

Lucent Technologies
Bell Labs Innovations



DACS II
Release 8.2.3, PDS
2.048-Mb/s Interface
Command and Message Manual

Volume I

365-353-242
Issue 1
February 1999

Copyright © 1999 Lucent Technologies
All Rights Reserved
Printed in U.S.A

Notice

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

Security Statement

In rare instances, unauthorized individuals make connections to the telecommunications network through the use of remote access features. In such event, applicable tariffs require that the customer pay all network charges for traffic. Lucent Technologies cannot be responsible for such charges, and will not make any allowance or give any credit for charges that result from unauthorized access.

Documentation Ordering Information

The ordering number for this document is 365-353-242. To order this document, call the Lucent Technologies Customer Information Center in Indianapolis, Indiana, on 1-888-582-3688. For more ordering information, refer to "How to Order Documentation" in the section "About this Document."

Technical Support Telephone Number

The Lucent Technologies Regional Technical Assistance Center (RTAC) provides a technical assistance telephone number which is staffed 24 hours a day. For technical assistance, simply call 1-800-225-RTAC.

Documentation Support Telephone Number

Lucent Technologies provides a telephone number for you to report errors or to ask questions about the information in this document. The support telephone numbers are:

Outside North Carolina - 1-800-334-0404
Inside North Carolina - 1-919-727-6681.

Developed by The Lucent Technologies Customer Training & Information Products Organization

How Are We Doing?

Document Title: DACS II Release 8.2.3, PDS 2.048-Mb/s Interface Command and Message Manual Volume I

Document No.: 365-353-242

Issue 1

Date: February 1999

Lucent Technologies welcomes your feedback on this document. Your comments can be of great value in helping us improve our documentation.

1. Please rate the effectiveness of this document in the following areas:

	Excellent	Good	Fair	Poor	Not Applicable
Ease of Use					////////////////
Clarity					////////////////
Completeness					////////////////
Accuracy					////////////////
Organization					////////////////
Appearance					////////////////
Examples					
Illustrations					
Overall Satisfaction					////////////////

2. Please check the ways you feel we could improve this document:

☐ Improve the overview/introduction	☐ Make it more concise/brief
☐ Improve the table of contents	☐ Add more step-by-step procedures/tutorials
☐ Improve the organization	☐ Add more troubleshooting information
☐ Include more figures	☐ Make it less technical
☐ Add more examples	☐ Add more/better quick reference aids
☐ Add more detail	☐ Improve the index

Please provide details for the suggested improvement. _____

3. What did you like most about this document?

4. Feel free to write any comments below or on an attached sheet.

If we may contact you concerning your comments, please complete the following:

Name: _____ Telephone Number: _____

Company/Organization: _____ Date: _____

Address: _____

When you have completed this form, please fold, tape, and return to address on back or Fax to: 910-727-3043.

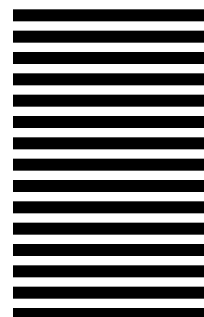
Lucent Technologies
Bell Labs Innovations



-----Do Not Cut—Fold Here And Tape-----



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 1999 GREENSBORO, N.C.

POSTAGE WILL BE PAID BY ADDRESSEE

DOCUMENTATION SERVICES
2400 Reynolda Road
Winston-Salem, NC 27199-2029



Contents

Introduction	1-1
■ DACS II Messages	1-2
■ Communicating With DACS II	1-5
■ DACS II Administrative Links	1-23
■ NPC Addressing	1-24
■ On-Line Help Feature	1-25
■ System Configuration	1-30
■ Documentation Support	1-46
■ Glossary	1-58

Alphabetic List of Messages	2-1
■ Alphabetic List of Keywords	2-1

Numerical List of Messages	3-1
■ Numeric List of Keywords	3-1

Summary of Input Commands	4-1
■ Alphabetic Command Summary	4-2
■ Numeric Command Summary	4-35

Autonomous Messages	5-1
■ Alarms Messages	5-2
■ Audits Messages	5-5
■ Error Recovery Messages	5-10
■ Event Reporting Messages	5-16
■ Input Denials Messages	5-17

Contents

■ Startup Messages	5-18

ABT — AUD	6-1
■ ABT	6-2
■ ACO,ACTIVE	6-5
■ ACT,MAP,CLR,INCL	6-7
■ ADD,LINK,K,T1,T3,N2,A,B	6-14
■ ADD,LINK,PTCOL,S,X,T,M,BAUD,ALM,BS,ENQ	6-16
■ ADD,LINK,W,P,T20,T22,T23,T25,T26,R20	6-21
■ ADD,NPC	6-28
■ ADD,USER,LINK,INCL,ALL,LANG,M,P,F	6-31
■ ADD,USER,NEW,PASSWD	6-38
■ ALM,IDLD,AI,NPC	6-41
■ ALM,NPC	6-45
■ ALM,NPC,AI,COUNT,THLEV	6-49
■ ALM,PMC,PMA,DMA,MI,CCN,OOS	6-53
■ ALM,PMC,PMA,DMA,MI,ECCN,OOS	6-55
■ ALM,PMC,PMA,DMA,MI,NPC,RPSFI,IDLD	6-57
■ ALM,PMC,PMA,DMA,MI,SMEM	6-60
■ ALM,RESET,DATE,TOD,FORMAT,MDY,DMY,PMC	6-62
■ ALWSW,UNIT,MMFG,TOPRTN,TOSRVC	6-64
■ APPEND,END	6-66
■ APPL,RESET,IN,PROGRESS	6-68
■ AR01,MISC,ALM,IDLD,PBA	6-70
■ AR01,MISC,ALM,PBA	6-74
■ AUD,PARAMS	6-79
■ AUD,QRY,BER,ALL,NPCS,TOT	6-81
■ AUD,QRY,BER,ALL,NPCS,TOT,EOM	6-83
■ AUD,QRY,CFA,CGA,LOS	6-89
■ AUD,QRY,CFA,CGA,LOS	6-97
■ AUD,QRY,CFA,CGA,LOS	6-107

BADVERB — BX2	7-1

Contents

■ BADVERB,BAD,SYNTAX,STOPPED	7-2
■ BADVERB,CMD,INERR,STOPPED	7-4
■ BC,R,TO,X,ZO,NA	7-7
■ BCON,FROM,TO,NTR,LPD,CONV,NAM,CUS,INCL	7-9
■ BCON,FROM,TO,RDC,CUS,INCL,NTR,LPD,CONV	7-20
■ BCON,FROM,TOX	7-26
■ BCON,FROM,TOX,NTR,LPD,CONV,NAM,CUS	7-33
■ BCON,FROM,TOX,RDC,CUS,INCL,NTR,LPD	7-45
■ BDIS,FROM,TO,CONV,OOS,DCC,INCL	7-51
■ BDIS,FROM,TO,OOS,INCL,CONV	7-58
■ BDIS,FROM,TOX,CONV,OOS,DCC,INCL	7-63
■ BDIS,FROM,TOX,OOS,INCL,CONV	7-70
■ BOOT,FAILED,BAD,DEVICE	7-76
■ BOOT,FROM,PMEM,FAILED,ATTEMPTING,TO	7-78
■ BOOT,FROM,PMEM,SMEM	7-80
■ BX2,STF,ATP	7-82

CBOFL — CTST	8-1
■ CBOFL,SIDE,EOM	8-2
■ CFR,FRAME	8-9
■ CFR,SYNC,FPLL	8-11
■ CFR,SYNC,MASTER,SLAVED	8-13
■ CFR,SYNC,STRATUM,STR2,STR3,TOLL,LOCAL	8-15
■ CFR,XC,INCL	8-17
■ CHG,ALMS,ON,OFF	8-19
■ CHG,BC,X,TO	8-21
■ CHG,BCOFF,TO	8-26
■ CHG,DD,TO	8-31
■ CHG,ERB,TYPE	8-36
■ CHG,FALMS,TYPE,PMACR,PMAMJ,DMAMN,MI	8-38
■ CHG,FROM,TO,NOT,TLA,TLR,F,T,B,A,INCL	8-54
■ CHG,FROM,TO,NOT,TLA,TLR,F,T,B,L,G,A	8-60
■ CHG,FROM,TO,TLP,NG,ES,INCL	8-68
■ CHG,INTV,ON,OFF	8-75
■ CHG,MACRO,MAP,SPACE	8-77
■ CHG,MSGLOG,ON,OFF	8-79

Contents

■ CHG,NPC,ALL,TLI,SYNC,CCN,LEV	8-81
■ CHG,NPC,ALMOPT,AIS,MI,PMA,PMC,DMA	8-86
■ CHG,NPC,CBTIMER	8-92
■ CHG,NPC,LPBK	8-95
■ CHG,NPC,NFS	8-102
■ CHG,NPC,OPTS,THMODE	8-108
■ CHG,NPC,TS0	8-136
■ CHG,NPC,TS0M	8-142
■ CHG,NPC,TYPE,IW,X	8-148
■ CHG,NPC,TYPE,IW,X,INCL	8-166
■ CHG,PASSWD,OLD,NEW	8-171
■ CHG,SALMS,PMACR,PMAMJ,DMAMN,MI,RESET	8-174
■ CHG,SETOP,TYPE,ALL,NPCOP	8-176
■ CHG,SWCH,TOX,INCL	8-186
■ CHG,SWCH,TOX,INCL	8-192
■ CHG,SYNC,TLI,SSP,TYPE,NPC,SRC	8-197
■ CHG,TYPE,OPTS,THMODE	8-204
■ CHG,TYPE,THMODE	8-230
■ CHG,UNIT,CONN	8-233
■ CHG,USER,LINK,INCL,SCR,GR,MCON,MCOFF	8-236
■ CI,ECI,RESET	8-240
■ CI,ECI,STARTUP,STF,ATP	8-242
■ CMD,MC,OOS,MCOND,INSERVICE,MPDBASE	8-244
■ COPY,NPC,TO	8-246
■ CTST,FAD,AIS,INCL	8-276
■ CTST,FAD,EMODE,FMODE,INCL	8-284
■ CTST,FAD,FROM,TO,AIS,INCL	8-291
■ CTST,HUB,FAD,TO,INCL	8-299
■ CTST,LPBKT,FAD,INCL	8-304
■ CTST,TNR,ALL,OOS	8-308
■ CTST,TNR,FAD,OOS	8-310

DDIS — DGN	9-1
■ DDIS,FROM,TO	9-2
■ DELETE,END	9-6
■ DGN,CCB,CFT,X	9-8

Contents

■ DGN,CCI,CFT,X	9-15
■ DGN,CCNI,CFT,X	9-19
■ DGN,CI,CFT,X	9-25
■ DGN,ETSI,CFT,X	9-29
■ DGN,ETSI,ECCN,ALL	9-33
■ DGN,IN,PROGRESS	9-36
■ DGN,LINK,CFT,X	9-38
■ DGN,MC,CFT,X	9-41
■ DGN,MP,CFT,X	9-45
■ DGN,NPC	9-48
■ DGN,NPC,SIDE,CFT,X	9-54
■ DGN,PMEM,SMEM,CFT,X,EXCT,DBASE,VERIFY	9-74
■ DGN,SYNC	9-79
■ DGN,SYNC,TLI,CRO	9-82
■ DGN,SYNC,TLI,SSP	9-85
■ DGN,TSI,CFT,X	9-88
■ DGN,TSIS,CCN,ALL	9-96
■ DGN,TSIS,CCN,UNIT,CONN	9-99
■ DGN,UNIT,DSPI,CFT,X	9-102
■ DGN,UNIT,FC,CFT,X	9-105
■ DGN,UNIT,FTMI,CFT,X	9-110
■ DGN,UNIT,UC,CFT,X	9-113

DGRTH — DSPC	10-1
■ DGRTH,NPC	10-2
■ DGRTH,NPC,NPCTG,TGR	10-14
■ DGRTH,NPC,NPCTP,TPR	10-19
■ DGRTH,SYNC,TB	10-24
■ DGRTH,SYNC,TLI,SSP	10-26
■ DGRTH,TG	10-31
■ DGRTH,TP	10-33
■ DGRTH,UNIT	10-35
■ DGRTH,UNIT,FTMI	10-40
■ DGRTH,UNIT,MXR	10-42
■ DLT,FPKG	10-44
■ DLT,MACRO,MAP,USER	10-48

Contents

■ DLT,NPC	10-50
■ DLT,USER	10-54
■ DSPC	10-56

EBX — EXC	11-1
■ EBX,STARTUP,STF,ATP	11-2
■ ED,CRET,MAP,PIC	11-4
■ ED,MACRO,MAP	11-8
■ EMTC,STARTUP,STF,ATP	11-14
■ ERR,CMD,ABT,TN,STOPPED	11-16
■ ERR,ESR,ANALYSIS,REPORT,EVENT	11-18
■ ERR,ESR,CCB,TN,EVENT,COND	11-21
■ ERR,ESR,CCI,TN,EVENT,COND	11-23
■ ERR,ESR,CCNI,TN,EVENT,COND	11-26
■ ERR,ESR,ETSI,TN,EVENT,COND	11-33
■ ERR,ESR,MC,MP,CI,TN	11-36
■ ERR,ESR,MC,MP,TN,EVENT,COND,CI,BX,EBX	11-38
■ ERR,ESR,NPC,SIDE,TN,EVENT,COND	11-42
■ ERR,ESR,NPC,TN,EVENT,COND	11-48
■ ERR,ESR,SYNC,TLI,SSP,TN,EVENT,NPC,COND	11-53
■ ERR,ESR,SYNC,TLI,TN,EVENT,COND	11-59
■ ERR,ESR,SYNC,TN,EVENT,COND	11-63
■ ERR,ESR,TSI,TN,EVENT,COND	11-68
■ ERR,ESR,UNIT,DSPI,TN,EVENT,COND	11-72
■ ERR,ESR,UNIT,FC,TN,EVENT,COND	11-75
■ ERR,ESR,UNIT,FTMI,TN,EVENT,COND	11-78
■ ERR,ESR,UNIT,UC,UBX,TN,EVENT,COND	11-81
■ ERR,HARDWARE,TN,COND,EVENT,ACTION	11-84
■ ERR,LINK,TN,STATUS	11-88
■ ERR,MSGs,TO,LOG,DISCARDED	11-91
■ ERR,PMEM,SMEM,TN,EVENT,COND	11-93
■ ERR,PWR,PMC,PMA,DMA,MI,TN	11-95
■ ERR,SOFTWARE,MC,ERROR,MID,TN,RC,ACTION	11-98
■ ERR,SYNC,MODE,FAST,HOLDOVER,NORMAL	11-102
■ ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN	11-107
■ ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN	11-112

Contents

■ EXC,MACRO	11-117

FRADTS — LOGOFF	12-1
■ FRADTS,BMCMP	12-2
■ FRADTS,DGN	12-4
■ FRADTS,FRCMP	12-7
■ FRADTS,MC,DGN	12-107
■ GRTH,FRAME,CHAR,UID	12-109
■ GRTH,NPC,NPCTG	12-112
■ GRTH,NPC,NPCTP	12-116
■ GRTH,NPC,TYPE	12-120
■ GRTH,NPC,TYPE,CBTIMER	12-127
■ GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,DMA	12-132
■ GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,PMC	12-157
■ GRTH,SYNC,TB,TYPE	12-177
■ GRTH,SYNC,TLI,TYPE	12-179
■ GRTH,SYNC,TLI,TYPE,SSP,SRC,NPC	12-181
■ GRTH,TG,NPCTG	12-187
■ GRTH,TP	12-190
■ GRTH,UNIT,FTMI,IMP	12-194
■ GRTH,UNIT,MXR,TYPE,BERM,BERT,LBO	12-196
■ GRTH,UNIT,TYPE,CONN	12-199
■ IN,PROGRESS	12-204
■ INHSW,UNIT,MMFG,TOPRTN,TOSRVC	12-206
■ INSTALL	12-208
■ INVALID,SFW,ID,BLOCK,COND	12-216
■ LINE	12-218
■ LIST,END	12-220
■ LOGIN,USER,PASSWD	12-223
■ LOGOFF,USER,LINK,INCL	12-226

MC — MTC	13-1
■ MC,MCOND	13-2

Contents

■ MC,RESET,RELEASE,ISSUE,FPKG,COND	13-4
■ MOVE,FROM,END,TO	13-8
■ MP,STARTUP,STF,ATP	13-10
■ MTC,STF,ATP	13-12

OCNT — OVERLOAD	14-1
■ OCNT,FROM,TO,MPM,NAM,CUS,INCL,RDC	14-2
■ OCNT,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT	14-11
■ OCNT,FROM,TO,RDC,CUS,INCL,PRIOUT	14-21
■ OCON,FROM,TO,MPM,CUS,INCL,RDC,NAM	14-26
■ OCON,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT	14-35
■ OCON,FROM,TO,RDC,CUS,INCL,PRIOUT	14-45
■ ODIS,FROM,TO,INCL,OOS,DCC	14-50
■ ODIS,FROM,TO,INCL,OOS,DCC,PRIOUT	14-57
■ ODIS,FROM,TO,OOS,INCL,PRIOUT	14-63
■ OVERLOAD,MP,CI,UNIT,UC,TN,PROCESSOR	14-68

RESET — RMV	15-1
■ RESET,DATE,TOD,FORMAT,MDY,DMY	15-2
■ RESET,STOPPED	15-4
■ RMV,CCB	15-5
■ RMV,CCI	15-7
■ RMV,CCNI	15-10
■ RMV,ETSI	15-12
■ RMV,ETSI,ECCN,ALL	15-14
■ RMV,LINK	15-16
■ RMV,MC	15-18
■ RMV,NPC,SIDE,INCL	15-20
■ RMV,SMEM,PMEM	15-46
■ RMV,SYNC	15-49
■ RMV,SYNC,TLI,CRO	15-51
■ RMV,SYNC,TLI,PMC,PMA,DMA,MI,COND	15-53
■ RMV,SYNC,TLI,SSP	15-55

Contents

■ RMV,TSI	15-58
■ RMV,TSIS,CCN,ALL	15-60
■ RMV,TSIS,CCN,UNIT,CONN	15-63
■ RMV,UNIT,FC	15-66
■ RMV,UNIT,FLI	15-69
■ RMV,UNIT,FMT	15-71
■ RMV,UNIT,FTMI,DSPI	15-73
■ RMV,UNIT,MMFG,FRC,INCL	15-76
■ RMV,UNIT,UC	15-79

RST	16-1
■ RST,CCB	16-2
■ RST,CCI	16-4
■ RST,CCNI	16-6
■ RST,ETSI	16-8
■ RST,ETSI,ECCN,ALL	16-10
■ RST,LINK	16-13
■ RST,MC,MCOND,NOJRN,CLR,ALL	16-15
■ RST,NPC,MON	16-20
■ RST,NPC,SIDE	16-25
■ RST,NPC,TS0M	16-49
■ RST,PMEM,SMEM,CLR,FRC,BKGRND	16-53
■ RST,SYNC	16-59
■ RST,SYNC,TLI,CRO	16-61
■ RST,SYNC,TLI,SSP	16-63
■ RST,TSI	16-65
■ RST,TSIS,CCN,ALL	16-67
■ RST,TSIS,CCN,UNIT,CONN	16-70
■ RST,UNIT,FC	16-73
■ RST,UNIT,FLI	16-75
■ RST,UNIT,FMT	16-77
■ RST,UNIT,FTMI,DSPI	16-79
■ RST,UNIT,UC	16-81

SAVE — SW	17-1

Contents

■ SAVE	17-2
■ STOP,MACRO,LINK	17-4
■ SW,BCAST,OLD,NEW,INCL	17-6
■ SW,BCAST,OLD,NEW,INCL	17-13
■ SW,DISC,OOS	17-21
■ SW,DISC,OOS	17-26
■ SW,ROLL,OLD,NEW,INCL,FRC,OOS	17-33
■ SW,ROLL,OLD,NEW,INCL,FRC,OOS,TWAY	17-39
■ SW,UNIT,FLI,TOPTN	17-45
■ SW,UNIT,FLI,TOSRVC	17-47
■ SW,UNIT,MMFG,TOPTN,FRC	17-49
■ SW,UNIT,MMFG,TOSRVC	17-52

TCNT — TTST	18-1
■ TCNT,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL	18-2
■ TCNT,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT	18-13
■ TCNT,FROM,TO,PFW,NFW	18-25
■ TCNT,FROM,TO,RDC,CUS,INCL,PRIOUT	18-32
■ TCON,FROM,CB,CUS,RDC,INCL	18-37
■ TCON,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL	18-43
■ TCON,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT	18-54
■ TCON,FROM,TO,PFW,NFW	18-66
■ TCON,FROM,TO,RDC,CUS,INCL,PRIOUT	18-73
■ TDIS,FROM,CB,INCL,OOS	18-78
■ TDIS,FROM,TO,INCL,OOS,DCC	18-83
■ TDIS,FROM,TO,INCL,OOS,DCC,PRIOUT	18-90
■ TDIS,FROM,TO,OOS,INCL,PRIOUT	18-96
■ TS0,R,NPC,OLD,NEW	18-101
■ TS0MBOFL	18-105
■ TTST,HUB,TO,TG	18-108
■ TTST,HUB,TO,TP,NAM	18-115
■ TTST,LPD,TG	18-122
■ TTST,LPD,TP	18-124
■ TTST,MON,TG	18-128
■ TTST,MON,TO,NAM,TP	18-134
■ TTST,MON,TO,TG	18-145

Contents

■ TTST,SPL,TG	18-153
■ TTST,SPL,TP	18-159
■ TTST,TGR,TG,OOS	18-164
■ TTST,TLA,NOT,TP	18-172
■ TTST,TLA,TG	18-179
■ TTST,TLR,NOT,TP	18-184
■ TTST,TLR,TG	18-191
■ TTST,TPR,ALL,OOS	18-196
■ TTST,TPR,TP,OOS,FRC	18-198

UTL	19-1
■ UTL,ACO	19-2
■ UTL,BMTR,FROM,TO,EXCT,INCL,UPGRD	19-4
■ UTL,BOOT,FRAME,CLR	19-10
■ UTL,CLR,ALL	19-12
■ UTL,CLR,ERR,HWER,SWER	19-14
■ UTL,CLR,NPC	19-16
■ UTL,CLR,NPC,ALL,AI,MONDAT,MONTIM	19-22
■ UTL,CLR,NPC,PARAMS	19-30
■ UTL,CLR,PWR	19-34
■ UTL,DATE,FORMAT,INT	19-36
■ UTL,INIT,ALM	19-39
■ UTL,LOC	19-41
■ UTL,QRY,ALL	19-53
■ UTL,QRY,ALL,COMMON	19-60
■ UTL,QRY,ALL,UNIT	19-66
■ UTL,QRY,ALM,INTV	19-86
■ UTL,QRY,ALMOPT,NPC,AIS	19-88
■ UTL,QRY,ALMS	19-97
■ UTL,QRY,ALMS,DBASE	19-124
■ UTL,QRY,APPL,NPC,ALL	19-137
■ UTL,QRY,BC,NPC,ALL	19-143
■ UTL,QRY,BC,TO	19-152
■ UTL,QRY,BCAST,ALL	19-157
■ UTL,QRY,BCAST,FROM	19-161
■ UTL,QRY,BCAST,FROM	19-167

Contents

■ UTL, QRY, CMAP	19-172
■ UTL, QRY, CNFGR	19-204
■ UTL, QRY, DATE	19-207
■ UTL, QRY, DD	19-209
■ UTL, QRY, DD, NPC, DDCT, ALL	19-214
■ UTL, QRY, DMAP	19-220
■ UTL, QRY, DS3, BERMT, UNIT	19-249
■ UTL, QRY, DS3, LBO	19-251
■ UTL, QRY, EQD, COMMON	19-253
■ UTL, QRY, EQD, CONN	19-257
■ UTL, QRY, EQD, ETSIS	19-259
■ UTL, QRY, EQD, MXRS	19-261
■ UTL, QRY, EQD, NPCS, TOTAL, UNIT	19-263
■ UTL, QRY, EQD, TSIS	19-276
■ UTL, QRY, EQD, UNIT	19-278
■ UTL, QRY, EQD, UNITS	19-297
■ UTL, QRY, ERR, SWER, HWER, INT, DATE, TOD, TN	19-299
■ UTL, QRY, ESR, CCN	19-309
■ UTL, QRY, ESR, ECCN	19-312
■ UTL, QRY, ESR, MP	19-316
■ UTL, QRY, ESR, NPC, SIDE	19-321
■ UTL, QRY, ESR, UNIT	19-329
■ UTL, QRY, ESR, UNIT, DSPI	19-333
■ UTL, QRY, ESR, UNIT, FC	19-335
■ UTL, QRY, ESR, UNIT, FLI	19-338
■ UTL, QRY, ESR, UNIT, FTMI	19-341
■ UTL, QRY, ESR, UNIT, MXR	19-345
■ UTL, QRY, FALMS, TYPE, ALL	19-350
■ UTL, QRY, FPKG	19-368
■ UTL, QRY, FROM	19-372
■ UTL, QRY, FROM	19-393
■ UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC	19-398
■ UTL, QRY, LIST, MACRO, USER	19-408
■ UTL, QRY, LIST, MAP, USER	19-411
■ UTL, QRY, LOG, ALL	19-414
■ UTL, QRY, LPBK, NPC	19-418
■ UTL, QRY, MACRO, ATTR, USER, ALL	19-425
■ UTL, QRY, MACRO, MAP, SPACE, USER, ALL	19-429

Contents

■ UTL, QRY, MACRO, USER	19-432
■ UTL, QRY, MAP, ATTR, ALL, USER, MAPNM	19-435
■ UTL, QRY, MARK	19-438
■ UTL, QRY, MARK	19-448
■ UTL, QRY, MEMSTAT	19-458
■ UTL, QRY, NFS, NPC	19-466
■ UTL, QRY, NPC	19-471
■ UTL, QRY, NPC, ALL, AI, LV, MONDAT, MONTIM	19-483
■ UTL, QRY, NPC, CBTIMER	19-495
■ UTL, QRY, NPC, MAP, USER	19-498
■ UTL, QRY, NPCTG	19-503
■ UTL, QRY, OPT, TYPE, ALL, NPCS	19-508
■ UTL, QRY, PEST, FAIL, OOS, COMMON	19-513
■ UTL, QRY, PEST, FAIL, OOS, UNIT	19-518
■ UTL, QRY, ROLL, DS0, NPC, ALL, UNIT	19-538
■ UTL, QRY, ROLL, DS1, NPC, ALL, UNIT	19-545
■ UTL, QRY, RPSFI	19-552
■ UTL, QRY, SALMS, ALL	19-554
■ UTL, QRY, SCR, LINK, USER, LINKS, USERS	19-557
■ UTL, QRY, SIGST	19-565
■ UTL, QRY, SQN	19-571
■ UTL, QRY, STATE, ACO	19-573
■ UTL, QRY, STATE, NPC	19-575
■ UTL, QRY, STATE, NPC	19-605
■ UTL, QRY, STATE, SYNC	19-628
■ UTL, QRY, STR, LINK	19-631
■ UTL, QRY, STR, SYNC	19-641
■ UTL, QRY, STR, SYNC, TLI	19-647
■ UTL, QRY, STR, SYNC, TLI, SSP	19-650
■ UTL, QRY, STR, XC	19-655
■ UTL, QRY, SYNC, TYPE	19-657
■ UTL, QRY, TGS	19-660
■ UTL, QRY, TO	19-665
■ UTL, QRY, TO	19-700
■ UTL, QRY, TOD, CFA, MONDAT	19-718
■ UTL, QRY, TPS	19-721
■ UTL, QRY, TS0, NPC	19-727
■ UTL, QRY, TS0M, NPC	19-732

Contents

■ UTL, QRY, UNIT, FTMI, IMP	19-737
■ UTL, QRY, WHO	19-739
■ UTL, QRY, XCSB, UNIT	19-742
■ UTL, RCY, COND, IN, PROGRESS	19-749
■ UTL, RCY, PASSWD	19-752
■ UTL, TOD, CFA, PRIM, X, MONDAT	19-754

Glossary

G-1

IN

Index

IN-1

Tables

7-1.	Allowable Signaling Type and Signaling Consequent Action	7-15
7-2.	Allowable Cross-Connected Time slot Consequent Action	7-15
7-3.	Allowable Cross-Connected Time slot Consequence Action	7-30
7-4.	Allowable Signaling Type and Signaling Consequent Action	7-39
7-5.	Allowable Cross-Connected Time slot Consequence Action	7-40
8-1.	Provisioning values for x	8-39
8-2.	Provisioning values for y	8-41
8-3.	Provisioning values for z	8-42
8-4.	Combinations of x and y Values	8-45
8-5.	Combinations of y and z Values	8-46
8-6.	Combinations of x and z Values	8-47
8-7.	NPC Provisioning Options	8-47
8-8.	Parameter Register Threshold Range and Default Values	8-115
8-9.	Provisioning values for x	8-117
8-10.	Provisioning values for y	8-118
8-11.	Provisioning values for z	8-119
8-12.	Combinations of x and y Values	8-122
8-13.	Combinations of y and z Values	8-123
8-14.	Combinations of x and z Values	8-124
8-15.	NPC Provisioning Options	8-124
8-16.	Provisioning values for x	8-152
8-17.	Provisioning values for y	8-153
8-18.	Provisioning values for z	8-154
8-19.	Combinations of x and y Values	8-157
8-20.	Combinations of y and z Values	8-158
8-21.	Combinations of x and z Values	8-159
8-22.	NPC Provisioning Options	8-159
8-23.	Parameter Register Threshold Range and Default Values	8-179
8-24.	NPC Provisioning Options	8-206
8-25.	Provisioning values for x	8-212
8-26.	Provisioning values for y	8-213
8-27.	Provisioning values for z	8-214

Tables

8-28.	Combinations of x and y Values	8-217
8-29.	Combinations of y and z Values	8-218
8-30.	Combinations of x and z Values	8-219
8-31.	Parameter Register Threshold Range and Default Values	8-221
8-32.	Parameter Register Threshold Range and Default Values	8-268
12-1.	Provisioning values for x	12-138
12-2.	Provisioning values for y	12-139
12-3.	Provisioning values for z	12-141
12-4.	Combinations of x and y Values	12-144
12-5.	Combinations of y and z Values	12-145
12-6.	Combinations of x and z Values	12-146
12-7.	Parameter Register Threshold Range and Default Values	12-148
12-8.	NPC Provisioning Options	12-163
14-1.	Allowable Signaling Type and Signaling Consequent Action	14-17
14-2.	Allowable Cross-Connected Time slot Consequent Action	14-17
14-3.	Allowable Signaling Type and Signaling Consequent Action	14-40
14-4.	Allowable Cross-Connected Time slot Consequent Action	14-41
15-1.	NPC Provisioning Options	15-32
15-2.	Provisioning values for x	15-37
15-3.	Provisioning values for y	15-38
15-4.	Provisioning values for z	15-39
15-5.	Combinations of x and y Values	15-42
15-6.	Combinations of y and z Values	15-43
15-7.	Combinations of x and z Values	15-44
16-1.	NPC Provisioning Options	16-35
16-2.	Provisioning values for x	16-40
16-3.	Provisioning values for y	16-41
16-4.	Provisioning values for z	16-42
16-5.	Combinations of x and y Values	16-45
16-6.	Combinations of y and z Values	16-46
16-7.	Combinations of x and z Values	16-47

Tables

18-1.	Allowable Signaling Type and Signaling Consequent Action	18-19
18-2.	Allowable Cross-Connected Time Slot Consequent Action	18-20
18-3.	Allowable Signaling Type and Signaling Consequent Action	18-60
18-4.	Allowable Cross-Connected Time Slot Consequent Action	18-61
19-1.	NPC Provisioning Options	19-187
19-2.	Provisioning values for x	19-192
19-3.	Provisioning values for y	19-193
19-4.	Provisioning values for z	19-194
19-5.	Combinations of x and y Values	19-197
19-6.	Combinations of y and z Values	19-199
19-7.	Combinations of x and z Values	19-200
19-8.	NPC Provisioning Options	19-231
19-9.	Provisioning values for x	19-236
19-10.	Provisioning values for y	19-237
19-11.	Provisioning values for z	19-238
19-12.	Combinations of x and y Values	19-241
19-13.	Combinations of y and z Values	19-242
19-14.	Combinations of x and z Values	19-243
19-15.	Provisioning values for x	19-354
19-16.	Provisioning values for y	19-355
19-17.	Provisioning values for z	19-357
19-18.	Combinations of x and y Values	19-360
19-19.	Combinations of y and z Values	19-361
19-20.	Combinations of x and z Values	19-362
19-21.	NPC Provisioning Options	19-362
19-22.	Provisioning values for x	19-377
19-23.	Provisioning values for y	19-379
19-24.	Provisioning values for z	19-380
19-25.	Combinations of x and y Values	19-383
19-26.	Combinations of y and z Values	19-384
19-27.	Combinations of x and z Values	19-385
19-28.	NPC Provisioning Options	19-385
19-29.	NPC Provisioning Options	19-585
19-30.	Provisioning values for x	19-590
19-31.	Provisioning values for y	19-591

Tables

19-32.	Provisioning values for z	19-592
19-33.	Combinations of x and y Values	19-595
19-34.	Combinations of y and z Values	19-596
19-35.	Combinations of x and z Values	19-597
19-36.	Provisioning values for x	19-610
19-37.	Provisioning values for y	19-611
19-38.	Provisioning values for z	19-612
19-39.	Combinations of x and y Values	19-615
19-40.	Combinations of y and z Values	19-616
19-41.	Combinations of x and z Values	19-617
19-42.	Provisioning values for x	19-680
19-43.	Provisioning values for y	19-681
19-44.	Provisioning values for z	19-683
19-45.	Combinations of x and y Values	19-686
19-46.	Combinations of y and z Values	19-687
19-47.	Combinations of x and z Values	19-688
19-48.	NPC Provisioning Options	19-688
19-49.	Provisioning values for x	19-704
19-50.	Provisioning values for y	19-705
19-51.	Provisioning values for z	19-706
19-52.	Combinations of x and y Values	19-709
19-53.	Combinations of y and z Values	19-710
19-54.	Combinations of x and z Values	19-711
19-55.	NPC Provisioning Options	19-711

About This Document

Purpose

The *DACS II Release 8.2.3 Command and Message Manual* describes the input commands and output messages of Release 8.2.3 of the Digital Access and Cross-Connect System II (DACS II). In addition, it provides full support for previous product releases.

NOTE:

Those customers using this manual with Releases 3 through 7.0.3 software should be aware that all features of a particular message shown for Release 8.2.3 may or may not apply to previous releases.

This manual consists of three volumes as follows:

- **Volume I** - This volume contains general information about the document, a detailed introduction that defines DACS II messages, relates how to communicate with DACS II, introduces the administrative links, and discusses in detail NPC addressing, on-line help feature, system configuration and features a listing of related documentation. Message listings in this volume include alphabetical and numerical, summary list of input commands and a list of autonomous messages. A comprehensive presentation of input commands and output messages (ABT through DGN) concludes this volume.
- **Volume II and III** - These two volumes contain input commands and output messages in the following order:
 - **Volume II** - DGRTH through RST
 - **Volume III** - SAVE through UTL and the Glossary

Reason for Issue

The *DACS II Release 8.2.3 Command and Message Manual* has been issued to include updated and new commands applicable to Release 8.2.3.

Intended Audiences

This manual is a catalog of messages intended for reference by a technician or craftperson who needs additional details about a message. It provides the user with supplemental information for the Digital Access and Cross-Connect System II (DACS II) that is programmed in the Program Documentation Standards (PDS) language. An example of a user is someone performing a task from an operation and maintenance manual who needs the definition of a specific keyword to complete the task.

How to Order Documentation

To order additional copies of this document, send or call in an order as follows:

- To order by Mail:

Lucent Technologies
Customer Information Center
Attention: Order Entry Section
2855 N. Franklin Road
P. O. Box 19901
Indianapolis, IN 46219

-
- To order by Telephone (Monday through Friday);

Within the United States of America:

1-800-LUCENT8 (582-3688) (7:30 a.m. to 6:30 p.m. EST)

From Canada:

1-800-255-1242

Worldwide:

Toll: **1-317-352-8557**

FAX: **1-317-352-8484**

For RBOC/BOC customers, process orders through your Company Documentation Coordinator.

For commercial customers, a check, money order, purchase order number, or charge card number is required with all orders. Make checks payable to Lucent Technologies.

Lucent Technologies entities should use Form IND 1-80.80 FA, available through the Customer Information Center.

One-time orders include a binder (if applicable) and the document contents for the current issue in effect at the time of order. After placing a one-time order, you can request a standing order for any document revisions *of that software release*. Documents for new software releases do *not* go to standing-order customers. You will only get those documents if you order the new software release.

How to Comment on This Document

A feedback form is located at the beginning of this publication, immediately after the title page. Please fill out the feedback form and return it (postage free) to the address on the back.

If the feedback form is missing, send comment on this publication to:

Lucent Technologies
DACS II Documentation Coordinator
Attn: Tabatha Wright
101 Crawfords Corner Road
Room 1B-320
Holmdel, NJ 07733-3030 USA

Introduction

Introduction

Foreword

This manual contains the latest message information regarding the Digital Access and Cross-Connect System II (DACS II) Release 8.2.3 software.

This manual is a catalog of messages intended for a technician or craftsperson who needs additional details about a message. This manual provides the user with supplemental information for the Digital Access and Cross-Connect System II (DACS II) which is programmed in the Program Documentation Standards (PDS) language. An example of a user is someone performing a task from an operation and maintenance manual who needs the definition of a specific keyword to complete the task.

How To Use This Manual

The user refers to a particular message via the message number or the action verb with modifiers. The messages are arranged in alphabetical order by verb; for example; add, audits, broadcast, change, etc. A numerical list, an alphabetical list, and a summary of input commands provide cross referencing of messages and should help in locating a particular message.

A *message* is a communication between a user* and a DACS II. Input messages, or *commands*, are sent from a user to a DACS II. Output messages are originated by a DACS II and sent to the user.

* A *user* can be a person operating a DACS II or an Operations System (OS), such as TIRKS[†] system, SARTS, etc.

[†] TIRKS is a registered trademark of Bell Communications Research, Inc.

How the Manual Is Organized

This manual or document consists of three volumes of messages in alphabetical verb sequence. The volumes are organized as follows:

Volume I Contents

- Introduction
 - About This Manual
 - DACS II Messages
 - Communicating With DACS II
 - DACS II Administrative Links
 - NPC Addressing
 - On-Line Help Feature
 - System Configuration
 - Documentation Support
- Alphabetical List of Messages
- Numerical List of Messages
- Summary of Input Commands
- List of Autonomous Messages
- Messages (ABT through DGN).

Volume II Contents

- Messages (DGRTN through RST).

Volume III Contents

- Messages (SW through UTL).
- Glossary

DACS II Messages

How Messages In This Manual Are Formatted

Each message is presented in actual input message format with accompanying explanations of keywords and variables providing sufficient information to fully understand the activity. Additionally, all responses to the input message such as the completion, the

denial, and any autonomous messages generated from the input or activated by the machine are shown.

Understanding Message Numbering

Messages are grouped according to verb and keywords and are indexed by a *message number*.

IMPORTANT: Message numbers are used for organization and reference in this manual, and they appear in actual output messages.

Message numbers have the following format:

I . mmmmn	Input commands
O . mmmmn	Output messages reporting successful completion (COMPLD) of the input command
O . mmmmn . pp	Output message reporting a denial (DENY) of the input command.

Input commands are prefixed by an I; output messages are prefixed by an O. All messages related to each other have the same mmmm digits. An input command may have more than one completion output message. In this case, the last digit, n, indicates the particular completion message. DNY (command denial) messages are referenced by the additional digits pp.

For example, consider the diagnose unit digital signal processor interface group of messages (mmmm = 4134). Below is the input message followed by the possible output messages or groups of messages:

```

I . 41341      DGN-EQPT:[xy]:UNIT-q:[ww]:DSPI[:CFT-X-vwxy];

O . 41341      xy yy-mm-dd hh:mm:ss <link number>
M DGN EQPT::UNIT-q:[ww]:DSPI[:CFT-X-vwxy] COMPLD
/* [0.41341] */
"{ATP|CATP-cc|STF-ppqq,d5,d4,d3,d2,d1,d0}"
;

O . 41341.01   xy yy-mm-dd hh:mm:ss <link number>
M DGN EQPT::UNIT-q:[ww]:DSPI[:CFT-X-vwxy] DENY
mmmm
/* [0.41341.01] */
/* <explanation of error condition code> */
;
```

Usage of Uppercase and Lowercase Characters

In the message format of this manual, uppercase and lowercase letters distinguish between information that is constant (uppercase) and information that is variable (lowercase). Any

character written in uppercase appears on the output device exactly as it is written. A character represented by lowercase letters will be replaced on the output driver by the value listed on the manual page for that particular message under *Explanation of Parameters*.

Representation of Lines Longer Than the Page Width

Many message lines in this document exceed the width of the page on which they are printed. Consequently, a way to present the message on more than one line while maintaining an accurate representation of the message's parameter fields and the character spacing between them has been devised. The backslash character is used in both input and output message representations to mark the point in the message text where the line has been truncated and continued onto another line. This is consistent with the present use of the backslash character on input to enter a command whose length exceeds 80 characters. The user can easily construct the single-line representation because the backslash marks the extent of any blank characters in the message.

Rather than using the backslash convention discussed above, some utility (RTRV) output messages are printed in a smaller type font because of their volume.

Delimiters

Delimiters are used to enclose a field in a message.

- [] Brackets indicate an optional field, one which may or may not be used in the input command or appear on the output message.
- { } Braces indicate a field containing alternate choices. For input messages, the user must select one of the choices. In output messages, braces indicate that only one of the fields within the braces will appear.
- < > The less than and greater than symbols enclose an abbreviation representing information too lengthy to display in the manual. These delimiters are never used in actual DACS II input commands or output messages but are used only in describing the message format in this manual.
- () Parentheses **are** part of the message text and must be entered where shown.

Message Layout and Heading Definitions

The page format for a message in this manual may contain these major headings:

- INPUT COMMAND FORMAT
- EXPLANATION OF COMMAND
- EXPLANATION OF PARAMETERS

- COMPLETION MESSAGE
- DENIAL MESSAGE (Not applicable to every message)
- AUTONOMOUS MESSAGES (Not applicable to every message).

INPUT COMMAND FORMAT shows the message exactly as it appears when entered at the terminal. Some input commands are too long to display on a single line; therefore, these commands are presented on multiple lines. Both the nonhierarchical and hierarchical NPC numbering formats are shown.

EXPLANATION OF COMMAND explains the meaning of the message in general terms.

EXPLANATION OF PARAMETERS defines the keywords present in the command and provides specific information concerning conditions that apply to a particular feature set. Keywords are generally shown in uppercase format, while variables are generally shown in lowercase format. Variables consist of data that further defines or delineates keywords.

COMPLETION MESSAGE shows a complete version of the normal response to the input command.

DENIAL MESSAGE shows a complete version of the input command denial message. The message includes an error code and a reason for the denial.

AUTONOMOUS MESSAGES are messages that report a change in the DACS II system state. The header line of the autonomous response contains the information of source identifier (SID), date, and time. The primary line contains an alarm code (ALMCDE), an autonomous message tag (ATAG) and a verb with modifiers. The verb is always REPT, indicating a report.

Communicating With DACS II

Input Command Mode

The input command requests an action to be performed; this command contains necessary information for DACS II to accomplish the requested action. The user has two basic modes for inputting commands: the command mode and the menu/prompt mode.

Command Mode

The command mode is for the experienced user or machine-machine operation. A command must be selected along with variables and entered within a single line. The user types a single-line command with the only carriage return occurring at the end. "Single-line" refers to the input *command*, not to the display of the command. *A long single-line command may extend for several lines on a display terminal.*

DACS II accepts up to 120 characters of input per command. If an input command exceeds 80 characters (the standard width of most terminal screens), the input will continue on the next line of the display beginning with the 81st character. However, the command line can be broken at a convenient place by typing a backslash (\) followed by a carriage return. The display of the input command will continue on the next line, but the command will be interpreted as a single-line command. If 120 characters is not sufficient or if the user finds entering long commands error-prone, the single-line command can be broken up into several smaller commands.

Entering a carriage return without the backslash terminates the input and causes the line to be interrupted. An exclamation point (!) also terminates the input command (that is, DACS interprets the carriage return and ! as the end of the command). If the carriage return is used, ! is echoed back to the terminal.

Menu/Prompt Mode

This optional on-line help mode assists the user in completing the input command. The menu/prompt mode aids the user by providing a list of alternative parameters or keywords.

The user starts the menu/prompt mode by entering a question mark (?) in the command line at the point in question. In response, DACS II presents a list of possible keywords. This list is presented to the user in menu or prompt form. At this point, the user may continue or return to the command line. If the user continues, s/he should refer to the detailed examples (menu form and prompt form) in the "On-Line Help Feature" section.

Aborting an Input Command or Output Message

The ABT -CMD is entered to interrupt a system response or abort an input command. If ABT -CMD is entered at LINK-I, the output from this link will be interrupted just after ABT -CMD is entered or after one or two output lines. At other links, the output messages may or may not be interrupted. When the ABT -CMD option is used, the command generating the output has been completed unless the autonomous message, CMD ERR ABT, appears.

For a nonabortable message, the output message will not be affected.

If a nonabortable message is being output but DACS II is executing an abortable command, ABT -CMD will stop the execution of the abortable command and CMD ERR ABT (Message No. O.01121) will be output on all links.

Input Command Format

General

The general format of an input command is:

VERB[-MODIFIER][-MODIFIER]:[xy]:[zz]:[ww]:[d][,e]...[,z];

Brackets [] enclose modifiers, parameters, and optional information. Parameters give the specific information required by the command verb in order to execute that command. All parameters are positional within the command line.

: [xy]: [zz]: [ww]: [d][,e]...[,z]; represent the input parameters and are separated by colons, but if they are logically connected (also called group, block, field), they are separated by commas. The colon (:) is used as a parameter field delimiter. Note: When entering a command the trailing or last colon may be omitted.

Input messages are terminated with the semicolon (;) or a carriage return. If the carriage return is used, ; is echoed back to the terminal.

Input commands must be treated on a case-by-case basis. For example:

- If a parameter field has only a single value (letter or number), it is considered a keyword defined parameter field.
- A keyword defined parameter is not positioned inside the parameter field and the comma (,) is omitted. A double comma (,,) in any keyword defined parameter field will be rejected.
- A value (letter or number) defined parameter is positional inside a parameter block.

Keywords

Commands consist of *keywords* combined with equipment and circuit identification. A *keyword* is an alphanumeric string of characters representing:

- Verb (also called command or action verb)
- Parameter addressing conventions
- Address specification
- Result of a command.

Command verbs are keywords that tell the system to do something.

Entity identification is a keyword that identifies a specific system or circuit pack within the system. For example, the keyword NPC refers to a network processing circuit pack.

Address specification is a keyword that refers to a specific address. TP 03, for example, refers to a specific test port (Test Port 03).

The "Glossary" section contains a listing of all commonly used keywords and their definitions.

Verbs

The general format of an input command is shown below with the various command keywords described in some detail:

VERB[-MODIFIER][-MODIFIER]:[TID]:[EID]:[CTAG]:DATA PARAMETER BLOCKS;
VERB is the command verb specifying what action the system is to perform: connect, audit, diagnose, etc. A *command verb* (also called an action verb) is sometimes in mnemonic form.

A verb can be followed by no *modifier*, one *-modifier*, or two *-modifiers* (each preceded by a hyphen). These modifiers represent the equipment and circuit identification and identify the physical entity within the frame or the data base entity upon which action is taken. Table 1, after the "Output Message Format" section, lists verbs, keywords, and modifiers.

Parameter Addressing Rules

Two different levels of addressing occur in messages. The first level occurs within the target identification (TID), and the second level of addressing occurs within the entity

identification (EID).

Target Identification (TID). The TID uniquely identifies the target as DACS II. An 11-character CLLI* code is the recommended value for the TID. If the CLLI code for a DACS is not unique, the CLLI code can be augmented with additional characters (letters, digits, and hyphens) for a total of 20 characters. The TID is used only in applications of indirect routing. If direct routing exists between the user and the DACS II frame, the TID is not necessary. If a TID is incorrectly entered, whether it is required or not, the entire command will be denied.

Entity Identification (EID). The EID identifies the particular entity within the DACS II frame and is composed of an equipment part and a facility part.

- Equipment

The format of the equipment part consists of PHYSICAL-{UNIT number}-{NUMBER}. The PHYSICAL description is a DISK, TAPE, UNIT, MC, PWR, FTMI, etc., and, if necessary, a hierarchic logical address may be appended to it. Therefore, the equipment part may be a combination of the physical description and the logical address. UNIT number defines where the equipment (unit) exists. There can be up to six units in a 512 primary block circuit DACS II. NUMBER is the range or count of different entities that can exist in a unit. If the range is one for NUMBER, it will be "null" in the address.

- Facility

In this manual, the double and triple ampersand (&&,&&&) define a sequence of consecutive simple parameter arguments. It is possible to indicate the arguments by writing the lower and upper simple parameter arguments separated by && or &&&.

Input Command Control Characters

In addition to input commands, DACS II responds to the following input command control characters or symbols:

CONTROL-x or CTRL-x. *Abandon message.* Depressing the CONTROL and the X keys simultaneously causes DACS II to abandon the message being entered and return the system prompt.

* COMMON LANGUAGE is a registered trademark and CLEI, CLLI, CLCI and CLFI are trademarks of Bell Communications Research, Inc.

CONTROL-h or CTRL-h, UNDERLINE, BACKSPACE. *Erase last character.*

Depressing the CONTROL and H keys simultaneously or depressing the UNDERLINE key or the BACKSPACE key causes DACS II to ignore the last character of a message and echo an underline (_). Entering *n* number of erase character symbols causes DACS II to ignore the last *n* characters of a message.

BREAK. *Interrupt output message.* The BREAK key interrupts an output message. The message continues after an allotted amount of time has passed or after the operator has finished entering an input message.

Input Command Acknowledgements

After DACS II has received the execute character of the input command, an immediate reply will appear with one of the following acknowledgements:

PF (Printout Follows)

DACS II received the input command and processed it. An output message will soon be returned. The output message will report the results of the work initiated by the command. If the system cannot complete the command, the reason will be printed.

RL (Retry Later)

DACS II cannot execute the requested command now because it does not currently have system resources available.

- The system could be temporarily overloaded.
- The command queue could be excessively long.
- The requested program may be busy, etc.

Wait, and enter the command later.

NG (No Good)

The basic format of the command is correct, but the system is in trouble. An example is when the MP is in the MCOND state.

NA (No Acknowledgement)

The command has been accepted by the parser, but processing control has been lost, thus making correct acknowledgement impossible. An example is when the communication interface (CI) has detected a local area network (LAN) failure.

If either NA or RL is sent as an input acknowledgement, a normal or error output message may not be sent. Also, if the input command itself is in error, the input acknowledgement will indicate this fact and either the normal or error message will not be sent.

Acknowledgement	Meaning
?V<cr><lf>	Command code error
?D<cr><lf>	Parameter block error
?E<cr><lf>	Error in command, cannot be identified as either ?V or ?D
?P<cr><lf>	Parity error occurred in the input
?T<cr><lf>	The time between characters exceeded timeout threshold
?X<cr><lf>	Command aborted in response to a <cancel> or <break> from user.

Output Message Format

There are three types of DACS II output messages. The normal or **completion message** indicates that the input command from the user has been executed and completed. An error response or **denial message** means that the input command has been denied and gives the reason or condition code for the denial. An autonomous output message reports a change in the operational state of the DACS II.

General Format of Output Message

An output message consists of one or more segments. Each message segment is in the following format: a *header line* followed by a *primary line* which may be followed by one or more *secondary lines*.

Header Line. The header line contains the information of target identifier (TID), date, time, and link number. The target identifier is the code for a DACS II frame and consists of up to 20 ASCII characters in length. The date is the current date presented in the format of yy-mm-dd (i.e., year-month-day), where yy is the last two digits of the year, mm is the month, and dd is the day of the month. The time is the current time of day in the format of hh:mm:ss (i.e., hour:minute:second), where hh ranges from 00 to 23, and mm and ss range from 00 to 59. The link number is the administrative link/virtual circuit number in the format of LINK-I[mm] (i.e., LINK-<administrative link number>[<virtual circuit number>]), where I ranges from 1 to 6 and mm ranges from 01 to 16. An autonomous response does not contain the link number.

Primary Line. The primary line contains the information of priority of action (PA), command code, entity identifier (EID), correlation tag (CTAG), data parameters, and termination report. The priority of action indicates the type of output message which could be either a response to an input command or an autonomous message generated by DACS II. The priority of action takes one of the following values:

Value	Meaning
*C	Immediate action, critical alarm (autonomous response)
**	Immediate action, major alarm (autonomous response)
*^	Action, minor alarm (autonomous response)
M^	Result of manual action (response to an input command)
A^	Autonomously generated message, not an alarm

Each caret (^) represents a character space.

The command code consists of the action verb and one or more possible modifiers. In a normal or error response, the correlation tag is the same as that specified in the input command. The correlation tag in an autonomous response is generated by DACS II. The data parameters further specify the action performed on the entity. The termination report indicates whether the input command is successfully completed or denied, and it takes on one of the following values:

Value	Meaning
COMPLD	Input command completed successfully
DENY	Input command denied

Secondary Lines

The secondary lines contained in the output message are of two types: free-format and fixed-format. The free-format secondary lines provide information for the user to understand the data contained in the fixed-format lines. The free-format secondary lines are enclosed by "/"* and "*/." The fixed-format secondary lines contain data generated by DACS II and are arranged in a format so as to be parsed by a machine. The fixed-format secondary lines are enclosed by double quotes ("").

Output Message Segment

The header line is the same for each message segment except for the time and possibly the date. The primary line is exactly the same for all message segments.

A multisegmented output message uses the greater-than sign (>) and the semicolon (;) to terminate the message segments. The greater-than sign is the terminating character (the last printable character) for the first and all intermediate message segments. The semicolon terminates the final message segment. A message segment should be no larger than 4096 bytes.

Normal Response

A normal response reports a successfully completed input command. The general formats of this type of output message are shown below: Each caret (^) represents a character space. The brackets [] are not part of the actual output message, except for those surrounding the output message number.

Single-Segment Normal Response Without Secondary Lines

```
^^^TID^yy-mm-dd^hh:mm:ss^LINK-l[mm]
M^^VERB[^MODIFIER][^MODIFIER]::[b]:[CTAG]:[d][,e]...[z]^COMPLD
;
```

Single-Segment Normal Response With Secondary Lines

```
^^^TID^yy-mm-dd^hh:mm:ss^LINK-l[mm]
M^^VERB[^MODIFIER][^MODIFIER]::[b]:[CTAG]:[d][,e]...[z]^COMPLD
^^^/*^[output message number]^*/
^^^/*^free-format secondary line^*/
^^^"fixed-format secondary line"
;
```

Multisegmented Normal Response

```
^^^TID^yy-mm-dd^hh:mm:ss^LINK-l[mm]
M^^VERB[^MODIFIER][^MODIFIER]::[b]:[CTAG]:[d][,e]...[z]^COMPLD
^^^/*^[output message number]^*/
^^^/*^free-format secondary line^*/
^^^"fixed-format secondary line"
^^^"fixed-format secondary line "
      .....
      .....
^^^"fixed-format secondary line"
>
      .....
      .....
>
^^^TID^yy-mm-dd^hh:mm:ss^LINK-l[mm]
M^^VERB[^MODIFIER][^MODIFIER]::[b]:[CTAG]:[d][,e]...[z]\
COMPLD
^^^/*^[output message number]^*/
^^^/*^free-format secondary line^*/
^^^"fixed-format secondary line"
^^^"fixed-format secondary line"
      .....
      .....
^^^"fixed-format secondary line"
;
```

The example below shows the normal response to a cross-connect command (Message No. I.11001) for cross-connecting channel 022 of the primary block circuit terminated on unit 01, module 1, NPC 01 with channel 015 of the primary block circuit terminated on unit 03, module 2, NPC 05. The output message (Message No. O.11001) does not contain secondary lines.

```
DACS2FRAME1 88-08-01 20:27:12 LINK-2
M CONN CRS T0::01-1-01-022,03-2-05-015:CMDSEQ1:CUS::\
NORM,NORM COMPLD
;
```

Error Response

An error response reports a denial to an input command. The general error response formats are similar to the normal response. The header line is exactly the same, and the primary line only differs in the termination report (DENY). The termination report DENY indicates that the input command was not executed. The first secondary line begins with a 4-character error code (mmmm). This error code describes the reason for the denial of the input command. A free-format secondary line can give more details about the error code. A list of error codes and their meanings are given in Table 2 at the end of this section. Two error response formats are shown below:

Error Response Without Free-Format Secondary Line

```
^^^TID^yy-mm-dd^hh:mm:ss^LINK-l[mm]
M^^VERB[-MODIFIER][-MODIFIER]::[b]:[CTAG]:[d][,e]...[,z]^DENY
^^^mmmm
;
```

Error Response With Free-Format Secondary Line

```
^^^TID^yy-mm-dd^hh:mm:ss^LINK-l[mm]
M^^VERB[-MODIFIER][-MODIFIER]::[b]:[CTAG]:[d][,e]...[,z]^DENY
^^^mmmm
^^^/*^[output message number]^*/
^^^/*^free-format secondary line^*/
;
```

Autonomous Response

An autonomous response reports a change in the DACS II system state. The header line of the autonomous response contains the information of source identifier (SID), date, and time. The primary line contains an alarm code (ALMCDE), an autonomous message tag (ATAG), and a verb with modifiers. The verb is always REPT, indicating a report.

Single-Segment Autonomous Response

```
^^^SID^yy-mm-dd^hh:mm:ss
ALMCDE^ATAG^REPT[-MODIFIER][-MODIFIER]
^^^/*^[output message number]^*/
^^^/*^free-format secondary line^*/
^^^"fixed-format secondary line"
;
```

Multisegmented Autonomous Response

```

^^^SID^yy-mm-dd^hh:mm:ss
ALMCDE^ATAG^REPT[-MODIFIER][-MODIFIER]
^^^/*^[output message number]^*/
^^^/*^free-format secondary line^*/
^^^"fixed-format secondary line"
^^^"fixed-format secondary line"
      .....
      .....
^^^"fixed-format secondary line"
>
      .....
      .....
>
^^^SID^yy-mm-dd^hh:mm:ss
ALMCDE^ATAG^REPT[-MODIFIER][-MODIFIER]
^^^/*^[output message number]^*/
^^^/*^free-format secondary line^*/
^^^"fixed-format secondary line"
^^^"fixed-format secondary line"
      .....
      .....
^^^"fixed-format secondary line"
;

```

The alarm code indicates an alarm for a trouble condition or a nonalarm condition for a DACS II system state change which does not trigger any alarms; it identifies the severity reported by DACS II and is shown below:

Value	Meaning
*C	Critical alarm message
**	Major alarm message
*^	Minor alarm message
A^	Autonomous nonalarm message

The ATAG is used to check for a skipped output message and for correlation of previous autonomous messages. Some similarity exists with the correlation tag (CTAG) of an input message, but DACS II generates an autonomous message tag for all autonomous output messages. The form of this parameter is xxx[.yyy] where xxx is a 3-digit number and ranges from 050 to 099 ($050 \leq xxx \leq 099$). The yyy is optional; but if used, it may be used as a correlation tag with previous autonomous messages or for association with an action verb. For example, yyy can indicate the number of times that a particular REPT message has been issued ($001 \leq yyy \leq 999$). Value 000 is not used for xxx or yyy.

The free-format secondary line may assist the user in reading the data in the fixed-format secondary line. The message number above the line is used in referring to the manual for more detailed information.

The fixed-format secondary line contains actual message information. This information is described within the individual messages.

Table 1. Verb/Keyword and/or Modifier(s)

VERB/KEYWORD	MEANING
ABT - CMD	Abort or terminate a previous input command that has not completed its execution.
ABT - PROC	Abort or terminate a currently active process or macro.
ALW - LPBK	Allow loopback or inhibit automatic switch protection.
ALW - SW	Allow switching or automatic switch protection.
CHG - LGN	Change password and/or user identification code.
CHG - RPATH - T0	Change the return path for the digroups and ranges beginning with the initial channels given in the TOX argument list.
CHG - TACC - T0	Change the modes of a test session under a specified test port.
CHG - TL - T0	Change the modes of a terminate and leave state of a circuit(s).
CONN - BDCST - T0	Connect a broadcast cross-connection (from source NPC) to a multiple number of other terminations in one direction of transmission.
CONN - CRS1 - T0	Connect a one-way cross-connect circuit or a range of one-way circuits.
CONN - CRS - T0	Connect a two-way cross-connect circuit or a range of two-way circuits.
CONN - HUB - T0	Connect a hubbing mode test access via test port kk with trunk conditioning to the T0 termination.
CONN - TACC - T0	Connect a monitor connection between a digroup (designated T0) and a test port (designated TP).

Table 1. Verb/Keyword and/or Modifier(s) (Contd)

VERB/KEYWORD	MEANING
CPY - MEM	Copy data from one memory to another, such as disk (PRI) to tape (SEC) or RAM (WKG).
CRTE - CNFGRN	Create connectivity in the system data base.
CRTE - CRS	Create cross-connections in the cross-connect network.
CRTE - EQPT	Create equipment entities in the system data base.
CRTE - LGN	Create or add a new user to the system.
DGN - EQPT	Diagnose equipment at the user's request and report details. Equipment such as cross-connect buffer (CCB), cross-connect network interface (CCNI), communications interface (CI), disk unit (DISK), link number (LINK), main controller (MC), main processor (MP), network processing circuit (NPC), secondary storage controller (SSC), synchronizer (SYNC), tape unit (TAPE), time slot interchange (TSI), and FTU, DSPC, or DS3 unit.
DISC - BDCST - T0	Disconnect a broadcast connection (from source NPC) to a multiple number of other terminations in one direction of transmission.
DISC - CRS - T0	Disconnect a two-way cross-connect circuit or a range of two-way circuits.
DISC - CRS1 - T0	Disconnect a one-way cross-connect circuit or a range of one-way circuits.
DISC - EQPT	Disconnect (degrowth) equipment, multiple interface units, and/or multiplexers.
DISC - TACC - T0	Disconnect a test access session under a specified test port and restore the original cross-connection.
DLT - CRS	Delete a cross-connection from the system data base.
DLT - FPKG	Delete a feature package from the system data base.
DLT - LGN	Delete a password and user identification code. Only the superuser can invoke this command.
DLT - MACRO, MAP	Delete a macro or map.
DLT - PRMTR	Delete a parameter from the system data base.
ED - CNFGRN - EQPT	Edit the current connectivity and entity state of a specified equipment unit.

Table 1. Verb/Keyword and/or Modifier(s) (Contd)

VERB/KEYWORD	MEANING
ED-CONN	Edit a connection.
ED-CRTE	Edit a create activity.
ED-DATE	Edit the system date and time clock.
ED-ADD-MAP	Enter NPCs into the map.
ED-DLT-MAP	Delete NPCs from the map.
ED-OPT-T1	Edit the programmable thresholds for the facility performance parameters of an NPC.
ED-PRMTR-EQPT	Modify the provisioning information associated with equipment.
ED-PRMTR-LINK	Modify the provisioning information associated with user interface links.
ED-PRMTR-MAP, MACRO	Modify the existing map or macro with new information.
ED-PRMTR-NE	Modify the provisioning information associated with the DACS II network element.
ED-PRMTR-T0	Modify the provisioning information associated with digroup.
ED-STATE-EQPT	Edit the maintenance state of equipment in ways other than via a remove or restore function.
ENT-EQPT	Manually provision equipment entities (those that are not automatically provisioned).
ENT-MACRO, MAP	Manually create the open session of an alternate map or a macro.
EXC-MACRO, MAP	Execute the existing map or macro.
INH-LPBK	Inhibit an automatic loopback switch protection.
INH-SW	Inhibit an automatic switch protection.
INIT-LOG	Initialize the ERR log file.
INIT-REG	Initialize the DACS II registers.
INIT-SYS	Initialize the DACS II processor system.
LGN-USER	Allow the user to identify himself/herself to the system with his/her <id>.
LGT-USER	Allow the user to logoff from the system.

Table 1. Verb/Keyword and/or Modifier(s) (Contd)

VERB/KEYWORD	MEANING
OPR-ACO-ALL	Cut off the office audible alarm indications without changing the local alarm indications. This function does not clear other alarm indicators and does not disable future alarms from sounding audibles (so a release ACO function is not needed).
OPR-LPBK-T0	Request a loopback on a specified equipment unit or facility in the system.
RLS-LPBK-T1	Release the 1.544 Mb/s loopback.
REPT-ALM-EQPT	Report alarms associated with equipment failures.
REPT-ALMDET-EQPT	Supplement the information about the trouble generated by the REPT-ALM.
REPT-ALM-T0	Report alarms associated with DS0 facility failures.
REPT-CMPR-MEM	Report frame audit memory comparison mismatches.
REPT-DGN-EQPT	Report the results of diagnostic routines that have been initiated autonomously by the system.
REPT-EVT-EQPT	Report events which do not require alarm notifications but indicate the maintenance condition of the system.
REPT-RMV-EQPT	Report the autonomous removal of equipment from service.
REPT-RST-EQPT	Report the autonomous restoral of equipment to service.
REPT-SW-EQPT	Report the autonomous switch of an entity to protection (auto-removal) or to working (auto-restoration).
RMV-CNFGRN	Remove connectivity equipment from service.
RMV-EQPT	Remove equipment from service.
RMV-LINK	Remove a user interface link from service.
RST-CNFGRN	Restore connectivity equipment to service.
RST-EQPT	Restore equipment to service.
RST-PASSWD	Restore or recover the frame administrator password.
RST-LINK	Restore a user interface link to service.

Table 1. Verb/Keyword and/or Modifier(s) (Contd)

VERB/KEYWORD	MEANING
RTRV-ALM-EQPT	Retrieve the current status of all automatically-reported equipment indicators (alarm or status).
RTRV-ALM-NE	Retrieve the current alarm state of the DACS II network element.
RTRV-ALM-T0	Retrieve the current status of all automatically-reported digroup indicators (alarm or status).
RTRV-BDCST-T0	Retrieve the cross-connect map for a single NPC or a range of NPCs.
RTRV-BKUP-SCHED	Retrieve the scheduled autonomous backup from a primary memory to a local nonvolatile backup memory.
RTRV-COND-EQPT	Retrieve condition types associated with equipment indicators (alarm or status).
RTRV-COND-T0	Retrieve condition types associated with NPC indicators (alarm or status).
RTRV-CNFGRN-EQPT	Retrieve the current connectivity and entity state of a specified equipment unit.
RTRV-CRS-T1	Retrieve the cross-connect map information associated with NPCs.
RTRV-HDR	Retrieve the header information associated with the DACS II network element.
RTRV-LOC-EQPT	Retrieve a physical location of a plug-in entity.
RTRV-LOG	Request to dump the contents of the log file.
RTRV-MAP-COM, EQPT	Query the map.
RTRV-MACRO-COM	Query the macro.
RTRV-OPT-T1	Retrieve the option (threshold) value for parameter.
RTRV-PRMTR-EQPT	Retrieve the provisioning information and service data associated with equipment.
RTRV-PRMTR-LINK	Retrieve provisioning information and service data associated with user interface links.
RTRV-PRMTR-MACRO, MAP	Retrieve information of the components associated with the macro or map.

Table 1. Verb/Keyword and/or Modifier(s) (Contd)

VERB/KEYWORD	MEANING
RTRV-PRMTR-NE	Retrieve provisioning information and service data associated with the network element.
RTRV-PRMTR-T0	Retrieve the provisioning information and service data associated with NPC channels.
RTRV-PRVG-USER LINK	Retrieve privilege parameters associated with login users or link.
RTRV-RECOVY-EQPT	Retrieve information of the error source register (ESR) for a specific processor.
RTRV-REG-EQPT	Retrieve information of the error source register (ESR) for the main processor.
RTRV-STATE-COM	Retrieve the common information associated with equipment (such as TLIs and SYNCs).
RTRV-STATE-EQPT	Retrieve the state information associated with equipment.
RTRV-STATE-T0	Retrieve the state information associated with NPCs.
RTRV-TACC-T1	Retrieve information about all test access activity of the test port.
RTRV-TACC-T0	Retrieve information about all test access activity in the system.
SCHED-BKUP-MEM	Schedule an autonomous backup from a primary memory to a local nonvolatile memory.
SCHED-PMREPT-ALL	Schedule an autonomous midnight performance monitoring report.
SET-ATTR-EQPT	Set the attributes that are associated with a specified event.
SET-PRVG-USER TERM	Assign user or link privilege for input prioritization and output screening.
STA-LOCL-RST	Transfer the database from DISK to RAM or from TAPE to RAM.
SW-DX-EQPT	Request all digroup circuits to select data and clocks from cross-connect side A.

Table 2. Error Codes and Conditions

CODE	CONDITION
AETN	Not valid for access type
ENAC	Equipage, not equipped with alarm cutoff
ENDG	Equipage, not equipped with diagnostic capability
ENDS	Equipage, not equipped with duplex switching
ENEC	Equipage, not established channel
ENEQ	Equipage, not equipped
ENFE	Equipage, feature not provided
ENIE	Equipage, not identical entities
ENMB	Equipage, not a multipoint bridge
ENMD	Equipage, not equipped with memory device
ENRE	Equipage, not recognized
ERLC	Equipage, a red-lined circuit
IBEX	Input, extra block
IBNC	Input, block not consistent
ICNV	Input, command not valid
IDMS	Input, data missing
IDNV	Input, data not valid
IDRG	Input, data out of range
IAC	Input, invalid access identifier
ICM	Input, invalid command
ICT	Input, invalid correlation tag
IDT	Input, invalid data parameter
IIFM	Input, invalid data format
IITA	Input, invalid TID (target identifier)
INAC	Input, access number not correct
IORD	Input, out of range of data
IPNV	Input, parameter not valid
ISCH	Input, syntax character error
ISPC	Input, syntax punctuation error
NCON	No condition
PICC	Privilege, illegal command code
PIOC	Privilege, illegal operations channel
PIPW	Privilege, illegal password/user id code
RABY	Resource, all test ports busy
RTBY	Resource, request test port busy
RTEN	Resource, request test port does not exist
SAAL	Status, already allowed

Table 2. Error Codes and Conditions (Contd)

CODE	CONDITION
SAAS	Status, already assigned
SABT	Status, aborted
SACC	Status, already cross-connected
SADC	Status, already disconnected
SAIN	Status, already inhibited
SAIS	Status, already in-service
SAMS	Status, already in maintenance state
SAOS	Status, already out-of-service
SARL	Status, already released
SAWS	Status, already in working state
SCAT	Status, circuit already connected to another test port
SCNA	Status, command not able to be aborted
SCNS	Status, circuit not in split condition
SCOS	Status, channel out of service
SDAS	Status, diagnostic already started
SDFA	Status, duplex unit failed
SDNA	Status, duplex unit not available
SDNS	Status, diagnostic not started yet
SNAS	Status, not in pending state
SNCC	Status, not cross-connected
SNIS	Status, not in-service
SNML	Status, no monitor line established
SNOS	Status, not out-of-service
SNST	Status, execution could not be started
SNVS	Status, not in valid state
SOSF	Status, out-of-service, failed
SOST	Status, out-of-service testing
SPFA	Status, protection unit failed
SRCN	Status, request condition already exists
SROF	Status, requested operation failed
SRTN	Status, unable to release test port
SSTP	Status, execution stopped before completion
STAB	Status, test aborted
STOS	Status, test port out of service
STTI	Status, test port idle
SWFA	Status, working unit failed

DACS II Administrative Links

The DACS II can be administered (managed, operated) from a local terminal or remotely from an OS connected via an administrative link. Six physical links can be connected to the DACS II frame. Links 1–4 are asynchronous and links 5 and 6 can be asynchronous or

synchronous depending on the communications interface. Sixteen virtual circuits may be established on a synchronous link.

Variables *n* and *vv* are used within the message formats to represent the physical and virtual link numbers, respectively.

A level of message screening can be assigned to each link. A user may choose to always receive responses to his/her commands, to receive selected messages, or to receive all messages from the other links. Autonomous messages may be blocked for a particular link to prevent other output messages from being interspersed among the user's messages. Some examples of uses of an administrative link are:

- Common equipment and feature equipment provisioning and maintenance
- Equipment and channel status information
- Facility provisioning and maintenance
- Facility performance readings.

An output message is sent from the DACS II over one or more administrative links in response to one of the following occurrences:

- An input command

The output message reports that the input command was either completed successfully or denied; additionally, it may contain information requested by the input command. A *normal response* is an output message reporting a successful completion; an *error response* is an output message reporting a denial.

- An autonomous change in DACS II operation state

The output message reports the information on DACS II system operation state changes which includes alarms and other trouble indications. This output message is referred to as an *autonomous response*.

NPC Addressing

Two addressing or numbering methods for network processing circuits are available: the **nonhierarchical or extended format** and the **hierarchical**. These numbering methods are used to provide a means of locating network processing circuits.

Hierarchical Numbering

The **hierarchical method** consists of three parts: the unit number (uv), the module or group number within the unit (m), and the NPC number within the module (np) for a total of five digits (uv-m-np) with dashes separating the parts.

Nonhierarchical Numbering

The nonhierarchical or extended method uses consecutive numbering to count through the units in the frame. Each unit has a fixed starting number (for example, [0]061 for unit 2; [0]321 for unit 3; [0]481 for unit 4). The starting number is the same for the FTU or the DSPU type units.

On-Line Help Feature

Description

The DACS II provides on-line assistance to the user when constructing commands at the terminal. This assistance is in the form of a menu-driven help routine. Different menus are displayed during the routine to provide the user with information on all the command fields. The menu items include:

- Verbs (Action or command)
- Applicable keywords for a command
- Possible choices or number range for a variable field
- Definitions of keywords.

An inappropriate selection will bring an error response.

The help routine can be used to the degree needed to complete the command: either through the entire command in every field or only for a particular part of the command. Using help to construct the entire command will probably not be applicable after some experience is gained at entering commands, since all the commands are documented and the direct entry of commands is so much faster.

There are two operators or keyboard controls used to invoke the different levels of the help routine. These operators are: **SHIFT** **?** and **RETURN**. The question mark is used to initiate the routine or to go into a deeper level (more explanation), and the **RETURN** is used to see the alternative choices at a given point. The dialogue can be terminated either by entering a CTRL-x or by completing the current command line when it is displayed.

Summary: The Help Feature

By entering **SHIFT** **?** , the user may ask DACS II for help at any time before or during the construction of an input command.

In the help mode, DACS II will offer the user menus for the selection of the message keywords and/or prompt for values of variable fields. Entering **SHIFT** **?** provides a greater detail of information on the keywords or variables.

When looking at a menu of choices for a command field, you can select an item and then either continue the process or return to the current position on the command line. To continue the process, use the question mark and the next menu will appear. To return to the command line, use the **RETURN** key. When looking at a prompt to enter a value, you can enter a value, look at the next choice, or request more information. To look at the next choice or to repeat the choices, use the **RETURN** key. To obtain more information in order to enter a value, use the question mark. You can continue this process using the question mark after each entry to complete and submit the command via the dialogue. Alternatively, you can use the **RETURN** key after an entry to obtain the current command line. Then, you can directly enter the remainder of the command line just as you would any DACS command.

Constructing an Entire Command Using Help

The following demonstrates how the menus in the help routine can be used for constructing a simple RTRV (retrieve) command. Only portions of the long menus are shown, but these examples serve to demonstrate how selections are made.

- (1) To invoke the help routine at the start level, enter **SHIFT** **?** . The DACS will respond with OK and the following menu:

Select from:

1. ABT
2. ALW
3. CHG
- .
- .
- .
25. SW

Selection?

- (2) To obtain more of an explanation, enter **SHIFT** **?**. The DACS will respond with OK and the following list:

Select from:

1. ABT (perform an abort)
2. ALW (perform an allow operation)
3. CHG (perform a change)
4. CONN (perform a cross-connection)
- .
- .
- .
21. RTRV (perform a retrieve information)

Selection?

- (3) You may enter either 21 or RTRV followed by **SHIFT** **?**. The DACS responds with this menu:

Select from:

1. ALM
2. BDCST
- .
- .
- .
21. STATE
22. TACC

Selection?

- (4) Again you select the desired verb modifier by entering either 21 or STATE.

- (5) The DACS responds with:

Select from:

1. COM
2. EQPT
3. T3
4. TS

- (6) Select 2 and enter **RETURN** to see the command line developed so far.

RTRV-STATE-EQPT

- (7) Enter **SHIFT** **?** to see the next part of the command which is:
1-20 character Target Id (optional).
Since the frame target ID is optional, it can be omitted which is confirmed by entering **RETURN** . This lists the alternative go to address block (YES/NO)?
- (8) Answer Y and notice the double colons that are added to the end of the command line to close the target ID field. After this, enter a ? to obtain the next selection.
units (YES/NO)?
specify ftu unit number (YES/NO)?
specify dspc unit number (YES/NO)?
specify ds3u unit number (YES/NO)?
timeslot interchange (YES/NO)?
- (9) Select 4, bringing the resultant command line. Entering a question mark brings the response
1-10 character Correlation Tag (optional)
Again this is optional, and entering a **RETURN** requests that you go on to the next field EQPD block (YES/NO)?, which is the alternative to entering the Correlation Tag.
- (10) Answer Y and after the current command line is displayed, enter **RETURN** . At this point, the DACS returns the command line as follows:
RTRV-STATE-EQPT::TSI::EQPD;
The command line is complete.
EXECUTE (YES/NO)?
- (11) Now simply answer Y followed by **RETURN** and the command will be executed.

Obtaining Help at a Particular Point on a Command Line

DACS II's on-line help not only can be used to construct a command from scratch, it can also be used to obtain information on particular fields of a command. If the command format is not known or if the keywords or variables are not clear, the help dialogue can be initiated at any point by entering **SHIFT** **?** .

- (1) Assume the following multipoint circuit CONN-CRS command was entered and denied because one of the NPCs named in the command must be an MB-type.

```
CONN-CRS-T0::01-1-01-01,01-1-02-03::TRSP::SYM,LEG::; ?D
xy 90-10-15 13:12:10 LINK-4
M CMD ::::INERR,BAD_SYNTAX STOPPED
/* [0.01131] */
/* CONN-CRS-T0::01-1-01-01,01-1-02-03::TRSP::=SYM,LEG::; */
;
```

- (2) The equal signs around the word SYM indicate a problem because it is a multipoint bridge circuit.
- (3) Start over using the help command to obtain information. For example, enter

CONN-CRS-T0:: and ?

The DACS responds with

ds3u unit number = OK

ftu unit number =

Since you are working with a DMB which is in a DSPU, if you enter only RETURN, the next option will be displayed, which turns out to be

dspu unit number =

- (4) To get more information at this point, enter SHIFT ?. The DACS responds with:

dspu unit number = OK

/* decimal integer:, range 1 - 6 */

- (5) This is where the trouble occurred; one of the NPCs in the range must be an MB-type.

- (6) Enter "05" after the equal sign. The DACS responds with:

CONN-CRS-T0::05

dspu module number = OK

/* decimal integer:, range 1 - 8 */

- (7) Enter "1" after the question mark. The DACS responds with:

CONN-CRS-T0::05-1

dspu npc number = OK

/* decimal integer:, range 1 - 2 */

- (8) Enter "1" after the question mark. The DACS responds with:
- ```
dspu npc number = 1 OK
CONN-CRS-T0:05-1-1
dmb conference number = OK
/* decimal integer:, range 1 - 85 */
```
- (9) In response to dmb conference number =, enter the **SHIFT** **?** to get more information. The DACS responds with:
- ```
/*decimal integer, range 1 - 85 */
dmb conference number =
```
- (10) Enter your conference number (2 for example), and **SHIFT** **?**.
- (11) In response to ftu npc number =, enter a question mark to get more information. The DACS responds with:
- ```
/* 3 digit decimal integer, range 01-10-1--04-4-32 */
ftu npc number =
```
- (12) Now that the difference between the NPC numbers for the DSPU and FTU sides of the circuit is clear, terminate the dialogue by entering the required ftu npc number followed by a **RETURN**. This will cause the command line developed through the dialogue to be displayed. Enter the remaining information from the original command to complete the command.

## System Configuration

---

### Frame Configuration and Bay Growth

---

This section discusses the frame configuration for a standard DACS II Capacity Expansion Frame (CEF) and for a retrofitted CEF. In addition, it details the bay growth schemes and requirements for the CEF. The same command is used to configure a non-CEF system, however, the responses will vary since a non-CEF system can have a maximum of two interface bays.

#### Frame Configuration

A DACS II CEF supports one switch bay and up to six interface bays. The switch bay, always bay 2, controls the overall DACS II system operations and provides the switch matrix, power, timing and alarm, and administrative links connections. The interface bay terminates digital facilities and/or provides the digital signal processing function. Interface bays 1, 3, 4, and 5 support three unit positions, while interface bays 6 and 7 support two units. Therefore, a CEF can be equipped with a total of 16 units. Two interface bay types

are supported:

- Original Interface Bay

The original interface bay supports two facility terminating units (FTUs) in its two upper unit positions and one digital signal processing unit (DSPU) or DS3 unit (DS3U) in its lower unit position. The original interface bay only appears in a retrofitted CEF. An interface bay used for a CEF can be an original interface bay only if the frame is a retrofit CEF. In such a case, the original interface bay can only be in bays 1 and 3. Bay 3 can be an original interface bay only if the CEF is retrofitted from a 3-bay frame. If bay 3 of a CEF is an original interface bay, bay 1 must also be an original interface bay.

- Flexible Interface Bay

The flexible interface bay allows fully flexible unit provisioning. Each of the unit positions can be independently equipped as an IFTU, DSPU, or DS3U. The flexible interface bay can occupy any interface bay location; that is, it can occupy bay 1, 3, 4, 5, 6, or 7. The flexible interface bay is the standard interface bay type for the CEF.

## Bay Growth

The minimum bay equipage for a CEF is two bays: Bay 1 (an interface bay) and bay 2 (the switch bay). DACS II allows additional peripheral units and/or bays to be added to an in-service CEF without causing a hit to the existing service.

The bay choices and growth are provisioned by entries to the configuration file using the configuration file command:

```
[I.35021]
```

```
INIT-SYS:[xy]:FRAME:[ww];
```

After all data is entered into the configuration file and it is accepted, DACS II outputs the following response:

```
[O.35021]
```

```
xy yy-mm-dd hh:mm:ss <link number>
```

```
M INIT SYS::FRAME:[ww] COMPLD
```

```
;
```

## **Procedure For Configuring the Frame**

---

When the configuration file command is entered, DACS II leads the user to complete the entry of the file by displaying the Main Menu below:

- 1: Initialize/Reset Configuration File
- 2: Add new bay(s) and unit(s)
- 3: Add unit(s) to existing bay(s)
- 4: Change unit(s) type
- 5: Remove unit(s) OR bay(s) and unit(s)
- 6: Recall configuration data
- 7: Exit

### **Option 1, Initialize/Reset Configuration File**

If Option 1 (initializing or resetting the configuration file) is selected, DACS II leads the user through the steps detailed below.

**Note:** A default option has been assigned to each step and each time a step is entered, DACS II presents its default option unless a user has previously selected an option. In such case, the user-selected option is displayed.

Step 1. Choose the Software Serial Number.

Default = 1234567890.

Step 2. Choose the height of the bay.

The options are:

- 1: 7'0''
- 2: 11'6''

Default = 7'0''.

Step 3. Choose the Cross-Connect Network designation.

Choose ECCN for a CEF  
Choose CCN1 for a non-CEF multibay frame  
Choose CCN2 for a single-bay frame (SBF)

Step 4. Choose the allowable nonhierarchical NPC addressing scheme.

The options are:

- 1: Both 3-digit and 4-digit are allowed
- 2: Only 3-digit is allowed
- 3: Only 4-digit is allowed

Default = Option 1 (both 3-digit and 4-digit).

Selection of option 1 or 3 will be denied if the frame is non-CEF. Selection of option 3 on a CEF will be denied if there is one or more administrative link or if the user has chosen the 3-digit scheme. Similarly, the selection of option 2 on a CEF will be denied if there is one or more administrative links or users using the 4-digit scheme. The denial causes an error message to be displayed; after that, DACS II returns to the Main Menu. In this case, all the choices entered in the previous steps are discarded. Once the Main Menu is shown, the user can either exit to change the provisioning of the link (or user) or select another option from the menu.

Note that for domestic DACS II frames, the 3-digit NPC addressing scheme is the default for DACS II administrative links/users. Also, since the hierarchical NPC addressing scheme does not restrict the frame configuration, there is no selection needed here.

Step 5. Choose total number of bays.

The options are:

- 1: 1 bay
- 2: 2 bays
- 3: 3 bays
- 4: 4 bays
- 5: 5 bays
- 6: 6 bays
- 7: 7 bays

Default = 2 bays (Option 2).

Option 1 above (1 bay) is not allowed for a CEF. Options 4 through 7 must not be selected for a non-CEF. Options 4 through 7 are allowed only if the 4-digit scheme (i.e., Option 3 of Step 4) is selected. Otherwise, an error message will be generated and Step 4 will be displayed again.

## Step 6. Choose bays.

Step 6.1 If the total number of bays selected is 2, choose bays 1 and 2.

Choose bay 1 type. In the figure below, the boxes shown represent the physical relationship between the switch bay (bay 2) and the bay selected; that is, the one surrounded by asterisks (\*).

```

*****_-----
* | |
* Bay 1 | ECCN |
* | |
*****_-----

```

SELECT BAY 1 TYPE

1: Flexible Interface Bay (Units 1, 2, 5)  
2: Original Interface Bay (Units 1, 2, 5)

Default = Option 1 (Flexible Interface Bay).

Step 6.2 If the total number of bays selected is 3, choose the third bay as below.

```

*****_-----*****
* | | | *
* Bay 4 | Bay 1 | ECCN | Bay 3 *
* | | | *
*****_-----*****

```

SELECT THE NEXT BAY POSITION

1: Bay 3, Flexible Interface Bay (Units 3, 4, 6)  
2: Bay 3, Original Interface Bay (Units 3, 4, 6)  
3: Bay 4 (Units 7, 8, 11)

Default = Option 1 Bay 3, Flexible Interface Bay



Step 6.3 If the total number of bays selected is 4, select the fourth bay.

Depending on which bay is selected as the third bay, the options chosen for the fourth bay will be one of the following:

Step 6.3.1 If bay 3 is the third bay configured, the fourth bay can only be one of the following:

```
*****_-----*****
* | | | | *
* Bay 4 | Bay 1 | ECCN | Bay 3 | Bay 5 *
* | | | | *
*****_-----*****
```

SELECT THE NEXT BAY POSITION

- 1: Bay 4 (Units 7, 8, 11)
- 2: Bay 5 (Units 9, 10, 12)

Default = Option 1.

Step 6.3.2 If bay 4 is the third bay configured, the fourth bay can only be one of the followings:

```
*****_-----*****
* | | | | *
* Bay 6 | Bay 4 | Bay 1 | ECCN | Bay 3 *
* | | | | *
*****_-----*****
```

SELECT THE NEXT BAY POSITION

- 1: Bay 3, Flexible Interface Bay (Units 3, 4, 5)
- 2: Bay 3, Original Interface Bay (Units 3, 4, 5)
- 3: Bay 6 (Units 13, 14)

Default = Option 1.

Bay 1 must also be an original interface bay. If this rule is violated, the type for both bays (bays 1 and 3) must be reentered.

Step 6.4 If the total number of bays is 5, choose the fifth bay.

Depending on the third and fourth bays selected, the selection for the fifth bay will be one of the following:

Step 6.4.1 If bays 3 and 4 are the third and fourth bays (in any order), the options are:

```

***** _ _ _ _ _ *****
* | | | | | *
* Bay 6 | Bay 4 | Bay 1 | ECCN | Bay 3 | Bay 5 *
* | | | | | *
***** _ _ _ _ _ *****

```

SELECT THE NEXT BAY POSITION

1: Bay 5 (Units 9, 10, 12)  
2: Bay 6 (Units 13, 14)

Default = Option 1.

Step 6.4.2 If bays 3 and 5 are the third and fourth bays (in any order), the options are:

```

***** _ _ _ _ _ *****
* | | | | | *
* Bay 4 | Bay 1 | ECCN | Bay 3 | Bay 5 | Bay 7 *
* | | | | | *
***** _ _ _ _ _ *****

```

SELECT THE NEXT BAY POSITION

1: Bay 4 (Units 7, 8, 11)  
2: Bay 7 (Units 15, 16)

Default = Option 1.

Step 6.4.3 If bays 4 and 6 are the third and fourth bays, the options are:

```

-----*****
Bay 6	Bay 4	Bay 1	ECCN	Bay 3
-----	-----	-----	-----	-----	*****

```

SELECT THE NEXT BAY POSITION

- 1: Bay 3, Flexible Interface Bay (Units 3, 4, 6)
- 2: Bay 3, Original Interface Bay (Units 3, 4, 6)

Default = Option 1.

**Note:** Option 2 is allowed only if bay 1 is an original interface bay. If this rule is violated, the bay type for both bays (bays 1 and 3) must be reentered.

Step 6.5 If the total number of bays is 6, choose the sixth bay.

Depending on which bays are already configured, the option displayed will be one of the following:

Step 6.5.1 If bays 3, 4, and 5 were chosen, select the next bay.

```

*****-----*****
* | | | | | | *
* Bay 6 | Bay 4 | Bay 1 | ECCN | Bay 3 | Bay 5 | Bay 7 *
* | | | | | | *
*****-----*****

```

SELECT THE NEXT BAY POSITION

- 1: Bay 6 (Units 13, 14)
- 2: Bay 7 (Units 15, 16)

Default = Option 1.

Step 6.5.2 If bay 4 has not been chosen, choose bay 4 as the sixth bay configured.

```

*****-----
* | | | | | |
* Bay 4 | Bay 1 | ECCN | Bay 3 | Bay 5 | Bay 7 |
* | | | | | |
*****-----

```

THE NEXT BAY IS BAY 4

Step 6.5.3 If bay 5 was not selected, choose bay 5 as the sixth bay configured.

```

-----*****
Bay 6	Bay 4	Bay 1	ECCN	Bay 3	Bay 5
-----*****

```

THE NEXT BAY IS BAY 5

Step 6.6 If the 7-bay option is selected, determine if the bay type for bays 1 and 3 has already been stored in the data base. If so, go to Step 7. Otherwise, choose these two bays.

Step 6.6.1 Choose the type for bay 1:

```

-----*****
Bay 6	Bay 4	Bay 1	ECCN	Bay 3	Bay 5	Bay 7
-----*****

```

SELECT BAY 1 TYPE

- 1: Flexible Interface Bay (Units 1, 2, 5)
- 2: Original Interface Bay (Units 1, 2, 5)

Default = Option 1.

Step 6.6.2 Choose the type for bay 3:

```

-----*****
Bay 6	Bay 4	Bay 1	ECCN	Bay 3	Bay 5	Bay 7
-----*****

```

SELECT BAY 3 TYPE

- 1: Flexible Interface Bay (Units 3, 4, 6)
- 2: Original Interface Bay (Units 3, 4, 6)

Default = Option 1.

Step 7. Choose unit types.

Step 7.1 For original interface bay 1, the unit types are:

Units 1, 2: FTU or NONE

Unit 5: DS3U, DSPU, or NONE

Default for units 1 and 2 = FTU.

Default for unit 5 = DSPU.

Step 7.2 For the flexible interface bay 1, unit types are:

Units 1, 2, 5: IFTU, DSPU, DS3U or NONE

Default = IFTU. Only one type of IFTU is available in Release 5.0. Thus, no version selection is necessary.

Step 7.3 For original interface bay 3, the unit types are:

Units 3, 4: FTU or NONE

Unit 6: DSPU, DS3U or NONE

Default for units 3 and 4 = FTU.

Default for unit 6 = DSPU.

Step 7.4 For flexible interface bay 3, the unit type can be:

Units 3, 4, 6: IFTU, DSPU, DS3U or NONE

Default = IFTU.

Step 7.5 Bay 4 is restricted to the flexible interface bay type, and the unit type can be:

Units 7, 8, 11: IFTU, DSPU, DS3U or NONE

Default = IFTU.

Step 7.6 Bay 5 is restricted to a flexible interface bay type, and the unit type can be:

Units 9, 10, 12: IFTU, DSPU, DS3U or NONE

Default = IFTU.

Step 7.7 Bay 6 is restricted to the flexible interface bay type, and the unit type can be:

Units 13, 14: IFTU, DSPU, DS3U or NONE

Default = IFTU.

Step 7.8 Bay 7 is restricted to a flexible interface bay type, and the unit type can be:

Units 15, 16: IFTU, DSPU, DS3U or NONE

Default = IFTU.

**Note:** It is acceptable for all units to be configured with the option NONE. Also, if the software used on the frame does not support the DS3 termination feature, the DS3U option will not be displayed.

Step 8. After all unit types are chosen and accepted by DACS II, the following will be displayed:

Are the Frame # and UID to be unprotected?

1: YES

2: NO

Default = unprotected.

When all required data for initializing/resetting the configuration file is entered, the user must press the carriage return to view the Main Menu. Recalling data, changing data or exiting must be implemented through the Main Menu. Note that DACS II does not back up the configuration data to DISK until the user exits.

To interrupt the data entry and exit, press the DELETE key followed by the RETURN key. Once this interrupt signal is received, DACS II denies the input command, and all newly entered data is discarded. In this case, the input message I.35021 must be reentered to

allow initialization or editing of the configuration file.

### **Option 2, Add New Bay(s) and Unit(s)**

To add new bay(s) and/or unit(s) from the Main Menu, DACS II first verifies that the action is allowed. The action of adding new bay(s) and/or unit(s) (option 2 from Main Menu) will be denied if any of the following conditions exist:

- a. The configuration file is not initialized.
- b. All bays are configured.
- c. DACS II is a single bay frame (SBF) or a 3-bay non-CEF.
- d. DACS II is a 3-bay CEF equipped with bays 1, 2 and 3, and at least one of its links/users is using the 3-digit scheme.

Once the selection is accepted, DACS II displays the allowable nonhierarchical NPC addressing scheme. If DACS II is currently a 2-bay frame, DACS II displays the same choices as displayed above, except that, instead of the default option, the currently recorded option is displayed.

If the frame is already equipped with three or more bays, DACS II displays the following:

THE NONHIERARCHICAL NPC ADDRESS SCHEME IS THE 4-DIGIT SCHEME

### **Option 3, Add Unit(s) to Existing Bay(s)**

To add unit(s) to an existing bay from the Main Menu, enter option 3. Units listed are those configured as type NONE. DACS II lists the units in ascending order, with the first unit listed being the default.

Once the unit is selected, DACS II displays the unit type as shown in Step 7 of Option 1. However, DACS II only shows up to three options (IFTU/FTU, DSPU, and DS3U) for each unit, depending on the feature package used. The NONE option will not be shown.

After the unit type is selected, if there are other units configured as NONE, DACS II asks the user if another unit is to be added. If the answer is yes, the unit list will be shown again and the same procedure must be repeated. Otherwise, DACS II will allow the user to return to the Main Menu.

The selection of option 3 from the Main Menu will be denied if either of the following two conditions exists:

- a. The configuration file is not initialized.
- b. No units are configured as NONE.

### **Option 4, Change Unit(s) Type**

To change the unit(s) type, enter option 4 from the Main Menu. Units listed are types IFTU, DSPU and DS3U. Note that an FTU cannot be changed to another unit type and vice versa. DACS II lists the units in ascending order. The first unit listed is the default.

Once the unit is selected, DACS II shows the two allowable choices of the new unit type.

If the original unit type is IFTU, the choice is:

- 1: DSPU
- 2: DS3U

If the original unit type is DSPU, the choice is:

- 1: IFTU
- 2: DS3U

If the original unit type is DS3U, the choice is:

- 1: IFTU
- 2: DSPU

**Note:** The DS3U option will not be displayed if the DS3 termination feature is not supported by the frame.

After the new type unit is selected, DACS II asks the user if another unit is to be changed to a new type. If the answer is yes, the same procedure must be repeated.

The choice of option 4 from the Main Menu will be denied if one of the following conditions exists:

- a. The configuration File is not initialized.
- b. The selected unit is grown by the GRTH command.
- c. All units are configured with type NONE or FTU.

### **Option 5, Delete Unit(s) or Bay(s) and Unit(s)**

To delete unit(s) or bay(s) and units(s) from the Main Menu choose the unit number. The units listed are those of a type other than NONE. DACS II lists the units in ascending order, and the first unit listed is the default.

Once the unit is selected, DACS II shows that the unit type is NONE and asks if another unit is to be deleted. If the answer is yes, the same procedure must be repeated. If the answer is no, DACS II then checks to verify if there is a bay with all units as type NONE. If such a bay exists and the bay is not bay 1, DACS II queries the user if the bay is to be deleted. If the response is yes, DACS II deletes the bay and its units from the configuration file. DACS II repeats the routine for each qualified bay. Note that although all three units of bay 1 can be designated as NONE, bay 1 cannot be deleted from the frame. After



verification is completed, DACS II continues completion of the configuration.

**Note:** If all units are configured as type NONE when the option is selected, DACS II immediately starts the bay deletion check.

The deletion of the unit is denied if either of the following conditions exists:

- a. The configuration file is not initialized.
- b. The selected unit is grown by the GRTH command.

### Option 6, Recall Configuration Data

If option 6 is entered from the Main Menu, DACS II presents the configuration file from the most recently completed session. If no session has previously been completed, the file stored before the current command is entered will be displayed.

A 7-bay configuration is shown below as an example:

| Bay6   | Bay4   | Bay1  | Bay2 | Bay3  | Bay5   | Bay7   |
|--------|--------|-------|------|-------|--------|--------|
| Unit14 | Unit8  | Unit2 |      | Unit4 | Unit10 | Unit16 |
| TYPE   | TYPE   | TYPE  |      | TYPE  | TYPE   | TYPE   |
| Unit13 | Unit7  | Unit1 | ECCN | Unit3 | Unit9  | Unit15 |
| TYPE   | TYPE   | TYPE  |      | TYPE  | TYPE   | TYPE   |
| -----  | Unit11 | Unit5 |      | Unit6 | Unit12 | -----  |
|        | TYPE   | TYPE  |      | TYPE  | TYPE   |        |

|                                     |                             |
|-------------------------------------|-----------------------------|
| Bay 1 Type:                         | Original Interface Bay      |
| Bay 3 Type:                         | Flexible Interface Bay      |
| Height of Bay:                      | 7'0''                       |
| Software Serial Number:             | 1234567890                  |
| Frame Number:                       | UNINITIALIZED (UNPROTECTED) |
| Unique Id:                          | UNINITIALIZED               |
| Nonhierarchical NPC Address Scheme: | 4 digits                    |

Note that the TYPE can be IFTU, DSPU, DS3U, or NONE, depending on the type provisioned. The bay type for bays 1 and 3 can be either the original interface bay or flexible interface bay. The word "UNINITIALIZED" is shown for the frame number and for the unique ID number if these numbers are not entered. Otherwise, the number and/or identification stored will be output instead of the word "UNINITIALIZED." DACS II shows whether or not the frame number is protected (in parentheses).

If a specific bay has not been selected, its space will be filled with blanks. An example of a 3-bay frame configuration follows:

|       |      |       |
|-------|------|-------|
| Bay1  | Bay2 | Bay3  |
| Unit2 |      | Unit4 |
| TYPE  |      | TYPE  |
| Unit1 | ECCN | Unit3 |
| TYPE  |      | TYPE  |
| Unit5 |      | Unit6 |
| TYPE  |      | TYPE  |

After the configuration file is recalled, DACS II instructs the user to return to the Main Menu.  
If the configuration file is not initialized, the recall option will be denied.

### Option 7, Exit

If option 7 is selected from the Main Menu, DACS II shows all data in the configuration file as if the "recall" option were chosen. In addition, DACS II displays the following:

```
Is the above data correct ? (if not, reenter the data)
 1: YES
 2: NO
IS DATA CORRECT ?
```

If the answer is yes, DACS II displays the following menu:

```
Preparing to write Configuration File to DISK
Please wait while writing to disk
Are you sure? (YES/NO)
```

If the answer is yes, DACS II begins writing the configuration file to DISK. When the configuration file backup is completed, output message O.35021 appears. DACS II backs up the configuration file to DISK before generating message O.35021.

**Note:** DACS II generates the completion message even if the content of the configuration file is unchanged.

### Configuration File Completion

This configuration file command can be executed only if the conditions listed are met:

1. The MC is in maintenance condition.
2. The command is entered from link 1.
3. The command is entered by the superuser.

The configuration file command allows the configuration information to be entered all at once or at the time that a new bay or unit is added to the frame. The entry of unit types into the unit positions in the configuration file does not equip these units; rather it limits unit equipage to be consistent with the configuration file and makes the equipment locate function available to assist the craft installation operations before the equipment has been placed in service.

## Documentation Support

The following sections provide descriptions of the following types of DACS II documents:

- Customer Reference Manual
- Operation and Maintenance Manual
- Command and Message Manual
- Quick Reference Guide
- Customer Information Releases

### Customer Reference Manual

This manual provides the overall description of the DACS II equipment and features including physical, functional, application, and capability considerations and administrative link connections.

The following table lists the Customer Reference Manual by select code, issue, and applicable software release.

| Document #    | Subject                           | Iss. | Release |   |   |   |   |   |
|---------------|-----------------------------------|------|---------|---|---|---|---|---|
|               |                                   |      | 1       | 2 | 3 | 4 | 5 | 6 |
| 365-301-002   | DACS II Customer Reference Manual | 1    | X       |   |   |   |   |   |
|               |                                   | 2    |         |   | X |   |   |   |
|               |                                   | 3    |         |   | X | X |   |   |
|               |                                   | 4    |         |   |   | X | X |   |
| 365-352-000   | DACS II Customer Reference Manual | 1    | X       | X | X | X | X |   |
| 365-353-000 * | DACS II Customer Reference Manual | 1    | X       | X | X | X | X | X |

\* Last version.

---

## **Operation and Maintenance Manuals**

---

The operation and maintenance manuals contain instructions on how to operate the DACS II and how to clear trouble messages. These manuals are intended to be the guide for daily use and for troubleshooting before requesting technical help. The operation and maintenance manuals for the basic core software and all features are available in both MML and PDS versions.

The following table lists the Operation and Maintenance Manual by select code, issue, and applicable software release.

| Operation and Maintenance Manual |                                                           |       |         |   |   |   |   |   |   |   |
|----------------------------------|-----------------------------------------------------------|-------|---------|---|---|---|---|---|---|---|
| Document #                       | Subject                                                   | Iss.  | Release |   |   |   |   |   |   |   |
|                                  |                                                           |       | 1       | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 365-301-601                      | DACS II Operation and Maintenance Manual                  | 1     | X       |   |   |   |   |   |   |   |
| 365-301-605                      | DACS II (PDS)                                             | 1     |         | X |   |   |   |   |   |   |
| 365-301-606                      | DACS II (MML)                                             | 1     |         | X |   |   |   |   |   |   |
| 365-301-615                      | DACS II (PDS)                                             | 1     |         |   | X | X |   |   |   |   |
| 365-301-616                      | DACS II (MML)                                             | 1     |         |   | X | X |   |   |   |   |
| 365-301-617                      | DACS II (PDS) Subrate Feature                             | 1     |         |   | X | X |   |   |   |   |
|                                  |                                                           | 2     |         |   | X | X | X |   |   |   |
| 365-301-618                      | DACS II (MML) Subrate Feature                             | 1     |         |   | X | X |   |   |   |   |
|                                  |                                                           | 2     |         |   | X | X | X |   |   |   |
| 365-301-619                      | DACS II (PDS) <i>SLC</i> ® 96 Carrier Feature             | B     |         |   | X | X |   |   |   |   |
|                                  |                                                           | 2     |         |   | X | X | X |   |   |   |
| 365-301-620                      | DACS II (MML) <i>SLC</i> ® 96 Carrier Feature             | A     |         |   | X | X |   |   |   |   |
|                                  |                                                           | 2     |         |   | X | X | X |   |   |   |
| 365-301-615AI                    | DACS II (PDS) 2.048 Mb/s and Enhanced 2.048 Mb/s Features | Prel. |         |   | X |   |   |   |   |   |
|                                  |                                                           | 1     |         |   | X | X |   |   |   |   |
| 365-301-616AI                    | DACS II (MML) 2.048 Mb/s and Enhanced 2.048 Mb/s Features | 1     |         |   | X |   |   |   |   |   |
|                                  |                                                           | 2     |         |   | X | X |   |   |   |   |
| 365-301-621                      | DACS II (PDS) Gateway Feature                             | 1     |         |   | X | X |   |   |   |   |
| 365-301-622                      | DACS II (MML) Gateway Feature                             | 1     |         |   | X | X |   |   |   |   |
| 365-301-623                      | DACS II PDS Domestic                                      | 2     |         |   |   | X |   |   |   |   |

| Operation and Maintenance Manual |                                                                                               |      |         |   |   |   |   |   |   |   |
|----------------------------------|-----------------------------------------------------------------------------------------------|------|---------|---|---|---|---|---|---|---|
| Document #                       | Subject                                                                                       | Iss. | Release |   |   |   |   |   |   |   |
|                                  |                                                                                               |      | 1       | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 365-352-001                      | DACS II PDS Domestic                                                                          | 1    |         |   |   | X | X |   |   |   |
| 365-352-011                      | DACS II MML Domestic                                                                          | 1    |         |   |   | X | X |   |   |   |
| 365-352-021                      | DACS II PDS 2.048 Mb/s                                                                        | 1    |         |   |   | X | X |   |   |   |
| 365-352-031                      | DACS II MML 2.048 Mb/s                                                                        | 1    |         |   |   | X | X |   |   |   |
| 365-301-627                      | DACS II Capacity Expansion Frame, (PDS) Core with DS1, DS3, and Gateway Features              | 1    |         |   |   |   | X |   |   |   |
| 365-301-627AI                    | DACS II Capacity Expansion Frame, (PDS) Core with 2.048 Mb/s and Enhanced 2.048 Mb/s Features | 1    |         |   |   |   | X |   |   |   |
| 365-301-628                      | DACS II Capacity Expansion Frame, (MML) Core with DS1, DS3, and Gateway Features              | 1    |         |   |   |   | X |   |   |   |
| 365-301-628AI                    | DACS II Capacity Expansion Frame, (MML) Core with 2.048 Mb/s and Enhanced 2.048 Mb/s Features | 1    |         |   |   |   | X |   |   |   |
| 365-353-001                      | DACS II PDS Domestic                                                                          | 1    |         |   |   |   |   | X |   |   |
| 365-353-011                      | DACS II MML Domestic                                                                          | 1    |         |   |   |   |   | X |   |   |
| 365-353-021                      | DACS II PDS 2.048 Mb/s                                                                        | 1    |         |   |   |   |   | X |   |   |
| 365-353-031                      | DACS II MML 2.048 Mb/s                                                                        | 1    |         |   |   |   |   | X |   |   |

| Operation and Maintenance Manual ( <i>Contd</i> ) |                        |      |         |   |   |   |   |   |   |   |
|---------------------------------------------------|------------------------|------|---------|---|---|---|---|---|---|---|
| Document #                                        | Subject                | Iss. | Release |   |   |   |   |   |   |   |
|                                                   |                        |      | 1       | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 365-353-054                                       | DACS II PDS Domestic   | 1    |         |   |   |   |   |   |   | X |
| 365-353-064                                       | DACS II MML Domestic   | 1    |         |   |   |   |   |   |   | X |
| 365-353-074                                       | DACS II PDS 2.048 Mb/s | 1    |         |   |   |   |   |   |   | X |
| 365-353-084                                       | DACS II MML 2.048 Mb/s | 1    |         |   |   |   |   |   |   | X |
| 365-353-121                                       | DACS II PDS Domestic   | 1    |         |   |   |   |   |   |   | X |
| 365-353-131                                       | DACS II MML Domestic   | 1    |         |   |   |   |   |   |   | X |
| 365-353-141                                       | DACS II PDS 2.048 Mb/s | 1    |         |   |   |   |   |   |   | X |
| 365-353-151                                       | DACS II MML 2.048 Mb/s | 1    |         |   |   |   |   |   |   | X |



## Command and Message Manuals

The command and message manuals are the reference documents for all the input and output messages and explanations of all message fields. These manuals are available in both MML and PDS versions.

The following table lists the Command and Message Manuals by select code, title, issue, and applicable software release.

| Command and Message Manuals |                                                  |      |         |   |   |   |   |   |   |   |
|-----------------------------|--------------------------------------------------|------|---------|---|---|---|---|---|---|---|
| Document #                  | Subject                                          | Iss. | Release |   |   |   |   |   |   |   |
|                             |                                                  |      | 1       | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 365-301-603                 | Volumes I and II                                 | 1    | X       |   |   |   |   |   |   |   |
| 365-301-606                 | DACS II PDS                                      | 1    |         | X |   |   |   |   |   |   |
| 365-301-610                 | DACS II MML                                      | 1    |         | X |   |   |   |   |   |   |
| 365-301-651                 | DACS II (PDS) Core                               | 1    |         |   | X | X |   |   |   |   |
| 365-301-651AI               | DACS II (PDS) 2.048 Mb/s and Enhanced 2.048 Mb/s | 1    |         |   | X | X |   |   |   |   |
| 365-301-652                 | DACS II (MML) Core                               | 1    |         |   | X | X |   |   |   |   |
| 365-301-652AI               | DACS II (MML) 2.048 Mb/s and Enhanced 2.048 Mb/s | 1    |         |   | X | X |   |   |   |   |
| 365-301-653                 | DACS II (PDS) Subrate Feature                    | 1    |         |   | X | X |   |   |   |   |
| 365-301-654                 | DACS II (MML) Subrate Feature                    | 1    |         |   | X | X |   |   |   |   |
| 365-301-655                 | DACS II (PDS) <i>SLC</i> ® Carrier Feature       | 1    |         |   | X | X |   |   |   |   |
| 365-301-656                 | DACS II (MML) <i>SLC</i> ® Carrier Feature       | 1    |         |   | X | X |   |   |   |   |

| Command and Message Manuals ( <i>Contd</i> ) |                                  |      |         |   |   |   |   |   |   |   |
|----------------------------------------------|----------------------------------|------|---------|---|---|---|---|---|---|---|
| Document #                                   | Subject                          | Iss. | Release |   |   |   |   |   |   |   |
|                                              |                                  |      | 1       | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 365-301-657                                  | DACS II (PDS)<br>Gateway Feature | 1    |         |   | X | X |   |   |   |   |
| 365-301-658                                  | DACS II (MML)<br>Gateway Feature | 1    |         |   | X | X |   |   |   |   |
| 365-301-661                                  | DACS II (PDS)                    | 1    |         |   | X | X |   |   |   |   |
| 365-301-662                                  | DACS II (MML)                    | 1    |         |   | X | X |   |   |   |   |
| 365-301-661AI                                | DACS II (PDS) 2.048<br>Mb/s      | 1    |         |   | X | X |   |   |   |   |
| 365-301-662AI                                | DACS II (MML) 2.048<br>Mb/s      | 1    |         |   | X | X |   |   |   |   |
| 365-301-663                                  | DACS II (PDS)                    | 1    |         |   |   |   | X |   |   |   |
| 365-301-663AI                                | DACS II (PDS) 2.048<br>Mb/s      | 1    |         |   |   |   | X |   |   |   |
| 365-301-664                                  | DACS II (MML)                    | 1    |         |   |   |   | X |   |   |   |
| 365-301-664AI                                | DACS II (MML) 2.048<br>Mb/s      | 1    |         |   |   |   | X |   |   |   |

| Command and Message Manuals (Contd) |                        |      |         |   |   |   |   |   |   |   |
|-------------------------------------|------------------------|------|---------|---|---|---|---|---|---|---|
| Document #                          | Subject                | Iss. | Release |   |   |   |   |   |   |   |
|                                     |                        |      | 1       | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 365-352-002                         | DACS II PDS 24 Channel | 1    |         |   |   | X | X |   |   |   |
| 365-352-012                         | DACS II MML 24 Channel | 1    |         |   |   | X | X |   |   |   |
| 365-352-022                         | DACS II PDS 2.048 Mb/s | 1    |         |   |   | X | X |   |   |   |
| 365-352-032                         | DACS II MML 2.048 Mb/s | 1    |         |   |   | X | X |   |   |   |
| 365-353-002                         | DACS II PDS 24 Channel | 1    |         |   |   |   |   | X |   |   |
| 365-353-012                         | DACS II MML 24 Channel | 1    |         |   |   |   |   | X |   |   |
| 365-353-022                         | DACS II PDS 2.048 Mb/s | 1    |         |   |   |   |   | X |   |   |
| 365-353-032                         | DACS II MML 2.048 Mb/s | 1    |         |   |   |   |   | X |   |   |
| 365-353-052                         | DACS II PDS 24 Channel | 1    |         |   |   |   |   |   | X |   |
| 365-353-062                         | DACS II MML 24 Channel | 1    |         |   |   |   |   |   | X |   |
| 365-353-072                         | DACS II PDS 2.048 Mb/s | 1    |         |   |   |   |   |   | X |   |
| 365-353-082                         | DACS II MML 2.048 Mb/s | 1    |         |   |   |   |   |   | X |   |
| 365-353-122                         | DACS II PDS 24 Channel | 1    |         |   |   |   |   |   |   | X |
| 365-353-132                         | DACS II MML 24 Channel | 1    |         |   |   |   |   |   |   | X |
| 365-353-142                         | DACS II PDS 2.048 Mb/s | 1    |         |   |   |   |   |   |   | X |
| 365-353-152                         | DACS II MML 2.048 Mb/s | 1    |         |   |   |   |   |   |   | X |

## **Quick Reference Guides**

---

These guides contain frequently used commands organized into categories of functions, tables and illustrations of cross-connections, a summary of corrective action for frame audit messages, and for PDS, the meanings of the command denial condition codes. The guides are intended to support the experienced user and to serve as a handy reference for commands. Different guides cover two feature set: 2.048 Mb/s alone or subrate SLC<sup>®</sup> carrier, DS1, DS3, and clear-DS1. Both MML and PDS versions are available for each feature set.

The following table lists each Quick Reference Guide by select code, title, issue, and applicable software release.

| Quick Reference Guide |                               |      |         |   |   |   |   |   |   |   |
|-----------------------|-------------------------------|------|---------|---|---|---|---|---|---|---|
| Document #            | Subject                       | Iss. | Release |   |   |   |   |   |   |   |
|                       |                               |      | 1       | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 365-301-602           | DACS II Quick Reference Guide | 1    | X       |   |   |   |   |   |   |   |
| 365-301-607           | DACS II PDS                   | 1    |         | X |   |   |   |   |   |   |
| 365-301-608           | DACS II MML                   | 1    |         | X |   |   |   |   |   |   |
| 365-301-625           | DACS II (PDS) 24 Channel      | 1    |         |   | X |   |   |   |   |   |
|                       |                               | 2    |         |   | X | X |   |   |   |   |
|                       |                               | 3    |         |   |   |   | X |   |   |   |
| 365-301-626           | DACS II (MML) 24 Channel      | 1    |         |   | X |   |   |   |   |   |
|                       |                               | 2    |         |   | X | X |   |   |   |   |
|                       |                               | 3    |         |   |   |   | X |   |   |   |
| 365-301-625AI         | DACS II (PDS) 30 Channel      | 1    |         |   | X | X |   |   |   |   |
|                       |                               | 2    |         |   |   |   | X |   |   |   |
| 365-301-626AI         | DACS II (MML) 30 Channel      | 1    |         |   | X |   |   |   |   |   |
|                       |                               | 2    |         |   | X | X |   |   |   |   |
|                       |                               | 3    |         |   |   |   | X |   |   |   |
| 365-352-003           | DACS II PDS 24 Channel        | 1    |         |   |   | X | X |   |   |   |
| 365-352-013           | DACS II MML 24 Channel        | 1    |         |   |   | X | X |   |   |   |
| 365-352-023           | DACS II PDS 2.048 Mb/s        | 1    |         |   |   | X | X |   |   |   |
| 365-352-033           | DACS II MML 2.048 Mb/s        | 1    |         |   |   | X | X |   |   |   |
| 365-353-003           | DACS II PDS 24 Channel        | 1    |         |   |   |   |   | X |   |   |
| 365-353-013           | DACS II MML 24 Channel        | 1    |         |   |   |   |   | X |   |   |
| 365-353-023           | DACS II PDS 2.048 Mb/s        | 1    |         |   |   |   |   | X |   |   |
| 365-353-033           | DACS II MML 2.048 Mb/s        | 1    |         |   |   |   |   | X |   |   |

| Quick Reference Guide (Contd) |                        |      |         |   |   |   |   |   |   |   |
|-------------------------------|------------------------|------|---------|---|---|---|---|---|---|---|
| Document #                    | Subject                | Iss. | Release |   |   |   |   |   |   |   |
|                               |                        |      | 1       | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 365-353-053                   | DACS II PDS 24 Channel | 1    |         |   |   |   |   |   | X |   |
| 365-353-063                   | DACS II MML 24 Channel | 1    |         |   |   |   |   |   | X |   |
| 365-353-073                   | DACS II PDS 2.048 Mb/s | 1    |         |   |   |   |   |   | X |   |
| 365-353-083                   | DACS II MML 2.048 Mb/s | 1    |         |   |   |   |   |   | X |   |
| 365-353-123                   | DACS II PDS 24 Channel | 1    |         |   |   |   |   |   |   | X |
| 365-353-133                   | DACS II MML 24 Channel | 1    |         |   |   |   |   |   |   | X |
| 365-353-143                   | DACS II PDS 2.048 Mb/s | 1    |         |   |   |   |   |   |   | X |
| 365-353-153                   | DACS II MML 2.048 Mb/s | 1    |         |   |   |   |   |   |   | X |

## Customer Information Releases

Customer Information Releases (CIRs) are designed both to assist sales personnel and as a vehicle to get new feature information to customers.

The following table lists CIRs by number, issue and title.

| Customer Information Releases |      |                                                                                                |
|-------------------------------|------|------------------------------------------------------------------------------------------------|
| CIR No.                       | Iss. | Title                                                                                          |
| 365-099-031NP                 | 2    | Digital Access and Cross-Connect System II                                                     |
| 365-099-032NP                 | 1    | Multiple DACS Complex                                                                          |
| 365-099-053TS                 | 1    | DACS II, Technical Specification                                                               |
| 365-099-055TD                 | 1    | DACS II, Release 2 Features                                                                    |
| 365-099-059TD                 | 1    | DACS II, Stratum 2 Clock                                                                       |
| 365-099-091NP                 | 1    | DACS II, Release 2 Features                                                                    |
| 365-099-093TD                 | 1    | DACS II, Release 3 Features                                                                    |
| 365-099-095IR                 | 1    | DACS II Communication Interfaces<br>Circuit Pack Ordering Information                          |
| 365-099-098IR                 | 1    | New Dacs II Dual Digroup Card<br>Announcement and Ordering<br>Information                      |
| 365-099-100MA                 | 1    | Normal Tape Operations for the DACS<br>II, DACS III-2000, and DACS IV-2000<br>Systems          |
| 365-099-105TD                 | 1    | DACS II Release 4 Technical<br>Description                                                     |
| 365-099-111TD                 | 1    | DACS II Release 5.0 Technical<br>Description                                                   |
| 365-099-123IR                 | 1    | UL Listed DACS II Digital Access and<br>Cross-Connect System                                   |
| 365-099-126TS                 | 1    | Digital Access and Cross-Connect<br>System II (DACS II) Release 5.0<br>Technical Specification |

| Customer Information Releases ( <i>Contd</i> ) |      |                                             |
|------------------------------------------------|------|---------------------------------------------|
| CIR No.                                        | Iss. | Title                                       |
| 365-099-129TD                                  | 1    | DACS II Release 6.0 Technical Description   |
| 365-099-130TS                                  | 1    | DACS II Release 6.0 Technical Specification |

## **Glossary**

---

Note: Some keywords are used in a generic manner by DACS II. For example, CCN also represents ECCN. Some other keywords used in this manner are: MIU and EMIU, MXR and EMXR, and FTU and IFTU. The Glossary is located in Volume III.



---

**Alphabetic List of Messages**

**2**

---

**Contents**

**Alphabetic List of Keywords**

2-1



---

## Alphabetic List of Messages

---

### Alphabetic List of Messages

---

### Alphabetic List of Keywords

|                                                  |       |
|--------------------------------------------------|-------|
| ABT                                              | 55711 |
| ACO, ACTIVE                                      | 65071 |
| ACT, MAP, CLR, INCL                              | 39201 |
| ADD, LINK, K, T1, T3, N2, A, B                   | 36003 |
| ADD, LINK, PTCOL, S, X, T, M, BAUD, ALM, BS, ENQ | 36001 |
| ADD, LINK, W, P, T20, T22, T23, T25, T26, R20    | 36005 |
| ADD, NPC                                         | 36021 |
| ADD, USER, LINK, INCL, ALL, LANG, M, P, F        | 36103 |
| ADD, USER, NEW, PASSWD                           | 36101 |
| ALM, IDLD, AI, NPC                               | 65046 |
| ALM, NPC                                         | 65036 |
| ALM, NPC, AI, COUNT, THLEV                       | 65061 |
| ALM, PMC, PMA, DMA, MI, CCN, OOS                 | 65054 |
| ALM, PMC, PMA, DMA, MI, ECCN, OOS                | 65055 |
| ALM, PMC, PMA, DMA, MI, NPC, RPSFI, IDLD         | 65091 |
| ALM, PMC, PMA, DMA, MI, SMEM                     | 65056 |
| ALM, RESET, DATE, TOD, FORMAT, MDY, DMY, PMC     | 65051 |
| ALWSW, UNIT, MMFG, TOPRTN, TOSRVC                | 35301 |
| APPEND, END                                      | 19041 |
| APPL, RESET, IN, PROGRESS                        | 62011 |
| AR01, MISC, ALM, IDLD, PBA                       | 65021 |
| AR01, MISC, ALM, PBA                             | 65011 |
| AUD, PARAMS                                      | 81006 |
| AUD, QRY, BER, ALL, NPCS, TOT                    | 81005 |
| AUD, QRY, BER, ALL, NPCS, TOT, EOM               | 81003 |
| AUD, QRY, CFA, CGA, LOS                          | 81001 |
| AUD, QRY, CFA, CGA, LOS                          | 81002 |
| AUD, QRY, CFA, CGA, LOS                          | 81004 |
| BADVERB, BAD, SYNTAX, STOPPED                    | 01101 |

---

|                                                |       |
|------------------------------------------------|-------|
| BADVERB, CMD, INERR, STOPPED                   | 01131 |
| BC, R, TO, X, ZO, NA                           | 65211 |
| BCON, FROM, TO, NTR, LPD, CONV, NAM, CUS, INCL | 13002 |
| BCON, FROM, TO, RDC, CUS, INCL, NTR, LPD, CONV | 13021 |
| BCON, FROM, TOX                                | 13051 |
| BCON, FROM, TOX, NTR, LPD, CONV, NAM, CUS      | 13001 |
| BCON, FROM, TOX, RDC, CUS, INCL, NTR, LPD      | 13011 |
| BDIS, FROM, TO, CONV, OOS, DCC, INCL           | 15201 |
| BDIS, FROM, TO, OOS, INCL, CONV                | 15231 |
| BDIS, FROM, TOX, CONV, OOS, DCC, INCL          | 15211 |
| BDIS, FROM, TOX, OOS, INCL, CONV               | 15221 |
| BOOT, FAILED, BAD, DEVICE                      | 65053 |
| BOOT, FROM, PMEM, FAILED, ATTEMPTING, TO       | 01242 |
| BOOT, FROM, PMEM, SMEM                         | 01241 |
| BX2, STF, ATP                                  | 01271 |
| CBOFL, SIDE, EOM                               | 65221 |
| CFR, FRAME                                     | 35021 |
| CFR, SYNC, FPLL                                | 35011 |
| CFR, SYNC, MASTER, SLAVED                      | 35013 |
| CFR, SYNC, STRATUM, STR2, STR3, TOLL, LOCAL    | 35012 |
| CFR, XC, INCL                                  | 35001 |
| CHG, ALMS, ON, OFF                             | 38355 |
| CHG, BC, X, TO                                 | 38333 |
| CHG, BCOFF, TO                                 | 38335 |
| CHG, DD, TO                                    | 38331 |
| CHG, ERB, TYPE                                 | 38631 |
| CHG, FALMS, TYPE, PMACR, PMAMJ, DMAMN, MI      | 38375 |
| CHG, FROM, TO, NOT, TLA, TLR, F, T, B, A, INCL | 17011 |
| CHG, FROM, TO, NOT, TLA, TLR, F, T, B, L, G, A | 17001 |
| CHG, FROM, TO, TLP, NG, ES, INCL               | 17002 |
| CHG, INTV, ON, OFF                             | 38451 |
| CHG, MACRO, MAP, SPACE                         | 38501 |
| CHG, NPC, ALL, TLI, SYNC, CCN, LEV             | 38461 |
| CHG, NPC, ALMOPT, AIS, MI, PMA, PMC, DMA       | 38281 |
| CHG, NPC, CBTIMER                              | 38001 |
| CHG, NPC, LPBK                                 | 38341 |
| CHG, NPC, NFS                                  | 38324 |
| CHG, NPC, OPTS, THMODE                         | 38221 |
| CHG, NPC, TS0                                  | 38321 |
| CHG, NPC, TS0M                                 | 38323 |
| CHG, NPC, TYPE, IW, X                          | 38211 |
| CHG, NPC, TYPE, IW, X, INCL                    | 38271 |
| CHG, PASSWD, OLD, NEW                          | 38301 |
| CHG, SALMS, PMACR, PMAMJ, DMAMN, MI, RESET     | 38365 |
| CHG, SETOP, TYPE, ALL, NPCOP                   | 38201 |
| CHG, SWCH, TOX, INCL                           | 18001 |
| CHG, SWCH, TOX, INCL                           | 18011 |

|                                              |       |
|----------------------------------------------|-------|
| CHG, SYNC, TLI, SSP, TYPE, NPC, SRC          | 38011 |
| CHG, TYPE, OPTS, THMODE                      | 38231 |
| CHG, TYPE, THMODE                            | 38291 |
| CHG, UNIT, CONN                              | 38101 |
| CHG, USER, LINK, INCL, SCR, GR, MCON, MCOFF  | 38401 |
| CI, ECI, RESET                               | 01201 |
| CI, ECI, STARTUP, STF, ATP                   | 01211 |
| CMD, MC, OOS, MCOND, INSERVICE, MPDBASE      | 01111 |
| COPY, NPC, TO                                | 31521 |
| CTST, FAD, AIS, INCL                         | 20101 |
| CTST, FAD, EMODE, FMODE, INCL                | 20111 |
| CTST, FAD, FROM, TO, AIS, INCL               | 20001 |
| CTST, HUB, FAD, TO, INCL                     | 20031 |
| CTST, LPBKT, FAD, INCL                       | 20301 |
| CTST, TNR, ALL, OOS                          | 20202 |
| CTST, TNR, FAD, OOS                          | 20201 |
| DDIS, FROM, TO                               | 15061 |
| DELETE, END                                  | 19051 |
| DGN, CCB, CFT, X                             | 41211 |
| DGN, CCI, CFT, X                             | 41251 |
| DGN, CCNI, CFT, X                            | 41201 |
| DGN, CI, CFT, X                              | 41031 |
| DGN, ETSI, CFT, X                            | 41261 |
| DGN, ETSIS, ECCN, ALL                        | 41271 |
| DGN, IN, PROGRESS                            | 41004 |
| DGN, LINK, CFT, X                            | 41011 |
| DGN, MC, CFT, X                              | 41001 |
| DGN, MP, CFT, X                              | 41021 |
| DGN, NPC                                     | 41361 |
| DGN, NPC, SIDE, CFT, X                       | 41351 |
| DGN, PMEM, SMEM, CFT, X, EXCT, DBASE, VERIFY | 41051 |
| DGN, SYNC                                    | 41101 |
| DGN, SYNC, TLI, CRO                          | 41111 |
| DGN, SYNC, TLI, SSP                          | 41121 |
| DGN, TSI, CFT, X                             | 41221 |
| DGN, TSIS, CCN, ALL                          | 41241 |
| DGN, TSIS, CCN, UNIT, CONN                   | 41232 |
| DGN, UNIT, DSPI, CFT, X                      | 41341 |
| DGN, UNIT, FC, CFT, X                        | 41331 |
| DGN, UNIT, FTMI, CFT, X                      | 41321 |
| DGN, UNIT, UC, CFT, X                        | 41311 |
| DGRTH, NPC                                   | 32341 |
| DGRTH, NPC, NPCTG, TGR                       | 32401 |
| DGRTH, NPC, NPCTP, TPR                       | 32381 |
| DGRTH, SYNC, TB                              | 32101 |
| DGRTH, SYNC, TLI, SSP                        | 32121 |
| DGRTH, TG                                    | 32421 |

---

|                                                |       |
|------------------------------------------------|-------|
| DGRTH, TP                                      | 32411 |
| DGRTH, UNIT                                    | 32211 |
| DGRTH, UNIT, FTMI                              | 32321 |
| DGRTH, UNIT, MXR                               | 32501 |
| DLT, FPKG                                      | 37301 |
| DLT, MACRO, MAP, USER                          | 37201 |
| DLT, NPC                                       | 37001 |
| DLT, USER                                      | 37101 |
| DSPC                                           | 14901 |
| EBX, STARTUP, STF, ATP                         | 01272 |
| ED, CRET, MAP, PIC                             | 19031 |
| ED, MACRO, MAP                                 | 19001 |
| EMTC, STARTUP, STF, ATP                        | 01282 |
| ERR, CMD, ABT, TN, STOPPED                     | 01121 |
| ERR, ESR, ANALYSIS, REPORT, EVENT              | 01391 |
| ERR, ESR, CCB, TN, EVENT, COND                 | 01351 |
| ERR, ESR, CCI, TN, EVENT, COND                 | 01354 |
| ERR, ESR, CCNI, TN, EVENT, COND                | 01352 |
| ERR, ESR, ETSI, TN, EVENT, COND                | 01355 |
| ERR, ESR, MC, MP, CI, TN                       | 01312 |
| ERR, ESR, MC, MP, TN, EVENT, COND, CI, BX, EBX | 01311 |
| ERR, ESR, NPC, SIDE, TN, EVENT, COND           | 01371 |
| ERR, ESR, NPC, TN, EVENT, COND                 | 01372 |
| ERR, ESR, SYNC, TLI, SSP, TN, EVENT, NPC, COND | 01341 |
| ERR, ESR, SYNC, TLI, TN, EVENT, COND           | 01342 |
| ERR, ESR, SYNC, TN, EVENT, COND                | 01331 |
| ERR, ESR, TSI, TN, EVENT, COND                 | 01353 |
| ERR, ESR, UNIT, DSPI, TN, EVENT, COND          | 01365 |
| ERR, ESR, UNIT, FC, TN, EVENT, COND            | 01364 |
| ERR, ESR, UNIT, FTMI, TN, EVENT, COND          | 01363 |
| ERR, ESR, UNIT, UC, UBX, TN, EVENT, COND       | 01361 |
| ERR, HARDWARE, TN, COND, EVENT, ACTION         | 01392 |
| ERR, LINK, TN, STATUS                          | 01321 |
| ERR, MSGS, TO, LOG, DISCARDED                  | 01337 |
| ERR, PMEM, SMEM, TN, EVENT, COND               | 01315 |
| ERR, PWR, PMC, PMA, DMA, MI, TN                | 01301 |
| ERR, SOFTWARE, MC, ERROR, MID, TN, RC, ACTION  | 01362 |
| ERR, SYNC, MODE, FAST, HOLDOVER, NORMAL        | 01366 |
| ERR, SYNC, TLI, SSP, NPC, TN, ALM, LOS, LEN    | 01333 |
| ERR, SYNC, TLI, SSP, NPC, TN, ALM, LOS, LEN    | 01335 |
| EXC, MACRO                                     | 39301 |
| FRADTS, BMCMP                                  | 82003 |
| FRADTS, DGN                                    | 82001 |
| FRADTS, FRCMP                                  | 82002 |
| FRADTS, MC, DGN                                | 82004 |
| GRTH, FRAME, CHAR, UID                         | 30101 |
| GRTH, NPC, NPCTG                               | 31401 |

|                                                 |       |
|-------------------------------------------------|-------|
| GRTH, NPC, NPCTP                                | 31381 |
| GRTH, NPC, TYPE, CBTIMER                        | 31351 |
| GRTH, NPC, TYPE, OPTS, IW, X, AIS, MI, PMA, DMA | 31363 |
| GRTH, NPC, TYPE, OPTS, IW, X, AIS, MI, PMA, PMC | 31362 |
| GRTH, SYNC, TB, TYPE                            | 31101 |
| GRTH, SYNC, TLI, TYPE                           | 31111 |
| GRTH, SYNC, TLI, TYPE, SSP, SRC, NPC            | 31121 |
| GRTH, TG, NPCTG                                 | 31421 |
| GRTH, TP                                        | 31411 |
| GRTH, UNIT, FTMI, IMP                           | 31321 |
| GRTH, UNIT, MXR, TYPE, BERM, BERT, LBO          | 31511 |
| GRTH, UNIT, TYPE, CONN                          | 31211 |
| IN, PROGRESS                                    | 55703 |
| INHSW, UNIT, MMFG, TOPRTN, TOSRVC               | 35311 |
| INSTALL                                         | 55721 |
| INVALID, SFW, ID, BLOCK, COND                   | 01291 |
| LINE                                            | 19071 |
| LIST, END                                       | 19061 |
| LOGIN, USER, PASSWD                             | 39001 |
| LOGOFF, USER, LINK, INCL                        | 39101 |
| MC, MCOND                                       | 58011 |
| MC, RESET, RELEASE, ISSUE, FPKG, COND           | 01261 |
| MOVE, FROM, END, TO                             | 19091 |
| MP, STARTUP, STF, ATP                           | 01221 |
| MTC, STF, ATP                                   | 01281 |
| OCNT, FROM, TO, MPM, NAM, CUS, INCL, RDC        | 12121 |
| OCNT, FROM, TO, NAM, RDC, CUS, INCL, PRIOUT     | 12101 |
| OCNT, FROM, TO, RDC, CUS, INCL, PRIOUT          | 12131 |
| OCON, FROM, TO, MPM, CUS, INCL, RDC, NAM        | 11121 |
| OCON, FROM, TO, NAM, RDC, CUS, INCL, PRIOUT     | 11101 |
| OCON, FROM, TO, RDC, CUS, INCL, PRIOUT          | 11131 |
| ODIS, FROM, TO, INCL, OOS, DCC                  | 15102 |
| ODIS, FROM, TO, INCL, OOS, DCC, PRIOUT          | 15101 |
| ODIS, FROM, TO, OOS, INCL, PRIOUT               | 15111 |
| OVERLOAD, MP, CI, UNIT, UC, TN, PROCESSOR       | 01381 |
| RESET, DATE, TOD, FORMAT, MDY, DMY              | 01393 |
| RESET, STOPPED                                  | 01251 |
| RMV, CCB                                        | 33202 |
| RMV, CCI                                        | 33251 |
| RMV, CCNI                                       | 33201 |
| RMV, ETSI                                       | 33261 |
| RMV, ETSIS, ECCN, ALL                           | 33271 |
| RMV, LINK                                       | 33011 |
| RMV, MC                                         | 33001 |
| RMV, NPC, SIDE, INCL                            | 33351 |
| RMV, SMEM, PMEM                                 | 33211 |
| RMV, SYNC                                       | 33101 |

---

|                                               |       |
|-----------------------------------------------|-------|
| RMV, SYNC, TLI, CRO                           | 33111 |
| RMV, SYNC, TLI, SSP                           | 33121 |
| RMV, TSI                                      | 33221 |
| RMV, TSIS, CCN, ALL                           | 33241 |
| RMV, TSIS, CCN, UNIT, CONN                    | 33231 |
| RMV, UNIT, FC                                 | 33331 |
| RMV, UNIT, FLI                                | 33401 |
| RMV, UNIT, FMT                                | 33411 |
| RMV, UNIT, FTMI, DSPI                         | 33321 |
| RMV, UNIT, MMFG, FRC, INCL                    | 33421 |
| RMV, UNIT, UC                                 | 33311 |
| RST, CCB                                      | 34202 |
| RST, CCI                                      | 34251 |
| RST, CCNI                                     | 34201 |
| RST, ETSI                                     | 34261 |
| RST, ETSIS, ECCN, ALL                         | 34271 |
| RST, LINK                                     | 34011 |
| RST, MC, MCOND, NOJRN, FRC, CLR, ALL          | 34001 |
| RST, NPC, MON                                 | 34361 |
| RST, NPC, SIDE                                | 34351 |
| RST, NPC, TSOM                                | 34371 |
| RST, PMEM, SMEM, CLR, FRC, BKGRND             | 34211 |
| RST, SYNC                                     | 34101 |
| RST, SYNC, TLI, CRO                           | 34111 |
| RST, SYNC, TLI, SSP                           | 34121 |
| RST, TSI                                      | 34221 |
| RST, TSIS, CCN, ALL                           | 34241 |
| RST, TSIS, CCN, UNIT, CONN                    | 34231 |
| RST, UNIT, FC                                 | 34331 |
| RST, UNIT, FLI                                | 34401 |
| RST, UNIT, FMT                                | 34411 |
| RST, UNIT, FTMI, DSPI                         | 34321 |
| RST, UNIT, UC                                 | 34311 |
| SAVE                                          | 19081 |
| STOP, MACRO, LINK                             | 39311 |
| SW, BCAST, OLD, NEW, INCL                     | 14021 |
| SW, BCAST, OLD, NEW, INCL                     | 14061 |
| SW, DISC, OOS                                 | 14041 |
| SW, DISC, OOS                                 | 14081 |
| SW, ROLL, OLD, NEW, INCL, FRC, OOS            | 14031 |
| SW, ROLL, OLD, NEW, INCL, FRC, OOS, TWAY      | 14071 |
| SW, UNIT, FLI, TOPRTN                         | 35101 |
| SW, UNIT, FLI, TOSRVC                         | 35105 |
| SW, UNIT, MMFG, TOPRTN, FRC                   | 35111 |
| SW, UNIT, MMFG, TOSRVC                        | 35121 |
| TCNT, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL | 12021 |
| TCNT, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT   | 12001 |



|                                               |       |
|-----------------------------------------------|-------|
| TCNT, FROM, TO, PFW, NFW                      | 12051 |
| TCNT, FROM, TO, RDC, CUS, INCL, PRIOUT        | 12031 |
| TCON, FROM, CB, CUS, RDC, INCL                | 11041 |
| TCON, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL | 11021 |
| TCON, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT   | 11001 |
| TCON, FROM, TO, PFW, NFW                      | 11051 |
| TCON, FROM, TO, RDC, CUS, INCL, PRIOUT        | 11011 |
| TDIS, FROM, CB, INCL, OOS                     | 15004 |
| TDIS, FROM, TO, INCL, OOS, DCC                | 15002 |
| TDIS, FROM, TO, INCL, OOS, DCC, PRIOUT        | 15001 |
| TDIS, FROM, TO, OOS, INCL, PRIOUT             | 15011 |
| TS0, R, NPC, OLD, NEW                         | 65201 |
| TS0MBOFL                                      | 65231 |
| TTST, HUB, TO, TG                             | 24021 |
| TTST, HUB, TO, TP, NAM                        | 24001 |
| TTST, LPD, TG                                 | 29021 |
| TTST, LPD, TP                                 | 29001 |
| TTST, MON, TG                                 | 21031 |
| TTST, MON, TO, NAM, TP                        | 21001 |
| TTST, MON, TO, TG                             | 21021 |
| TTST, SPL, TG                                 | 23021 |
| TTST, SPL, TP                                 | 23001 |
| TTST, TGR, TG, OOS                            | 27021 |
| TTST, TLA, NOT, TP                            | 25101 |
| TTST, TLA, TG                                 | 25121 |
| TTST, TLR, NOT, TP                            | 25501 |
| TTST, TLR, TG                                 | 25521 |
| TTST, TPR, ALL, OOS                           | 27002 |
| TTST, TPR, TP, OOS, FRC                       | 27001 |
| UTL, ACO                                      | 51111 |
| UTL, BMTR, FROM, TO, EXCT, INCL, UPGRD        | 55701 |
| UTL, BOOT, FRAME, CLR                         | 58001 |
| UTL, CLR, ALL                                 | 56011 |
| UTL, CLR, ERR, HWER, SWER                     | 56061 |
| UTL, CLR, NPC                                 | 56001 |
| UTL, CLR, NPC, ALL, AI, MONDAT, MONTIM        | 56071 |
| UTL, CLR, NPC, PARAMS                         | 56051 |
| UTL, CLR, PWR                                 | 56052 |
| UTL, DATE, FORMAT, INT                        | 51021 |
| UTL, INIT, ALM                                | 51101 |
| UTL, LOC                                      | 56401 |
| UTL, QRY, ALL                                 | 56031 |
| UTL, QRY, ALL, COMMON                         | 53104 |
| UTL, QRY, ALL, UNIT                           | 53101 |
| UTL, QRY, ALM, INTV                           | 53351 |
| UTL, QRY, ALMOPT, NPC, AIS                    | 56021 |
| UTL, QRY, ALMS                                | 53111 |

---

|                                               |       |
|-----------------------------------------------|-------|
| UTL, QRY, ALMS, DBASE                         | 53151 |
| UTL, QRY, APPL, NPC, ALL                      | 51201 |
| UTL, QRY, BC, NPC, ALL                        | 56351 |
| UTL, QRY, BC, TO                              | 56353 |
| UTL, QRY, BCAST, ALL                          | 52101 |
| UTL, QRY, BCAST, FROM                         | 52111 |
| UTL, QRY, BCAST, FROM                         | 52121 |
| UTL, QRY, CMAP                                | 52011 |
| UTL, QRY, CNFGR                               | 51091 |
| UTL, QRY, DATE                                | 51031 |
| UTL, QRY, DD                                  | 56341 |
| UTL, QRY, DD, NPC, DDCT, ALL                  | 56343 |
| UTL, QRY, DMAP                                | 52031 |
| UTL, QRY, DS3, BERMT, UNIT                    | 53221 |
| UTL, QRY, DS3, LBO                            | 53231 |
| UTL, QRY, EQD, COMMON                         | 53109 |
| UTL, QRY, EQD, CONN                           | 53031 |
| UTL, QRY, EQD, ETSIS                          | 53022 |
| UTL, QRY, EQD, MXRS                           | 53211 |
| UTL, QRY, EQD, NPCS, TOTAL, UNIT              | 53041 |
| UTL, QRY, EQD, TSIS                           | 53021 |
| UTL, QRY, EQD, UNIT                           | 53108 |
| UTL, QRY, EQD, UNITS                          | 53011 |
| UTL, QRY, ERR, SWER, HWER, INT, DATE, TOD, TN | 55011 |
| UTL, QRY, ESR, CCN                            | 55401 |
| UTL, QRY, ESR, ECCN                           | 55411 |
| UTL, QRY, ESR, MP                             | 55111 |
| UTL, QRY, ESR, NPC, SIDE                      | 55601 |
| UTL, QRY, ESR, UNIT                           | 55501 |
| UTL, QRY, ESR, UNIT, DSPI                     | 55531 |
| UTL, QRY, ESR, UNIT, FC                       | 55521 |
| UTL, QRY, ESR, UNIT, FLI                      | 55801 |
| UTL, QRY, ESR, UNIT, FTMI                     | 55511 |
| UTL, QRY, ESR, UNIT, MXR                      | 55821 |
| UTL, QRY, FALMS, TYPE, ALL                    | 53311 |
| UTL, QRY, FPKG                                | 51121 |
| UTL, QRY, FROM                                | 52051 |
| UTL, QRY, FROM                                | 52071 |
| UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC      | 53331 |
| UTL, QRY, LIST, MACRO, USER                   | 54131 |
| UTL, QRY, LIST, MAP, USER                     | 54101 |
| UTL, QRY, LOG, ALL                            | 54011 |
| UTL, QRY, LPBK, NPC                           | 53131 |
| UTL, QRY, MACRO, ATTR, USER, ALL              | 54211 |
| UTL, QRY, MACRO, MAP, SPACE, USER, ALL        | 54221 |
| UTL, QRY, MACRO, USER                         | 54121 |
| UTL, QRY, MAP, ATTR, ALL, USER, MAPNM         | 54201 |

---

|                                            |       |
|--------------------------------------------|-------|
| UTL, QRY, MARK                             | 52201 |
| UTL, QRY, MARK                             | 52211 |
| UTL, QRY, MEMSTAT                          | 51001 |
| UTL, QRY, NFS, NPC                         | 56324 |
| UTL, QRY, NPC                              | 56041 |
| UTL, QRY, NPC, ALL, AI, LV, MONDAT, MONTIM | 56091 |
| UTL, QRY, NPC, CBTIMER                     | 53171 |
| UTL, QRY, NPC, MAP, USER                   | 54111 |
| UTL, QRY, NPCTG                            | 53091 |
| UTL, QRY, OPT, TYPE, ALL, NPCS             | 53051 |
| UTL, QRY, PEST, FAIL, OOS, COMMON          | 53105 |
| UTL, QRY, PEST, FAIL, OOS, UNIT            | 53103 |
| UTL, QRY, ROLL, DS0, NPC, ALL, UNIT        | 52081 |
| UTL, QRY, ROLL, DS1, NPC, ALL, UNIT        | 52091 |
| UTL, QRY, RPSFI                            | 56326 |
| UTL, QRY, SALMS, ALL                       | 53301 |
| UTL, QRY, SCR, LINK, USER, LINKS, USERS    | 54001 |
| UTL, QRY, SIGST                            | 52601 |
| UTL, QRY, SQN                              | 51131 |
| UTL, QRY, STATE, ACO                       | 54340 |
| UTL, QRY, STATE, NPC                       | 56311 |
| UTL, QRY, STATE, NPC                       | 56314 |
| UTL, QRY, STATE, SYNC                      | 56301 |
| UTL, QRY, STR, LINK                        | 55113 |
| UTL, QRY, STR, SYNC                        | 55201 |
| UTL, QRY, STR, SYNC, TLI                   | 55311 |
| UTL, QRY, STR, SYNC, TLI, SSP              | 55321 |
| UTL, QRY, STR, XC                          | 55191 |
| UTL, QRY, SYNC, TYPE                       | 53001 |
| UTL, QRY, TGS                              | 53081 |
| UTL, QRY, TO                               | 52041 |
| UTL, QRY, TO                               | 52061 |
| UTL, QRY, TOD, CFA, MONDAT                 | 51071 |
| UTL, QRY, TPS                              | 53061 |
| UTL, QRY, TS0, NPC                         | 56321 |
| UTL, QRY, TS0M, NPC                        | 56323 |
| UTL, QRY, UNIT, FTMI, IMP                  | 53071 |
| UTL, QRY, WHO                              | 51041 |
| UTL, QRY, XCSB, UNIT                       | 55181 |
| UTL, RCY, COND, IN, PROGRESS               | 55021 |
| UTL, RCY, PASSWD                           | 51081 |
| UTL, TOD, CFA, PRIM, X, MONDAT             | 51011 |



---

## **Numerical List of Messages**

# **3**

---

### **Contents**

#### **Numeric List of Keywords**

3-1



---

## Numerical List of Messages

---

### Numerical List of Messages

---

### Numeric List of Keywords

01101 BADVERB, BAD, SYNTAX, STOPPED  
01111 CMD, MC, OOS, MCOND, INSERVICE, MPDBASE  
01121 ERR, CMD, ABT, TN, STOPPED  
01131 BADVERB, CMD, INERR, STOPPED  
01201 CI, ECI, RESET  
01211 CI, ECI, STARTUP, STF, ATP  
01221 MP, STARTUP, STF, ATP  
01241 BOOT, FROM, PMEM, SMEM  
01242 BOOT, FROM, PMEM, FAILED, ATTEMPTING, TO  
01251 RESET, STOPPED  
01261 MC, RESET, RELEASE, ISSUE, FPKG, COND  
01271 BX2, STF, ATP  
01272 EBX, STARTUP, STF, ATP  
01281 MTC, STF, ATP  
01282 EMTC, STARTUP, STF, ATP  
01291 INVALID, SFW, ID, BLOCK, COND  
01301 ERR, PWR, PMC, PMA, DMA, MI, TN  
01311 ERR, ESR, MC, MP, TN, EVENT, COND, CI, BX, EBX  
01312 ERR, ESR, MC, MP, CI, TN  
01315 ERR, PMEM, SMEM, TN, EVENT, COND  
01321 ERR, LINK, TN, STATUS  
01331 ERR, ESR, SYNC, TN, EVENT, COND  
01333 ERR, SYNC, TLI, SSP, NPC, TN, ALM, LOS, LEN  
01335 ERR, SYNC, TLI, SSP, NPC, TN, ALM, LOS, LEN  
01337 ERR, MSGS, TO, LOG, DISCARDED  
01341 ERR, ESR, SYNC, TLI, SSP, TN, EVENT, NPC, COND  
01342 ERR, ESR, SYNC, TLI, TN, EVENT, COND  
01351 ERR, ESR, CCB, TN, EVENT, COND  
01352 ERR, ESR, CCNI, TN, EVENT, COND

---

01353 ERR, ESR, TSI, TN, EVENT, COND  
01354 ERR, ESR, CCI, TN, EVENT, COND  
01355 ERR, ESR, ETSI, TN, EVENT, COND  
01361 ERR, ESR, UNIT, UC, UBX, TN, EVENT, COND  
01362 ERR, SOFTWARE, MC, ERROR, MID, TN, RC, ACTION  
01363 ERR, ESR, UNIT, FTMI, TN, EVENT, COND  
01364 ERR, ESR, UNIT, FC, TN, EVENT, COND  
01365 ERR, ESR, UNIT, DSPI, TN, EVENT, COND  
01366 ERR, SYNC, MODE, FAST, HOLDOVER, NORMAL  
01371 ERR, ESR, NPC, SIDE, TN, EVENT, COND  
01372 ERR, ESR, NPC, TN, EVENT, COND  
01381 OVERLOAD, MP, CI, UNIT, UC, TN, PROCESSOR  
01391 ERR, ESR, ANALYSIS, REPORT, EVENT  
01392 ERR, HARDWARE, TN, COND, EVENT, ACTION  
01393 RESET, DATE, TOD, FORMAT, MDY, DMY  
11001 TCON, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT  
11011 TCON, FROM, TO, RDC, CUS, INCL, PRIOUT  
11021 TCON, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL  
11041 TCON, FROM, CB, CUS, RDC, INCL  
11051 TCON, FROM, TO, PFW, NFW  
11101 OCON, FROM, TO, NAM, RDC, CUS, INCL, PRIOUT  
11121 OCON, FROM, TO, MPM, CUS, INCL, RDC, NAM  
11131 OCON, FROM, TO, RDC, CUS, INCL, PRIOUT  
12001 TCNT, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT  
12021 TCNT, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL  
12031 TCNT, FROM, TO, RDC, CUS, INCL, PRIOUT  
12051 TCNT, FROM, TO, PFW, NFW  
12101 OCNT, FROM, TO, NAM, RDC, CUS, INCL, PRIOUT  
12121 OCNT, FROM, TO, MPM, NAM, CUS, INCL, RDC  
12131 OCNT, FROM, TO, RDC, CUS, INCL, PRIOUT  
13001 BCON, FROM, TOX, NTR, LPD, CONV, NAM, CUS  
13002 BCON, FROM, TO, NTR, LPD, CONV, NAM, CUS, INCL  
13011 BCON, FROM, TOX, RDC, CUS, INCL, NTR, LPD  
13021 BCON, FROM, TO, RDC, CUS, INCL, NTR, LPD, CONV  
13051 BCON, FROM, TOX  
14021 SW, BCAST, OLD, NEW, INCL  
14031 SW, ROLL, OLD, NEW, INCL, FRC, OOS  
14041 SW, DISC, OOS  
14061 SW, BCAST, OLD, NEW, INCL  
14071 SW, ROLL, OLD, NEW, INCL, FRC, OOS, TWAY  
14081 SW, DISC, OOS  
14901 DSPC  
15001 TDIS, FROM, TO, INCL, OOS, DCC, PRIOUT  
15002 TDIS, FROM, TO, INCL, OOS, DCC  
15004 TDIS, FROM, CB, INCL, OOS  
15011 TDIS, FROM, TO, OOS, INCL, PRIOUT  
15061 DDIS, FROM, TO



---

15101 ODIS, FROM, TO, INCL, OOS, DCC, PRIOUT  
15102 ODIS, FROM, TO, INCL, OOS, DCC  
15111 ODIS, FROM, TO, OOS, INCL, PRIOUT  
15201 BDIS, FROM, TO, CONV, OOS, DCC, INCL  
15211 BDIS, FROM, TOX, CONV, OOS, DCC, INCL  
15221 BDIS, FROM, TOX, OOS, INCL, CONV  
15231 BDIS, FROM, TO, OOS, INCL, CONV  
17001 CHG, FROM, TO, NOT, TLA, TLR, F, T, B, L, G, A  
17002 CHG, FROM, TO, TLP, NG, ES, INCL  
17011 CHG, FROM, TO, NOT, TLA, TLR, F, T, B, A, INCL  
18001 CHG, SWCH, TOX, INCL  
18011 CHG, SWCH, TOX, INCL  
19001 ED, MACRO, MAP  
19031 ED, CRET, MAP, PIC  
19041 APPEND, END  
19051 DELETE, END  
19061 LIST, END  
19071 LINE  
19081 SAVE  
19091 MOVE, FROM, END, TO  
20001 CTST, FAD, FROM, TO, AIS, INCL  
20031 CTST, HUB, FAD, TO, INCL  
20101 CTST, FAD, AIS, INCL  
20111 CTST, FAD, EMODE, FMODE, INCL  
20201 CTST, TNR, FAD, OOS  
20202 CTST, TNR, ALL, OOS  
20301 CTST, LPBKT, FAD, INCL  
21001 TTST, MON, TO, NAM, TP  
21021 TTST, MON, TO, TG  
21031 TTST, MON, TG  
23001 TTST, SPL, TP  
23021 TTST, SPL, TG  
24001 TTST, HUB, TO, TP, NAM  
24021 TTST, HUB, TO, TG  
25101 TTST, TLA, NOT, TP  
25121 TTST, TLA, TG  
25501 TTST, TLR, NOT, TP  
25521 TTST, TLR, TG  
27001 TTST, TPR, TP, OOS, FRC  
27002 TTST, TPR, ALL, OOS  
27021 TTST, TGR, TG, OOS  
29001 TTST, LPD, TP  
29021 TTST, LPD, TG  
30101 GRTH, FRAME, CHAR, UID  
31101 GRTH, SYNC, TB, TYPE  
31111 GRTH, SYNC, TLI, TYPE  
31121 GRTH, SYNC, TLI, TYPE, SSP, SRC, NPC

---

31211 GRTH, UNIT, TYPE, CONN  
31321 GRTH, UNIT, FTMI, IMP  
31351 GRTH, NPC, TYPE, CBTIMER  
31362 GRTH, NPC, TYPE, OPTS, IW, X, AIS, MI, PMA, PMC  
31363 GRTH, NPC, TYPE, OPTS, IW, X, AIS, MI, PMA, DMA  
31381 GRTH, NPC, NPCTP  
31401 GRTH, NPC, NPCTG  
31411 GRTH, TP  
31421 GRTH, TG, NPCTG  
31511 GRTH, UNIT, MXR, TYPE, BERM, BERT, LBO  
31521 COPY, NPC, TO  
32101 DGRTH, SYNC, TB  
32121 DGRTH, SYNC, TLI, SSP  
32211 DGRTH, UNIT  
32321 DGRTH, UNIT, FTMI  
32341 DGRTH, NPC  
32381 DGRTH, NPC, NPCTP, TPR  
32401 DGRTH, NPC, NPCTG, TGR  
32411 DGRTH, TP  
32421 DGRTH, TG  
32501 DGRTH, UNIT, MXR  
33001 RMV, MC  
33011 RMV, LINK  
33101 RMV, SYNC  
33111 RMV, SYNC, TLI, CRO  
33121 RMV, SYNC, TLI, SSP  
33201 RMV, CCNI  
33202 RMV, CCB  
33211 RMV, SMEM, PMEM  
33221 RMV, TSI  
33231 RMV, TSIS, CCN, UNIT, CONN  
33241 RMV, TSIS, CCN, ALL  
33251 RMV, CCI  
33261 RMV, ETSI  
33271 RMV, ETSIS, ECCN, ALL  
33311 RMV, UNIT, UC  
33321 RMV, UNIT, FTMI, DSPI  
33331 RMV, UNIT, FC  
33351 RMV, NPC, SIDE, INCL  
33401 RMV, UNIT, FLI  
33411 RMV, UNIT, FMT  
33421 RMV, UNIT, MMFG, FRC, INCL  
34001 RST, MC, MCOND, NOJRN, FRC, CLR, ALL  
34011 RST, LINK  
34101 RST, SYNC  
34111 RST, SYNC, TLI, CRO  
34121 RST, SYNC, TLI, SSP

---

34201 RST, CCNI  
34202 RST, CCB  
34211 RST, PMEM, SMEM, CLR, FRC, BKGRND  
34221 RST, TSI  
34231 RST, TSIS, CCN, UNIT, CONN  
34241 RST, TSIS, CCN, ALL  
34251 RST, CCI  
34261 RST, ETSI  
34271 RST, ETSIS, ECCN, ALL  
34311 RST, UNIT, UC  
34321 RST, UNIT, FTMI, DSPI  
34331 RST, UNIT, FC  
34351 RST, NPC, SIDE  
34361 RST, NPC, MON  
34371 RST, NPC, TS0M  
34401 RST, UNIT, FLI  
34411 RST, UNIT, FMT  
35001 CFR, XC, INCL  
35011 CFR, SYNC, FPLL  
35012 CFR, SYNC, STRATUM, STR2, STR3, TOLL, LOCAL  
35013 CFR, SYNC, MASTER, SLAVED  
35021 CFR, FRAME  
35101 SW, UNIT, FLI, TOPRTN  
35105 SW, UNIT, FLI, TOSRVC  
35111 SW, UNIT, MMFG, TOPRTN, FRC  
35121 SW, UNIT, MMFG, TOSRVC  
35301 ALWSW, UNIT, MMFG, TOPRTN, TOSRVC  
35311 INHSW, UNIT, MMFG, TOPRTN, TOSRVC  
36001 ADD, LINK, PTCOL, S, X, T, M, BAUD, ALM, BS, ENQ  
36003 ADD, LINK, K, T1, T3, N2, A, B  
36005 ADD, LINK, W, P, T20, T22, T23, T25, T26, R20  
36021 ADD, NPC  
36101 ADD, USER, NEW, PASSWD  
36103 ADD, USER, LINK, INCL, ALL, LANG, M, P, F  
37001 DLT, NPC  
37101 DLT, USER  
37201 DLT, MACRO, MAP, USER  
37301 DLT, FPKG  
38001 CHG, NPC, CBTIMER  
38011 CHG, SYNC, TLI, SSP, TYPE, NPC, SRC  
38101 CHG, UNIT, CONN  
38201 CHG, SETOP, TYPE, ALL, NPCOP  
38211 CHG, NPC, TYPE, IW, X  
38221 CHG, NPC, OPTS, THMODE  
38231 CHG, TYPE, OPTS, THMODE  
38271 CHG, NPC, TYPE, IW, X, INCL  
38281 CHG, NPC, ALMOPT, AIS, MI, PMA, PMC, DMA

---

38291 CHG, TYPE, THMODE  
38301 CHG, PASSWD, OLD, NEW  
38321 CHG, NPC, TS0  
38323 CHG, NPC, TS0M  
38324 CHG, NPC, NFS  
38331 CHG, DD, TO  
38333 CHG, BC, X, TO  
38335 CHG, BCOFF, TO  
38341 CHG, NPC, LPBK  
38355 CHG, ALMS, ON, OFF  
38365 CHG, SALMS, PMACR, PMAMJ, DMAMN, MI, RESET  
38375 CHG, FALMS, TYPE, PMACR, PMAMJ, DMAMN, MI  
38401 CHG, USER, LINK, INCL, SCR, GR, MCON, MCOFF  
38451 CHG, INTV, ON, OFF  
38461 CHG, NPC, ALL, TLI, SYNC, CCN, LEV  
38471 CHG, MSGLOG, ON, OFF  
38501 CHG, MACRO, MAP, SPACE  
38631 CHG, ERB, TYPE  
39001 LOGIN, USER, PASSWD  
39101 LOGOFF, USER, LINK, INCL  
39201 ACT, MAP, CLR, INCL  
39301 EXC, MACRO  
39311 STOP, MACRO, LINK  
41001 DGN, MC, CFT, X  
41004 DGN, IN, PROGRESS  
41011 DGN, LINK, CFT, X  
41021 DGN, MP, CFT, X  
41031 DGN, CI, CFT, X  
41051 DGN, PMEM, SMEM, CFT, X, EXCT, DBASE, VERIFY  
41101 DGN, SYNC  
41111 DGN, SYNC, TLI, CRO  
41121 DGN, SYNC, TLI, SSP  
41201 DGN, CCNI, CFT, X  
41211 DGN, CCB, CFT, X  
41221 DGN, TSI, CFT, X  
41232 DGN, TSIS, CCN, UNIT, CONN  
41241 DGN, TSIS, CCN, ALL  
41251 DGN, CCI, CFT, X  
41261 DGN, ETSI, CFT, X  
41271 DGN, ETSIS, ECCN, ALL  
41311 DGN, UNIT, UC, CFT, X  
41321 DGN, UNIT, FTMI, CFT, X  
41331 DGN, UNIT, FC, CFT, X  
41341 DGN, UNIT, DSPI, CFT, X  
41351 DGN, NPC, SIDE, CFT, X  
41361 DGN, NPC  
51001 UTL, QRY, MEMSTAT

---

51011 UTL, TOD, CFA, PRIM, X, MONDAT  
51021 UTL, DATE, FORMAT, INT  
51031 UTL, QRY, DATE  
51041 UTL, QRY, WHO  
51071 UTL, QRY, TOD, CFA, MONDAT  
51081 UTL, RCY, PASSWD  
51091 UTL, QRY, CNFGR  
51101 UTL, INIT, ALM  
51111 UTL, ACO  
51121 UTL, QRY, FPKG  
51131 UTL, QRY, SQN  
51201 UTL, QRY, APPL, NPC, ALL  
52011 UTL, QRY, CMAP  
52031 UTL, QRY, DMAP  
52041 UTL, QRY, TO  
52051 UTL, QRY, FROM  
52061 UTL, QRY, TO  
52071 UTL, QRY, FROM  
52081 UTL, QRY, ROLL, DS0, NPC, ALL, UNIT  
52091 UTL, QRY, ROLL, DS1, NPC, ALL, UNIT  
52101 UTL, QRY, BCAST, ALL  
52111 UTL, QRY, BCAST, FROM  
52121 UTL, QRY, BCAST, FROM  
52201 UTL, QRY, MARK  
52211 UTL, QRY, MARK  
52601 UTL, QRY, SIGST  
53001 UTL, QRY, SYNC, TYPE  
53011 UTL, QRY, EQD, UNITS  
53021 UTL, QRY, EQD, TSIS  
53022 UTL, QRY, EQD, ETSIS  
53031 UTL, QRY, EQD, CONN  
53041 UTL, QRY, EQD, NPCS, TOTAL, UNIT  
53051 UTL, QRY, OPT, TYPE, ALL, NPCS  
53061 UTL, QRY, TPS  
53071 UTL, QRY, UNIT, FTMI, IMP  
53081 UTL, QRY, TGS  
53091 UTL, QRY, NPCTG  
53101 UTL, QRY, ALL, UNIT  
53103 UTL, QRY, PEST, FAIL, OOS, UNIT  
53104 UTL, QRY, ALL, COMMON  
53105 UTL, QRY, PEST, FAIL, OOS, COMMON  
53108 UTL, QRY, EQD, UNIT  
53109 UTL, QRY, EQD, COMMON  
53111 UTL, QRY, ALMS  
53131 UTL, QRY, LPBK, NPC  
53151 UTL, QRY, ALMS, DBASE  
53171 UTL, QRY, NPC, CBTIMER

---

53211 UTL, QRY, EQD, MXRS  
53221 UTL, QRY, DS3, BERMT, UNIT  
53231 UTL, QRY, DS3, LBO  
53301 UTL, QRY, SALMS, ALL  
53311 UTL, QRY, FALMS, TYPE, ALL  
53331 UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC  
53351 UTL, QRY, ALM, INTV  
54001 UTL, QRY, SCR, LINK, USER, LINKS, USERS  
54011 UTL, QRY, LOG, ALL  
54101 UTL, QRY, LIST, MAP, USER  
54111 UTL, QRY, NPC, MAP, USER  
54121 UTL, QRY, MACRO, USER  
54131 UTL, QRY, LIST, MACRO, USER  
54201 UTL, QRY, MAP, ATTR, ALL, USER, MAPNM  
54211 UTL, QRY, MACRO, ATTR, USER, ALL  
54221 UTL, QRY, MACRO, MAP, SPACE, USER, ALL  
54340 UTL, QRY, STATE, ACO  
55011 UTL, QRY, ERR, SWER, HWER, INT, DATE, TOD, TN  
55021 UTL, RCY, COND, IN, PROGRESS  
55111 UTL, QRY, ESR, MP  
55113 UTL, QRY, STR, LINK  
55181 UTL, QRY, XCSB, UNIT  
55191 UTL, QRY, STR, XC  
55201 UTL, QRY, STR, SYNC  
55311 UTL, QRY, STR, SYNC, TLI  
55321 UTL, QRY, STR, SYNC, TLI, SSP  
55401 UTL, QRY, ESR, CCN  
55411 UTL, QRY, ESR, ECCN  
55501 UTL, QRY, ESR, UNIT  
55511 UTL, QRY, ESR, UNIT, FTMI  
55521 UTL, QRY, ESR, UNIT, FC  
55531 UTL, QRY, ESR, UNIT, DSPI  
55601 UTL, QRY, ESR, NPC, SIDE  
55701 UTL, BMTR, FROM, TO, EXCT, INCL, UPGRD  
55703 IN, PROGRESS  
55711 ABT  
55721 INSTALL  
55801 UTL, QRY, ESR, UNIT, FLI  
55821 UTL, QRY, ESR, UNIT, MXR  
56001 UTL, CLR, NPC  
56011 UTL, CLR, ALL  
56021 UTL, QRY, ALMOPT, NPC, AIS  
56031 UTL, QRY, ALL  
56041 UTL, QRY, NPC  
56051 UTL, CLR, NPC, PARAMS  
56052 UTL, CLR, PWR  
56061 UTL, CLR, ERR, HWER, SWER

---

56071 UTL, CLR, NPC, ALL, AI, MONDAT, MONTIM  
56091 UTL, QRY, NPC, ALL, AI, LV, MONDAT, MONTIM  
56301 UTL, QRY, STATE, SYNC  
56311 UTL, QRY, STATE, NPC  
56314 UTL, QRY, STATE, NPC  
56321 UTL, QRY, TS0, NPC  
56323 UTL, QRY, TS0M, NPC  
56324 UTL, QRY, NFS, NPC  
56326 UTL, QRY, RPSFI  
56341 UTL, QRY, DD  
56343 UTL, QRY, DD, NPC, DDCT, ALL  
56351 UTL, QRY, BC, NPC, ALL  
56353 UTL, QRY, BC, TO  
56401 UTL, LOC  
58001 UTL, BOOT, FRAME, CLR  
58011 MC, MCOND  
62011 APPL, RESET, IN, PROGRESS  
65011 AR01, MISC, ALM, PBA  
65021 AR01, MISC, ALM, IDLD, PBA  
65036 ALM, NPC  
65046 ALM, IDLD, AI, NPC  
65051 ALM, RESET, DATE, TOD, FORMAT, MDY, DMY, PMC  
65053 BOOT, FAILED, BAD, DEVICE  
65054 ALM, PMC, PMA, DMA, MI, CCN, OOS  
65055 ALM, PMC, PMA, DMA, MI, ECCN, OOS  
65056 ALM, PMC, PMA, DMA, MI, SMEM  
65061 ALM, NPC, AI, COUNT, THLEV  
65071 ACO, ACTIVE  
65091 ALM, PMC, PMA, DMA, MI, NPC, RPSFI, IDLD  
65201 TS0, R, NPC, OLD, NEW  
65211 BC, R, TO, X, ZO, NA  
65221 CBOFL, SIDE, EOM  
65231 TS0MBOFL  
81001 AUD, QRY, CFA, CGA, LOS  
81002 AUD, QRY, CFA, CGA, LOS  
81003 AUD, QRY, BER, ALL, NPC, TOT, EOM  
81004 AUD, QRY, CFA, CGA, LOS  
81005 AUD, QRY, BER, ALL, NPC, TOT  
81006 AUD, PARAMS  
82001 FRADTS, DGN  
82002 FRADTS, FRCMP  
82003 FRADTS, BMCMP  
82004 FRADTS, MC, DGN





---

## Summary of Input Commands

# 4

---

### Contents

|                                   |      |
|-----------------------------------|------|
| <b>Alphabetic Command Summary</b> | 4-2  |
| <b>Numeric Command Summary</b>    | 4-35 |



---

## **Summary of Input Commands**

---

### **Summary of Input Commands**

This section provides a summary of the DACS II Release 8.2.3 input commands. The commands are presented in an alphabetical and numerical order.

## **Alphabetic Command Summary**

---

[I.55711]

**ABT!**

[I.39201]

**ACT:FRM xy,SEQ ww:MAP <map name>[,CLR][,INCL]!**

[I.36003]

**ADD:FRM xy,SEQ ww:LINK j[,K b][,T1 ee][,T3 ggg][,N2 aa]\**  
**[,FRMAD {A|B}]!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL {S|X|T|M}[,BAUD bb][,ALM k]\**  
**[,BS e][,ENQ q][,XON x][,INIT]!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL S[,BAUD bb][,ALM k]\**  
**[,BS e][,ENQ q][,XON x][,INIT]!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL X[,ALM k][,INIT]!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL T[,BAUD bb][,ALM k][,INIT]!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL M[,ALM k][,INIT]!**

[I.36005]

**ADD:FRM xy,SEQ ww:LINK j[mm][,W c][,P ddd][,T20 iii]\**  
**[,T22 jjj][,T23 kkk][,T25 lll][,T26 mmm][,R20 nn]\**  
**[,R22 p][,R23 qq][,R25 r][,DBIT v][,VC(ppss,gghh)]!**

[I.36021]

**ADD:FRM xy,SEQ ww:NPC {[s]abc-[t]def|[s]abc[, [s]ghi]... \**  
**[, [t]def]}!**

[I.36021]

**ADD:FRM xy,SEQ ww:NPC {uvmnp-wxkqr|uvmnp[,edfgh]... \**  
**[,wxkqr]}!**

[I.36103]

**ADD:FRM xy,SEQ ww:{USER <user id>|LINK j[mm][,INCL]|ALL}\**  
**[,LANG {M|P|F}][,NPCAD {E|X|H}][,LEV(a,b,c,d,e,f)]\**  
**[, {RMON|RMOFF}][,RLK {A|I}][, {CONVON|CONVOFF}][,INIT]!**

[I.36101]  
ADD:FRM xy,SEQ ww:USER <user id>[,NEW][,PASSWD <user password>]!

[I.36101]  
ADD:FRM xy,SEQ ww:USER <user id>[,NEW]!

[I.35301]  
ALWSW:FRM xy,SEQ ww:UNIT [q]q,MMFG c[-d],[TOPRTN|TOSRVC]!

[I.19041]  
APPEND[:FRM xy,SEQ ww:{<line number>|END}]!

[I.81001]  
AUD:FRM xy,SEQ ww:QRY,{CFA|CGA|LOS}!

[I.81001]  
AUD:[FRM xy,SEQ ww]:QRY,{CFA|CGA|LOS}!

[I.81001]  
AUD:[FRM xy,SEQ ww]:QRY,{CFA|CGA|LOS}!

[I.13002]  
BCON:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\  
[,<tc>][,<sc>][,{NTR|LPD|CONV}][,NAM][,{CUS|INCL}][,RDC]!

[I.13002]  
BCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,<tc>][,<sc>][,{NTR|LPD|CONV}][,NAM][,{CUS|INCL}][,RDC]!

[I.13021]  
BCON:FRM xy,SEQ ww:FROM [s]abc,TO [t]def[,RDC][,{CUS|INCL}]\  
[,,{NTR|LPD|CONV}]!

[I.13021]  
BCON:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}]\  
[,,{NTR|LPD|CONV}]!

[I.13051]  
BCON:FRM xy,SEQ ww:FROM [s]abc000,\  
TOX ([t]ghijjj[, [t]klmnn,...])!

[I.13051]  
BCON:FRM xy,SEQ ww:FROM uvmnp000,\  
TOX (wxkqrjjj [,edhfgnn,...])!

[I.13001]

**BCON:FRM xy,SEQ ww:FROM [s]abcddd[-eee],\  
TOX ([t]ghijjj[, [t]klmnnn,...])[,<tc>][,<sc>]\**  
**[,{NTR|LPD|CONV}][,NAM][,{CUS|INCL}][,RDC]!**

[I.13001]

**BCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],\  
TOX (wxkqrjjj [,edhfgnnn,...])[,<tc>][,<sc>]\**  
**[,{NTR|LPD|CONV}][,NAM][,{CUS|INCL}][,RDC]!**

[I.13011]

**BCON:FRM xy,SEQ ww:FROM [s]abc,TOX ([t]def[, [u]ghi]\**  
**[,[v]jkl][...])[,RDC][,{CUS|INCL}][,{NTR|LPD|CONV}]!**

[I.13011]

**BCON:FRM xy,SEQ ww:FROM uvmnp,TOX (wxkqr[,edfhg]\**  
**[,stmno][,...])[,RDC][,{CUS|INCL}][,{NTR|LPD|CONV}]!**

[I.15201]

**BDIS:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\**  
**[,CONV][,OOS][,DCC][,INCL]!**

[I.15201]

**BDIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\**  
**[,CONV][,OOS][,DCC][,INCL]!**

[I.15231]

**BDIS:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,OOS][,INCL][,CONV]!**

[I.15231]

**BDIS:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,OOS][,INCL][,CONV]!**

[I.15211]

**BDIS:FRM xy,SEQ ww:FROM [s]abcddd[-eee],\  
TOX ([t]ghijjj[, [u]klmnnn . . .])[,CONV][,OOS][,DCC][,INCL]!**

[I.15211]

**BDIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],\  
TOX (wxkqrjjj[,edhfgnnn, . . .])[,CONV][,OOS][,DCC][,INCL]!**

[I.15221]

**BDIS:FRM xy,SEQ ww:FROM [s]abc,\  
TOX ([t]ghi[, [u]jkl][, [v]mno][...])[,OOS][,INCL][,CONV]!**

[I.15221]

**BDIS:FRM xy,SEQ ww:FROM uvmnp,\  
TOX (wxkqr[,edhfg][,opqrs][...])[,OOS][,INCL][,CONV]!**

[I.35021]

**CFR:FRM xy,SEQ ww:FRAME!**

[I.35011]

**CFR:FRM xy,SEQ ww:SYNC a,FPLL!**

[I.35013]

**CFR:FRM xy,SEQ ww:SYNC,{MASTER|SLAVED}!**

[I.35012]

**CFR:FRM xy,SEQ ww:SYNC,STRATUM {STR2|STR3|TOLL|LOCAL}!**

[I.35001]

**CFR:FRM xy,SEQ ww:XC s[,INCL]!**

[I.38355]

**CHG:[FRM xy,SEQ ww]:ALMS,{ON|OFF}!**

[I.38333]

**CHG:FRM xy,SEQ ww:BC X'abcd, TO [s]abcddd[-eee]!**

[I.38333]

**CHG:FRM xy,SEQ ww:BC X'abcd, TO uvmnpddd[-eee]!**

[I.38335]

**CHG:FRM xy,SEQ ww:BCOFF,TO [s]abcddd[-eee]!**

[I.38335]

**CHG:FRM xy,SEQ ww:BCOFF,TO uvmnpddd[-eee]!**

[I.38331]

**CHG:FRM xy,SEQ ww:DD(m,w),TO [s]abcddd[-eee]!**

[I.38331]

**CHG:FRM xy,SEQ ww:DD(m,w),TO uvmnpddd[-eee]!**

[I.38631]

**CHG:FRM xy,SEQ ww:ERB ee,TYPE mn!**

[I.38375]

**CHG:[FRM xy,SEQ ww]:FALMS,TYPE mn[xyz],fal m,{PMACR|PMAMJ|DMAMN|MI|RESET}!**

[I.17011]

**CHG:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,NOT [u]rst],\  
{TLA|TLR} {F|T|B|A}[,INCL]!**

[I.17011]

**CHG:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,NOT edhfg],\  
{TLA|TLR} {F|T|B|A}[,INCL]!**

[I.17001]

**CHG:[FRM xy,SEQ ww]:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\  
[,NOT [u]rstvvv},{TLA|TLR} {F|T|B|L|G|A}[,INCL]!**

[I.17001]

**CHG:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,NOT edhfgvvv},{TLA|TLR} {F|T|B|L|G|A}[,INCL]!**

[I.17002]

**CHG:FRM xy,SEQ ww:FROM [s]abcddd,TO [t]ghijjj[,TLP(snn,smm)]\  
[,NG nn][,ES ee][,INCL]!**

[I.17002]

**CHG:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj\  
[,TLP(snn,smm)][,NG nn][,ES ee][,INCL]!**

[I.38451]

**CHG:[FRM xy,SEQ ww]:INTV,{ON|OFF}!**

[I.38501]

**CHG:FRM xy,SEQ ww:{MACRO|MAP},SPACE sss!**

[I.38461]

**CHG:[FRM xy,SEQ ww]:{NPC {[s]abc[-[t]def]|ALL}|TLI|SYNC|CCN|ALL},LEV r!**

[I.38461]

**CHG:[FRM xy,SEQ ww]:{NPC {uvmnp[-uvkqr]|ALL}|TLI|SYNC|CCN|ALL},LEV r!**

[I.38281]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]ghi],ALMOPT,\  
AIS {MI|PMA|PMC|DMA}!**

[I.38281]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-wxkqr],ALMOPT,\  
AIS {MI|PMA|PMC|DMA}!**

[I.38001]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],CBTIMER [t]v!**

[I.38001]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],CBTIMER [t]v!**



[I.38341]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],LPBK [d]t!**

[I.38341]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-wxkqr],LPBK [d]t!**

[I.38324]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],NFS abcdefghi!**

[I.38324]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],NFS abcdefghi!**

[I.38221]

**CHG:FRM xy,SEQ ww:NPC [s]abc,{OPTS(rr/<m>[,rr/<m>][...])|\  
THMODE hhh}!**

[I.38221]

**CHG:FRM xy,SEQ ww:NPC uvmnp,{OPTS(rr/<m>[,rr/<m>][...])|\  
THMODE hhh}!**

[I.38321]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TS0 abcdefgh!**

[I.38321]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],TS0 abcdefgh!**

[I.38323]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TS0M abcdefgh!**

[I.38323]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-wxkqr],TS0M abcdefgh!**

[I.38211]

**CHG:FRM xy,SEQ ww:NPC [s]abc,TYPE mnxyz[,IW X'pq[r]]!**

[I.38211]

**CHG:FRM xy,SEQ ww:NPC uvmnp,TYPE mnxyz[,IW X'pq[r]]!**

[I.38271]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TYPE mnxyz[,IW X'pq[,INCL]]!**

[I.38271]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],TYPE mnxyz[,IW X'pq[,INCL]]!**

[I.38301]

**CHG:FRM xy,SEQ ww:PASSWD[,OLD <old password>, \**  
**NEW <new password>]!**

[I.38301]

**CHG:FRM xy,SEQ ww:PASSWD!**  
    **OLD PASSWD:** (user enters the old password)  
    **NEW PASSWD:** (user enters the new password)  
    **PASSWD:** (user re-enters the new password for verification)

[I.38365]

**CHG:[FRM xy,SEQ ww]:SALMS,salm,{PMACR|PMAMJ|DMAMN|MI|RESET}!**

[I.38201]

**CHG:FRM xy,SEQ ww:SETOP rr,{TYPE mn|ALL},NPCOP(set1,set2,set3)!**

[I.18001]

**CHG:FRM xy,SEQ ww:SWCH,TOX([s]abcd[ , [t]ghijj], \**  
**[u]klmnn, ...)] [, INCL]!**

[I.18001]

**CHG:FRM xy,SEQ ww:SWCH,TOX(uvmnpddd[,wxkqrjjj,edhfgnnn, ...)] \**  
**[ , INCL]!**

[I.18011]

**CHG:FRM xy,SEQ ww:SWCH,TOX([s]ghi[, [t]jkl][ , [v]mno][ ...]) \**  
**[ , INCL]!**

[I.18011]

**CHG:FRM xy,SEQ ww:SWCH,TOX(uvmnp[,wxkqr][ , edhfg][ ...]) \**  
**[ , INCL]!**

[I.38011]

**CHG:FRM xy,SEQ ww:SYNC,TLI m,SSP b,{TYPE texyz|NPC [0]abc}!**

[I.38011]

**CHG:FRM xy,SEQ ww:SYNC,TLI m,SSP b,{TYPE texyz|NPC uvmnp}!**

[I.38011]

**CHG:FRM xy,SEQ ww:SYNC, \**  
**TLI, SRC(i/(a,b)[ , j/(c,d)[ , k/(e,f)[ , l/(g,h)]])!]**

[I.38231]

**CHG:FRM xy,SEQ ww:TYPE mnxyz,{OPTS(rr/<m>[,rr/<m>][ ...])|THMODE hhh}!**

[I.38291]

**CHG:FRM xy,SEQ ww:TYPE mn,THMODE hhh!**

[I.38101]  
**CHG:FRM xy,SEQ ww:UNIT q,CONN(a[,b[,c[,d[,e[,f]]]]))!**

[I.38401]  
**CHG:FRM xy,SEQ ww:{USER <user id>|LINK j[mm][,INCL]}\  
[,SCR n[,GR(a,b,c,d,e,f)]][,{MCON|MCOFF}][,INIT]!**

[I.31521]  
**COPY:FRM xy,SEQ ww:NPC [s]abc,TO [t]def[-[u]ghi]!**

[I.31521]  
**COPY:FRM xy,SEQ ww:NPC uvmnp,TO wxkqr[-ghikl]!**

[I.20101]  
**CTST:FRM xy,SEQ ww:<tmode>,FAD ([s]abc[, [t]def)][,AIS][,INCL]!**

[I.20101]  
**CTST:FRM xy,SEQ ww:<tmode>,FAD (uvmnp[,wxkqr)][,AIS][,INCL]!**

[I.20111]  
**CTST:FRM xy,SEQ ww:FAD ([s]abc[, [t]def])\  
{[,EMODE <emode>][,FMODE <fmode>]}[,INCL];**

[I.20111]  
**CTST:FRM xy,SEQ ww:FAD (uvmnp[,wxkqr])\  
{[,EMODE <emode>][,FMODE <fmode>]}[,INCL];**

[I.20001]  
**CTST:FRM xy,SEQ ww:<tmode>,FAD ([s]abc[, [t]def]),FROM [u]ghi\  
[,TO [v]jkl][,AIS][,INCL]!**

[I.20001]  
**CTST:FRM xy,SEQ ww:<tmode>,FAD (uvmnp[,wxkqr]),FROM eghij\  
[,TO jklmn][,AIS][,INCL]!**

[I.20031]  
**CTST:FRM xy,SEQ ww:HUB,FAD [s]abc,TO [t]jkl[,INCL]!**

[I.20031]  
**CTST:FRM xy,SEQ ww:HUB,FAD uvmnp,TO wxkqr[,INCL]!**

[I.20301]  
**CTST:FRM xy,SEQ ww:LPBKT,FAD [s]abc[,INCL]!**

[I.20301]  
**CTST:FRM xy,SEQ ww:LPBKT,FAD uvmnp[,INCL]!**

[I.20202]

**CTST:FRM xy,SEQ ww:TNR,ALL[,00S]!**

[I.20201]

**CTST:FRM xy,SEQ ww:TNR,FAD [s]abc[,00S]!**

**CTST:FRM xy,SEQ ww:TNR,FAD ([s]abc[, [t]def))[,00S]!**

[I.20201]

**CTST:FRM xy,SEQ ww:TNR,FAD uvmnp[,00S]!**

**CTST:FRM xy,SEQ ww:TNR,FAD (uvmnp[,wxkqr))[,00S]!**

[I.15061]

**DDIS:[FRM xy,SEQ ww]:FROM [s]abcddd[-eee],TO [v]ghijjj[-kkk]!**

[I.15061]

**DDIS:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]!**

[I.19051]

**DELETE[:FRM xy,SEQ ww:{<starting line>|END}[-{<ending line>\|END}]]!**

[I.41211]

**DGN:FRM xy,SEQ ww:CCB sf[,CFT X'vwxy]!**

[I.41251]

**DGN:FRM xy,SEQ ww:CCI s[,CFT X'vwxy]!**

[I.41201]

**DGN:FRM xy,SEQ ww:CCNI s[,CFT X'vwxy]!**

[I.41031]

**DGN:FRM xy,SEQ ww:CI[,CFT X'vwxy]!**

[I.41261]

**DGN:FRM xy,SEQ ww:ETSI sqq[,CFT X'vwxy]!**

[I.41271]

**DGN:FRM xy,SEQ ww:ETSI S,ECCN s,ALL!**

[I.41011]

**DGN:FRM xy,SEQ ww:LINK a[,CFT X'vwxy]!**

[I.41001]

DGN:FRM xy,SEQ ww:MC[,CFT X'vwxy]!

[I.41021]

DGN:FRM xy,SEQ ww:MP[,CFT X'vwxy]!

[I.41361]

DGN:[FRM xy,SEQ ww]:NPC [s]abc-[t]def!

[I.41361]

DGN:[FRM xy,SEQ ww]:NPC uvmnp-uvkqr!

[I.41351]

DGN:[FRM xy,SEQ ww]:NPC [s]abc[,SIDE s][,CFT X'vwxy]!

[I.41351]

DGN:[FRM xy,SEQ ww]:NPC uvmnp[,SIDE s][,CFT X'vwxy]!

[I.41051]

DGN:[FRM xy,SEQ ww]:{PMEM|SMEM}[,{CFT X'vwxy|EXCT|DBASE}][,VERIFY]!

[I.41101]

DGN:FRM xy,SEQ ww:SYNC a!

[I.41111]

DGN:FRM xy,SEQ ww:SYNC,TLI 3,CRO!

[I.41121]

DGN:FRM xy,SEQ ww:SYNC a,TLI m[,SSP b]!

[I.41221]

DGN:FRM xy,SEQ ww:TSI sft[,CFT X'vwxy]!

[I.41241]

DGN:FRM xy,SEQ ww:TSIS,CCN s,ALL!

[I.41232]

DGN:FRM xy,SEQ ww:TSIS,CCN s,UNIT q,\  
[,CONN(a[,b[,c[,d[,e[,f]]]]))]]!

[I.41341]

DGN:FRM xy,SEQ ww:UNIT [q]q,DSPI[,CFT X'vwxy]!

[I.41331]

DGN:FRM xy,SEQ ww:UNIT [q]q,FC sb[,CFT X'vwxy]!

[I.41321]  
**DGN:FRM xy,SEQ ww:UNIT [q]q,FTMI d[,CFT X'vwxy]!**

[I.41311]  
**DGN:FRM xy,SEQ ww:UNIT [q]q,UC[,CFT X'vwxy]!**

[I.32341]  
**DGRTH:FRM xy,SEQ ww:NPC [s]abc[-[t]def]!**

[I.32341]  
**DGRTH:FRM xy,SEQ ww:NPC uvmnp[-uvkqr]!**

[I.32401]  
**DGRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTG rrr[,TGR]!**

[I.32401]  
**DGRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTG rrr[,TGR]!**

[I.32381]  
**DGRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTP n[,TPR]!**

[I.32381]  
**DGRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTP n[,TPR]!**

[I.32101]  
**DGRTH:FRM xy,SEQ ww:SYNC,TB!**

[I.32121]  
**DGRTH:FRM xy,SEQ ww:SYNC,TLI m[,SSP a]!**

[I.32421]  
**DGRTH:FRM xy,SEQ ww:TG mmm[-nnn]!**

[I.32411]  
**DGRTH:FRM xy,SEQ ww:TP kk!**

[I.32211]  
**DGRTH:FRM xy,SEQ ww:UNIT [q]q!**

[I.32321]  
**DGRTH:FRM xy,SEQ ww:UNIT [q]q,FTMI d!**

[I.32501]  
**DGRTH:FRM xy,SEQ ww:UNIT [q]q,MXR c[-d]!**

[I.37301]  
**DLT:FRM xy,SEQ ww:FPKG nnnnnnnn!**

[I.37201]

**DLT:FRM xy,SEQ ww:{MACRO <macro name>|MAP <map name>}\**  
**[,USER <user id>]!**

[I.37001]

**DLT:FRM xy,SEQ ww:NPC {[s]abc-[t]def|[s]abc[, [s]ghi]...\  
[, [t]def]}!**

[I.37001]

**DLT:FRM xy,SEQ ww:NPC {uvmnp-wxkqr|uvmnp[, abcde]...[, wxkqr]}!**

[I.37101]

**DLT:FRM xy,SEQ ww:USER <user id>!**

[I.14901]

**DSPC:[FRM xy,SEQ ww]:{[s]aaa|[s]aaa-[v]bbb|SDxyz}:<pds\_application command>**

[I.14901]

**DSPC:[FRM xy,SEQ ww]:{uvmnp|uvmnp-wxkqr|SDxyz}:<pds\_application command>**

[I.19031]

**ED:FRM xy,SEQ ww:CRET,MAP <new map name>\**  
**,PIC <reference map name>!**

[I.19001]

**ED:FRM xy,SEQ ww:{MACRO <macro name>|MAP <map name>}!**

[I.39301]

**EXC:FRM xy,SEQ ww:MACRO <macro name>[, (<p1>[, <p2>[, <p3>\**  
**[, ...[, <p10>]]]])]!**

[I.30101]

**GRTH:FRM xy,SEQ ww:FRAME fg[, CHAR m][, UID <uid>]!**

[I.31401]

**GRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTG rrr!**

[I.31401]

**GRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTG rrr!**

[I.31381]

**GRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTP n!**

[I.31381]

**GRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTP n!**

[I.31351]

GRTH:FRM xy,SEQ ww:NPC [s]abc,TYPE mnxyz[,CBTIMER [t]v]!

[I.31351]

GRTH:FRM xy,SEQ ww:NPC uvmnp,TYPE mnxyz[,CBTIMER [t]v]!

[I.31363]

GRTH:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TYPE mnxyz[,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|DMA|PMC}][,LEV g]!

[I.31363]

GRTH:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],TYPE mnxyz[,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|DMA|PMC}][,LEV g]!

[I.31362]

GRTH:FRM xy,SEQ ww:NPC [s]abc[-[t]def]\  
[,TYPE mnxyz][,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|PMC|DMA}][,LEV g]!

[I.31362]

GRTH:FRM xy,SEQ ww:NPC uvmnp[-uvkqr]\  
[,TYPE mnxyz][,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|PMC|DMA}][,LEV g]!

[I.31101]

GRTH:FRM xy,SEQ ww:SYNC,TB,TYPE TBpqr!

[I.31111]

GRTH:FRM xy,SEQ ww:SYNC,TLI 3,TYPE TBpqr!

[I.31121]

GRTH:FRM xy,SEQ ww:SYNC,TLI m,\  
{TYPE texyz,SSP a,SRC p[,NPC [0]abc]|TYPE TDxyz}!

[I.31121]

GRTH:FRM xy,SEQ ww:SYNC,TLI m,\  
{TYPE texyz,SSP a,SRC p[,NPC uvmnp]|TYPE TDxyz}!

[I.31421]

GRTH:FRM xy,SEQ ww:TG mmm,NPCTG (rrr,eee[-fff];sss,www[-xxx])\  
[,<tc>]!

[I.31411]

GRTH:FRM xy,SEQ ww:TP kk[,<tc>]!

[I.31321]

GRTH:FRM xy,SEQ ww:UNIT [q]q,FTMI d,IMP <imp>!



[I.31511]  
GRTH:FRM xy,SEQ ww:UNIT [q]q,MXR c[-d]\  
[,TYPE mnxyz][,BERM s][,BERT t][,LBO <b>]!

[I.31211]  
GRTH:FRM xy,SEQ ww:UNIT q[,TYPE utxyz]\  
[,CONN(a[,b[,c[,d[,e [,f]]]]))]]]!

[I.31211]  
GRTH:FRM xy,SEQ ww:UNIT [q]q[,TYPE utxyz]!

[I.35311]  
INHSW:FRM xy,SEQ ww:UNIT [q]q,MMFG c[-d],[TOPRTN|TOSRVC]!

[I.55721]  
INSTALL;

[I.19071]  
LINE[:FRM xy,SEQ ww:]!

[I.19061]  
LIST[:FRM xy,SEQ ww:{<starting line>|END}[-{<ending line>|\  
END}]]]!

[I.39001]  
LOGIN:FRM xy,SEQ ww:USER <user id>[,PASSWD <user password>]!

[I.39001]  
LOGIN:FRM xy,SEQ ww:USER <user id>!  
PASSWD: <user enters the user password>

[I.39101]  
LOGOFF:FRM xy,SEQ ww:{USER <user id>|LINK j[mm][,INCL]}!

[I.19091]  
MOVE:FRM xy,SEQ ww:FROM {<starting line>|END}\  
[-{<ending line>|END}],TO {<destination line>|END}!

[I.12121]  
OCNT:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,{CUS|INCL}][,RDC]!

[I.12121]  
OCNT:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,{INCL|CUS}][,RDC]!

[I.12101]

OCNT:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\  
[,<tc>][,<sc>][,NAM][,RDC][,{CUS|INCL}][,PRIOUT]!

[I.12101]

OCNT:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,<tc>][,<sc>][,NAM][,RDC][,{CUS|INCL}][,PRIOUT]!

[I.12131]

OCNT:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC]\  
[,,{CUS|INCL}][,PRIOUT]!

[I.12131]

OCNT:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC]\  
[,,{CUS|INCL}][,PRIOUT]!

[I.11121]

OCON:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk],\  
MPM(fmd,tmd),<tc>[,,{CUS|INCL}][,RDC]!

[I.11121]

OCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,{INCL|CUS}][,RDC]!

[I.11101]

OCON:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\  
[,<tc>][,<sc>][,NAM][,RDC][,{CUS|INCL}][,PRIOUT]!

[I.11101]

OCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,<tc>][,<sc>][,NAM][,RDC][,{CUS|INCL}][,PRIOUT]!

[I.11131]

OCON:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.11131]

OCON:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.15102]

ODIS:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\  
[,INCL][,OOS][,DCC]!

[I.15102]

ODIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,INCL][,OOS][,DCC]!

[I.15101]

**ODIS:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\**  
**[,INCL][,OOS][,DCC][,PRIOUT]!**

[I.15101]

**ODIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\**  
**[,INCL][,OOS][,DCC][,PRIOUT]!**

[I.15111]

**ODIS:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,OOS][,INCL][,PRIOUT]!**

[I.15111]

**ODIS:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,OOS][,INCL][,PRIOUT]!**

[I.33202]

**RMV:FRM xy,SEQ ww:CCB sf!**

[I.33251]

**RMV:FRM xy,SEQ ww:CCI s!**

[I.33201]

**RMV:FRM xy,SEQ ww:CCNI s!**

[I.33261]

**RMV:FRM xy,SEQ ww:ETSI sqq!**

[I.33271]

**RMV:FRM xy,SEQ ww:ETISIS,ECCN s,ALL!**

[I.33011]

**RMV:FRM xy,SEQ ww:LINK j!**

[I.33001]

**RMV:FRM xy,SEQ ww:MC!**

[I.33351]

**RMV:[FRM xy,SEQ ww]:NPC [s]abc[-[t]def][,SIDE s][,INCL]!**

[I.33351]

**RMV:[FRM xy,SEQ ww]:NPC uvmnp[-uvkqr][,SIDE s][,INCL]!**

[I.33211]

**RMV:FRM xy,SEQ ww:{SMEM|PMEM}!**

[I.33101]

**RMV:FRM xy,SEQ ww:SYNC a!**

[I.33111]

**RMV:FRM xy,SEQ ww:SYNC,TLI 3,CRO!**

[I.33121]

**RMV:FRM xy,SEQ ww:SYNC a,TLI m[,SSP b]!**

[I.33221]

**RMV:FRM xy,SEQ ww:TSI sft!**

[I.33241]

**RMV:FRM xy,SEQ ww:TSIS,CCN s,ALL!**

[I.33231]

**RMV:FRM xy,SEQ ww:TSIS,CCN s,UNIT q\  
[,CONN(a[,b[,c[,d[,e[,f]]]]))]]!**

[I.33331]

**RMV:FRM xy,SEQ ww:UNIT [q]q,FC sb!**

[I.33401]

**RMV:FRM xy,SEQ ww:UNIT [q]q,FLI k!**

[I.33411]

**RMV:FRM xy,SEQ ww:UNIT [q]q,FMT s!**

[I.33321]

**RMV:FRM xy,SEQ ww:UNIT [q]q,{FTMI d|DSPI}!**

[I.33421]

**RMV:FRM xy,SEQ ww:UNIT [q]q,MMFG c[-d][,FRC[,INCL]]!**

[I.33311]

**RMV:FRM xy,SEQ ww:UNIT [q]q,UC!**

[I.34202]

**RST:FRM xy,SEQ ww:CCB sf!**

[I.34251]

**RST:FRM xy,SEQ ww:CCI s!**

[I.34201]

**RST:FRM xy,SEQ ww:CCNI s!**

[I.34261]

**RST:FRM xy,SEQ ww:ETSI sqq!**

[I.34271]  
RST:FRM xy,SEQ ww:ETISIS,ECCN s,ALL!

[I.34011]  
RST:FRM xy,SEQ ww:LINK j!

[I.34001]  
RST:FRM xy,SEQ ww:MC[, {MCOND|NOJRN|FRC}]!

[I.34001]  
RST:FRM xy,SEQ ww:MC,CLR[,ALL]!

[I.34361]  
RST:FRM xy,SEQ ww:NPC [s]abc,MON!

[I.34361]  
RST:FRM xy,SEQ ww:NPC uvmnp,MON!

[I.34351]  
RST:[FRM xy,SEQ ww]:NPC [s]abc[-[t]def][,SIDE s]!

[I.34351]  
RST:[FRM xy,SEQ ww]:NPC uvmnp[-uvkqr][,SIDE s]!

[I.34371]  
RST:FRM xy,SEQ ww:NPC [s]abc,TSØM!

[I.34371]  
RST:FRM xy,SEQ ww:NPC uvmnp,TSØM!

[I.34211]  
RST:FRM xy,SEQ ww:{PMEM|SMEM[{,CLR|[,FRC][,BKGRND]}}]!

[I.34101]  
RST:FRM xy,SEQ ww:SYNC a!

[I.34111]  
RST:FRM xy,SEQ ww:SYNC,TLI 3,CRO!

[I.34121]  
RST:FRM xy,SEQ ww:SYNC a,TLI m[,SSP b]!

[I.34221]  
RST:FRM xy,SEQ ww:TSI sft!

[I.34241]

RST:FRM xy,SEQ ww:TSIS,CCN s,ALL!

[I.34231]

RST:FRM xy,SEQ ww:TSIS,CCN s,UNIT q \  
[,CONN(a[,b[,c[,d[,e[,f]]]]))]]!

[I.34331]

RST:FRM xy,SEQ ww:UNIT [q]q,FC sb!

[I.34401]

RST:FRM xy,SEQ ww:UNIT [q]q,FLI k!

[I.34411]

RST:FRM xy,SEQ ww:UNIT [q]q,FMT s!

[I.34321]

RST:FRM xy,SEQ ww:UNIT [q]q,{FTMI d|DSPI}!

[I.34311]

RST:FRM xy,SEQ ww:UNIT [q]q,UC!

[I.19081]

SAVE[:FRM xy,SEQ ww:]!

[I.39311]

STOP:FRM xy,SEQ ww:MACRO[,LINK l[mm]]!

[I.14021]

SW:FRM xy,SEQ ww:BCAST,OLD [s]abcddd[-eee],NEW [t]ghijjj\  
[-kkk][,INCL]

[I.14021]

SW:FRM xy,SEQ ww:BCAST,OLD uvmnpddd[-eee],NEW wxkqrjjj\  
[-kkk][,INCL]

[I.14061]

SW:FRM xy,SEQ ww:BCAST,OLD [s]abc,NEW [t]ghi[,INCL]

[I.14061]

SW:FRM xy,SEQ ww:BCAST,OLD uvmnp,NEW wxkqr[,INCL]

[I.14041]

SW:FRM xy,SEQ ww:DISC [s]abcddd[-eee][,OOS]

[I.14081]  
SW:FRM xy,SEQ ww:DISC [s]abc[,00S]

[I.14081]  
SW:FRM xy,SEQ ww:DISC uvmnp[,00S]

[I.14031]  
SW:FRM xy,SEQ ww:ROLL,OLD [s]abcddd[-eee],NEW [t]ghijjj[-kkk]\  
[,INCL][,FRC][,00S]

[I.14031]  
SW:FRM xy,SEQ ww:ROLL,OLD uvmnpddd[-eee],NEW wxkqrjjj[-kkk]\  
[,INCL][,FRC][,00S]

[I.14071]  
SW:FRM xy,SEQ ww:ROLL,OLD [s]abc,NEW [t]ghi[,INCL][,FRC]\  
[,00S][,TWAY]

[I.14071]  
SW:FRM xy,SEQ ww:ROLL,OLD uvmnp,NEW wxkqr[,INCL][,FRC]\  
[,00S][,TWAY]

[I.35101]  
SW:FRM xy,SEQ ww:UNIT [q]q,FLI,TOPTN!

[I.35105]  
SW:FRM xy,SEQ ww:UNIT [q]q,FLI,TOSRVC!

[I.35111]  
SW:FRM xy,SEQ ww:UNIT [q]q,MMFG c,TOPTN[,FRC]!

[I.35121]  
SW:FRM xy,SEQ ww:UNIT [q]q,MMFG c,TOSRVC!

[I.12021]  
TCNT:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,NTR m][,RDC][,{CUS|INCL}]!

[I.12021]  
TCNT:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,NTR m][,RDC][,{CUS|INCL}]!

[I.12001]  
TCNT:[FRM xy,SEQ ww]:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\  
[,<tc>][,<sc>][,NAM][,{CUS|INCL}][,RDC][,PRIOUT]!

[I.12001]

TCNT:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,<tc>][,<sc>][ NAM][,{CUS|INCL}][,RDC][,PRIOUT]!

[I.12051]

TCNT:FRM xy,SEQ ww:FROM [s]abcdddd,TO [t]ghijjj\  
[, {PFW(abcdefg,ijklmno)|NFW}]!

[I.12051]

TCNT:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj\  
[, {PFW(abcdefg,ijklmno)|NFW}]!

[I.12031]

TCNT:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.12031]

TCNT:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.11041]

TCON:FRM xy,SEQ ww:FROM [s]abc,CB[,CUS][,RDC][,INCL]!

[I.11041]

TCON:FRM xy,SEQ ww:FROM uvmnp,CB[,CUS][,RDC][,INCL]!

[I.11021]

TCON:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM],[NTR m][,RDC][,{CUS|INCL}]!

[I.11021]

TCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM],[NTR m][,RDC][,{CUS|INCL}]!

[I.11001]

TCON:[FRM xy,SEQ ww]:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\  
[,<tc>][,<sc>][,NAM][,{CUS|INCL}][,RDC][,PRIOUT]!

[I.11001]

TCON:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,<tc>][,<sc>][,NAM][,{CUS|INCL}][,RDC][,PRIOUT]!

[I.11051]

TCON:FRM xy,SEQ ww:FROM [s]abcdddd,TO [t]ghijjj\  
[, {PFW(abcdefg,ijklmno)|NFW}]!

[I.11051]

TCON:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj\  
[, {PFW(abcdefg,ijklmno)|NFW}]!



[I.11011]  
TCON:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.11011]  
TCON:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.15004]  
TDIS:FRM xy,SEQ ww:FROM [s]abc,CB[,INCL][,OOS]!

[I.15004]  
TDIS:FRM xy,SEQ ww:FROM uvmnp,CB[,INCL][,OOS]!

[I.15002]  
TDIS:FRM xy,SEQ ww:FROM [s]abcddd,TO [t]ghijjj[,INCL][,OOS]\  
[,DCC]!

[I.15002]  
TDIS:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj[,INCL][,OOS]\  
[,DCC]!

[I.15001]  
TDIS:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\  
[,INCL][,OOS][,DCC][,PRIOUT]!

[I.15001]  
TDIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,INCL][,OOS][,DCC][,PRIOUT]!

[I.15011]  
TDIS:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,OOS][,INCL][,PRIOUT]!

[I.15011]  
TDIS:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,OOS][,INCL][,PRIOUT]!

[I.24021]  
TTST:FRM xy,SEQ ww:HUB,TO ([s]abcddd,[t]ghijjj),TG mmm[,<tc>]!

[I.24021]  
TTST:FRM xy,SEQ ww:HUB,TO (uvmnpddd,wxkqrjjj),TG mmm[,<tc>]!

[I.24001]  
TTST:FRM xy,SEQ ww:HUB,TO [t]ghijjj,TP kk[,<tc>][,NAM]!

[I.24001]  
TTST:FRM xy,SEQ ww:HUB,TO uvmnpjjj,TP kk[,<tc>][,NAM]!

[I.29021]

TTST:FRM xy,SEQ ww:LPD,TG mmm[,<tc>]!

[I.29001]

TTST:FRM xy,SEQ ww:LPD,TP kk,<tc>!

[I.21031]

TTST:FRM xy,SEQ ww:MON,TG mmm!

[I.21001]

TTST:FRM xy,SEQ ww:MON[,TO [t]ghijjj][,<tc>][,NAM],TP kk!

[I.21001]

TTST:FRM xy,SEQ ww:MON[,TO uvmnpjjj][,<tc>][,NAM],TP kk!

[I.21021]

TTST:FRM xy,SEQ ww:MON,TO [t]ghi(jjj[-kkk][,lll,...])[,<tc>],\  
TG mmm!

[I.21021]

TTST:FRM xy,SEQ ww:MON,TO wxkqr(jjj[-kkk][,lll,...])[,<tc>],\  
TG mmm!

[I.23021]

TTST:FRM xy,SEQ ww:SPL,TG mmm!

[I.23001]

TTST:FRM xy,SEQ ww:SPL,TP kk!

[I.27021]

TTST:FRM xy,SEQ ww:TGR,TG mmm[-nnn][,00S]!

[I.25101]

TTST:FRM xy,SEQ ww:TLA m[,NOT [t]rstvvv],TP kk!

[I.25101]

TTST:FRM xy,SEQ ww:TLA m[,NOT uvmnpvvv],TP kk!

[I.25121]

TTST:FRM xy,SEQ ww:TLA m,TG mmm!

[I.25501]

TTST:FRM xy,SEQ ww:TLR m[,NOT [t]rstvvv],TP kk!

[I.25501]

TTST:FRM xy,SEQ ww:TLR m[,NOT uvmnpvvv],TP kk!

[I.25521]

**TTST:FRM xy,SEQ ww:TLR m,TG mmm!**

[I.27002]

**TTST:FRM xy,SEQ ww:TPR,ALL[,00S]!**

[I.27001]

**TTST:FRM xy,SEQ ww:TPR,TP kk[,00S][,FRC]!**

[I.51111]

**UTL:FRM xy,SEQ ww:ACO!**

[I.55701]

**UTL:FRM xy,SEQ ww:BMTR,FROM <from>,TO <to>[, {EXCT|INCL|UPGRD}]]!**

[I.58001]

**UTL:FRM xy,SEQ ww:BOOT,FRAME[,CLR]!**

[I.56011]

**UTL:FRM xy,SEQ ww:CLR,<parameter>,ALL!**

[I.56061]

**UTL:FRM xy,SEQ ww:CLR,ERR,{HWER|SWER}!**

[I.56001]

**UTL:FRM xy,SEQ ww:CLR,<parameter>,NPC [s]abc[-[t]def]!**

[I.56001]

**UTL:FRM xy,SEQ ww:CLR,<parameter>,NPC uvmnp[-wxkqr]!**

[I.56071]

**UTL:FRM xy,SEQ ww:CLR,{NPC [s]abc[-[t]def]|ALL},<parameter>,AI aaaaa \[,MONDAT dddd][,MONTIM tttt]!**

[I.56071]

**UTL:FRM xy,SEQ ww:CLR,{NPC uvmnp[-wxkqr]|ALL},<parameter>,AI aaaaa \[,MONDAT dddd][,MONTIM tttt]!**

[I.56051]

**UTL:FRM xy,SEQ ww:CLR,NPC [s]abc,PARAMS!**

[I.56051]

**UTL:FRM xy,SEQ ww:CLR,NPC uvmnp,PARAMS!**

[I.56052]

**UTL:FRM xy,SEQ ww:CLR,PWR pp!**

[I.51021]

UTL:FRM xy,SEQ ww:DATE <new-date>[,FORMAT ggg][,INT ii]!

[I.51101]

UTL:FRM xy,SEQ ww:INIT,ALM a!

[I.56401]

UTL:FRM xy,SEQ ww:LOC,<entity>!

[I.56031]

UTL:FRM xy,SEQ ww:QRY,<parameter>,ALL!

[I.53104]

UTL:FRM xy,SEQ ww:QRY,ALL,COMMON!

[I.53101]

UTL:FRM xy,SEQ ww:QRY,ALL[,UNIT [q]q]!

[I.53351]

UTL:[FRM xy,SEQ ww]:QRY,ALM,INTV!

[I.56021]

UTL:FRM xy,SEQ ww:QRY,ALMOPT,NPC [s]abc[-[v]ghi],AIS!

[I.56021]

UTL:FRM xy,SEQ ww:QRY,ALMOPT,NPC uvmnp[-wxkqr],AIS!

[I.53111]

UTL:FRM xy,SEQ ww:QRY,ALMS!

[I.53151]

UTL:FRM xy,SEQ ww:QRY,ALMS,DBASE!

[I.51201]

UTL:[FRM xy,SEQ ww]:QRY,APPL,{NPC [s]abc|ALL}!

[I.51201]

UTL:[FRM xy,SEQ ww]:QRY,APPL,{NPC uvmnp|ALL}!

[I.56351]

UTL:FRM xy,SEQ ww:QRY,BC s,{NPC [s]abc[-[t]def]|ALL}!

[I.56351]

UTL:FRM xy,SEQ ww:QRY,BC s,{NPC uvmnp[-wxkqr]|ALL}!

[I.56353]

UTL:FRM xy,SEQ ww:QRY,BC s,TO [s]abcddd!

[I.56353]

**UTL:FRM xy,SEQ ww:QRY,BC s,TO uvmnpddd!**

[I.52101]

**UTL::QRY,BCAST,ALL!**

[I.52111]

**UTL:FRM xy,SEQ ww:QRY,BCAST,FROM [s]abcddd!**

[I.52111]

**UTL:FRM xy,SEQ ww:QRY,BCAST,FROM uvmnpddd!**

[I.52121]

**UTL:FRM xy,SEQ ww:QRY,BCAST,FROM [s]abc!**

[I.52121]

**UTL:FRM xy,SEQ ww:QRY,BCAST,FROM uvmnp!**

[I.52011]

**UTL:[FRM xy,SEQ ww]:QRY,CMAP [s]abc[-[t]def]!**

[I.52011]

**UTL:[FRM xy,SEQ ww]:QRY,CMAP uvmnp[-wxkqr]!**

[I.51091]

**UTL:FRM xy,SEQ ww:QRY,CNFR!**

[I.51031]

**UTL:FRM xy,SEQ ww:QRY,DATE!**

[I.56341]

**UTL:FRM xy,SEQ ww:QRY,DD [s]abcddd[-fff]!**

[I.56341]

**UTL:FRM xy,SEQ ww:QRY,DD uvmnpddd[-fff]!**

[I.56343]

**UTL:FRM xy,SEQ ww:QRY,{DD,NPC [s]abc[-[t]def]|DDCT,ALL}!**

[I.56343]

**UTL:FRM xy,SEQ ww:QRY,{DD,NPC uvmnp[-wxkqr]|DDCT,ALL}!**

[I.52031]

**UTL:[FRM xy,SEQ ww]:QRY,DMAP!**

[I.53221]

**UTL:FRM xy,SEQ ww:QRY,DS3,BERMT[,UNIT [q]q]!**

[I.53231]

**UTL:FRM xy,SEQ ww:QRY,DS3,LB0!**

[I.53109]

**UTL:FRM xy,SEQ ww:QRY,EQD,COMMON!**

[I.53031]

**UTL:FRM xy,SEQ ww:QRY,EQD,CONN!**

[I.53022]

**UTL:FRM xy,SEQ ww:QRY,EQD,ETISIS!**

[I.53211]

**UTL:FRM xy,SEQ ww:QRY,EQD,MXRS!**

[I.53041]

**UTL:FRM xy,SEQ ww:QRY,EQD,NPCS[, {TOTAL|UNIT [q]q}]!**

[I.53021]

**UTL:FRM xy,SEQ ww:QRY,EQD,TSIS!**

[I.53108]

**UTL:FRM xy,SEQ ww:QRY,EQD[,UNIT [q]q]!**

[I.53011]

**UTL:FRM xy,SEQ ww:QRY,EQD,UNITS!**

[I.55011]

**UTL:FRM xy,SEQ ww:QRY,ERR,{{SWER|HWER}[, {INT mn|[DATE moda[ce]yr,] TOD hrmsnc}}\[,TN X'dddd][,EVENT X'eeee][,ERCL{HARD|TRANS|APPINT}][,ENTY <entity>]|ALL}!**

[I.55401]

**UTL:FRM xy,SEQ ww:QRY,ESR,CCN s!**

[I.55411]

**UTL:FRM xy,SEQ ww:QRY,ESR,ECCN s!**

[I.55111]

**UTL:FRM xy,SEQ ww:QRY,ESR,MP!**

[I.55601]

**UTL:FRM xy,SEQ ww:QRY,ESR,NPC [s]abc[,SIDE s]!**

[I.55601]

**UTL:FRM xy,SEQ ww:QRY,ESR,NPC uvmp[,SIDE s]!**

[I.55501]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q!

[I.55531]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,DSPI!

[I.55521]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,FC sb!

[I.55801]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,FLI k!

[I.55511]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,FTMI d!

[I.55821]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,MXR c!

[I.53311]

UTL:[FRM xy,SEQ ww]:QRY,FALMS,TYPE {mn[xyz]|ALL},{<fa!m>|ALL}!

[I.51121]

UTL:FRM xy,SEQ ww:QRY,FPKG!

[I.52051]

UTL:FRM xy,SEQ ww:QRY,FROM [s]abcddd[-eee]!

[I.52051]

UTL:FRM xy,SEQ ww:QRY,FROM uvmnpddd[-eee]!

[I.52071]

UTL:FRM xy,SEQ ww:QRY,FROM [s]abc!

[I.52071]

UTL:FRM xy,SEQ ww:QRY,FROM uvmnp!

[I.53331]

UTL:[FRM xy,SEQ ww]:QRY,INTV,{NPC {[s]abc[-[t]def]|ALL}|TLI m|CCN|SYNC|ALL}!

[I.53331]

UTL:[FRM xy,SEQ ww]:QRY,INTV,{NPC {uvmnp-uvkqr|ALL}|TLI m|CCN|SYNC|ALL}!

[I.54131]

UTL:FRM xy,SEQ ww:QRY,LIST,MACRO <macro name>\  
[,USER <user id>]!

[I.54101]

**UTL:FRM xy,SEQ ww:QRY,LIST,MAP <name>[,USER <user id>]!**

[I.54011]

**UTL:FRM xy,SEQ ww:QRY,LOG[,ALL]!**

[I.53131]

**UTL:FRM xy,SEQ ww:QRY,LPBK,NPC [s]abc[-[t]def]!**

[I.53131]

**UTL:FRM xy,SEQ ww:QRY,LPBK,NPC uvmnp[-wxkqr]!**

[I.54211]

**UTL:FRM xy,SEQ ww:QRY,MACRO,ATTR[, {USER <user id>|ALL}]!**

[I.54221]

**UTL:FRM xy,SEQ ww:QRY,{MACRO|MAP},SPACE[, {USER <user id>|ALL|\SYSTEM}]!**

[I.54121]

**UTL:FRM xy,SEQ ww:QRY,MACRO <name>[,USER <user id>]!**

[I.54201]

**UTL:FRM xy,SEQ ww:QRY,MAP,ATTR[, {ALL|USER <user id>|MAPNM <name>}]!**

[I.52201]

**UTL:FRM xy,SEQ ww:QRY,MARK [s]abc[-[t]def]!**

[I.52201]

**UTL:FRM xy,SEQ ww:QRY,MARK uvmnp[-wxkqr]!**

[I.52211]

**UTL:FRM xy,SEQ ww:QRY,MARK [s]abcjjj[-kkk]!**

[I.52211]

**UTL:FRM xy,SEQ ww:QRY,MARK uvmnpjjj[-kkk]!**

[I.51001]

**UTL:[FRM xy,SEQ ww]:QRY,MEMSTAT!**

[I.56324]

**UTL:FRM xy,SEQ ww:QRY,NFS,NPC [s]abc[-[t]def]!**

[I.56324]

**UTL:FRM xy,SEQ ww:QRY,NFS,NPC uvmnp[-wxkqr]!**



[I.56041]

**UTL:FRM xy,SEQ ww:QRY,<parameter>,NPC [s]abc[-[t]def]!**

[I.56041]

**UTL:FRM xy,SEQ ww:QRY,<parameter>,NPC uvmnp[-wxkqr]!**

[I.56091]

**UTL:FRM xy,SEQ ww:QRY,{NPC [s]abc[-[t]def]|ALL},<parameter>,AI aaaaaa \**  
**[,LV llllllllll][,MONDAT dddd][,MONTIM tttt]!**

[I.56091]

**UTL:FRM xy,SEQ ww:QRY,{NPC uvmnp[-wxkqr]|ALL},<parameter>,AI aaaaaa \**  
**[,LV llllllllll][,MONDAT dddd][,MONTIM tttt]!**

[I.53171]

**UTL:FRM xy,SEQ ww:QRY,NPC [s]abc[-[t]def],CBTIMER!**

[I.53171]

**UTL:FRM xy,SEQ ww:QRY,NPC uvmnp[-uvkqr],CBTIMER!**

[I.54111]

**UTL:FRM xy,SEQ ww:QRY,NPC,MAP <name>[,USER <user id>]!**

[I.53091]

**UTL:FRM xy,SEQ ww:QRY,NPCTG rrr[-sss]!**

[I.53051]

**UTL:FRM xy,SEQ ww:QRY,OPT[, {TYPE mn|ALL}],NPCS!**

[I.53105]

**UTL:FRM xy,SEQ ww:QRY,{PEST|FAIL|OOS},COMMON!**

[I.53103]

**UTL:FRM xy,SEQ ww:QRY,{PEST|FAIL|OOS}[,UNIT [q]q]!**

[I.52081]

**UTL:FRM xy,SEQ ww:QRY,ROLL,DS0,{NPC [s]abc[-[t]def]|ALL[,UNIT [q]q]}!**

[I.52081]

**UTL:FRM xy,SEQ ww:QRY,ROLL,DS0,{NPC uvmnp[-wxkqr]|ALL[,UNIT [q]q]}!**

[I.52091]

**UTL:FRM xy,SEQ ww:QRY,ROLL,DS1,{NPC [s]abc[-[t]def]|ALL[,UNIT [q]q]}!**

[I.52091]

**UTL:FRM xy,SEQ ww:QRY,ROLL,DS1,{NPC uvmnp[-wxkqr]|ALL[,UNIT [q]q]}!**

[I.56326]

UTL: [FRM xy, SEQ ww]: QRY, RPSFI!

[I.53301]

UTL: [FRM xy, SEQ ww]: QRY, SALMS, {sa lm|ALL}!

[I.54001]

UTL: FRM xy, SEQ ww: QRY, SCR, {LINK j[mm[-jnn]]|USER <user id>|\LINKS|USERS}!

[I.52601]

UTL: [FRM xy, SEQ ww]: QRY, SIGST abcd

[I.52601]

UTL: [FRM xy, SEQ ww]: QRY, SIGST uvmnpddd

[I.51131]

UTL: FRM xy, SEQ ww: QRY, SQN!

[I.54340]

UTL: FRM xy, SEQ ww: QRY, STATE, ACO!

[I.56311]

UTL: [FRM xy, SEQ ww]: QRY, STATE, NPC [s]abc[-[t]def]!

[I.56311]

UTL: [FRM xy, SEQ ww]: QRY, STATE, NPC uvmnp[-wxkqr]!

[I.56314]

UTL: FRM xy, SEQ ww: QRY, STATE, NPC [s]abc[-[t]def]!

[I.56314]

UTL: FRM xy, SEQ ww: QRY, STATE, NPC uvmnp[-wxkqr]!

[I.56301]

UTL: FRM xy, SEQ ww: QRY, STATE, SYNC!

[I.55113]

UTL: FRM xy, SEQ ww: QRY, STR, LINK j[mm][-jnn]!

[I.55201]

UTL: FRM xy, SEQ ww: QRY, STR, SYNC a!

[I.55311]

UTL: FRM xy, SEQ ww: QRY, STR, SYNC a, TLI m!

[I.55321]  
**UTL:FRM xy,SEQ ww:QRY,STR,SYNC a,TLI m,SSP b!**

[I.55191]  
**UTL:FRM xy,SEQ ww:QRY,STR,XC a!**

[I.53001]  
**UTL:FRM xy,SEQ ww:QRY,SYNC,TYPE!**

[I.53081]  
**UTL:FRM xy,SEQ ww:QRY,TGS mmm[-nnn]!**

[I.52041]  
**UTL:[FRM xy,SEQ ww]:QRY,TO [s]abcddd[-eee]!**

[I.52041]  
**UTL:[FRM xy,SEQ ww]:QRY,TO uvmnpddd[-eee]!**

[I.52061]  
**UTL:FRM xy,SEQ ww:QRY,TO [s]abc!**

[I.52061]  
**UTL:FRM xy,SEQ ww:QRY,TO uvmnp!**

[I.51071]  
**UTL:FRM xy,SEQ ww:QRY,TOD[,CFA][,MONDAT]!**

[I.53061]  
**UTL:FRM xy,SEQ ww:QRY,TPS!**

[I.56321]  
**UTL:FRM xy,SEQ ww:QRY,TS0 s,NPC [s]abc[-[t]def]!**

[I.56321]  
**UTL:FRM xy,SEQ ww:QRY,TS0 s,NPC uvmnp[-wxkqr]!**

[I.56323]  
**UTL:FRM xy,SEQ ww:QRY,TS0M,NPC [s]abc[-[t]def]!**

[I.56323]  
**UTL:FRM xy,SEQ ww:QRY,TS0M,NPC uvmnp[-wxkqr]!**

[I.53071]  
**UTL:FRM xy,SEQ ww:QRY,UNIT [q]q,FTMI b[,IMP]!**

[I.51041]  
**UTL:FRM xy,SEQ ww:QRY,WHO!**

[I.55181]

**UTL:FRM xy,SEQ ww:QRY,XCSB[,UNIT [q]q]!**

[I.51081]

**UTL:FRM xy,SEQ ww:RCY,PASSWD!**

[I.51011]

**UTL:FRM xy,SEQ ww:[TOD hrmsc][,{CFA|PRIM X'ghi|MONDAT}]!**

[I.55731]

**UTL:[FRM xy,SEQ ww]:UPGRD!**

## **Numeric Command Summary**

---

[l.11001]

**TCON:** [FRM xy, SEQ ww]:FROM [s]abcddd[-eee], TO [t]ghijjj[-kkk]\  
[, <tc>][, <sc>][, NAM][, {CUS|INCL}][, RDC][, PRIOUT]!

[l.11001]

**TCON:** [FRM xy, SEQ ww]:FROM uvmnpddd[-eee], TO wxkqrjjj[-kkk]\  
[, <tc>][, <sc>][, NAM][, {CUS|INCL}][, RDC][, PRIOUT]!

[l.11011]

**TCON:** FRM xy, SEQ ww:FROM [s]abc, TO [t]ghi[, RDC][, {CUS|INCL}][, PRIOUT]!

[l.11011]

**TCON:** FRM xy, SEQ ww:FROM uvmnp, TO wxkqr[, RDC][, {CUS|INCL}][, PRIOUT]!

[l.11021]

**TCON:** FRM xy, SEQ ww:FROM [s]abcddd[-eee], TO [t]ghijjj[-kkk], \  
MPM(fmd, tmd)[, <tc>][, NAM], [NTR m][, RDC][, {CUS|INCL}]!

[l.11021]

**TCON:** FRM xy, SEQ ww:FROM uvmnpddd[-eee], TO wxkqrjjj[-kkk], \  
MPM(fmd, tmd)[, <tc>][, NAM], [NTR m][, RDC][, {CUS|INCL}]!

[l.11041]

**TCON:** FRM xy, SEQ ww:FROM [s]abc, CB[, CUS][, RDC][, INCL]!

[l.11041]

**TCON:** FRM xy, SEQ ww:FROM uvmnp, CB[, CUS][, RDC][, INCL]!

[l.11051]

**TCON:** FRM xy, SEQ ww:FROM [s]abcddd, TO [t]ghijjj\  
[, {PFW(abcdefg, ijklmno)|NFW}]!

[l.11051]

**TCON:** FRM xy, SEQ ww:FROM uvmnpddd, TO wxkqrjjj\  
[, {PFW(abcdefg, ijklmno)|NFW}]!

[l.11101]

**OCON:** FRM xy, SEQ ww:FROM [s]abcddd[-eee], TO [t]ghijjj[-kkk]\  
[, <tc>][, <sc>][, NAM][, RDC][, {CUS|INCL}][, PRIOUT]!

[l.11101]

**OCON:** FRM xy, SEQ ww:FROM uvmnpddd[-eee], TO wxkqrjjj[-kkk]\  
[, <tc>][, <sc>][, NAM][, RDC][, {CUS|INCL}][, PRIOUT]!

[I.11121]

OCN:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk],\  
MPM(fmd,tmd),<tc>[, {CUS|INCL}][,RDC]!

[I.11121]

OCN:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,{INCL|CUS}][,RDC]!

[I.11131]

OCN:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.11131]

OCN:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.12001]

TCNT:[FRM xy,SEQ ww]:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\  
[,<tc>][,<sc>][ NAM][,{CUS|INCL}][,RDC][,PRIOUT]!

[I.12001]

TCNT:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,<tc>][,<sc>][ NAM][,{CUS|INCL}][,RDC][,PRIOUT]!

[I.12021]

TCNT:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,NTR m][,RDC][,{CUS|INCL}]!

[I.12021]

TCNT:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,NTR m][,RDC][,{CUS|INCL}]!

[I.12031]

TCNT:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.12031]

TCNT:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}][,PRIOUT]!

[I.12051]

TCNT:FRM xy,SEQ ww:FROM [s]abcddd,TO [t]ghijjj\  
[, {PFW(abcdefg,ijklmno)|NFW}]!

[I.12051]

TCNT:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj\  
[, {PFW(abcdefg,ijklmno)|NFW}]!

[I.12101]

OCN:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\  
[,<tc>][,<sc>][,NAM][,RDC][,{CUS|INCL}][,PRIOUT]!

[I.12101]

OCNT:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,<tc>][,<sc>][,NAM][,RDC][,{CUS|INCL}][,PRIOUT]!

[I.12121]

OCNT:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,{CUS|INCL}][,RDC]!

[I.12121]

OCNT:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,{INCL|CUS}][,RDC]!

[I.12131]

OCNT:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC]\  
[,{CUS|INCL}][,PRIOUT]!

[I.12131]

OCNT:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC]\  
[,{CUS|INCL}][,PRIOUT]!

[I.13001]

BCON:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],\  
TOX ([t]ghijjj[, [t]klmnnn,...])[,<tc>][,<sc>]\  
[,{NTR|LPD|CONV}][,NAM][,{CUS|INCL}][,RDC]!

[I.13001]

BCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],\  
TOX (wxkqrjjj [,edhfgnnn,...])[,<tc>][,<sc>]\  
[,{NTR|LPD|CONV}] [,NAM][,{CUS|INCL}][,RDC]!

[I.13002]

BCON:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\  
[,<tc>][,<sc>][,{NTR|LPD|CONV}][,NAM][,{CUS|INCL}][,RDC]!

[I.13002]

BCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,<tc>][,<sc>][,{NTR|LPD|CONV}][,NAM][,{CUS|INCL}][,RDC]!

[I.13011]

BCON:FRM xy,SEQ ww:FROM [s]abc,TOX ([t]def[, [u]ghi]\  
[, [v]jkl][...])[,RDC][,{CUS|INCL}][,{NTR|LPD|CONV}]!

[I.13011]

BCON:FRM xy,SEQ ww:FROM uvmnp,TOX (wxkqr[,edfhg]\  
[,stmno][,...])[,RDC][,{CUS|INCL}][,{NTR|LPD|CONV}]!

[I.13021]

BCON:FRM xy,SEQ ww:FROM [s]abc,TO [t]def[,RDC][,{CUS|INCL}]\  
[, {NTR|LPD|CONV}]!

[I.13021]

BCON:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}]\  
[, {NTR|LPD|CONV}]!

[I.13051]

BCON:FRM xy,SEQ ww:FROM [s]abc000,\  
TOX ([t]ghijjj[, [t]klmnnn,...])!

[I.13051]

BCON:FRM xy,SEQ ww:FROM uvmnp000,\  
TOX (wxkqrjjj [,edhfgnnn,...])!

[I.14021]

SW:FRM xy,SEQ ww:BCAST,OLD [s]abcddd[-eee],NEW [t]ghijjj\  
[-kkk][,INCL]

[I.14021]

SW:FRM xy,SEQ ww:BCAST,OLD uvmnpddd[-eee],NEW wxkqrjjj\  
[-kkk][,INCL]

[I.14031]

SW:FRM xy,SEQ ww:ROLL,OLD [s]abcddd[-eee],NEW [t]ghijjj[-kkk]\  
[,INCL][,FRC][,OOS]

[I.14031]

SW:FRM xy,SEQ ww:ROLL,OLD uvmnpddd[-eee],NEW wxkqrjjj[-kkk]\  
[,INCL][,FRC][,OOS]

[I.14041]

SW:FRM xy,SEQ ww:DISC [s]abcddd[-eee][,OOS]

[I.14061]

SW:FRM xy,SEQ ww:BCAST,OLD [s]abc,NEW [t]ghi[,INCL]

[I.14061]

SW:FRM xy,SEQ ww:BCAST,OLD uvmnp,NEW wxkqr[,INCL]

[I.14071]

SW:FRM xy,SEQ ww:ROLL,OLD [s]abc,NEW [t]ghi[,INCL][,FRC]\  
[,OOS][,TWAY]



[I.14071]

**SW:FRM xy,SEQ ww:ROLL,OLD uvmnp,NEW wxkqr[,INCL][,FRC]\**  
**[,OOS][,TWAY]**

[I.14081]

**SW:FRM xy,SEQ ww:DISC [s]abc[,OOS]**

[I.14081]

**SW:FRM xy,SEQ ww:DISC uvmnp[,OOS]**

[I.14901]

**DSPC:[FRM xy,SEQ ww]:{[s]aaa|[s]aaa-[v]bbb|SDxyz}:<pds\_application command>**

[I.14901]

**DSPC:[FRM xy,SEQ ww]:{uvmnp|uvmnp-wxkqr|SDxyz}:<pds\_application command>**

[I.15001]

**TDIS:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\**  
**[,INCL][,OOS][,DCC][,PRIOUT]!**

[I.15001]

**TDIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\**  
**[,INCL][,OOS][,DCC][,PRIOUT]!**

[I.15002]

**TDIS:FRM xy,SEQ ww:FROM [s]abcdddd,TO [t]ghijjj[,INCL][,OOS]\**  
**[,DCC]!**

[I.15002]

**TDIS:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj[,INCL][,OOS]\**  
**[,DCC]!**

[I.15004]

**TDIS:FRM xy,SEQ ww:FROM [s]abc,CB[,INCL][,OOS]!**

[I.15004]

**TDIS:FRM xy,SEQ ww:FROM uvmnp,CB[,INCL][,OOS]!**

[I.15011]

**TDIS:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,OOS][,INCL][,PRIOUT]!**

[I.15011]

**TDIS:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,OOS][,INCL][,PRIOUT]!**

[I.15061]

**DDIS:[FRM xy,SEQ ww]:FROM [s]abcdddd[-eee],TO [v]ghijjj[-kkk]!**

[I.15061]

**DDIS:**[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]!

[I.15101]

**ODIS:**FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\  
[,INCL][,OOS][,DCC][,PRIOUT]!

[I.15101]

**ODIS:**FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,INCL][,OOS][,DCC][,PRIOUT]!

[I.15102]

**ODIS:**FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\  
[,INCL][,OOS][,DCC]!

[I.15102]

**ODIS:**FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,INCL][,OOS][,DCC]!

[I.15111]

**ODIS:**FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,OOS][,INCL][,PRIOUT]!

[I.15111]

**ODIS:**FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,OOS][,INCL][,PRIOUT]!

[I.15201]

**BDIS:**FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\  
[,CONV][,OOS][,DCC][,INCL]!

[I.15201]

**BDIS:**FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,CONV][,OOS][,DCC][,INCL]!

[I.15211]

**BDIS:**FRM xy,SEQ ww:FROM [s]abcdddd[-eee],\  
**TOX** ([t]ghijjj[, [u]klmnn . . .)][,CONV][,OOS][,DCC][,INCL]!

[I.15211]

**BDIS:**FRM xy,SEQ ww:FROM uvmnpddd[-eee],\  
**TOX** (wxkqrjjj[,edhfgnnn, . . .)][,CONV][,OOS][,DCC][,INCL]!

[I.15221]

**BDIS:**FRM xy,SEQ ww:FROM [s]abc,\  
**TOX** ([t]ghi[, [u]jkl[, [v]mno][...])[,OOS][,INCL][,CONV]!

[I.15221]  
BDIS:FRM xy,SEQ ww:FROM uvmnp,\  
TOX (wxkqr[,edhfg][,opqrs][...])[,OOS][,INCL][,CONV]!

[I.15231]  
BDIS:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,OOS][,INCL][,CONV]!

[I.15231]  
BDIS:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,OOS][,INCL][,CONV]!

[I.17001]  
CHG:[FRM xy,SEQ ww]:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\  
[,NOT [u]rstvvv},{TLA|TLR} {F|T|B|L|G|A}[,INCL]!

[I.17001]  
CHG:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,NOT edhfgvvv},{TLA|TLR} {F|T|B|L|G|A}[,INCL]!

[I.17002]  
CHG:FRM xy,SEQ ww:FROM [s]abcddd,TO [t]ghijjj[,TLP(snn,smm)]\  
[,NG nn][,ES ee][,INCL]!

[I.17002]  
CHG:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj\  
[,TLP(snn,smm)][,NG nn][,ES ee][,INCL]!

[I.17011]  
CHG:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,NOT [u]rst],\  
{TLA|TLR} {F|T|B|A}[,INCL]!

[I.17011]  
CHG:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,NOT edhfg],\  
{TLA|TLR} {F|T|B|A}[,INCL]!

[I.18001]  
CHG:FRM xy,SEQ ww:SWCH,TOX([s]abcddd[, [t]ghijjj,\  
[u]klmnn,...))[,INCL]!

[I.18001]  
CHG:FRM xy,SEQ ww:SWCH,TOX(uvmnpddd[,wxkqrjjj,edhfgnnn,...])\  
[,INCL]!

[I.18011]  
CHG:FRM xy,SEQ ww:SWCH,TOX([s]ghi[, [t]jkl][, [v]mno][...])\  
[,INCL]!

[I.18011]

**CHG:FRM xy,SEQ ww:SWCH,TOX(uvmnp[,wxkqr][,edhfg][...])\  
[,INCL]!**

[I.19001]

**ED:FRM xy,SEQ ww:{MACRO <macro name>|MAP <map name>}!**

[I.19031]

**ED:FRM xy,SEQ ww:CRET,MAP <new map name>\  
,PIC <reference map name>!**

[I.19041]

**APPEND[:FRM xy,SEQ ww:{<line number>|END}]]!**

[I.19051]

**DELETE[:FRM xy,SEQ ww:{<starting line>|END}[-{<ending line>\  
|END}]]!**

[I.19061]

**LIST[:FRM xy,SEQ ww:{<starting line>|END}[-{<ending line>|\  
END}]]!**

[I.19071]

**LINE[:FRM xy,SEQ ww:]!**

[I.19081]

**SAVE[:FRM xy,SEQ ww:]!**

[I.19091]

**MOVE:FRM xy,SEQ ww:FROM {<starting line>|END}\  
[-{<ending line>|END}],TO {<destination line>|END}!**

[I.20001]

**CTST:FRM xy,SEQ ww:<tmode>,FAD ([s]abc[, [t]def]),FROM [u]ghi\  
[,TO [v]jkl][,AIS][,INCL]!**

[I.20001]

**CTST:FRM xy,SEQ ww:<tmode>,FAD (uvmnp[,wxkqr]),FROM eghij\  
[,TO jklmn][,AIS][,INCL]!**

[I.20031]

**CTST:FRM xy,SEQ ww:HUB,FAD [s]abc,TO [t]jkl[,INCL]!**

[I.20031]

**CTST:FRM xy,SEQ ww:HUB,FAD uvmnp,TO wxkqr[,INCL]!**

[I.20101]  
**CTST:FRM xy,SEQ ww:<tmode>,FAD ([s]abc[, [t]def))[,AIS][,INCL]!**

[I.20101]  
**CTST:FRM xy,SEQ ww:<tmode>,FAD (uvmnp[,wxkqr))[,AIS][,INCL]!**

[I.20111]  
**CTST:FRM xy,SEQ ww:FAD ([s]abc[, [t]def))\  
{[,EMODE <emode>][,FMODE <fmode>]}[,INCL];**

[I.20111]  
**CTST:FRM xy,SEQ ww:FAD (uvmnp[,wxkqr))\  
{[,EMODE <emode>][,FMODE <fmode>]}[,INCL];**

[I.20201]  
**CTST:FRM xy,SEQ ww:TNR,FAD [s]abc[,00S]!**  
**CTST:FRM xy,SEQ ww:TNR,FAD ([s]abc[, [t]def))[,00S]!**

[I.20201]  
**CTST:FRM xy,SEQ ww:TNR,FAD uvmnp[,00S]!**  
**CTST:FRM xy,SEQ ww:TNR,FAD (uvmnp[,wxkqr))[,00S]!**

[I.20202]  
**CTST:FRM xy,SEQ ww:TNR,ALL[,00S]!**

[I.20301]  
**CTST:FRM xy,SEQ ww:LPBKT,FAD [s]abc[,INCL]!**

[I.20301]  
**CTST:FRM xy,SEQ ww:LPBKT,FAD uvmnp[,INCL]!**

[I.21001]  
**TTST:FRM xy,SEQ ww:MON[,TO [t]ghi[jjj][,<tc>][,NAM],TP kk!**

[I.21001]  
**TTST:FRM xy,SEQ ww:MON[,TO uvmnp[jjj][,<tc>][,NAM],TP kk!**

[I.21021]  
**TTST:FRM xy,SEQ ww:MON,TO [t]ghi(jjj[-kkk][,lll,...))[,<tc>],\  
TG mmm!**

[I.21021]

TTST:FRM xy,SEQ ww:MON,TO wxkqr(jjj[-kkk][,lll,...])[,<tc>],\  
TG mmm!

[I.21031]

TTST:FRM xy,SEQ ww:MON,TG mmm!

[I.23001]

TTST:FRM xy,SEQ ww:SPL,TP kk!

[I.23021]

TTST:FRM xy,SEQ ww:SPL,TG mmm!

[I.24001]

TTST:FRM xy,SEQ ww:HUB,TO [t]ghijjj,TP kk[,<tc>][,NAM]!

[I.24001]

TTST:FRM xy,SEQ ww:HUB,TO uvmnpjjj,TP kk[,<tc>][,NAM]!

[I.24021]

TTST:FRM xy,SEQ ww:HUB,TO ([s]abcddd,[t]ghijjj),TG mmm[,<tc>]!

[I.24021]

TTST:FRM xy,SEQ ww:HUB,TO (uvmnpddd,wxkqrjjj),TG mmm[,<tc>]!

[I.25101]

TTST:FRM xy,SEQ ww:TLA m[,NOT [t]rstvvv],TP kk!

[I.25101]

TTST:FRM xy,SEQ ww:TLA m[,NOT uvmnpvvv],TP kk!

[I.25121]

TTST:FRM xy,SEQ ww:TLA m,TG mmm!

[I.25501]

TTST:FRM xy,SEQ ww:TLR m[,NOT [t]rstvvv],TP kk!

[I.25501]

TTST:FRM xy,SEQ ww:TLR m[,NOT uvmnpvvv],TP kk!

[I.25521]

TTST:FRM xy,SEQ ww:TLR m,TG mmm!

[I.27001]

TTST:FRM xy,SEQ ww:TPR,TP kk[,00S][,FRC]!

[I.27002]

TTST:FRM xy,SEQ ww:TPR,ALL[,00S]!

[I.27021]

TTST:FRM xy,SEQ ww:TGR,TG mmm[-nnn][,00S]!

[I.29001]

TTST:FRM xy,SEQ ww:LPD,TP kk,<tc>!

[I.29021]

TTST:FRM xy,SEQ ww:LPD,TG mmm[,<tc>]!

[I.30101]

GRTH:FRM xy,SEQ ww:FRAME fg[,CHAR m][,UID <uid>]!

[I.31101]

GRTH:FRM xy,SEQ ww:SYNC,TB,TYPE TBpqr!

[I.31111]

GRTH:FRM xy,SEQ ww:SYNC,TLI 3,TYPE TBpqr!

[I.31121]

GRTH:FRM xy,SEQ ww:SYNC,TLI m,\  
{TYPE texyz,SSP a,SRC p[,NPC [0]abc]|TYPE TDxyz}!

[I.31121]

GRTH:FRM xy,SEQ ww:SYNC,TLI m,\  
{TYPE texyz,SSP a,SRC p[,NPC uvmnp]|TYPE TDxyz}!

[I.31211]

GRTH:FRM xy,SEQ ww:UNIT q[,TYPE utxyz]\  
[,CONN(a[,b[,c[,d[,e [,f]]]]))]]]!

[I.31211]

GRTH:FRM xy,SEQ ww:UNIT [q]q[,TYPE utxyz]!

[I.31321]

GRTH:FRM xy,SEQ ww:UNIT [q]q,FTMI d,IMP <imp>!

[I.31351]

GRTH:FRM xy,SEQ ww:NPC [s]abc,TYPE mnxyz[,CBTIMER [t]v]!

[I.31351]

GRTH:FRM xy,SEQ ww:NPC uvmnp,TYPE mnxyz[,CBTIMER [t]v]!

[I.31362]  
GRTH:FRM xy,SEQ ww:NPC [s]abc[-[t]def]\  
[,TYPE mnxyz][,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|PMC|DMA}][,LEV g]!

[I.31362]  
GRTH:FRM xy,SEQ ww:NPC uvmnp[-uvkqr]\  
[,TYPE mnxyz][,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|PMC|DMA}][,LEV g]!

[I.31363]  
GRTH:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TYPE mnxyz[,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|DMA|PMC}][,LEV g]!

[I.31363]  
GRTH:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],TYPE mnxyz[,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|DMA|PMC}][,LEV g]!

[I.31381]  
GRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTP n!

[I.31381]  
GRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTP n!

[I.31401]  
GRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTG rrr!

[I.31401]  
GRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTG rrr!

[I.31411]  
GRTH:FRM xy,SEQ ww:TP kk[,<tc>]!

[I.31421]  
GRTH:FRM xy,SEQ ww:TG mmm,NPCTG (rrr,eee[-fff];sss,www[-xxx])\  
[,<tc>]!

[I.31511]  
GRTH:FRM xy,SEQ ww:UNIT [q]q,MXR c[-d]\  
[,TYPE mnxyz][,BERM s][,BERT t][,LBO <b>]!

[I.31521]  
COPY:FRM xy,SEQ ww:NPC [s]abc,TO [t]def[-[u]ghi]!

[I.31521]  
COPY:FRM xy,SEQ ww:NPC uvmnp,TO wxkqr[-ghikl]!



[I.32101]

**DGRTH:FRM xy,SEQ ww:SYNC,TB!**

[I.32121]

**DGRTH:FRM xy,SEQ ww:SYNC,TLI m[,SSP a]!**

[I.32211]

**DGRTH:FRM xy,SEQ ww:UNIT [q]q!**

[I.32321]

**DGRTH:FRM xy,SEQ ww:UNIT [q]q,FTMI d!**

[I.32341]

**DGRTH:FRM xy,SEQ ww:NPC [s]abc[-[t]def]!**

[I.32341]

**DGRTH:FRM xy,SEQ ww:NPC uvmnp[-uvkqr]!**

[I.32381]

**DGRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTP n[,TPR]!**

[I.32381]

**DGRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTP n[,TPR]!**

[I.32401]

**DGRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTG rrr[,TGR]!**

[I.32401]

**DGRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTG rrr[,TGR]!**

[I.32411]

**DGRTH:FRM xy,SEQ ww:TP kk!**

[I.32421]

**DGRTH:FRM xy,SEQ ww:TG mmm[-nnn]!**

[I.32501]

**DGRTH:FRM xy,SEQ ww:UNIT [q]q,MXR c[-d]!**

[I.33001]

**RMV:FRM xy,SEQ ww:MC!**

[I.33011]

**RMV:FRM xy,SEQ ww:LINK j!**

[I.33101]

**RMV:FRM xy,SEQ ww:SYNC a!**

[I.33111]

**RMV:FRM xy,SEQ ww:SYNC,TLI 3,CRO!**

[I.33121]

**RMV:FRM xy,SEQ ww:SYNC a,TLI m[,SSP b]!**

[I.33201]

**RMV:FRM xy,SEQ ww:CCNI s!**

[I.33202]

**RMV:FRM xy,SEQ ww:CCB sf!**

[I.33211]

**RMV:FRM xy,SEQ ww:{SMEM|PMEM}!**

[I.33221]

**RMV:FRM xy,SEQ ww:TSI sft!**

[I.33231]

**RMV:FRM xy,SEQ ww:TSIS,CCN s,UNIT q\  
[,CONN(a[,b[,c[,d[,e[,f]]]])))]!**

[I.33241]

**RMV:FRM xy,SEQ ww:TSIS,CCN s,ALL!**

[I.33251]

**RMV:FRM xy,SEQ ww:CCI s!**

[I.33261]

**RMV:FRM xy,SEQ ww:ETSI sqq!**

[I.33271]

**RMV:FRM xy,SEQ ww:ETSI,ECN s,ALL!**

[I.33311]

**RMV:FRM xy,SEQ ww:UNIT [q]q,UC!**

[I.33321]

**RMV:FRM xy,SEQ ww:UNIT [q]q,{FTMI d|DSPI}!**

[I.33331]

**RMV:FRM xy,SEQ ww:UNIT [q]q,FC sb!**

[I.33351]

**RMV:[FRM xy,SEQ ww]:NPC [s]abc[-[t]def][,SIDE s][,INCL]!**

[I.33351]  
RMV:[FRM xy,SEQ ww]:NPC uvmnp[-uvkqr][,SIDE s][,INCL]!

[I.33401]  
RMV:FRM xy,SEQ ww:UNIT [q]q,FLI k!

[I.33411]  
RMV:FRM xy,SEQ ww:UNIT [q]q,FMT s!

[I.33421]  
RMV:FRM xy,SEQ ww:UNIT [q]q,MMFG c[-d][,FRC[,INCL]]!

[I.34001]  
RST:FRM xy,SEQ ww:MC[, {MCOND|NOJRN|FRC}]!

[I.34001]  
RST:FRM xy,SEQ ww:MC,CLR[,ALL]!

[I.34011]  
RST:FRM xy,SEQ ww:LINK j!

[I.34101]  
RST:FRM xy,SEQ ww:SYNC a!

[I.34111]  
RST:FRM xy,SEQ ww:SYNC,TLI 3,CRO!

[I.34121]  
RST:FRM xy,SEQ ww:SYNC a,TLI m[,SSP b]!

[I.34201]  
RST:FRM xy,SEQ ww:CCNI s!

[I.34202]  
RST:FRM xy,SEQ ww:CCB sf!

[I.34211]  
RST:FRM xy,SEQ ww:{PMEM|SMEM[{,CLR[,FRC][,BKGRND]]}]!

[I.34221]  
RST:FRM xy,SEQ ww:TSI sft!

[I.34231]  
RST:FRM xy,SEQ ww:TSIS,CCN s,UNIT q \  
[,CONN(a[,b[,c[,d[,e[,f]]]]))]]!

[I.34241]

**RST:FRM xy,SEQ ww:TSIS,CCN s,ALL!**

[I.34251]

**RST:FRM xy,SEQ ww:CCI s!**

[I.34261]

**RST:FRM xy,SEQ ww:ETSI sqq!**

[I.34271]

**RST:FRM xy,SEQ ww:ETSYS,ECCN s,ALL!**

[I.34311]

**RST:FRM xy,SEQ ww:UNIT [q]q,UC!**

[I.34321]

**RST:FRM xy,SEQ ww:UNIT [q]q,{FTMI d|DSPI}!**

[I.34331]

**RST:FRM xy,SEQ ww:UNIT [q]q,FC sb!**

[I.34351]

**RST:[FRM xy,SEQ ww]:NPC [s]abc[-[t]def][,SIDE s]!**

[I.34351]

**RST:[FRM xy,SEQ ww]:NPC uvmnp[-uvkqr][,SIDE s]!**

[I.34361]

**RST:FRM xy,SEQ ww:NPC [s]abc,MON!**

[I.34361]

**RST:FRM xy,SEQ ww:NPC uvmnp,MON!**

[I.34371]

**RST:FRM xy,SEQ ww:NPC [s]abc,TSØM!**

[I.34371]

**RST:FRM xy,SEQ ww:NPC uvmnp,TSØM!**

[I.34401]

**RST:FRM xy,SEQ ww:UNIT [q]q,FLI k!**

[I.34411]

**RST:FRM xy,SEQ ww:UNIT [q]q,FMT s!**

[I.35001]

**CFR:FRM xy,SEQ ww:XC s[,INCL]!**

[I.35011]

**CFR:FRM xy,SEQ ww:SYNC a,FPLL!**

[I.35012]

**CFR:FRM xy,SEQ ww:SYNC,STRATUM {STR2|STR3|TOLL|LOCAL}!**

[I.35013]

**CFR:FRM xy,SEQ ww:SYNC,{MASTER|SLAVED}!**

[I.35021]

**CFR:FRM xy,SEQ ww:FRAME!**

[I.35101]

**SW:FRM xy,SEQ ww:UNIT [q]q,FLI,TOPTN!**

[I.35105]

**SW:FRM xy,SEQ ww:UNIT [q]q,FLI,TOSRVC!**

[I.35111]

**SW:FRM xy,SEQ ww:UNIT [q]q,MMFG c,TOPTN[,FRC]!**

[I.35121]

**SW:FRM xy,SEQ ww:UNIT [q]q,MMFG c,TOSRVC!**

[I.35301]

**ALWSW:FRM xy,SEQ ww:UNIT [q]q,MMFG c[-d],{TOPTN|TOSRVC}!**

[I.35311]

**INHSW:FRM xy,SEQ ww:UNIT [q]q,MMFG c[-d],{TOPTN|TOSRVC}!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL {S|X|T|M}[,BAUD bb][,ALM k]\  
[,BS e][,ENQ q][,XON x][,INIT]!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL S[,BAUD bb][,ALM k]\  
[,BS e][,ENQ q][,XON x][,INIT]!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL X[,ALM k][,INIT]!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL T[,BAUD bb][,ALM k][,INIT]!**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL M[,ALM k][,INIT]!**

[I.36003]

**ADD:FRM xy,SEQ ww:LINK j[,K b][,T1 ee][,T3 ggg][,N2 aa]\**  
**[,FRMAD {A|B}]!**

[I.36005]

**ADD:FRM xy,SEQ ww:LINK j[mm][,W c][,P ddd][,T20 iii]\**  
**[,T22 jjj][,T23 kkk][,T25 lll][,T26 mmm][,R20 nn]\**  
**[,R22 p][,R23 qq][,R25 r][,DBIT v][,VC(ppss,gghh)]!**

[I.36021]

**ADD:FRM xy,SEQ ww:NPC {[s]abc-[t]def|[s]abc[, [s]ghi]... \**  
**[, [t]def]}!**

[I.36021]

**ADD:FRM xy,SEQ ww:NPC {uvmnp-wxkqr|uvmnp[,edfgh]... \**  
**[,wxkqr]}!**

[I.36101]

**ADD:FRM xy,SEQ ww:USER <user id>[,NEW][,PASSWD <user password>]!**

[I.36101]

**ADD:FRM xy,SEQ ww:USER <user id>[,NEW]!**

[I.36103]

**ADD:FRM xy,SEQ ww:{USER <user id>|LINK j[mm][,INCL]|ALL}\**  
**[,LANG {M|P|F}][,NPCAD {E|X|H}][,LEV(a,b,c,d,e,f)]\**  
**[,{RMON|RMOFF}][,RLK {A|I}][,{CONVON|CONVOFF}][,INIT]!**

[I.37001]

**DLT:FRM xy,SEQ ww:NPC {[s]abc-[t]def|[s]abc[, [s]ghi]... \**  
**[, [t]def]}!**

[I.37001]

**DLT:FRM xy,SEQ ww:NPC {uvmnp-wxkqr|uvmnp[,abcde]...[,wxkqr]}!**

[I.37101]

**DLT:FRM xy,SEQ ww:USER <user id>!**

[I.37201]

**DLT:FRM xy,SEQ ww:{MACRO <macro name>|MAP <map name>}\**  
**[,USER <user id>]!**

[I.37301]

**DLT:FRM xy,SEQ ww:FPKG nnnnnnnn!**

[I.38001]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],CBTIMER [t]v!**

[I.38001]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],CBTIMER [t]v!**

[I.38011]

**CHG:FRM xy,SEQ ww:SYNC,TLI m,SSP b,{TYPE texyz|NPC [0]abc}!**

[I.38011]

**CHG:FRM xy,SEQ ww:SYNC,TLI m,SSP b,{TYPE texyz|NPC uvmnp}!**

[I.38011]

**CHG:FRM xy,SEQ ww:SYNC,\**  
**TLI,SRC(i/(a,b)[,j/(c,d)[,k/(e,f)[,l/(g,h)]])!]**

[I.38101]

**CHG:FRM xy,SEQ ww:UNIT q,CONN(a[,b[,c[,d[,e[,f]]]]])!**

[I.38201]

**CHG:FRM xy,SEQ ww:SETOP rr,{TYPE mn|ALL},NPCOP(set1,set2,set3)!**

[I.38211]

**CHG:FRM xy,SEQ ww:NPC [s]abc,TYPE mnxyz[,IW X'pq[r]]!**

[I.38211]

**CHG:FRM xy,SEQ ww:NPC uvmnp,TYPE mnxyz[,IW X'pq[r]]!**

[I.38221]

**CHG:FRM xy,SEQ ww:NPC [s]abc,{OPTS(rr/<m>[,rr/<m>][...])|\**  
**THMODE hhh}!**

[I.38221]

**CHG:FRM xy,SEQ ww:NPC uvmnp,{OPTS(rr/<m>[,rr/<m>][...])|\**  
**THMODE hhh}!**

[I.38231]

**CHG:FRM xy,SEQ ww:TYPE mnxyz,{OPTS(rr/<m>[,rr/<m>][...])|THMODE hhh}!**

[I.38271]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TYPE mnxyz[,IW X'pq[,INCL]]!**

[I.38271]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],TYPE mnxyz[,IW X'pq[,INCL]]!**

[I.38281]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]ghi],ALMOPT,\**  
**AIS {MI|PMA|PMC|DMA}!**

[I.38281]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-wxkqr],ALMOPT,\**  
**AIS {MI|PMA|PMC|DMA}!**

[I.38291]

**CHG:FRM xy,SEQ ww:TYPE mn,THMODE hhh!**

[I.38301]

**CHG:FRM xy,SEQ ww:PASSWD[,OLD <old password>, \**  
**NEW <new password>]!**

[I.38301]

**CHG:FRM xy,SEQ ww:PASSWD!**  
    **OLD PASSWD:** (user enters the old password)  
    **NEW PASSWD:** (user enters the new password)  
    **PASSWD:** (user re-enters the new password for verification)

[I.38321]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TS0 abcdefgh!**

[I.38321]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],TS0 abcdefgh!**

[I.38323]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TS0M abcdefgh!**

[I.38323]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-wxkqr],TS0M abcdefgh!**

[I.38324]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],NFS abcdefghi!**

[I.38324]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],NFS abcdefghi!**

[I.38331]

**CHG:FRM xy,SEQ ww:DD(m,w),TO [s]abcddd[-eee]!**

[I.38331]

**CHG:FRM xy,SEQ ww:DD(m,w),TO uvmnpddd[-eee]!**

[I.38333]

**CHG:FRM xy,SEQ ww:BC X'abcd, TO [s]abcddd[-eee]!**

[I.38333]

**CHG:FRM xy,SEQ ww:BC X'abcd, TO uvmnpddd[-eee]!**



[I.38335]

**CHG:FRM xy,SEQ ww:BCOFF,TO [s]abcd[ddd[-eee]]!**

[I.38335]

**CHG:FRM xy,SEQ ww:BCOFF,TO uvmnp[ddd[-eee]]!**

[I.38341]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],LPBK [d]t!**

[I.38341]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-wxkqr],LPBK [d]t!**

[I.38355]

**CHG:[FRM xy,SEQ ww]:ALMS,{ON|OFF}!**

[I.38365]

**CHG:[FRM xy,SEQ ww]:SALMS,sa lm,{PMACR|PMAMJ|DMAMN|MI|RESET}!**

[I.38375]

**CHG:[FRM xy,SEQ ww]:FALMS,TYPE mn[xyz],fa lm,{PMACR|PMAMJ|DMAMN|MI|RESET}!**

[I.38401]

**CHG:FRM xy,SEQ ww:{USER <user id>|LINK j[mm][,INCL]}\  
[,SCR n[,GR(a,b,c,d,e,f)]][, {MCON|MCOFF}][,INIT]!**

[I.38451]

**CHG:[FRM xy,SEQ ww]:INTV,{ON|OFF}!**

[I.38461]

**CHG:[FRM xy,SEQ ww]:{NPC {[s]abc[-[t]def]|ALL}|TLI|SYNC|CCN|ALL},LEV r!**

[I.38461]

**CHG:[FRM xy,SEQ ww]:{NPC {uvmnp[-uvkqr]|ALL}|TLI|SYNC|CCN|ALL},LEV r!**

[I.38501]

**CHG:FRM xy,SEQ ww:{MACRO|MAP},SPACE sss!**

[I.38631]

**CHG:FRM xy,SEQ ww:ERB ee,TYPE mn!**

[I.39001]

**LOGIN:FRM xy,SEQ ww:USER <user id>[,PASSWD <user password>]!**

[I.39001]

**LOGIN:FRM xy,SEQ ww:USER <user id>!**

**PASSWD: <user enters the user password>**

[I.39101]

**LOGOFF:FRM xy,SEQ ww:{USER <user id>|LINK j[mm][,INCL]}!**

[I.39201]

**ACT:FRM xy,SEQ ww:MAP <map name>[,CLR][,INCL]!**

[I.39301]

**EXC:FRM xy,SEQ ww:MACRO <macro name>[(,(<p1>[,<p2>[,<p3>\  
[,...[,<p10>]]]]))!]**

[I.39311]

**STOP:FRM xy,SEQ ww:MACRO[,LINK l[mm]]!**

[I.41001]

**DGN:FRM xy,SEQ ww:MC[,CFT X'vwxy]!**

[I.41011]

**DGN:FRM xy,SEQ ww:LINK a[,CFT X'vwxy]!**

[I.41021]

**DGN:FRM xy,SEQ ww:MP[,CFT X'vwxy]!**

[I.41031]

**DGN:FRM xy,SEQ ww:CI[,CFT X'vwxy]!**

[I.41051]

**DGN:[FRM xy,SEQ ww]:{PMEM|SMEM}[,{CFT X'vwxy|EXCT|DBASE}][,VERIFY]!**

[I.41101]

**DGN:FRM xy,SEQ ww:SYNC a!**

[I.41111]

**DGN:FRM xy,SEQ ww:SYNC,TLI 3,CRO!**

[I.41121]

**DGN:FRM xy,SEQ ww:SYNC a,TLI m[,SSP b]!**

[I.41201]

**DGN:FRM xy,SEQ ww:CCNI s[,CFT X'vwxy]!**

[I.41211]

**DGN:FRM xy,SEQ ww:CCB sf[,CFT X'vwxy]!**

[I.41221]

**DGN:FRM xy,SEQ ww:TSI sft[,CFT X'vwxy]!**

[I.41232]

**DGN:FRM xy,SEQ ww:TSIS,CCN s,UNIT q,\**  
**[,CONN(a[,b[,c[,d[,e[,f]]]]))]]!**

[I.41241]

**DGN:FRM xy,SEQ ww:TSIS,CCN s,ALL!**

[I.41251]

**DGN:FRM xy,SEQ ww:CCI s[,CFT X'vwxy]!**

[I.41261]

**DGN:FRM xy,SEQ ww:ETSI sqq[,CFT X'vwxy]!**

[I.41271]

**DGN:FRM xy,SEQ ww:ETSI s,ECCN s,ALL!**

[I.41311]

**DGN:FRM xy,SEQ ww:UNIT [q]q,UC[,CFT X'vwxy]!**

[I.41321]

**DGN:FRM xy,SEQ ww:UNIT [q]q,FTMI d[,CFT X'vwxy]!**

[I.41331]

**DGN:FRM xy,SEQ ww:UNIT [q]q,FC sb[,CFT X'vwxy]!**

[I.41341]

**DGN:FRM xy,SEQ ww:UNIT [q]q,DSPI[,CFT X'vwxy]!**

[I.41351]

**DGN:[FRM xy,SEQ ww]:NPC [s]abc[,SIDE s][,CFT X'vwxy]!**

[I.41351]

**DGN:[FRM xy,SEQ ww]:NPC uvmnp[,SIDE s][,CFT X'vwxy]!**

[I.41361]

**DGN:[FRM xy,SEQ ww]:NPC [s]abc-[t]def!**

[I.41361]

**DGN:[FRM xy,SEQ ww]:NPC uvmnp-uvkqr!**

[I.51001]

**UTL:[FRM xy,SEQ ww]:QRY,MEMSTAT!**

[I.51011]

**UTL:FRM xy,SEQ ww:[TOD hrmsc][,{CFA|PRIM X'ghij|MONDAT}}]!**

[I.51021]

**UTL:FRM xy,SEQ ww:DATE <new-date>[,FORMAT ggg][,INT ii]!**

[I.51031]

**UTL:FRM xy,SEQ ww:QRY,DATE!**

[I.51041]

**UTL:FRM xy,SEQ ww:QRY,WHO!**

[I.51071]

**UTL:FRM xy,SEQ ww:QRY,TOD[,CFA][,MONDAT]!**

[I.51081]

**UTL:FRM xy,SEQ ww:RCY,PASSWD!**

[I.51091]

**UTL:FRM xy,SEQ ww:QRY,CNFR!**

[I.51101]

**UTL:FRM xy,SEQ ww:INIT,ALM a!**

[I.51111]

**UTL:FRM xy,SEQ ww:ACO!**

[I.51121]

**UTL:FRM xy,SEQ ww:QRY,FPKG!**

[I.51131]

**UTL:FRM xy,SEQ ww:QRY,SQL!**

[I.51201]

**UTL:[FRM xy,SEQ ww]:QRY,APPL,{NPC [s]abc|ALL}!**

[I.51201]

**UTL:[FRM xy,SEQ ww]:QRY,APPL,{NPC uvmp|ALL}!**

[I.52011]

**UTL:[FRM xy,SEQ ww]:QRY,CMP [s]abc[-[t]def]!**

[I.52011]

**UTL:[FRM xy,SEQ ww]:QRY,CMP uvmp[-wxqr]!**

[I.52031]

**UTL:[FRM xy,SEQ ww]:QRY,DMP!**

[I.52041]

**UTL:[FRM xy,SEQ ww]:QRY,TO [s]abcd[-eee]!**

[I.52041]  
**UTL: [FRM xy, SEQ ww]: QRY, TO uvmnpddd[-eee]!**

[I.52051]  
**UTL: FRM xy, SEQ ww: QRY, FROM [s]abcddd[-eee]!**

[I.52051]  
**UTL: FRM xy, SEQ ww: QRY, FROM uvmnpddd[-eee]!**

[I.52061]  
**UTL: FRM xy, SEQ ww: QRY, TO [s]abc!**

[I.52061]  
**UTL: FRM xy, SEQ ww: QRY, TO uvmnp!**

[I.52071]  
**UTL: FRM xy, SEQ ww: QRY, FROM [s]abc!**

[I.52071]  
**UTL: FRM xy, SEQ ww: QRY, FROM uvmnp!**

[I.52081]  
**UTL: FRM xy, SEQ ww: QRY, ROLL, DS0, {NPC [s]abc[-[t]def]|ALL[, UNIT [q]q]]!**

[I.52081]  
**UTL: FRM xy, SEQ ww: QRY, ROLL, DS0, {NPC uvmnp[-wxkqr]|ALL[, UNIT [q]q]]!**

[I.52091]  
**UTL: FRM xy, SEQ ww: QRY, ROLL, DS1, {NPC [s]abc[-[t]def]|ALL[, UNIT [q]q]]!**

[I.52091]  
**UTL: FRM xy, SEQ ww: QRY, ROLL, DS1, {NPC uvmnp[-wxkqr]|ALL[, UNIT [q]q]]!**

[I.52101]  
**UTL: : QRY, BCAST, ALL!**

[I.52111]  
**UTL: FRM xy, SEQ ww: QRY, BCAST, FROM [s]abcddd!**

[I.52111]  
**UTL: FRM xy, SEQ ww: QRY, BCAST, FROM uvmnpddd!**

[I.52121]  
**UTL: FRM xy, SEQ ww: QRY, BCAST, FROM [s]abc!**

[I.52121]  
**UTL: FRM xy, SEQ ww: QRY, BCAST, FROM uvmnp!**

[I.52201]  
**UTL:FRM xy,SEQ ww:QRY,MARK [s]abc[-[t]def]!**

[I.52201]  
**UTL:FRM xy,SEQ ww:QRY,MARK uvmnp[-wxkqr]!**

[I.52211]  
**UTL:FRM xy,SEQ ww:QRY,MARK [s]abcjjj[-kkk]!**

[I.52211]  
**UTL:FRM xy,SEQ ww:QRY,MARK uvmnpjjj[-kkk]!**

[I.52601]  
**UTL:[FRM xy,SEQ ww]:QRY,SIGST abcd**

[I.52601]  
**UTL:[FRM xy,SEQ ww]:QRY,SIGST uvmnpddd**

[I.53001]  
**UTL:FRM xy,SEQ ww:QRY,SYNC,TYPE!**

[I.53011]  
**UTL:FRM xy,SEQ ww:QRY,EQD,UNITS!**

[I.53021]  
**UTL:FRM xy,SEQ ww:QRY,EQD,TSIS!**

[I.53022]  
**UTL:FRM xy,SEQ ww:QRY,EQD,ETIS!**

[I.53031]  
**UTL:FRM xy,SEQ ww:QRY,EQD,CONN!**

[I.53041]  
**UTL:FRM xy,SEQ ww:QRY,EQD,NPCS[, {TOTAL|UNIT [q]q}]!**

[I.53051]  
**UTL:FRM xy,SEQ ww:QRY,OPT[, {TYPE mn|ALL}],NPCS!**

[I.53061]  
**UTL:FRM xy,SEQ ww:QRY,TPS!**

[I.53071]  
**UTL:FRM xy,SEQ ww:QRY,UNIT [q]q,FTMI b[,IMP]!**

[I.53081]  
**UTL:FRM xy,SEQ ww:QRY,TGS mmm[-nnn]!**

[I.53091]

**UTL:FRM xy,SEQ ww:QRY,NPCTG rrr[-sss]!**

[I.53101]

**UTL:FRM xy,SEQ ww:QRY,ALL[,UNIT [q]q]!**

[I.53103]

**UTL:FRM xy,SEQ ww:QRY,{PEST|FAIL|OOS}[,UNIT [q]q]!**

[I.53104]

**UTL:FRM xy,SEQ ww:QRY,ALL,COMMON!**

[I.53105]

**UTL:FRM xy,SEQ ww:QRY,{PEST|FAIL|OOS},COMMON!**

[I.53108]

**UTL:FRM xy,SEQ ww:QRY,EQD[,UNIT [q]q]!**

[I.53109]

**UTL:FRM xy,SEQ ww:QRY,EQD,COMMON!**

[I.53111]

**UTL:FRM xy,SEQ ww:QRY,ALMS!**

[I.53131]

**UTL:FRM xy,SEQ ww:QRY,LPBK,NPC [s]abc[-[t]def]!**

[I.53131]

**UTL:FRM xy,SEQ ww:QRY,LPBK,NPC uvmnp[-wxkqr]!**

[I.53151]

**UTL:FRM xy,SEQ ww:QRY,ALMS,DBASE!**

[I.53171]

**UTL:FRM xy,SEQ ww:QRY,NPC [s]abc[-[t]def],CBTIMER!**

[I.53171]

**UTL:FRM xy,SEQ ww:QRY,NPC uvmnp[-uvkqr],CBTIMER!**

[I.53211]

**UTL:FRM xy,SEQ ww:QRY,EQD,MXRS!**

[I.53221]

**UTL:FRM xy,SEQ ww:QRY,DS3,BERMT[,UNIT [q]q]!**

[I.53231]

**UTL:FRM xy,SEQ ww:QRY,DS3,LB0!**

[I.53301]

UTL: [FRM xy, SEQ ww]: QRY, SALMS, {sa lm|ALL}!

[I.53311]

UTL: [FRM xy, SEQ ww]: QRY, FALMS, TYPE {mn[xyz]|ALL}, {<fa lm>|ALL}!

[I.53331]

UTL: [FRM xy, SEQ ww]: QRY, INTV, {NPC {[s]abc[-[t]def]|ALL}|TLI m|CCN|SYNC|ALL}!

[I.53331]

UTL: [FRM xy, SEQ ww]: QRY, INTV, {NPC {uvmnp-uvkqr|ALL}|TLI m|CCN|SYNC|ALL}!

[I.53351]

UTL: [FRM xy, SEQ ww]: QRY, ALM, INTV!

[I.54001]

UTL: FRM xy, SEQ ww: QRY, SCR, {LINK j[mm[-jnn]]|USER <user id>|\LINKS|USERS}!

[I.54011]

UTL: FRM xy, SEQ ww: QRY, LOG[, ALL]!

[I.54101]

UTL: FRM xy, SEQ ww: QRY, LIST, MAP <name>[, USER <user id>]!

[I.54111]

UTL: FRM xy, SEQ ww: QRY, NPC, MAP <name>[, USER <user id>]!

[I.54121]

UTL: FRM xy, SEQ ww: QRY, MACRO <name>[, USER <user id>]!

[I.54131]

UTL: FRM xy, SEQ ww: QRY, LIST, MACRO <macro name>\[, USER <user id>]!

[I.54201]

UTL: FRM xy, SEQ ww: QRY, MAP, ATTR[, {ALL|USER <user id>|MAPNM <name>}]!

[I.54211]

UTL: FRM xy, SEQ ww: QRY, MACRO, ATTR[, {USER <user id>|ALL}]!

[I.54221]

UTL: FRM xy, SEQ ww: QRY, {MACRO|MAP}, SPACE[, {USER <user id>|ALL|\SYSTEM}]!

[I.54340]

UTL: FRM xy, SEQ ww: QRY, STATE, ACO!



[I.55011]  
UTL:FRM xy,SEQ ww:QRY,ERR,{SWER|HWER},{INT mn|[DATE moda[ce]yr,] TOD hrmsc}}\  
[,TN X'dddd][,EVENT X'eeee][,ERCL{HARD|TRANS|APPINT}][,ENTY <entity>]|ALL}!

[I.55111]  
UTL:FRM xy,SEQ ww:QRY,ESR,MP!

[I.55113]  
UTL:FRM xy,SEQ ww:QRY,STR,LINK j[mm][-jnn]!

[I.55181]  
UTL:FRM xy,SEQ ww:QRY,XCSB[,UNIT [q]q]!

[I.55191]  
UTL:FRM xy,SEQ ww:QRY,STR,XC a!

[I.55201]  
UTL:FRM xy,SEQ ww:QRY,STR,SYNC a!

[I.55311]  
UTL:FRM xy,SEQ ww:QRY,STR,SYNC a,TLI m!

[I.55321]  
UTL:FRM xy,SEQ ww:QRY,STR,SYNC a,TLI m,SSP b!

[I.55401]  
UTL:FRM xy,SEQ ww:QRY,ESR,CCN s!

[I.55411]  
UTL:FRM xy,SEQ ww:QRY,ESR,ECCN s!

[I.55501]  
UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q!

[I.55511]  
UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,FTMI d!

[I.55521]  
UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,FC sb!

[I.55531]  
UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,DSPI!

[I.55601]  
UTL:FRM xy,SEQ ww:QRY,ESR,NPC [s]abc[,SIDE s]!

[I.55601]

**UTL:FRM xy,SEQ ww:QRY,ESR,NPC uvmnp[,SIDE s]!**

[I.55701]

**UTL:FRM xy,SEQ ww:BMTR,FROM <from>,TO <to>[, {EXCT|INCL|UPGRD}]]!**

[I.55711]

**ABT!**

[I.55721]

**INSTALL;**

[I.55731]

**UTL:[FRM xy,SEQ ww]:UPGRD!**

[I.55801]

**UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,FLI k!**

[I.55821]

**UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,MXR c!**

[I.56001]

**UTL:FRM xy,SEQ ww:CLR,<parameter>,NPC [s]abc[-[t]def]!**

[I.56001]

**UTL:FRM xy,SEQ ww:CLR,<parameter>,NPC uvmnp[-wxkqr]!**

[I.56011]

**UTL:FRM xy,SEQ ww:CLR,<parameter>,ALL!**

[I.56021]

**UTL:FRM xy,SEQ ww:QRY,ALMOPT,NPC [s]abc[-[v]ghi],AIS!**

[I.56021]

**UTL:FRM xy,SEQ ww:QRY,ALMOPT,NPC uvmnp[-wxkqr],AIS!**

[I.56031]

**UTL:FRM xy,SEQ ww:QRY,<parameter>,ALL!**

[I.56041]

**UTL:FRM xy,SEQ ww:QRY,<parameter>,NPC [s]abc[-[t]def]!**

[I.56041]

**UTL:FRM xy,SEQ ww:QRY,<parameter>,NPC uvmnp[-wxkqr]!**

[I.56051]

**UTL:FRM xy,SEQ ww:CLR,NPC [s]abc,PARAMS!**

[I.56051]

UTL:FRM xy,SEQ ww:CLR,NPC uvmnp,PARAMS!

[I.56052]

UTL:FRM xy,SEQ ww:CLR,PWR pp!

[I.56061]

UTL:FRM xy,SEQ ww:CLR,ERR,{HWER|SWER}!

[I.56071]

UTL:FRM xy,SEQ ww:CLR,{NPC [s]abc[-[t]def]|ALL},<parameter>,AI aaaaa \  
[,MONDAT dddd][,MONTIM tttt]!

[I.56071]

UTL:FRM xy,SEQ ww:CLR,{NPC uvmnp[-wxkqr]|ALL},<parameter>,AI aaaaa \  
[,MONDAT dddd][,MONTIM tttt]!

[I.56091]

UTL:FRM xy,SEQ ww:QRY,{NPC [s]abc[-[t]def]|ALL},<parameter>,AI aaaaa \  
[,LV llllllllll][,MONDAT dddd][,MONTIM tttt]!

[I.56091]

UTL:FRM xy,SEQ ww:QRY,{NPC uvmnp[-wxkqr]|ALL},<parameter>,AI aaaaa \  
[,LV llllllllll][,MONDAT dddd][,MONTIM tttt]!

[I.56301]

UTL:FRM xy,SEQ ww:QRY,STATE,SYNC!

[I.56311]

UTL:[FRM xy,SEQ ww]:QRY,STATE,NPC [s]abc[-[t]def]!

[I.56311]

UTL:[FRM xy,SEQ ww]:QRY,STATE,NPC uvmnp[-wxkqr]!

[I.56314]

UTL:FRM xy,SEQ ww:QRY,STATE,NPC [s]abc[-[t]def]!

[I.56314]

UTL:FRM xy,SEQ ww:QRY,STATE,NPC uvmnp[-wxkqr]!

[I.56321]

UTL:FRM xy,SEQ ww:QRY,TS0 s,NPC [s]abc[-[t]def]!

[I.56321]

UTL:FRM xy,SEQ ww:QRY,TS0 s,NPC uvmnp[-wxkqr]!

[I.56323]

UTL:FRM xy,SEQ ww:QRY,TS0M,NPC [s]abc[-[t]def]!

[I.56323]

UTL:FRM xy,SEQ ww:QRY,TS0M,NPC uvmnp[-wxkqr]!

[I.56324]

UTL:FRM xy,SEQ ww:QRY,NFS,NPC [s]abc[-[t]def]!

[I.56324]

UTL:FRM xy,SEQ ww:QRY,NFS,NPC uvmnp[-wxkqr]!

[I.56326]

UTL:[FRM xy,SEQ ww]:QRY,RPSFI!

[I.56341]

UTL:FRM xy,SEQ ww:QRY,DD [s]abcddd[-fff]!

[I.56341]

UTL:FRM xy,SEQ ww:QRY,DD uvmnpddd[-fff]!

[I.56343]

UTL:FRM xy,SEQ ww:QRY,{DD,NPC [s]abc[-[t]def]|DDCT,ALL}!

[I.56343]

UTL:FRM xy,SEQ ww:QRY,{DD,NPC uvmnp[-wxkqr]|DDCT,ALL}!

[I.56351]

UTL:FRM xy,SEQ ww:QRY,BC s,{NPC [s]abc[-[t]def]|ALL}!

[I.56351]

UTL:FRM xy,SEQ ww:QRY,BC s,{NPC uvmnp[-wxkqr]|ALL}!

[I.56353]

UTL:FRM xy,SEQ ww:QRY,BC s,TO [s]abcddd!

[I.56353]

UTL:FRM xy,SEQ ww:QRY,BC s,TO uvmnpddd!

[I.56401]

UTL:FRM xy,SEQ ww:LOC,<entity>!

[I.58001]

UTL:FRM xy,SEQ ww:BOOT,FRAME[,CLR]!

[I.81001]

AUD:FRM xy,SEQ ww:QRY,{CFA|CGA|LOS}!

[I.81001]

AUD:[FRM xy,SEQ ww]:QRY,{CFA|CGA|LOS}!

[I.81001]

**AUD:[FRM xy,SEQ ww]:QRY,{CFA|CGA|LOS}!**



---

# **Autonomous Messages**

# 5

---

## **Contents**

|                                 |      |
|---------------------------------|------|
| <b>Alarms Messages</b>          | 5-2  |
| <b>Audits Messages</b>          | 5-5  |
| <b>Error Recovery Messages</b>  | 5-10 |
| <b>Event Reporting Messages</b> | 5-16 |
| <b>Input Denials Messages</b>   | 5-17 |
| <b>Startup Messages</b>         | 5-18 |





---

## **Autonomous Messages**

---

### **Autonomous Messages**

This section provides a summary of the autonomous messages that can appear on the DACS II Release 8.2.3 output printer. The following are the categories of autonomous messages:

- Alarms Messages
- Audits Messages
- Error Recovery Messages
- Event Reporting Messages
- Input Denial Messages
- Scheduled PM Reporting Messages
- Startup Messages

## Alarms Messages

---

[O.65011]

pa <il> hh:mm:ss xy,ww AR01 MISC ALM <state> PBA [s]abc k COMPL

[O.65011]

pa <il> hh:mm:ss xy,ww AR01 MISC ALM <state> PBA uvmnp k COMPL

[O.65021]

I hh:mm:ss xy,ww AR01 MISC ALM IDLD PBA [s]abc k COMPL

[O.65021]

I hh:mm:ss xy,ww AR01 MISC ALM IDLD PBA uvmnp k COMPL

[O.65036]

pa <il> hh:mm:ss xy,ww ALM <state> <parameter> NPC [s]abc COMPL

[O.65036]

pa <il> hh:mm:ss xy,ww ALM <state> <parameter> NPC uvmnp COMPL

[O.65046]

I hh:mm:ss xy,ww ALM IDLD[ <parameter>][ AI aaaaa] NPC [s]abc COMPL

[O.65046]

I hh:mm:ss xy,ww ALM IDLD[ <parameter>][ AI aaaaa] NPC uvmnp COMPL

[O.65051]

pa <il> hh:mm:ss xy,ww ALM RESET {DATE|TOD|TOD DATE} hr:mn:sc \ {mo/da/yr FORMAT MDY|da/mo/yr FORMAT DMY} {PMC|PMA|DMA|MI} COMPL

[O.65053]

\*\*hh:mm:ss xy,ww BOOT FAILED - BAD BOOT DEVICE

[O.65054]

pa <il> hh:mm:ss xy,ww ALM {PMC|PMA|DMA|MI} CCN s OOS COMPL

[O.65055]

pa <il> hh:mm:ss xy,ww ALM {PMC|PMA|DMA|MI} ECCN s OOS COMPL

[O.65056]

pa <il> hh:mm:ss xy,ww ALM {PMC|PMA|DMA|MI} SMEM COMPL

[O.65071]

I hh:mm:ss xy,ww ACO ACTIVE COMPL

[O.65091]

pa <il> hh:mm:ss xy,ww ALM {PMC|PMA|DMA|MI} NPC [s]abc RPSFI COMPL

[O.65092]

I hh:mm:ss xy,ww ALM IDLD NPC [s]abc RPSFI COMPL

[O.65091]

pa <il> hh:mm:ss xy,ww ALM {PMC|PMA|DMA|MI} NPC uvmnp RPSFI COMPL

[O.65092]

I hh:mm:ss xy,ww ALM IDLD NPC uvmnp RPSFI COMPL

[O.65201]

I hh:mm:ss xy,ww TS0 R NPC [s]abc OLD abcdefgh NEW \  
abcdefgh COMPL

[O.65201]

I hh:mm:ss xy,ww TS0 R NPC uvmnp OLD abcdefgh NEW \  
abcdefgh COMPL

[O.65211]

I hh:mm:ss xy,ww BC R TO [s]abcd {X'abcd|Z0|NA} COMPL

[O.65211]

I hh:mm:ss xy,ww BC R TO uvmnpddd {X'abcd|Z0|NA} COMPL

[O.65221]

I hh:mm:ss xy,ww CBOFL abc [SIDE s] 5 LN MSG:  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno \  
EOM

I hh:mm:ss xy,ww CBOFL abc [SIDE s] 5 LN MSG:  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno \  
EOM

I hh:mm:ss xy,ww CBOFL abc [SIDE s] 3 LN MSG:  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno \  
COMPL

[O.65221]

I hh:mm:ss xy,ww CBOFL uvmnp [SIDE s] 5 LN MSG:  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno EOM

I hh:mm:ss xy,ww CBOFL uvmnp [SIDE s] 5 LN MSG:  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno EOM

I hh:mm:ss xy,ww CBOFL uvmnp [SIDE s] 3 LN MSG:  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno COMPL

[O.65231]

I hh:mm:ss xy,ww TS0MBOFL [s]abc COMPL

[O.65231]

I hh:mm:ss xy,ww TS0MBOFL uvmnp COMPL

---

## Audits Messages

---

[O.81001]

I hh:mm:ss xy,ww AUD AR02 ALARM SUM nnnn REPORTS FOLLOW:

I hh:mm:ss xy,ww SC ALM <state> CGA [s]abc k COMPL

.  
.  
.

I hh:mm:ss xy,ww SC ALM <state> CGA [s]abc k COMPL

I hh:mm:ss xy,ww AR01 MISC ALM <state> {CGA|CFA|LOS} [s]abc \  
[k] COMPL

.  
.  
.

I hh:mm:ss xy,ww AR01 MISC ALM <state> {CGA|CFA|LOS} [s]abc \  
[k] COMPL

I hh:mm:ss xy,ww AUD {CGA|CFA|LOS} END COMPL

I hh:mm:ss xy,ww AUD PARAMS COMPL

[O.81001]

I hh:mm:ss xy,ww AUD AR02 ALARM SUM nnnn REPORTS FOLLOW:

I hh:mm:ss xy,ww SC ALM <state> CGA uvmnp k COMPL

.  
.  
.

I hh:mm:ss xy,ww SC ALM <state> CGA uvmnp k COMPL

I hh:mm:ss xy,ww AR01 MISC ALM <state> {CGA|CFA|LOS} uvmnp \  
[k] COMPL

.  
.  
.

I hh:mm:ss xy,ww AR01 MISC ALM <state> {CGA|CFA|LOS} uvmnp \  
[k] COMPL

I hh:mm:ss xy,ww AUD {CGA|CFA|LOS} END COMPL

I hh:mm:ss xy,ww AUD PARAMS COMPL

[O.81002]

I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS \

[s]abc-[t]def TOT nnn 5 LN MSG:

XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX EOM

.  
.  
.

I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS \

[s]abc-[t]def TOT nnn 5 LN MSG:

XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX COMPL

[O.81002]

I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS [s]abc-[t]def TOT nnn 6 LN MSG:

hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx  
hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx  
hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx  
hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx  
hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx EOM

.  
.  
.

I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS [s]abc-[t]def TOT nnn 6 LN MSG:

hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx  
hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx  
hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx  
hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx  
hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx hxxxxxxxxx COMPL

[O.81002]

I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS \  
uvmnp-uvmqr TOT nnn 5 LN MSG:

XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX EOM

.  
.  
.

I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS \  
uvmnp-uvmqr TOT nnn 5 LN MSG:

XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX  
XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX COMPL

[O.81002]

I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS uvmnp-uvmqr TOT nnn 6 LN MSG:

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx EOM

.  
.  
.

I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS uvmnp-uvmqr TOT nnn 6 LN MSG:

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx COMPL

[O.81003]

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS [s]abc-[t]def \

TOT nnn 5 LN MSG:

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX EOM

.  
.  
.

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS [s]abc-[t]def \

TOT nnn 5 LN MSG:

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX COMPL

[O.81003]

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS uvmnp-uvmqr \

TOT nnn 5 LN MSG:

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX EOM

.  
.  
.

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS uvmnp-uvmqr \

TOT nnn 5 LN MSG:

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX

XX XX XX XX XX XX XX XX COMPL

[O.81005]

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS TOT 0000 COMPL

[O.81006]

I hh:mm:ss xy,ww AUD PARAMS COMPL

[O.82001]

I hh:mm:ss xy,ww FRADTS DGN <ttt> <eee> d0 COMPL

[O.82002]

I hh:mm:ss xy,ww FRADTS FRCMP ttt[ d9 d8 d7 d6] \  
d5 d4 d3 d2 d1 d0 COMPL



[O.82003]

**I hh:mm:ss xy,ww    FRADTS BMCMP <ttt> d8 d7 d6 d5 d4 d3 d2 d1 COMPL**

[O.82004]

**I hh:mm:ss xy,ww    FRADTS MC DGN <tt> COMPL**

## Error Recovery Messages

[O.01301]

pa <il> hh:mm:ss xy,ww ERR PWR {PMC|PMA|DMA|MI}  
aaaa bbbb cccc dddd TN dddd COMPL

[O.01311]

I hh:mm:ss xy,ww ERR[ ESR] MC[ MP] TN dddd EVENT eeee \  
2 LN MSG:  
abab bbbb cccc dddd eeee ffff COND cc COMPL

[O.01311]

I hh:mm:ss xy,ww ERR[ ESR] MC[ CI] TN dddd EVENT eeee \  
2 LN MSG:  
COND cc COMPL

[O.01311]

I hh:mm:ss xy,ww ERR[ ESR] MC[ {BX|EBX}] TN dddd EVENT eeee \  
2 LN MSG:  
abab bbbb cccc dddd eeee ffff COND cc COMPL

[O.01311]

I hh:mm:ss xy,ww ERR[ ESR] MC[ {MTC|EMTC}] TN dddd \  
EVENT eeee 2 LN MSG:  
abab bbbb cccc dddd eeee ffff gggg hhhh iiii jjjj COND cc \  
COMPL

[O.01312]

I hh:mm:ss xy,ww ERR [ESR] MC [, {MP|CI}] TN dddd COMPL

[O.01321]

I hh:mm:ss xy,ww ERR LINK a TN dddd STATUS a0 a1 a2 COMPL

[O.01331]

I hh:mm:ss xy,ww ERR [ESR] SYNC a \  
TN dddd EVENT eeee 2 LN MSG:  
<byte1> <byte2> <byte3> <byte4> <byte5> COND cccc COMPL

[O.01333]

pa <il> hh:mm:ss xy,ww ERR SYNC a TLI m SSP b [NPC abc] \  
TN dddd 3 LN MSG:  
ALM[ LOS][ LEN][ EXJ][ PHS][ OOF][ MAJ][ MIN] {PMC|PMA|DMA|MI} SET  
<byte 1> <byte 2> <byte 3> <byte 4> <byte 5> COND cccc COMPL

[O.01333]  
pa <il> hh:mm:ss xy,ww ERR SYNC a TLI m SSP b [NPC uvmnp] \  
TN dddd 3 LN MSG:  
ALM[ LOS][ LEN][ EXJ][ PHS][ OOF][ MAJ][ MIN] {PMC|PMA|DMA|MI} SET  
<byte 1> <byte 2> <byte 3> <byte 4> <byte 5> COND cccc COMPL

[O.01335]  
I hh:mm:ss xy,ww ERR SYNC a TLI m SSP b [NPC abc] \  
TN dddd 3 LN MSG:  
ALM[ LOS][ LEN][ EXJ][ PHS][ OOF][ MAJ][ MIN] CLR  
<byte 1> <byte 2> <byte 3> <byte 4> <byte 5> COND cccc COMPL

[O.01335]  
I hh:mm:ss xy,ww ERR SYNC a TLI m SSP b [NPC uvmnp] \  
TN dddd 3 LN MSG:  
ALM[ LOS][ LEN][ EXJ][ PHS][ OOF][ MAJ][ MIN] CLR  
<byte 1> <byte 2> <byte 3> <byte 4> <byte 5> COND cccc COMPL

[O.01337]  
I hh:mm:ss xy,ww ERR MSGS TO LOG DISCARDED COMPL

[O.01341]  
I hh:mm:ss xy,ww ERR[ ESR] SYNC a TLI m SSP b \  
TN dddd EVENT eeee 2 LN MSG:  
<synchronizer status data bytes>[ NPC [s]abc][ COND cccc] COMPL

[O.01341]  
I hh:mm:ss xy,ww ERR[ ESR] SYNC a TLI m SSP b \  
TN dddd EVENT eeee 2 LN MSG:  
<synchronizer status data bytes>[ NPC uvmnp][ COND cccc] COMPL

[O.01342]  
I hh:mm:ss xy,ww ERR [ESR] SYNC a TLI m \  
TN dddd EVENT eeee 2 LN MSG:  
<synchronizer status data bytes> COND cccc COMPL

[O.01351]  
I hh:mm:ss xy,ww ERR [ESR] CCB sf TN dddd EVENT eeee \  
2 LN MSG:  
<error analysis data bytes> COND cc COMPL

[O.01352]  
I hh:mm:ss xy,ww ERR [ESR] CCNI s \  
TN dddd EVENT eeee 2 LN MSG:  
<reg0> <reg1> <reg2> <reg3> <reg4> \  
<emr0> <emr1> <emr2> <emr3> <emr4> COND cc COMPL

[O.01353]

I hh:mm:ss xy,ww ERR [ESR] TSI sft \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data> COND cc COMPL

[O.01354]

I hh:mm:ss xy,ww ERR[ ESR] CCI s \  
TN dddd EVENT eeee 2 LN MSG  
wd01 wd02 wd03 wd04 wd05 wd06 wd07 wd08 wd09 wd10 wd11 \  
wd12 COND cc COMPL

[O.01355]

I hh:mm:ss xy,ww ERR[ ESR] ETSI sqq \  
TN dddd EVENT eeee 2 LN MSG:  
wd01 wd02 wd03 wd04 wd05 wd06 wd07 wd08 wd09 wd10 wd11 \  
wd12 COND cc COMPL

[O.01361]

I hh:mm:ss xy,ww ERR[ ESR] UNIT [q]q {UC|UBX} \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data> COND cc COMPL

[O.01362]

I hh:mm:ss xy,ww ERR {SOFTWARE|MC} <error type> ERROR 4 LN MSG:  
MID=<mid> TN=dddd RC=<rc> ACTION=<action> ENTITY=<entity>  
SOURCE=<source> DP=<dp> PROC=<proc>  
TSARGS=<tsargs> COMPL

[O.01363]

I hh:mm:ss xy,ww ERR[ ESR] UNIT [q]q FTMI b \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data> COND cc COMPL

[O.01364]

I hh:mm:ss xy,ww ERR[ ESR] UNIT [q]q FC sb \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data> COND cc COMPL

[O.01366]

I hh:mm:ss xy,ww ERR SYNC a MODE {FAST|HOLDOVER|NORMAL}\  
{MATE|CRO|TLI m SSP c} TN dddd 2 LN MSG:  
<synchronizer status data bytes> COND cccc COMPL

[O.01371]

I hh:mm:ss xy,ww ERR[ ESR] NPC [s]abc-[[t]def] SIDE s \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data bytes>[ COND cc] COMPL

[O.01371]

I hh:mm:ss xy,ww ERR[ ESR] NPC uvmnp[-uvmqr] SIDE s \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data bytes>[ COND cc] COMPL

[O.01372]

I hh:mm:ss xy,ww ERR[ ESR] NPC [s]abc-[t]def TN dddd \  
EVENT eeee 2 LN MSG:  
<error analysis data bytes>[ COND cc] COMPL

[O.01372]

I hh:mm:ss xy,ww ERR[ ESR] NPC uvmnp-wxkqr TN dddd \  
2 LN MSG:  
EVENT eeee <error analysis data bytes>[ COND cc] COMPL

[O.01381]

pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd \  
PROCESSOR DATA 5 LN MSG:  
<d01> <d02> <d03> <d04> <d05> < d06 > < d07 > < d08 >  
<d09> <d10> <d11> <d12> <d13> < d14 > < d15 > < d16 >  
<d17> <d18> <d19> <d20> <d21> < d22 > < d23 > < d24 >  
<d25> <d26> <d27> <d28> <d29> <d3031> < d3233> < d34353637> \  
EOM

pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd \  
PROGRAM TEXT 5 LN MSG:  
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>  
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16>  
<d17> <d18> <d19> <d20> <d21> <d22> <d23> <d24>  
<d25> <d26> <d27> <d28> <d29> <d30> <d31> <d32> EOM

pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd \  
MEMORY DATA 5 LN MSG:  
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>  
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16>  
<d17> <d18> <d19> <d20> <d21> <d22> <d23> <d24>  
<d25> <d26> <d27> <d28> <d29> <d30> <d31> <d32> EOM

pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd READY \  
QUEUE DATA 3 LN MSG:  
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>  
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16> EOM

pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd PAUSE \  
QUEUE DATA 3 LN MSG:  
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>  
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16> EOM

pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd \  
LOCAL STACK DATA 5 LN MSG:  
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>  
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16>  
<d17> <d18> <d19> <d20> <d21> <d22> <d23> <d24>  
<d25> <d26> <d27> <d28> <d29> <d30> <d31> <d32> EOM

pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd STACK \  
TRACE 5 LN MSG:  
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>  
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16>  
<d17> <d18> <d19> <d20> <d21> <d22> <d23> <d24>  
<d25> <d26> <d27> <d28> <d29> <d30> <d31> <d32> COMPL

[O.01391]

I hh:mm:ss xy,ww ERR ESR ANALYSIS REPORT EVENT eeee 4 LN MSG:  
<action> <circuit identifier>  
<action> <circuit identifier>  
<action> <circuit identifier> COMPL

[O.01392]

I hh:mm:ss xy,ww ERR HARDWARE <entity> 4 LN MSG:  
TN=dddd COND=cc EVENT=xxxx ACTION=<action>  
SOURCE=<source> DP=<dp> PROC=<proc> <load>  
TSARGS=cn [<tsargs>] COMPL

[O.01393]

I hh:mm:ss xy,ww RESET {DATE|TOD|TOD DATE} hr:mn:sc \  
{mo/da/yr FORMAT MDY|da/mo/yr FORMAT DMY} COMPL

## **Event Reporting Messages**

---

[O.65061]

pa <il> hh:mm:ss xy,ww ALM <state> <parameter> NPC [s]abc 2 LN MSG:

AI aaaaa COUNT cccccccc THLEV lllllllll COMPL

[O.65061]

pa <il> hh:mm:ss xy,ww ALM <state> <parameter> NPC uvmnp 2 LN MSG:

AI aaaaa COUNT cccccccc THLEV lllllllll COMPL



---

## Input Denials Messages

---

[O.01101]

M hh:mm:ss xy,ww n[vv] {BADVERB|FRMERR|SEQERR} BAD SYNTAX \\  
e LN MSG:  
First 70 characters of input message.  
Remaining text of input message STOPPED

[O.01111]

M hh:mm:ss xy,ww n[vv] CMD MC {OOS|MCOND|INSERVICE|MPDBASE} \\  
e LN MSG:  
<First 70 characters of input message.>  
<Remaining text of input message> STOPPED

[O.01121]

A hh:mm:ss xy,ww ERR CMD ABT [TN abcd] e LN MSG:  
First 70 characters of input message.  
Remaining text of input message STOPPED

[O.01131.01]

M hh:mm:ss xy,ww n[vv] [<BADVERB|FRMERR|SEQERR|CMD>|<actverb>] \\  
[<INERR>] <reason> e LN MSG:  
<First 70 characters of input message.>  
[<Text continued from input message>]  
<Remaining text of input message> {STOPPED|DNY}

---

## Startup Messages

---

[O.01201]

**\*\*{CI|ECI} RESET**

[O.01211]

**{CI|ECI} STARTUP {STF|ATP}**

[O.01221]

**MP STARTUP {STF|ATP}**

[O.01241]

**BOOT FROM {PMEM|SMEM}**

[O.01242]

**BOOT FROM PMEM FAILED  
ATTEMPTING TO BOOT FROM SMEM**

[O.01251]

**RESET STOPPED**

[O.01261]

**I hh:mm:ss xy,ww n[vv] MC RESET RELEASE DACSIgg.pp ISSUE r \**  
**2 LN MSG:**  
**FPKG kkttuuvv [COND cc] COMPL**

[O.01271]

**BX2 {STF|ATP}**

[O.01272]

**EBX STARTUP {STF|ATP}**

[O.01281]

**MTC {STF|ATP}**

[O.01282]

**EMTC STARTUP {STF|ATP}**

[O.62011]

**I hh:mm:ss xy,ww APPL RESET COMP**

---

**Contents**

|                             |     |
|-----------------------------|-----|
| <b>ABT</b>                  | 6-2 |
| ■ Explanation Of Command    | 6-2 |
| ■ Command                   | 6-3 |
| ■ Completion Message        | 6-4 |
| ■ Denial Message            | 6-4 |
| ■ Autonomous Message        | 6-4 |
| ■ Explanation Of Parameters | 6-4 |
| <b>ACO,ACTIVE</b>           | 6-5 |
| ■ Explanation Of Command    | 6-5 |
| ■ Command                   | 6-5 |
| ■ Completion Message        | 6-5 |
| ■ Denial Message            | 6-5 |
| ■ Autonomous Message        | 6-5 |
| ■ Explanation Of Parameters | 6-6 |
| <b>ACT,MAP,CLR,INCL</b>     | 6-7 |
| ■ Explanation Of Command    | 6-7 |
| ■ Command                   | 6-7 |
| ■ Completion Message        | 6-7 |
| ■ Nonhierarchical           | 6-7 |
| ■ Hierarchical              | 6-8 |
| ■ Denial Message            | 6-8 |
| ■ Nonhierarchical           | 6-8 |
| ■ Hierarchical              | 6-8 |
| ■ Common                    | 6-8 |
| ■ Autonomous Message        | 6-8 |
| ■ Explanation Of Parameters | 6-9 |

---

## Contents

|                                               |      |
|-----------------------------------------------|------|
| <b>ADD,LINK,K,T1,T3,N2,A,B</b>                | 6-14 |
| ■ Explanation Of Command                      | 6-14 |
| ■ Command                                     | 6-14 |
| ■ Completion Message                          | 6-14 |
| ■ Denial Message                              | 6-14 |
| ■ Autonomous Message                          | 6-14 |
| ■ Explanation Of Parameters                   | 6-15 |
| <b>ADD,LINK,PTCOL,S,X,T,M,BAUD,ALM,BS,ENQ</b> | 6-16 |
| ■ Explanation Of Command                      | 6-16 |
| ■ Command                                     | 6-16 |
| ■ Completion Message                          | 6-17 |
| ■ Denial Message                              | 6-17 |
| ■ Autonomous Message                          | 6-17 |
| ■ Explanation Of Parameters                   | 6-18 |
| <b>ADD,LINK,W,P,T20,T22,T23,T25,T26,R20</b>   | 6-21 |
| ■ Explanation Of Command                      | 6-21 |
| ■ Command                                     | 6-21 |
| ■ Completion Message                          | 6-22 |
| ■ Denial Message                              | 6-22 |
| ■ Autonomous Message                          | 6-22 |
| ■ Explanation Of Parameters                   | 6-23 |
| <b>ADD,NPC</b>                                | 6-28 |
| ■ Explanation Of Command                      | 6-28 |
| ■ Command                                     | 6-28 |
| ■ Nonhierarchical                             | 6-28 |
| ■ Hierarchical                                | 6-28 |
| ■ Completion Message                          | 6-28 |
| ■ Denial Message                              | 6-28 |
| ■ Autonomous Message                          | 6-29 |
| ■ Explanation Of Parameters                   | 6-29 |
| <b>ADD,USER,LINK,INCL,ALL,LANG,M,P,F</b>      | 6-31 |
| ■ Explanation Of Command                      | 6-31 |
| ■ Command                                     | 6-31 |
| ■ Completion Message                          | 6-32 |
| ■ Denial Message                              | 6-32 |
| ■ Autonomous Message                          | 6-32 |
| ■ Explanation Of Parameters                   | 6-32 |

---

## Contents

|                                   |      |
|-----------------------------------|------|
| <b>ADD,USER,NEW,PASSWD</b>        | 6-38 |
| ■ Explanation Of Command          | 6-38 |
| ■ Command                         | 6-38 |
| ■ Completion Message              | 6-39 |
| ■ Denial Message                  | 6-39 |
| ■ Autonomous Message              | 6-39 |
| ■ Explanation Of Parameters       | 6-39 |
| <b>ALM,IDLD,AI,NPC</b>            | 6-41 |
| ■ Explanation Of Command          | 6-41 |
| ■ Command                         | 6-41 |
| ■ Completion Message              | 6-41 |
| ■ Denial Message                  | 6-41 |
| ■ Autonomous Message              | 6-41 |
| ■ Nonhierarchical                 | 6-41 |
| ■ Hierarchical                    | 6-42 |
| ■ Explanation Of Parameters       | 6-42 |
| <b>ALM,NPC</b>                    | 6-45 |
| ■ Explanation Of Command          | 6-45 |
| ■ Command                         | 6-45 |
| ■ Completion Message              | 6-45 |
| ■ Denial Message                  | 6-45 |
| ■ Autonomous Message              | 6-45 |
| ■ Nonhierarchical                 | 6-45 |
| ■ Hierarchical                    | 6-46 |
| ■ Explanation Of Parameters       | 6-46 |
| <b>ALM,NPC,AI,COUNT,THLEV</b>     | 6-49 |
| ■ Explanation Of Command          | 6-49 |
| ■ Command                         | 6-49 |
| ■ Completion Message              | 6-49 |
| ■ Denial Message                  | 6-49 |
| ■ Autonomous Message              | 6-49 |
| ■ Nonhierarchical                 | 6-49 |
| ■ Hierarchical                    | 6-50 |
| ■ Explanation Of Parameters       | 6-50 |
| <b>ALM,PMC,PMA,DMA,MI,CCN,OOS</b> | 6-53 |
| ■ Explanation Of Command          | 6-53 |
| ■ Command                         | 6-53 |

---

## Contents

|                                              |      |
|----------------------------------------------|------|
| ■ Completion Message                         | 6-53 |
| ■ Denial Message                             | 6-53 |
| ■ Autonomous Message                         | 6-53 |
| ■ Explanation Of Parameters                  | 6-54 |
| <b>ALM,PMC,PMA,DMA,MI,ECCN,OOS</b>           | 6-55 |
| ■ Explanation Of Command                     | 6-55 |
| ■ Command                                    | 6-55 |
| ■ Completion Message                         | 6-55 |
| ■ Denial Message                             | 6-55 |
| ■ Autonomous Message                         | 6-55 |
| ■ Explanation Of Parameters                  | 6-56 |
| <b>ALM,PMC,PMA,DMA,MI,NPC,RPSFI,IDLD</b>     | 6-57 |
| ■ Explanation Of Command                     | 6-57 |
| ■ Command                                    | 6-57 |
| ■ Completion Message                         | 6-57 |
| ■ Denial Message                             | 6-57 |
| ■ Autonomous Message                         | 6-57 |
| ■ Nonhierarchical                            | 6-57 |
| ■ Hierarchical                               | 6-58 |
| ■ Explanation Of Parameters                  | 6-58 |
| <b>ALM,PMC,PMA,DMA,MI,SMEM</b>               | 6-60 |
| ■ Explanation Of Command                     | 6-60 |
| ■ Command                                    | 6-60 |
| ■ Completion Message                         | 6-60 |
| ■ Denial Message                             | 6-60 |
| ■ Autonomous Message                         | 6-60 |
| ■ Explanation Of Parameters                  | 6-61 |
| <b>ALM,RESET,DATE,TOD,FORMAT,MDY,DMY,PMC</b> | 6-62 |
| ■ Explanation Of Command                     | 6-62 |
| ■ Command                                    | 6-62 |
| ■ Completion Message                         | 6-62 |
| ■ Denial Message                             | 6-62 |
| ■ Autonomous Message                         | 6-62 |
| ■ Explanation Of Parameters                  | 6-63 |
| <b>ALWSW,UNIT,MMFG,TOPRTN,TOSRVC</b>         | 6-64 |
| ■ Explanation Of Command                     | 6-64 |
| ■ Command                                    | 6-64 |

---

## Contents

|                               |      |
|-------------------------------|------|
| ■ Completion Message          | 6-64 |
| ■ Denial Message              | 6-65 |
| ■ Autonomous Message          | 6-65 |
| ■ Explanation Of Parameters   | 6-65 |
| <b>APPEND,END</b>             | 6-66 |
| ■ Explanation Of Command      | 6-66 |
| ■ Command                     | 6-66 |
| ■ Completion Message          | 6-66 |
| ■ Denial Message              | 6-66 |
| ■ Autonomous Message          | 6-66 |
| ■ Explanation Of Parameters   | 6-67 |
| <b>APPL,RESET,IN,PROGRESS</b> | 6-68 |
| ■ Explanation Of Command      | 6-68 |
| ■ Command                     | 6-68 |
| ■ Completion Message          | 6-68 |
| ■ Denial Message              | 6-68 |
| ■ Autonomous Message          | 6-68 |
| ■ Explanation Of Parameters   | 6-69 |
| <b>AR01,MISC,ALM,IDLD,PBA</b> | 6-70 |
| ■ Explanation Of Command      | 6-70 |
| ■ Command                     | 6-70 |
| ■ Completion Message          | 6-70 |
| ■ Denial Message              | 6-70 |
| ■ Autonomous Message          | 6-70 |
| ■ Nonhierarchical             | 6-70 |
| ■ Hierarchical                | 6-71 |
| ■ Explanation Of Parameters   | 6-71 |
| <b>AR01,MISC,ALM,PBA</b>      | 6-74 |
| ■ Explanation Of Command      | 6-74 |
| ■ Command                     | 6-74 |
| ■ Completion Message          | 6-74 |
| ■ Denial Message              | 6-74 |
| ■ Autonomous Message          | 6-74 |
| ■ Nonhierarchical             | 6-74 |
| ■ Hierarchical                | 6-75 |
| ■ Explanation Of Parameters   | 6-75 |
| <b>AUD,PARAMS</b>             | 6-79 |

---

## Contents

|                                           |      |
|-------------------------------------------|------|
| ■ Explanation Of Command                  | 6-79 |
| ■ Command                                 | 6-79 |
| ■ Completion Message                      | 6-79 |
| ■ Denial Message                          | 6-79 |
| ■ Autonomous Message                      | 6-79 |
| ■ Explanation Of Parameters               | 6-80 |
| <b>AUD, QRY, BER, ALL, NPCS, TOT</b>      | 6-81 |
| ■ Explanation Of Command                  | 6-81 |
| ■ Command                                 | 6-81 |
| ■ Completion Message                      | 6-81 |
| ■ Denial Message                          | 6-81 |
| ■ Autonomous Message                      | 6-81 |
| ■ Explanation Of Parameters               | 6-82 |
| <b>AUD, QRY, BER, ALL, NPCS, TOT, EOM</b> | 6-83 |
| ■ Explanation Of Command                  | 6-83 |
| ■ Command                                 | 6-83 |
| ■ Completion Message                      | 6-84 |
| ■ Nonhierarchical                         | 6-84 |
| ■ Hierarchical                            | 6-84 |
| ■ Denial Message                          | 6-84 |
| ■ Autonomous Message                      | 6-85 |
| ■ Nonhierarchical                         | 6-85 |
| ■ Hierarchical                            | 6-85 |
| ■ Explanation Of Parameters               | 6-86 |
| <b>AUD, QRY, CFA, CGA, LOS</b>            | 6-89 |
| ■ Explanation Of Command                  | 6-89 |
| ■ Command                                 | 6-89 |
| ■ Completion Message                      | 6-90 |
| ■ Nonhierarchical                         | 6-90 |
| ■ Hierarchical                            | 6-91 |
| ■ Denial Message                          | 6-92 |
| ■ Autonomous Message                      | 6-92 |
| ■ Nonhierarchical                         | 6-92 |
| ■ Hierarchical                            | 6-93 |
| ■ Explanation Of Parameters               | 6-93 |
| <b>AUD, QRY, CFA, CGA, LOS</b>            | 6-97 |
| ■ Explanation Of Command                  | 6-97 |



---

## Contents

|                                |       |
|--------------------------------|-------|
| ■ Command                      | 6-97  |
| ■ Completion Message           | 6-98  |
| ■ Nonhierarchical              | 6-98  |
| ■ Hierarchical                 | 6-99  |
| ■ Denial Message               | 6-100 |
| ■ Autonomous Message           | 6-100 |
| ■ Nonhierarchical              | 6-100 |
| ■ Hierarchical                 | 6-102 |
| ■ Explanation Of Parameters    | 6-103 |
| <b>AUD, QRY, CFA, CGA, LOS</b> | 6-107 |
| ■ Explanation Of Command       | 6-107 |
| ■ Command                      | 6-107 |
| ■ Completion Message           | 6-107 |
| ■ Denial Message               | 6-107 |
| ■ Autonomous Message           | 6-107 |
| ■ Explanation Of Parameters    | 6-108 |



---

## **ABT — AUD**

---

### **ABT — AUD**

This section documents the commands **ABT** through **AUD**.

## **ABT**

---

### **ABORT**

#### **Explanation Of Command**

---

The abort command enables a user to stop a currently executing abortable task previously initiated by the same user from continuing execution. This command is helpful to use when a task is producing large amounts of output that the user does not wish to view, or to stop a task that is operating over a range of entities.

If no users are logged in, a command entered on one link CANNOT be aborted from another link. If the same user is logged in on two different links, commands entered from one link CAN be aborted from another link. Only USER DAX can abort commands entered on any link issued by any user.

When an abortable task is operating over a range of entities, DACS II will complete the task on the current entity, and then stop the task for the remaining entities in the specified range. Since the abort command will also delete all messages queued for output for the link or virtual circuit on which the ABT command was entered, the user should use appropriate query commands to determine which entities in the range have been operated upon before the task was stopped.

In the case where a task has already executed, or no task is executing when the abort command is entered, the abort command will not take effect. Any remaining output will not be generated, and DACS II will not generate a completion message or an ABT completion message.

The following commands may be aborted:

**31341 GRTH::NPC**  
**31352 GRTH::NPC**  
**31362 GRTH::NPC**  
**31363 GRTH::NPC**  
**31371 GRTH::NPC**  
**32341 DGR::NPC**  
**33351 RMV::NPC**  
**34351 RST::NPC**  
**38271 CHG::NPC,TYPE (abortable only for DS3 NPCs.)**  
**38281 CHG::NPC,TYPE,ALMOPT,AIS**

38321 CHG::NPC, TS0  
38323 CHG::NPC, TS0M  
38324 CHG::NPC, NFS  
38341 CHG::NPC, LPBK  
51151 UTL::QRY, PMSCHED  
51161 INH::PMREPT  
51171 ALW::PMREPT  
52011 UTL::QRY, CMAP  
52031 UTL::QRY, DMAP  
52041 UTL::QRY, TO  
52051 UTL::QRY, FROM  
52101 UTL::QRY, BCAST, ALL  
52201 UTL::QRY, MARK  
52211 UTL::QRY, MARK  
52311 UTL::QRY, RTMAP | DLMAP  
52321 UTL::QRY, SCDG, ALL, STATE  
52501 UTL::QRY, SECH, TO  
52511 UTL::QRY, SCON, CH  
52581 UTL::QRY, LOAD  
53041 UTL::QRY, EQD, NPC  
53101 UTL::QRY, ALL  
53103 UTL::QRY, UNIT  
53104 UTL::QRY, ALL, COMMON  
53105 UTL::QRY, COMMON  
53151 UTL::QRY, ALMS, DBASE  
55011 UTL::QRY, SWER, ERR  
55012 UTL::QRY, HWER, ERR  
55181 UTL::QRY, XCSB  
56021 UTL::QRY, ALMOPT, NPC  
56311 UTL::QRY, STATE, NPC  
56314 UTL::QRY, STATE, NPC  
56321 UTL::QRY, TS0, NPC  
56323 UTL::QRY, TS0M, NPC  
56324 UTL::QRY, NFS, NPC  
56341 UTL::QRY, DD  
56343 UTL::QRY, DD  
56351 UTL::QRY, NPC  
56353 UTL::QRY, BC, NPC  
56501 UTL::QRY, SR00F

### Command

---

[I.55711]

ABT!

### **Completion Message**

---

[O.55711]

M hh:mm:ss xy,ww n[vv] CMD ABT e LN MSG:  
<First 70 characters of aborted command>  
<Remaining text of aborted command> ABT COMPL

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**ABT** - Abort

**e** - Number of lines in the message

## **ACO,ACTIVE**

### **ALARM CUTOFF ACTIVE**

#### **Explanation Of Command**

This output message automatically reports the activation (depressing) of the alarm cutoff (ACO) switch. Activation of this switch silences the audible alarms. The ACO switch will be inactivated when all alarms are retired or when a new alarm appears on the frame. For example, if there is a minor alarm on the frame before the CGA major alarm is induced, when the CGA major alarm is retired by an ACO action, the minor alarm will remain. In this case, there will be a second ACO ACTIVE message.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.65071]

**I hh:mm:ss xy,ww ACO ACTIVE COMPL**

### **Explanation Of Parameters**

---

**ACO** - Alarm cutoff

**ACTIVE** - Active



## **ACT,MAP,CLR,INCL**

### **ACTIVATE ALTERNATE MAPS**

#### **Explanation Of Command**

This command requests the activation of an alternate map.

DACS II will not generate individual completion messages for each successful cross-connection; however, it will generate individual denial messages. Moreover, the individual denial messages will only be output to the link/user where the alternate map command was entered, independent of the output screening level.

When only one end of a TCON is remapped via this command, the trunk conditioning specified for a particular cross-connection when that cross-connection was first established will be applied to a disconnected channel.

#### **Command**

[I.39201]

**ACT:FRM xy,SEQ ww:MAP <map name>[,CLR][,INCL]!**

#### **Completion Message**

#### **Nonhierarchical**

[O.39201]

**M hh:mm:ss xy,ww n[vv] ACT MAP <map name>[ CLR][ INCL]\  
[ NPC [s]abc] COND cc COMPL**

### **Hierarchical**

---

[O.39201]

M hh:mm:ss xy,ww n[vv] ACT MAP <map name>[ CLR][ INCL]\  
[ NPC uvmnp] COND cc COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.39201.02]

M hh:mm:ss xy,ww n[vv] ACT MAP <map name>[ CLR][ INCL] \  
2 LN MSG:  
TCON [s]jklddd[-eee],[t]ghijjj[-kkk][ <tc>][ <sc>]\  
[ NAM][ CUS][ INCL][ RDC] COND cc DNY

### **Hierarchical**

---

[O.39201.02]

M hh:mm:ss xy,ww n[vv] ACT MAP <map name>[ CLR][ INCL] \  
2 LN MSG:  
TCON edhfgddd[-eee],wxkqrjjj[-kkk][ <tc>][ <sc>]\  
[ NAM][ CUS|INCL][ RDC] COND cc DNY

### **Common**

---

[O.39201.01]

M hh:mm:ss xy,ww n[vv] ACT MAP <map name>[ CLR][ INCL] \  
COND cc DNY

[O.55703]

M hh:mm:ss xy,ww n[vv] ACT MAP IN PROGRESS

**Note:** As the alternate map is being executed, DACS II will generate the above IN PROGRESS message every 20 seconds.

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**MAP** - Map

**map name**

- Map name (1 to 7 uppercase alphanumeric characters)  
Name of an already existing alternate map.

**CLR** - Clear

Clear all cross-connections on all NPCs included in the map before activating the alternate map.

**INCL** - Inclusive

When an alternate map is activated, existing circuits that are marked CUS or RDC will be overwritten only if the INCL keyword has been specified. Otherwise, a denial will be issued as is currently done for channels under test, etc.

**NPC** - Network processing circuit

**[s]abc** - The first 3- or 4-digit nonhierarchical NPC number of NPC containing a non-two-way, two-point cross-connect.

**[s]jkl, [t]ghi**

- The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - First hierarchical NPC number of NPC containing a non-two-way, two-point cross-connection.

**edhfg** - Hierarchical NPC number

**wxkqr** - Hierarchical NPC number

**uv,wx,ed**

- Unit number

**m,k,h** - Module number

**np,qr,fg**

- NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd,jjj**

- Channel number, the first channel of a range

**eee,kkk**

- Channel number, the last channel of a range

000-031      CEPT

**tc**      - Trunk conditioning

**sc** - Signaling control

This variable represents the optional signaling bit control specification and is used only in the Channel Associated Signaling (CAS) to CAS application with CAS signaling.

If this option is not used, all four cross-connected time slot 16 (**abcd**) signaling bits in each direction will be cross-connected unchanged.

Signaling control is specified as follows:

**SC(abcd,efgh)**

**abcd** - Time slot 16 signalling bits, From direction

**efgh** - Time slot 16 signalling bits, To direction

All 8 bits can be controlled independently. Control is applied by replacing each character in variable **abcd** or **efgh** with the appropriate control character.

The allowable control characters are:

*Bit*

*Setting Explanation*

**P** Pass through unchanged

**V** Pass through inverted

**0** Set output to 0

**1** Set output to 1

The effect of the **V** control character depends upon whether the connection is international or gateway.

International: Inversion takes place on both the From and To-direction sides. The net effect is to cancel out the inversion. Hence it will appear that no inversion took place.

Gateway: Inversion takes place only on the international side of the connection. The effect is an inversion.

**NAM** - No A to Mu (conversion)

A- to  $\mu$ -law conversion is inhibited.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**00** No conditions

**62** File is being accessed

**64** File doesn't exist/can't be accessed

**70** Some circuits not activated,cleared or pictured

**71** The reference map does not exist

**72** The map is not valid

**cc**    *Explanation*

- 73**    Both sides of CCN are OOS
- 74**    At least one UC is OOS or At least one UC is failed
- 75**    At least one UC is not the correct type
- D5**    No user is logged in on the link/vc
- 01**    Invalid range for specified NPC type
- 02**    Invalid NPC type for AIS insertion
- 06**    Invalid range for specified FROM NPC type
- 07**    Invalid range for specified TO NPC type
- 10**    NPC out of service or failed
- 11**    NPC not equipped
- 12**    Active CCN side not IS or failed or pested or hardware OOS
- 13**    UNIT not equipped, not in service, or failed
- 14**    CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS
- 15**    FTMI not equipped, not in service, or failed
- 16**    FC not eqd, not IS, or failed or inactive side FC not eqd or not IS
- 17**    TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS
- 21**    Trunk conditioning is invalid
- 30**    Termination is already assigned
- 32**    Termination is under test
- 35**    Termination is protected (RDC)
- 36**    Termination is not connected as indicated
- 40**    CCN denied request
- 54**    Conversion leg is terminated
- 38**    Deny SP Type NPCs for Alternate Maps
- A7**    Deny non-channelized NPCs for Alternate Maps
- E8**    SC invalid for cross-connection specified
- E9**    MUX or TRB invalid for cross-connection specified
- EA**    AIS invalid for cross-connection specified
- EB**    NAM invalid for cross-connection specified
- EC**    Invalid channel 000 cross-connection specified
- ED**    Invalid channel 031 cross-connection specified
- FF**    Termination is in process of being rolled
- B0**    Unit 1 denied request
- B1**    Unit 2 denied request
- B2**    Unit 3 denied request
- B3**    Unit 4 denied request
- B4**    Unit 5 denied request
- B5**    Unit 6 denied request
- 2A**    Deny Clear-2MB for Alternate Maps
- 4A**    channel part of a TP or TG

## **ADD, LINK, K, T1, T3, N2, A, B**

**ADD LINK, X.25, PROTOCOL, DATA LINK, LAYER  
PARAMETERS**

### **Explanation Of Command**

This command allows the user to provision the protocol-specific parameters in the data link layer of an X.25 administrative link.

### **Command**

[I.36003]

**ADD:FRM xy,SEQ ww:LINK j[,K b][,T1 ee][,T3 ggg][,N2 aa]\  
[,FRMAD {A|B}]!**

### **Completion Message**

[O.36003]

**M hh:mm:ss xy,ww n[vv] ADD LINK j[ K b][ T1 ee][ T3 ggg]\  
[ N2 aa][ FRMAD {A|B}] COMPL**

### **Denial Message**

[O.36003.01]

**M hh:mm:ss xy,ww n[vv] ADD LINK j[ K b][ T1 ee][ T3 ggg]\  
[ N2 aa][ FRMAD {A|B}] COND cc DNY**

### **Autonomous Message**

Not applicable.



### **Explanation Of Parameters**

---

**LINK** - Link

**j** - Administrative link number (5 or 6)

**FRMAD** - Frame address used by each frame in the Data Link Layer of X.25 protocol.

**A** - Data link layer frame address A. Default is A

**B** - Data link layer frame address B

**K** - Maximum number of outstanding I frames

**b** - Number of frames (1 through 7). Default is 7.

**T1** - Acknowledgment timer

**ee** - Timer setting in seconds (2 through 20). Default is 3 seconds

**T3** - Disconnect (or Idle channel) timer

**ggg** - Timer setting in seconds (4 through 120). Default is 26 seconds

**N2** - Maximum number of frame transmissions

**aa** - Number of frame transmissions (2 through 16) (including original transmission). Default is 7.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**03** Subject entity is in service

**D0** Command is Frame administrator (DAX) only.

## **ADD, LINK, PTCOL, S, X, T, M, BAUD, ALM, BS, ENQ**

### **ADD LINK, PROTOCOL, BAUD**

#### **Explanation Of Command**

This command is used to provision (add) a Snider, X.25, or TABS administrative link.

This command can also be used to initialize or change the performance parameters of the link, including the protocol (PTCOL), link speed (BAUD), alarm class (ALM), backspace (BS), Xon/Xoff flow control (XON), and Enq/Ack flow control (ENQ) provisioning.

At least one parameter must be given.

On input, if a virtual circuit range is specified as zero (0), the corresponding group number specified is ignored by DACS II.

#### **Command**

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL {S|X|T|M}[,BAUD bb][,ALM k]\  
[,BS e][,ENQ q][,XON x][,INIT]!**

If the protocol is Snider:

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL S[,BAUD bb][,ALM k]\  
[,BS e][,ENQ q][,XON x][,INIT]!**

If the protocol is X.25:

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL X[,ALM k][,INIT]!**

If the protocol is TABS:

[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL T[,BAUD bb][,ALM k][,INIT]!**

If the protocol is Modified Snider:  
[I.36001]

**ADD:FRM xy,SEQ ww:LINK j,PTCOL M[,ALM k][,INIT]!**

### **Completion Message**

---

The output message received depends upon whether "ENQ" and "XON" are specified in the input command. If "ENQ" and "XON" are not specified in the input command, the output message is the following:  
[O.36001]

**M hh:mm:ss xy,ww n[vv] ADD LINK j[ PTCOL {S|X|T|M}]\**  
**[ BAUD bb][ ALM k][ BS e][ INIT] COMPL**

If "ENQ" and "XON" are specified in the input command, the output message is the following:

**M hh:mm:ss xy,ww n[vv] ADD LINK j[ PTCOL {S|X|T|M}]\**  
**[ BAUD bb][ ALM k][ BS e][ INIT] 2 LN MSG:**  
**[ ENQ q][ XON x] COMPL**

### **Denial Message**

---

The output message received depends upon whether "ENQ" and "XON" are specified in the input command. If "ENQ" and "XON" are not specified in the input command, the output message is the following:  
[O.36001.01]

**M hh:mm:ss xy,ww n[vv] ADD LINK j[ PTCOL {S|X|T|M}]\**  
**[ BAUD bb][ ALM k][ BS e][ INIT] COND cc DNY**

If "ENQ" and "XON" are specified in the input command, the output message is the following:

**M hh:mm:ss xy,ww n[vv] ADD LINK j[ PTCOL {S|X|T|M}]\**  
**[ BAUD bb][ ALM k][ BS e][ INIT] 2 LN MSG:**  
**[ ENQ q][ XON x] COND cc DNY**

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**LINK** - Link

**j** - Administrative link number (1 through 6)

**PTCOL** - Protocol

**S** - SCCSAI (Snider protocol)

**X** - X.25 Synchronous protocol

**T** - TABS (Telemetry Asynchronous Block Serial protocol)

**M** - Modified Snider Protocol (requires baud rate of 1200)

**BAUD** - Baud

**bb** - Baud rate

The baud rate is not provisioned for synchronous X.25 links. Timing for X.25 links is received from the connected X.25 network or device. Provisioning the baud rate applies only to asynchronous Snider links.

| <i>bb</i> | <i>Rate</i> |
|-----------|-------------|
|-----------|-------------|

|    |      |
|----|------|
| 03 | 300  |
| 06 | 600  |
| 12 | 1200 |
| 24 | 2400 |
| 48 | 4800 |
| 96 | 9600 |

**ALM** - Alarm

**k** - Alarm class for link hardware failures

| <i>k</i> | <i>Alarm Class</i> |
|----------|--------------------|
|----------|--------------------|

|   |                 |
|---|-----------------|
| 1 | Minor (default) |
| 2 | Major           |

**BS** - Backspace

**e** - Character echoed for backspace or control-h

| <i>e</i> | <i>Character</i> |
|----------|------------------|
|----------|------------------|

|   |                               |
|---|-------------------------------|
| 0 | Backspace is echoed (default) |
| 1 | Underscore is echoed          |

**ENQ** - Enquire

**q** - ENQ/ACK Protocol Enable/Disable Control

*q*      *ENQ/ACK Protocol Provisioning*

0      Disabled

1      Enabled (default)

If the DACS II frame has been set to expect the ENQ/ACK Protocol Enable/Disable Control and the sending terminal is not set up properly to send the ACK in response to ENQ, then after several attempts to receive ACK the DACS II frame will autonomously declare a protocol OOS for ENQ/ACK, remove the link, perform diagnostics and then restore the link. At this point the ENQ/ACK protocol is set to disabled.

**XON** - XON

**x** - XON/XOFF Protocol Enable/Disable Control

*x*      *XON/XOFF Protocol Provisioning*

0      Disabled (default)

1      Enabled

The XON/XOFF Protocol Enable/Disable Control will only take effect when the DACS II frame is in output mode. The effect of XOFF lasts for 60 seconds or until an XON is received. If the frame has data to be output on the given link (that is, from a command executed on that link, or output data from another monitored link), and XOFF's are received in a manner such that at the end of an 60 second OFF interval a new 60 second OFF interval begins, thus preventing the frame from delivering output data, then the frame will declare a software error based on the assumption that a software communications error exists. The link will be autonomously removed, diagnosed, and restored. Following restoral, queued output data will be flushed. The XON protocol will still be in effect after the link is restored.

**INIT** - Initialize

Initialize the administrative link; all parameters are set to default except those specified in the command.

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 01** Subject entity is equipped
- 03** Subject entity is in service
- D0** Command is Frame administrator (DAX) only.
- DF** Command and protocol are inconsistent
- 2A** Incorrect pack type in slot
- EA** XON/XOFF flow control is supported only on Snider link
- EB** ENQ/ACK flow control is supported only on Snider link

## **ADD, LINK, W, P, T20, T22, T23, T25, T26, R20**

### **ADD X.25 LINK PARAMETERS**

#### **Explanation Of Command**

This command allows a user to provision an X.25 administrative link with packet layer parameters.

If a virtual circuit (VC) range is specified as zero (0), the corresponding group number specified in **gghh** is ignored by DACS II.

Parameters T20, R20, DBIT, and VC() are per-link parameters and the remaining parameters are per-VC parameters.

If a 3-digit link+VC number (501, 502, ..) is used and only per-VC parameters are specified, then the command is accepted and the values apply only to the specified VC.

If a 3-digit link+VC number is used and at least one per-link parameter is specified, then the command is denied.

If a 1-digit link number (5 or 6) is used and any per-link and/or per-VC parameter is specified, then the command is accepted and the values apply to all VCs in the link. To ensure proper interface between DACS II and the packet network, packet layer parameters at DACS II and network ends of the X.25 link must be identical.

#### **Command**

[I.36005]

```
ADD:FRM xy,SEQ ww:LINK j[mm][,W c][,P ddd][,T20 iii]\
[,T22 jjj][,T23 kkk][,T25 lll][,T26 mmm][,R20 nn]\
[,R22 p][,R23 qq][,R25 r][,DBIT v][,VC(ppss,gghh)]!
```

### **Completion Message**

---

[O.36005]

```
M hh:mm:ss xy,ww n[vv] ADD LINK j[mm][W c][P ddd]\
[T20 iii][T22 jjj][T23 kkk][T25 lll][T26 mmm]\
[R20 nn][R22 p][R23 qq][R25 r][DBIT v][VC(ppss,gghh)] COMPL
```

**Note:** If output message is longer than 80 characters, the following will be output.

[O.36005]

```
M hh:mm:ss xy,ww n[vv] ADD LINK j[mm][W c][P ddd]\
[T20 iii][T22 jjj] 2 LN MSG:
[T23 kkk][T25 lll][T26 mmm][R20 nn][R22 p][R23 qq]\
[R25 r][DBIT v][VC(ppss,gghh)] COMPL
```

### **Denial Message**

---

[O.36005.01]

```
M hh:mm:ss xy,ww n[vv] ADD LINK j[mm][W c][P ddd]\
[T20 iii][T22 jjj][T23 kkk] [T25 lll][T26 mmm]\
[R20 nn][R22 p][R23 qq][R25 r][DBIT v][VC(ppss,gghh)]\
COND cc DNY
```

**Note:** If output message is longer than 80 characters, the following will be output:

[O.36005.01]

```
M hh:mm:ss xy,ww n[vv] ADD LINK j[mm][W c][P ddd]\
[T20 iii][T22 jjj] 2 LN MSG:
[T23 kkk][T25 lll][T26 mmm][R20 nn][R22 p][R23 qq]\
[R25 r][DBIT v][VC(ppss,gghh)] COND cc DNY
```

### **Autonomous Message**

---

Not applicable.



### **Explanation Of Parameters**

---

**LINK** - Link

**j [mm]** - Administrative link number

**j** - Physical link number (l is either 5 or 6)

**mm** - Virtual circuit number (01 through 16)

**W** - Window

**c** - Window size (1 through 7). Default window size is 2.

**P** - Packet

**ddd** - Packet size. Can be 128, 256, 512 octets. Default is 128 octets.

**T20** - Restart request response timer

**iii** - Timer setting (10 through 180 seconds). Default is 180 seconds.

T20 is valid only on a per link basis and will be denied on an individual virtual circuit.

**T22** - Reset request response timer

**jjj** - Timer setting (10 through 180 seconds). Default is 180 seconds.

**T23** - Disconnect (or idle channel) timer

**kkk** - Timer setting (10 through 180 seconds). Default is 180 seconds.

**T25** - Data packet acknowledgement timer

**lll** - Timer setting (10 through 200 seconds). Default is 200 seconds.

**T26** - Interrupt response timer.

**mmm** - Timer setting (10 through 180 seconds). Default is 180 seconds.

**R20** - Restart request retransmission counter

**nn** - Counter setting (1 through 10). Default is 1.

R20 is valid only on a per link basis and will be denied on an individual virtual circuit.

**R22** - Reset request retransmission counter.

**p** - Counter setting (1 through 3). Default is 1.

**R23** - Clear request retransmission counter.

**qq** - Counter setting (1 through 10). Default is 1.

**R25** - Data packet retransmission counter.

**r** - Counter setting (0 through 3). Default is 0.

**VC** - Virtual circuit

**ppss** - Virtual circuit number

**pp** - Range of PVCs

**ss** - Range of SVCs

The sum of the number of PVCs and SVCs must be equal to 16.

Table 1 shows the default values for these fields.

Table 1 and Table 2 show the acceptable values for these fields, allowing for an LCN numbering scheme of 00-255.

TABLE 1

| "pp" | "ss" | Number<br>of PVCs | Number<br>of SVCs | Starting LCN for first<br>PVC Channel | Starting LCN for first<br>SVC Channel |
|------|------|-------------------|-------------------|---------------------------------------|---------------------------------------|
| 00   | 16   | 00                | 16                | --                                    | 01                                    |
| 01   | 15   | 01                | 15                | 01                                    | 02                                    |
| 02   | 14   | 02                | 14                | 01                                    | 03                                    |
| 03   | 13   | 03                | 13                | 01                                    | 04                                    |
| 04   | 12   | 04                | 12                | 01                                    | 05                                    |
| 05   | 11   | 05                | 11                | 01                                    | 06                                    |
| 06   | 10   | 06                | 10                | 01                                    | 07                                    |
| 07   | 09   | 07                | 09                | 01                                    | 08                                    |
| 08   | 08   | 08                | 08                | 01                                    | 09                                    |
| 09   | 07   | 09                | 07                | 01                                    | 10                                    |
| 10   | 06   | 10                | 06                | 01                                    | 11                                    |
| 11   | 05   | 11                | 05                | 01                                    | 12                                    |
| 12   | 04   | 12                | 04                | 01                                    | 13                                    |
| 13   | 03   | 13                | 03                | 01                                    | 14                                    |
| 14   | 02   | 14                | 02                | 01                                    | 15                                    |
| 15   | 01   | 15                | 01                | 01                                    | 16                                    |
| 16   | 00   | 16                | 00                | 01                                    | --                                    |

TABLE 2

| "pp"                | "ss" | Number<br>of PVCs | Number<br>of SVCs | Starting LCN for first<br>PVC Channel | Starting LCN for first<br>SVC Channel |
|---------------------|------|-------------------|-------------------|---------------------------------------|---------------------------------------|
| $0 \leq nn \leq 48$ |      |                   |                   |                                       |                                       |
| 20                  | nn   | 00                | 16                | --                                    | nn                                    |
| 21                  | nn   | 01                | 15                | nn                                    | nn+1                                  |
| 22                  | nn   | 02                | 14                | nn                                    | nn+2                                  |
| 23                  | nn   | 03                | 13                | nn                                    | nn+3                                  |
| 24                  | nn   | 04                | 12                | nn                                    | nn+4                                  |
| 25                  | nn   | 05                | 11                | nn                                    | nn+5                                  |
| 26                  | nn   | 06                | 10                | nn                                    | nn+6                                  |
| 27                  | nn   | 07                | 09                | nn                                    | nn+7                                  |
| 28                  | nn   | 08                | 08                | nn                                    | nn+8                                  |
| 29                  | nn   | 09                | 07                | nn                                    | nn+9                                  |
| 30                  | nn   | 10                | 06                | nn                                    | nn+10                                 |
| 31                  | nn   | 11                | 05                | nn                                    | nn+11                                 |
| 32                  | nn   | 12                | 04                | nn                                    | nn+12                                 |
| 33                  | nn   | 13                | 03                | nn                                    | nn+13                                 |
| 34                  | nn   | 14                | 02                | nn                                    | nn+14                                 |
| 35                  | nn   | 15                | 01                | nn                                    | nn+15                                 |
| 36                  | nn   | 16                | 00                | nn                                    | --                                    |
| 40                  | nn   | 00                | 16                | --                                    | nn+64                                 |
| 41                  | nn   | 01                | 15                | nn+64                                 | nn+65                                 |
| 42                  | nn   | 02                | 14                | nn+64                                 | nn+66                                 |
| 43                  | nn   | 03                | 13                | nn+64                                 | nn+67                                 |
| 44                  | nn   | 04                | 12                | nn+64                                 | nn+68                                 |
| 45                  | nn   | 05                | 11                | nn+64                                 | nn+69                                 |
| 46                  | nn   | 06                | 10                | nn+64                                 | nn+70                                 |
| 47                  | nn   | 07                | 09                | nn+64                                 | nn+71                                 |
| 48                  | nn   | 08                | 08                | nn+64                                 | nn+72                                 |
| 49                  | nn   | 09                | 07                | nn+64                                 | nn+73                                 |
| 50                  | nn   | 10                | 06                | nn+64                                 | nn+74                                 |
| 51                  | nn   | 11                | 05                | nn+64                                 | nn+75                                 |
| 52                  | nn   | 12                | 04                | nn+64                                 | nn+76                                 |
| 53                  | nn   | 13                | 03                | nn+64                                 | nn+77                                 |
| 54                  | nn   | 14                | 02                | nn+64                                 | nn+78                                 |
| 55                  | nn   | 15                | 01                | nn+64                                 | nn+79                                 |
| 56                  | nn   | 16                | 00                | nn+64                                 | --                                    |

TABLE 2 (continued)

| "pp"                | "ss" | Number<br>of PVCs | Number<br>of SVCs | Starting LCN for first<br>PVC Channel | Starting LCN for first<br>SVC Channel |
|---------------------|------|-------------------|-------------------|---------------------------------------|---------------------------------------|
| $0 \leq nn \leq 48$ |      |                   |                   |                                       |                                       |
| 60                  | nn   | 00                | 16                | --                                    | nn+128                                |
| 61                  | nn   | 01                | 15                | nn+128                                | nn+129                                |
| 62                  | nn   | 02                | 14                | nn+128                                | nn+130                                |
| 63                  | nn   | 03                | 13                | nn+128                                | nn+131                                |
| 64                  | nn   | 04                | 12                | nn+128                                | nn+132                                |
| 65                  | nn   | 05                | 11                | nn+128                                | nn+133                                |
| 66                  | nn   | 06                | 10                | nn+128                                | nn+134                                |
| 67                  | nn   | 07                | 09                | nn+128                                | nn+135                                |
| 68                  | nn   | 08                | 08                | nn+128                                | nn+136                                |
| 69                  | nn   | 09                | 07                | nn+128                                | nn+137                                |
| 70                  | nn   | 10                | 06                | nn+128                                | nn+138                                |
| 71                  | nn   | 11                | 05                | nn+128                                | nn+139                                |
| 72                  | nn   | 12                | 04                | nn+128                                | nn+140                                |
| 73                  | nn   | 13                | 03                | nn+128                                | nn+141                                |
| 74                  | nn   | 14                | 02                | nn+128                                | nn+142                                |
| 75                  | nn   | 15                | 01                | nn+128                                | nn+143                                |
| 76                  | nn   | 16                | 00                | nn+128                                | --                                    |
| 80                  | nn   | 00                | 16                | --                                    | nn+192                                |
| 81                  | nn   | 01                | 15                | nn+192                                | nn+193                                |
| 82                  | nn   | 02                | 14                | nn+192                                | nn+194                                |
| 83                  | nn   | 03                | 13                | nn+192                                | nn+195                                |
| 84                  | nn   | 04                | 12                | nn+192                                | nn+196                                |
| 85                  | nn   | 05                | 11                | nn+192                                | nn+197                                |
| 86                  | nn   | 06                | 10                | nn+192                                | nn+198                                |
| 87                  | nn   | 07                | 09                | nn+192                                | nn+199                                |
| 88                  | nn   | 08                | 08                | nn+192                                | nn+200                                |
| 89                  | nn   | 09                | 07                | nn+192                                | nn+201                                |
| 90                  | nn   | 10                | 06                | nn+192                                | nn+202                                |
| 91                  | nn   | 11                | 05                | nn+192                                | nn+203                                |
| 92                  | nn   | 12                | 04                | nn+192                                | nn+204                                |
| 93                  | nn   | 13                | 03                | nn+192                                | nn+205                                |
| 94                  | nn   | 14                | 02                | nn+192                                | nn+206                                |
| 95                  | nn   | 15                | 01                | nn+192                                | nn+207                                |
| 96                  | nn   | 16                | 00                | nn+192                                | --                                    |

**gghh** - Group number

**gg** - Group number for all PVCs (00 through 15).

**hh** - Group number for all SVCs (00 through 15).

VC() is valid only on a per link basis and will be denied on an individual virtual circuit.

**DBIT** - D-bit

*v* - X.25 d-bit setting

**v**      *Explanation*

0      Off (unset) (acknowledgement done from local DTE). Default  
1      On (set) (acknowledgement done from remote DTE)

DBIT is valid only on a per link basis and will be denied on an individual virtual circuit.

**cc** - Hexadecimal condition code

**cc**    **st**    *Explanation*

**03**      Subject entity is in service  
**DF**      Command and protocol are inconsistent  
**E2**      Invalid link number specified  
**E3**    **IS**    Can't Use LCN 0/LGN 0 - designated as a supervisory channel only

## **ADD,NPC**

### **ADD NETWORK PROCESSING CIRCUIT**

#### **Explanation Of Command**

This message adds one or more network processing circuits (NPCs) of the facility terminating unit (FTU) into an alternate map while in a map session.

#### **Command**

##### **Nonhierarchical**

[I.36021]

**ADD:FRM xy,SEQ ww:NPC {[s]abc-[t]def|[s]abc[, [s]ghi]...\  
[, [t]def]]}!**

##### **Hierarchical**

[I.36021]

**ADD:FRM xy,SEQ ww:NPC {uvmnp-wxkqr|uvmnp[,edfgh]...\  
[,wxkqr]]}!**

#### **Completion Message**

If the command is accepted by DACS II, the following acknowledgement will be output.

**OK**

#### **Denial Message**

Not applicable.

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**NPC** - Network processing circuit

**[s]abc, [t]def, [s]ghi**  
- The 3- or 4-digit nonhierarchical NPC numbers

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number at beginning of range

**wxkqr** - Hierarchical NPC number at end of range

**edfgh** - Hierarchical NPC number

**uv,wx,ed**

- Unit number

**m,k,f**

- Module number

**np,qr,gh**

- NPC number

The valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |



## **ADD,USER,LINK,INCL,ALL,LANG,M,P,F**

### **ADD USER/LINK LANGUAGE, NPC ADDRESSING AND PRIORITY**

#### **Explanation Of Command**

This command *is used by the DACS II frame administrator* to assign to a user or link or all users and links any of the following attributes:

- The language with which users converse with the DACS II machine
- The type of addressing used to specify a network processing circuit
- The execution priority level assigned to a given message category
- The ability to remove a link

The command can also be used to initialize these attributes, except for the language and NPC addressing type attributes, to their default values.

To change the type of addressing the frame administrator must issue this command and then logout and login again.

#### **Command**

[I.36103]

```
ADD:FRM xy,SEQ ww:{USER <user id>|LINK j[mm][,INCL]|ALL}\
[,LANG {M|P|F}][,NPCAD {E|X|H}][,LEV(a,b,c,d,e,f)]\
[, {RMON|RMOFF}][,RLK {A|I}][,{CONVON|CONVOFF}][,INIT]!
```

### **Completion Message**

---

[O.36103]

```
M hh:mm:ss xy,ww n[vv] ADD {USER <user id>|LINK j[mm][,INCL]|ALL} \
2 LN MSG:
[LANG {M|P|F}][NPCAD {E|X|H}][LEV(a,b,c,d,e,f)]\
[{RMON|RMOFF}][RLK {A|I}][{CONVON|CONVOFF}][INIT] COMPL
```

### **Denial Message**

---

[O.36103.01]

```
M hh:mm:ss xy,ww n[vv] ADD {USER <user id>|LINK j[mm][,INCL]|ALL} \
2 LN MSG:
[LANG {M|P|F}][NPCAD {E|X|H}][LEV(a,b,c,d,e,f)]\
[{RMON|RMOFF}][RLK {A|I}][INIT][{CONVON|CONVOFF}] COND cc DNY
```

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**USER** - User

**user id**

- User identifier

The users login identifier (two to eight alphabetic characters). The command is denied if the user identifier does not exist.

**LINK** - Link

**j[mm]** - Administrative link number

j Physical link number (1 through 6)

mm Virtual circuit number (01 through 16) for l = 5 or 6

**INCL** - Inclusive

Include virtual circuits of links 5 and 6. The INCL keyword can only be entered with X.25 links 5 and 6, and no virtual circuit number is allowed when this keyword is used. That is, "mm" and "INCL" are mutually exclusive. In addition, the INCL keyword is also mutually exclusive with the "user id" and the keyword "ALL". When INCL is entered, it means that all provisioning data specified in this command, for example, LANG, NPCAD, LEV(a,b,c,d,e,f), RMON/RMOFF and RLK, will be applied to all virtual circuits of the link (5 or 6).

**ALL** - All

All users and links (including virtual circuits). The ALL keyword can only be used together with the NPCAD option. When used, it will change the NPC addressing scheme for ALL users and links including virtual circuits. There is a single exception: the ALL keyword does not affect the NPC addressing scheme for a virtual circuit that is provisioned with the facility data link communication protocol, "F".

**LANG** - Language

The LANG keyword specifies the language used by a link communicating with the DACS II system. All languages cannot be used on all links. The protocol determines what languages are permissible. Three languages are available and they are listed below. See the table below for permissible combinations of protocol and language.

| <i>protocol</i> | <i>language</i>  |
|-----------------|------------------|
| Snider          | PDS or MML       |
| X.25            | PDS, MML, or FDL |
| TABS            | Not applicable   |
| Modified Snider | Not applicable   |

The language defaults to *MML* if LANG is not specified.

**P** - Program Documentation Standards (PDS)

**M** - HuMan-Machine Language (MML)

**NPCAD** - Network processing circuit addressing

**E** - Extended 3-digit nonhierarchical NPC addressing

If the 3-digit nonhierarchical NPC addressing scheme is allowed in the configuration file, it will be used as the default NPC addressing scheme.

**X** - Extended 4-digit nonhierarchical NPC addressing

If the 3-digit nonhierarchical NPC addressing scheme is not allowed in the configuration file, the 4-digit scheme is used as the default NPC addressing scheme.

**H** - Hierarchical NPC addressing

**NOTE:** ➡

To place a new addressing scheme into effect the frame administrator must first request the new addressing scheme with this command and then logout and login again.

**LEV** - Level

- a** - Execution priority level for circuit provisioning commands
- b** - Execution priority level for equipment provisioning commands
- c** - Execution priority level for maintenance commands
- d** - Execution priority level for test access commands
- e** - Execution priority level for monitoring commands
- f** - Execution priority level for common commands

A table giving the command verbs associated with each of the above command sets is given below.

LEV is used in combination with the command set identifiers a through f to set the execution priority level for each command set. A priority level applies to a user or link as appropriate. Priority levels range from 0 through 3. A list of these levels and their meaning is given below for a. The list for b through f is similar to the a list.

- a Explanation*
- 0 Commands in the command set assigned this execution priority level cannot be executed.
  - 1 Highest execution priority level. Commands in the command set assigned this execution priority level will be executed before commands with priority level 2 or 3.
  - 2 Middle execution priority level. Commands in the command set assigned this execution priority level will be executed before commands with priority level 3
  - 3 Lowest execution priority level. Commands in the command set assigned this execution priority level will be executed after all priority level 1 and 2 commands have been executed. Level 3 is the default priority level.
  - The execution priority level of the command set assigned this execution priority level is not to be changed.

**Note:** The commands used to login, logoff, cross-connect, stop, and abort always have the highest priority.

A single queue is used for DACS II commands. When multiple commands arrive at the same time, they will be queued for execution according to the priority assigned to their command set. Commands with the same priority will be executed in the order of arrival, that is, first come first served. A timeout feature insures that no command will wait in the queue forever. When the timeout period has expired for a given command that command will be executed regardless of its priority level.

| <b>a</b><br><b>Circuit</b><br><b>Prov.</b>                                     | <b>b</b><br><b>Equipment</b><br><b>Prov.</b> | <b>c</b><br><b>Maint.</b> | <b>d</b><br><b>Test</b><br><b>Access</b> | <b>e</b><br><b>Monitoring</b> | <b>f</b><br><b>Common</b>                    |
|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------|------------------------------------------|-------------------------------|----------------------------------------------|
| BCON<br>BDIS<br><br>OCNT<br>OCON<br>ODIS<br>OPR<br>RLS<br>TCNT<br>TCON<br>TDIS | COPY<br>DGRTH<br>DLT<br>GRTH                 | CFR<br>DGN<br>RMV<br>RST  | CTST<br><br>TTST                         | AUD<br>UTL                    | ACT<br>ADD<br>ALW<br>CHG<br>ED<br>EXC<br>INH |

**RMON** - Restricted maintenance privilege ON

The RMON keyword is used to assign to a user the privilege of issuing the commands normally restricted to the Frame Administrator.

The following commands are restricted to the Frame Administrator (or superuser).

|                                   |           |
|-----------------------------------|-----------|
| RST::MC,FRC!                      | (I.34001) |
| RST::SMEM,CLR,FRC!                | (I.34211) |
| DLT::FPKG!                        | (I.37301) |
| CHG::ALMS,{ON   OFF}!             | (I.38555) |
| CHG::INTV,{ON   OFF}!             | (I.38451) |
| CHG::MSGLOG:{ON   OFF}!           | (I.38471) |
| UTL::BMTR,FROM SMEM,TO PMEM,EXCT! | (I.55701) |
| UTL::CLR,MSGLOG!                  | (I.57031) |
| UTL::UPGRD!                       | (I.57731) |
| UTL::BOOT,FRAME!                  | (I.58001) |

**RMOFF** - Restricted maintenance privilege OFF

The RMOFF keyword is used to eliminate a user's privilege to issue the commands restricted to the Frame Administrator. RMOFF is the default value.

**RLK** - Remove Link

**A** - Allowed

A is the default value.

**I** - Inhibited

RLK is used to assign to a user or link the privilege of removing a link. There is a relationship between the link privilege and the execution priority level. If c (see previous Command Sets table) in the LEV field is set to zero then the command to remove a link cannot be executed hence the remove link privilege is inhibited even if the RLK option is set to A or I.

**INIT** - Initialize

INIT is used to assign the default values to the link/user parameters LEV, RMON/RMOFF and RLK. Parameters specified in the command will take on the specified values.

**CONVON**

- Mixed Addressing Conversion ON

**CONVOFF**

- Mixed Addressing Conversion OFF

This mixed addressing conversion feature is only applicable to PDS commands in an environment that uses 4-digit sequential NPC numbers. This conversion feature is useful when a DACS II frame is converted from 3-digit sequential NPC addressing to 4-digit sequential NPC addressing for growth reasons. In that case this conversion feature allows certain Operational Support Systems to use 3-digit NPC numbers, even though the frame has been changed to normally accept only 4-digit NPC numbers.

Assuming sequential NPC number usage, DACS II normally accepts only fixed length NPC numbers in its input commands. This conversion feature transfers the fixed length requirement from NPC number to channel number on a link basis. This allows the DACS II parser to accept 3- or 4-digit NPC numbers assuming that the channel number is interpreted to be of 2-digit fixed length. If a 3-digit NPC number is entered with CONVON in effect, then DACS II will internally expand 3-digit NPC numbers to 4-digit NPC numbers.

For some feature configurations this conversion feature is not available, and the CONVOFF keyword will not appear in the output of this command.

**cc** - Hexadecimal condition code

**cc**    *Explanation*

- D0**    Command is Frame administrator (DAX) only.
- D1**    Cannot create any more users
- D2**    User has been created
- D3**    User does not exist
- D6**    Incorrect or missing password
- D8**    Cannot remove Frame administrator
- DC**    No zeros allowed for DAX privilege
- DF**    Command and protocol are inconsistent
- 25**    Invalid FPI value
- C0**    NPC addressing scheme selected is not allowed in the configuration file
- E1**    Virtual circuit is not specified for X.25 link
- E2**    Invalid link number specified
- E3**    Invalid keyword(s) combination specified
- E4**    Invalid NPC addressing scheme specified
- E5**    No user/link needs to be changed
- 3B**    Not valid for frame administrator
- 40**    Only one channel allowed to have this language
- 41**    Language "F" provisioned for this channel
- 83**    Language is not allowed

## **ADD,USER,NEW,PASSWD**

### **ADD USER**

#### **Explanation Of Command**

This message is used by the frame administrator to create a new user login identification and password or to reassign a login identification and password to a previous user of DACS II.

The **NEW** keyword indicates that a new user is being created. The frame administrator uses this command without the **NEW** keyword to reassign a password to a user who is currently on DACS II.

A user is identified to DACS II by his or her **user id** associated with the login. The administrator divulges a password to a new user for the initial log on to DACS II. Afterwards, the user can change this initial password through the **CHG PASSWD** command to a password known only to him or her.

Output from this command is sent only to the link on which the command was input.

#### **Command**

[I.36101]

**ADD:FRM xy,SEQ ww:USER <user id>[,NEW][,PASSWD <user password>]!**



If the message is entered on a Snider link:

[I.36101]

**ADD:FRM xy,SEQ ww:USER <user id>[,NEW]!**

DACS II then generates the message below and a dialog is started.

**PASSWD:** (The frame administrator enters user password.)

**REENTER PASSWD:** (The frame administrator again enters the user password.).

Note that the user password is not echoed by DACS II.

### **Completion Message**

---

[O.36101]

**M hh:mm:ss xy,ww n[vv] ADD USER <user id>[ NEW] COMPL**

### **Denial Message**

---

[O.36101.01]

**M hh:mm:ss xy,ww n[vv] ADD USER <user id>[ NEW] COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**USER** - User

**user id**

- User identifier

User login identification (two to eight alphabetic characters).

**NEW** - New

Create a user identifier for a new user.

**Note:** The "NEW" keyword cannot be used to create a user identifier on a link that is using the X.25 protocol.

**PASSWD** - Password

**user password**

- User password

The password assigned to the user, where password is at least six alphanumeric characters.

**Note:** The "PASSWD" keyword cannot be used to create a user identifier on a link that is using the X.25 protocol.

**cc** - Hexadecimal condition code

**cc** *Explanation*

- D0** Command is Frame administrator (DAX) only.
- D1** Cannot create any more users
- D2** User has been created
- D3** User does not exist
- D6** Incorrect or missing password

---

## **ALM,IDLD,AI,NPC**

### **ALARM CEPT NPC**

#### **Explanation Of Command**

This autonomous output message reports the clearance of a 15-minute, 1-hour, or 24-hour threshold exception alarm on a particular network processing circuit (NPC).

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

#### **Nonhierarchical**

[O.65046]

I hh:mm:ss xy,ww ALM IDLD[ <parameter>][ AI aaaaa] NPC [s]abc COMPL

## Hierarchical

[O.65046]

I hh:mm:ss xy,ww ALM IDLD[ <parameter>][ AI aaaaa] NPC uvmnp COMPL

## Explanation Of Parameters

### parameter

- Facility Performance Parameter

For PB and PC type NPCs:

| <i>parameter</i> | <i>explanation</i>                  |
|------------------|-------------------------------------|
| DM1H             | Degraded Minutes 1 hour             |
| DM24H            | Degraded Minutes 24 hours           |
| SERS15M          | Severely Errored Seconds 15 minutes |
| SERS24H          | Severely Errored Seconds 24 hours   |
| ERS15M           | Errored Seconds 15 minutes          |
| ERS24H           | Errored Seconds 24 hours            |
| US15M            | Unavailable Seconds 15 minutes      |
| US24H            | Unavailable Seconds 24 hours        |
| SLIPS15M         | Slip Events 15 minutes              |
| SLIPS24H         | Slip Events 24 hours                |

For PA type NPCs:

| <i>parameter</i> | <i>Explanation</i>               |
|------------------|----------------------------------|
| CRC              | CRC Block Errors                 |
| FRER             | Framing Errors                   |
| OFS              | Out of Frame Seconds             |
| ES               | Errored Seconds                  |
| SES              | Severely Errored Seconds         |
| CSS              | Controlled Slip Seconds          |
| CV               | Coding Violations                |
| UAS              | Unavailable Seconds              |
| UATC             | Unavailable Time Count           |
| MER              | Multiframe Errors                |
| FEBE             | Far End Block Errors             |
| FES              | Far End Errored Seconds          |
| FSER             | Far End Severely Errored Seconds |
| FUAS             | Far End Unavailable Seconds      |

**AI** - Accumulation Interval

**aaaaa** - The accumulation time period for the specified parameter.  
(Only for PA/TH type NPCs)

*aaaaa Explanation*

15MIN Parameter count from a 15-minute accumulator  
DAILY Parameter count from a daily accumulator

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

---

## **ALM,NPC**

---

### **REPORT PERFORMANCE MONITORING ALARMS FOR CEPT PB and PC NPCs**

#### **Explanation Of Command**

---

This output message reports the performance monitoring alarm state on a 15-minute, 1-hour, or a 24-hour interval whenever the threshold exception has been equaled or exceeded for the designated facility performance parameter on a particular PB or PC network processing circuit (NPC).

#### **Command**

---

Not applicable.

#### **Completion Message**

---

Not applicable.

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

#### **Nonhierarchical**

---

[O.65036]

pa <il> hh:mm:ss xy,ww    ALM <state> <parameter> NPC [s]abc COMPL

## **Hierarchical**

---

[O.65036]

**pa** <il> hh:mm:ss xy,ww    **ALM** <state> <parameter> **NPC** uvmnp **COMPL**

## **Explanation Of Parameters**

---

**pa**     - Priority of Action

*pa*     *Explanation*

|    |                                   |
|----|-----------------------------------|
| I  | Information (PDS)                 |
| A  | Autonomous (MML)                  |
| *  | Minor alarm                       |
| ** | Major alarm, service affecting    |
| *C | Critical alarm, service affecting |

**il**     - Intervention Level

*il*     *Explanation*

|     |                              |
|-----|------------------------------|
| AM  | Immediate maintenance action |
| AMD | Deferred maintenance action  |
| SI  | No intervention              |

**state** - Alarm state

*state*   *Explanation*

|     |                                       |
|-----|---------------------------------------|
| MI  | Maintenance Information               |
| DMA | Deferred Maintenance Alarm Minor(MN)  |
| PMA | Prompt Maintenance Alarm Major(MJ)    |
| PMC | Prompt Maintenance Alarm Critical(CR) |



**parameter**

- Facility Performance Parameters

| <i>parameter</i> | <i>Explanation</i>                  |
|------------------|-------------------------------------|
| DM1H             | Degraded Minutes 1 hour             |
| DM24H            | Degraded Minutes 24 hours           |
| SERS15M          | Severely Errored Seconds 15 minutes |
| SERS24H          | Severely Errored Seconds 24 hours   |
| ERS15M           | Errored Seconds 15 minutes          |
| ERS24H           | Errored Seconds 24 hours            |
| US15M            | Unavailable Seconds 15 minutes      |
| US24H            | Unavailable Seconds 24 hours        |
| SLIPS15M         | Slip Events 15 minutes              |
| SLIPS24H         | Slip Events 24 hours.               |

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PB and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PB and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number

**m** - Module number

**np** - NPC number

The values are listed below:

PB and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

## **ALM,NPC,AI,COUNT,THLEV**

### **REPORT NPC THRESHOLD CROSSING ALARM FOR PA, TA, DA, AND TH TYPE NPCS**

#### **Explanation Of Command**

This autonomous output message reports a facility performance monitoring parameter threshold crossing event for the specified PA type NPC. Threshold crossing alert messages can be generated for both 15-minute and daily parameter accumulation intervals.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

#### **Nonhierarchical**

[O.65061]

```
pa <il> hh:mm:ss xy,ww ALM <state> <parameter> NPC [s]abc 2 LN MSG:
AI aaaaa COUNT cccccccc THLEV lllllllll COMPL
```

## Hierarchical

[O.65061]

pa <il> hh:mm:ss xy,ww ALM <state> <parameter> NPC uvmnp 2 LN MSG:  
AI aaaaa COUNT cccccccc THLEV llllllll COMPL

## Explanation Of Parameters

**AI** - Accumulation Interval

**aaaaa** - The accumulation time period for the specified parameter

*aaaaa Explanation*

15MIN Parameter count from a 15-minute accumulator

DAILY Parameter count from a daily accumulator

**NPC** - Network processing circuit

[s]abc - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**COUNT** - Count

**cccccccc**

- The count accumulated for the monitored parameter  
(000000001 through 345600000)

**THLEV** - Threshold Level

**11111111**

- The programmed threshold level of the monitored parameter  
(000000001 through 345600000)

Values of threshold levels within the ranges above may cause threshold  
crossing alert messages

**pa** - Priority of Action

*pa*      *Explanation*

**I**      Information  
**\***      Minor alarm  
**\*\***      Major alarm, service affecting  
**\*C**      Critical alarm, service affecting

**il**      Intervention level.

*il*      *Explanation*

AMI      Immediate maintenance action  
AMD      Deferred maintenance action  
SI      No intervention

**state** - Alarm state

*state*      *Explanation*

MI      Maintenance Information  
DMA      Deferred Maintenance Minor Alarm  
PMA      Prompt Maintenance Major Alarm  
PMC      Prompt Maintenance Critical Alarm

For PA type NPCs:

| <i>parameter</i> | <i>Explanation</i>               |
|------------------|----------------------------------|
| CRC              | CRC Block Errors                 |
| FRER             | Framing Errors                   |
| OFS              | Out of Frame Seconds             |
| ES               | Errored Seconds                  |
| SES              | Severely Errored Seconds         |
| CSS              | Controlled Slip Seconds          |
| CV               | Coding Violations                |
| UAS              | Unavailable Seconds              |
| UATC             | Unavailable Time Count           |
| MER              | Multiframe Errors                |
| FEBE             | Far End Block Errors             |
| FES              | Far End Errored Seconds          |
| FSES             | Far End Severely Errored Seconds |
| FUAS             | Far End Unavailable Seconds      |

## **ALM,PMC,PMA,DMA,MI,CCN,OOS**

### **ALARM CROSS-CONNECT NETWORK**

#### **Explanation Of Command**

This message reports an alarm on a cross-connect network (CCN) side if the CCN duplexed entities are in an unprotected state. A alarm will be generated when a CCN side is out-of-service (OOS) and pested for two or more consecutive minutes.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.65054]

pa <il> hh:mm:ss xy,ww ALM {PMC|PMA|DMA|MI} CCN s OOS COMPL

## **Explanation Of Parameters**

---

**pa** - Priority of action field.

**pa**      *Explanation*

**I**      Information

**\***      Minor alarm

**\*\***      Major alarm

**\*C**      Critical alarm

**il**      Intervention level.

**il**      *Explanation*

**AMI**      Immediate maintenance action

**AMD**      Deferred maintenance action

**SI**      No intervention

**ALM** - Alarm

**IDLD** - Idled

This indicates an alarm has be Idled.

**PMC**      Prompt Maintenance Action Critical

**PMA**      Prompt Maintenance Action Major

**DMA**      Deferred Maintenance Action Minor

**MI**      Maintenance Information

**COND** - Condition

**CCN** - Cross-connect network

**s** - Cross-connect Network side number (0 or 1)

**OOS** - Out-of-service



## **ALM,PMC,PMA,DMA,MI,ECCN,OOS**

### **ALARM ECCN**

#### **Explanation Of Command**

This message reports an alarm on side 0 or 1 of the expanded cross-connect network side. The reported alarm notifies the craft when the ECCN duplexed entities are in an unprotected state. An alarm is generated when an ECCN side is out-of-service and pested for two or more consecutive minutes.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.65055]

pa <il> hh:mm:ss xy,ww ALM {PMC|PMA|DMA|MI} ECCN s OOS COMPL

## Explanation Of Parameters

---

**pa** - Priority of action field.

**pa**      *Explanation*

**I**      Information

**\***      Minor alarm

**\*\***      Major alarm

**\*C**      Critical alarm

**il**      Intervention level.

**il**      *Explanation*

**AMI**      Immediate maintenance action

**AMD**      Deferred maintenance action

**SI**      No intervention

**ALM** - Alarm

**IDLD** - Idled

This indicates the alarm has been idled.

**PMC**      Prompt Maintenance Action Critical

**PMA**      Prompt Maintenance Action Major

**DMA**      Deferred Maintenance Action Minor

**MI**      Maintenance Information

**ECCN** - Expanded cross-connect network

**s**      - Side number (0 or 1)

**OOS**      - Out-of-service

## **ALM,PMC,PMA,DMA,MI,NPC,RPSFI,IDLD**

### **Explanation Of Command**

One alarm message will be output when a RPSFI condition has been detected on a NPC.  
The alarm idled message will be output when it is detected that the RPSFI condition no longer exists on the NPC.

### **Command**

Not applicable.

### **Completion Message**

Not applicable.

### **Denial Message**

Not applicable.

### **Autonomous Message**

### **Nonhierarchical**

[O.65091]

pa <il> hh:mm:ss xy,ww ALM {PMC|PMA|DMA|MI} NPC [s]abc RPSFI COMPL

[O.65092]

I hh:mm:ss xy,ww ALM IDLD NPC [s]abc RPSFI COMPL

## **Hierarchical**

---

[O.65091]

**pa** <il> hh:mm:ss xy,ww    **ALM** {PMC|PMA|DMA|MI} **NPC** uvmnp **RPSFI** **COMPL**

[O.65092]

**I** hh:mm:ss xy,ww    **ALM** **IDLD** **NPC** uvmnp **RPSFI** **COMPL**

## **Explanation Of Parameters**

---

**NPC**    - Network processing circuit

[s]abc    - The 3- or 4-digit nonhierarchical NPC number

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

uvmnp    - Hierarchical NPC number

uv        - Unit number  
m        - Module number  
np        - NPC number within the module

The values are listed below:

**ALM**    - Alarm

**pa** - priority of action

**pa** *Explanation*

**I** Informational

**A** Autonomous

**\*** minor

**\*\*** major

**\*C** Critical

**PMA** - Prompt Maintenance Action Major Alarm

**PMC** - Prompt Maintenance Action Critical Alarm

**DMA** - Deferred Maintenance Action Minor Alarm

**MI** - Maintenance Information

**CR** - Critical Alarm

**MJ** - Major alarm

**MN** - Minor Alarm

**INFO** - Informational Alarm

**il** - Intervention level.

*il Explanation*

AMI Immediate maintenance action

AM Deferred maintenance action

SI No intervention

**RPSFI** - Remote Power Supply Failure Indicator

**IDLD** - Idled

The alarm has been idled since the RPSFI condition no longer exists.

## **ALM,PMC,PMA,DMA,MI,SMEM**

### **ALARM BACKUP MEMORY TRANSFER**

#### **Explanation Of Command**

This message reports when Secondary Memory card (SMEM) is out-of-service (OOS). It is cleared when SMEM is restored to service.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.65056]

pa <il> hh:mm:ss xy,ww ALM {PMC|PMA|DMA|MI} SMEM COMPL

### **Explanation Of Parameters**

---

**pa** - Priority of action field.

**pa** *Explanation*

**I** Information

**\*** Minor alarm

**\*\*** Major alarm

**\*C** Critical alarm

PMC Prompt Maintenance Action Critical Alarm

PMA Prompt Maintenance Action Major Alarm

DMA Deferred Maintenance Action Minor Alarm

MI Maintenance Information Alarm

**ALM** - Alarm

**MN** - Minor alarm

**IDLD** - Alarm idled

**SMEM** - Secondary memory card.

## **ALM,RESET,DATE,TOD,FORMAT,MDY,DMY,PMC**

### **ALARM RESET**

#### **Explanation Of Command**

This autonomous output message reports that the date and/or time have been reset because of a DACS II frame reset or because Message I.34001 (RST MC) has been entered.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.65051]

pa <il> hh:mm:ss xy,ww ALM RESET {DATE|TOD|TOD DATE} hr:mn:sc \  
{mo/da/yr FORMAT MDY|da/mo/yr FORMAT DMY} {PMC|PMA|DMA|MI} COMPL



### **Explanation Of Parameters**

---

**pa** - Priority of action field.

**pa**      *Explanation*

**I**      Information

**\***      Minor alarm

**\*\***      Major alarm

**\*C**      Critical alarm

**il**      Intervention level.

**il**      *Explanation*

**AMI**      Immediate maintenance action

**AMD**      Deferred maintenance action

**SI**      No intervention

**PMC**      Prompt Maintenance Action Critical

**PMA**      Prompt Maintenance Action Major

**DMA**      Deferred Maintenance Action Minor

**MI**      Maintenance Information

**DATE** - Date

**TOD** - Time of day

**FORMAT** - Allows user to set date format to either USA or International format

**MDY** - USA format (Month, Day, Year)

**DMY** - International format (Day, Month, Year)

**yr** - Year number (four digits)

**mo** - Month number

**da** - Day of month number

**hr** - Hour of day

**mn** - Minute of hour

**sc** - Second of minute

## **ALWSW,UNIT,MMFG,TOPRTN,TOSRVC**

### **ALLOW SWITCH OF MMFG**

#### **Explanation Of Command**

This command requests removal of the inhibition of automatic protection switching from a range of service multiplexer-multiple interface unit functional group (MMFG) in a DS3 unit (DS3U) or a Hybrid DS3 unit (HDS3U) to the protection MMFG in that unit or the automatic switch back from the protection MMFG of a DS3U or a HDS3U to the service MMFG c[-d] of that unit. Only automatic protection switches due to failure will be affected by this message.

The command will always specify the number of the service MMFGs involved, even in the case of the command to allow switch back from the protection MMFG.

When the **TOSRVC** keyword is specified, a range of MMFGs is not acceptable. The command will be denied by the parser.

This command may cause an immediate protection switching/switch back if the original MMFG is out-of-service or is pested. In this case, an autonomous message that indicates the occurrence of the switch will be printed out.

#### **Command**

[I.35301]

**ALWSW:FRM xy,SEQ ww:UNIT [q]q,MMFG c[-d],{TOPRTN|TOSRVC}!**

#### **Completion Message**

[O.35301]

**M hh:mm:ss xy,ww n[vv] ALWSW UNIT [q]q MMFG a {TOPRTN|TOSRVC} \**  
**COMPL**

### **Denial Message**

---

[O.35301.01]

**M** hh:mm:ss xy,ww n[vv] **ALWSW UNIT** [q]q **MMFG a** {TOPRTN|TOSRVC} \  
**COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**MMFG** - Multiplexer-multiple interface unit functional group

**c, d** - The number of the MMFG within the unit (1 through 6)

When the TOSRVC keyword is specified, a range of MMFGs is not acceptable. The command will be denied by the parser.

**TOPRTN** - To protection pack

**TOSRVC** - To service pack

**a** - The number of the service MMFG within the range c and d

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

**4D** The switch is allowed (not inhibited)

## **APPEND,END**

---

### **APPEND COMPONENT COMMAND**

#### **Explanation Of Command**

---

This message is used, during a macro session, to add one or more commands to an existing macro. Commands are added following the location specified by **line number** or **END**. If neither **line number** or **END** is specified then the command(s) being added will be added on the line following the current position of the line pointer. This position may be determined by use of the LINE command.

#### **Command**

---

[I.19041]

**APPEND[:FRM xy,SEQ ww:{<line number>|END}]!**

#### **Completion Message**

---

[O.19041]

**M hh:mm:ss xy,ww n[vv] APPEND[ {<line number>|END}] COMPL**

#### **Denial Message**

---

[O.19041.01]

**M hh:mm:ss xy,ww n[vv] APPEND[ {<line number>|END}] COND cc \**  
**DNY**

#### **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

### **line number**

- Line number at which to begin appending (0, 1, 2, 3, ...)

If a line number is specified, a command being added will be appended to this line. That is, the new command will be placed on the line following the line pointed to by the line number. The line pointer will then move down to point to the position of the new command. If more than one command has been entered the line pointer will move to the position of the last line entered.

### **END** - End

End is a special line number that marks the position of the last line in the macro. If END is specified, the new command will be placed on the line following the line pointed to by END. The line pointer will then move down to point to the position of the new command. END will then be the line number of the new command. If more than one command has been entered, END will be the line number of the last line entered.

### **COND** - Condition

### **cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                              |
|-----------|------------------------------|
| <b>60</b> | User macro/map space is full |
| <b>6B</b> | Invalid line number          |
| <b>6E</b> | No edit session active       |

## **APPL,RESET,IN,PROGRESS**

### **UTILITY QUERY, APPLICATION RESET**

#### **Explanation Of Command**

This message reports that a reset of all the DSP Application cards is complete. During the reset operation an APPL RESET IN-PROGRESS message will also be generated every 20 seconds until the reset operation is completed.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.62011]

I hh:mm:ss xy,ww    APPL RESET COMPL

[O.62010]

I hh:mm:ss xy,ww    APPL RESET IN PROGRESS

### **Explanation Of Parameters**

---

**APPL** - Digital Signaling Processing Application

The following applications are currently supported:

**SD111** - X.50/X.57 International Subrate application

**SD311** - Digital Multipoint Bridge (DMB) application

**SD411** - DDS Subrate and Multipoint Junction Unit application

---

## **AR01,MISC,ALM,IDLD,PBA**

### **ALARM IDLD**

#### **Explanation Of Command**

This autonomous message indicates that the primary block alarm (PBA) on a facility terminated on a particular network processing circuit has been cleared.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

#### **Nonhierarchical**

[O.65021]

I hh:mm:ss xy,ww AR01 MISC ALM IDLD PBA [s]abc k COMPL



## Hierarchical

[O.65021]

**I** hh:mm:ss xy,ww **AR01 MISC ALM IDLD PBA uvmnp k COMPL**

## Explanation Of Parameters

**PBA** - Primary block alarm

**MISC** - Miscellaneous

**ALM** - Alarm

**IDLD** - Idled

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**k** - Type of PBA alarm

*k*      *Explanation*

**A**      Primary AIS - AIS received in all 32 time slots.  
**B**      BER - Bit error rate detected in received signal.  
**C**      LCMA - Loss of CRC4 multiframe alignment in TS0.  
**G**      FLCMA - Far-end Loss of CRC4 multiframe alignment in TS0.  
**E**      RBER - Remote bit error rate detected in TS0 bit 4.  
**I**      RAIS - Remote AIS detected in TS0 bit 4.

**L** LMA - Loss of multiframe alignment in CAS TS16.  
**M** R16 - RAI received in TS16 bit 6 of frame 0.  
**P** PFWOOF - TS0 Pseudo Frame Word Out-Of-Frame  
**R** LOS PBF - Loss of Signal type Primary block failure.  
**F** LOF PBF - Loss of Frame type Primary block failure.  
**S** SFI - Synchronization failure indication in TS0 bit 5.  
**V** A16 - AIS received in CAS TS16  
**X** EER - EER - Excessive error rate  
**Y** RAI - Remote alarm indication received in TS0 bit 3.

## **AR01,MISC,ALM,PBA**

**AR01 MISCELLANEOUS ALARM, CGA, PBA OR  
LOS**

### **Explanation Of Command**

This autonomous message reports a DACS II Primary Block Alarm (PBA) on a facility terminated on a particular Network Processing Circuit. Once a PBA has been detected, DACS II inserts downstream trunk conditioning and performs upstream consequent actions, if they are provisioned.

### **Command**

Not applicable.

### **Completion Message**

Not applicable.

### **Denial Message**

Not applicable.

### **Autonomous Message**

### **Nonhierarchical**

[O.65011]

pa <il> hh:mm:ss xy,ww AR01 MISC ALM <state> PBA [s]abc k COMPL

## Hierarchical

---

[O.65011]

**pa** <il> hh:mm:ss xy,ww    **AR01 MISC ALM** <state> **PBA** uvmnp k **COMPL**

## Explanation Of Parameters

---

**pa**    - Priority of action

*pa*    *Explanation*

I       Information

\*       Minor alarm

\*\*      Major alarm

\*C      Critical alarm

**il**    - Intervention level.

*il*    *Explanation*

AM       Immediate maintenance action

AMD      Deferred maintenance action

SI        No intervention

**MISC**   - Miscellaneous

**ALM**    - Alarm

**NPC**    - Network processing circuit

**[s]abc**        - The 3- or 4-digit nonhierarchical NPC number

**uvmnp**   - Hierarchical NPC number

**uv**       - Unit number

**m**        - Module number

**np**       - NPC number within the module

The values are listed below:

**state**   - Alarm status

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

*state Explanation*

PMA Prompt Maintenance Major Alarm (MJ)  
PMC Prompt Maintenance Critical Alarm (CR)  
DMA Deferred Maintenance Minor Alarm (MN)  
MI Maintenance Information

**PBA** - Primary block alarm

**k** - Type of PBA alarm

*k Explanation*

For PA type NPCs:

**A** Primary AIS - AIS received in all 32 time slots.  
**B** BER - Bit error rate detected in received signal.  
**C** LCMA - Loss of CRC4 multiframe alignment in TS0.  
**E** RBER - Remote bit error rate detected in TS0 bit 4.  
**F** LOF - Loss of Frame type Primary block failure.  
**G** FLCMA - Far-end Loss of CRC4 multiframe alignment in TS0.  
**I** RAIS - Remote AIS detected in TS0 bit 4.  
**L** LMA - Loss of multiframe alignment in CAS TS16.  
**M** R16 - RAI received in TS16 bit 6 of frame 0.  
**P** PFWOOF - TS0 Pseudo Frame Word Out-Of-Frame  
**R** LOS - Loss of Signal type Primary block failure.  
**S** SFI - Synchronization failure indication in TS0 bit 5.  
**V** A16 - AIS received in CAS TS16  
**X** EER - Excessive error rate  
**Y** RAI - Remote alarm indication received in TS0 bit 3.  
**Z** RPSFI- Remote Power Supply Failure Indicator

For PB and PC type NPCs:

- A** Primary AIS - AIS received in all 32 time slots.
- B** BER - Bit error rate detected in received signal.
- E** RBER - Remote bit error rate detected in TS0 bit 4.
- I** RAIS - Remote AIS detected in TS0 bit 4.
- L** LMA - Loss of multiframe alignment in CAS TS16.
- M** R16 - RAI received in TS16 bit 6 of frame 0.
- R** PBF - Primary block failure caused by LOS or LOF.
- S** SFI - Synchronization failure indication in TS0 bit 5.
- V** A16 - AIS received in CAS TS16
- X** EER - EER - Excessive error rate
- Y** RAI - Remote alarm indication received in TS0 bit 3.
- Z** RPSFI- Remote Power Supply Failure Indicator



## **AUD,PARAMS**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This autonomous output message indicates the end-of-midnight report.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.81006]

I hh:mm:ss xy,ww AUD PARAMS COMPL

### **Explanation Of Parameters**

---

**NPC** - Network processing circuit.

## **AUD, QRY, BER, ALL, NPCS, TOT**

### **AUDIT QUERY**

#### **Explanation Of Command**

This message indicates all equipped facility terminating network processing circuits have zero values for the BER parameter since local midnight.

See message I.51011 for setting those performance parameters you would like to have measured and collected. Also see messages O.81001, O.81002, O.81003, and O.81004 for other output on performance parameters.

#### **Command**

Not applicable.

#### **Completion Message**

[O.81005]

M hh:mm:ss xy,ww n[vv] AUD QRY BER ALL NPCS TOT 0000 COMPL

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.81005]

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS TOT 0000 COMPL

### **Explanation Of Parameters**

---

**BER** - Bit error rate

**ALL NPCS TOT**  
- Total of all NPCs

## **AUD, QRY, BER, ALL, NPCS, TOT, EOM**

### **RETRIEVE EVENT EQUIPMENT**

#### **Explanation Of Command**

This message lists all facility terminating unit network processing circuits associated with facilities exceeding bit error rate thresholds. See message I.51011 for setting those performance parameters you would like to have measured and collected. See message I.81001 for invoking output on performance parameters. Also see messages O.81001, O.81002, O.81004, and O.81005 for other output on performance parameters.

#### **Command**

See the input command in I.81001.

## Completion Message

---

### Nonhierarchical

---

[O.81003]

M hh:mm:ss xy,ww n[vv] AUD QRY BER ALL NPCS [s]abc-[t]def \  
TOT nnn 5 LN MSG:  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] AUD QRY BER ALL NPCS [s]abc-[t]def \  
TOT nnn 5 LN MSG:  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX COMPL

### Hierarchical

---

[O.81003]

M hh:mm:ss xy,ww n[vv] AUD QRY BER ALL NPCS uvmnp-uvmqr \  
TOT nnn 5 LN MSG:  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] AUD QRY BER ALL NPCS uvmnp-uvmqr \  
TOT nnn 5 LN MSG:  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX COMPL

### Denial Message

---

Not applicable.

## **Autonomous Message**

---

### **Nonhierarchical**

---

[O.81003]

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS [s]abc-[t]def \  
TOT nnn 5 LN MSG:  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX EOM

.  
.  
.

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS [s]abc-[t]def \  
TOT nnn 5 LN MSG:  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX COMPL

### **Hierarchical**

---

[O.81003]

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS uvmnp-uvmqr \  
TOT nnn 5 LN MSG:  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX EOM

.  
.  
.

I hh:mm:ss xy,ww AUD QRY BER ALL NPCS uvmnp-uvmqr \  
TOT nnn 5 LN MSG:  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX  
XX XX XX XX XX XX XX XX COMPL

## Explanation Of Parameters

**BER** - Bit error rate  
Minor Bit Error Rate for NPCs.

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number  
The first NPC in a module.

**[t]def** - The 3- or 4-digit nonhierarchical NPC number  
The last NPC in a module.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |



| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| NPC              | NPC              | NPC              | NPC              |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| NPC              | NPC              | NPC              | NPC              |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number  
The first NPC in a range.

**uvmqr** - Hierarchical NPC number  
The last NPC in a range.

**uv** - Unit number

**m** - Module number

**np, qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**nnn** - Number of NPCs with BER values greater than BER minor threshold or  
number of NPCs with the parameter threshold exceeded.

**xx** - BER Alarm State

This state represents a combination of the Excessive Bit Error Rate (EER), Bit Error Rate (BER), and Remote Bit Error Rate (RBER). It is interpreted as either a Prompt Maintenance Alarm -Major(PMA), Prompt Maintenance Alarm - Critical(PMC), Deferred Maintenance Alarm (DMA), or Clear.

| <i>xx</i> | <i>EER/BER state</i>                                        | <i>RBER state</i> |
|-----------|-------------------------------------------------------------|-------------------|
| CR        | PMC                                                         |                   |
| MJ        | EER/PMA                                                     | Not applicable    |
| MN        | DMA                                                         | Inactive          |
| RN        | DMA                                                         | Active            |
| CL        | Clear*                                                      | Inactive          |
| RL        | Clear*                                                      | Active            |
| --        | NPC unequipped, out of service or with a inappropriate type |                   |

\* Clear refers to a Facility type NPC whose received error rate is less than the Minor BER threshold.

without CRC ( $10^{-5}$ )  
with CRC ( $10^{-6}$ )

Note that EER has priority over the BER/RBER states. EER does not coexist with them; however, BER and RBER coexist with each other.

Unless CHG::NPC,TS0 command is used to redefine the active value of bit 4 of CTS 0, the RBER values are:

*RBER Explanation*

|   |          |
|---|----------|
| 1 | inactive |
| 0 | Active   |

Note that if the autonomous output is the midnight report for non-PA NPCs only, the "xx" will be output as dashes ("-") for the PA NPCs within the same FTM. In this case, an FTM with PA NPCs only will be skipped. Similarly, if the autonomous output is the daily report for PA NPCs only, the "xx" for non-PA NPCs will be output as dashes ("-").

## **AUD,QRY,CFA,CGA,LOS**

### **QUERY FACILITY ALARMS**

#### **Explanation Of Command**

This message requests a listing of all Network Processing Circuits reporting a Primary Block Alarm. See message I.51011 for setting those performance parameters you would like to have measured and collected.

*The alarm report is followed by reports of the form [O.81002], [O.81003] and [O.81004] — if their respective parameters have been enabled as specified in Message I.51011.*

The end of the report is indicated by REPT EVT EQPT::NPC COMPLD.

For an autonomous message, the link field "n" is blank.

#### **Command**

[I.81001]

**AUD:FRM xy,SEQ ww:QRY,{CFA|CGA|LOS}!**

## **Completion Message**

---

### **Nonhierarchical**

---

USAGE: CGA report

[O.81001]

M hh:mm:ss xy,ww n[vv] AUD AR02 ALARM SUM nnnn REPORTS FOLLOW:

M hh:mm:ss xy,ww n[vv] AR01 MISC ALM <state> PBA [s]abc k \  
COMPL

.  
.  
.

M hh:mm:ss xy,ww n[vv] AR01 MISC ALM <state> PBA [s]abc k \  
COMPL

M hh:mm:ss xy,ww n[vv] AUD {CGA|CFA} END COMPL

M hh:mm:ss xy,ww n[vv] AUD PARAMS COMPL

USAGE: CFA report

[O.81001]

M hh:mm:ss xy,ww n[vv] AUD AR02 ALARM SUM nnnn REPORTS FOLLOW:

M hh:mm:ss xy,ww n[vv] AR01 MISC ALM <state> PBA [s]abc k \  
COMPL

.  
.  
.

M hh:mm:ss xy,ww n[vv] AR01 MISC ALM <state> PBA [s]abc k \  
COMPL

M hh:mm:ss xy,ww n[vv] AUD {CGA|CFA} END COMPL

**Note:** The above message can be followed by messages 0.81002, 0.81003 and 0.81004 if their respective parameters have been enabled by Message I.51011. Please refer to Message I.51011 for the list of presently implemented parameter audit reports.

M hh:mm:ss xy,ww n[vv] AUD PARAMS COMPL

## **Hierarchical**

---

USAGE: CGA report

[O.81001]

M hh:mm:ss xy,ww n[vv] AUD AR02 ALARM SUM nnnn REPORTS FOLLOW:

M hh:mm:ss xy,ww n[vv] AR01 MISC ALM <state> PBA uvmnp k \  
COMPL

.  
.  
.

M hh:mm:ss xy,ww n[vv] AR01 MISC ALM <state> PBA uvmnp k \  
COMPL

M hh:mm:ss xy,ww n[vv] AUD CGA END COMPL

M hh:mm:ss xy,ww n[vv] AUD PARAMS COMPL

USAGE: CFA report

[O.81001]

M hh:mm:ss xy,ww n[vv] AUD AR02 ALARM SUM nnnn REPORTS FOLLOW:

M hh:mm:ss xy,ww n[vv] AR01 MISC ALM <state> PBA uvmnp k \  
COMPL

.  
.  
.

M hh:mm:ss xy,ww n[vv] AR01 MISC ALM <state> PBA uvmnp k \  
COMPL

M hh:mm:ss xy,ww n[vv] AUD CFA END COMPL

**Note:** The above message can be followed by messages 0.81002, 0.81003 and 0.81004 if their respective parameters have been enabled by Message I.51011. Please refer to Message I.51011 for the list of presently implemented parameter audit reports.

M hh:mm:ss xy,ww n[vv] AUD PARAMS COMPL

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

### **Nonhierarchical**

---

[O.81001]

I hh:mm:ss xy,ww    AUD AR02 ALARM SUM nnnn REPORTS FOLLOW:

I hh:mm:ss xy,ww    SC ALM <state> CGA [s]abc k COMPL

.  
.  
.

I hh:mm:ss xy,ww    SC ALM <state> CGA [s]abc k COMPL

I hh:mm:ss xy,ww    AR01 MISC ALM <state> {CGA|CFA|LOS} [s]abc \  
[k] COMPL

.  
.  
.

I hh:mm:ss xy,ww    AR01 MISC ALM <state> {CGA|CFA|LOS} [s]abc \  
[k] COMPL

I hh:mm:ss xy,ww    AUD {CGA|CFA|LOS} END COMPL

I hh:mm:ss xy,ww    AUD PARAMS COMPL

## **Hierarchical**

---

[O.81001]

**I hh:mm:ss xy,ww    AUD AR02 ALARM SUM nnnn REPORTS FOLLOW:**

**I hh:mm:ss xy,ww    SC ALM <state> CGA uvmnp k COMPL**

.  
.  
.

**I hh:mm:ss xy,ww    SC ALM <state> CGA uvmnp k COMPL**

**I hh:mm:ss xy,ww    AR01 MISC ALM <state> {CGA|CFA|LOS} uvmnp \**  
**[k] COMPL**

.  
.  
.

**I hh:mm:ss xy,ww    AR01 MISC ALM <state> {CGA|CFA|LOS} uvmnp \**  
**[k] COMPL**

**I hh:mm:ss xy,ww    AUD {CGA|CFA|LOS} END COMPL**

**I hh:mm:ss xy,ww    AUD PARAMS COMPL**

## **Explanation Of Parameters**

---

**CFA**    - Carrier failure alarm

Use this keyword to list carrier group alarms and alarms enabled by command UTL::TOD (I.51011).

**CGA**    - Carrier group alarm

Use this keyword to list only carrier group alarms.

**PARAMS**    - Parameters

**AR01**    - Alarm report 1

**AR02**    - Alarm report 2

**ALARM**    - Alarm

**SUM**    - Summary

## REPORTS

- Reports

## FOLLOW

- Follow

## NPC

- Network processing circuits

## MISC

- Miscellaneous

## END

- End

## PBA

- Primary Block Alarm

## [s]abc

- The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0032 | 0161-0192 | 0321-0352 | 0481-0512 |
| 0041-0072 | 0201-0232 | 0361-0392 | 0521-0552 |
| 0081-0112 | 0241-0272 | 0401-0432 | 0561-0592 |
| 0121-0152 | 0281-0312 | 0441-0472 | 0601-0632 |



| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**nnnn** - Total number of CGA/CFA reports

**SC** - Subscriber (loop) carrier

**ALM** - Alarm

**state** - Alarm status

*state Explanation*

PMA Prompt Maintenance Alarm (MJ)  
PMC Prompt Maintenance Critical Alarm (CR)  
DMA Deferred Maintenance Alarm (MN)  
MI Maintenance Information

**k** - Type of alarm

*k Explanation*

For PA type NPCs:

**A** Primary AIS - AIS received in all 32 time slots.  
**B** BER - Bit error rate detected in received signal.  
**C** LCMA - Loss of CRC4 multiframe alignment in TS0.  
**E** RBER - Remote bit error rate detected in TS0 bit 4.  
**F** LOF - Loss of Frame type Primary block failure.  
**G** FLCMA - Far-end Loss of CRC4 multiframe alignment in TS0.  
**I** RAIS - Remote AIS detected in TS0 bit 4.  
**L** LMA - Loss of multiframe alignment in CAS TS16.  
**M** R16 - RAI received in TS16 bit 6 of frame 0.  
**P** PFWOOF - TS0 Pseudo Frame Word Out-Of-Frame  
**R** LOS - Loss of Signal type Primary block failure.  
**S** SFI - Synchronization failure indication in TS0 bit 5.  
**V** A16 - AIS received in CAS TS16  
**X** EER - Excessive error rate  
**Y** RAI - Remote alarm indication received in TS0 bit 3.  
**Z** RPSFI- Remote Power Supply Failure Indicator

For PB and PC type NPCs:

**A** Primary AIS - AIS received in all 32 time slots.  
**B** BER - Bit error rate detected in received signal.  
**E** RBER - Remote bit error rate detected in TS0 bit 4.  
**I** RAIS - Remote AIS detected in TS0 bit 4.  
**L** LMA - Loss of multiframe alignment in CAS TS16.  
**M** R16 - RAI received in TS16 bit 6 of frame 0.  
**R** PBF - Primary block failure caused by LOS or LOF.  
**S** SFI - Synchronization failure indication in TS0 bit 5.  
**V** A16 - AIS received in CAS TS16  
**X** EER - EER - Excessive error rate  
**Y** RAI - Remote alarm indication received in TS0 bit 3.  
**Z** RPSFI- Remote Power Supply Failure Indicator

## **AUD,QRY,CFA,CGA,LOS**

### **AUDIT QUERY NPC PARAMETER**

#### **Explanation Of Command**

This command is used to request the value of selected facility performance parameters of all FTU or DS3U NPCs that are associated with active Carrier Group Alarms (CGAs) or Carrier Failure Alarms (CFAs). Only those parameters that were enabled by the UTL::TOD,FAC (51011) command are reported. Also see messages O.81001, O.81003, O.81004, and O.81005 for other output on performance parameters.

The output messages may be the result of executing the AUD::QRY, {CFA|CGA|LFVR|FFER} command or they may be autonomously produced.

The output messages are part of the "midnight report" parameter count section. The parameter count section appears:

- Manually: Immediately when requested by the AUD::QRY,CFA command.
- Autonomously: Daily at the time scheduled with the UTL::TOD command (default is midnight).

#### **Command**

[I.81001]

**AUD:[FRM xy,SEQ ww]:QRY,{CFA|CGA|LOS}!**

## Completion Message

### Nonhierarchical

One command response output segment is generated for each FTM.

If the FTM does not have any PA type NPCs or if the parameter is not applicable to PA type NPCs, the following output format will be generated:

[O.81002]

M hh:mm:ss xy,ww n[vv] AUD QRY <parameter> ALL FTU NPCS \  
[s]abc-[t]def TOT nnn 5 LN MSG:

```

xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM

```

.

M hh:mm:ss xy,ww n[vv] AUD QRY <parameter> ALL FTU NPCS \  
[s]abc-[t]def TOT nnn 5 LN MSG:

```

xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx COMPL

```

If the FTM has at least one PA type NPC and the parameter is applicable to a PA type NPC the following output format will be generated:

[O.81002]

M hh:mm:ss xy,ww n[vv] AUD QRY <parameter> ALL FTU NPCS [s]abc-[t]def TOT nnn 6 LN MSG:

```

xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx
xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx
xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx
xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx
xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx EOM

```

.

M hh:mm:ss xy,ww n[vv] AUD QRY <parameter> ALL FTU NPCS [s]abc-[t]def TOT nnn 6 LN MSG:

```

xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx
xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx
xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx
xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx
xxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx COMPL

```

## Hierarchical

One command response output segment is generated for each FTM.

If the FTM does not have any PA type NPC or if the parameter is not applicable to a PA type NPC, the following output format will be generated:

[O.81002]

M hh:mm:ss xy,ww n[vv] AUD QRY <parameter> ALL FTU NPCS \  
uvmnp-uvmqr TOT nnn 5 LN MSG:

```
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

.  
.  
.

M hh:mm:ss xy,ww n[vv] AUD QRY <parameter> ALL FTU NPCS \  
uvmnp-uvmqr TOT nnn 5 LN MSG:

```
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx COMPL
```

If the FTM has at least one PA type NPC and the parameter is applicable to a PA type NPC, the following output format will be generated:

[O.81002]

M hh:mm:ss xy,ww n[vv] AUD QRY <parameter> ALL FTU NPCS uvmnp-uvmqr TOT nnn 6 LN MSG:  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] AUD QRY <parameter> ALL FTU NPCS uvmnp-uvmqr TOT nnn 6 LN MSG:  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx  
xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx COMPL

### Denial Message

Not applicable.

### Autonomous Message

### Nonhierarchical

One output segment is generated for each FTM.

The output format shown below will be generated if one of the following condition exists:

1. The output is only for Non-PA type NPC midnight report. In this case dashes ("-") will be output for PA type NPCs.
2. All NPCs are scheduled with the same report time, but the parameter is not applicable to PA type NPCs. In this case dashes ("-") will be output for PA type NPCs.
3. All NPCs are scheduled with the same report time and the parameter is common to all NPC types, but the FTM does not have any PA type NPCs.

[O.81002]

```
I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS \
[s]abc-[t]def TOT nnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

.  
.  
.

```
I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS \
[s]abc-[t]def TOT nnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx COMPL
```

The output format shown below will be generated if one of the following condition exists:

1. The output is only for PA type NPC daily report. In this case dashes ("-") will be output for non-PA type NPCs.

2. All NPCs are scheduled with the same report time, and the parameter is for PA type NPCs only. In this case dashes ("-") will be output for non-PA type NPCs.
3. All NPCs are scheduled with the same report time; the parameter is common to all NPC types; there is at least one PA type NPC in the FTM. In this case, the "h" will be output as a dash ("-") for non-PA type NPCs.

[O.81002]

```
I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS [s]abc-[t]def TOT nnn 6 LN MSG:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx EOM
```

.  
.  
.

```
I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS [s]abc-[t]def TOT nnn 6 LN MSG:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx COMPL
```

## Hierarchical

One output segment is generated for each FTM.

The output format shown below will be generated if one of the following condition exists:

1. The output is only for Non-PA type NPC midnight report. In this case dashes ("-") will be output for PA type NPCs.
2. All NPCs are scheduled with the same report time, but the parameter is not applicable to PA type NPCs. In this case dashes ("-") will be output for PA type NPCs.
3. All NPCs are scheduled with the same report time and the parameter is common to all NPC types, but the FTM does not have any PA type NPCs.

[O.81002]

```
I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS \
uvmnp-uvmqr TOT nnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

.

```
I hh:mm:ss xy,ww AUD QRY <parameter> ALL FTU NPCS \
uvmnp-uvmqr TOT nnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx COMPL
```

The output format shown below will be generated if one of the following condition exists:

1. The output is only for PA type NPC daily report. In this case dashes ("-") will be output for non-PA type NPCs.
2. All NPCs are scheduled with the same report time, and the parameter is for PA type NPCs only. In this case dashes ("-") will be output for non-PA type NPCs.
3. All NPCs are scheduled with the same report time; the parameter is common to all NPC types; there is at least one PA type NPC in the FTM. In this case, the "h" will be output as a dash ("-") for non-PA type NPCs.



- 
- 
- 

### Explanation Of Parameters

## parameter

- Facility performance parameter

For PB or PC type NPCs:

| <i>parameter</i> | <i>Explanation</i>                               |
|------------------|--------------------------------------------------|
| DM1H             | Degraded Minutes 1 hour                          |
| DM24H            | Degraded Minutes 24 hour                         |
| SERS15M          | Severely Errored Seconds 15 minute               |
| SERS24H          | Severely Errored Seconds 24 hour                 |
| ERS15M           | Errored Seconds 15 minute                        |
| ERS24H           | Errored Seconds 24 hour                          |
| US15M            | Unavailable Seconds 15 minute                    |
| US24H            | Unavailable Seconds 24 hour                      |
| SLIP15M          | Slip events 15 minute                            |
| SLIP24H          | Slip events 24 hour                              |
| CRC              | Cyclic Redundancy Code                           |
| FRER             | Frame Error                                      |
| LOFA             | Loss of Frame Alignment                          |
| MER              | Multiframe Alignment Error Events (time slot 16) |

For PA type NPCs:

| <i>parameter</i> | <i>Explanation</i>               |
|------------------|----------------------------------|
| CRC              | CRC Block Errors                 |
| FRER             | Framing Errors                   |
| OFS              | Out of Frame Seconds             |
| ES               | Errored Seconds                  |
| SES              | Severely Errored Seconds         |
| CSS              | Controlled Slip Seconds          |
| CV               | Coding Violations                |
| UAS              | Unavailable Seconds              |
| UATC             | Unavailable Time Count           |
| MER              | Multiframe Errors                |
| FEBE             | Far End Block Errors             |
| FES              | Far End Errored Seconds          |
| FSES             | Far End Severely Errored Seconds |
| FUAS             | Far End Unavailable Seconds      |

**Note:** For PA type NPCs, only the daily parameters will be output by this message.

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, the first NPC in a module.

**[t]def** - The 3- or 4-digit nonhierarchical NPC number, the last NPC in a module.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number, the first NPC in a module.

**uvmqr** - Hierarchical NPC number, the last NPC in a module.

**uv** - Unit number

**m** - Module number

**np, qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**TOT** - Total

**nnn** - Cumulative total number of NPCs in the module

A module is either an FTM or a Multiplexer on a DS3U with the specified facility performance parameter value greater than 0.

One DS3U output module contains the information about NPCs on one Multiplexer.

**xxxxx** - Facility performance parameter value (00000 through 65536)

This value is used when there is no PA type NPC provisioned.

**h** - Thresholding Mode for PA type NPCs.

|          |                    |
|----------|--------------------|
| <i>h</i> | <i>Explanation</i> |
|----------|--------------------|

|   |           |
|---|-----------|
| I | Inhibited |
|---|-----------|

|   |         |
|---|---------|
| A | Allowed |
|---|---------|

If the count of a common parameter, that is, CRC, FRER or MER, is to be output, a dash ("-") will be output in this field for a non-PA type NPC within FTMs with mixed NPC types.

**xxxxxxxxx**

- Facility performance parameter value for PA type NPCs  
(000000000 through 345600000)

## **AUD, QRY, CFA, CGA, LOS**

### **AUDIT QUERY FACILITY PERFORMANCE PARAMETERS**

#### **Explanation Of Command**

This message indicates all equipped facility terminating network processing circuits have zero values for a specified facility performance parameter since local midnight. See message I.51011 for setting those performance parameters you would like to have measured and collected. Also see messages O.81001, O.81002, O.81003, and O.81005 for other output on performance parameters.

#### **Command**

[I.81001]

**AUD: [FRM xy, SEQ ww]: QRY, {CFA|CGA|LOS}!**

#### **Completion Message**

[O.81004]

**M hh:mm:ss xy, ww n[vv] AUD QRY <parameter> ALL NPCS TOT 000 \**  
**COMPL**

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

---

**CFA** - Carrier failure alarm

**CGA** - Carrier group alarm

**ALL** - All

**NPCS** - Network processing circuits

**TOT** - Total

Total of all NPCs

### **parameter**

- Facility performance parameter

For PB and PC type NPCs:

| <i>parameter</i> | <i>Explanation</i>                               |
|------------------|--------------------------------------------------|
| DM1H             | Degraded Minutes (1 hour)                        |
| DM24H            | Degraded Minutes (24 hour)                       |
| SERS15M          | Severely Error Seconds (15 minutes)              |
| SERS24H          | Severely Error Seconds (24 hours)                |
| ERS15M           | Error Seconds (15 minutes)                       |
| ERS24H           | Error Seconds (24 hours)                         |
| US15M            | Unavailable Seconds (15 minutes)                 |
| US24H            | Unavailable Seconds (24 hours)                   |
| SLIP15M          | Slip events (15 minutes)                         |
| SLIP24H          | Slip events (24 hours)                           |
| CRC              | Cyclic Redundancy Code                           |
| FRER             | Frame Error                                      |
| LOFA             | Loss of Frame Alignment                          |
| MER              | Multiframe Alignment Error Events (time slot 16) |

For PA type NPCs:

| <i>parameter</i> | <i>Explanation</i>               |
|------------------|----------------------------------|
| CRC              | CRC Block Errors                 |
| FRER             | Framing Errors                   |
| OFS              | Out of Frame Seconds             |
| ES               | Errored Seconds                  |
| SES              | Severely Errored Seconds         |
| CSS              | Controlled Slip Seconds          |
| CV               | Coding Violations                |
| UAS              | Unavailable Seconds              |
| UATC             | Unavailable Time Count           |
| MER              | Multiframe Errors                |
| FEBE             | Far End Block Errors             |
| FES              | Far End Errored Seconds          |
| FSES             | Far End Severely Errored Seconds |
| FUAS             | Far End Unavailable Seconds      |





---

**Contents**

|                                               |      |
|-----------------------------------------------|------|
| <b>BADVERB,BAD,SYNTAX,STOPPED</b>             | 7-2  |
| ■ Explanation Of Command                      | 7-2  |
| ■ Command                                     | 7-2  |
| ■ Completion Message                          | 7-2  |
| ■ Denial Message                              | 7-2  |
| ■ Autonomous Message                          | 7-2  |
| ■ Explanation Of Parameters                   | 7-3  |
| <b>BADVERB,CMD,INERR,STOPPED</b>              | 7-4  |
| ■ Explanation Of Command                      | 7-4  |
| ■ Command                                     | 7-4  |
| ■ Completion Message                          | 7-4  |
| ■ Denial Message                              | 7-4  |
| ■ Autonomous Message                          | 7-5  |
| ■ Explanation Of Parameters                   | 7-5  |
| <b>BC,R,TO,X,ZO,NA</b>                        | 7-7  |
| ■ Explanation Of Command                      | 7-7  |
| ■ Command                                     | 7-7  |
| ■ Completion Message                          | 7-7  |
| ■ Denial Message                              | 7-7  |
| ■ Autonomous Message                          | 7-7  |
| ■ Nonhierarchical                             | 7-7  |
| ■ Hierarchical                                | 7-8  |
| ■ Explanation Of Parameters                   | 7-8  |
| <b>BCON,FROM,TO,NTR,LPD,CONV,NAM,CUS,INCL</b> | 7-9  |
| ■ Explanation Of Command                      | 7-9  |
| ■ Command                                     | 7-10 |

---

## Contents

|                                                       |      |
|-------------------------------------------------------|------|
| ■ Nonhierarchical                                     | 7-10 |
| ■ Hierarchical                                        | 7-10 |
| ■ Completion Message                                  | 7-10 |
| ■ Nonhierarchical                                     | 7-10 |
| ■ Hierarchical                                        | 7-11 |
| ■ Denial Message                                      | 7-11 |
| ■ Nonhierarchical                                     | 7-11 |
| ■ Hierarchical                                        | 7-11 |
| ■ Autonomous Message                                  | 7-11 |
| ■ Explanation Of Parameters                           | 7-12 |
| <b>BCON, FROM, TO, RDC, CUS, INCL, NTR, LPD, CONV</b> | 7-20 |
| ■ Explanation Of Command                              | 7-20 |
| ■ Command                                             | 7-20 |
| ■ Nonhierarchical                                     | 7-20 |
| ■ Hierarchical                                        | 7-20 |
| ■ Completion Message                                  | 7-21 |
| ■ Nonhierarchical                                     | 7-21 |
| ■ Hierarchical                                        | 7-21 |
| ■ Denial Message                                      | 7-21 |
| ■ Nonhierarchical                                     | 7-21 |
| ■ Hierarchical                                        | 7-21 |
| ■ Autonomous Message                                  | 7-21 |
| ■ Explanation Of Parameters                           | 7-22 |
| <b>BCON, FROM, TOX</b>                                | 7-26 |
| ■ Explanation Of Command                              | 7-26 |
| ■ Command                                             | 7-26 |
| ■ Nonhierarchical                                     | 7-26 |
| ■ Hierarchical                                        | 7-27 |
| ■ Completion Message                                  | 7-27 |
| ■ Nonhierarchical                                     | 7-27 |
| ■ Hierarchical                                        | 7-27 |
| ■ Denial Message                                      | 7-27 |
| ■ Nonhierarchical                                     | 7-27 |
| ■ Hierarchical                                        | 7-28 |
| ■ Autonomous Message                                  | 7-28 |
| ■ Explanation Of Parameters                           | 7-28 |
| <b>BCON, FROM, TOX, NTR, LPD, CONV, NAM, CUS</b>      | 7-33 |
| ■ Explanation Of Command                              | 7-33 |

---

## Contents

|                                           |      |
|-------------------------------------------|------|
| ■ Command                                 | 7-34 |
| ■ Nonhierarchical                         | 7-34 |
| ■ Hierarchical                            | 7-34 |
| ■ Completion Message                      | 7-34 |
| ■ Nonhierarchical                         | 7-34 |
| ■ Hierarchical                            | 7-35 |
| ■ Denial Message                          | 7-35 |
| ■ Nonhierarchical                         | 7-35 |
| ■ Hierarchical                            | 7-35 |
| ■ Autonomous Message                      | 7-35 |
| ■ Explanation Of Parameters               | 7-36 |
| <b>BCON,FROM,TOX,RDC,CUS,INCL,NTR,LPD</b> | 7-45 |
| ■ Explanation Of Command                  | 7-45 |
| ■ Command                                 | 7-45 |
| ■ Nonhierarchical                         | 7-45 |
| ■ Hierarchical                            | 7-45 |
| ■ Completion Message                      | 7-46 |
| ■ Nonhierarchical                         | 7-46 |
| ■ Hierarchical                            | 7-46 |
| ■ Denial Message                          | 7-46 |
| ■ Nonhierarchical                         | 7-46 |
| ■ Hierarchical                            | 7-46 |
| ■ Autonomous Message                      | 7-46 |
| ■ Explanation Of Parameters               | 7-47 |
| <b>BDIS,FROM,TO,CONV,OOS,DCC,INCL</b>     | 7-51 |
| ■ Explanation Of Command                  | 7-51 |
| ■ Command                                 | 7-51 |
| ■ Nonhierarchical                         | 7-51 |
| ■ Hierarchical                            | 7-51 |
| ■ Completion Message                      | 7-51 |
| ■ Nonhierarchical                         | 7-51 |
| ■ Hierarchical                            | 7-52 |
| ■ Denial Message                          | 7-52 |
| ■ Nonhierarchical                         | 7-52 |
| ■ Hierarchical                            | 7-52 |
| ■ Autonomous Message                      | 7-52 |
| ■ Explanation Of Parameters               | 7-53 |
| <b>BDIS,FROM,TO,OOS,INCL,CONV</b>         | 7-58 |

---

## Contents

|                                        |      |
|----------------------------------------|------|
| ■ Explanation Of Command               | 7-58 |
| ■ Command                              | 7-58 |
| ■ Nonhierarchical                      | 7-58 |
| ■ Hierarchical                         | 7-58 |
| ■ Completion Message                   | 7-58 |
| ■ Nonhierarchical                      | 7-58 |
| ■ Hierarchical                         | 7-59 |
| ■ Denial Message                       | 7-59 |
| ■ Nonhierarchical                      | 7-59 |
| ■ Hierarchical                         | 7-59 |
| ■ Autonomous Message                   | 7-59 |
| ■ Explanation Of Parameters            | 7-59 |
| <b>BDIS,FROM,TOX,CONV,OOS,DCC,INCL</b> | 7-63 |
| ■ Explanation Of Command               | 7-63 |
| ■ Command                              | 7-63 |
| ■ Nonhierarchical                      | 7-63 |
| ■ Hierarchical                         | 7-63 |
| ■ Completion Message                   | 7-64 |
| ■ Nonhierarchical                      | 7-64 |
| ■ Hierarchical                         | 7-64 |
| ■ Denial Message                       | 7-64 |
| ■ Nonhierarchical                      | 7-64 |
| ■ Hierarchical                         | 7-64 |
| ■ Autonomous Message                   | 7-65 |
| ■ Explanation Of Parameters            | 7-65 |
| <b>BDIS,FROM,TOX,OOS,INCL,CONV</b>     | 7-70 |
| ■ Explanation Of Command               | 7-70 |
| ■ Command                              | 7-70 |
| ■ Nonhierarchical                      | 7-70 |
| ■ Hierarchical                         | 7-70 |
| ■ Completion Message                   | 7-71 |
| ■ Nonhierarchical                      | 7-71 |
| ■ Hierarchical                         | 7-71 |
| ■ Denial Message                       | 7-71 |
| ■ Nonhierarchical                      | 7-71 |
| ■ Hierarchical                         | 7-71 |
| ■ Autonomous Message                   | 7-71 |
| ■ Explanation Of Parameters            | 7-72 |

---

## Contents

|                                            |      |
|--------------------------------------------|------|
| <b>BOOT,FAILED,BAD,DEVICE</b>              | 7-76 |
| ■ Explanation Of Command                   | 7-76 |
| ■ Command                                  | 7-76 |
| ■ Completion Message                       | 7-76 |
| ■ Denial Message                           | 7-76 |
| ■ Autonomous Message                       | 7-76 |
| ■ Explanation Of Parameters                | 7-77 |
| <b>BOOT,FROM,PMEM,FAILED,ATTEMPTING,TO</b> | 7-78 |
| ■ Explanation Of Command                   | 7-78 |
| ■ Command                                  | 7-78 |
| ■ Completion Message                       | 7-78 |
| ■ Denial Message                           | 7-78 |
| ■ Autonomous Message                       | 7-78 |
| ■ Explanation Of Parameters                | 7-79 |
| <b>BOOT,FROM,PMEM,SMEM</b>                 | 7-80 |
| ■ Explanation Of Command                   | 7-80 |
| ■ Command                                  | 7-80 |
| ■ Completion Message                       | 7-80 |
| ■ Denial Message                           | 7-80 |
| ■ Autonomous Message                       | 7-80 |
| ■ Explanation Of Parameters                | 7-81 |
| <b>BX2,STF,ATP</b>                         | 7-82 |
| ■ Explanation Of Command                   | 7-82 |
| ■ Command                                  | 7-82 |
| ■ Completion Message                       | 7-82 |
| ■ Denial Message                           | 7-82 |
| ■ Autonomous Message                       | 7-82 |
| ■ Explanation Of Parameters                | 7-83 |



---

## **BADVERB — BX2**

---

### **BADVERB — BX2**

This section documents the commands **BADVERB** through **BX2**.

## **BADVERB,BAD,SYNTAX,STOPPED**

### **INPUT DENIAL**

#### **Explanation Of Command**

Processing of the input message is **STOPPED** because the action verb is unrecognized (**BADVERB**) or the frame or sequence number is incorrect (**FRMERR** or **SEQERR**).

Output from this command is sent only to the link on which the command was input.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01101]

M hh:mm:ss xy,ww n[vv] {BADVERB|FRMERR|SEQERR} BAD SYNTAX \  
e LN MSG:  
First 70 characters of input message.  
Remaining text of input message STOPPED



### **Explanation Of Parameters**

---

**BADVERB**

- Bad verb

The action verb was not recognized.

**FRMERR**

- Frame error

Incorrect frame number

**SEQERR**

- Sequence error

Incorrect sequence number

**BAD**

- Bad

**STOPPED**

- Stopped

**SYNTAX**

- Syntax

**e**

- Number of lines in the message

## **BADVERB,CMD,INERR,STOPPED**

### **INPUT DENIAL**

#### **Explanation Of Command**

If the message reports STOPPED it means that the input command has been stopped or has been denied processing.

If the message reports DNY it means that an attempt has been made to execute an unlicensed or inactive command.

Note that the error field, action verb, and category are optional; a reason will always be given.

Attempts to address entities (units and NPCs) dependent upon nonconfigured units will result in the following message:

**BAD ARG CONFIG ERR.**

Output from this command is sent only to the link on which the command was input.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

### **Autonomous Message**

---

[O.01131.01]

M hh:mm:ss xy,ww n[vv] [<BADVERB|FRMERR|SEQERR|CMD>|<actverb>] \\  
[<INERR>] <reason> e LN MSG:  
<First 70 characters of input message.>  
[<Text continued from input message>]  
<Remaining text of input message> {STOPPED|DNY}

### **Explanation Of Parameters**

---

#### **BADVERB**

- Bad verb

The action verb was not recognized

#### **FRMERR**

- Frame error

Incorrect frame number

#### **SEQERR**

- Sequence error

Incorrect sequence number

#### **actverb**

- Action verb

A valid action verb of the stopped or denied command

#### **CMD**

- Command

Other command error

**INERR** - Input error

#### **STOPPED**

- Stopped

#### **e**

- Number of lines in the message

**reason** - Reason for stop or denial

*reason*

*Explanation*

BAD ARG

Bad argument

BAD ARG CONFIG ERR

Bad argument and configuration error; attempted to address entities such as units and Network Processing Circuits (NPCs) dependent on non-configured units

BAD SYNTAX

Bad syntax

CMD NOT ALLOWED

Command is not allowed in a macro or alternative map

RESTRICTED

Command is restricted to frame administrator only

ERR CMD ABT

Command error and aborted

INACT

Command is for a feature package which currently is inactive

MC OOS,MCOND,INSERVICE

Main Controller is out-of-service, maintenance condition, or in-service

RANGE ERROR

Range error

## **BC,R,TO,X,ZO,NA**

### **REPORT CHANGE OF C-BIT STATUS**

#### **Explanation Of Command**

This message reports one of three states for the monitor time slot:

- idle,
- framed and c-bit, and
- network.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

#### **Nonhierarchical**

[O.65211]

I hh:mm:ss xy,ww BC R TO [s]abcd {X'abcd|ZO|NA} COMPL

## **Hierarchical**

---

[O.65211]

**I** hh:mm:ss xy,ww BC R TO uvmnpddd {X'abcd|ZO|NA} COMPL

## **Explanation Of Parameters**

---

- [s]abc** - Non-Hierarchical NPC number
- uvmnp** - Hierarchical NPC number
- ddd** - C-bit channel number, valid values are 1-30.
- abcd** - Received c-bit pattern
- ZO** - All zero (or idle) pattern
- NA** - Network Alarm

## **BCON, FROM, TO, NTR, LPD, CONV, NAM, CUS, INCL**

### **BROADCAST CROSS-CONNECTION**

#### **Explanation Of Command**

This command adds a single tributary leg to a broadcast cross-connection. It cross-connects the tributary to the indicated source.

It can be used to create a new one-way cross-connection from an existing broadcast source to the specified tributary channel. It can also be used to convert an existing two-way, two-point cross-connection to a broadcast cross-connection while adding a new tributary leg.

Data received on the broadcast tributary leg is discarded because a one-way cross-connection is created. Only data from the full tributary leg is returned to the broadcast source.

The FROM end field designates the conference backbone (source). The optional range fields indicate the conference width.

The allowable range is from 01 to 31 channels.

The FROM end will receive return data from the TO end, if and only if

- the TO end is the initial connection (first tributary), and
- the FROM end is not provisioned with the LPD or NTR keywords.

The field in the TO end designates the tributary. The width of the tributary is indicated by a range designation and must match the backbone width. If necessary, more tributaries can be added by subsequent broadcast cross-connect commands. Received data from broadcast-only TO terminations will be dead-ended as it enters DACS II.

**Note:** Broadcast cross-connections are not allowed from or to the 24th channel of a DS1 using the T1DM framing format.

For broadcast circuits (in contrast to two-point circuits) the A-law to  $\mu$ -law conversion is turned on as a default. Therefore, all broadcast connections dealing with E1 circuits need to use the NAM keyword to turn the A-law to  $\mu$ -law conversion off, if that is desired.

There is an exception. If the broadcast circuit is started as a two-way connection between E1 circuits that are later on converted to broadcast connections using the CONV keyword, then the default for E1 two-way connections governs, and there is no A-law to  $\mu$ -law conversion. In fact a broadcast circuit that is started as a two-way circuit can never be operated with A-law to  $\mu$ -law conversion on. If A-law to  $\mu$ -law conversion is desired for the broadcast connections, then the user must provision the circuit immediately as a broadcast circuit.

## Command

---

### Nonhierarchical

---

[I.13002]

```
BCON:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\
[,<tc>][,<sc>][,{NTR|LPD|CONV}][,NAM][,{CUS|INCL}][,RDC]!
```

### Hierarchical

---

[I.13002]

```
BCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\
[,<tc>][,<sc>][,{NTR|LPD|CONV}][,NAM][,{CUS|INCL}][,RDC]!
```

## Completion Message

---

### Nonhierarchical

---

[O.13002]

```
M hh:mm:ss xy,ww n[vv] BCON [s]abcddd[-eee],[t]ghijjj[-kkk] \
2 LN MSG:
[<tc>][<sc>][{NTR|LPD|CONV}][NAM][CUS][RDC] COMPL
```



### **Hierarchical**

---

[O.13002]

M hh:mm:ss xy,ww n[vv] BCON uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
2 LN MSG:  
[<tc>][<sc>][ {NTR|LPD|CONV}][ NAM][ CUS][ RDC] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.13002.01]

M hh:mm:ss xy,ww n[vv] BCON [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
2 LN MSG:  
[[t]wxyz] cc BCAST DNY

[O.13002.02]

M hh:mm:ss xy,ww n[vv] BCON [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
2 LN MSG:  
[[t]wxyz] COND cc DNY

### **Hierarchical**

---

[O.13002.01]

M hh:mm:ss xy,ww n[vv] BCON uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
2 LN MSG:  
[opjstzzz] cc BCAST DNY

[O.13002.02]

M hh:mm:ss xy,ww n[vv] BCON uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
2 LN MSG:  
[opjstzzz] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From

**TO** - To

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd,**  
**jjj** - Channel numbers for beginning of channel range  
**eee,**  
**kkk** - Channel numbers for end of channel range

000-030 CEPT type NPCs grown as CAS  
000-031 CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

For CEPT type NPCs, channel associated signaling (CAS) channel 031 (TS16) is not allowed in a range of channel numbers.

**tc** - Trunk conditioning

The desired cross-connected signaling and insertion word applied when a failure occurs. The signaling and the insertion word specification are entered separately, with a comma as the delimiter.

The following signaling options are allowed:

| <i>signaling</i>      | <i>Explanation</i>                                                                                                                                                                    |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TC(efghijkl,mnopqrst) | 2-way, 16-state in binary.                                                                                                                                                            |
| TC(X'ab,X'cd)         | 2-way, 16-state in hexadecimal.                                                                                                                                                       |
| TRSP                  | Transparent, no signaling (that is, channel 000 in TS16).                                                                                                                             |
| Omitted               | Defaults to TC(X'FF,X'FF) if both terminations are channel associated signaling (CAS) type. It will default to TRSP if one of the terminations is nonsignaling associated (NSA) type. |

The following insertion word options are allowed:

| <i>insertion word</i> | <i>Explanation</i>                                                                                                                       |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq               | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line. |
| Omitted               | Will default to IW X'FF.                                                                                                                 |

Additional rules apply for CEPT cross-connections. See Table 1 for allowable signaling type and signaling consequence action and Table 2 for allowable cross-connected time slot consequence action.

**Table 7-1. Allowable Signaling Type and Signaling Consequent Action**

| Primary Type<br>in X-connect | Allowable<br><tc> sig. type/<br>type/ sig.<br>consequent<br>action<br>keyword | Resulting<br>Signaling<br>consequent<br>action<br>TO | Resulting<br>sig.<br>Code<br>(when used)<br>TO | Resulting<br>Disconnect |
|------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|-------------------------|
| CAS → CAS                    | TRSP                                                                          | None<br>(fixed at X'D)                               | Sig.<br>fixed at X'D                           | X'D                     |
|                              | TC(--, X'tu)                                                                  | CAS                                                  | X'F                                            | X'u                     |
|                              | Omitted                                                                       | CAS                                                  | X'F                                            | X'F                     |
| NSA → CAS<br>or<br>CAS → NAS | TRSP/Omitted<br>X'D in CAS<br>direction)                                      | None (fixed at<br>X'D in CAS<br>direction)           | Sig. fixed at<br>direction                     | X'D in CAS              |
| NSA → NSA                    | TRSP/Omitted                                                                  | None                                                 | Not appl.                                      | Not appl.               |

**Table 7-2. Allowable Cross-Connected Time slot Consequent Action**

| Allowable <tc><br>Time slot X-connect<br>keyword | Resulting Cross-Connected<br>Time slot Consequent Action<br>TO | Resulting Disconnect<br>Code (when used)<br>TO |
|--------------------------------------------------|----------------------------------------------------------------|------------------------------------------------|
| Omitted                                          | X'FF                                                           | X'FF                                           |
| IW X'pq*                                         | X'FF                                                           | X'pq                                           |

\* Only used as a means of providing per time slot DCC codes. If the DCC code is not used when issuing the disconnect command, then the insertion word at the time the NPC was grown is used. This growth insertion word defaults to hex "D5" if not explicitly specified at growth time.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**sc** - Signaling control

This variable represents the optional signaling bit control specification and is used only in the Channel Associated Signaling (CAS) to CAS application with CAS signaling.

If this option is not used, all four cross-connected time slot 16 (**abcd**) signaling bits in each direction will be cross-connected unchanged.

Signaling control is specified as follows:

**SC(abcd,efgh)**

**abcd** - Time slot 16 signalling bits, From direction

**efgh** - Time slot 16 signalling bits, To direction

All 8 bits can be controlled independently. Control is applied by replacing each character in variable **abcd** or **efgh** with the appropriate control character.

The allowable control characters are:

*Bit*

*Setting Explanation*

**P** Pass through unchanged

**V** Pass through inverted

**0** Set output to 0

**1** Set output to 1

The effect of the **V** control character depends upon whether the connection is international or gateway.

International: Inversion takes place on both the From and To-direction sides. The net effect is to cancel out the inversion. Hence it will appear that no inversion took place.

Gateway: Inversion takes place only on the international side of the connection. The effect is an inversion.

**NTR** - No Transmit

All tributaries are broadcast only. There is no return path to the source.

**LPD** - Looped.

The source loops its broadcast back to itself. All the tributaries are broadcast only. When the LPD keyword is used, the signaling conversion of the FROM side will override that of the TO side.

If neither NTR nor LPD is used, and the source (FROM abcd[ddd[-eee]]) is being established for the first time, ghij is a full tributary, capable of transmitting back to the source. If the source has been previously established, all tributaries are broadcast only.

**CONV** - Convert

CONV is given to convert a two-way, two-point circuit to a broadcast circuit.

The first termination (NPC and channel) listed in the input message is the FROM (or source) termination in the current two-point connection. The termination next following in the command is the full tributary leg to be added in the conversion to a broadcast connection.

If the range fields eee and kkk are used, the entire width of the conference tributaries must be indicated.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Multi-Point:*

E1 to E1      Multi-point cross-connects have A-law to  $\mu$ -law and  $\mu$ -law to A-law set as a default. This conversion is performed on pure E1 multi-point connections in case a DS1 leg is ever added to the broadcast connection. The **NAM** keyword is used to disable the conversions. It may be desirable to disable conversions in a pure E1 multi-point cross-connect since such a connection has more quantization noise than a pure E1 two-point cross-connect. This is due to the back to back A-law to  $\mu$ -law and  $\mu$ -law to A-law conversions which are taking place.

E1 to DS1 or      Same explanation as E1 to E1.  
DS1 to E1

DS1 to DS1      Not applicable.

**CUS** - Customer

Indicates a customer controlled circuit

**RDC** - Red circuit

This keyword will cause the associated circuit to be flagged as a red circuit.

**INCL** - Inclusive

To connect a circuit or range of circuits including one or more circuits previously marked as Customer Controlled, use the INCL (inclusive) option. If this option is not used, the message will be denied if any circuits in the range are customer controlled. INCL is not needed to connect a circuit or circuits previously marked as Red Circuits.

[t]wxy

- The 3- or 4-digit nonhierarchical NPC number involved in the denial, otherwise the same as [s]abc

**opjst** - Hierarchical NPC number involved in the denial, otherwise the same as uvmp.

**zzz** - Channel number involved in the denial; otherwise, the same as ddd.

**BCAST** - Denial specific to broadcast conferences.

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b> | <i>Explanation</i>                                                    |
|-----------|-----------|-----------------------------------------------------------------------|
| <b>01</b> |           | Invalid range for specified NPC type                                  |
| <b>03</b> |           | No RDC or CUS circuits and INCL keyword used                          |
| <b>04</b> |           | No NPC's out of service and OOS keyword used                          |
| <b>05</b> |           | Invalid use of CONV keyword                                           |
| <b>10</b> |           | NPC out of service or failed                                          |
| <b>11</b> |           | NPC not equipped                                                      |
| <b>12</b> |           | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> |           | UNIT not equipped, not in service, or failed                          |
| <b>14</b> |           | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> |           | FTMI not equipped, not in service, or failed                          |
| <b>16</b> |           | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> |           | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>20</b> |           | Line format types are incompatible                                    |
| <b>21</b> |           | Trunk conditioning is invalid                                         |
| <b>22</b> |           | FMC cannot be cross-connected in this format                          |
| <b>30</b> |           | Termination is already assigned                                       |



| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                            |
|-----------|--------------|---------------------------------------------------------------|
| <b>32</b> |              | Termination is under test                                     |
| <b>34</b> |              | Termination is under customer control (CUS)                   |
| <b>35</b> |              | Termination is protected (RDC)                                |
| <b>36</b> |              | Termination is not connected as indicated                     |
| <b>50</b> |              | Trunk conditioning doesn't match that of conference           |
| <b>51</b> |              | CUS flag doesn't match that of conference                     |
| <b>52</b> |              | RDC flag doesn't match that of conference                     |
| <b>53</b> |              | TO side of two-way to be converted is not an FTU NPC          |
| <b>54</b> |              | Conversion leg is terminated                                  |
| <b>55</b> |              | Width of existing two way does not match conference width     |
| <b>56</b> |              | FROM is a two-way and no CONV specified                       |
| <b>57</b> |              | FROM is not a backbone leg                                    |
| <b>58</b> |              | Specified width does not match existing conference width      |
| <b>59</b> |              | NTR invalid since existing conference is not already NTR      |
| <b>5A</b> |              | LPD invalid since existing conference is not already LPD      |
| <b>95</b> |              | Range overlapping between FROM and TO or between two TOs      |
| <b>D3</b> |              | Corresponding NPC for FROM virtual channel is not provisioned |
| <b>D4</b> |              | Corresponding NPC for TO virtual channel is not provisioned   |
| <b>D6</b> |              | Invalid FROM channel number                                   |
| <b>D7</b> |              | Invalid TO channel number                                     |
| <b>D9</b> |              | Invalid FROM channel number range                             |
| <b>DA</b> |              | Invalid TO channel number range                               |
| <b>DC</b> |              | A loopback is active on the FROM termination                  |
| <b>E3</b> |              | Attempt to broadcast a locally switched channel               |
| <b>E8</b> |              | SC invalid for cross-connection specified                     |
| <b>E9</b> |              | MUX or TRB invalid for cross-connection specified             |
| <b>EA</b> |              | AIS invalid for cross-connection specified                    |
| <b>EB</b> |              | NAM invalid for cross-connection specified                    |
| <b>EC</b> |              | Invalid channel 000 cross-connection specified                |
| <b>ED</b> |              | Invalid channel 031 cross-connection specified                |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                              |
| <b>FF</b> |              | Termination is in process of being rolled                     |
| <b>E0</b> |              | ETSI not equipped, not in service, or failed                  |
| <b>4A</b> |              | Channel part of a TP or TG                                    |

## **BCON, FROM, TO, RDC, CUS, INCL, NTR, LPD, CONV**

### **BROADCAST CONNECT**

#### **Explanation Of Command**

This message connects a new broadcast circuit from a non-channelized source network processing circuit (NPC) to a single non-channelized tributary. It also adds a single non-channelized tributary to an existing conference.

This message also adds the indicated tributary and converts (CONV) a two-way, two-point circuit to a broadcast conference.

When a failure occurs or during an alarm state, the alarm-indication signal (AIS or all ones signal) is transmitted to the failed tributaries or to all tributaries if the source NPCs fail. If the failure occurs during the execution of this command, it is canceled and no broadcast circuit is set up.

#### **Command**

##### **Nonhierarchical**

[I.13021]

**BCON:FRM xy,SEQ ww:FROM [s]abc,TO [t]def[,RDC][,{CUS|INCL}]\  
[, {NTR|LPD|CONV}]!**

##### **Hierarchical**

[I.13021]

**BCON:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}]\  
[, {NTR|LPD|CONV}]!**

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.13021]

M hh:mm:ss xy,ww n[vv] BCON [s]abc,[t]def[ RDC][ {CUS|INCL}\  
[ {NTR|LPD|CONV}] COMPL

#### **Hierarchical**

---

[O.13021]

M hh:mm:ss xy,ww n[vv] BCON uvmnp,wxkqr[ RDC][ {CUS|INCL}]\  
[ {NTR|LPD|CONV}] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.13021.01]

M hh:mm:ss xy,ww n[vv] BCON [s]abc,[t]def[ [t]ghi] cc <st> DNY

#### **Hierarchical**

---

[O.13021.01]

M hh:mm:ss xy,ww n[vv] BCON uvmnp,wxkqr[ edfhg] cc <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From termination

**TO** - To termination

**[s]abc** - The 3- or 4-digit non-hierarchical non-channelized source (backbone)  
NPC number

**[t]def** - The 3- or 4-digit non-hierarchical non-channelized tributary NPC  
number

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical number of non-channelized source NPC  
**wxkqr** - Hierarchical number of non-channelized tributary NPC

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number

The values are listed below:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**Note:** An NPC cannot be broadcast-connected to itself. The desired effect can be achieved by specifying the LPD option.

**RDC** - Red circuit

**CUS** - Customer  
Customer-controlled circuit

**INCL** - Inclusive

The INCL keyword will remove CUS marking

**NTR** - No transmit

No transmit or return path, the tributary is broadcast only

**LPD** - Looped

One signal is looped back to source

If neither the NTR nor LPD keyword is specified and the broadcast conference is being established for the first time, the tributary is a full tributary, capable of transmitting back to the source; if the source has been previously established then the tributary is broadcast only.

**CONV** - Convert

CONV is given to convert a two-way, two-point circuit to a broadcast circuit.

The first termination (NPC and channel) listed in the input message is the FROM (or source) termination in the current two-point connection. The termination next following in the command is the full tributary leg to be added in the conversion to a broadcast connection.

**[t]ghi** - The 3- or 4-digit backbone leg (bbl) or tributary NPC number causing denial

**edfhg** - Hierarchical number of the backbone leg or tributary NPC causing denial

**st** - Status  
Status of denial

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>01</b> | <b>RNGIE</b> | Invalid range for specified NPC type                                  |
| <b>03</b> | <b>INERR</b> | No RDC or CUS circuits and INCL keyword used                          |
| <b>05</b> | <b>BCAST</b> | Invalid use of CONV keyword                                           |
| <b>10</b> | <b>MCOND</b> | NPC out of service or failed                                          |
| <b>11</b> | <b>MCOND</b> | NPC not equipped                                                      |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>30</b> | <b>MCOND</b> | Termination is already assigned                                       |
| <b>32</b> | <b>MCOND</b> | Termination is under test                                             |
| <b>33</b> | <b>MCOND</b> | Termination is a test port                                            |
| <b>34</b> | <b>MCOND</b> | Termination is under customer control (CUS)                           |
| <b>35</b> | <b>MCOND</b> | Termination is protected (RDC)                                        |
| <b>36</b> |              | Termination is not connected as indicated                             |
| <b>50</b> | <b>INERR</b> | Trunk conditioning doesn't match that of conference                   |
| <b>51</b> | <b>INERR</b> | CUS flag doesn't match that of conference                             |
| <b>52</b> | <b>INERR</b> | RDC flag doesn't match that of conference                             |
| <b>53</b> | <b>INERR</b> | TO side of two-way to be converted is not an FTU NPC                  |
| <b>54</b> | <b>INERR</b> | Conversion leg is terminated                                          |
| <b>55</b> | <b>INERR</b> | Width of existing two way does not match conference width             |
| <b>56</b> | <b>INERR</b> | FROM is a two-way and no CONV specified                               |
| <b>57</b> | <b>BCAST</b> | FROM is not a backbone leg                                            |
| <b>58</b> | <b>INERR</b> | Specified width does not match existing conference width              |
| <b>59</b> | <b>INERR</b> | NTR invalid since existing conference is not already NTR              |
| <b>5A</b> | <b>INERR</b> | LPD invalid since existing conference is not already LPD              |
| <b>62</b> | <b>INERR</b> | NPC type mismatch                                                     |
| <b>63</b> | <b>INERR</b> | NPC is a channelized NPC                                              |
| <b>64</b> | <b>INERR</b> | NPC is a non-channelized NPC                                          |
| <b>95</b> | <b>MCOND</b> | Range overlapping between FROM and TO or between two TOs              |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                               |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                                      |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |

## **BCON, FROM, TOX**

---

### **BROADCAST TS0 to non-TS0 CROSS- CONNECTIONS**

#### **Explanation Of Command**

---

This command sets up a broadcast from a TS0 channel of a (FROM) NPC to up to eight non-TS0 tributary channels of (TO) receiving NPCs in the same broadcast. The FROM NPC must be grown as a PA or TH type. The broadcast connection defaults to NTR - no return leg. The broadcast connection defaults to NAM- no a-law to u-law conversion. The TS0 source defaults to NFW-non frame word mode. The broadcast connection defaults to TRSP-transparent signalling and uses a default insertion word of X'FF. This message is also used to add multiple TOs to an existing broadcast connection based on the specified FROM. Each of the TOs will be connected to the specified FROM. There will be at most eight TOs allowed in the argument list to the TO keyword.

The **FROM** field designates the source termination.

The fields following the SOURCE designation assign the tributaries to be connected to the backbone. Although a conference may have any number of tributaries (limited only by frame configuration), at most eight at a time may be added using this command.

More tributaries can be added by subsequent **BCON** commands.

If a command attempts to cross-connect a channel to the 24th channel of a DS1 provisioned with the T1DM format, the command will be denied.

#### **Command**

---

##### **Nonhierarchical**

---

[I.13051]

```
BCON:FRM xy,SEQ ww:FROM [s]abc000,\
TOX ([t]ghijjj[, [t]klmnnn, ...])!
```



### **Hierarchical**

---

[I.13051]

BCON:FRM xy,SEQ ww:FROM uvmnp000,\  
TOX (wxkqrjjj [,edhfgnnn,...])!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.13051]

M hh:mm:ss xy,ww n[vv] BCON [s]abc000 3 LN MSG:  
TOX [t]ghijjj[, [u]klmnnn,...]  
NTR NAM NFW COMPL

### **Hierarchical**

---

[O.13051]

M hh:mm:ss xy,ww n[vv] BCON uvmnp000 3 LN MSG:  
TOX wxkqrjjj[,edhfgnnn,...]  
NTR NAM NFW COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.13051.01]

M hh:mm:ss xy,ww n[vv] BCON [s]abc000 3 LN MSG:  
TOX [t]ghijjj[, [t]klmnnn,...]  
[[t]wxyz] cc BCAST DNY

[O.13051.02]

M hh:mm:ss xy,ww n[vv] BCON [s]abc000 3 LN MSG:  
TOX [t]ghijjj[, [t]klmnnn,...]  
[[t]wxyz] COND cc DNY

## Hierarchical

[O.13051.01]

M hh:mm:ss xy,ww n[vv] BCON uvmnp000 3 LN MSG:  
TOX wxkqrjjj[,edhfgnnn,...]  
[opjstzzz] cc BCAST DNY

[O.13051.02]

M hh:mm:ss xy,ww n[vv] BCON uvmnp000 3 LN MSG:  
TOX wxkqrjjj[,edhfgnnn,...]  
[opjstzzz] COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**FROM** - From

The FROM field is the source termination.

[s]abc - The 3- or 4-digit nonhierarchical FROM NPC number  
[t]ghi - The 3- or 4-digit nonhierarchical TO NPC number  
[u]klm - The 3- or 4-digit nonhierarchical TO NPC number

The values are as follows:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number  
**edhfg** - Hierarchical TO NPC number within a range of NPC numbers

**uv, wx, ed**

- Unit number

**m, k, h** - Module number

**np, qr, fg**

- NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**000** - FROM channel number is 000

**jjj** - TO channel number

000-030 CEPT type NPCs grown as CAS

000-031 CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

**Table 7-3. Allowable Cross-Connected Time slot Consequence Action**

| Allowable <tc><br>Time slot X-connect<br>keyword | Resulting Cross-Connected<br>Time slot Consequence Action<br>TO | Resulting Disconnect<br>Code (when used)<br>TO |
|--------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------|
| Omitted                                          | X'FF                                                            | X'FF                                           |
| IW X'pq*                                         | X'FF                                                            | X'pq                                           |

\* Only used as a means of providing per time slot DCC codes. If the DCC code is not used when issuing the disconnect command, then the insertion word at the time the NPC was grown is used. This growth insertion word defaults to hex "D5" if not explicitly specified at growth time.

**[t]wxy** - NPC number involved in the denial; otherwise, the same as [s]abc.

**zzz** - Channel number involved in the denial; otherwise, the same as ddd.

**opjst** - Hierarchical NPC number involved in the denial, otherwise the same as uvmnp

**BCAST** - Denial specific to broadcast conferences

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b> | <i>Explanation</i>                                                    |
|-----------|-----------|-----------------------------------------------------------------------|
| <b>01</b> |           | Invalid range for specified NPC type                                  |
| <b>03</b> |           | No RDC or CUS circuits and INCL keyword used                          |
| <b>04</b> |           | No NPC's out of service and OOS keyword used                          |
| <b>05</b> |           | Invalid use of CONV keyword                                           |
| <b>10</b> |           | NPC out of service or failed                                          |
| <b>11</b> |           | NPC not equipped                                                      |
| <b>12</b> |           | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> |           | UNIT not equipped, not in service, or failed                          |
| <b>14</b> |           | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> |           | FTMI not equipped, not in service, or failed                          |
| <b>16</b> |           | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> |           | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>20</b> |           | Line format types are incompatible                                    |
| <b>21</b> |           | Trunk conditioning is invalid                                         |
| <b>22</b> |           | FMC cannot be cross-connected in this format                          |
| <b>30</b> |           | Termination is already assigned                                       |
| <b>32</b> |           | Termination is under test                                             |
| <b>33</b> |           | Termination is a test port                                            |
| <b>34</b> |           | Termination is under customer control (CUS)                           |
| <b>35</b> |           | Termination is protected (RDC)                                        |
| <b>36</b> |           | Termination is not connected as indicated                             |
| <b>50</b> |           | Trunk conditioning doesn't match that of conference                   |
| <b>51</b> |           | CUS flag doesn't match that of conference                             |
| <b>52</b> |           | RDC flag doesn't match that of conference                             |
| <b>53</b> |           | TO side of two-way to be converted is not an FTU NPC                  |
| <b>54</b> |           | Conversion leg is terminated                                          |
| <b>55</b> |           | Width of existing two way does not match conference width             |
| <b>56</b> |           | FROM is a two-way and no CONV specified                               |
| <b>57</b> |           | FROM is not a backbone leg                                            |
| <b>58</b> |           | Specified width does not match existing conference width              |
| <b>59</b> |           | NTR invalid since existing conference is not already NTR              |

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                            |
|-----------|--------------|---------------------------------------------------------------|
| <b>5A</b> |              | LPD invalid since existing conference is not already LPD      |
| <b>25</b> |              | Invalid FPI Value                                             |
| <b>95</b> |              | Range overlapping between FROM and TO or between two TOs      |
| <b>D3</b> |              | Corresponding NPC for FROM virtual channel is not provisioned |
| <b>D4</b> |              | Corresponding NPC for TO virtual channel is not provisioned   |
| <b>D6</b> |              | Invalid FROM channel number                                   |
| <b>D7</b> |              | Invalid TO channel number                                     |
| <b>D9</b> |              | Invalid FROM channel number range                             |
| <b>DA</b> |              | Invalid TO channel number range                               |
| <b>DC</b> |              | A loopback is active on the FROM termination                  |
| <b>E3</b> |              | Attempt to broadcast a locally switched channel               |
| <b>E8</b> |              | SC invalid for cross-connection specified                     |
| <b>E9</b> |              | MUX or TRB invalid for cross-connection specified             |
| <b>EA</b> |              | AIS invalid for cross-connection specified                    |
| <b>EB</b> |              | NAM invalid for cross-connection specified                    |
| <b>EC</b> |              | Invalid channel 000 cross-connection specified                |
| <b>ED</b> |              | Invalid channel 031 cross-connection specified                |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                              |
| <b>FF</b> |              | Termination is in process of being rolled                     |
| <b>E0</b> |              | ETSI not equipped, not in service, or failed                  |
| <b>9D</b> |              | NPC containing channel 000 is invalid type                    |

## **BCON, FROM, TOX, NTR, LPD, CONV, NAM, CUS**

### **BROADCAST CROSS-CONNECTIONS**

#### **Explanation Of Command**

This command sets up a broadcast from a source (FROM) NPC to up to eight tributary (TO) receiving NPCs in the same broadcast. This message is also used to add multiple TOs to an existing broadcast connection based on the specified FROM. Each of the TOs will be connected to the specified FROM. There will be at most eight TOs allowed in the argument list to the TO keyword. Note that no channel range can be specified on the TO arguments.

The channel range from 001 to 031 channels is determined by the range given for the FROM.

The **FROM** field designates the source termination. The optional range field **[-eee]** indicates the width of the conference backbone

The allowable width ranges from 001 to 031 channels and must be the same as the width of the existing conference backbone (if any).

The fields following the SOURCE designation assign the tributaries to be connected to the backbone. Although a conference may have any number of tributaries (limited only by frame configuration), at most eight at a time may be added using this command.

More tributaries can be added by subsequent **BCON** commands. Each specified tributary will have the same range width as the backbone.

If a command attempts to cross-connect a channel to the 24th channel of a DS1 provisioned with the T1DM format, the command will be denied.

For broadcast circuits (in contrast to two-point circuits) the A-law to  $\mu$ -law conversion is turned on as a default. Therefore, all broadcast connections dealing with E1 circuits need to use the NAM keyword to turn the A-law to  $\mu$ -law conversion off, if that is desired.

There is an exception. If the broadcast circuit is started as a two-way connection between E1 circuits that are later on converted to broadcast connections using the CONV keyword, then the default for E1 two-way connections governs, and there is no A-law to  $\mu$ -law conversion. In fact a broadcast circuit that is started as a two-way circuit can never be operated with A-law to  $\mu$ -law conversion on. If A-law to  $\mu$ -law conversion is desired for the broadcast connections, then the user must provision the circuit immediately as a broadcast circuit.

## Command

---

### Nonhierarchical

---

[I.13001]

```
BCON:FRM xy,SEQ ww:FROM [s]abcddd[-eee],\
TOX ([t]ghijjj[, [t]klmnnn,...])[,<tc>][,<sc>]\
[, {NTR|LPD|CONV}][, NAM][, {CUS|INCL}][, RDC]!
```

### Hierarchical

---

[I.13001]

```
BCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],\
TOX (wxqrrjjj [, edhfgnnn,...])[,<tc>][,<sc>]\
[, {NTR|LPD|CONV}][, NAM][, {CUS|INCL}][, RDC]!
```

## Completion Message

---

### Nonhierarchical

---

[O.13001]

```
M hh:mm:ss xy,ww n[vv] BCON [s]abcddd[-eee] 3 LN MSG:
TOX [t]ghijjj[, [u]klmnnn,...]
[<tc>][<sc>][{NTR|LPD|CONV}][{CUS|INCL}][RDC] COMPL
```



### **Hierarchical**

---

[O.13001]

M hh:mm:ss xy,ww n[vv] BCON uvmnpddd[-eee] 3 LN MSG:  
TOX wxkqrjjj[,edhfgnnn,...]  
[<tc>][<sc>][ {NTR|LPD|CONV}][ {CUS|INCL}][ RDC] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.13001.01]

M hh:mm:ss xy,ww n[vv] BCON [s]abcddd[-eee] 3 LN MSG:  
TOX [t]ghijjj[, [t]klmnnn,...]  
[[t]wxyz] cc BCAST DNY

[O.13001.02]

M hh:mm:ss xy,ww n[vv] BCON [s]abcddd[-eee] 3 LN MSG:  
TOX [t]ghijjj[, [t]klmnnn,...]  
[[t]wxyz] COND cc DNY

### **Hierarchical**

---

[O.13001.01]

M hh:mm:ss xy,ww n[vv] BCON uvmnpddd[-eee] 3 LN MSG:  
TOX wxkqrjjj[,edhfgnnn,...]  
[opjstzzz] cc BCAST DNY

[O.13001.02]

M hh:mm:ss xy,ww n[vv] BCON uvmnpddd[-eee] 3 LN MSG:  
TOX wxkqrjjj[,edhfgnnn,...]  
[opjstzzz] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From

The FROM field is the source termination.

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

**[u]klm** - The 3- or 4-digit nonhierarchical TO NPC number

The values are as follows:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number  
**edhfg** - Hierarchical TO NPC number within a range of NPC numbers

**uv, wx, ed**  
 - Unit number  
**m, k, h** - Module number  
**np, qr, fg**  
 - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
 Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - FROM channel number  
**eee** - FROM channel number denoting the end of the range  
**jjj** - TO channel number  
**nnn** - TO channel number denoting the end of the range

000-030      CEPT type NPCs grown as CAS  
000-031      CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

The optional range field *eee* indicates the width of the conference backbone. The range field must not be repeated on the tributary legs' specification. A termination cannot be broadcast connected to itself. The desired effect can be reached by specifying the LPD option. If this message is used to add tributary legs, the width must be the same as the width of the existing conference backbone. However, a conference can have an unlimited number of tributaries, limited only by the frame configuration. More tributaries can be added by subsequent commands.

For CEPT type NPCs, CAS channel 031 (TS16) is not allowed in a range of channel numbers.

**tc** - Trunk conditioning

**tc** represents the desired cross-connected signaling and insertion word applied when a failure occurs. The signaling and the insertion word specification are entered separately, with a comma as the delimiter, which have the following form:

<tc\_sig>,<tc\_iw>

The following signaling options are allowed:

| <i>tc_sig</i>         | <i>Explanation</i>                                                                                                                                                           |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TC(ijkl,mnop)         | 2-way, 4-state signaling in binary. For ESF type framing format, software will expand 4-state to 16-state by duplicating the format on the remaining frames on a superframe. |
| TC(efghijkl,mnopqrst) | 2-way, 16-state in binary. Only valid for ESF and CEPT framing formats.                                                                                                      |
| TC(X'ab,X'cd)         | 2-way, 16-state in hexadecimal. Only valid for ESF and CEPT framing formats.                                                                                                 |
| TRSP                  | Transparent, no signaling.                                                                                                                                                   |

The following insertion word options are allowed:

| <i>tc_iw</i> | <i>Explanation</i>                                                                                                                       |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq      | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line. |
| TRB          | Standard trouble code, equal to IW X'E4, not valid for CEPT.                                                                             |
| MUX          | MUX out of sync code, equal to IW X'1A, not valid for CEPT.                                                                              |
| Omitted      | Only valid for CEPT, will default to IW-X-FF.                                                                                            |

Additional rules apply for CEPT cross-connections. See the following tables.

**Table 7-4. Allowable Signaling Type and Signaling Consequent Action**

| Primary Type<br>in<br>Cross-connect | Allowable<br><tc><br>Signaling<br>Specification | Resulting<br>Signaling<br>Code<br><br>FROM, TO    | Resulting<br>Signaling<br>Consequent<br>Action<br>(Hardware)<br>FROM, TO | Resulting<br>Signaling<br>Consequent<br>Action<br>(Firmware)<br>FROM, TO | Resulting<br>Disconnect<br>(When DCC used<br>in disconnect<br>command) |
|-------------------------------------|-------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------|
| CAS ↔ CAS                           | <b>TRSP</b>                                     | Fixed at <b>X'D</b>                               | Fixed at <b>X'D</b>                                                      | Fixed at <b>X'D</b>                                                      | <b>X'D</b>                                                             |
|                                     | <b>TC-X'uv, X'yz*</b>                           | CAS<br>(Passed Through)                           | <b>X'F</b>                                                               | <b>X'uv, X'yz</b>                                                        | <b>X'v, X'z</b>                                                        |
|                                     | Omitted                                         | CAS<br>(Passed Through)                           | <b>X'F</b>                                                               | <b>X'F</b>                                                               | <b>X'F</b>                                                             |
| NSA ↔ CAS                           | <b>TRSP/Omitted</b>                             | None (Fixed at<br><b>X'D</b> in CAS<br>direction) | Fixed at<br><b>X'D</b> in CAS<br>direction                               | Fixed at<br><b>X'D</b> in CAS<br>direction                               | <b>X'D</b> in CAS<br>direction                                         |
| NSA ↔ NSA                           | <b>TRSP/Omitted</b>                             | Not appl.                                         | Not appl.                                                                | Not appl.                                                                | Not appl.                                                              |

\* For TCON and TCNT TC is X'uv,X'yz.  
For OCON, OCNT and BCON TC is --,X'yz.

**Table 7-5. Allowable Cross-Connected Time slot Consequence Action**

| Allowable <tc><br>Time slot X-connect<br>keyword | Resulting Cross-Connected<br>Time slot Consequence Action<br>TO | Resulting Disconnect<br>Code (when used)<br>TO |
|--------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------|
| Omitted                                          | X'FF                                                            | X'FF                                           |
| IW X'pq*                                         | X'FF                                                            | X'pq                                           |

\* Only used as a means of providing per time slot DCC codes. If the DCC code is not used when issuing the disconnect command, then the insertion word at the time the NPC was grown is used. This growth insertion word defaults to hex "D5" if not explicitly specified at growth time.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**sc** - Signaling control

This variable represents the optional signaling bit control specification and is used only in the Channel Associated Signaling (CAS) to CAS application with CAS signaling.

If this option is not used, all four cross-connected time slot 16 (**abcd**) signaling bits in each direction will be cross-connected unchanged.

Signaling control is specified as follows:

**SC(abcd,efgh)**

**abcd** - Time slot 16 signalling bits, From direction

**efgh** - Time slot 16 signalling bits, To direction

All 8 bits can be controlled independently. Control is applied by replacing each character in variable **abcd** or **efgh** with the appropriate control character.

The allowable control characters are:

*Bit*

*Setting Explanation*

**P** Pass through unchanged

**V** Pass through inverted

**0** Set output to 0

**1** Set output to 1

The effect of the **V** control character depends upon whether the connection is international or gateway.

International: Inversion takes place on both the From and To-direction sides. The net effect is to cancel out the inversion. Hence it will appear that no inversion took place.

Gateway: Inversion takes place only on the international side of the connection. The effect is an inversion.

**NTR** - No transmit

All tributaries are broadcast only. There is no return path to the source.

**LPD** - Looped

The source loops its broadcast back to itself. All the tributaries are broadcast only.

When the LPD keyword is used, the signaling conversion of the FROM side will override that of the TO side.

If neither NTR nor LPD is used, and the source (FROM abcd[...]) is being established for the first time, ghij is a full tributary, capable of transmitting back to the source. If the source has been previously established, all tributaries are broadcast only.

**CONV** - Convert

CONV is given to convert a two-way, two-point circuit to a broadcast circuit.

The first termination (NPC and channel) listed in the input message is the FROM (or source) termination in the current two-point connection. The termination next following in the command is the full tributary leg to be added in the conversion to a broadcast connection. Additional legs may be added simultaneously by specifying additional terminations.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Multi-Point:*

**E1 to E1** Multi-point cross-connects have A-law to  $\mu$ -law and  $\mu$ -law to A-law set as a default. This conversion is performed on pure E1 multi-point connections in case a DS1 leg is ever added to the broadcast connection. The **NAM** keyword is used to disable the conversions. It may be desirable to disable conversions in a pure E1 multi-point cross-connect since such a connection has more quantization noise than a pure E1 two-point cross-connect. This is due to the back to back A-law to  $\mu$ -law and  $\mu$ -law to A-law conversions which are taking place.

**E1 to DS1 or DS1 to E1** Same explanation as E1 to E1.

**DS1 to DS1** Not applicable.

**CUS** - Customer

Indicates a Customer-controlled Circuit

**RDC** - Red circuit

This keyword will cause the associated circuits to be flagged as red circuits.



**INCL** - Inclusive

To connect a circuit or range of circuits including one or more circuits previously marked as customer controlled, use the INCL (inclusive) option. If this option is not used, the message will be denied if any circuits in the range are customer controlled. INCL is not needed to connect a circuit or circuits previously marked as red circuits.

**[t]wxy** - NPC number involved in the denial; otherwise, the same as [s]abc.

**zzz** - Channel number involved in the denial; otherwise, the same as ddd.

**opjst** - Hierarchical NPC number involved in the denial, otherwise the same as uvmnp

**BCAST** - Denial specific to broadcast conferences

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b> | <i>Explanation</i>                                                    |
|-----------|-----------|-----------------------------------------------------------------------|
| <b>01</b> |           | Invalid range for specified NPC type                                  |
| <b>03</b> |           | No RDC or CUS circuits and INCL keyword used                          |
| <b>04</b> |           | No NPC's out of service and OOS keyword used                          |
| <b>05</b> |           | Invalid use of CONV keyword                                           |
| <b>10</b> |           | NPC out of service or failed                                          |
| <b>11</b> |           | NPC not equipped                                                      |
| <b>12</b> |           | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> |           | UNIT not equipped, not in service, or failed                          |
| <b>14</b> |           | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> |           | FTMI not equipped, not in service, or failed                          |
| <b>16</b> |           | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> |           | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>20</b> |           | Line format types are incompatible                                    |
| <b>21</b> |           | Trunk conditioning is invalid                                         |
| <b>22</b> |           | FMC cannot be cross-connected in this format                          |
| <b>30</b> |           | Termination is already assigned                                       |
| <b>32</b> |           | Termination is under test                                             |
| <b>34</b> |           | Termination is under customer control (CUS)                           |
| <b>35</b> |           | Termination is protected (RDC)                                        |
| <b>36</b> |           | Termination is not connected as indicated                             |
| <b>50</b> |           | Trunk conditioning doesn't match that of conference                   |
| <b>51</b> |           | CUS flag doesn't match that of conference                             |
| <b>52</b> |           | RDC flag doesn't match that of conference                             |
| <b>53</b> |           | TO side of two-way to be converted is not an FTU NPC                  |
| <b>54</b> |           | Conversion leg is terminated                                          |

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                            |
|-----------|--------------|---------------------------------------------------------------|
| <b>55</b> |              | Width of existing two way does not match conference width     |
| <b>56</b> |              | FROM is a two-way and no CONV specified                       |
| <b>57</b> |              | FROM is not a backbone leg                                    |
| <b>58</b> |              | Specified width does not match existing conference width      |
| <b>59</b> |              | NTR invalid since existing conference is not already NTR      |
| <b>5A</b> |              | LPD invalid since existing conference is not already LPD      |
| <b>95</b> |              | Range overlapping between FROM and TO or between two TOs      |
| <b>D3</b> |              | Corresponding NPC for FROM virtual channel is not provisioned |
| <b>D4</b> |              | Corresponding NPC for TO virtual channel is not provisioned   |
| <b>D6</b> |              | Invalid FROM channel number                                   |
| <b>D7</b> |              | Invalid TO channel number                                     |
| <b>D9</b> |              | Invalid FROM channel number range                             |
| <b>DA</b> |              | Invalid TO channel number range                               |
| <b>DC</b> |              | A loopback is active on the FROM termination                  |
| <b>E3</b> |              | Attempt to broadcast a locally switched channel               |
| <b>E8</b> |              | SC invalid for cross-connection specified                     |
| <b>E9</b> |              | MUX or TRB invalid for cross-connection specified             |
| <b>EA</b> |              | AIS invalid for cross-connection specified                    |
| <b>EB</b> |              | NAM invalid for cross-connection specified                    |
| <b>EC</b> |              | Invalid channel 000 cross-connection specified                |
| <b>ED</b> |              | Invalid channel 031 cross-connection specified                |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                              |
| <b>FF</b> |              | Termination is in process of being rolled                     |
| <b>E0</b> |              | ETSI not equipped, not in service, or failed                  |
| <b>4A</b> |              | Channel part of a TP or TG                                    |

## **BCON, FROM, TOX, RDC, CUS, INCL, NTR, LPD**

### **BROADCAST CONNECT**

#### **Explanation Of Command**

This message cross connects a new broadcast circuit from a non-channelized source network processing circuit (NPC) to up to eight non-channelized tributaries. The NPCs can belong to different units. This message can be used to add up to eight non-channelized tributaries to an existing conference.

This message is also used to add the indicated tributaries and convert (CONV) a two-way, two-point circuit to a broadcast circuit. When a failure occurs, or during an alarm state, the alarm-indication signal (AIS-all ones) is transmitted to the failed tributaries or all tributaries if the source NPCs fail. If the failure occurs during the execution of this command, the message is canceled and no broadcast circuit is set up.

#### **Command**

##### **Nonhierarchical**

[I.13011]

```
BCON:FRM xy,SEQ ww:FROM [s]abc,TOX ([t]def[, [u]ghi]\
[, [v]jkl][...])[,RDC][,{CUS|INCL}][,{NTR|LPD|CONV}]!
```

##### **Hierarchical**

[I.13011]

```
BCON:FRM xy,SEQ ww:FROM uvmnp,TOX (wxkqr[,edfhg]\
[,stmno][...])[,RDC][,{CUS|INCL}][,{NTR|LPD|CONV}]!
```

## **Completion Message**

---

### **Nonhierarchical**

---

[O.13011]

M hh:mm:ss xy,ww n[vv] BCON [s]abc 3 LN MSG:  
TOX [t]def[, [u]ghi][, [v]jkl][...]  
[RDC][ CUS][ {NTR|LPD|CONV}] COMPL

### **Hierarchical**

---

[O.13011]

M hh:mm:ss xy,ww n[vv] BCON uvmpn 3 LN MSG:  
TOX wxkqr[,edfhg][,stmno][...]  
[RDC][ CUS][ {NTR|LPD|CONV}] COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.13011.01]

M hh:mm:ss xy,ww n[vv] BCON [s]abc 3 LN MSG:  
TOX [t]def[, [u]ghi][, [v]jkl][...]  
[[t]qrs] cc <st> DNY

### **Hierarchical**

---

[O.13011.01]

M hh:mm:ss xy,ww n[vv] BCON uvmpn 3 LN MSG:  
TOX wxkqr[,edfhg][,stmno][...]  
[opqrs] cc <st> DNY

## **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**Note:** An NPC cannot be broadcast-connected to itself. The desired effect can be achieved by specifying the LPD option.

[s]abc - The 3- or 4-digit nonhierarchical FROM NPC number  
[t]def - The 3- or 4-digit nonhierarchical TO NPC number  
[u]ghi - Same definition as [t]def  
[v]jkl - Same definition as [t]def  
[t]mno - Same definition as [t]def

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical number of non-channelized source NPC

**wxkqr** - Hierarchical tributary NPC number.

**edfhg** - Same definition as wxkqr

**stmno** - Same definition as wxkqr

**uv, wx, ed, st**

- Unit number

**m, k, f**

- Module number

**np, qr, hg, no**

- NPC number within the module

The values are:

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**RDC** - Red circuit

**CUS** - Customer

Customer-controlled circuit

**INCL** - Inclusive

Option will remove CUS marking

**NTR** - No transmit

No transmit or return path, all tributaries are broadcast only

**LPD** - Looped

One signal is looped back to source

If neither the NTR nor the LPD keyword is specified and the broadcast conference is being established for the first time, the first tributary is a full tributary, capable of transmitting back to the source; if the source has been previously established then all tributaries are broadcast only.

**CONV** - Convert

Convert a two-way, two-point circuit to a broadcast circuit by adding the indicated tributaries

The first termination (NPC and channel) listed in the input message is the FROM (or source) termination in the current two-point connection. The termination next following in the command is the full tributary leg to be added in the conversion to a broadcast connection. Additional legs may be added simultaneously by specifying additional terminations.

**[t]qrs** - The 3- or 4-digit backbone leg (bbl) or tributary NPC involved in denial

**opqrs** - Hierarchical number of the backbone leg or tributary NPC involved in denial.

**st** - Status

Status of denial

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>01</b> | <b>INERR</b> | Invalid range for specified NPC type                                  |
| <b>03</b> | <b>INERR</b> | No RDC or CUS circuits and INCL keyword used                          |
| <b>05</b> | <b>BCAST</b> | Invalid use of CONV keyword                                           |
| <b>10</b> | <b>MCOND</b> | NPC out of service or failed                                          |
| <b>11</b> | <b>MCOND</b> | NPC not equipped                                                      |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>30</b> | <b>MCOND</b> | Termination is already assigned                                       |
| <b>32</b> | <b>MCOND</b> | Termination is under test                                             |

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                        |
|-----------|--------------|-----------------------------------------------------------|
| <b>33</b> | <b>INERR</b> | Termination is a test port                                |
| <b>34</b> | <b>MCOND</b> | Termination is under customer control (CUS)               |
| <b>35</b> | <b>MCOND</b> | Termination is protected (RDC)                            |
| <b>36</b> |              | Termination is not connected as indicated                 |
| <b>50</b> | <b>INERR</b> | Trunk conditioning doesn't match that of conference       |
| <b>51</b> | <b>INERR</b> | CUS flag doesn't match that of conference                 |
| <b>52</b> | <b>INERR</b> | RDC flag doesn't match that of conference                 |
| <b>53</b> | <b>INERR</b> | TO side of two-way to be converted is not an FTU NPC      |
| <b>54</b> | <b>INERR</b> | Conversion leg is terminated                              |
| <b>55</b> | <b>INERR</b> | Width of existing two way does not match conference width |
| <b>56</b> | <b>INERR</b> | FROM is a two-way and no CONV specified                   |
| <b>57</b> | <b>BCAST</b> | FROM is not a backbone leg                                |
| <b>58</b> | <b>INERR</b> | Specified width does not match existing conference width  |
| <b>59</b> | <b>INERR</b> | NTR invalid since existing conference is not already NTR  |
| <b>5A</b> | <b>INERR</b> | LPD invalid since existing conference is not already LPD  |
| <b>62</b> | <b>INERR</b> | NPC type mismatch                                         |
| <b>63</b> | <b>INERR</b> | NPC is a channelized NPC                                  |
| <b>64</b> | <b>INERR</b> | NPC is a non-channelized NPC                              |
| <b>95</b> | <b>MCOND</b> | Range overlapping between FROM and TO or between two TOs  |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                   |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                          |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                 |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed              |



## **BDIS, FROM, TO, CONV, OOS, DCC, INCL**

### **BROADCAST DISCONNECTIONS**

#### **Explanation Of Command**

This command requests the disconnection of a broadcast circuit cross-connection. It can be used to disconnect any one-way tributary from a broadcast circuit, or the full tributary once all of the one-way tributaries have been disconnected.

#### **Command**

##### **Nonhierarchical**

[I.15201]

```
BDIS:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\
[,CONV][,OOS][,DCC][,INCL]!
```

##### **Hierarchical**

[I.15201]

```
BDIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\
[,CONV][,OOS][,DCC][,INCL]!
```

#### **Completion Message**

##### **Nonhierarchical**

[O.15201]

```
M hh:mm:ss xy,ww n[vv] BDIS [s]abcddd[-eee],[t]ghijjj[-kkk]\
[BRDIS][CONV][OOS][CUS][RDC][DCC] COMPL
```

### **Hierarchical**

---

[O.15201]

M hh:mm:ss xy,ww n[vv] BDIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ BRDIS][ CONV][ OOS][ CUS][ RDC][ DCC] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.15201.01]

M hh:mm:ss xy,ww n[vv] BDIS [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ [t]wxyzzz] cc BCAST DNY

[O.15201.02]

M hh:mm:ss xy,ww n[vv] BDIS [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ [t]wxyzzz] COND cc DNY

### **Hierarchical**

---

[O.15201.01]

M hh:mm:ss xy,ww n[vv] BDIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ edhfgzzz] cc BCAST DNY

[O.15201.02]

M hh:mm:ss xy,ww n[vv] BDIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ edhfgzzz] COND cc DNY

### **Autonomous Message**

---

Not applicable.

### Explanation Of Parameters

- [s]abc - The 3- or 4-digit nonhierarchical FROM NPC number  
[t]ghi - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number

**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd, jjj**

- Channel number for beginning of channel range

**eee, kkk**

- Channel number for end of channel range.

Without the optional CONV keyword, ddd and jjj must be the lowest numbered channels in the range of channels that make up the broadcast circuit. If the range fields [-eee] and [-kkk] are used, the entire width of the conference tributaries must be indicated.

000-030      CEPT type NPCs grown as CAS

000-031      CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

**CONV** - Convert

The CONV keyword is given to disconnect the specified one-way tributary from the broadcast circuit and convert the circuit to a two-way, two-point circuit. For a command with this option to succeed, only the broadcast source and the full tributary leg must remain on the circuit following the disconnection of the specified one-way tributary. That is, this option will be denied if the user attempts to disconnect the full tributary rather than a one-way tributary, or if any other one-way tributaries remain on the broadcast circuit following the disconnection of the one-way tributary specified in the command.

**OOS** - Out-of-service

An OOS disconnection may be done by giving the optional OOS keyword. At least one end of the circuit must be out-of-service or the OOS disconnection will be denied.

**INCL** - Inclusive

Use the optional INCL keyword to disconnect a circuit or range of circuits including one or more circuits marked as a red circuit or under customer control. If this option is not used, the message will be denied if any circuits in the range are red circuits or customer controlled.

**DCC** - Disconnect code

If the DCC keyword is specified, DACS II will insert the user-defined disconnect code and signaling into the disconnected channels. This disconnect code and signaling are specified by the trunk conditioning field used to connect the circuit. If the DCC option is not used, the disconnect code specified in the GRTH::NPC command is used.

**[t]wxy** - The 3- or 4-digit nonhierarchical NPC number that caused the denial, with the same valid values as [s]abc.

**edhfg** - Hierarchical NPC number that caused the denial

**zzz** - Channel number that caused the denial, with the same valid value as ddd.

**BRDIS** - Broadcast disconnect

The BRDIS keyword indicates that the conference is entirely disconnected (no tributaries remain).

**CUS** - Customer

Customer-controlled circuit

CUS indicates a customer controlled circuit.

**RDC** - Red circuit

Indicates that the disconnection was performed on a red circuit.

This implies that the INCL keyword was given in the input message.

If the disconnection was given on more than one circuit, at least one of them was a red circuit or under customer control.

**BCAST** - Broadcast

**cc** - Hexadecimal condition code

**cc**    *Explanation*

- 01**    Invalid range for specified NPC type
- 03**    No RDC or CUS circuits and INCL keyword used
- 04**    No NPC's out of service and OOS keyword used
- 05**    Invalid use of CONV keyword
- 10**    NPC out of service or failed
- 11**    NPC not equipped
- 12**    Active CCN side not IS or failed or pested or hardware OOS
- 13**    UNIT not equipped, not in service, or failed
- 14**    CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS
- 15**    FTMI not equipped, not in service, or failed
- 16**    FC not eqd, not IS, or failed or inactive side FC not eqd or not IS
- 17**    TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS
- 32**    Termination is under test
- 34**    Termination is under customer control (CUS)
- 35**    Termination is protected (RDC)
- 53**    TO side of two-way to be converted is not an FTU NPC
- 55**    Width of existing two way does not match conference width
- 57**    FROM is not a backbone leg
- 58**    Specified width does not match existing conference width
- 59**    NTR invalid since existing conference is not already NTR
- 5A**    LPD invalid since existing conference is not already LPD
- 5B**    TO is not a leg of this/any conference
- 5C**    Can't disconnect return leg unless entire conference disconnected
- 95**    Range overlapping between FROM and TO or between two TOs
- D3**    Corresponding NPC for FROM virtual channel is not provisioned
- D4**    Corresponding NPC for TO virtual channel is not provisioned
- D9**    Invalid FROM channel number range
- DA**    Invalid TO channel number range
- DC**    A loopback is active on the FROM termination

**cc**    *Explanation*

**FF**    Termination is in process of being rolled

**E0**    ETSI not equipped, not in service, or failed

## **BDIS, FROM, TO, OOS, INCL, CONV**

### **BROADCAST DISCONNECTION**

#### **Explanation Of Command**

This message disconnects a single non-channelized tributary network processing circuit from a non-channelized digital signal broadcast circuit. It also disconnects a single tributary and converts a broadcast conference to a two-way, two-point circuit.

When the circuit is disconnected, the idle code (AIS) is transmitted.

#### **Command**

##### **Nonhierarchical**

[I.15231]

**BDIS:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,OOS][,INCL][,CONV]!**

##### **Hierarchical**

[I.15231]

**BDIS:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,OOS][,INCL][,CONV]!**

#### **Completion Message**

##### **Nonhierarchical**

[O.15231]

**M hh:mm:ss xy,ww n[vv] BDIS [s]abc,[t]ghi[ OOS][ CUS]\  
[ RDC][ BRDIS][ CONV] COMPL**



### **Hierarchical**

---

[O.15231]

M hh:mm:ss xy,ww n[vv] BDIS uvmnp,wxkqr[ OOS][ CUS][ RDC]\  
[ BRDIS][ CONV] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.15231.01]

M hh:mm:ss xy,ww n[vv] BDIS [s]abc,[t]ghi[ [t]qrs] cc <st> \  
DNY

### **Hierarchical**

---

[O.15231.01]

M hh:mm:ss xy,ww n[vv] BDIS uvmnp,wxkqr[ uvqrs] cc <st> DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

|        |                                                                                     |
|--------|-------------------------------------------------------------------------------------|
| [s]abc | - The 3- or 4-digit non-hierarchical non-channelized source(backbone)<br>NPC number |
| [t]ghi | - The 3- or 4-digit non-hierarchical non-channelized tributary NPC<br>number        |

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1952  | 2081-2112  | 2241-2272  | 2401-2432  |
| 1961-1992  | 2121-2152  | 2281-2312  | 2441-2472  |
| 2001-2032  | 2161-2192  | 2321-2352  | 2481-2512  |
| 2041-2072  | 2201-2232  | 2361-2392  | 2521-2552  |

**uvmnp** - Hierarchical non-channelized source (backbone) NPC number  
**wxkqr** - Hierarchical non-channelized tributary NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The values are listed below:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

**OOS** - Out-of-service keyword may be specified if one or more of the backbone or tributary NPCs is out of service

**INCL** - Inclusive keyword required for Customer-controlled (CUS) or Red circuits

**CONV** - Convert circuit to a two-way, two-point circuit by disconnecting the indicated tributary; as long as more than two tributaries remain, or no return path exists, the option is denied.

If the indicated tributary is a full tributary, it can be disconnected only when there are no other tributaries.

**[t]qrs** - The 3- or 4-digit nonhierarchical NPC number causing denial

**uvqrs** - Hierarchical NPC number causing denial

**RDC** - Red circuit

**CUS** - Customer

Customer-controlled circuit

**BRDIS** - Broadcast conference completely disconnected

**st** - Status of denial

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>01</b> | <b>INERR</b> | Invalid range for specified NPC type                                  |
| <b>03</b> | <b>INERR</b> | No RDC or CUS circuits and INCL keyword used                          |
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>05</b> | <b>BCAST</b> | Invalid use of CONV keyword                                           |
| <b>10</b> | <b>MCOND</b> | NPC out of service or failed                                          |
| <b>11</b> | <b>MCOND</b> | NPC not equipped                                                      |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>32</b> | <b>MCOND</b> | Termination is under test                                             |
| <b>33</b> | <b>INERR</b> | Termination is a test port                                            |
| <b>34</b> | <b>MCOND</b> | Termination is under customer control (CUS)                           |
| <b>35</b> | <b>MCOND</b> | Termination is protected (RDC)                                        |
| <b>51</b> | <b>BCAST</b> | CUS flag doesn't match that of conference                             |
| <b>52</b> | <b>BCAST</b> | RDC flag doesn't match that of conference                             |
| <b>57</b> | <b>BCAST</b> | FROM is not a backbone leg                                            |
| <b>58</b> | <b>INERR</b> | Specified width does not match existing conference width              |
| <b>5B</b> | <b>BCAST</b> | TO is not a leg of this/any conference                                |
| <b>5C</b> | <b>BCAST</b> | Can't disconnect return leg unless entire conference disconnected     |
| <b>62</b> | <b>INERR</b> | NPC type mismatch                                                     |
| <b>63</b> | <b>INERR</b> | NPC is a channelized NPC                                              |
| <b>64</b> | <b>INERR</b> | NPC is a non-channelized NPC                                          |
| <b>95</b> | <b>MCOND</b> | Range overlapping between FROM and TO or between two TOs              |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                               |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                                      |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |

## **BDIS, FROM, TOX, CONV, OOS, DCC, INCL**

### **BROADCAST DISCONNECTION**

#### **Explanation Of Command**

This command requests the disconnection of up to eight tributary legs from the source of a broadcast cross-connection circuit.

The **FROM** field designates the source termination. The optional range field **[-eee]** indicates the width of the conference backbone. When disconnecting a TS0 to non-TS0 broadcast the width of the conference is one. The allowable width ranges from 001 to 031 channels and must be the same as the width of the existing conference backbone (if any).

The fields in the TO end designate the tributaries to be connected to the backbone. Although a conference may have any number of tributaries (limited only by the frame configuration), at most eight at a time may be disconnected using this command. More tributaries can be disconnected by subsequent broadcast disconnect commands.

#### **Command**

##### **Nonhierarchical**

[.15211]

```
BDIS:FRM xy,SEQ ww:FROM [s]abcddd[-eee],\
TOX ([t]ghijjj[, [u]klmnn . . .)][, CONV][, OOS][, DCC][, INCL]!
```

##### **Hierarchical**

[.15211]

```
BDIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],\
TOX (wxqrrjj[, edhfgnnn, . . .)][, CONV][, OOS][, DCC][, INCL]!
```

## **Completion Message**

---

### **Nonhierarchical**

---

[O.15211]

M hh:mm:ss xy,ww n[vv] BDIS [s]abcddd[-eee] 3 LN MSG:  
TOX [t]ghijjj[, [u]klmnnn, . . .]  
[BRDIS][ CONV][ OOS][ CUS][ RDC][ DCC] COMPL

### **Hierarchical**

---

[O.15211]

M hh:mm:ss xy,ww n[vv] BDIS uvmnpddd[-eee] 3 LN MSG:  
TOX wxkqrjjj[,edhfgnnn, . . .]  
[BRDIS][ CONV][ OOS][ CUS][ RDC][ DCC] COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.15211.01]

M hh:mm:ss xy,ww n[vv] BDIS [s]abcddd[-eee] 3 LN MSG:  
TOX [t]ghijjj[, [u]klmnnn, . . .]  
[[t]wxyz] COND cc BCAST DNY

[O.15211.02]

M hh:mm:ss xy,ww n[vv] BDIS [s]abcddd[-eee] 3 LN MSG:  
TOX [t]ghijjj[, [u]klmnnn, . . .]  
[[t]wxyz] COND cc DNY

### **Hierarchical**

---

[O.15211.01]

M hh:mm:ss xy,ww n[vv] BDIS uvmnpddd[-eee] 3 LN MSG:  
TOX wxkqrjjj[,edhfgnnn, . . .]  
[opjstzz] COND cc BCAST DNY

[O.15211.02]

M hh:mm:ss xy,ww n[vv] BDIS uvmnpddd[-eee] 3 LN MSG:  
TOX wxkqrjjj[,edhfgnnn,. . .]  
[opjstzzz] COND cc DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

[s]abc - The 3- or 4-digit nonhierarchical FROM NPC number designating the source termination

[t]ghi, [u]klm  
- The 3- or 4-digit nonhierarchical tributary NPC numbers

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0032 | 0161-0192 | 0321-0352 | 0481-0512 |
| 0041-0072 | 0201-0232 | 0361-0392 | 0521-0552 |
| 0081-0112 | 0241-0272 | 0401-0432 | 0561-0592 |
| 0121-0152 | 0281-0312 | 0441-0472 | 0601-0632 |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number designating the source termination

**wxkqr** - Hierarchical FROM NPC number designating the source termination

**edhfg** - Hierarchical tributary NPC numbers

**uv, wx, ed**

- Unit number

**m, k, h** - Module number

**np, qr, fg**

- NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |



**ddd** - FROM channel number  
**eee** - FROM channel number denoting end of width

The optional range field [-eee] or [&&-eee] indicates the width of the conference backbone. Note that a range may be specified for the source only.

**jjj** - Channel number of tributary legs  
**nnn** - Channel number of the last tributary leg of the range

Without the optional CONV keyword, ddd and jjj must be the lowest numbered channels in the range of channels that make up the broadcast circuit. If the range field [-eee] is used, the entire width of the conference tributaries must be indicated.

000-030            CEPT type NPCs grown as CAS  
000-031            CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

**NOTE:** Channel 000 of a CEPT NPC(TS0) can be BCONEd to a non-TS0 of a CEPT NPC.  
**FROM** - From

The FROM field designates the source termination.

The fields following the TOX keyword (or the subsequent channel numbers in MML) designate the tributaries that are connected to the backbone.

Although a conference may have any number of tributaries (limited only by frame configuration), at most eight at a time may be disconnected using this command. More tributaries can be disconnected by subsequent commands.

**CONV** - Convert

The CONV keyword is given to disconnect the specified one-way tributaries from the broadcast circuit and convert the circuit to a two-way, two-point circuit. For a command with this option to succeed, only the broadcast source and the full tributary leg must remain on the circuit following the disconnection of the specified one-way tributaries. That is, this option will be denied if the user attempts to disconnect the full tributary rather than a one-way tributary, or if any other one-way tributaries remain on the broadcast circuit following the disconnection of the one-way tributaries specified in the command.

**OOS** - Out-of-service

An OOS disconnection may be done by giving the optional OOS keyword. At least one end of the circuit must be out-of-service or the OOS disconnection will be denied.

**DCC** - Disconnect code

If the DCC keyword is specified, DACS II will insert the user-defined disconnect code and signaling into the disconnected channels. This disconnect code and signaling are specified by the trunk conditioning field used to connect the circuit. If the DCC option is not used, the disconnect code specified in the GRTH::NPC command is used.

**INCL** - Inclusive

To disconnect a circuit or range of circuits including one or more circuits marked as a red circuit or under customer control, use the INCL option. If this option is not used, the message will be denied if any circuits in the range are red circuits or customer controlled.

**[t]wxy** - The 3- or 4-digit nonhierarchical NPC number involved in the denial.  
(with the same valid value as [s]abc.)

**opjst** - Hierarchical NPC number involved in the denial

**zzz** - Channel number involved in the denial. Otherwise the same as ddd.

**BCAST** - Broadcast

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                                       |
|-----------|-----------------------------------------------------------------------|
| <b>01</b> | Invalid range for specified NPC type                                  |
| <b>03</b> | No RDC or CUS circuits and INCL keyword used                          |
| <b>04</b> | No NPC's out of service and OOS keyword used                          |
| <b>05</b> | Invalid use of CONV keyword                                           |
| <b>10</b> | NPC out of service or failed                                          |
| <b>11</b> | NPC not equipped                                                      |
| <b>12</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>32</b> | Termination is under test                                             |
| <b>34</b> | Termination is under customer control (CUS)                           |
| <b>35</b> | Termination is protected (RDC)                                        |
| <b>53</b> | TO side of two-way to be converted is not an FTU NPC                  |
| <b>55</b> | Width of existing two way does not match conference width             |
| <b>57</b> | FROM is not a backbone leg                                            |
| <b>58</b> | Specified width does not match existing conference width              |
| <b>59</b> | NTR invalid since existing conference is not already NTR              |
| <b>5A</b> | LPD invalid since existing conference is not already LPD              |
| <b>5B</b> | TO is not a leg of this/any conference                                |
| <b>5C</b> | Can't disconnect return leg unless entire conference disconnected     |
| <b>95</b> | Range overlapping between FROM and TO or between two TOs              |
| <b>D3</b> | Corresponding NPC for FROM virtual channel is not provisioned         |
| <b>D4</b> | Corresponding NPC for TO virtual channel is not provisioned           |
| <b>D6</b> | Invalid FROM channel number                                           |
| <b>D7</b> | Invalid TO channel number                                             |
| <b>D9</b> | Invalid FROM channel number range                                     |
| <b>DA</b> | Invalid TO channel number range                                       |
| <b>DC</b> | A loopback is active on the FROM termination                          |
| <b>EC</b> | Invalid channel 000 cross-connection specified                        |
| <b>ED</b> | Invalid channel 031 cross-connection specified                        |
| <b>FF</b> | Termination is in process of being rolled                             |
| <b>E0</b> | ETSI not equipped, not in service, or failed                          |

## **BDIS, FROM, TOX, OOS, INCL, CONV**

### **BROADCAST DISCONNECT**

#### **Explanation Of Command**

This message disconnects upto eight non-channelized tributaries from a non-channelized source network processing circuit (NPC). The NPCs can be in different units. This message also disconnects tributaries and can convert a broadcast conference to a two-way, two-point circuit. When the circuit is disconnected, the idle code (AIS) is transmitted.

#### **Command**

##### **Nonhierarchical**

[|.15221]

```
BDIS:FRM xy,SEQ ww:FROM [s]abc,\
TOX ([t]ghi[, [u]jkl][, [v]mno][...])[, OOS][, INCL][, CONV]!
```

##### **Hierarchical**

[|.15221]

```
BDIS:FRM xy,SEQ ww:FROM uvmnp,\
TOX (wxkqr[, edhfg][, opqrs][...])[, OOS][, INCL][, CONV]!
```

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.15221]

M hh:mm:ss xy,ww n[vv] BDIS [s]abc 3 LN MSG:  
TOX [t]ghi[, [u]jkl][, [v]mno][...]  
[OOS ][CUS ][RDC ][BRDIS ][CONV ]COMPL

#### **Hierarchical**

---

[O.15221]

M hh:mm:ss xy,ww n[vv] BDIS uvmpn 3 LN MSG:  
TOX wxkqr[, edhfg][, opqrs][...]  
[OOS ][CUS ][RDC ][BRDIS ][CONV ]COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.15221.01]

M hh:mm:ss xy,ww n[vv] BDIS [s]abc 3 LN MSG:  
TOX [t]ghi[, [u]jkl][, [v]mno][...]  
[[t]qrs] cc <st> DNY

#### **Hierarchical**

---

[O.15221.01]

M hh:mm:ss xy,ww n[vv] BDIS uvmpn 3 LN MSG:  
TOX wxkqr[, edhfg][, opqrs][...]  
[uvjkl] cc <st> DNY

### **Autonomous Message**

---

Not applicable.

**Explanation Of Parameters**

|               |                                                                                  |
|---------------|----------------------------------------------------------------------------------|
| <b>[s]abc</b> | - The 3- or 4-digit non-hierarchical non-channelized Source(backbone) NPC number |
| <b>[t]ghi</b> | - The 3- or 4-digit non-hierarchical non-channelized tributary NPC number        |
| <b>[u]jkl</b> | - Explained for [t]ghi                                                           |
| <b>[v]mno</b> | - Explained for [t]ghi                                                           |

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical number of non-channelized source NPC  
**wxkqr** - Hierarchical NPC number of non-channelized tributary

**edhfg** - Hierarchical number of NPC  
**opqrs** - Hierarchical number of tributary

**uv, wx, ed, op**  
 - Unit number  
**m, x, h, q**  
 - Module number  
**np, qr, fg, rs**  
 - NPC number within the module

The values are listed below:

PA type numbers listed by unit, module, and NPC Number  
 Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**OOS** - Out-of-service keyword may be specified if one or more of the backbone or tributary NPCs is out of service

**INCL** - Inclusive keyword required for customer-controlled or Red circuits

**CONV** - Convert circuit to a two-way, two-point circuit by disconnecting the indicated tributaries; as long as more than two tributaries remain, or if no return path exists, the option is denied.

If the broadcast circuit has one full tributary, it can be disconnected only when there are no other tributaries.

**[t]qrs** - The 3- or 4-digit nonhierarchical NPC number causing denial

**uvjkl** - Hierarchical NPC number causing denial

**BRDIS** - Broadcast conference completely disconnected

**st** - Status of denial

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>01</b> | <b>RNGIE</b> | Invalid range for specified NPC type                                  |
| <b>03</b> | <b>INERR</b> | No RDC or CUS circuits and INCL keyword used                          |
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>05</b> | <b>BCAST</b> | Invalid use of CONV keyword                                           |
| <b>10</b> | <b>MCOND</b> | NPC out of service or failed                                          |
| <b>11</b> | <b>MCOND</b> | NPC not equipped                                                      |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>32</b> | <b>MCOND</b> | Termination is under test                                             |
| <b>33</b> | <b>MCOND</b> | Termination is a test port                                            |
| <b>34</b> | <b>MCOND</b> | Termination is under customer control (CUS)                           |
| <b>35</b> | <b>MCOND</b> | Termination is protected (RDC)                                        |
| <b>51</b> | <b>BCAST</b> | CUS flag doesn't match that of conference                             |
| <b>52</b> | <b>BCAST</b> | RDC flag doesn't match that of conference                             |
| <b>57</b> | <b>BCAST</b> | FROM is not a backbone leg                                            |
| <b>58</b> | <b>INERR</b> | Specified width does not match existing conference width              |
| <b>5B</b> | <b>BCAST</b> | TO is not a leg of this/any conference                                |
| <b>5C</b> | <b>BCAST</b> | Can't disconnect return leg unless entire conference disconnected     |
| <b>62</b> | <b>INERR</b> | NPC type mismatch                                                     |
| <b>63</b> | <b>INERR</b> | NPC is a channelized NPC                                              |
| <b>64</b> | <b>INERR</b> | NPC is a non-channelized NPC                                          |



| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                       |
|-----------|--------------|----------------------------------------------------------|
| <b>95</b> | <b>MCOND</b> | Range overlapping between FROM and TO or between two TOs |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                  |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                         |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed             |

## **BOOT,FAILED,BAD,DEVICE**

### **BOOT FAILED**

#### **Explanation Of Command**

This autonomous output message reports that a system boot has failed while entering the RST::MC command (Message 34001).

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.65053]

**\*\*hh:mm:ss xy,ww    BOOT FAILED - BAD BOOT DEVICE**

**Explanation Of Parameters**

---

None

## **BOOT, FROM, PMEM, FAILED, ATTEMPTING, TO**

### **STARTUP**

#### **Explanation Of Command**

If the Primary memory Card (PMEM) had a corrupted generic load or the generic is absent from the PMEM, the bootstrap loader will display this message.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01242]

**BOOT FROM PMEM FAILED  
ATTEMPTING TO BOOT FROM SMEM**

### **Explanation Of Parameters**

---

**BOOT** - Boot.

**PMEM** - Primary memory card.

**SMEM** - Secondary memory card.

## **BOOT, FROM, PMEM, SMEM**

### **STARTUP**

#### **Explanation Of Command**

The main processor has successfully loaded the boot program from either the Primary Memory (PMEM) or the Secondary Memory (SMEM).

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01241]

**BOOT FROM {PMEM|SMEM}**

### **Explanation Of Parameters**

---

**BOOT** - Boot

**PMEM** - Primary memory.

**FROM** - From

**SMEM** - Secondary memory.

## **BX2,STF,ATP**

### **BUS EXTENDER STARTUP**

#### **Explanation Of Command**

This message indicates that the communications interface bus extender has initialized itself and has performed self-diagnostics. The results of these diagnostics are reported as some tests failed or all tests passed.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01271]

**BX2 {STF|ATP}**



### **Explanation Of Parameters**

---

**BX2** - Bus extender

**STF** - Some tests failed

**ATP** - All tests passed

For ATP no action is required.



---

**Contents**

|                               |      |
|-------------------------------|------|
| <b>CBOFL,SIDE,EOM</b>         | 8-2  |
| ■ Explanation Of Command      | 8-2  |
| ■ Command                     | 8-2  |
| ■ Completion Message          | 8-2  |
| ■ Denial Message              | 8-2  |
| ■ Autonomous Message          | 8-3  |
| ■ Nonhierarchical             | 8-3  |
| ■ Hierarchical                | 8-4  |
| ■ Explanation Of Parameters   | 8-4  |
| <b>CFR,FRAME</b>              | 8-9  |
| ■ Explanation Of Command      | 8-9  |
| ■ Command                     | 8-9  |
| ■ Completion Message          | 8-9  |
| ■ Denial Message              | 8-10 |
| ■ Autonomous Message          | 8-10 |
| ■ Explanation Of Parameters   | 8-10 |
| <b>CFR,SYNC,FPLL</b>          | 8-11 |
| ■ Explanation Of Command      | 8-11 |
| ■ Command                     | 8-11 |
| ■ Completion Message          | 8-11 |
| ■ Denial Message              | 8-11 |
| ■ Autonomous Message          | 8-11 |
| ■ Explanation Of Parameters   | 8-12 |
| <b>CFR,SYNC,MASTER,SLAVED</b> | 8-13 |
| ■ Explanation Of Command      | 8-13 |
| ■ Command                     | 8-13 |

---

## Contents

|                                              |      |
|----------------------------------------------|------|
| ■ Completion Message                         | 8-13 |
| ■ Denial Message                             | 8-13 |
| ■ Autonomous Message                         | 8-14 |
| ■ Explanation Of Parameters                  | 8-14 |
| <b>CFR,SYNC,STRATUM,STR2,STR3,TOLL,LOCAL</b> | 8-15 |
| ■ Explanation Of Command                     | 8-15 |
| ■ Command                                    | 8-15 |
| ■ Completion Message                         | 8-15 |
| ■ Denial Message                             | 8-15 |
| ■ Autonomous Message                         | 8-15 |
| ■ Explanation Of Parameters                  | 8-16 |
| <b>CFR,XC,INCL</b>                           | 8-17 |
| ■ Explanation Of Command                     | 8-17 |
| ■ Command                                    | 8-17 |
| ■ Completion Message                         | 8-17 |
| ■ Denial Message                             | 8-18 |
| ■ Autonomous Message                         | 8-18 |
| ■ Explanation Of Parameters                  | 8-18 |
| <b>CHG,ALMS,ON,OFF</b>                       | 8-19 |
| ■ Explanation Of Command                     | 8-19 |
| ■ Command                                    | 8-19 |
| ■ Completion Message                         | 8-19 |
| ■ Denial Message                             | 8-19 |
| ■ Autonomous Message                         | 8-19 |
| ■ Explanation Of Parameters                  | 8-20 |
| <b>CHG,BC,X,TO</b>                           | 8-21 |
| ■ Explanation Of Command                     | 8-21 |
| ■ Command                                    | 8-21 |
| ■ Nonhierarchical                            | 8-21 |
| ■ Hierarchical                               | 8-22 |
| ■ Completion Message                         | 8-22 |
| ■ Nonhierarchical                            | 8-22 |
| ■ Hierarchical                               | 8-22 |
| ■ Denial Message                             | 8-22 |
| ■ Nonhierarchical                            | 8-22 |
| ■ Hierarchical                               | 8-22 |
| ■ Autonomous Message                         | 8-22 |

---

## Contents

|                                            |      |
|--------------------------------------------|------|
| ■ Explanation Of Parameters                | 8-23 |
| <b>CHG,BCOFF,TO</b>                        | 8-26 |
| ■ Explanation Of Command                   | 8-26 |
| ■ Command                                  | 8-26 |
| ■ Nonhierarchical                          | 8-26 |
| ■ Hierarchical                             | 8-26 |
| ■ Completion Message                       | 8-26 |
| ■ Nonhierarchical                          | 8-26 |
| ■ Hierarchical                             | 8-27 |
| ■ Denial Message                           | 8-27 |
| ■ Nonhierarchical                          | 8-27 |
| ■ Hierarchical                             | 8-27 |
| ■ Autonomous Message                       | 8-27 |
| ■ Explanation Of Parameters                | 8-27 |
| <b>CHG,DD,TO</b>                           | 8-31 |
| ■ Explanation Of Command                   | 8-31 |
| ■ Command                                  | 8-31 |
| ■ Nonhierarchical                          | 8-31 |
| ■ Hierarchical                             | 8-31 |
| ■ Completion Message                       | 8-31 |
| ■ Nonhierarchical                          | 8-31 |
| ■ Hierarchical                             | 8-32 |
| ■ Denial Message                           | 8-32 |
| ■ Nonhierarchical                          | 8-32 |
| ■ Hierarchical                             | 8-32 |
| ■ Autonomous Message                       | 8-32 |
| ■ Explanation Of Parameters                | 8-32 |
| <b>CHG,ERB,TYPE</b>                        | 8-36 |
| ■ Explanation Of Command                   | 8-36 |
| ■ Command                                  | 8-36 |
| ■ Completion Message                       | 8-36 |
| ■ Denial Message                           | 8-36 |
| ■ Autonomous Message                       | 8-36 |
| ■ Explanation Of Parameters                | 8-37 |
| <b>CHG,FALMS,TYPE,PMACR,PMAMJ,DMAMN,MI</b> | 8-38 |
| ■ Explanation Of Command                   | 8-38 |
| ■ Command                                  | 8-38 |

---

## Contents

|                                             |      |
|---------------------------------------------|------|
| ■ Completion Message                        | 8-38 |
| ■ Denial Message                            | 8-38 |
| ■ Autonomous Message                        | 8-38 |
| ■ Explanation Of Parameters                 | 8-39 |
| <b>CHG,FROM,TO,NOT,TLA,TLR,F,T,B,A,INCL</b> | 8-54 |
| ■ Explanation Of Command                    | 8-54 |
| ■ Command                                   | 8-54 |
| ■ Nonhierarchical                           | 8-54 |
| ■ Hierarchical                              | 8-54 |
| ■ Completion Message                        | 8-55 |
| ■ Nonhierarchical                           | 8-55 |
| ■ Hierarchical                              | 8-55 |
| ■ Denial Message                            | 8-55 |
| ■ Nonhierarchical                           | 8-55 |
| ■ Hierarchical                              | 8-55 |
| ■ Autonomous Message                        | 8-55 |
| ■ Explanation Of Parameters                 | 8-56 |
| <b>CHG,FROM,TO,NOT,TLA,TLR,F,T,B,L,G,A</b>  | 8-60 |
| ■ Explanation Of Command                    | 8-60 |
| ■ Command                                   | 8-60 |
| ■ Nonhierarchical                           | 8-60 |
| ■ Hierarchical                              | 8-60 |
| ■ Completion Message                        | 8-61 |
| ■ Nonhierarchical                           | 8-61 |
| ■ Hierarchical                              | 8-61 |
| ■ Denial Message                            | 8-61 |
| ■ Nonhierarchical                           | 8-61 |
| ■ Hierarchical                              | 8-61 |
| ■ Autonomous Message                        | 8-62 |
| ■ Explanation Of Parameters                 | 8-62 |
| <b>CHG,FROM,TO,TLP,NG,ES,INCL</b>           | 8-68 |
| ■ Explanation Of Command                    | 8-68 |
| ■ Command                                   | 8-68 |
| ■ Nonhierarchical                           | 8-68 |
| ■ Hierarchical                              | 8-68 |
| ■ Completion Message                        | 8-69 |
| ■ Nonhierarchical                           | 8-69 |
| ■ Hierarchical                              | 8-69 |

---

## Contents

|                                     |      |
|-------------------------------------|------|
| ■ Denial Message                    | 8-69 |
| ■ Nonhierarchical                   | 8-69 |
| ■ Hierarchical                      | 8-69 |
| ■ Autonomous Message                | 8-69 |
| ■ Explanation Of Parameters         | 8-70 |
| <b>CHG,INTV,ON,OFF</b>              | 8-75 |
| ■ Explanation Of Command            | 8-75 |
| ■ Command                           | 8-75 |
| ■ Completion Message                | 8-75 |
| ■ Denial Message                    | 8-75 |
| ■ Autonomous Message                | 8-76 |
| ■ Explanation Of Parameters         | 8-76 |
| <b>CHG,MACRO,MAP,SPACE</b>          | 8-77 |
| ■ Explanation Of Command            | 8-77 |
| ■ Command                           | 8-77 |
| ■ Completion Message                | 8-77 |
| ■ Denial Message                    | 8-77 |
| ■ Autonomous Message                | 8-77 |
| ■ Explanation Of Parameters         | 8-78 |
| <b>CHG,MSGLOG,ON,OFF</b>            | 8-79 |
| ■ Explanation Of Command            | 8-79 |
| ■ Command                           | 8-79 |
| ■ Completion Message                | 8-79 |
| ■ Denial Message                    | 8-79 |
| ■ Autonomous Message                | 8-79 |
| ■ Explanation Of Parameters         | 8-80 |
| <b>CHG,NPC,ALL,TLI,SYNC,CCN,LEV</b> | 8-81 |
| ■ Explanation Of Command            | 8-81 |
| ■ Command                           | 8-81 |
| ■ Nonhierarchical                   | 8-81 |
| ■ Hierarchical                      | 8-81 |
| ■ Completion Message                | 8-82 |
| ■ Nonhierarchical                   | 8-82 |
| ■ Hierarchical                      | 8-82 |
| ■ Denial Message                    | 8-82 |
| ■ Nonhierarchical                   | 8-82 |
| ■ Hierarchical                      | 8-82 |

---

## Contents

|                                          |      |
|------------------------------------------|------|
| ■ Autonomous Message                     | 8-82 |
| ■ Explanation Of Parameters              | 8-83 |
| <b>CHG,NPC,ALMOPT,AIS,MI,PMA,PMC,DMA</b> | 8-86 |
| ■ Explanation Of Command                 | 8-86 |
| ■ Command                                | 8-86 |
| ■ Nonhierarchical                        | 8-86 |
| ■ Hierarchical                           | 8-86 |
| ■ Completion Message                     | 8-87 |
| ■ Nonhierarchical                        | 8-87 |
| ■ Hierarchical                           | 8-87 |
| ■ Denial Message                         | 8-88 |
| ■ Nonhierarchical                        | 8-88 |
| ■ Hierarchical                           | 8-88 |
| ■ Autonomous Message                     | 8-88 |
| ■ Explanation Of Parameters              | 8-89 |
| <b>CHG,NPC,CBTIMER</b>                   | 8-92 |
| ■ Explanation Of Command                 | 8-92 |
| ■ Command                                | 8-92 |
| ■ Nonhierarchical                        | 8-92 |
| ■ Hierarchical                           | 8-92 |
| ■ Completion Message                     | 8-92 |
| ■ Nonhierarchical                        | 8-92 |
| ■ Hierarchical                           | 8-93 |
| ■ Denial Message                         | 8-93 |
| ■ Nonhierarchical                        | 8-93 |
| ■ Hierarchical                           | 8-93 |
| ■ Autonomous Message                     | 8-93 |
| ■ Explanation Of Parameters              | 8-93 |
| <b>CHG,NPC,LPBK</b>                      | 8-95 |
| ■ Explanation Of Command                 | 8-95 |
| ■ Command                                | 8-97 |
| ■ Nonhierarchical                        | 8-97 |
| ■ Hierarchical                           | 8-97 |
| ■ Completion Message                     | 8-97 |
| ■ Nonhierarchical                        | 8-97 |
| ■ Hierarchical                           | 8-97 |
| ■ Denial Message                         | 8-97 |
| ■ Nonhierarchical                        | 8-97 |



---

## Contents

|                             |       |
|-----------------------------|-------|
| ■ Hierarchical              | 8-98  |
| ■ Autonomous Message        | 8-98  |
| ■ Explanation Of Parameters | 8-98  |
| <b>CHG,NPC,NFS</b>          | 8-102 |
| ■ Explanation Of Command    | 8-102 |
| ■ Command                   | 8-102 |
| ■ Nonhierarchical           | 8-102 |
| ■ Hierarchical              | 8-102 |
| ■ Completion Message        | 8-103 |
| ■ Nonhierarchical           | 8-103 |
| ■ Hierarchical              | 8-103 |
| ■ Denial Message            | 8-103 |
| ■ Nonhierarchical           | 8-103 |
| ■ Hierarchical              | 8-103 |
| ■ Autonomous Message        | 8-103 |
| ■ Explanation Of Parameters | 8-104 |
| <b>CHG,NPC,OPTS,THMODE</b>  | 8-108 |
| ■ Explanation Of Command    | 8-108 |
| ■ Command                   | 8-108 |
| ■ Nonhierarchical           | 8-108 |
| ■ Hierarchical              | 8-109 |
| ■ Completion Message        | 8-109 |
| ■ Nonhierarchical           | 8-109 |
| ■ Hierarchical              | 8-111 |
| ■ Denial Message            | 8-112 |
| ■ Nonhierarchical           | 8-112 |
| ■ Hierarchical              | 8-112 |
| ■ Autonomous Message        | 8-112 |
| ■ Explanation Of Parameters | 8-112 |
| <b>CHG,NPC,TS0</b>          | 8-136 |
| ■ Explanation Of Command    | 8-136 |
| ■ Command                   | 8-136 |
| ■ Nonhierarchical           | 8-136 |
| ■ Hierarchical              | 8-136 |
| ■ Completion Message        | 8-137 |
| ■ Nonhierarchical           | 8-137 |
| ■ Hierarchical              | 8-137 |
| ■ Denial Message            | 8-137 |

---

## Contents

|                               |       |
|-------------------------------|-------|
| ■ Nonhierarchical             | 8-137 |
| ■ Hierarchical                | 8-137 |
| ■ Autonomous Message          | 8-137 |
| ■ Explanation Of Parameters   | 8-138 |
| <b>CHG,NPC,TS0M</b>           | 8-142 |
| ■ Explanation Of Command      | 8-142 |
| ■ Command                     | 8-142 |
| ■ Nonhierarchical             | 8-142 |
| ■ Hierarchical                | 8-142 |
| ■ Completion Message          | 8-143 |
| ■ Nonhierarchical             | 8-143 |
| ■ Hierarchical                | 8-143 |
| ■ Denial Message              | 8-143 |
| ■ Nonhierarchical             | 8-143 |
| ■ Hierarchical                | 8-143 |
| ■ Autonomous Message          | 8-143 |
| ■ Explanation Of Parameters   | 8-144 |
| <b>CHG,NPC,TYPE,IW,X</b>      | 8-148 |
| ■ Explanation Of Command      | 8-148 |
| ■ Command                     | 8-148 |
| ■ Nonhierarchical             | 8-148 |
| ■ Hierarchical                | 8-149 |
| ■ Completion Message          | 8-149 |
| ■ Nonhierarchical             | 8-149 |
| ■ Hierarchical                | 8-149 |
| ■ Denial Message              | 8-149 |
| ■ Nonhierarchical             | 8-149 |
| ■ Hierarchical                | 8-149 |
| ■ Autonomous Message          | 8-149 |
| ■ Explanation Of Parameters   | 8-150 |
| <b>CHG,NPC,TYPE,IW,X,INCL</b> | 8-166 |
| ■ Explanation Of Command      | 8-166 |
| ■ Command                     | 8-166 |
| ■ Nonhierarchical             | 8-166 |
| ■ Hierarchical                | 8-167 |
| ■ Completion Message          | 8-167 |
| ■ Nonhierarchical             | 8-167 |
| ■ Hierarchical                | 8-167 |

---

## Contents

|                                             |       |
|---------------------------------------------|-------|
| ■ Denial Message                            | 8-167 |
| ■ Nonhierarchical                           | 8-167 |
| ■ Hierarchical                              | 8-167 |
| ■ Autonomous Message                        | 8-167 |
| ■ Explanation Of Parameters                 | 8-168 |
| <b>CHG,PASSWD,OLD,NEW</b>                   | 8-171 |
| ■ Explanation Of Command                    | 8-171 |
| ■ Command                                   | 8-172 |
| ■ Completion Message                        | 8-172 |
| ■ Denial Message                            | 8-172 |
| ■ Autonomous Message                        | 8-172 |
| ■ Explanation Of Parameters                 | 8-173 |
| <b>CHG,SALMS,PMACR,PMAMJ,DMAMN,MI,RESET</b> | 8-174 |
| ■ Explanation Of Command                    | 8-174 |
| ■ Command                                   | 8-174 |
| ■ Completion Message                        | 8-174 |
| ■ Denial Message                            | 8-174 |
| ■ Autonomous Message                        | 8-174 |
| ■ Explanation Of Parameters                 | 8-175 |
| <b>CHG,SETOP,TYPE,ALL,NPCOP</b>             | 8-176 |
| ■ Explanation Of Command                    | 8-176 |
| ■ Command                                   | 8-177 |
| ■ Completion Message                        | 8-177 |
| ■ Denial Message                            | 8-177 |
| ■ Nonhierarchical                           | 8-177 |
| ■ Hierarchical                              | 8-177 |
| ■ Autonomous Message                        | 8-177 |
| ■ Explanation Of Parameters                 | 8-178 |
| <b>CHG,SWCH,TOX,INCL</b>                    | 8-186 |
| ■ Explanation Of Command                    | 8-186 |
| ■ Command                                   | 8-186 |
| ■ Nonhierarchical                           | 8-186 |
| ■ Hierarchical                              | 8-186 |
| ■ Completion Message                        | 8-187 |
| ■ Nonhierarchical                           | 8-187 |
| ■ Hierarchical                              | 8-187 |
| ■ Denial Message                            | 8-187 |

---

## Contents

|                                      |       |
|--------------------------------------|-------|
| ■ Nonhierarchical                    | 8-187 |
| ■ Hierarchical                       | 8-187 |
| ■ Autonomous Message                 | 8-188 |
| ■ Explanation Of Parameters          | 8-188 |
| <b>CHG,SWCH,TOX,INCL</b>             | 8-192 |
| ■ Explanation Of Command             | 8-192 |
| ■ Command                            | 8-192 |
| ■ Nonhierarchical                    | 8-192 |
| ■ Hierarchical                       | 8-192 |
| ■ Completion Message                 | 8-193 |
| ■ Nonhierarchical                    | 8-193 |
| ■ Hierarchical                       | 8-193 |
| ■ Denial Message                     | 8-193 |
| ■ Nonhierarchical                    | 8-193 |
| ■ Hierarchical                       | 8-193 |
| ■ Autonomous Message                 | 8-193 |
| ■ Explanation Of Parameters          | 8-194 |
| <b>CHG,SYNC,TLI,SSP,TYPE,NPC,SRC</b> | 8-197 |
| ■ Explanation Of Command             | 8-197 |
| ■ Command                            | 8-197 |
| ■ Nonhierarchical                    | 8-197 |
| ■ Hierarchical                       | 8-198 |
| ■ Common                             | 8-198 |
| ■ Completion Message                 | 8-198 |
| ■ Nonhierarchical                    | 8-198 |
| ■ Hierarchical                       | 8-198 |
| ■ Common                             | 8-198 |
| ■ Denial Message                     | 8-199 |
| ■ Nonhierarchical                    | 8-199 |
| ■ Hierarchical                       | 8-199 |
| ■ Common                             | 8-199 |
| ■ Autonomous Message                 | 8-199 |
| ■ Explanation Of Parameters          | 8-199 |
| <b>CHG,TYPE,OPTS,THMODE</b>          | 8-204 |
| ■ Explanation Of Command             | 8-204 |
| ■ Command                            | 8-204 |
| ■ Completion Message                 | 8-205 |
| ■ Denial Message                     | 8-205 |

---

## Contents

|                                             |       |
|---------------------------------------------|-------|
| ■ Autonomous Message                        | 8-206 |
| ■ Explanation Of Parameters                 | 8-206 |
| <b>CHG,TYPE,THMODE</b>                      | 8-230 |
| ■ Explanation Of Command                    | 8-230 |
| ■ Command                                   | 8-230 |
| ■ Completion Message                        | 8-231 |
| ■ Denial Message                            | 8-231 |
| ■ Autonomous Message                        | 8-231 |
| ■ Explanation Of Parameters                 | 8-231 |
| <b>CHG,UNIT,CONN</b>                        | 8-233 |
| ■ Explanation Of Command                    | 8-233 |
| ■ Command                                   | 8-233 |
| ■ Completion Message                        | 8-234 |
| ■ Denial Message                            | 8-234 |
| ■ Autonomous Message                        | 8-234 |
| ■ Explanation Of Parameters                 | 8-235 |
| <b>CHG,USER,LINK,INCL,SCR,GR,MCON,MCOFF</b> | 8-236 |
| ■ Explanation Of Command                    | 8-236 |
| ■ Command                                   | 8-236 |
| ■ Completion Message                        | 8-236 |
| ■ Denial Message                            | 8-237 |
| ■ Autonomous Message                        | 8-237 |
| ■ Explanation Of Parameters                 | 8-237 |
| <b>CI,ECI,RESET</b>                         | 8-240 |
| ■ Explanation Of Command                    | 8-240 |
| ■ Command                                   | 8-240 |
| ■ Completion Message                        | 8-240 |
| ■ Denial Message                            | 8-240 |
| ■ Autonomous Message                        | 8-240 |
| ■ Explanation Of Parameters                 | 8-241 |
| <b>CI,ECI,STARTUP,STF,ATP</b>               | 8-242 |
| ■ Explanation Of Command                    | 8-242 |
| ■ Command                                   | 8-242 |
| ■ Completion Message                        | 8-242 |
| ■ Denial Message                            | 8-242 |
| ■ Autonomous Message                        | 8-242 |
| ■ Explanation Of Parameters                 | 8-243 |

---

## Contents

|                                           |       |
|-------------------------------------------|-------|
| <b>CMD,MC,OOS,MCOND,INSERVICE,MPDBASE</b> | 8-244 |
| ■ Explanation Of Command                  | 8-244 |
| ■ Command                                 | 8-244 |
| ■ Completion Message                      | 8-244 |
| ■ Denial Message                          | 8-244 |
| ■ Autonomous Message                      | 8-244 |
| ■ Explanation Of Parameters               | 8-245 |
| <b>COPY,NPC,TO</b>                        | 8-246 |
| ■ Explanation Of Command                  | 8-246 |
| ■ Command                                 | 8-247 |
| ■ Nonhierarchical                         | 8-247 |
| ■ Hierarchical                            | 8-247 |
| ■ Completion Message                      | 8-247 |
| ■ Nonhierarchical                         | 8-247 |
| ■ Hierarchical                            | 8-249 |
| ■ Denial Message                          | 8-251 |
| ■ Nonhierarchical                         | 8-251 |
| ■ Hierarchical                            | 8-251 |
| ■ Autonomous Message                      | 8-251 |
| ■ Explanation Of Parameters               | 8-252 |
| <b>CTST,FAD,AIS,INCL</b>                  | 8-276 |
| ■ Explanation Of Command                  | 8-276 |
| ■ Command                                 | 8-276 |
| ■ Nonhierarchical                         | 8-276 |
| ■ Hierarchical                            | 8-277 |
| ■ Completion Message                      | 8-277 |
| ■ Nonhierarchical                         | 8-277 |
| ■ Hierarchical                            | 8-277 |
| ■ Denial Message                          | 8-277 |
| ■ Nonhierarchical                         | 8-277 |
| ■ Hierarchical                            | 8-277 |
| ■ Autonomous Message                      | 8-278 |
| ■ Explanation Of Parameters               | 8-278 |
| <b>CTST,FAD,EMODE,FMODE,INCL</b>          | 8-284 |
| ■ Explanation Of Command                  | 8-284 |
| ■ Command                                 | 8-284 |
| ■ Nonhierarchical                         | 8-284 |

---

## Contents

|                                  |       |
|----------------------------------|-------|
| ■ Hierarchical                   | 8-285 |
| ■ Completion Message             | 8-285 |
| ■ Nonhierarchical                | 8-285 |
| ■ Hierarchical                   | 8-285 |
| ■ Denial Message                 | 8-285 |
| ■ Nonhierarchical                | 8-285 |
| ■ Hierarchical                   | 8-285 |
| ■ Autonomous Message             | 8-286 |
| ■ Explanation Of Parameters      | 8-286 |
| <b>CTST,FAD,FROM,TO,AIS,INCL</b> | 8-291 |
| ■ Explanation Of Command         | 8-291 |
| ■ Command                        | 8-292 |
| ■ Nonhierarchical                | 8-292 |
| ■ Hierarchical                   | 8-292 |
| ■ Completion Message             | 8-292 |
| ■ Nonhierarchical                | 8-292 |
| ■ Hierarchical                   | 8-293 |
| ■ Denial Message                 | 8-293 |
| ■ Nonhierarchical                | 8-293 |
| ■ Hierarchical                   | 8-293 |
| ■ Autonomous Message             | 8-293 |
| ■ Explanation Of Parameters      | 8-293 |
| <b>CTST,HUB,FAD,TO,INCL</b>      | 8-299 |
| ■ Explanation Of Command         | 8-299 |
| ■ Command                        | 8-299 |
| ■ Nonhierarchical                | 8-299 |
| ■ Hierarchical                   | 8-299 |
| ■ Completion Message             | 8-300 |
| ■ Nonhierarchical                | 8-300 |
| ■ Hierarchical                   | 8-300 |
| ■ Denial Message                 | 8-300 |
| ■ Nonhierarchical                | 8-300 |
| ■ Hierarchical                   | 8-300 |
| ■ Autonomous Message             | 8-300 |
| ■ Explanation Of Parameters      | 8-301 |
| <b>CTST,LPBKT,FAD,INCL</b>       | 8-304 |
| ■ Explanation Of Command         | 8-304 |
| ■ Command                        | 8-304 |

---

## Contents

|                             |       |
|-----------------------------|-------|
| ■ Nonhierarchical           | 8-304 |
| ■ Hierarchical              | 8-304 |
| ■ Completion Message        | 8-304 |
| ■ Nonhierarchical           | 8-304 |
| ■ Hierarchical              | 8-305 |
| ■ Denial Message            | 8-305 |
| ■ Nonhierarchical           | 8-305 |
| ■ Hierarchical              | 8-305 |
| ■ Autonomous Message        | 8-305 |
| ■ Explanation Of Parameters | 8-305 |
| <b>CTST,TNR,ALL,OOS</b>     | 8-308 |
| ■ Explanation Of Command    | 8-308 |
| ■ Command                   | 8-308 |
| ■ Completion Message        | 8-308 |
| ■ Denial Message            | 8-308 |
| ■ Autonomous Message        | 8-308 |
| ■ Explanation Of Parameters | 8-309 |
| <b>CTST,TNR,FAD,OOS</b>     | 8-310 |
| ■ Explanation Of Command    | 8-310 |
| ■ Command                   | 8-310 |
| ■ Nonhierarchical           | 8-310 |
| ■ Hierarchical              | 8-311 |
| ■ Completion Message        | 8-311 |
| ■ Nonhierarchical           | 8-311 |
| ■ Hierarchical              | 8-311 |
| ■ Denial Message            | 8-311 |
| ■ Nonhierarchical           | 8-311 |
| ■ Hierarchical              | 8-312 |
| ■ Autonomous Message        | 8-312 |
| ■ Nonhierarchical           | 8-312 |
| ■ Hierarchical              | 8-312 |
| ■ Explanation Of Parameters | 8-313 |



---

## **CBOFL — CTST**

---

## **CBOFL — CTST**

---

This section documents the commands **CBOFL** through **CTST**.

## **CBOFL,SIDE,EOM**

### **C-BIT BUFFER OVERFLOW**

#### **Explanation Of Command**

This message is an autonomous report of a buffer overflow condition on a c-bit processing circuit pack. Only network processing circuits reporting buffer overflow are printed.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

## **Autonomous Message**

---

### **Nonhierarchical**

---

[O.65221]

I hh:mm:ss xy,ww CBOFL abc [SIDE s] 5 LN MSG:  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno \  
EOM

I hh:mm:ss xy,ww CBOFL abc [SIDE s] 5 LN MSG:  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno \  
EOM

I hh:mm:ss xy,ww CBOFL abc [SIDE s] 3 LN MSG:  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno  
ghi abcdefghijklmno ghi abcdefghijklmno ghi abcdefghijklmno \  
COMPL

## Hierarchical

---

[O.65221]

I hh:mm:ss xy,ww CBOFL uvmnp [SIDE s] 5 LN MSG:  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno EOM

I hh:mm:ss xy,ww CBOFL uvmnp [SIDE s] 5 LN MSG:  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno EOM

I hh:mm:ss xy,ww CBOFL uvmnp [SIDE s] 3 LN MSG:  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno  
fghij abcdefghijklmno fghij abcdefghijklmno fghij \  
abcdefghijklmno COMPL

## Explanation Of Parameters

---

**abc** - Nonhierarchical NPC number

NPC number of the CB type NPC on the Digital Signal Processing Unit  
Valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |
| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9  | Unit<br>10 | Unit<br>11 | Unit<br>12 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1281       | 1441       | 1601       | 1761       |
| 1301       | 1461       | 1621       | 1781       |
| 1321       | 1481       | 1641       | 1801       |
| 1341       | 1501       | 1661       | 1821       |
| 1361       | 1521       | 1681       | 1841       |
| 1381       | 1541       | 1701       | 1861       |
| 1401       | 1561       | 1721       | 1881       |
| 1421       | 1581       | 1741       | 1901       |
|            |            |            |            |
| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
| NPC        | NPC        | NPC        | NPC        |
| 1921       | 2081       | 2241       | 2401       |
| 1941       | 2101       | 2261       | 2421       |
| 1961       | 2121       | 2281       | 2441       |
| 1981       | 2141       | 2301       | 2461       |
| 2001       | 2161       | 2321       | 2481       |
| 2021       | 2181       | 2341       | 2501       |
| 2041       | 2201       | 2361       | 2521       |
| 2061       | 2221       | 2381       | 2541       |

**SIDE** - Side

**s** - Network processing circuit side (0 through 1)

**ghi** - Nonhierarchical NPC number

NPC number of the Facility Terminating Unit type NPC

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

NPC number of the CB type NPC on the Digital Signal Processing Unit

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

**fghij** - Hierarchical NPC number

NPC number of the Facility Terminating Unit type NPC

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

abcdefghijklmno

- C-bit channel activity word (hexadecimal)

This word contains 15 digits each representing two adjacent c-bit channels for a total of 30 consecutive channels. Channel numbering is 0 to 30 beginning at the left with "a". Each digit contains four bits which represent two adjacent channels at two bits per channel. The two bits have four discrete values. The meaning of each bit pair is given below:

*Bit*      *Meaning*

|    |                                                    |
|----|----------------------------------------------------|
| 00 | No activity on a c-bit channel                     |
| 01 | One change of state on a c-bit channel             |
| 10 | Two to five changes of state on a c-bit channel    |
| 11 | More than five changes of state on a c-bit channel |

Example:

X'9 = 1001      indicates two to five changes of state on the channel represented by the leftmost two bits and one change of state on a c-bit channel represented by the rightmost two bits.



---

## **CFR,FRAME**

---

### **CONFIGURE FRAME**

#### **Explanation Of Command**

---

This command is used to initialize or change the frame configuration. After this command is successfully completed, DACS II will autonomously update the location information for the packs in the frame.

**WARNING:** A manual backup from RAM to MEM must be invoked prior to entering Maintenance Condition, else the command may not complete.

Entering this message will cause DACS II to present the user with self-explanatory menus. These menus allow the user to select the total number of bays and units to be equipped and to specify the bay and unit type for each of them. With the user specified information, DACS II will then determine the physical location of each circuit pack in the frame. The completion message will be output when the user exits from the menu mode.

This command can only be entered under the following conditions:

- It is entered from link 1
- The frame is in the maintenance condition
- The user is a superuser

#### **Command**

---

[I.35021]

**CFR:FRM xy,SEQ ww:FRAME!**

#### **Completion Message**

---

[O.35021]

**M hh:mm:ss xy,ww n[vv] CFR FRAME[ COND cc] COMPL**

### **Denial Message**

---

[O.35021.01]

**M** hh:mm:ss xy,ww n[vv] **CFR FRAME COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**FRAME** - Frame

**COND** - Condition

**cc** - Completion condition code (hexadecimal)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**8D** DB PMEM error OP-CL-RD-WR-SK

**8F** Can't lock or unlock ram database

**96** Unit(s) OOS, and additional backup required

**98** Unable to verify Configuration file since MP DB not loaded

**92** Can't mount or unmount PMEM

**97** User quit the menu

**01** Backup required before executing this command

## **CFR,SYNC,FPLL**

### **CONFIGURE SYNCHRONIZER**

#### **Explanation Of Command**

This command requests the fast start of the phase-locked loop in a synchronizer.

#### **Command**

[I.35011]

**CFR:FRM xy,SEQ ww:SYNC a,FPLL!**

#### **Completion Message**

[O.35011]

**M hh:mm:ss xy,ww n[vv] CFR SYNC a FPLL COMPL**

#### **Denial Message**

[O.35011.01]

**M hh:mm:ss xy,ww n[vv] CFR SYNC a FPLL COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**a** - Synchronizer number (0 or 1)

**FPLL** - Fast start phase-locked loop

**cc** - Hexadecimal condition code

**cc** *Explanation*

**16** SYNC TB is not equipped

**17** SYNC is out of service

**BF** Sync mode is same

**C8** Sync pack denied command

## **CFR,SYNC,MASTER,SLAVED**

### **CONFIGURE SYNCHRONIZER**

#### **Explanation Of Command**

This command requests configuration of the synchronizer to extract timing from itself (stand-alone or **MASTER** mode) or from external sources (**SLAVED** mode).

The **CFR::SYNC** command modifies the Main Controller (MC) data base for the synchronizers, thus allowing appropriate combinations of time bases, timing extractors, and timing distributors to be equipped. This command is also used by the MC to instruct the Digital Phase Locked Loops (DPLLs) to implement the specified architecture. Condition codes for completion indicate architecture states, dependent on the current equipage. Condition codes for denial indicate that the requested architecture is not consistent with the current equipage.

#### **Command**

[I.35013]

**CFR:FRM xy,SEQ ww:SYNC,{MASTER|SLAVED}!**

#### **Completion Message**

[O.35013]

**M hh:mm:ss xy,ww n[vv] CFR SYNC {MASTER|SLAVED} COND 00 \**  
**COMPL**

#### **Denial Message**

[O.35013.01]

**M hh:mm:ss xy,ww n[vv] CFR SYNC {MASTER|SLAVED} COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**MASTER** - Master

The frame will use its own sources for timing.

**SLAVED** - Slaved

Timing will be extracted from external sources.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 16** SYNC TB is not equipped
- B6** Sync architecture is same
- B7** Some TLIs are still equipped
- B8** CRO is still equipped
- B9** Timing Extractor type TLIs are present
- BA** TLI 3 or 4 still equipped
- BC** SSP with 0 priority present
- BD** SSP with non 0 priority present
- C8** Sync pack denied command

## **CFR,SYNC,STRATUM,STR2,STR3,TOLL,LOCAL**

### **CONFIGURE SYNCHRONIZER STRATUM**

#### **Explanation Of Command**

This command requests the configuration of the synchronizer at a particular stratum level.

The command can be entered to configure the synchronizer at a lower stratum than the capability of the equipped time bases. The message can also be used to change the operating stratum level of the synchronizer to a higher level if the synchronizer is so equipped.

#### **Command**

[I.35012]

**CFR:FRM xy,SEQ ww:SYNC,STRATUM {STR2|STR3|TOLL|LOCAL}!**

#### **Completion Message**

[O.35012]

**M hh:mm:ss xy,ww n[vv] CFR SYNC STRATUM \  
{STR2|STR3|TOLL|LOCAL} COMPL**

#### **Denial Message**

[O.35012.01]

**M hh:mm:ss xy,ww n[vv] CFR SYNC STRATUM \  
{STR2|STR3|TOLL|LOCAL} COND cc DNY**

#### **Autonomous Message**

Not applicable.

## **Explanation Of Parameters**

---

**SYNC** - Synchronizer

### **STRATUM**

- Stratum

**STR2** - Stratum 2 Time Base

**STR3** - Stratum 3 Time Base

**TOLL** - CEPT Toll Time Base

**LOCAL** - CEPT Local Time Base

**COND** - Condition

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**16**    SYNC TB is not equipped

**C0**    Sync stratum is same

**C1**    Stratum not allowed

**C8**    Sync pack denied command



## **CFR,XC,INCL**

### **CONFIGURE DIGROUP CIRCUITS**

#### **Explanation Of Command**

This command requests that all Network Processing Circuits (NPCs) select data and clocks from the specified cross-connect network side.

Starting with Release 8.2 this command not only applies to the cross-connect network, it also applies to the Digital Phase Locked Loop (DPLL) that provides timing to the cross-connect network. The situation where the active synch is not on the same side as the active cross-connect network will now be considered a transient state.

This change was made in Release 8.2 to avoid a single hardware problem in the active DPLL affecting both sides of the cross-connect network, which can lead to service problems.

If the frame is in the maintenance condition state then the user must be logged in as the system administrator (DAX) on link 1. In addition the INCL keyword must be specified in order for the command to be accepted. If these conditions are not met the command will be denied.

#### **Command**

[I.35001]

**CFR:FRM xy,SEQ ww:XC s[,INCL]!**

#### **Completion Message**

[O.35001]

**M hh:mm:ss xy,ww n[vv] CFR XC s[ INCL] COMPL**

### **Denial Message**

---

[O.35001.01]

**M** hh:mm:ss xy,ww n[vv] CFR XC s[ INCL] COND cc DNY

### **Autonomous Message**

---

[O.35001]

**I** hh:mm:ss xy,ww n[vv] CFR XC s[ TN abcd] COMPL

### **Explanation Of Parameters**

---

**XC** - Cross-connect

**s** - Cross-connect side (0 or 1)

**INCL** - Inclusive

**a, b** - The CCN side representations used for the autonomous report, with the same definition as s.

a and b each represents a CCN side. If a is 1, b must be 0, and vice versa.

**TN** - Transaction

**abcd** - transaction number (hexadecimal)

The transaction number is shown only in the autonomous output message.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

**1C** CCN side s is out of service

**98** Unable to verify Configuration file since MP DB not loaded

**F5** INCL keyword needed to perform this command

**64** Frame is not in MCOND

**65** Link being used is not Link 1

**66** User login-id is not DAX

## **CHG,ALMS,ON,OFF**

Turn ON or OFF the Alarm Severity Feature

### **Explanation Of Command**

This command is used to turn ON or OFF the Alarm Severity Feature which is used to change the alarm severity of the system alarms. When this feature is ON, messages I.38365 and I.38375 can be used to change the alarm severity of shelf and facility alarms. This command is restricted to those with super user privileges.

This command can only be used if the alarm severity feature has been purchased as part of the DACS II software generic.

### **Command**

[I.38355]

**CHG: [FRM xy,SEQ ww]:ALMS, {ON|OFF}!**

### **Completion Message**

[O.38355]

**M hh:mm:ss xy,ww n[vv] CHG ALMS {ON|OFF} COMPL**

### **Denial Message**

[O.38355.01]

**M hh:mm:ss xy,ww n[vv] CHG ALMS {ON|OFF} COND cc DNY**

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**ALMS** - Alarms

**ON** - Turn feature ON

**OFF** - Turn feature OFF

**cc** - Hexadecimal condition code

**cc** *Explanation*

**F7** Alarm Severity Feature (already) OFF

**F9** Alarm Severity Feature Already ON

---

## CHG,BC,X,TO

---

### CHANGE BIT-C TO

#### Explanation Of Command

---

This message allows you to send any 15-bit pattern of 0's and 1's on the addressed c-bit circuit. The addressed c-bit circuit must be provisioned as a Director DACS (DD) for the overwrite function (Message I.38331). The pattern can be changed on a single channel or a range of channels without disconnecting and reconnecting the circuits.

abcd is the hexadecimal value of the 15-bit pattern to be sent on the address c-bit circuit(s). Bit 1 is a framing bit generated on the CPR circuit pack. The other 14 bits are specified as follows:

| HEX DIGIT | BIT POSITION       |
|-----------|--------------------|
| a         | Bits 2 and 3*      |
| b         | Bits 4 through 7   |
| c         | Bits 8 through 11  |
| d         | Bits 12 through 15 |

\*Bits 2 and 3 are the two least significant values of Hex digit a. The two most significant values of Hex digit a will always be input as 00. Hex digit a will always be a number between 0 and 3 (0000 - 0011).

#### Command

---

#### Nonhierarchical

---

[I.38333]

**CHG:FRM xy,SEQ ww:BC X'abcd, TO [s]abcddd[-eee]!**

### **Hierarchical**

---

[I.38333]

CHG:FRM xy,SEQ ww:BC X'abcd, TO uvmnpddd[-eee]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.38333]

M hh:mm:ss: xy, ww n[vv] CHG BC X'abcd TO [s]abcddd[-eee] COMPL

### **Hierarchical**

---

[O.38333]

M hh:mm:ss: xy, ww n[vv] CHG BC X'abcd TO uvmnpddd[-eee] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.38333.01]

M hh:mm:ss xy,ww n[vv] CHG BC X'abcd TO [s]abcddd[-eee] COND cc DNY

### **Hierarchical**

---

[O.38333.01]

M hh:mm:ss xy,ww n[vv] CHG BC X'abcd TO uvmnpddd[-eee] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**BC** - BIT-C

**abcd** - Hexadecimal representation of bits 2 through 15 of the c-bit transmission pattern (X'0000 through X'3FFF)

**T0** - NPC identifier

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

Valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number

Valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - Channel number at the beginning of a range  
**eee** - Ending channel number

Valid values are listed below:

001-030      CEPT type NPCs grown as CAS

**Note:** Channel 000 of CEPT NPCs (TS0) can be connected to another channel 000 of CEPT NPCs (TS0). Also, the channel 000 of CEPT NPCs can be connected to a channel other than the channel 000 of CEPT NPCs (non-TS0).

Channel 031 of CAS NPCs (TS16) can only be cross-connected to another channel 031 of CAS (TS16) or one-way cross-connected to another channel. Also these two channels can not be part of any conference.



**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                   |
|-----------|---------------------------------------------------|
| <b>04</b> | Subject entity is out of service                  |
| <b>10</b> | Unit is not equipped                              |
| <b>11</b> | UC is out of service                              |
| <b>12</b> | UC is in service but failed                       |
| <b>13</b> | FTMI is not equipped                              |
| <b>14</b> | FTMI is out of service                            |
| <b>15</b> | NPC is unequipped                                 |
| <b>1E</b> | Customer control or red circuit exists            |
| <b>1F</b> | FTMI is in service but failed                     |
| <b>24</b> | Unit type error                                   |
| <b>36</b> | DSPI not equipped                                 |
| <b>37</b> | DSPI out-of-service                               |
| <b>3E</b> | DSPI failed                                       |
| <b>2C</b> | Write to CPR failed                               |
| <b>51</b> | C-bit modify function is disabled                 |
| <b>53</b> | CPR is out of service                             |
| <b>54</b> | Cross-connect to CPR is required                  |
| <b>58</b> | DSPU is not equipped                              |
| <b>59</b> | DSPU unit controller is out of service            |
| <b>5A</b> | DSPU unit controller is failed                    |
| <b>F1</b> | Parameter only valid with PA, PB, or PC type NPCs |
| <b>F2</b> | Invalid NPC number specified                      |
| <b>FF</b> | Termination is in process of being rolled         |

## **CHG,BCOFF,TO**

### **CHANGE BIT-C-OFF TO**

#### **Explanation Of Command**

This command requests that the system stop sending the 15-bit pattern on the addressed c-bit circuit(s). You can request the "stop" on a single channel or a range of channels on the specified newtwork processing circuit (NPC).

#### **Command**

##### **Nonhierarchical**

[I.38335]

**CHG:FRM xy,SEQ ww:BCOFF,TO [s]abcddd[-eee]!**

##### **Hierarchical**

[I.38335]

**CHG:FRM xy,SEQ ww:BCOFF,TO uvmnpddd[-eee]!**

#### **Completion Message**

##### **Nonhierarchical**

[O.38335]

**M hh:mm:ss xy,ww n[vv] CHG BCOFF TO [s]abcddd[-eee] COMPL**

### **Hierarchical**

---

[O.38335]

M hh:mm:ss xy,ww n[vv] CHG BCOFF TO uvmnpddd[-eee] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.38335.01]

M hh:mm:ss xy,ww n[vv] CHG BCOFF TO [s]abcddd[-eee]\  
COND cc DNY

### **Hierarchical**

---

[O.38335.01]

M hh:mm:ss xy,ww n[vv] CHG BCOFF TO uvmnpddd[-eee]\  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

TO - To  
TO NPC identifier

[s]abc - The 3- or 4-digit nonhierarchical NPC number  
Valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number

Valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - Starting channel number  
**eee** - Ending channel number

Valid values are listed below:

001-030      CEPT type NPCs grown as CAS

**Note:** Channel 000 of CEPT NPCs (TS0) can be connected to another channel 000 of CEPT NPCs (TS0). Also, the channel 000 of CEPT NPCs can be connected to a channel other than the channel 000 of CEPT NPCs (non-TS0).

Channel 031 of CAS NPCs (TS16) can only be cross-connected to another channel 031 of CAS (TS16) or one-way cross-connected to another channel. Also these two channels can not be part of any conference.

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                   |
|-----------|---------------------------------------------------|
| <b>10</b> | Unit is not equipped                              |
| <b>11</b> | UC is out of service                              |
| <b>12</b> | UC is in service but failed                       |
| <b>13</b> | FTMI is not equipped                              |
| <b>14</b> | FTMI is out of service                            |
| <b>15</b> | NPC is unequipped                                 |
| <b>1E</b> | Customer control or red circuit exists            |
| <b>1F</b> | FTMI is in service but failed                     |
| <b>24</b> | Unit type error                                   |
| <b>36</b> | DSPI not equipped                                 |
| <b>37</b> | DSPI out-of-service                               |
| <b>3E</b> | DSPI failed                                       |
| <b>2C</b> | Write to CPR failed                               |
| <b>51</b> | C-bit modify function is disabled                 |
| <b>52</b> | CPR is not equipped                               |
| <b>53</b> | CPR is out of service                             |
| <b>54</b> | Cross-connect to CPR is required                  |
| <b>58</b> | DSPU is not equipped                              |
| <b>59</b> | DSPU unit controller is out of service            |
| <b>5A</b> | DSPU unit controller is failed                    |
| <b>F1</b> | Parameter only valid with PA, PB, or PC type NPCs |
| <b>F2</b> | Invalid NPC number specified                      |
| <b>FF</b> | Termination is in process of being rolled         |

## **CHG,DD,TO**

### **CHANGE DIRECTOR DACS TO**

#### **Explanation Of Command**

This command allows the designation or change of the c-bit signaling bit(s) for the Director DACS (DD) function of monitoring, overwriting, or both; or to stop monitoring, overwriting, or both. This change can be made on a single channel or a range of channels without disconnecting and reconnecting the circuit.

#### **Command**

##### **Nonhierarchical**

[I.38331]

**CHG:FRM xy,SEQ ww:DD(m,w),TO [s]abcddd[-eee]!**

##### **Hierarchical**

[I.38331]

**CHG:FRM xy,SEQ ww:DD(m,w),TO uvmnpddd[-eee]!**

#### **Completion Message**

##### **Nonhierarchical**

[O.38331]

**M hh:mm:ss xy,ww n[vv] CHG DD(m,w) TO [s]abcddd[-eee] COMPL**

### **Hierarchical**

---

[O.38331]

M hh:mm:ss xy,ww n[vv] CHG DD(m,w) TO uvmnpddd[-eee] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.38331.01]

M hh:mm:ss xy,ww n[vv] CHG DD(m,w) TO [s]abcddd[-eee] \  
COND cc DNY

### **Hierarchical**

---

[O.38331.01]

M hh:mm:ss xy,ww n[vv] CHG DD(m,w) TO uvmnpddd[-eee] \  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**DD** - Director DACS

**m** - Monitor function parameter for c-bits entering the C-bit Processing  
Circuit Pack

Valid values are listed below:

| <i>m</i> | <i>Explanation</i>            |
|----------|-------------------------------|
| 0        | Disable the monitor function  |
| 1        | Enable the monitor function   |
| -        | Do not change current setting |



**w** - Write function parameter for c-bits leaving the C-bit Processing Pack

Valid values are listed below:

| <i>w</i> | <i>Explanation</i>            |
|----------|-------------------------------|
| 0        | Disable the write function    |
| 1        | Enable the write function     |
| -        | Do not change current setting |

**TO** - NPC identifier keyword

**[s]abc** - The 3- or 4-digit non-hierarchical NPC number

Valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number

**m** - Module number

**np** - NPC number

Valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - Starting channel number

Valid values are listed below:

000-030      CEPT type NPCs grown as CAS  
000-031      CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

**eee**    - Ending channel number  
Valid values are identical to those for ddd.

**cc**      - Hexadecimal condition code

**cc**    *Explanation*

**04**    Subject entity is out of service  
**10**    Unit is not equipped  
**13**    FTMI is not equipped  
**15**    NPC is unequipped  
**24**    Unit type error  
**36**    DSPI not equipped  
**37**    DSPI out-of-service  
**3E**    DSPI failed  
**2C**    Write to CPR failed  
**50**    CPR in buffer overflow condition  
**52**    CPR is not equipped  
**53**    CPR is out of service  
**54**    Cross-connect to CPR is required  
**58**    DSPU is not equipped  
**59**    DSPU unit controller is out of service  
**5A**    DSPU unit controller is failed  
**5B**    C-bit modify function is active  
**F1**    Parameter only valid with PA, PB, or PC type NPCs  
**F2**    Invalid NPC number specified  
**FF**    Termination is in process of being rolled  
**8A**    Modify disable denied on channel connected to NPC in RPSFI condition

## **CHG,ERB,TYPE**

### **SET ERRORED BLOCK THRESHOLD RATIO**

#### **Explanation Of Command**

This command allows users to set an error threshold for PA type NPCs that will be used to determine that a severely errored second or a far-end severely errored second has occurred. The threshold is set in terms of a percentage of blocks in error (errored blocks). At system start up, this percentage is set to 81 percent. Execution of this command will change the threshold to the percentage of errored blocks requested in the command for all provisioned PA NPCs. Once the percentage is set by this command it will be applied to all PA NPCs subsequently provisioned.

#### **Command**

[I.38631]

**CHG:FRM xy,SEQ ww:ERB ee,TYPE mn!**

#### **Completion Message**

[O.38631]

**M hh:mm:ss xy,ww n[vv] CHG ERB ee TYPE mn COMPL**

#### **Denial Message**

[O.38631.01]

**M hh:mm:ss xy,ww n[vv] CHG ERB ee TYPE mn COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**ERB** - Errored Block

**ee** - Percentage of errored blocks (1% through 91%, default is 81%)

The number of errored blocks, expressed as a percentage, used to declare a severely errored second (SES) or far-end SES (FSES).

**NPC** - Network processing circuit

**TYPE** - Type

**mn** - NPC type identifier

mn Explanation

PA CEPT NPC (75-ohm or 120-ohm)

**Note:** PA is the only value that can be entered in this field.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

**26** NPC type error

## **CHG,FALMS,TYPE,PMACR,PMAMJ,DMAMN,MI**

### **CHANGE Facility Alarms Severity**

#### **Explanation Of Command**

This command is used to change the Alarm Severity of the system facility alarms. The Alarm Severity must be turned ON via I.38355 to use this command. If a specific type is specified the command does not verify whether the facility alarm being changed is supported by that type.

#### **Command**

[I.38375]

**CHG:[FRM xy,SEQ ww]:FALMS,TYPE mn[xyz],fa!m,{PMACR|PMAMJ|DMAMN|MI|RESET}!**

#### **Completion Message**

[O.38375]

**M hh:mm:ss xy,ww n[vv] CHG FALMS TYPE mn[xyz] fa!m\  
{PMACR|PMAMJ|DMAMN|MI|RESET} COMP**

#### **Denial Message**

[O.38375.01]

**M hh:mm:ss xy,ww n[vv] CHG FALMS TYPE mn[xyz] fa!m \  
{PMACR|PMAMJ|DMAMN|MI|RESET} COND cc DNY**

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

**mn** - NPC Type

PA E1 NPC (75 ohm and 120 ohm)  
PB E1 NPC (75 ohm)  
PC E1 NPC (120 ohm)

[xyz] -if the xyz is not specified all NPCs of the PA,PB, or PC will be changed  
This implies that the default value for the specified type are changed and that any changes for specific xyz of that type done prior are lost.

### PA-Type xyz fields

The provisioning values of *x*, *y*, and *z* for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (*x*, *y* or *z*) provisioning value):

**Table 8-1. Provisioning values for *x***

| <b>x<br/>value</b> | <b>CRC-4<br/>Mode</b> | <b>Automatic<br/>CRC-4</b> | <b>Far-End<br/>PM</b> | <b>NPC used as<br/>Sync Source</b> | <b>TS0 Bit 5<br/>used for SFI</b> |
|--------------------|-----------------------|----------------------------|-----------------------|------------------------------------|-----------------------------------|
| <b>0</b>           | Y                     |                            |                       |                                    |                                   |
| <b>1</b>           | Y                     |                            | Y                     |                                    | Y                                 |
| <b>2</b>           | Y                     |                            |                       |                                    | Y                                 |
| <b>3</b>           | Y                     |                            | Y                     |                                    |                                   |
| <b>4</b>           | Y                     |                            |                       | Y                                  |                                   |
| <b>5</b>           | Y                     |                            | Y                     | Y                                  | Y                                 |
| <b>6</b>           | Y                     |                            |                       | Y                                  | Y                                 |
| <b>7</b>           | Y                     |                            | Y                     | Y                                  |                                   |
| <b>8</b>           |                       | Y                          | Y                     |                                    |                                   |
| <b>9</b>           |                       | Y                          | Y                     |                                    | Y                                 |
| <b>A</b>           |                       |                            |                       |                                    | Y                                 |
| <b>B</b>           |                       |                            |                       |                                    |                                   |
| <b>C</b>           |                       | Y                          | Y                     | Y                                  |                                   |
| <b>D</b>           |                       | Y                          | Y                     | Y                                  | Y                                 |
| <b>E</b>           |                       |                            |                       | Y                                  | Y                                 |
| <b>F</b>           |                       |                            |                       | Y                                  |                                   |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled (*x* values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected (*x* values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected (*x* values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.
4. If the NPC is to be used as a Sync Source (*x* values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected (*x* values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6. *x* value B does not enable any of the features shown in the Table; this is a valid option.

---

\* Automatic CRC-4 is also known as CRC-4 Interworking.



**Table 8-2. Provisioning values for *y***

| <i>y</i><br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|-------------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0                 | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2                 | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4                 | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6                 | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8                 |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9                 |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C                 |             |             |                        |                       |                   |                  | Y               |                   |
| D                 |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2. *y* values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For *y* values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected (*y* values 0 and 2), the *abcd* bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected (*y* values 4 and 6), a value of '0000' in the *abcd* bits will be transmitted transparently.

If the "AIS in TS16" option is selected (*y* value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (*y* values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For *y* values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (*y*=8) or Timeslot Channel Numbering (*y*=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (*y*=C) or as an unframed clear 2Mbit/s interface (*y*=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).

- Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 8-3. Provisioning values for *z***

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. *z* value **F** and **E** are unassigned (i.e. not valid).
2. *z* value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )
3. *z* values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For *z* values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For *z* values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if *z* = **1, 3, 5**, or **9**  
in **2496 ms**  
if *z* = **7** or **B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:<sup>\*</sup>
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when  $z = 7$  or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when  $z = 0, 1, 4, 5, 6, 7, A$  or **B**. **However**, for  $z$  values 2 and 8 the set time is 144 ms and for  $z$  values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for  $z = 4$  and 8) or 480 ms (for  $z = 5$  and 9) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.
8.  $z$  values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options ( $z = 6-7$  or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms
- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

---

<sup>\*</sup> Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

**z=6 or A** hardware timing

**z=7 or B** firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**Specific Options for z= 6 or 7**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

[ix] To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of  $xyz$  for the PA type NPC.

**Table 8-4. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations | Explanation                                                                                                                                                                                                                        |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                              | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                              |                                                                                                                                                                                                                                    |
| CCz                              |                                                                                                                                                                                                                                    |
| DCz                              |                                                                                                                                                                                                                                    |
| 0Dz                              | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                           |
| 1Dz                              |                                                                                                                                                                                                                                    |
| 2Dz                              |                                                                                                                                                                                                                                    |
| 3Dz                              |                                                                                                                                                                                                                                    |
| 4Dz                              |                                                                                                                                                                                                                                    |
| 5Dz                              |                                                                                                                                                                                                                                    |
| 6Dz                              |                                                                                                                                                                                                                                    |
| 7Dz                              |                                                                                                                                                                                                                                    |
| 8Dz                              |                                                                                                                                                                                                                                    |
| 9Dz                              |                                                                                                                                                                                                                                    |
| ADz                              |                                                                                                                                                                                                                                    |
| CDz                              |                                                                                                                                                                                                                                    |
| DDz                              |                                                                                                                                                                                                                                    |
| EDz                              |                                                                                                                                                                                                                                    |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 8-5. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z*= value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 8-6. Combinations of  $x$  and  $z$  Values**

| Invalid<br>xyz<br>Combinations | Explanation                                                                                                                                                                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC                            | Use of NPC as Sync Source ( $x$ 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( $z$ value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |
| 5yC                            |                                                                                                                                                                                                                                                         |
| 6yC                            |                                                                                                                                                                                                                                                         |
| 7yC                            |                                                                                                                                                                                                                                                         |
| CyC                            |                                                                                                                                                                                                                                                         |
| DyC                            |                                                                                                                                                                                                                                                         |
| EyC                            |                                                                                                                                                                                                                                                         |
| FyC                            |                                                                                                                                                                                                                                                         |

**PB- and PC-type xyz fields**

**Table 8-7. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent \$ Actions sup [c'] \$                  |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW'bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW'bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW'bit'3=RAI set in < 2 ms,                                                                                                                |
|              |            | 001          | NFW'bit'3=RAI set in time \$ T sup [c''] \$                                                                                                 |
|              |            | 010          | NFW'bit'4=RAIS in time \$ T sup [c''] \$ and RAI in < 2 ms                                                                                  |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW'bit'4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496'ms, CACT=624'\$ms sup [jkl'] \$),     |
|              |            | 100          | NFW'bit'4=RAIS and RAI in time \$ T sup [c''] \$ (TRANSMIC'2G)                                                                              |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW'bit'4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496'ms, CACT=624'\$ms sup [jkl'] \$), |
|              |            | 110          | NFW'bits'3-8,in time 144ms (TRANSMIC 1G)                                                                                                    |
|              |            | 111          | Unassigned                                                                                                                                  |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                               |
|              |            | 1            |                                                                                                                                             |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2'ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**



if  $jkl \neq 011$  and  $jkl \neq 101$   
in 2496'ms  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl'].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a gateway **cross-connection** the insertion word always defaults to AIS.

mnxyz'bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When  $c=0$ , the AIS in signaling bits is applied within 2'ms, overriding the signaling freeze. When  $c=1$  if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option  $c=0$  is supported and both the AIS and RAI will be applied in less than 2'ms. NFW'bit'3 of TS0 in enhanced CEPT is controlled by selecting the **jkl** options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

$c=0$      **Both** remote and local alarms are declared and cleared in 144 ms.

$c=1$      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when**  $jkl=011$  or  $jkl=101$ . **For that case, see note [jkl']**.

[c''] Time T will be 144'ms when option  $c=0$  and 480 ms when option  $c=1$ .

[g] Option  $g$  has meaning only if the NPC is provisioned for CAS; that is, option  $d=1$ , otherwise it is ignored. If option  $g=0$  is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option  $g=1$  is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW'bit'5 when used as SFI, and  $h=1$ , is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW'bit'5 will default to 1 when the NPC is grown, without regard of whether option  $h$  was selected as either 0 or 1, unless it is later set to 0 by setting parameter  $e=0$  in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic'1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of xyz the alarm message REPT ALARM

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

EQPT (O.65011) is output on detection of change of state of NFW spare bit'5 when option h=1.

If both  $b=1$  and  $h=1$  and the NPC (used as synchronization source) receives NFW bit'5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit'3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section'2.3.2 and is the same as in Basic CEPT when option  $c$  is selected as 0; **that is, within 2'ms after detecting the failure.** If this option is not specified as 000, use of NFW bit'3 as RAI will remain unchanged except the time when NFW bit'3 is set can be changed to 144'ms as opposed to 2 ms after detecting the failure. NFW'bit'3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW'bit'4 when used as RAIS, and AIS is detected in the received signal, can only be set 144'ms after detecting this condition. Similarly, when the received NFW bit'4 is in the active state, consequent actions are taken 144'ms after detecting this condition.

NFW'bit'4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

**[jkl'] minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

LB 5 0 2 4 i 1 0

Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

RAI set in 2 ms

Signaling freeze Delay timing, consequent action clear timing:

**c=0** hardware timing

**c=1** firmware timing (SFDT=2496'ms, CACT=624'ms)

BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW'bit'4=RBER:

- DACS'II sends a remote indicator in bit'4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144'ms after detecting the minor bit error rate (BER) condition.
- “ DACS'II sets the RBER bit to its idle state, on clearing of the BER condition.
- DACS'II detects the remote setting of the received bit'4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144'ms after detecting this condition.
- “ DACS II generates an appropriate retirement message when the received bit'4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW'bit'4=disabled

NFW'bit'4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

**LE 1**

For the MBER/SFDT features, the required xyz options are **ab1d'efgh'0110** or **ab1d'efgh'1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d'efgh'0110** or **ab0d'efgh'1010**.

[ix] NFW'bit'4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic'1G the **abcdefgh=11000000**.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic'1G the **abcdefgh=00111111**.

**faIm** - Facility Alarms

**faIm** *Explanation*

For PA type NPCs, valid values are:

**RPSFI** Remote Power Supply Failure Indicator  
**LOS** Loss of Signal  
**LOF** Loss of Frame  
**AIS** Alarm Indication Signal  
**EER** Excessive Error Rate  
**BER** Bit Error Rate  
**LCMA** Loss of CRC-4 Multiframe Alignment  
**FLC** Far End Loss of CRC-4 Multiframe Alignment  
**RAI** Remote Alarm Indication  
**RBER** Remote Bit Error Rate  
**SFI** Sync failure Indication  
**POF** Psuedo Frame Word Out of Frame  
**TAI** TS-16All Ones Alarm  
**RAIS** Remote AIS  
**LMA** Loss of Multiframe  
**RABS** Remote Alarm bit 6,TS16  
**PBF** Primary Block Failure  
**ALL** ALL above identified facility alarms

For PB and PC type NPCs, valid values are:

**RPSFI** Remote Power Supply Failure Indicator  
**AIS** Alarm Indication Signal  
**EER** Excessive Error Rate  
**BER** Bit Error Rate  
**RAI** Remote Alarm Indication  
**RBER** Remote Bit Error Rate  
**SFI** Sync failure Indication  
**TAI** TS-16All Ones Alarm  
**RAIS** Remote AIS  
**LMA** Loss of Multiframe  
**RABS** Remote Alarm bit 6,TS16  
**PBF** Primary Block Failure  
**ALL** ALL above identified facility alarms

**NOTE:** The command does not check for valid facility alarm - NPC type combinations.

**PMACR** - Prompt Maintenance Action CRITICAL alarm severity

**PMAMJ** - Prompt Maintenance Action MAJOR alarm severity

**DMAMN** - Deferred Maintenance Action MINOR alarm severity

**MI** - MESSAGE INFORMATION alarm severity

**RESET** - Reset Alarm Severity to default value

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                                 |
|-----------|-----------------------------------------------------------------|
| <b>26</b> | NPC type error                                                  |
| <b>34</b> | NPC type option xyz is unassigned                               |
| <b>30</b> | NPC not provisioned for CAS                                     |
| <b>31</b> | NPC not provisioned for NSA                                     |
| <b>BB</b> | Timeslot channel numbering not allowed with CAS                 |
| <b>A3</b> | Transmic 1G NPC designated as SYNC source invalid               |
| <b>A4</b> | Firmware timing invalid for Transmic 1G NPC                     |
| <b>7E</b> | Framed/Unframed clear 2Mbit/s NPC invalid for Automatic CRC-4   |
| <b>7F</b> | Unframed clear 2Mbit/s NPC invalid for TS0 processing           |
| <b>80</b> | Framed/Unframed clear 2Mbit/s NPC invalid for Transmic 1G, 2G   |
| <b>81</b> | Framed/Unframed clear 2Mbit/s NPC invalid for Firmware Timing   |
| <b>82</b> | Unframed clear 2Mbit/s NPC invalid for Bit 4 used as RA IS/RBER |
| <b>F6</b> | Alarm Severity DB full, reset to defaults                       |
| <b>F7</b> | Alarm Severity Feature (already) OFF                            |
| <b>F8</b> | Alarm Severity of facility Alarm not changed                    |

## **CHG, FROM, TO, NOT, TLA, TLR, F, T, B, A, INCL**

### **CHANGE CIRCUIT PARAMETERS**

#### **Explanation Of Command**

This message changes the termination state of a cross-connected non-channelized network processing circuit. This command can affect either a two-way, a one-way or a broadcast non-channelized digital signal cross-connection. This command has the ability to change the termination states of all of the legs of a broadcast circuit. However, an option is provided to exclude one of the legs from being changed. The idle code for non-channelized digital signal cross-connections is the alarm indication signal which is transmitted over a terminated connection.

#### **Command**

##### **Nonhierarchical**

[I.17011]

```
CHG:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,NOT [u]rst],\
{TLA|TLR} {F|T|B|A}{[,INCL]!
```

##### **Hierarchical**

[I.17011]

```
CHG:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,NOT edhfg],\
{TLA|TLR} {F|T|B|A}{[,INCL]!
```

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.17011]

M hh:mm:ss xy,ww n[vv] CHG [s]abc,[t]ghi[ RDC]\  
[ CUS][ NOT [u]rst] {TLA|TLR} {F|T|B|A} COMPL

#### **Hierarchical**

---

[O.17011]

M hh:mm:ss xy,ww n[vv] CHG uvmnp,wxkqr[ RDC]\  
[ CUS][ NOT edhfg] {TLA|TLR} {F|T|B|A} COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.17011.01]

M hh:mm:ss xy,ww n[vv] CHG [s]abc,[t]ghi cc <st> DNY

[O.17011.02]

M hh:mm:ss xy,ww n[vv] CHG [s]abc,[t]ghi <d> <st> DNY

#### **Hierarchical**

---

[O.17011.01]

M hh:mm:ss xy,ww n[vv] CHG uvmnp,wxkqr cc <st> DNY

[O.17011.02]

M hh:mm:ss xy,ww n[vv] CHG uvmnp,wxkqr <d> <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From termination  
**TO** - To termination

**[s]abc** - The 3- or 4-digit nonhierarchical non-channelized  
FROM NPC number  
**[t]ghi** - The 3- or 4-digit nonhierarchical non-channelized  
TO NPC number  
**[u]rst** - The 3- or 4-digit nonhierarchical non-channelized  
NPC number that is not affected by this command.

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |



|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical number of non-channelized FROM NPC  
**wxkqr** - Hierarchical number of non-channelized TO NPC  
**edhfg** - Hierarchical number of a leg of a non-channelized digital signal broadcast circuit that is not affected by this command.

**uv, wk, ed**  
- Unit number  
**m, x, h**  
- Module number  
**np, qr, fg**  
- NPC number within the module

The values are listed below:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**INCL** - Inclusive  
Inclusive keyword, required if one or more circuits are marked Customer-controlled (CUS) or Red (RDC)

**TLA** - Terminate and leave activate  
**TLR** - Terminate and leave release

The direction in which TLA or TLR is to be applied is specified by the use of F, T, B, A, and NOT as defined below:

**F** - Towards the FROM NPC  
**T** - Towards the TO NPC  
**B** - In both directions  
**A** - All directions of a broadcast circuit  
**NOT** - In conjunction with the A options, all directions of a broadcast circuit except the one specified

**RDC** - Red circuit  
 NPC is a red circuit

**CUS** - Customer  
 NPC is a Customer-controlled Circuit

**d** - direction

|   |             |
|---|-------------|
| d | Explanation |
| F | From        |
| T | To          |
| B | Both        |
| A | All         |

**st** - Status of denial

**cc** - Hexadecimal condition code

| cc | st           | Explanation                                                           |
|----|--------------|-----------------------------------------------------------------------|
| 15 | <b>MCOND</b> | NPC is unequipped                                                     |
| 01 | <b>INERR</b> | Invalid range for specified NPC type                                  |
| 03 | <b>MCOND</b> | No RDC or CUS circuits and INCL keyword used                          |
| 10 | <b>MCOND</b> | NPC out of service or failed                                          |
| 13 | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| 14 | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| 15 | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| 16 | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| 17 | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| 32 | <b>MCOND</b> | Termination is under test                                             |
| 34 | <b>MCOND</b> | Termination is under customer control (CUS)                           |
| 35 | <b>MCOND</b> | Termination is protected (RDC)                                        |
| 57 | <b>BCAST</b> | FROM is not a backbone leg                                            |
| 5B | <b>BCAST</b> | TO is not a leg of this/any conference                                |
| 5D | <b>BCAST</b> | TO is the backbone leg of a conference                                |
| 5F | <b>BCAST</b> | Conference is NTR: has no switchable return leg                       |
| 90 | <b>CHGIE</b> | Invalid change parameter combinations                                 |
| C5 | <b>BCAST</b> | Option NOT leg can not appear with F, T, or B                         |

| cc | st    | Explanation                               |
|----|-------|-------------------------------------------|
| C7 | BCAST | Option NOT leg is not in conference       |
| FF | ROLL  | Termination is in process of being rolled |

| st      | d         | Explanation                         |
|---------|-----------|-------------------------------------|
| CUS     | {F T B A} | Customer-controlled Circuit         |
| FAIL    | {F T B A} | Failed                              |
| NOMTH   | {F T B A} | No match of NPCs                    |
| OOS     | {F T B A} | Out-of-service                      |
| RDC     | {F T B A} | Red Circuit                         |
| UNPASGN | {F T B A} | Unassigned or Not Properly Assigned |
| UEQD    | {F T B A} | Unequipped                          |
| UTST    | {F T B A} | Under Test                          |

## CHG, FROM, TO, NOT, TLA, TLR, F, T, B, L, G, A

### CHANGE CROSS-CONNECT TERMINATION STATUS

#### Explanation Of Command

This command is used to request a change in the termination status of the specified cross-connected circuit or range of circuits which were established by a two-point or multipoint cross-connect command.

If successful, the requested change is echoed ([NOT [u]rst-vvv]{TLA|TLR}{F|T|B|L|G|A}), followed by the new termination state (**NEW STATE**) of the circuit. If the range option was given, the new states of the circuits in the range may differ, noted by the **RNG** keyword.

#### Command

##### Nonhierarchical

[I.17001]

```
CHG:[FRM xy,SEQ ww]:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\
[,NOT [u]rstvvv},{TLA|TLR}{F|T|B|L|G|A}[,INCL]!
```

##### Hierarchical

[I.17001]

```
CHG:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\
[,NOT edhfgvvv},{TLA|TLR}{F|T|B|L|G|A}[,INCL]!
```

## **Completion Message**

---

### **Nonhierarchical**

---

[O.17001]

M hh:mm:ss xy,ww n[vv] CHG [s]abcddd[-eee],[t]ghijjj[-kkk] 2 LN MSG:  
[NOT [u]rstvvv ]{TLA|TLR} {F|T|B|L|G|A}\  
[ NEW STATE {TLA s|RNG}][ RDC][ CUS] COMPL

### **Hierarchical**

---

[O.17001]

M hh:mm:ss xy,ww n[vv] CHG uvmnpddd[-eee],wxkqrjjj[-kkk] 2 LN MSG:  
[NOT edhfgvvv ]{TLA|TLR} {F|T|B|L|G|A}\  
[ NEW STATE {TLA s|RNG}][ RDC][ CUS] COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.17001.01]

M hh:mm:ss xy,ww n[vv] CHG [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.17001.02]

M hh:mm:ss xy,ww n[vv] CHG [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

[O.17001.03]

M hh:mm:ss xy,ww n[vv] CHG [s]abcddd[-eee],[t]ghijjj[-kkk] 2 LN MSG:  
{TLA|TLR} {F|T|B} COND cc DNY

### **Hierarchical**

---

[O.17001.01]

M hh:mm:ss xy,ww n[vv] CHG uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.17001.02]

M hh:mm:ss xy,ww n[vv] CHG uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

[O.17001.03]

M hh:mm:ss xy,ww n[vv] CHG uvmnpddd[-eee],wxkqrjjj[-kkk] 2 LN MSG:  
{TLA|TLR} {F|T|B} COND cc DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

**FROM** - From

**TO** - To

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

**[u]rst** - The 3- or 4-digit nonhierarchical NPC number not affected by this message

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number  
**edfhg** - Hierarchical NPC number not affected by this message

**uv, wx, ed**  
 - Unit number  
**m, k, f**  
 - Module number  
**np, qr, hg**  
 - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
 Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
 Unit Type VI (Virtual)

| Unit      | Module   | NPC          |                                 |
|-----------|----------|--------------|---------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02</b> | <b>(DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06</b> | <b>(DACS II CEF frames)</b>     |

**ddd** - FROM channel number  
**jjj** - TO channel number  
**eee** - FROM channel number denoting the end of the range  
**kkk** - TO channel number denoting the end of range  
**vvv** - Channel number not affected by this command.

The valid channel numbers are:

|         |                             |
|---------|-----------------------------|
| 000-030 | CEPT type NPCs grown as CAS |
| 000-031 | CEPT type NPCs grown as NSA |

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Conference numbers  
 001-500 (Virtual NPC)



**TLA** - Terminate and leave activate

**s** - Direction of transmission to be terminated

If the cross-connection is between a facility terminating unit (FTU) and a virtual NPC (VI type NPC), once terminated, the FTU NPC will send out its provisioning insertion word (PIW) as the idle code.

**TLR** - Terminate and leave release

**s**      *Explanation*

**A**      Towards the facilities and the bridge (multipoint only)

**B**      Towards both terminations

**F**      Towards the FROM termination

**G**      Towards the bridge (multipoint connection only)

**L**      Towards the facilities (multipoint connection only)

**T**      Towards the TO termination

**INCL** - Inclusive

Use this keyword, to change the termination status on a channel or range of channels including one or more channels marked as a red. The command will otherwise be denied if one or more of the cross-connected circuits in the range are marked as red.

**NOT** - Not

The LEG is not affected by this command

**mmm, nnn**

- Channel number involved in the denial.

Otherwise, the same as **ddd**.

**RNG** - Range

**RDC** - Red circuit

The change in termination status was performed on a red circuit. If the command specified a range of circuits, then at least one of the circuits involved was a red circuit. This keyword will appear only if the **INCL** keyword was specified in the command.

**CUS** - Customer

The change in termination status was performed on a customer controlled circuit. If the command specified a range of circuits, then at least one of the circuits involved was a customer controlled circuit.

**d** - Direction

**d** *Direction*

**F** From

**T** To

**B** Both

**st** - Status

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>      | <i>Explanation</i>                                                      |
|-----------|----------------|-------------------------------------------------------------------------|
| <b>06</b> | <b>INERR</b>   | Invalid range for specified FROM NPC type                               |
| <b>07</b> | <b>INERR</b>   | Invalid range for specified TO NPC type                                 |
| <b>12</b> | <b>MCOND</b>   | Active CCN side not IS or failed or pested or hardware OOS              |
| <b>13</b> | <b>MCOND</b>   | UNIT not equipped, not in service, or failed                            |
| <b>14</b> | <b>MCOND</b>   | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS   |
| <b>15</b> | <b>MCOND</b>   | FTMI not equipped, not in service, or failed                            |
| <b>16</b> | <b>MCOND</b>   | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS     |
| <b>17</b> | <b>MCOND</b>   | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS   |
| <b>18</b> | <b>MCOND</b>   | DSPI not equipped, not in service, or failed                            |
| <b>72</b> | <b>CONFERR</b> | The NPC of VC BBL leg doesn't match that in the input command           |
| <b>73</b> | <b>CONFERR</b> | The first channel of VC BBL leg doesn't match that in the input command |
| <b>75</b> | <b>CONFERR</b> | The input BRD leg is not in VC                                          |
| <b>76</b> | <b>CONFERR</b> | The first channel of VC BRD leg doesn't match that in the input command |
| <b>90</b> | <b>CHGIE</b>   | Invalid change parameter combinations                                   |
| <b>A1</b> | <b>INERR</b>   | Illegal BBL BBL combination                                             |
| <b>A2</b> | <b>INERR</b>   | Illegal BRD BRD combination                                             |
| <b>A3</b> | <b>INERR</b>   | Illegal SYM BRD combination                                             |
| <b>A4</b> | <b>INERR</b>   | Illegal BRD SYM combination                                             |
| <b>A5</b> | <b>INERR</b>   | Illegal BBL SYM combination                                             |
| <b>A6</b> | <b>INERR</b>   | Illegal SYM BBL combination                                             |
| <b>B7</b> | <b>INERR</b>   | Cannot perform DMB CHG on input direction F                             |
| <b>B8</b> | <b>INERR</b>   | Cannot perform DMB CHG on input direction T                             |
| <b>B9</b> | <b>INERR</b>   | Cannot perform DMB CHG on input direction B                             |
| <b>C0</b> | <b>INERR</b>   | Cannot perform DMB CHG on input direction L                             |
| <b>C1</b> | <b>INERR</b>   | Cannot perform DMB CHG on input direction G                             |
| <b>C2</b> | <b>INERR</b>   | Cannot perform DMB CHG on input direction A                             |
| <b>C3</b> | <b>CHGIE</b>   | Can't perform DMB CHG because NTR flag set on FROM side                 |
| <b>C4</b> | <b>CHGIE</b>   | Can't perform DMB CHG because NTR flag set on TO side                   |
| <b>C5</b> | <b>INERR</b>   | Option NOT leg can not appear with F, T, or B                           |

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                            |
|-----------|--------------|---------------------------------------------------------------|
| <b>C6</b> | <b>INERR</b> | Option NOT leg is not a FTU leg                               |
| <b>C7</b> | <b>INERR</b> | Option NOT leg is not in conference                           |
| <b>D3</b> | <b>SCERR</b> | Corresponding NPC for FROM virtual channel is not provisioned |
| <b>D4</b> | <b>SCERR</b> | Corresponding NPC for TO virtual channel is not provisioned   |
| <b>D6</b> | <b>INERR</b> | Invalid FROM channel number                                   |
| <b>D7</b> | <b>INERR</b> | Invalid TO channel number                                     |
| <b>D9</b> | <b>INERR</b> | Invalid FROM channel number range                             |
| <b>DA</b> | <b>INERR</b> | Invalid TO channel number range                               |
| <b>DC</b> | <b>INERR</b> | A loopback is active on the FROM termination                  |
| <b>DD</b> | <b>INERR</b> | A loopback is active on the TO termination                    |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                       |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                |
| <b>ED</b> | <b>INERR</b> | Invalid channel 031 cross-connection specified                |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                              |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                     |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                  |

| <b>st</b>      | <b>d</b>       | <i>Explanation</i>                  |
|----------------|----------------|-------------------------------------|
| <b>CUS</b>     | <b>{F T B}</b> | Customer-controlled Circuit         |
| <b>FAIL</b>    | <b>{F T B}</b> | Failed                              |
| <b>NOMTH</b>   | <b>{F T B}</b> | No Match                            |
| <b>OOS</b>     | <b>{F T B}</b> | Out-of-service                      |
| <b>RDC</b>     | <b>{F T B}</b> | Red Circuit                         |
| <b>TP</b>      | <b>{F T B}</b> | NPC is used for test access         |
| <b>UNPASGN</b> | <b>{F T B}</b> | Unassigned or Not Properly Assigned |
| <b>UEQD</b>    | <b>{F T B}</b> | Unequipped                          |
| <b>UTST</b>    | <b>{F T B}</b> | Under Test                          |

## **CHG, FROM, TO, TLP, NG, ES, INCL**

### **CHANGE CIRCUIT PARAMETERS**

#### **Explanation Of Command**

This message requests DACS II to change the parameters of a multipoint circuit leg. Termination [s]abcddd must be either a termination on an FTU (facility terminating unit), IFTU (integrated Facility Terminating Unit), DS3U (DS3 Unit), HDS3U (Hybrid DS3 Unit) or DSPU (Digital Signal Processing Unit) NPC. Termination [t]ghijjj must be a termination on a DSPU NPC.

#### **Command**

##### **Nonhierarchical**

[I.17002]

```
CHG:FRM xy,SEQ ww:FROM [s]abcddd,TO [t]ghijjj[,TLP(snn,smm)]\
[,NG nn][,ES ee][,INCL]!
```

##### **Hierarchical**

[I.17002]

```
CHG:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj\
[,TLP(snn,smm)][,NG nn][,ES ee][,INCL]!
```

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.17002]

M hh:mm:ss xy,ww n[vv] CHG [s]abcddd,[t]ghijjj 2 LN MSG:  
[TLP(snn,smm)][ NG nn][ ES ee]\  
NEW STATE spp,sqq NG ff ES hh[ RDC][ CUS] COMPL

#### **Hierarchical**

---

[O.17002]

M hh:mm:ss xy,ww n[vv] CHG uvmnpddd,wxkqrjjj 2 LN MSG:  
[TLP(snn,smm)][ NG nn][ ES ee]\  
NEW STATE spp,sqq NG ff ES hh[ RDC][ CUS] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.17002.01]

M hh:mm:ss xy,ww n[vv] CHG [s]abcddd,[t]ghijjj 2 LN MSG:  
[TLP(snn,smm)][ NG nn][ ES ee] COND cc DNY

#### **Hierarchical**

---

[O.17002.01]

M hh:mm:ss xy,ww n[vv] CHG uvmnpddd,wxkqrjjj 2 LN MSG:  
[TLP(snn,smm)][ NG nn][ ES ee] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From  
**TO** - To

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number  
**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - FROM channel number

000-030 CEPT type NPCs grown as CAS  
000-031 CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

**jjj** - TO channel number

**TLP** - Transmission level point

Specify the incoming and outgoing gain adjustments relative to the TO multipoint circuit by using the TLP (snn,smm) field. Gain adjustment snn is applied as the signal enters the bridge, while smm is applied as the signal leaves.

**snn** - Incoming gain adjust parameter

**smm** - Outgoing gain adjust parameter

**s** - Sign (+ or -)

**nn** - Incoming gain adjust value (-90 through +88)

**mm** - Outgoing gain adjust value (-90 through +88)

These are the parameters requested for the TO termination. Values are given in steps of two and the units are tenths of a db.

Certain situations require replacement of the gain adjust parameter values with "---". In general "---" is used for either snn or smm (but not both) when no change is to be made to that parameter. This feature allows changing only one of the two parameters if desired. Also, if the cross-connection was provisioned with the NTR (no transmit) option, the gain adjustment in the direction for which transmission is shut off MUST be ---. See the table below to see what situations require "---".

| <i>FROM</i> | <i>TO</i> | <i>snn</i>          | <i>smm</i> |
|-------------|-----------|---------------------|------------|
| BRD         | BBL       | ---                 | smm        |
| BBL         | BRD       | snn                 | ---        |
| LEG         | BBL       | ---                 | smm        |
| LEG         | BRD       | snn                 | ---        |
| LEG         | SYM       | snn                 | smm        |
| BBL         | LEG       | Invalid combination |            |
| BBL         | SYM       | Invalid combination |            |
| BRD         | LEG       | Invalid combination |            |
| BRD         | SYM       | Invalid combination |            |

**NG** - Noise guard

**nn** - Requested NG level setting (00, 06, 12, or 18) db

To specify the noise guard level setting, use NG nn. The following default values apply:

For Symmetrical bridges    Default: NG = -18 db

For Polling circuits        Default: NG = 0 db



**ES** - Echo suppression

**ee** - Requested ES level setting (00, 06, 12, or 18) db

To specify the echo suppression level setting, use ES ee. The following default values apply:

For Symmetrical bridges Default: ES = -18 db

For Polling circuits Default: ES = 0 db

At least one of the three parameters (TLP, NG, ES) must be specified.

Since a BBL (backbone leg) has no input to the bridge and the bridge has no output to a BRD (broadcast) leg, transmission values in these directions cannot be changed.

**INCL** - Inclusive

INCL is used to change the parameters on a circuit marked either as a red or a customer controlled circuit. If this option is not used, the command will be denied such a circuit.

**spp, sqq**

- New gain setting. Otherwise, the same as snn and smm.

**ff** - New noise guard setting. Otherwise, the same as nn.

**hh** - New echo suppression setting. Otherwise, the same as ee.

**RDC** - Red circuit

These keywords indicate the connection is marked as a red circuit.

**CUS** - Customer

The connection is a Customer-controlled Circuit.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**03** No RDC or CUS circuits and INCL keyword used

**13** UNIT not equipped, not in service, or failed

**18** DSPI not equipped, not in service, or failed

**A0** Illegal LEG LEG combination

**A1** Illegal BBL BBL combination

**A2** Illegal BRD BRD combination

**A3** Illegal SYM BRD combination

**A4** Illegal BRD SYM combination

**A5** Illegal BBL SYM combination

**A6** Illegal SYM BBL combination

**cc**    *Explanation*

- AF**    Delete or change a leg from a conference that has no leg
- B2**    Transmission parameters in command will not change existing settings
- B3**    Trying to change level out on BRD leg
- B4**    Trying to change level in on BBL leg
- B6**    TO side is not a DMB type NPC
- AE**    A substrate circuit pack is specified in the command line
- B5**    CPR circuit pack specified in the command
- D0**    FROM NPC is not provisioned as DGA
- D3**    Corresponding NPC for FROM virtual channel is not provisioned
- D6**    Invalid FROM channel number
- 43**    Trying to change in NTR direction

## **CHG,INTV,ON,OFF**

**Turn ON or OFF the Intervention Level Setting  
Feature**

### **Explanation Of Command**

This command is used to turn ON or OFF the Intervention Level Setting Feature, which is used to change the intervention level of the alarm severities for various system resources. When this feature is ON, message I.31363 can be used to change the intervention level of NPCs. This command is restricted to users with superuser privileges.

This command can only be used if the intervention level feature has been purchased as part of the DACS II software generic.

### **Command**

[I.38451]

**CHG:[FRM xy,SEQ ww]:INTV,{ON|OFF}!**

### **Completion Message**

[O.38451]

**M hh:mm:ss xy,ww n[vv] CHG INTV {ON|OFF} COMPL**

### **Denial Message**

[O.38451.01]

**M hh:mm:ss xy,ww n[vv] CHG INTV COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**ON** - Turn feature ON

**OFF** - Turn feature OFF

**cc** - Hexadecimal condition code

**cc** *Explanation*

**FC** Intervention Level Feature Already ON

**FD** Intervention Level Feature (already) OFF

**FF** NPC escalated alarm condition exists

## **CHG,MACRO,MAP,SPACE**

### **CHANGE MACRO SPACE**

#### **Explanation Of Command**

This command is used by the frame administrator to request a change in the amount of memory space allocated to macros or maps for all users of the system.

#### **Command**

[I.38501]

**CHG:FRM xy,SEQ ww:{MACRO|MAP},SPACE sss!**

#### **Completion Message**

[O.38501]

**M hh:mm:ss xy,ww n[vv] CHG {MACRO|MAP} SPACE NEW sss \  
OLD ttt COMPL**

#### **Denial Message**

[O.38501.01]

**M hh:mm:ss xy,ww n[vv] CHG {MACRO|MAP} SPACE sss COND cc \  
DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**SPACE** - Space

**sss** - User macro or map space allocation (000 through 100 percent)

Variable sss represents the space allocated to user macros or maps for entire DACS II system as a percentage of the system macro space.

**ttt** - Old user macro space allocation (000 through 100 percent)

Variable ttt represents the space previously allocated to user macros for the entire DACS II system as a percentage of the system macro space.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**D0** Command is Frame administrator (DAX) only.

## **CHG,MSGLOG,ON,OFF**

Turn ON or OFF the Message Logging feature

### **Explanation Of Command**

This command is used to turn ON or OFF the Message Logging feature, which is used to log the MML messages, so they can be retrieved at a later time. Turning ON the Message Logging feature resets the Message Log Number to 1. This command is restricted to those with superuser permissions.

This command can only be used if the message logging feature has been purchased as part of the DACS II software generic.

### **Command**

[I.38471]

**CHG:FRM xy,SEQ ww:MSGLOG {ON|OFF}!**

### **Completion Message**

[O.38471]

**M hh:mm:ss xy,ww n[vv] CHG MSGLOG {ON|OFF} COMPL**

### **Denial Message**

**M hh:mm:ss xy,ww n[vv] CHG MSGLOG {ON|OFF} COND cc DNY**

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**MSGLOG** - Message Log

**ON** - Turn feature ON

**OFF** - Turn feature OFF

**cc** - Hexadecimal condition code

**cc** *Explanation*

**01** Subject entity is equipped

**02** Subject entity is not equipped

**06** Feature is (already) off



## **CHG,NPC,ALL,TLI,SYNC,CCN,LEV**

### **CHANGE INTERVENTION LEVEL**

#### **Explanation Of Command**

This command is used to change the Intervention Level Setting for the following resources:

NPC  
SYNC  
TLI

For an NPC the Intervention Level setting will affect the alarm severity level reported for all NPC alarms including the facility and performance monitoring alarms. The escalation for greater than 5 NPC alarms will not happen when Intervention Level is ON. For an SYNC and TLI, all alarms associated with these resources will be affected by Intervention Level and the escalation mechanism associated with these resources will occur. This command can be executed while the resource is in service.

#### **Command**

##### **Nonhierarchical**

[I.38461]

CHG:[FRM xy,SEQ ww]:{NPC {[s]abc[-[t]def]|ALL}|TLI|SYNC|CCN|ALL},LEV r!

##### **Hierarchical**

[I.38461]

CHG:[FRM xy,SEQ ww]:{NPC {uvmnp[-uvkqr]|ALL}|TLI|SYNC|CCN|ALL},LEV r!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.38461]

M hh:mm:ss xy,ww n[vv] CHG INTV {NPC-{[s]abc[&&- [t]def]|ALL}|TLI|\  
SYNC|CCN|ALL} LEV r COMPL

#### **Hierarchical**

---

[O.38461]

M hh:mm:ss xy,ww n[vv] CHG INTV {NPC {uvmnp[-uvkqr]|ALL}|TLI|\  
SYNC|CCN|ALL} LEV r COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.38461.01]

M hh:mm:ss xy,ww n[vv] CHG INTV {NPC-{[s]abc[&&- [t]def]|ALL}|TLI|\  
SYNC|CCN|ALL} LEV r COND cc DNY

#### **Hierarchical**

---

[O.38461.01]

M hh:mm:ss xy,ww n[vv] CHG INTV {NPC {uvmnp[-uvkqr]|ALL}|TLI|\  
SYNC|CCN|ALL} LEV r COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**NPC** - Network Processing Number

abc,def - NPC number

**ALL** - ALL NPCs

**TLI** - Timing Link Interfaces(TLI 1,TLI 2,TLI 3,TLI 4)

**SYNC** - Synchronizer

**CCN** - Cross Connect Network(CCN or ECCN)

**ALL** - All equipment  
(All NPCs, TLI 1, TLI 2,TLI 3,TLI 4 SYNCs 0,1 and CCN 0,1)

#begifill

NOTE:When the intervention level setting of the TLI is changed the SSPs on that TLI if it is an extractor will inherit the same setting.

**LEV** - Intervention Level Setting

**r** - Intervention Level Setting (1-6)

Listed below is the Intervention actions for the different Intervention levels and alarm serities.

| Intv. Level<br>Setting | Alarm Severity |           |           |       |
|------------------------|----------------|-----------|-----------|-------|
|                        | PMA-Critical   | PMA-Major | DMA-Minor | Info. |
| 1                      | IMA            | IMA       | IMA       | DMA   |
| 2                      | IMA            | IMA       | DMA       | DMA   |
| 3                      | IMA            | DMA       | DMA       | NI    |
| 4                      | DMA            | DMA       | NI        | NI    |
| 5                      | DMA            | NI        | NI        | NI    |
| 6                      | NI             | NI        | NI        | NI    |

where:

**IMA** = Immediate Maintenance Action  
PMA Critical Alarm LED  
Critical Relay

**DMA** = Deferred Maintenance Action  
PMA Major Alarm LED  
Major Relay

**NI** = No Action  
No Alarm LED  
No relay

The Intervention Level setting for other resources other than the TLI,NPC,CCN,and SYNC will be set to 2 and can not be changed. These other resource are:

Power Failure (feeder or fuse)

SMEM

MC

CCI/CCNI

TSI/ETSI

FC

FTMI

DSPI

FTU UC

CCB

DSPU UC

System Date and Time

**cc** - Hexadecimal condition code

**cc** *Explanation*

**FE** Intervention Level setting not changed

## **CHG,NPC,ALMOPT,AIS,MI,PMA,PMC,DMA**

### **CHANGE NPC AIS ALARM OPTION**

#### **Explanation Of Command**

This command requests a change of the NPC alarm option to Maintenance Information (MI), Prompt Maintenance Alarm (PMA), Deferred Maintenance Alarm (DMA), or Prompt Maintenance Action Critical (PMC) for all CEPT NPC types.

#### **Command**

##### **Nonhierarchical**

[I.38281]

```
CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]ghi],ALMOPT,\
AIS {MI|PMA|PMC|DMA}!
```

##### **Hierarchical**

[I.38281]

```
CHG:FRM xy,SEQ ww:NPC uvmnp[-wxkqr],ALMOPT,\
AIS {MI|PMA|PMC|DMA}!
```

---

## Completion Message

---

### Nonhierarchical

---

Usage: FOR FT UNIT

[O.38281]

```
M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc[-[s]def] \
ALMOPT AIS {MI|DMA|PMA|PMC} e LN MSG:
TOT nnn
stttt stttt stttt stttt stttt stttt stttt stttt
stttt stttt stttt stttt stttt stttt stttt stttt
stttt stttt stttt stttt stttt stttt stttt stttt
stttt stttt stttt stttt stttt stttt stttt stttt EOM
 : :
 : :
```

```
M hh:mm:ss xy,ww n[vv] CHG NPC [t]jkl[-[t]ghi] \
ALMOPT AIS {MI|DMA|PMA|PMC} e LN MSG:
TOT nnn
stttt stttt stttt stttt stttt stttt stttt stttt
stttt stttt stttt stttt stttt stttt stttt stttt
stttt stttt stttt stttt stttt stttt stttt stttt
stttt stttt stttt stttt stttt stttt stttt stttt EOM
```

```
M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc[-[t]ghi] \
ALMOPT AIS {MI|DMA|PMA|PMC} COMPL
```

### Hierarchical

---

Usage: FOR FT UNIT

[O.38281]

```
M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp[-defgh] \
ALMOPT AIS {MI|DMA|PMA|PMC}
e LN MSG:
TOT nnn
stttt stttt stttt stttt stttt stttt stttt stttt
stttt stttt stttt stttt stttt stttt stttt stttt
stttt stttt stttt stttt stttt stttt stttt stttt
stttt stttt stttt stttt stttt stttt stttt stttt EOM
 : :
 : :
```

M hh:mm:ss xy,ww n[vv] CHG NPC ijklm[-wxkqr] \  
ALMOPT AIS {MI|DMA|PMA|PMC}  
e LN MSG:  
TOT nnn  
stttt stttt stttt stttt stttt stttt stttt stttt  
stttt stttt stttt stttt stttt stttt stttt stttt  
stttt stttt stttt stttt stttt stttt stttt stttt  
stttt stttt stttt stttt stttt stttt stttt stttt EOM

M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp[-wxkqr] \  
ALMOPT AIS {MI|DMA|PMA|PMC} COMPL

### Denial Message

---

#### Nonhierarchical

---

[O.38281.01]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc[-[t]ghi] \  
ALMOPT AIS {MI|PMA|PMC|DMA} COND cc DNY

[O.38281.02]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc[-[t]ghi] \  
ALMOPT AIS {MI|PMA|PMC|DMA} UEQD DNY

#### Hierarchical

---

[O.38281.01]

M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp[-wxkqr] \  
ALMOPT AIS {MI|PMA|PMC|DMA} COND cc DNY

[O.38281.02]

M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp[-wxkqr] \  
ALMOPT AIS {MI|PMA|PMC|DMA} UEQD DNY

### Autonomous Message

---

Not applicable.



### Explanation Of Parameters

- [s]abc** - The 3- or 4-digit nonhierarchical NPC number at beginning of a range
- [t]ghi** - The 3- or 4-digit nonhierarchical NPC number at end of a range
- [s]def** - The 3- or 4-digit nonhierarchical NPC number between [s]abc and [t]jkl
- [t]jkl** - The 3- or 4-digit nonhierarchical NPC number between [s]def and [t]ghi

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number at beginning of range  
**wxkqr** - Hierarchical NPC number at beginning of range  
**defgh** - Hierarchical NPC number between uvmnp and ijklm  
**ijklm** - Hierarchical NPC number between defgh and wxkqr

**uv,wx** - Unit number  
**m,k** - Module number in unit uv  
**np,qr** - NPC number in module m

The allowable values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ALMOPT** - Alarm option

**AIS** - Alarm indication signal

Type of alarm. AIS is not detected by unframed clear (unchannelized) 2Mbit/s PAXDz or THxDz type NPCs. Therefore, specifying AIS with one of the alarm level types MI, DMA, PMA, or PMC is unnecessary. However, the command will not be denied if AIS is specified with an alarm level for unframed clear PAXDz or THxDz NPCs. AIS with its alarm level will simply never be reported for unframed clear PAXDz or THxDz NPCs.

**MI** - Maintenance information  
Maintenance information message (not an alarm). Default.

**PMC** - Prompt Maintenance Action Critical Alarm

**PMA** - Prompt Maintenance Action Major Alarm.

**DMA** - Deferred Maintenance Action Minor alarm.

**TOT nnn**  
- Total number of NPCs in the output segment.

**PLOPT** - Payload loopback option  
The NPC(s) must be out of service to use this option.

**tttt** - The old AIS alarm option/payload loopback setting for the NPC.

*tttt Explanation*

MI AIS programmed for Information message  
PMA AIS programmed for Prompt maintenance major alarm  
PMC AIS programmed for Prompt Maintenance critical alarm  
DMA AIS programmed for Deferred maintenance minor alarm

---- Not applicable (for unequipped NPCs or not valid NPC type within the specified NPC range)

**cc** - Hexadecimal condition code

*cc Explanation*

**02** Subject entity is not equipped  
**10** Unit is not equipped  
**11** UC is out of service  
**12** UC is in service but failed  
**13** FTMI is not equipped  
**14** FTMI is out of service  
**15** NPC is unequipped  
**C9** In-service NPC change not allowed  
**FD** NPC range crosses unit boundary  
**70** NPC invalid type  
**60** Selectable AIS not valid for specified NPC(s) type  
**61** All NPC(s) are either not valid or not grown  
**62** IU type NPC(s) cannot be provisioned for Minor Alarm  
**67** NPC(s) actual type incompatible with TYPE keyword and/or alarm type  
**A5** AIS keyword incompatible with NPC type

## **CHG,NPC,CBTIMER**

---

### **Explanation Of Command**

---

This command is used to change the C-bit Message Filter Timer value for an NPC or range of NPCs. Only cept NPCs cross-connected to NPCs with the type CB10z can be specified.

### **Command**

---

#### **Nonhierarchical**

---

[I.38001]

CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],CBTIMER [t]v!

#### **Hierarchical**

---

[I.38001]

CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],CBTIMER [t]v!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.38001]

M hh:mm:ss xy,ww CHG NPC [s]abc CBTIMER [t]v COMPL

.

.

.

M hh:mm:ss xy,ww CHG NPC [s]abc CBTIMER [t]v COMPL

### **Hierarchical**

---

[O.38001]

M hh:mm:ss xy,ww CHG NPC uvmnp CBTIMER [t]v COMPL

.  
.  
.

M hh:mm:ss xy,ww CHG NPC uvmnp CBTIMER [t]v COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.38001.01]

M hh:mm:ss xy,ww CHG NPC [s]abc[-[t]def] CBTIMER [t]v COND cc DNY

### **Hierarchical**

---

[O.38001.01]

M hh:mm:ss xy,ww CHG NPC uvmnp[-uvkqr] CBTIMER [t]v COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**NPC** - Network Processing Number

**[s]abc** - NPC number Non-Hierarchical

**[t]def** - NPC number Non-Hierarchical

**uvkqr** - NPC number Hierarchical

**uvmnp** - NPC number Hierarchical

#### **CBTIMER**

- C-Bit Message Filter Timer

**[t]v** - Values (0-10)

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 04** Subj entity is out of service
- 10** Unit is not equipped
- 11** UC is out of service
- 12** UC is in service but failed
- 13** FTMI is not equipped
- 15** NPC is unequipped
- 36** DSPI not equipped
- 37** DSPI out-of-service
- 3E** DSPI failed
- 52** CPR is not equipped
- 54** Cross-connect to CPR is required
- 58** DSPU is not equipped
- 59** DSPU unit controller is out of service
- 5A** DSPU unit controller is failed
- F1** Parameter only valid with PA, PB, or PC type NPCs
- F2** Invalid NPC number specified

## **CHG,NPC,LPBK**

### **CHANGE NPC LOOPBACK**

#### **Explanation Of Command**

This command requests a loopback, or the changing of the provisioning of the loopback, for a 2048-kb/s signal received on the addressed NPC(s). It allows changing provisioning for either a single NPC or a range of NPCs.

LPBK controls loopback and provisioning. For PB/PC type NPCs, variable d is not allowed and the variable t may be set as follows:

| LPBK-t |                                                                                                                                                                   |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| t      | FUNCTION                                                                                                                                                          |
| A      | Starts looping the signal towards the facility and sends AIS downstream. Turns off facility performance monitoring and freezes alarm states and parameter counts. |
| T      | Transparently passes through the received signal.                                                                                                                 |
| N      | Stops looping the signal.                                                                                                                                         |

For PA type NPCs, variable d and t may be set as follows:

| LPBK-dt |   |                                                                                                                                                                                                                                                |
|---------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| d       | t | FUNCTION                                                                                                                                                                                                                                       |
| F       | A | Starts looping the incoming signal back towards the facility and sends AIS downstream. Turns off facility performance monitoring and freezes alarm states and parameter counts.                                                                |
| F       | B | Starts looping the incoming signal back towards the facility and sends AIS downstream. Performance Monitoring activity and alarm processing is maintained.                                                                                     |
| F       | C | Starts looping the incoming signal back towards the facility and transparently passes through the received signal. Turns off facility performance monitoring and freezes alarm states and parameter counts.                                    |
| F       | T | Starts looping the incoming signal back towards the facility and transparently passes through the received signal. Performance Monitoring activity and alarm processing is maintained.                                                         |
| E       | A | Starts looping the outgoing signal back towards the DACS II equipment and sends AIS upstream. Turns off facility performance monitoring and freezes alarm state and parameter counts                                                           |
| E       | B | Starts looping the outgoing signal back towards the DACS II equipment and sends AIS upstream. Performance Monitoring activity and alarm processing is maintained.                                                                              |
| E       | C | Starts looping the outgoing signal back towards the DACS II equipment and transparently passes through the outgoing signal in the upstream direction. Turns off facility performance monitoring and freezes alarm states and parameter counts. |
| E       | T | Starts looping the outgoing signal back towards the DACS II equipment and transparently passes through the outgoing signal in the upstream direction. Performance Monitoring activity and alarm processing is maintained.                      |
| N       | N | Stop loopback.                                                                                                                                                                                                                                 |

When the NPC loopback is activated towards the facility, DACS II will no longer output its own clock on the line. Equipment connected to this NPC should not rely on timing from



DACS II in that case.

### **Command**

---

#### **Nonhierarchical**

---

[I.38341]

CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],LPBK [d]t!

#### **Hierarchical**

---

[I.38341]

CHG:FRM xy,SEQ ww:NPC uvmnp[-wxkqr],LPBK [d]t!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.38341]

M hh:mm:ss xy,ww n[vv] CHG NPC [v]ghi LPBK [d]t COMPL

#### **Hierarchical**

---

[O.38341]

M hh:mm:ss xy,ww n[vv] CHG NPC edhfg LPBK [d]t COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.38341.01]

M hh:mm:ss xy,ww n[vv] CHG NPC [v]ghi LPBK [d]t COND cc DNY

## Hierarchical

[O.38341.01]

M hh:mm:ss xy,ww n[vv] CHG NPC edhfg LPBK [d]t COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

If an NPC range is specified in the input command, the following floating window rules apply:

1. Unequipped NPCs within the requested range will be skipped.
2. If a CEPT gap is within the requested range, the NPCs in the gap will be skipped.
3. If an endpoint of the requested range is in a CEPT gap, then the NPCs in the portion of the range which is in the gap will be denied.

**[s]abc** - The 3- or 4-digit beginning nonhierarchical NPC  
Valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**[t]def** - The 3- or 4-digit ending nonhierarchical NPC number  
Valid values are identical to those for [s]abc.

**uvmnp** - Beginning hierarchical NPC number

**wxkqr** - Ending hierarchical NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number

Valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**LPBK** - Loopback

**d** - Loopback direction specifier; required for PA NPCs, but not allowed for PB/PC NPCs. See previous table for PA type NPCs.

**t** - Loopback signal transmission and performance monitoring specifier.  
See tables above for PB/PC type NPCs and for PA type NPCs.

For PB/PC type NPCs, only the "t" flag is allowed. If the optional "d" flag is also entered the command will be denied.

The "t" flag is allowed to be changed while a loopback is active. That is, this command can be entered to change the signal transmission and/or the PM options while a loopback is being performed.

The change of the loopback direction for PA NPCs, that is, change the "d" flag between "F" and "E", while a loopback is active is not allowed.

For PB/PC NPCs, a loopback will be stopped when this command is entered with "LPBK N". For PA NPCs, a loopback will be stopped only if this command is entered with "LPBK NN".

For PB/PC NPCs if LPBK T or LPBK N is entered from the LPBK A state, Facility Performance Monitoring is enabled and alarm and parameter counts are reset. For PA NPCs when the "t" flag is changed from "A" or "C" to another state, Facility Performance Monitoring is enabled and alarm and parameter counts are reset.

For a range command, if the "d" field is specified, the command will only be applied to PA NPCs; PB/PC NPCs will be skipped. Similarly, if the "d" field is not entered, the command will only be applied to PB/PC NPCs and will skip PA NPCs. In either cases, if no NPCs with the appropriate NPC type is in the specified range, the command will be denied.

**[v]ghi** - The 3- or 4-digit nonhierarchical NPC number  
([s]abc ≤ [v]ghi ≤ [t]def)

**edhfg** - Hierarchical NPC number (uvmnp ≤ edhfg ≤ wxkqr)

**cc** - Hexadecimal condition code

**cc**    *Explanation*

- 10**    Unit is not equipped
- 11**    UC is out of service
- 12**    UC is in service but failed
- 13**    FTMI is not equipped
- 14**    FTMI is out of service
- 15**    NPC is unequipped
- 24**    Unit type error
- 46**    NPC Failed or Out of Service
- F1**    Parameter only valid with PA, PB, or PC type NPCs
- F2**    Invalid NPC number specified
- FD**    NPC range crosses unit boundary
- A1**    The parameter specified does not match with the NPC type
- 17**    Command did not execute for any entity specified in the command
- AE**    NPC used as a timing reference

## **CHG,NPC,NFS**

---

### **CHANGE NPC NON FRAME-WORD SETTING**

#### **Explanation Of Command**

---

This command allows control of the spare national and international bits in time slot zero (TS0).

Control is exercised through variable "abcdefghi". Each letter in this variable represents one of the spare national or international bits in TS0. The bit represented by a given letter is controlled by assigning an appropriate value to the letter. Each letter may be set to one of the following: **0**, **1**, **p** or **-**. **p** indicates that the incoming bit will be passed through unchanged if cross-connected. A **0** and **1** set for any of the bits (except **c**) will override the cross-connected bits. This applies also to NPCs assigned as test NPCs. A hyphen (-) means that the bit is not affected by this command.

When a command covering a range of NPCs is denied for successive NPCs in the range for the same reason, a summary denial message shall be output, giving the range of NPCs denied and the reason. The execution of the normal completions, or of denials for a reason other than diagnostic failures, then resumes at the next NPC and continues to the end of the range.

#### **Command**

---

##### **Nonhierarchical**

---

[I.38324]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],NFS abcdefghi!**

##### **Hierarchical**

---

[I.38324]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],NFS abcdefghi!**

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.38324]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]jkl OLD abcdefghi \  
NEW abcdefghi NFS COMPL

#### **Hierarchical**

---

[O.38324]

M hh:mm:ss xy,ww n[vv] CHG NPC uvjkl OLD abcdefghi \  
NEW abcdefghi NFS COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.38324.01]

M hh:mm:ss [<xy>],ww n[vv] CHG NPC [s]jkl[-[t]mno] ab\  
cdefghi NFS COND cc DNY

#### **Hierarchical**

---

[O.38324.01]

M hh:mm:ss xy,ww n[vv] CHG NPC uvjkl[-uvmno] ab\  
cdefghi NFS COND cc DNY

### **Autonomous Message**

---

Not applicable.

**Explanation Of Parameters**

- [s]abc** - The 3- or 4-digit nonhierarchical NPC number, start of range
- [t]def** - The 3- or 4-digit nonhierarchical NPC number, end of range, must be in the same unit as [s]abc
- [s]jkl** - The 3- or 4-digit nonhierarchical NPC number within the range of [s]abc and [t]def.
- [t]mno** - The 3- or 4-digit nonhierarchical NPC number within the range of [s]abc and [t]def.

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |



| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number, start of range

**uvkqr** - Hierarchical NPC number, end of range

**uvjkl** - Hierarchical NPC number (uvmnp through uvkqr)

**uvmno** - Hierarchical NPC number (uvmnp through uvkqr)

**uv**

- Unit number

**m, k, j**

- Module number

**np, qr, kl, no**

- NPC number within the module

The allowable values are presented below:

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**NFS** - Nonframe-word Setting

**abcdefghi**

- Input variables corresponding to spare bits in TS0

**abcdefghi**

- Variables of old spare bits in TS0.

- a: Bit 1 of Frame Word (FW) - International spare bit for TS0 to non-TS0 cross-connect in Mode 2, this variable can only be "-" or "b"
- b: Bit 1 of Non Frame Word (NFW) - International spare bit
- c: Bit 2 of NFW
- d: Bit 3 of NFW - Remote Alarm Indicator
- e-f: Bits 4-5 of Not Frame Word, National spare bits
- g: Bit 6 of Not Frame Word, RPSFI bit if provisioned for RPSFI otherwise a national spare bit.
- h-i: Bits 7-8 of Not Frame Word, National spare bits

| Variable<br>Input Value | Action on corresponding TS0 bit:                                 |
|-------------------------|------------------------------------------------------------------|
| "0" or "1"              | Set TS0 bit to this value                                        |
| "V"                     | Received bit is inverted and passed through                      |
| "P"                     | Received bit is passed through unchanged                         |
| "_"                     | Neither the variable nor the TS0 bit is changed by this command. |

The output parameters take on values dependent on the message language (PDS or MML) and position (OLD or NEW) as shown in the following table:

| Input | Output<br>Primary<br>Line<br>(MML) | OLD          | NEW      |
|-------|------------------------------------|--------------|----------|
| "0"   | "0"                                | previous     | "0"      |
| "1"   | "1"                                | previous     | "1"      |
| "V"   | "V"                                | previous "V" |          |
| "P"   | "P"                                | previous     | "P"      |
| "_"   | "_"                                | previous     | previous |

previous value may be one of "0", "1", "V" or "P"

For example:

11V---00P    11V---00P    0011PPPPV    11V1PP00P

If this command is not entered for a NPC, the default value for all the bits is "P".

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                                       |
|-----------|-----------------------------------------------------------------------|
| <b>02</b> | Subject entity is not equipped                                        |
| <b>10</b> | Unit is not equipped                                                  |
| <b>11</b> | UC is out of service                                                  |
| <b>12</b> | UC is in service but failed                                           |
| <b>13</b> | FTMI is not equipped                                                  |
| <b>14</b> | FTMI is out of service                                                |
| <b>24</b> | Unit type error                                                       |
| <b>26</b> | NPC type error                                                        |
| <b>46</b> | NPC Failed or Out of Service                                          |
| <b>F2</b> | Invalid NPC number specified                                          |
| <b>FF</b> | Termination is in process of being rolled                             |
| <b>2C</b> | not allowed for clear 2MB                                             |
| <b>2D</b> | TS0 is crossconnected to TS0                                          |
| <b>2F</b> | TS0 connected to nonTS0 in Mode 2 - "a" should be "-" or equal to "b" |
| <b>3A</b> | Invalid FPI value                                                     |

## **CHG,NPC,OPTS,THMODE**

### **CHANGE NPC OPTIONS**

#### **Explanation Of Command**

This message changes the facility performance parameter threshold values on a specified Network Processing Circuit (NPC) without disconnecting and reconnecting provisioned circuits.

One or more alarm or information threshold values for the designated NPC may be changed to a value previously stored in the DACS II threshold data base. These previously stored values are selected through use of the indices **rr/m**.

Each facility parameter of an NPC has a default threshold and up to three user-programmable threshold values stored in the DACS II threshold data base. The **CHG SETOP NPCOP** command sets these values.

**Note:** This command will not reboot the NPC hardware. Therefore, if any NPCs are in service, use the **UTL : :BOOT,FRAME** command (Message I.58001) to avoid any possible inconsistency.

#### **Command**

#### **Nonhierarchical**

[I.38221]

**CHG:FRM xy,SEQ ww:NPC [s]abc,{OPTS(rr/<m>[,rr/<m>][...])|\**  
**THMODE hhh}!**

## Hierarchical

[I.38221]

CHG:FRM xy,SEQ ww:NPC uvmnp,{OPTS(rr/<m>[,rr/<m>][...])|\  
THMODE hhh}!

## Completion Message

## Nonhierarchical

For PA type NPCs:

[O.38222]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ IW pqr] 5 LN MSG:  
DAILY CRC FRER OFS ES SES CSS CV  
THRESHOLDS aaaaaaaa bbbbbbbbbb ccccc ddddd eeeee fffff gggggggg  
OPTIONS a b c d e f g  
OLD OPTIONS á ħ ċ đ é f g EOM

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ IW pqr] 5 LN MSG:  
DAILY UAS UATC MER FEBE FES FSES FUAS  
THRESHOLDS hhhh iiij jjjj kkkkkkkk llll mmmm nnnnn  
OPTIONS h i j k l m n  
OLD OPTIONS ħ î ĵ k l m n EOM

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ IW pqr] 5 LN MSG:  
15MIN CRC FRER OFS ES SES CSS CV  
THRESHOLDS aaaaaa bbbbbbbb ccc ddd eee fff gggggg  
OPTIONS a b c d e f g  
OLD OPTIONS á ħ ċ đ é f g EOM

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ IW pqr] 5 LN MSG:  
15MIN UAS UATC MER FEBE FES FSES FUAS  
THRESHOLDS hhh ii jjj kkkkkk lll mmm nnn  
OPTIONS h i j k l m n  
OLD OPTIONS ħ î ĵ k l m n COMPL

[O.38223]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ IW pqr] THMODE \  
hhh COMPL

For PB and PC type NPCs:

[O.38221]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ IW pqr] 5 LN MSG:  
 24 HOURS DM SERS ERS US SLIP  
 THRESHOLDS nnnnn ppppp qqqqq rrrrr sssss  
 OPTIONS e f g h i  
 OLD OPTIONS s t u v w EOM

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ IW pqr] 5 LN MSG:  
 SHORT INTERVAL DM SERS ERS US SLIP  
 THRESHOLDS nnnnn ppppp qqqqq rrrrr sssss  
 OPTIONS e f g h i  
 OLD OPTIONS s t u v w COMPL

## Hierarchical

For PA type NPCs:

[O.38222]

```
M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[IW pqr] 5 LN MSG:
DAILY CRC FRER OFS ES SES CSS CV
THRESHOLDS aaaaaaaa bbbbbbbbb ccccc ddddd eeeee fffff gggggggg
OPTIONS a b c d e f g
OLD OPTIONS á ß ć đ é f ğ EOM
```

```
M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[IW pqr] 5 LN MSG:
DAILY UAS UATC MER FEBE FES FSES FUAS
THRESHOLDS hhhhh iiii jjjjj kkkkkkkk lllll mmmm nnnnn
OPTIONS h i j k l m n
OLD OPTIONS ħ ı j k l ĩ ñ EOM
```

```
M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[IW pqr] 5 LN MSG:
15MIN CRC FRER OFS ES SES CSS CV
THRESHOLDS aaaaaa bbbbbbb ccc ddd eee fff gggggg
OPTIONS a b c d e f g
OLD OPTIONS á ß ć đ é f ğ EOM
```

```
M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[IW pqr] 5 LN MSG:
15MIN UAS UATC MER FEBE FES FSES FUAS
THRESHOLDS hhh ii jjj kkkkkk lll mmm nnn
OPTIONS h i j k l m n
OLD OPTIONS ħ ı j k l ĩ ñ COMPL
```

[O.38223]

```
M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[IW pqr] THMODE \
hhh COMPL
```

For PB and PC type NPCs:

[O.38221]

```
M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[IW pqr] 5 LN MSG:
24 HOURS DM SERS ERS US SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr sssss
OPTIONS e f g h i
OLD OPTIONS s t u v w EOM
```

```
M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[IW pqr] 5 LN MSG:
SHORT INTERVAL DM SERS ERS US SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr sssss
OPTIONS e f g h i
OLD OPTIONS s t u v w COMPL
```

## Denial Message

---

## Nonhierarchical

---

[O.38221.01]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ {ss/n|\  
THMODE hhh}] COND cc DNY

## Hierarchical

---

[O.38221.01]

M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[ {ss/n|\  
THMODE hhh}] COND cc DNY

## Autonomous Message

---

Not applicable.

## Explanation Of Parameters

---

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

The valid numbers are:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |



If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The allowable values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**rr** - Facility performance parameter number

Variable rr specifies the parameter whose alarm threshold is being selected.

**<m>** - Facility performance parameter threshold index (0 through X'10')

Variable <m> is used to select threshold values and threshold crossing alarm levels previously programmed for rr. The default threshold value for each parameter is shown below under the column heading "Default Threshold Value". Default threshold values are selected by setting m = 0, 1, 2 or d. Each of these m values corresponds to the default threshold but a different alarm level. The default threshold value and alarm level is given by m = 0. Threshold values selected from Set1 (m=3,4,5,e), Set2 (m=6,7,8,f), and Set3 (m=9,a,b,X'10') must exist, that is, they must have been programmed, prior to being selected.

These other thresholds can be set by using the CHG::SETOP command.

#### For PB and PC type NPCs:

| <b>rr</b> | Parameter                          | Threshold<br>Value<br>Range | Default<br>Threshold<br>Value |
|-----------|------------------------------------|-----------------------------|-------------------------------|
| <b>31</b> | Degraded Minutes, 1 hour           | 1-60                        | 60                            |
| <b>32</b> | Degraded Minutes, 24 hours         | 1-1440                      | 1440                          |
| <b>33</b> | Severely Errored Seconds, 15 mins  | 1-900                       | 900                           |
| <b>34</b> | Severely Errored Seconds, 24 hours | 1-65535                     | 65535                         |
| <b>35</b> | Errored Seconds, 15 minutes        | 1-900                       | 900                           |
| <b>36</b> | Errored Seconds, 24 hours          | 1-65535                     | 65535                         |
| <b>37</b> | Unavailable Seconds, 15 minutes    | 1-900                       | 900                           |
| <b>38</b> | Unavailable Seconds, 24 hours      | 1-65535                     | 65535                         |
| <b>39</b> | Slips, 15 minutes                  | 1-900                       | 900                           |
| <b>40</b> | Slips, 24 hours                    | 1-65535                     | 65535                         |

**Note 1:** 24-hour thresholds must be greater than their respective 15-minute or 1-hour threshold.

**For PA type NPCs:**

**Table 8-8. Parameter Register Threshold Range and Default Values**

| rr | Parameter                        | Interval | Threshold Value Range | Default Threshold Value |
|----|----------------------------------|----------|-----------------------|-------------------------|
| 11 | CRC Block Errors                 | DAILY    | 1 - 79056000          | 176947                  |
| 12 | Framing Errors                   | DAILY    | 1 - 345600000         | 176947                  |
| 13 | Out of Frame Seconds             | DAILY    | 1 - 86400             | 4                       |
| 14 | Errored Seconds                  | DAILY    | 1 - 86400             | 4320                    |
| 15 | Severely Errored Seconds         | DAILY    | 1 - 86400             | 90                      |
| 16 | Controlled Slip Seconds          | DAILY    | 1 - 86400             | 4                       |
| 17 | Coding Violations                | DAILY    | 1 - 176947200         | 176947                  |
| 18 | Unavailable Seconds              | DAILY    | 1 - 86400             | 90                      |
| 19 | Unavailable Time Count           | DAILY    | 1 - 4320              | 9                       |
| 20 | Multiframe Errors                | DAILY    | 1 - 86400             | 4095                    |
| 21 | Far End Block Errors             | DAILY    | 1 - 79056000          | 176947                  |
| 22 | Far End Errored Seconds          | DAILY    | 1 - 86400             | 4320                    |
| 23 | Far End Severely Errored Seconds | DAILY    | 1 - 86400             | 90                      |
| 24 | Far End Unavailable Seconds      | DAILY    | 1 - 86400             | 90                      |
| 81 | CRC Block Errors                 | 15MIN    | 1 - 823500            | 18432                   |
| 82 | Framing Errors                   | 15MIN    | 1 - 3600000           | 18432                   |
| 83 | Out of Frame Seconds             | 15MIN    | 1 - 900               | 4                       |
| 84 | Errored Seconds                  | 15MIN    | 1 - 900               | 300                     |
| 85 | Severely Errored Seconds         | 15MIN    | 1 - 900               | 30                      |
| 86 | Controlled Slip Seconds          | 15MIN    | 1 - 900               | 1                       |
| 87 | Coding Violations                | 15MIN    | 1 - 1843200           | 18432                   |
| 88 | Unavailable Seconds              | 15MIN    | 1 - 900               | 30                      |
| 89 | Unavailable Time Count           | 15MIN    | 1 - 45                | 3                       |
| 90 | Multiframe Errors                | 15MIN    | 1 - 900               | 255                     |
| 91 | Far End Block Errors             | 15MIN    | 1 - 823500            | 18432                   |
| 92 | Far End Errored Seconds          | 15MIN    | 1 - 900               | 300                     |
| 93 | Far End Severely Errored Seconds | 15MIN    | 1 - 900               | 30                      |
| 94 | Far End Unavailable Seconds      | 15MIN    | 1 - 900               | 30                      |

**For PA, PB, and PC type NPCs:**

In the following table these definitions apply:

|              |                                          |
|--------------|------------------------------------------|
| MI           | Maintenance Information                  |
| DMA          | Deferred Maintenance Action Minor Alarm  |
| PMA Major    | Prompt Maintenance Action Major Alarm    |
| PMA Critical | Prompt Maintenance Action Critical Alarm |

| <m> | Threshold Value    | Alarm Type                             |
|-----|--------------------|----------------------------------------|
| 0   | Default            | MI (Maintenance Information)           |
| 1   | Default            | DMA (Deferred Maintenance Minor Alarm) |
| 2   | Default            | PMA (Prompt Maintenance Major Alarm)   |
| 3   | Set 1              | MI                                     |
| 4   | Set 1              | DMA                                    |
| 5   | Set 1              | PMA Major                              |
| 6   | Set 2              | MI                                     |
| 7   | Set 2              | DMA                                    |
| 8   | Set 2              | PMA Major                              |
| 9   | Set 3              | MI                                     |
| a   | Set 3              | DMA                                    |
| b   | Set 3              | PMA Major                              |
| c   | Threshold disabled | no alarm                               |
| d   | Default            | PMA Critical                           |
| e   | Set 1              | PMA Critical                           |
| f   | Set 2              | PMA Critical                           |
| 10  | Set 3              | PMA Critical                           |

**Note 1:** m = 0 is the default.

**Note 2:** Threshold values for Set 1, Set 2, and Set 3 must be set (programmed) by using the command mentioned in the explanation of m above before variable **m** can be used to select threshold levels and alarm types other than the defaults.

**TYPE** - Type

**mnxyz** - NPC type

PAxyz - CEPT NPC (120-ohm twisted pair or 75-ohm coaxial)  
PBxyz - CEPT NPC (120-ohm twisted pair)  
PCxyz - CEPT NPC (75-ohm coaxial)

**PA-Type xyz fields**

The provisioning values of  $x$ ,  $y$ , and  $z$  for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding ( $x$ ,  $y$  or  $z$ ) provisioning value):

**Table 8-9. Provisioning values for  $x$**

| $x$<br>value | CRC-4<br>Mode | Automatic<br>CRC-4 | Far-End<br>PM | NPC used as<br>Sync Source | TS0 Bit 5<br>used for SFI |
|--------------|---------------|--------------------|---------------|----------------------------|---------------------------|
| 0            | Y             |                    |               |                            |                           |
| 1            | Y             |                    | Y             |                            | Y                         |
| 2            | Y             |                    |               |                            | Y                         |
| 3            | Y             |                    | Y             |                            |                           |
| 4            | Y             |                    |               | Y                          |                           |
| 5            | Y             |                    | Y             | Y                          | Y                         |
| 6            | Y             |                    |               | Y                          | Y                         |
| 7            | Y             |                    | Y             | Y                          |                           |
| 8            |               | Y                  | Y             |                            |                           |
| 9            |               | Y                  | Y             |                            | Y                         |
| A            |               |                    |               |                            | Y                         |
| B            |               |                    |               |                            |                           |
| C            |               | Y                  | Y             | Y                          |                           |
| D            |               | Y                  | Y             | Y                          | Y                         |
| E            |               |                    |               | Y                          | Y                         |
| F            |               |                    |               | Y                          |                           |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

\* Automatic CRC-4 is also known as CRC-4 Interworking.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.
4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 8-10. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the *abcd* bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the *abcd* bits will be transmitted transparently.

If the "AIS in TS16" option is selected ( $y$  value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected ( $y$  values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For  $y$  values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering ( $y=8$ ) or Timeslot Channel Numbering ( $y=9$ ) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface ( $y=C$ ) or as an unframed clear 2Mbit/s interface ( $y=D$ ). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 8-11. Provisioning values for  $z$**

| $z$<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|--------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|              | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0            | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1            |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2            | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3            |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4            | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5            |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6            | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7            |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8            | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9            |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A            | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B            |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C            | Y           |    |              |       |       |               |      |               |       |         |         |
| D            | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. **z** value **F** and **E** are unassigned (i.e. not valid).
2. **z** value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )
3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B**. **However**, for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.



7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for  $z = 4$  and 8) or 480 ms (for  $z = 5$  and 9) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.
8.  $z$  values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options ( $z = 6-7$  or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms

- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

$z=6$  or A hardware timing

$z=7$  or B firmware timing (SFDT=2496 ms, CACT=624 ms)

- [iv] BER alarm level = DMA

**Specific Options for  $z=6$  or 7**

- [v] RBER alarm level = MI

- [vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for  $z= A$  or B**

- [vii] RBER unalarmed
- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

9. To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of *xyz* for the PA type NPC.

**Table 8-12. Combinations of *x* and *y* Values**

| Invalid<br><i>xyz</i><br>Combinations | Explanation                                                                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                                   | Framed clear 2Mbit/s ( <i>y</i> value C) is valid for all <i>x</i> options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                                   |                                                                                                                                                                                                                                              |
| CCz                                   |                                                                                                                                                                                                                                              |
| DCz                                   |                                                                                                                                                                                                                                              |
| 0Dz                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) is only valid for <i>x</i> values B and F. These are the only <i>x</i> options which do not require decoding of TS0 content.                                                                      |
| 1Dz                                   |                                                                                                                                                                                                                                              |
| 2Dz                                   |                                                                                                                                                                                                                                              |
| 3Dz                                   |                                                                                                                                                                                                                                              |
| 4Dz                                   |                                                                                                                                                                                                                                              |
| 5Dz                                   |                                                                                                                                                                                                                                              |
| 6Dz                                   |                                                                                                                                                                                                                                              |
| 7Dz                                   |                                                                                                                                                                                                                                              |
| 8Dz                                   |                                                                                                                                                                                                                                              |
| 9Dz                                   |                                                                                                                                                                                                                                              |
| ADz                                   |                                                                                                                                                                                                                                              |
| CDz                                   |                                                                                                                                                                                                                                              |
| DDz                                   |                                                                                                                                                                                                                                              |
| EDz                                   |                                                                                                                                                                                                                                              |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled *z* values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables (*x* values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 8-13. Combinations of y and z Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s (y value C or D) cannot be used with Firmware controlled Consequent Action (z values 1, 3, 5, 7, 9 or B), TRANSMIC 1G (z value C) or TRANSMIC 2G (z value 8).                      |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s (y value D) cannot be used with z value 4 (NFW Bit 4 used for RAIS) or with z value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling (y values 0, 2, 4 and 6) is not valid for TRANSMIC 1G (z value C).                                                                                                  |

**Table Notes:**

1. If framed clear 2Mbit/s (y value C) is selected with z value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (y value C) is selected with z= value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 8-14. Combinations of *x* and *z* Values**

| Invalid<br>xyz<br>Combinations                       | Explanation                                                                                                                                                                                                                                                       |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC<br>5yC<br>6yC<br>7yC<br>CyC<br>DyC<br>EyC<br>FyC | Use of NPC as Sync Source ( <i>x</i> 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( <i>z</i> value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |

**PB- and PC-type xyz field**

**PB- and PC-type xyz fields**

**Table 8-15. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                         |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                           |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                   |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                    |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8,in time 144ms (TRANSMIC 1G)                                                                                               |
|              |            | 111          | Unassigned                                                                                                                             |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                          |
|              |            | 1            |                                                                                                                                        |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496 ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway* **cross-connection** the insertion word always defaults to AIS.

mnxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option c=0 is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the **jkl** options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when** *jkl=011* or *jkl=101*. **For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option *g* has meaning only if the NPC is provisioned for CAS; that is, option *d=1*, otherwise it is ignored. If option *g=0* is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option *g=1* is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and *h=1*, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option *h* was selected as either 0 or 1, unless it is later set to 0 by setting parameter *e=0* in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of *xyz* the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option *h=1*.

If both *b=1* and *h=1* and the NPC (used as synchronization source) receives

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure.** If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

**[jkl'] minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

**c=0** hardware timing

**c=1** firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

- [vii] RBER unalarmed
- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

- [m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.



**IW** - Insertion word

**pqr** - Insertion word value (hexadecimal)

**pq** - Disconnect code (DCC) or idle code

**r** - Signaling option

The value entered for pq is used as the disconnect code (DCC) or idle code. This value is inserted in the transmit direction on unassigned channels. An insertion word is not allowed for clear-2Mbit NPCs; the all ones signal is transmitted for an idle clear-2Mbit NPC. Thus, information about the disconnect code will not appear for any message involving a clear-2Mbit type NPC.

Variable r is used for circuits provisioned for channel associated signaling (CAS). A value may be entered for r for nonsignaling associated (NSA) NPCs but it has no significance.

*pq Explanation*

D5 Default idle code

*r Explanation*

D Default signaling

This sets signaling bits abcd to the binary value 1101

**For PB and PC type NPCs:**

**DM** - Degraded Minutes

**SERS** - Severely Errored Seconds

**ERS** - Errored Seconds

**US** - Unavailable Seconds

**SLIP** - Slip Events

For SHORT INTERVAL, DM is calculated hourly and SERS, ERS, US and SLIP are calculated at 15-minute intervals.

**nnnnn** - 24-hour Degraded Minutes (DM) threshold

**ppppp** - 24-hour Severely Errored Seconds (SERS) threshold

**qqqqq** - 24-hour Errored Seconds (ERS) threshold

**rrrrr** - 24-hour Unavailable Seconds (US) threshold

**sssss** - 24-hour Slip Events (SLIP) threshold

**e** - 24-hour DM threshold/alarm selection  
**f** - 24-hour SERS threshold/alarm selection  
**g** - 24-hour ERS threshold/alarm selection  
**h** - 24-hour US threshold/alarm selection  
**i** - 24-hour SLIP threshold/alarm selection

**s** - Old 24-hour DM threshold/alarm selection  
**t** - Old 24-hour SERS threshold/alarm selection  
**u** - Old 24-hour ERS threshold/alarm selection  
**v** - Old 24-hour US threshold/alarm selection  
**w** - Old 24-hour SLIP threshold/alarm selection

**nnnnn** - 1-hour DM threshold  
**ppppp** - 15-minute SERS threshold  
**qqqqq** - 15-minute ERS threshold  
**rrrrr** - 15-minute US threshold  
**sssss** - 15-minute SLIP threshold

**e** - 1-hour DM threshold/alarm selection  
**f** - 15-minute SERS threshold/alarm selection  
**g** - 15-minute ES threshold/alarm selection  
**h** - 15-minute US threshold/alarm selection  
**i** - 15-minute SLIP threshold/alarm selection

**s** - 1-hour DM threshold/alarm selection  
**t** - 15-minute SERS threshold/alarm selection  
**u** - 15-minute ES threshold/alarm selection  
**v** - 15-minute US threshold/alarm selection  
**w** - 15-minute SLIP threshold/alarm selection

**For PA type NPCs:**

**CRC** - CRC Block Errors  
**FRER** - Framing Errors  
**OFS** - Out of Frame Seconds  
**ES** - Errored Seconds  
**SES** - Severely Errored Seconds  
**CSS** - Controlled Slip Seconds  
**CV** - Coding Violations  
**UAS** - Unavailable Seconds  
**UATC** - Unavailable Time Count  
**MER** - Multiframe Errors  
**FEBE** - Far End Block Errors  
**FES** - Far End Errored Seconds  
**FSES** - Far End Severely Errored Seconds  
**FUAS** - Far End Unavailable Seconds

**aaaaaaaa**

- Daily CRC block error threshold value.

**bbbbbbbb**

- Daily framing error threshold value.

**cccc**

- Daily out of frame seconds threshold value.

**dddd**

- Daily errored second threshold value.

**eeee**

- Daily severely errored second threshold value.

**ffff**

- Daily controlled slip second threshold value.

**gggggggg**

- Daily coding violation threshold value.

**hhhh**

- Daily unavailable second threshold value.

**iiii**

- Daily unavailable time count threshold value.

**jjjj**

- Daily multiframe alignment error threshold value.

**kkkkkkkk**

- Daily far-end block error threshold value.

**llll**

- Daily far-end errored second threshold value.

**mmmm**

- Daily far-end severely errored second threshold value.

**nnnn**

- Daily far-end unavailable second threshold value.

**a**

- Daily CRC block error threshold selection,

**b**

- Daily framing error threshold selection,

**c**

- Daily out of frame seconds threshold selection,

**d**

- Daily errored second threshold selection,

**e**

- Daily severely errored second threshold selection,

**f**

- Daily controlled slip second threshold selection,

**g**

- Daily coding violation threshold selection,

**h**

- Daily unavailable second threshold selection,

**i**

- Daily unavailable time count threshold selection,

**j**

- Daily multiframe alignment error threshold selection,

**k**

- Daily far-end path block error selection,

**l**

- Daily far-end path second threshold selection,

**m**

- Daily far-end severely errored second threshold selection,

**n**

- Daily far-end unavailable second threshold selection,

- a** - Old Daily CRC block error threshold selection,
- b** - Old Daily framing error threshold selection,
- c** - Old Daily out of frame seconds threshold selection,
- d** - Old Daily errored second threshold selection,
- e** - Old Daily severely errored second threshold selection,
- f** - Old Daily controlled slip second threshold selection,
- g** - Old Daily coding violation threshold selection,
- h** - Old Daily unavailable second threshold selection,
- i** - Old Daily unavailable time count threshold selection,
- j** - Old Daily multiframe alignment error threshold selection,
- k** - Old Daily far-end path block error selection,
- l** - Old Daily far-end path second threshold selection,
- m** - Old Daily far-end severely errored second threshold selection,
- n** - Old Daily far-end unavailable second threshold selection,

The options can be a value from "0" to "c" as specified for the "m" of the "rr/m" field.

**aaaaaa** - 15-minute CRC block error threshold value.

**bbbbbb**

- 15-minute framing error threshold value.

c c c

- 15-minute out of frame seconds threshold value.

d d d

- 15-minute errored second threshold value.

e e e

- 15-minute severely errored second threshold value.

f f f

- 15-minute controlled slip second threshold value.

**ggggggg**

- 15-minute coding violation threshold value.

h h h

- 15-minute unavailable second threshold value.

i i

- 15-minute unavailable time count threshold value.

j j j

- 15-minute multiframe alignment error threshold value.

**kkkkkk**

- 15-minute far-end block error threshold value.

l l l

- 15-minute far-end errored second threshold value.

m m m

- 15-minute far-end severely errored second threshold value.

n n n

- 15-minute far-end unavailable second threshold value.

- |          |                                                                      |
|----------|----------------------------------------------------------------------|
| <b>a</b> | - 15-minute CRC block error threshold selection,                     |
| <b>b</b> | - 15-minute framing error threshold selection,                       |
| <b>c</b> | - 15-minute out of frame seconds threshold selection,                |
| <b>d</b> | - 15-minute errored second threshold selection,                      |
| <b>e</b> | - 15-minute severely errored second threshold selection,             |
| <b>f</b> | - 15-minute controlled slip second threshold selection,              |
| <b>g</b> | - 15-minute coding violation threshold selection,                    |
| <b>h</b> | - 15-minute unavailable second threshold selection,                  |
| <b>i</b> | - 15-minute unavailable time count threshold selection,              |
| <b>j</b> | - 15-minute multiframe alignment error threshold selection,          |
| <b>k</b> | - 15-minute far-end path block error selection,                      |
| <b>l</b> | - 15-minute far-end path second threshold selection,                 |
| <b>m</b> | - 15-minute far-end severely errored second threshold selection,     |
| <b>n</b> | - 15-minute far-end unavailable second threshold selection,          |
|          |                                                                      |
| <b>a</b> | - Old 15-minute CRC block error threshold selection,                 |
| <b>b</b> | - Old 15-minute framing error threshold selection,                   |
| <b>c</b> | - Old 15-minute out of frame seconds threshold selection,            |
| <b>d</b> | - Old 15-minute errored second threshold selection,                  |
| <b>e</b> | - Old 15-minute severely errored second threshold selection,         |
| <b>f</b> | - Old 15-minute controlled slip second threshold selection,          |
| <b>g</b> | - Old 15-minute coding violation threshold selection,                |
| <b>h</b> | - Old 15-minute unavailable second threshold selection,              |
| <b>i</b> | - Old 15-minute unavailable time count threshold selection,          |
| <b>j</b> | - Old 15-minute multiframe alignment error threshold selection,      |
| <b>k</b> | - Old 15-minute far-end path block error selection,                  |
| <b>l</b> | - Old 15-minute far-end path second threshold selection,             |
| <b>m</b> | - Old 15-minute far-end severely errored second threshold selection, |
| <b>n</b> | - Old 15-minute far-end unavailable second threshold selection,      |

The options can be a value from "0" to "c" as specified for the "m" of the "rr/m" field.

#### For PA type NPCs:

Depending on which interface functions are enabled by the provisioning values of xyz, some parameters may not be applicable. In this case the threshold value, the parameter count (if present in the message) and the selection value will appear as dashes ("-"). In the table below "N/A" indicates that a parameter is not applicable for the given value of x or y.

Also, if the selection value m=c has been chosen for a parameter, the threshold value and the parameter count (if present in the message) will appear as dashes.

| For PA Type NPCs |                                    |                                            |                             |                                 |
|------------------|------------------------------------|--------------------------------------------|-----------------------------|---------------------------------|
| Parameter        | CRC-4 Mode Disabled<br>(x=A,B,E,F) | Far-End PM Disabled<br>(x=0,2,4,6,A,B,E,F) | CAS Disabled<br>(y=8,9,C,D) | Unframed Clear 2Mbit/s<br>(y=D) |
| CRC              | N/A                                |                                            |                             | N/A                             |
| FRER             |                                    |                                            |                             | N/A                             |
| OFS              |                                    |                                            |                             | N/A                             |
| ES               |                                    |                                            |                             | N/A                             |
| SES              |                                    |                                            |                             | N/A                             |
| CSS              |                                    |                                            |                             |                                 |
| CV               |                                    |                                            |                             |                                 |
| UAS              |                                    |                                            |                             | N/A                             |
| UATC             |                                    |                                            |                             | N/A                             |
| MER              |                                    |                                            | N/A                         | N/A                             |
| FEBE             |                                    | N/A                                        |                             | N/A                             |
| FES              |                                    | N/A                                        |                             | N/A                             |
| FSES             |                                    | N/A                                        |                             | N/A                             |
| FUAS             |                                    | N/A                                        |                             | N/A                             |

**For PA type NPCs only:****THMODE** - Thresholding mode**hhh** - Thresholding mode option

| <i>hhh</i> | <i>Explanation</i>   |
|------------|----------------------|
| INH        | Inhibit thresholding |
| ALW        | Allow thresholding   |

The INH option is used to temporarily inhibit thresholding for all parameters of a PA NPC. The ALW option is used to turn-off the INH option. The default thresholding mode is ALW.

When the INH mode is entered, all thresholds for the NPC are suspended; therefore, no threshold crossing messages will be output after the inhibition. However, the previously programmed threshold values are still stored in the database and will continue to be output for each parameter. Threshold value option changes are permitted while the NPC thresholding is inhibited.

When the ALW mode is entered, the previously programmed threshold values will be re-applied unless they were changed while in the INH mode.

**ss/n** - First improper values of "rr/m" for which message is denied.

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 02** Subject entity is not equipped
- 10** Unit is not equipped
- 11** UC is out of service
- 12** UC is in service but failed
- 13** FTMI is not equipped
- 20** Option rr/m has not been set up on 2nd database
- 21** Minor  $\geq$  major for SLIP opt
- 22** Minor  $\leq$  major for BER opt
- 23** Minor  $\geq$  major for COFA opt
- 26** NPC type error
- 29** IW is UMUX (18) but NPC not type DE4yz
- 2A** DMI combined with T1DM
- 2B** Maj|Min BER threshold is 7, but not in T1DM or Fe mode
- 4F** BER must not be less than 4 for Clear DS1
- 83** Option not programmable for this NPC type
- B5** NPC is a test port
- 93** PA NPC threshold already in inhibit mode
- 94** PA NPC threshold already in allow mode

## **CHG,NPC,TS0**

### **CHANGE NPC TIME SLOT ZERO**

#### **Explanation Of Command**

This message allows the changing of the spare national and international bits in TS0.

TS0-abcdefgh is the international and national bit in timeslot 0. Each variable may be set to one of the following: 0, 1, p or -. p indicates that the incoming bit will be passed through unchanged if cross-connected. A 0 and 1 set for any of the bits (except c) will override the cross-connected bits. This also applies to NPCs assigned as test NPCs. A hyphen (-) means that the bit is not affected by this command.

When a range NPC is denied for successive NPCs in the range for the same reason, a summary denial message shall be output, giving the range of NPCs denied and the reason. The execution of the normal completions, or of denials for a reason other than diagnostic failures, then resumes at the next NPC, up to the end of the range.

#### **Command**

##### **Nonhierarchical**

[I.38321]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TS0 abcdefgh!**

##### **Hierarchical**

[I.38321]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],TS0 abcdefgh!**



### **Completion Message**

---

#### **Nonhierarchical**

---

[O.38321]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]jkl OLD abcdefgh \  
NEW abcdefgh TS0 COMPL

#### **Hierarchical**

---

[O.38321]

M hh:mm:ss xy,ww n[vv] CHG NPC uvjkl OLD abcdefgh \  
NEW abcdefgh TS0 COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.38321.01]

M hh:mm:ss [<xy>],ww n[vv]G NPC [s]jkl[-[t]mno] ab\  
cdefgh TS0 COND cc DNY

#### **Hierarchical**

---

[O.38321.01]

M hh:mm:ss xy,ww n[vv]G NPC uvjkl[-uvmno] abc\  
defgh TS0 COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

### [s]abc, [t]def

- The 3- or 4-digit nonhierarchical NPC number, must be in the same unit

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
|                  |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uvkqr** - Hierarchical NPC number

**uv** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The allowable values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**TS0** - Time slot zero (0)

**abcdefgh**

- Spare bits in TS0

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

|             |                                  |
|-------------|----------------------------------|
| Variable    | Action on corresponding TS0 bit: |
| Input Value |                                  |

|            |                                                                  |
|------------|------------------------------------------------------------------|
| "0" or "1" | Set TS0 bit to this value                                        |
| "P"        | Received bit is passed through (cross-connected) unchanged.      |
| "-"        | Neither the variable nor the TS0 bit is changed by this command. |

**[s]jkl** - The 3- or 4-digit nonhierarchical NPC number within the range of [s]abc and [t]def.

**[t]mno** - The 3- or 4-digit nonhierarchical NPC number within the range of [s]abc and [t]def.

**uvjkl** - Hierarchical NPC number (uvmnp through wxkqr)

**uvmno** - Hierarchical NPC number (uvmnp through wxkqr)

# **abcdefgh**

- Variables to corresponding TS0 bits.

The output parameters take on values dependent on the message language (PDS or MML) and position (OLD or NEW) as shown in the following table:

| Input         | Output<br>Primary<br>Line<br>(MML) | OLD      | NEW      |
|---------------|------------------------------------|----------|----------|
| "0"           | "0"                                | previous | "0"      |
| "1"           | "1"                                | previous | "1"      |
| "P"           | "P"                                | previous | "P"      |
| "V" (PA only) | "V"                                | previous | "V"      |
| "_"           | "_"                                | previous | previous |

previous value may be one of "0", "1", "P", or "V" (for PA NPCs)

For example:

|          |          |          |          |
|----------|----------|----------|----------|
| 11----00 | 11----00 | 0011PPPP | 1111PP00 |
|----------|----------|----------|----------|

## **cc** - Hexadecimal condition code

### **cc**    *Explanation*

- 02**    Subject entity is not equipped
- 10**    Unit is not equipped
- 11**    UC is out of service
- 12**    UC is in service but failed
- 13**    FTMI is not equipped
- 14**    FTMI is out of service
- 24**    Unit type error
- 26**    NPC type error
- 2B**    Bit c not settable
- 38**    Bit 6 provisioned for use as RPSFI
- 3C**    Bits 3 through 8 are provisioned for Transmic 1G
- 3D**    Alarm bits cannot be passed through or inverted
- 46**    NPC Failed or Out of Service
- B0**    Combination of bit g (b7) and h (b8) is invalid
- F1**    Parameter only valid with PA, PB, or PC type NPCs
- F2**    Invalid NPC number specified
- FF**    Termination is in process of being rolled
- 8E**    For RPSFI, TS0 bit 6 must be provisioned as 1
- 2C**    not allowed for clear 2MB
- 2E**    bit value not allowed for NPC type

## **CHG,NPC,TS0M**

### **CHANGE TIME SLOT ZERO MONITOR**

#### **Explanation Of Command**

This command is used to change the Network Processing Circuit provisioning either to monitor or to stop monitoring the National and International bits in CTS 0 without removing the NPC from service. The provisioning may be specified for one NPC or for a range of NPCs. Note that the NPC numbers which are divisible by four with remainder zero, are not a valid Hybrid DS3 Unit THxyz type NPCs. However, the range of THxyz type NPC numbers is still supported with the understanding that there may be gaps in the NPC number range.

#### **Command**

##### **Nonhierarchical**

[I.38323]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TS0M abcdefgh!**

##### **Hierarchical**

[I.38323]

**CHG:FRM xy,SEQ ww:NPC uvmnp[-wxkqr],TS0M abcdefgh!**

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.38323]

M hh:mm:ss xy, ww n[vv] CHG NPC [s]abc OLDM abcdefgh\  
NEWM abcdefgh TS0MBOFL v COMPL

#### **Hierarchical**

---

[O.38323]

M hh:mm:ss xy, ww n[vv] CHG NPC uvmnp OLDM abcdefgh\  
NEWM abcdefgh TS0MBOFL v COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.38323.01]

M hh:mm:ss xy, ww n[vv] CHG NPC [v]ghi[-[u]jkl]\  
TS0M abcdefgh COND cc DNY

#### **Hierarchical**

---

[O.38323.01]

M hh:mm:ss xy, ww n[vv] CHG NPC edhfg[-opjst]\  
TS0M abcdefgh COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**[s]abc** - The 3- or 4-digit beginning NPC number  
The values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |



| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1952  | 2081-2112  | 2241-2272  | 2401-2432  |
| 1961-1992  | 2121-2152  | 2281-2312  | 2441-2472  |
| 2001-2032  | 2161-2192  | 2321-2352  | 2481-2512  |
| 2041-2072  | 2201-2232  | 2361-2392  | 2521-2552  |

**[t]def** - The 3- or 4-digit ending NPC number  
The valid values are identical to those for [s]abc

**uvmnp** - Beginning NPC number

**wxkqr** - Ending NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

#### **abcdefgh**

- Time slot 0 monitor bits

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW  
if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

Valid values for bits **a** through **h** are described below:

| <i>Bit<br/>value</i> | <i>Explanation</i>                                                           |
|----------------------|------------------------------------------------------------------------------|
| <b>0</b>             | Do not monitor and therefore do not send a message if this bit changes state |
| <b>1</b>             | Monitor and therefore send a message if this bit changes state               |
| -                    | Leave the setting of the monitor mask for that bit unchanged                 |

**[v]ghi** - The 3- or 4-digit nonhierarchical NPC number ([s]abc through [u]jkl)

**[u]jkl** - The 3- or 4-digit nonhierarchical NPC number ([s]ghi through [t]def)

**edhfg** - Hierarchical NPC number (uvmnp through opjst)

**opjst** - Hierarchical NPC number (edhfg through wxkqr)

**OLDM** - Old value of TS0M bits

**NEWM** - New value of TS0M bits

**TS0MBOFL**  
- TS0M buffer overflow keyword

**v** - TS0M buffer overflow condition indicator

|   |                                              |
|---|----------------------------------------------|
| 0 | NPC is not in TS0M buffer overflow condition |
| 1 | NPC is in TS0M buffer overflow condition     |

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>                 |
|-----------|------------------------------------|
| <b>10</b> | Unit is not equipped               |
| <b>11</b> | UC is out of service               |
| <b>12</b> | UC is in service but failed        |
| <b>13</b> | FTMI is not equipped               |
| <b>14</b> | FTMI is out of service             |
| <b>15</b> | NPC is unequipped                  |
| <b>24</b> | Unit type error                    |
| <b>32</b> | Bit 3 provisioned for use as RA13  |
| <b>33</b> | Bit 4 provisioned for use as RA1S  |
| <b>38</b> | Bit 6 provisioned for use as RPSFI |
| <b>3A</b> | Bit 4 provisioned for use as RBER  |
| <b>3B</b> | Bit 5 provisioned for use as SFI   |

**cc**    *Explanation*

- 3C**    Bits 3 through 8 are provisioned for Transmic 1G
- EF**    Software does not contain Enhanced CEPT feature
- F1**    Parameter only valid with PA, PB, or PC type NPCs
- F2**    Invalid NPC number specified
- FF**    Termination is in process of being rolled

## **CHG,NPC,TYPE,IW,X**

### **CHANGE NPC TYPE**

#### **Explanation Of Command**

This command is used to change the type and, optionally, the insertion word of a specified network processing Circuit (NPC) equipped in a facility terminating unit (IFTU2/IFTU/FTU). The insertion word field is used to change the NPC's disconnect code (DCC). These changes may be made without disconnecting and reconnecting the provisioned circuits, but the NPC must be out of service when this command is executed.

For PA, PB, and PC type NPCs the y value of the type field may not be changed, because a change in the y value may change the channel numbering for cross-connections that are already provisioned.

The NPC must be out of service to change the facility provisioning. It can be taken out of service using the **RMV** command. Changes to the parameters will take effect when the NPC is restored (**RST**) to service. When the NPC facility provisioning is changed, all programmable alarm thresholds revert to their default values. These default thresholds are defined in the **GRTH: :NPC, TYPE** message. If values other than the defaults are desired, a separate **CHG: :NPC, OPTS** command must be given for each value.

#### **Command**

#### **Nonhierarchical**

[I.38211]

**CHG:FRM xy,SEQ ww:NPC [s]abc,TYPE mnxyz[,IW X'pq[r]]!**

### **Hierarchical**

---

[I.38211]

CHG:FRM xy,SEQ ww:NPC uvmnp,TYPE mnxyz[,IW X'pq[r]]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.38211]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz\  
[ IW pq[r]] 2 LN MSG:  
OLD TYPE ttuvw[ OLD IW rs[t]] COMPL

#### **Hierarchical**

---

[O.38211]

M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz\  
[ IW pq[r]] 2 LN MSG:  
OLD TYPE ttuvw[ OLD IW rs[t]] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.38211.01]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ IW pq[r]] \  
COND cc DNY

#### **Hierarchical**

---

[O.38211.01]

M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[ IW pq[r]] \  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

The allowable values are presented below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number in unit uv  
**np** - NPC number in module m

The allowable values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**OLD** - Old

**TYPE** - Type

**mnxyz** - NPC type

*mnxyz* Type

PAxyz CEPT NPC (120-ohm twisted pair or 75-ohm coaxial)  
PBxyz CEPT NPC (120-ohm twisted pair)  
PCxyz CEPT NPC (75-ohm coaxial)

**ttuvw** - Previous value of mnxyz

**PA-Type xyz fields**

The provisioning values of x, y, and z for the PA type are shown in the following tables (a 'Y'

in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (x, y or z) provisioning value):

**Table 8-16. Provisioning values for x**

| x value | CRC-4 Mode | Automatic CRC-4 | Far-End PM | NPC used as Sync Source | TS0 Bit 5 used for SFI |
|---------|------------|-----------------|------------|-------------------------|------------------------|
| 0       | Y          |                 |            |                         |                        |
| 1       | Y          |                 | Y          |                         | Y                      |
| 2       | Y          |                 |            |                         | Y                      |
| 3       | Y          |                 | Y          |                         |                        |
| 4       | Y          |                 |            | Y                       |                        |
| 5       | Y          |                 | Y          | Y                       | Y                      |
| 6       | Y          |                 |            | Y                       | Y                      |
| 7       | Y          |                 | Y          | Y                       |                        |
| 8       |            | Y               | Y          |                         |                        |
| 9       |            | Y               | Y          |                         | Y                      |
| A       |            |                 |            |                         | Y                      |
| B       |            |                 |            |                         |                        |
| C       |            | Y               | Y          | Y                       |                        |
| D       |            | Y               | Y          | Y                       | Y                      |
| E       |            |                 |            | Y                       | Y                      |
| F       |            |                 |            | Y                       |                        |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled (x values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected (x values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

\* Automatic CRC-4 is also known as CRC-4 Interworking.



3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.
4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 8-17. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the *abcd* bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the *abcd* bits will be transmitted transparently.

If the "AIS in TS16" option is selected ( $y$  value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected ( $y$  values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For  $y$  values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering ( $y=8$ ) or Timeslot Channel Numbering ( $y=9$ ) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface ( $y=C$ ) or as an unframed clear 2Mbit/s interface ( $y=D$ ). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 8-18. Provisioning values for  $z$**

| $z$<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|--------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|              | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0            | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1            |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2            | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3            |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4            | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5            |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6            | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7            |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8            | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9            |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A            | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B            |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C            | Y           |    |              |       |       |               |      |               |       |         |         |
| D            | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. **z** value **F** and **E** are unassigned (i.e. not valid).
2. **z** value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )
3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B**. **However**, for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for  $z = 4$  and 8) or 480 ms (for  $z = 5$  and 9) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.
8.  $z$  values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options ( $z = 6-7$  or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms

- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

$z=6$  or A hardware timing

$z=7$  or B firmware timing (SFDT=2496 ms, CACT=624 ms)

- [iv] BER alarm level = DMA

**Specific Options for  $z=6$  or 7**

- [v] RBER alarm level = MI

- [vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

- [vii] RBER unalarmed
- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

- [ix] To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of  $xyz$  for the PA type NPC.

**Table 8-19. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations                                                               | Explanation                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz<br>9Cz<br>CCz<br>DCz                                                                       | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking. The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 0Dz<br>1Dz<br>2Dz<br>3Dz<br>4Dz<br>5Dz<br>6Dz<br>7Dz<br>8Dz<br>9Dz<br>ADz<br>CDz<br>DDz<br>EDz | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.

2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables (x values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 8-20. Combinations of y and z Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s (y value C or D) cannot be used with Firmware controlled Consequent Action (z values 1, 3, 5, 7, 9 or B), TRANSMIC 1G (z value C) or TRANSMIC 2G (z value 8).                      |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s (y value D) cannot be used with z value 4 (NFW Bit 4 used for RAIS) or with z value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling (y values 0, 2, 4 and 6) is not valid for TRANSMIC 1G (z value C).                                                                                                  |

**Table Notes:**

1. If framed clear 2Mbit/s (y value C) is selected with z value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (y value C) is selected with z= value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 8-21. Combinations of  $x$  and  $z$  Values**

| Invalid<br>xyz<br>Combinations                       | Explanation                                                                                                                                                                                                                                             |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC<br>5yC<br>6yC<br>7yC<br>CyC<br>DyC<br>EyC<br>FyC | Use of NPC as Sync Source ( $x$ 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( $z$ value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |

**PB- and PC-type xyz fields**

**Table 8-22. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                            |
|--------------|------------|--------------|---------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                     |
|              |            | 1            | Non-CRC framing in TS0                                                    |
|              | b          | 0            | NPC is not used as a synchronization source                               |
|              |            | 1            | NPC is used as a synchronization source                                   |
|              | c          | 0            | CCITT G.732 (hardware controlled)<br>Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>              |
|              | d          | 0            | Non-signaling associated (NSA)                                            |
|              |            | 1            | 16-state channel associated signaling (CAS)                               |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                         |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                           |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                   |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                    |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8,in time 144ms (TRANSMIC 1G)                                                                                               |
|              |            | 111          | Unassigned                                                                                                                             |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                          |
|              |            | 1            |                                                                                                                                        |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:



in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496 ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl'].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway cross-connection* the insertion word always defaults to AIS.

mxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When  $c=0$ , the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When  $c=1$  if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option  $c=0$  is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the **jkl** options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared.\*

$c=0$      **Both** remote and local alarms are declared and cleared in 144 ms.

$c=1$      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when**  $jkl=011$  or  $jkl=101$ . **For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option  $c=0$  and 480 ms when option  $c=1$ .

[g] Option *g* has meaning only if the NPC is provisioned for CAS; that is, option  $d=1$ , otherwise it is ignored. If option  $g=0$  is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option  $g=1$  is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and  $h=1$ , is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option *h* was selected as either 0 or 1, unless it is later set to 0 by setting parameter  $e=0$  in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

output. For all other combinations of *xyz* the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option *h*=1.

If both *b*=1 and *h*=1 and the NPC (used as synchronization source) receives NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure.** If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

[jkl'] minor bit error rate and signaling freeze delay time features:

jkl=011 or jkl=101

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

c=0 hardware timing

c=1 firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

**IW** - Insertion word

**pq** - Insertion word value (hexadecimal)

Hexadecimal value of the growth insertion word (GIW). Specifies the insertion word sent in the transmit direction on unassigned channels. If this value is not specified, it remains unchanged from its previous value.

An eight-bit code, called the growth insertion word, is transmitted by this NPC on unassigned 64kb/s channels. This code is specified by the optional keyword IW and its argument pq. This code was previously called the Disconnect Code (DCC), but that name is properly reserved for the cross-connect insertion word, which is transmitted when the disconnect message with DDC specified is used.

D5 Unassigned Channel Code (UAC). Default value.

**rs** - Previous value of pq

**r** - Transmitted signaling information

**r** is the portion of TS16 used for signaling when provisioned for CAS (four signaling bits in the associated CAS time slot 16 signaling). If **r** is not specified, it will remain unchanged.

*r Explanation*

D Unassigned channel code (UAC). Default value.

**t** - Previous value of r

**COND** - Condition

**cc** - Hexadecimal condition code

*cc Explanation*

**02** Subject entity is not equipped

**03** Subject entity is in service

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

**13** FTMI is not equipped

**14** FTMI is out of service

**1F** FTMI is in service but failed

**20** Option rr/m has not been set up on 2nd database

**21** Minor >= major for SLIP opt

**26** NPC type error

**29** IW is UMUX (18) but NPC not type DE4yz

**2A** DMI combined with T1DM

**2B** MajMin BER threshold is 7, but not in T1DM or Fe mode

**cc**    *Explanation*

- 34**    NPC type option xyz is unassigned
- 35**    NPC has active circuit
- 86**    NPC is NPCTG and chan 24 is used in a TG;Can't change to T1DM or DMI
- 19**    Test ports must be on CAS
- 3D**    Alarm bits cannot be passed through or inverted
- 42**    Change not valid
- 4E**    IW option is not allowed for new type of Clear-DS1 NPC
- 4F**    BER must not be less than 4 for Clear DS1
- 5C**    NPC providing timing to inservice SSP
- 83**    Option not programmable for this NPC type
- 8A**    x & z parameters on DSxyz are inconsistent
- 8F**    NPC not deleted
- BB**    Timeslot channel numbering not allowed with CAS
- C9**    In-service NPC change not allowed
- CD**    NPC not designated as sync timing source
- F2**    Invalid NPC number specified
- FE**    Change to non-ESF digroup with 16-state cross-connect
- FF**    Change to T1DM digroup with cross-connect that is not TRSP
- 05**    This NPC type does not allow unframed Clear-DS1
- 87**    NPC as 12th test port can not change to DMI nor T1DM
- 8D**    RPSFI condition is active
- 8E**    For RPSFI, TS0 bit 6 must be provisioned as 1
- 8F**    For RPSFI, TS0 bit 6 cannot be monitored
- AA**    NPC is NPCTG, changing to CAS/NSA is not allowed
- 36**    INCL keyword needed when restricted Insertion Word specified
- 7E**    Framed/Unframed clear 2Mbit/s NPC invalid for Automatic CRC-4
- 7F**    Unframed clear 2Mbit/s NPC invalid for TS0 processing
- 80**    Framed/Unframed clear 2Mbit/s NPC invalid for Transmic 1G, 2G
- 81**    Framed/Unframed clear 2Mbit/s NPC invalid for Firmware Timing
- 82**    Unframed clear 2Mbit/s NPC invalid for Bit 4 used as RA IS/RBER
- 85**    IW not allowed to be specified in Clear 2Mbit/s

## **CHG,NPC,TYPE,IW,X,INCL**

### **CHANGE DS3U NPC TYPE**

#### **Explanation Of Command**

For DACS II DS3 Units (DS3U) or Hybrid DS3 Units (HDS3U), this command changes a single or range of TE or TA type (DS3U Only) Network Processing Circuits (NPCs) to the newly specified type without disconnecting and reconnecting provisioned circuits. The NPCs must be out of service.

The "mn" field, as well as the "xyz" field, of the NPC type parameter ("mnxyz") can be changed by this command. This feature is used to change between the different types (TE and TA) of NPCs supported by the DS3 or Hybrid DS3 Unit line termination circuit packs.

A range is allowed for the NPCs within one DS3 or Hybrid DS3 Unit. The optional insertion word field is used to change the disconnect code (DCC).

The new parameters will take effect when the NPC is restored to service. When the NPC **TYPE** parameters are changed, all programmable alarm thresholds revert to the default values. If values other than defaults are desired, a separate **CHG** command must be given for each value. There will be one output completion message for each NPC in the range.

#### **Command**

#### **Nonhierarchical**

[I.38271]

**CHG:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TYPE mnxyz[,IW X'pq[,INCL]]!**

### **Hierarchical**

---

[I.38271]

CHG:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],TYPE mnxyz[,IW X'pq[,INCL]]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.38271]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc TYPE mnxyz[ IW pq[ INCL]] \\  
2 LN MSG:  
OLD TYPE ttuvw[ OLD IW rs] COMPL

### **Hierarchical**

---

[O.38271]

M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp TYPE mnxyz[ IW pq[ INCL]] \\  
2 LN MSG:  
OLD TYPE ttuvw[ OLD IW rs] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.38271.01]

M hh:mm:ss xy,ww n[vv] CHG NPC [s]abc[-[t]def] TYPE mnxyz\  
[ IW pq[ INCL]] COND cc DNY

### **Hierarchical**

---

[O.38271.01]

M hh:mm:ss xy,ww n[vv] CHG NPC uvmnp[-uvkqr] TYPE mnxyz\  
[ IW pq[ INCL]] COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

Use the optional insertion word (IW X'pq) field to change the unassigned channel code.

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC Number

**[t]def** - The 3- or 4-digit nonhierarchical NPC number denoting the end of a range specification.

**uvmnp** - Hierarchical NPC number

**uvkqr** - Hierarchical NPC number denoting the end of a range specification

**uvghi** - Hierarchical NPC number within the range of uvmnp and uvkqr

**uvjyl** - Hierarchical NPC number of the first NPC of the denied range

**uvmno** - Hierarchical NPC number of the last NPC of the denied range

**uv** - Unit number

**m, k, j, m, g**

- Module number

**np, qr, yl, no, hi**

- NPC number within the module

**mnxyz** - NPC-type identifier

**TYPE** - Type

*mnxyz Explanation*

TExyz DS3U or HDS3U Enhanced NPC

TAxyz DS3U ANSI NPC



**IW** - Insertion Word

**pq** - Hexadecimal value of the growth insertion word (GIW). Specifies the insertion word in the transmit direction on unassigned channels.

An eight-bit code, called the growth insertion word, is transmitted by this NPC on unassigned DS0 channels. This code is specified by the optional keyword IW and its argument pq. This code was previously called the Disconnect Code (DCC), but that name is properly reserved for the cross-connect insertion word, which is transmitted when the disconnect message with the DDC specified is used.

Although any 2-digit hexadecimal code may be used (see INCL below), the default GIWs are:

| <i>pq</i> | <i>Explanation</i>                                                                                                                                                                                                                    |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7F        | Unassigned Channel Code (UAC), the default value for TE/TA type NPCs provisioned with D4 or ESF framing.                                                                                                                              |
| 18        | Unassigned Multiplex Code (UMC), the default value for TE/TA type NPCs provisioned with T1DM framing. This value should only be provisioned with T1DM framing (DA4yz or TA4yz). The change command does not enforce this restriction. |

**INCL** - Inclusive

As a protection to users, this keyword must be added to provision an NPC with D4 framing and an Insertion Word with bit 2 equal to zero. NPCs grown in the D4 format (TE1yz/TA1yz) transmit a DS1 yellow alarm by setting bit 2 to zero in all 24 DS0 channels. If the Insertion Word "pq" is unknowingly provisioned in this manner, the NPC will transmit a D4 yellow alarm signal when it is restored. The D4 yellow alarm is generated by any Insertion Word with the binary value a0cdefgh, where the letters a-h define the eight bits of the binary word. The D4 yellow alarm is not generated by an Insertion Word with a binary value a1cdefgh.

For Clear-DS1 NPCs, the insertion word option is **NOT** available and the message will be denied if this option is entered. The alarm indication signal (AIS) is transmitted in the disconnect or idle state.

**[s]ghi,**

- The 3- or 4-digit nonhierarchical NPC number within the range of [s]abc and [t]def

**[s]jkl**

- The 3- or 4-digit nonhierarchical NPC number of the first NPC of a range that is being denied ( $abc \leq jkl \leq mno$ )

**[t]mno** - The 3- or 4-digit nonhierarchical NPC number of the last NPC of a range that is being denied ( $jkl \leq mno \leq def$ )

**ttuvw** - Previous value of mnxyz

**rs** - Previous value of pq

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 02** Subject entity is not equipped
- 03** Subject entity is in service
- 10** Unit is not equipped
- 11** UC is out of service
- 12** UC is in service but failed
- 24** Unit type error
- 26** NPC type error
- 29** IW is UMUX (18) but NPC not type DE4yz
- 2A** DMI combined with T1DM
- 34** NPC type option xyz is unassigned
- 35** NPC has active circuit
- 01** Invalid range for specified NPC type
- 11** NPC not equipped
- 4E** IW option is not allowed for new type of Clear-DS1 NPC
- F6** T1DM or DMI mode and channel 24 is connected
- FD** NPC range crosses unit boundary
- 05** This NPC type does not allow unframed Clear-DS1
- 87** NPC as 12th test port can not change to DMI nor T1DM
- 07** Mismatch between MXR and NPC types
- 36** INCL keyword needed when restricted Insertion Word specified

## **CHG,PASSWD,OLD,NEW**

### **CHANGE USER PASSWORD**

#### **Explanation Of Command**

This message requests a change of a previously created password by any user of DACS II.

For an X.25 link, <old pswd>:<new pswd> option must be used. DACS II will not prompt the user for old and new password.

For a SCCSAI (Snider) link, <old pswd>:<new pswd> option cannot be used.

For a Snider link, DACS II will prompt the user for the old and new password. Neither new nor old password characters will be echoed by DACS II.

Output from this command is sent only to the link on which the command was input.

### **Command**

---

[I.38301]

**CHG:FRM xy,SEQ ww:PASSWD[,OLD <old password>, \**  
**NEW <new password>]!**

If the user is on a Snider protocol administrative link, the message is entered as follows:

[I.38301]

**CHG:FRM xy,SEQ ww:PASSWD!**

Then DACS II will prompt the user for the old and new password:

**OLD PASSWD: (user enters the old password)**  
**NEW PASSWD: (user enters the new password)**  
**PASSWD: (user re-enters the new password for verification)**

### **Completion Message**

---

[O.38301]

**M hh:mm:ss xy,ww n[vv] CHG PASSWD COMPL**

### **Denial Message**

---

[O.38301.01]

**M hh:mm:ss xy,ww n[vv] CHG PASSWD COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**PASSWD** - Password

**OLD** - Old

**old password**

- Old password, where password is at least six alphanumeric characters.

**NEW** - New

**new password**

- New password where password is at least six alphanumeric characters.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**D6** Incorrect or missing password

**DA** User is not logged in

## **CHG,SALMS,PMACR,PMAMJ,DMAMN,MI,RESET**

### **CHANGE SHELF ALARMS SEVERITY**

#### **Explanation Of Command**

This command is used to change the Alarm Severity of the system shelf alarms. The Alarm Severity must be turned ON via I.38355 to use this command.

#### **Command**

[I.38365]

**CHG: [FRM xy, SEQ ww]:SALMS, sa lm, {PMACR|PMAMJ|DMAMN|MI|RESET}!**

#### **Completion Message**

[O.38365]

**M hh:mm:ss xy,ww n[vv] CHG SALMS sa lm \  
{PMACR|PMAMJ|DMAMN|MI|RESET} COMPL**

#### **Denial Message**

[O.38365.01]

**M hh:mm:ss xy,ww n[vv] CHG SALMS sa lm \  
{PMACR|PMAMJ|DMAMN|MI|RESET} COND cc DNY**

#### **Autonomous Message**

Not applicable.

## **Explanation Of Parameters**

---

**salm** - Shelf Alarms

*salm Explanation*

**PFF** Power Failure  
**SYNC** Failure of one SYNC  
**CCN** CCN autonomously removed  
**LTF** NPC Hardware Failure  
**TREF** Failure of one SSP  
**STREF** Failure of last SSP  
**TLI** TLI removed from service  
**CRO** Failure of Clock Reference Oscillator  
**SMEM** Failure of SMEM memory card  
**MCE** MC removed from service  
**CCNI** CCI/CCNI autonomously removed  
**TSI** TSI/ETSI autonomously removed  
**FC** FC autonomously removed  
**FTMI** FTMI autonomously removed  
**DSPI** DSPI autonomously removed  
**FTUC** FTU UC autonomously removed  
**CCB** CCB autonomously removed  
**DSPUC** DSP UC autonomously removed  
**SDT** System date and time not set  
**DSPC** DSP NPC autonomously removed  
**ALL** All Shelf Alarms

**PMACR** - CRITICAL alarm severity

**PMAMJ** - MAJOR alarm severity

**DMAMN** - MINOR alarm severity

**MI** - MESSAGE INFORMATION alarm severity

**RESET** - Reset Alarm Severity to default value

**cc** - Hexadecimal condition code

*cc Explanation*

**F7** Alarm Severity Feature (already) OFF  
**FA** Alarm Severity of Shelf Alarm not changed  
**FB** Shelf escalation less than source severity

## **CHG,SETOP,TYPE,ALL,NPCOP**

### **CHANGE/SET OPTIONS**

#### **Explanation Of Command**

This message initializes or changes the DACS II threshold data base, which contains the programmable set of selectable alarm thresholds for facility performance parameters accumulated by DACS II NPCs.

This command will be denied if an attempt is made to set the minor threshold greater than or equal to the major threshold of any parameter specified on *any* NPC currently in the frame.

Threshold values are entered in free format (1 to 9 digits) separated by commas. Enter a hyphen (-) for values that are *not* to be changed.

Following DACS II installation, the user-programmable (non-default) values are empty until this **CHG::SETOP** command initializes them. A user-programmable threshold value must first be initialized by this message before it can be used as an argument to the **OPTS** keyword of the **GRTH::NPC** (Message I.31352), **CHG::NPC,OPTS** (Message I.38221), and **CHG::NPC** message.

**SETOP rr** designates the parameter to be changed.

**NPCOP(set1,set2,set3)** are the user-programmable threshold values for the designated parameter.

If **ALL** is specified, the given thresholds will be written to the threshold data base for all types of NPCs for which the associated parameter is valid.

**Note:** This command will not reboot the NPC hardware. Therefore, if any NPCs are in service, use the **UTL::BOOT,FRAME** command (Message I.58001) to avoid any possible inconsistency. **Note:** This command will not reboot the NPC hardware. Therefore, if any NPCs are in service, use the **STA-LOCL-RST** command (Message I.58001) to avoid any



possible inconsistency.

### **Command**

---

[I.38201]

CHG:FRM xy,SEQ ww:SETOP rr,{TYPE mn|ALL},NPCOP(set1,set2,set3)!

### **Completion Message**

---

[O.38201]

M hh:mm:ss xy,ww n[vv] CHG SETOP rr e LN MSG:  
{TYPE mn|ALL} NPCOP(set1,set2,set3)  
OPT rr OLD ttttt[tttt] aaaaa[aaaa] bbbbbb[bbbb] ccccc[cccc]\  
[ <tal>] <pname>[ TYPE mn]  
[OPT rr OLD ttttt[tttt] aaaaa[aaaa] bbbbbb[bbbb] ccccc[cccc]\  
[ <tal>] <pname> TYPE mn]  
OPT rr NEW ttttt[tttt] xxxxx[xxxx] yyyyy[yyyy] zzzzz[zzzz]\  
[ <tal>] <pname> COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.38201.01]

M hh:mm:ss xy,ww n[vv] CHG SETOP rr 2 LN MSG:  
{TYPE mn|ALL} NPCOP(set1,set2,set3)[ NPC [s]abc] COND cc DNY

### **Hierarchical**

---

[O.38201.01]

M hh:mm:ss xy,ww n[vv] CHG SETOP rr 2 LN MSG:  
{TYPE mn|ALL} NPCOP(set1,set2,set3)[ NPC uvmnp] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**SETOP** - Set option

**OPT** - Option

**rr** - Facility performance parameter number

Variable *rr* specifies the parameter whose alarm threshold is being set or changed. The parameters and their corresponding *rr* values are given in the table below.

The Major and Minor *Slip* threshold crossing alarms can be disabled by programming a value of zero for the Slip Major and Slip Minor thresholds, respectively.

To use this feature, the Slip Major threshold must be disabled before the Slip Minor threshold. This command will be denied if an attempt is made to disable the Minor Slip threshold (by setting its value to zero) before disabling the Major Slip threshold on *any* in-service NPC on the frame.

### For PB and PC type NPCs:

| <b>rr</b> | Parameter                          | Threshold<br>Value<br>Range | Default<br>Threshold<br>Value |
|-----------|------------------------------------|-----------------------------|-------------------------------|
| <b>31</b> | Degraded Minutes, 1 hour           | 1-60                        | 60                            |
| <b>32</b> | Degraded Minutes, 24 hours         | 1-1440                      | 1440                          |
| <b>33</b> | Severely Errored Seconds, 15 mins  | 1-900                       | 900                           |
| <b>34</b> | Severely Errored Seconds, 24 hours | 1-65535                     | 65535                         |
| <b>35</b> | Errored Seconds, 15 minutes        | 1-900                       | 900                           |
| <b>36</b> | Errored Seconds, 24 hours          | 1-65535                     | 65535                         |
| <b>37</b> | Unavailable Seconds, 15 minutes    | 1-900                       | 900                           |
| <b>38</b> | Unavailable Seconds, 24 hours      | 1-65535                     | 65535                         |
| <b>39</b> | Slips, 15 minutes                  | 1-900                       | 900                           |
| <b>40</b> | Slips, 24 hours                    | 1-65535                     | 65535                         |

**Note 1:** 24-hour thresholds must be greater than their respective 15-minute or 1-hour threshold.

**For PA type NPCs:**

**Table 8-23. Parameter Register Threshold Range and Default Values**

| rr | Parameter                        | Interval | Threshold Value Range | Default Threshold Value |
|----|----------------------------------|----------|-----------------------|-------------------------|
| 11 | CRC Block Errors                 | DAILY    | 1 - 79056000          | 176947                  |
| 12 | Framing Errors                   | DAILY    | 1 - 345600000         | 176947                  |
| 13 | Out of Frame Seconds             | DAILY    | 1 - 86400             | 4                       |
| 14 | Errored Seconds                  | DAILY    | 1 - 86400             | 4320                    |
| 15 | Severely Errored Seconds         | DAILY    | 1 - 86400             | 90                      |
| 16 | Controlled Slip Seconds          | DAILY    | 1 - 86400             | 4                       |
| 17 | Coding Violations                | DAILY    | 1 - 176947200         | 176947                  |
| 18 | Unavailable Seconds              | DAILY    | 1 - 86400             | 90                      |
| 19 | Unavailable Time Count           | DAILY    | 1 - 4320              | 9                       |
| 20 | Multiframe Errors                | DAILY    | 1 - 86400             | 4095                    |
| 21 | Far End Block Errors             | DAILY    | 1 - 79056000          | 176947                  |
| 22 | Far End Errored Seconds          | DAILY    | 1 - 86400             | 4320                    |
| 23 | Far End Severely Errored Seconds | DAILY    | 1 - 86400             | 90                      |
| 24 | Far End Unavailable Seconds      | DAILY    | 1 - 86400             | 90                      |
| 81 | CRC Block Errors                 | 15MIN    | 1 - 823500            | 18432                   |
| 82 | Framing Errors                   | 15MIN    | 1 - 3600000           | 18432                   |
| 83 | Out of Frame Seconds             | 15MIN    | 1 - 900               | 4                       |
| 84 | Errored Seconds                  | 15MIN    | 1 - 900               | 300                     |
| 85 | Severely Errored Seconds         | 15MIN    | 1 - 900               | 30                      |
| 86 | Controlled Slip Seconds          | 15MIN    | 1 - 900               | 1                       |
| 87 | Coding Violations                | 15MIN    | 1 - 1843200           | 18432                   |
| 88 | Unavailable Seconds              | 15MIN    | 1 - 900               | 30                      |
| 89 | Unavailable Time Count           | 15MIN    | 1 - 45                | 3                       |
| 90 | Multiframe Errors                | 15MIN    | 1 - 900               | 255                     |
| 91 | Far End Block Errors             | 15MIN    | 1 - 823500            | 18432                   |
| 92 | Far End Errored Seconds          | 15MIN    | 1 - 900               | 300                     |
| 93 | Far End Severely Errored Seconds | 15MIN    | 1 - 900               | 30                      |
| 94 | Far End Unavailable Seconds      | 15MIN    | 1 - 900               | 30                      |

**TYPE** - Type

Type of NPC for which the options are being set. Note that not all parameter threshold options apply to all NPC types.

**mn** - NPC Type prefix

| <b>mn</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                                        |
|-----------|--------------------------------------------------------|
| <b>PA</b> | CEPT NPC type (120-ohm twisted pair or 75-ohm coaxial) |
|-----------|--------------------------------------------------------|

|           |                                      |
|-----------|--------------------------------------|
| <b>PB</b> | CEPT NPC type (120-ohm twisted pair) |
|-----------|--------------------------------------|

|           |                                |
|-----------|--------------------------------|
| <b>PC</b> | CEPT NPC type (75-ohm coaxial) |
|-----------|--------------------------------|

|           |                     |
|-----------|---------------------|
| <b>TH</b> | HDS3U CEPT NPC type |
|-----------|---------------------|

**ALL** - All

All NPC types. If specified, the given thresholds will be written into the secondary data base for all types of NPCs for which the associated parameter is valid.

**set1** - Threshold setting 1 (m=1) for given parameter rr

**set2** - Threshold setting 2 (m=2) for given parameter rr

**set3** - Threshold setting 3 (m=3) for given parameter rr

Thresholds are entered in free format (1 to 9 digits) separated by commas. Enter a "-" (hyphen) for values that are not to be changed.

DACS II provides a set of default threshold values and alarm levels (<m>=0,1,2,d) for each NPC type. Only the default threshold value for each parameter exists in the DACS II database prior to user programming using the CHG::SETOP command. Before any non-default threshold value (m=3 to b) can be provisioned to be used by an NPC for performance monitoring, it must be entered in the DACS II database using this command. Otherwise, an error message will occur. When this command is executed, all threshold values in the DACS II frame are changed, including the ones previously set or in use. Performance monitoring thresholds are provisioned for NPCs using the "rr/<m>" argument of the GRTH::NPC or CHG::NPC command.

The default values are accessed using threshold setting 0 (<m>=0,1,2,d). Threshold settings 1 (<m>=3,4,5,e), 2 (<m>=6,7,8,f), and 3 (<m>=9,a,b,10) are user-programmable. That is, set1, set2, and set3 do not have default values; they must be programmed by the user before they can be used.

**ttttt[tttt]**

- Default threshold value for option rr

**aaaaa[aaaa]**

- Old set1 threshold value

**bbbbbb[bbbb]**

- Old set2 threshold value

**cccccc[cccc]**

- Old set3 threshold value

**pname** - Parameter name

| <i>pname</i>  | <i>Explanation</i>                           |
|---------------|----------------------------------------------|
| BER           | Bit error rate                               |
| COFA          | Change of frame alignment                    |
| DM, 1 hr.     | Degraded minutes, 1 hour interval            |
| DM, 24 hr.    | Degraded minutes, 24 hour interval           |
| ERS           | Errored seconds                              |
| ERS, 15 min.  | Errored seconds, 15 minute interval          |
| ERS, 24 hr.   | Errored seconds, 24 hour interval            |
| SERS          | Severely errored seconds                     |
| SERS, 15 min. | Severely errored seconds, 15 minute interval |
| SERS, 24 hr.  | Severely errored seconds, 24 hour interval   |
| SLIP          | Slip                                         |
| SLIP, 15 min. | Slip, 15 minute interval                     |
| SLIP, 24 hr.  | Slip, 24 hour interval                       |
| US, 15 min.   | Unavailable seconds, 15 minute interval      |
| US, 24 hr.    | Unavailable seconds, 24 hour interval        |

|             |                                                      |
|-------------|------------------------------------------------------|
| CRC, 15MIN  | CRC Block Errors, 15 minute interval                 |
| CRC, DAILY  | CRC Block Errors, daily interval                     |
| CSS, 15MIN  | Controlled Slip Seconds, 15 minute interval          |
| CSS, DAILY  | Controlled Slip Seconds, daily interval              |
| CV, 15MIN   | Coding Violations, 15 minute interval                |
| CV, DAILY   | Coding Violations, daily interval                    |
| ES, 15MIN   | Errored Seconds, 15 minute interval                  |
| ES, DAILY   | Errored Seconds, daily interval                      |
| FEBE, 15MIN | Far End Block Errors, 15 minute interval             |
| FEBE, DAILY | Far End Block Errors, daily interval                 |
| FES, 15MIN  | Far End Errored Seconds, 15 minute interval          |
| FES, DAILY  | Far End Errored Seconds, daily interval              |
| FRER, 15MIN | Framing Errors, 15 minute interval                   |
| FRER, DAILY | Framing Errors, daily interval                       |
| FSES, 15MIN | Far End Severely Errored Seconds, 15 minute interval |
| FSES, DAILY | Far End Severely Errored Seconds, daily interval     |
| FUAS, 15MIN | Far End Unavailable Seconds, 15 minute interval      |
| FUAS, DAILY | Far End Unavailable Seconds, daily interval          |
| MER, 15MIN  | Multiframe Errors, 15 minute interval                |
| MER, DAILY  | Multiframe Errors, daily interval                    |
| OFS, 15MIN  | Out of Frame Seconds, 15 minute interval             |
| OFS, DAILY  | Out of Frame Seconds, daily interval                 |
| SES, 15MIN  | Severely Errored Seconds, 15 minute interval         |
| SES, DAILY  | Severely Errored Seconds, daily interval             |
| UAS, 15MIN  | Unavailable Seconds, 15 minute interval              |
| UAS, DAILY  | Unavailable Seconds, daily interval                  |
| UATC, 15MIN | Unavailable Time Count, 15 minute interval           |
| UATC, DAILY | Unavailable Time Count, daily interval               |

**xxxxx[xxxx]**  
- New set1 threshold value  
**yyyyy[yyyy]**  
- New set2 threshold value  
**zzzzz[zzzz]**  
- New set3 threshold value

**Note:** If the "TYPE mn" option is used in the input command to change the thresholds for a single NPC type and a hyphen is entered for at least one of the thresholds to preserve its value, the output response will show that the respective new threshold values are unchanged by outputting the same value for the new threshold that is output for the old threshold.

If the "ALL" types option is used in the input command to change the thresholds for all NPC types and a hyphen is entered for at least one set of thresholds to preserve their values, the output response will show that the respective threshold values are unchanged by outputting "----[----]" (a dash) for the new threshold value and the respective unchanged values in the old threshold fields for each NPC type.

**NPC** - Network processing circuit  
**[s]abc** - The 3- or 4-digit nonhierarchical NPC number of problematic NPC

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
|                  |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
|                  |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
|                  |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical number of problematic NPC

The valid NPC numbers are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |



**COND** - Condition

**cc** - Hexadecimal condition code

**cc**    *Explanation*

- 21**    Minor  $\geq$  major for SLIP opt
- 22**    Minor  $\leq$  major for BER opt
- 23**    Minor  $\geq$  major for COFA opt
- 2B**    Maj|Min BER threshold is 7, but not in T1DM or Fe mode
- 14**    1 hr  $\geq$  24 hr for DM opt
- 15**    15 min  $\geq$  24 hr for SERS opt
- 16**    15 min  $\geq$  24 hr for ERS opt
- 17**    15 min  $\geq$  24 hr for US opt
- 18**    15 min  $\geq$  24 hr for SLIP opt
- 4F**    BER must not be less than 4 for Clear DS1
- 83**    Option not programmable for this NPC type
- FE**    Change to non-ESF digroup with 16-state cross-connect
- FF**    Change to T1DM digroup with cross-connect that is not TRSP
- 0A**    Minor Slip threshold disabled before Major Slip threshold
- 32**    Threshold value is out of range

## **CHG,SWCH,TOX,INCL**

### **CHANGE CIRCUIT PARAMETERS**

#### **Explanation Of Command**

This message switches return paths to the digroups and ranges beginning with the initial channels given in the TO end argument list.

This message requests a change in a broadcast multipoint circuit, switching the full tributary circuit leg (one that can both receive and transmit to the multipoint source) to another leg. Up to eight multipoint circuits can be changed with this command. Arguments [s]abcddd, [t]ghi-fff, and [u]klm-nnn etc., represent TO terminations Arguments [s]abcddd, [t]ghifff, and [u]klmnnn etc., represent TO terminations from different broadcast circuits (allowing multiple switches to be performed with a single message). That is, these arguments specify the new full tributaries in up to eight different broadcast circuits.

#### **Command**

##### **Nonhierarchical**

[I.18001]

```
CHG:FRM xy,SEQ ww:SWCH,TOX([s]abcddd[, [t]ghifff,\n[u]klmnnn, ...])[, INCL]!
```

##### **Hierarchical**

[I.18001]

```
CHG:FRM xy,SEQ ww:SWCH,TOX(uvmnpddd[,wxqrrff,edhfgnnn, ...])\n[, INCL]!
```

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.18001]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX [s]abcddd[, [t]ghijjj, [u]klmnnn, . . .]  
[CUS][ RDC] COMPL

#### **Hierarchical**

---

[O.18001]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX uvmnpddd[, wxkqrjjj, edhfgnnn, . . .])  
[CUS][ RDC] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.18001.01]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX [s]abcddd[, [t]ghijjj, [u]klmnnn, . . .]  
[[t]wxyzzz] cc BCAST DNY

[O.18001.02]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX [s]abcddd[, [t]ghijjj, [u]klmnnn, . . .]  
[[t]wxyzzz] COND cc DNY

#### **Hierarchical**

---

[O.18001.01]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX uvmnpddd[, wxkqrjjj, edhfgnnn, . . .])  
[opjstzzz] cc BCAST DNY

[O.18001.02]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX uvmnpddd[,wxkqrjjj,edhfgnnn, . . .])  
[opjstzzz] COND cc DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

[s]abc - The 3- or 4-digit nonhierarchical FROM NPC number  
[t]ghi - The 3- or 4-digit nonhierarchical TO NPC number  
[u]klm - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0032 | 0161-0192 | 0321-0352 | 0481-0512 |
| 0041-0072 | 0201-0232 | 0361-0392 | 0521-0552 |
| 0081-0112 | 0241-0272 | 0401-0432 | 0561-0592 |
| 0121-0152 | 0281-0312 | 0441-0472 | 0601-0632 |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number  
**edhfg** - Hierarchical TO NPC number

**uv,wx,ed**  
- Unit number  
**m,k,h**  
- Module number  
**np,qr,fg**  
- NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - FROM channel number  
**jjj** - TO channel number  
**nnn** - TO channel number

000-030      CEPT type NPCs grown as CAS  
000-031      CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

**INCL** - Inclusive

To change a circuit or range of circuits including one or more circuits previously marked as a Red Circuit or under Customer Control, use the INCL (inclusive) option. If this option is not used, the message will be denied if any circuits in the range are red circuits or customer controlled.

**SWCH** - Switch

**TOX** - TO Tributaries

**[t]wxyz**

- Nonhierarchical number of circuit leg on which problem occurred.

**opjstzzz**

- Hierarchical number of circuit leg on which problem occurred.

**BCAST** - Broadcast

Denial specific to a broadcast conference.

**CUS** - Customer

NPC is a customer-controlled circuit

**RDC** - Red circuit

NPC is a Red circuit

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 01** Invalid range for specified NPC type
- 03** No RDC or CUS circuits and INCL keyword used
- 04** No NPC's out of service and OOS keyword used
- 10** NPC out of service or failed
- 11** NPC not equipped
- 12** Active CCN side not IS or failed or pested or hardware OOS
- 13** UNIT not equipped, not in service, or failed
- 14** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS
- 15** FTMI not equipped, not in service, or failed
- 16** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS
- 17** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS
- 32** Termination is under test
- 33** Termination is a test port
- 34** Termination is under customer control (CUS)
- 35** Termination is protected (RDC)
- 53** TO side of two-way to be converted is not an FTU NPC
- 5B** TO is not a leg of this/any conference
- 5D** TO is the backbone leg of a conference
- 5F** Conference is NTR: has no switchable return leg
- 60** Conference is LPD: has no switchable return leg
- 61** TO is already the return leg
- D3** Corresponding NPC for FROM virtual channel is not provisioned
- D4** Corresponding NPC for TO virtual channel is not provisioned
- D6** Invalid FROM channel number
- D7** Invalid TO channel number
- D9** Invalid FROM channel number range
- DA** Invalid TO channel number range
- EC** Invalid channel 000 cross-connection specified
- ED** Invalid channel 031 cross-connection specified

## **CHG,SWCH,TOX,INCL**

### **CHANGE SWITCH, TOX**

#### **Explanation Of Command**

This message changes a non-channelized digital signal broadcast circuit by switching a specified tributary network processing circuit (NPC) to be the full tributary NPC. Up to eight broadcast circuits can be changed by specifying the respective full tributary NPCs, all of which are non-channelized NPCs currently part of different broadcast circuits and may belong to different Units.

#### **Command**

##### **Nonhierarchical**

[I.18011]

**CHG:FRM xy,SEQ ww:SWCH,TOX([s]ghi[, [t]jkl][, [v]mno][...])\  
[, INCL]!**

##### **Hierarchical**

[I.18011]

**CHG:FRM xy,SEQ ww:SWCH,TOX(uvmnp[, wxkqr][, edhfg][...])\  
[, INCL]!**



### **Completion Message**

---

#### **Nonhierarchical**

---

[O.18011]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX [s]ghi[, [t]jkl][, [v]mno][...]  
[CUS ][RDC ]COMPL

#### **Hierarchical**

---

[O.18011]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX uvmnp[,wxkqr][,edhfg][...]  
[CUS ][RDC ]COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.18011.01]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX [s]ghi[, [t]jkl][, [v]mno][...]  
[[t]qrs] cc <st> DNY

#### **Hierarchical**

---

[O.18011.01]

M hh:mm:ss xy,ww n[vv] CHG SWCH 3 LN MSG:  
TOX uvmnp[,wxkqr][,edhfg][...]  
[opqrs] cc <st> DNY

### **Autonomous Message**

---

Not applicable.

**Explanation Of Parameters**

[s]ghi - The 3- or 4-digit nonhierarchical NPC number of new full tributary  
[t]jkl - The 3- or 4-digit nonhierarchical NPC number of new full tributary  
[v]mno - The 3- or 4-digit nonhierarchical NPC number of new full tributary

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1952  | 2081-2112  | 2241-2272  | 2401-2432  |
| 1961-1992  | 2121-2152  | 2281-2312  | 2441-2472  |
| 2001-2032  | 2161-2192  | 2321-2352  | 2481-2512  |
| 2041-2072  | 2201-2232  | 2361-2392  | 2521-2552  |

**uvmnp** - Hierarchical NPC number of new full tributary

**wxkqr** - Hierarchical NPC number of new full tributary

**edhfg** - Hierarchical NPC number of new full tributary

**uv,wx,ed**

- Unit number

**m,k,h**

- Module number

**np,qr,fg**

- NPC number within the module

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

**INCL** - Inclusive keyword, required for Red (RDC) or Customer-controlled circuit (CUS)

**[t]qrs** - The 3- or 4-digit nonhierarchical number of the NPC that caused the denial

**opqrs** - Hierarchical number of problematic NPC, same range as uvmnp

**st** - Status of denial

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>01</b> | <b>INERR</b> | Invalid range for specified NPC type                                  |
| <b>03</b> | <b>INERR</b> | No RDC or CUS circuits and INCL keyword used                          |
| <b>10</b> | <b>MCOND</b> | NPC out of service or failed                                          |
| <b>11</b> | <b>MCOND</b> | NPC not equipped                                                      |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>32</b> | <b>MCOND</b> | Termination is under test                                             |
| <b>34</b> | <b>MCOND</b> | Termination is under customer control (CUS)                           |
| <b>35</b> | <b>MCOND</b> | Termination is protected (RDC)                                        |
| <b>5B</b> | <b>BCAST</b> | TO is not a leg of this/any conference                                |
| <b>5D</b> | <b>BCAST</b> | TO is the backbone leg of a conference                                |
| <b>5E</b> | <b>BCAST</b> | TO is a part of the same conference as a previous TO                  |
| <b>5F</b> | <b>BCAST</b> | Conference is NTR: has no switchable return leg                       |
| <b>60</b> | <b>BCAST</b> | Conference is LPD: has no switchable return leg                       |
| <b>61</b> | <b>BCAST</b> | TO is already the return leg                                          |
| <b>63</b> | <b>INERR</b> | NPC is a channelized NPC                                              |
| <b>64</b> | <b>INERR</b> | NPC is a non-channelized NPC                                          |
| <b>4A</b> | <b>INERR</b> | Red circuit, INCL not entered                                         |
| <b>4B</b> | <b>INERR</b> | Customer controlled circuit, INCL not entered                         |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                                      |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |

## **CHG,SYNC,TLI,SSP,TYPE,NPC,SRC**

### **CHANGE PRIORITIES AND/OR TYPE, SYNCHRONIZER OR NPC**

#### **Explanation Of Command**

This command changes priorities and network processing circuit (NPC) or type parameters of timing extractor type TLIs/SSPs that have been equipped. One of the following three fields must be given: type/synchronizer sync port, the NPC/SSP, or the source for priority (SRC). Only one type may be changed at a time; the output message will show both types after the change command is completed, if both are equipped, or it will show a "-" for unequipped SSPs.

Only the type and priority data bases are affected by this command. The SSP must be out of service for the command to complete. The RST::SYNC,TLI,[SSP]! command must be given to implement the changes for both side 0 and 1.

If the SSP-type is given, you must specify the timing link Interface (TLI-n), SSP-b, and the type.

The NPC parameter (valid only with a TU-type sync) indicates that the specified TLI is receiving its synchronizing signal from the given NPC location. The system allows only one of eight NPC locations per TLI SSP.

#### **Command**

#### **Nonhierarchical**

[I.38011]

**CHG:FRM xy,SEQ ww:SYNC,TLI m,SSP b,{TYPE texyz|NPC [0]abc}!**

### **Hierarchical**

---

[I.38011]

CHG:FRM xy,SEQ ww:SYNC,TLI m,SSP b,{TYPE texyz|NPC uvmnp}!

### **Common**

---

[I.38011]

CHG:FRM xy,SEQ ww:SYNC,\  
TLI,SRC(i/(a,b)[,j/(c,d)[,k/(e,f)[,l/(g,h)]])!]

### **Completion Message**

---

### **Nonhierarchical**

---

[O.38011]

M hh:mm:ss xy,ww n[vv] CHG SYNC \  
TLI m SSP b {TYPE texyz,testu|NPC [0]abc} COMPL

### **Hierarchical**

---

[O.38011]

M hh:mm:ss xy,ww n[vv] CHG SYNC \  
TLI m SSP b {TYPE texyz,testu|NPC uvmnp} COMPL

### **Common**

---

[O.38011]

M hh:mm:ss xy,ww n[vv] CHG SYNC \  
TLI SRC i,a,b j,c,d k,e,f l,g,h COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.38011.01]

M hh:mm:ss xy,ww n[vv] CHG SYNC \  
TLI m SSP b {TYPE tepqr,testu|NPC [0]abc} COND cc DNY

#### **Hierarchical**

---

[O.38011.01]

M hh:mm:ss xy,ww n[vv] CHG SYNC \  
TLI m SSP b {TYPE tepqr,testu|NPC uvmnp} COND cc DNY

#### **Common**

---

[O.38011.01]

M hh:mm:ss xy,ww n[vv] CHG SYNC \  
TLI SRC i,a,b j,c,d k,e,f l,g,h COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**TLI** - Timing link interface

**m** - Timing link interface number (1 through 4)

**SSP** - Synchronizer sync port

**b** - SSP side (0 or 1)

**TYPE** - Type

**texyz** - Timing Extractor or Timing Distributor type

The output message shows the type of SSP for both SSPs on the TLI card  
If one SSP is not equipped, a "-" will appear for the unequipped SSP.

**testu** - The TLI type of the other SSP on the same TLI. If not equipped, this parameter will be output as "-----".

| <i>te</i> | <i>Explanation</i>                      |
|-----------|-----------------------------------------|
| TC        | Composite Clock Timing Extractor        |
| TE        | DS1 Timing Extractor                    |
| TP        | Primary Block Timing Extractor          |
| TR        | Basic System Reference Frequency (BSRF) |
| TU        | Unipolar Clock Timing Extractor         |
| TD        | Timing Distributor                      |

TD-type TLI xyz fields

**x** - Timing distributor identification

| <b>x</b> | <i>Explanation</i>                       |
|----------|------------------------------------------|
| <b>1</b> | Composite Clock Timing Distribution      |
| <b>2</b> | Sinusoidal 2.048 MHz Timing Distribution |

**y** - Unassigned

**z** - Unassigned



TP-type TLI xyz fields

**x** - Frame format

**x**      *Explanation*

**1,5**    Common Channel Signaling

**2,6**    Channel Associated Signaling - Mode 0

**3,7**    Channel Associated Signaling - Mode 1

**4,8**    European Remote Switching Module

**0,9**    Invalid

**y** - Line format

**y**      *Explanation*

**0,2**    Alternate Mark Inversion (Bipolar)

**1,3**    High Density Bipolar (HDB3)

**4-9**    Invalid

**z** - Channel format

**z**      *Explanation*

**0-9**    Unassigned

TC, TR, and TU-type TLI xyz fields

**x** - Frame format

**y** - Line format

**z** - Channel format

Values for x, y, and z are unassigned.

**SRC** - Source

- i** - TLI slot number (1 through 4)
- a** - TLI i SSP 0 priority (1 through 8)
- b** - TLI i SSP 1 priority (1 through 8)
- j** - TLI slot number (1 through 4)
- c** - TLI j SSP 0 priority (1 through 8)
- d** - TLI j SSP 1 priority (1 through 8)
- k** - TLI slot number (1 through 4)
- e** - TLI k SSP 0 priority (1 through 8)
- f** - TLI k SSP 1 priority (1 through 8)
- l** - TLI slot number (1 through 4)
- g** - TLI l SSP 0 priority (1 through 8)
- h** - TLI l SSP 1 priority (1 through 8)

**COND** - Condition

**NPC** - Network processing circuit

**[0]abc** - The 3- or 4-digit nonhierarchical NPC number

The valid NPC numbers are:

If NPC numbers are expressed in three digits, the valid values are:

PB and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1  | Unit<br>2  |
|------------|------------|
| <b>NPC</b> | <b>NPC</b> |
| <b>030</b> | <b>190</b> |
| <b>032</b> | <b>192</b> |
| <b>070</b> | <b>230</b> |
| <b>072</b> | <b>232</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1   | Unit<br>2   |
|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  |
| <b>0030</b> | <b>0190</b> |
| <b>0032</b> | <b>0192</b> |
| <b>0070</b> | <b>0230</b> |
| <b>0072</b> | <b>0232</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid NPC numbers are:

PB and PC NPC numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit          | Module      | NPC           |
|---------------|-------------|---------------|
| <b>01, 02</b> | <b>1, 2</b> | <b>30, 32</b> |

The NPC keyword and its associated parameter are only specified in conjunction with the TLI and SSP keywords for TLI type TUxyz.

The NPC option allows the DACS II system to correlate a synchronizing source failure to either an NPC failure or an NPC input signal failure.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped  
**16** SYNC TB is not equipped  
**B3** X option is illegal  
**B4** Y option is illegal  
**C2** SSP type(options) same  
**C3** Wrong SSP type(Timing Extractor type)  
**C4** Sync architecture different  
**C5** Some priority values required  
**C6** Some priority values not required  
**C7** Priority values are same  
**C8** Sync pack denied command  
**CA** New NPC same as existing one  
**CB** NPC parameter only valid with TU type TLI  
**CC** NPC is still provisioned to provide sync timing  
**CD** NPC not designated as sync timing source  
**CE** NPC already allocated as sync timing source  
**CF** NPC already grown as non-synchronization source  
**F1** Parameter only valid with PA, PB, or PC type NPCs  
**01** Assignment of single priority to multiple SSPs  
**E4** NPC already has Equipment Loopback

## **CHG,TYPE,OPTS,THMODE**

### **CHANGE TYPE, OPTIONS**

#### **Explanation Of Command**

This command changes the threshold values for facility performance parameters on all NPCs of a particular type. The threshold values may be changed without disconnecting and reconnecting provisioned circuits.

One or more alarm or information threshold values may be set for all NPCs to a value previously stored in the DACS II threshold data base.

The values stored in the DACS II threshold data base are selected with the indices (**rr/n**).

#### **Command**

[I.38231]

**CHG:FRM xy,SEQ ww:TYPE mnxyz,{OPTS(rr/<m>[,rr/<m>][...])|THMODE hhh}!**

## Completion Message

For PB and PC type NPCs:

[O.38231]

```

M hh:mm:ss xy,ww n CHG TYPE mnxyz 4 LN MSG:
 24 HOURS DM SERS ERS US SLIP
 THRESHOLDS nnnnn ppppp qqqqq rrrrr sssss
 OPTIONS e f g h i EOM

M hh:mm:ss xy,ww n CHG TYPE mnxyz 4 LN MSG:
 SHORT INTERVAL DM SERS ERS US SLIP
 THRESHOLDS nnnnn ppppp qqqqq rrrrr sssss
 OPTIONS e f g h i COMPL

```

For PA type NPCs:

[O.38232]

```

M hh:mm:ss xy,ww n[vv] CHG TYPE mnxyz 4 LN MSG:
 DAILY CRC FRER OFS ES SES CSS CV
 THRESHOLDS aaaaaaaa bbbbbbbb ccccc ddddd eeeee fffff gggggggg
 OPTIONS a b c d e f g EOM

M hh:mm:ss xy,ww n[vv] CHG TYPE mnxyz 4 LN MSG:
 DAILY UAS UATC MER FEBE FES FSES FUAS
 THRESHOLDS hhhhh iiii jjjjj kkkkkkkk lllll mmmmm nnnnn
 OPTIONS h i j k l m n EOM

M hh:mm:ss xy,ww n[vv] CHG TYPE mnxyz 4 LN MSG:
 15MIN CRC FRER OFS ES SES CSS CV
 THRESHOLDS aaaaaa bbbbbb ccc ddd eee fff gggggg
 OPTIONS a b c d e f g EOM

M hh:mm:ss xy,ww n[vv] CHG TYPE mnxyz 4 LN MSG:
 15MIN UAS UATC MER FEBE FES FSES FUAS
 THRESHOLDS hhh ii jjj kkkkkk lll mmm nnn
 OPTIONS h i j k l m n COMPL

```

[O.38233]

```

M hh:mm:ss xy,ww n[vv] CHG TYPE mnxyz THMODE hhh COMPL

```

## Denial Message

[O.38231.01]

```

M hh:mm:ss xy,ww n[vv] CHG TYPE mnxyz[{vv/k|THMODE hhh}] COND cc DNY

```

**Autonomous Message**

Not applicable.

**Explanation Of Parameters**

**mnxyz** - NPC type

**mnxyz** *Explanation*

PAxyz CEPT NPC (120-ohm twisted pair or 75-ohm coaxial)

PBxyz CEPT NPC (120-ohm twisted pair)

PCxyz CEPT NPC (75-ohm coaxial)

**PB- and PC-type xyz fields****Table 8-24. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                         |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                           |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                   |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                    |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8,in time 144ms (TRANSMIC 1G)                                                                                               |
|              |            | 111          | Unassigned                                                                                                                             |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                          |
|              |            | 1            |                                                                                                                                        |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496 ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway* **cross-connection** the insertion word always defaults to AIS.

mxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option c=0 is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the **jkl** options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when** *jkl=011* or *jkl=101*. **For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option *g* has meaning only if the NPC is provisioned for CAS; that is, option *d=1*, otherwise it is ignored. If option *g=0* is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option *g=1* is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and *h=1*, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option *h* was selected as either 0 or 1, unless it is later set to 0 by setting parameter *e=0* in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of *xyz* the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option *h=1*.

If both *b=1* and *h=1* and the NPC (used as synchronization source) receives

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.



NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure.** If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

[jkl'] **minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

**c=0** hardware timing

**c=1** firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

**PA-Type xyz fields**

The provisioning values of *x*, *y*, and *z* for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (*x*, *y* or *z*) provisioning value):

**Table 8-25. Provisioning values for  $x$** 

| <b>x<br/>value</b> | <b>CRC-4<br/>Mode</b> | <b>Automatic<br/>CRC-4</b> | <b>Far-End<br/>PM</b> | <b>NPC used as<br/>Sync Source</b> | <b>TS0 Bit 5<br/>used for SFI</b> |
|--------------------|-----------------------|----------------------------|-----------------------|------------------------------------|-----------------------------------|
| <b>0</b>           | Y                     |                            |                       |                                    |                                   |
| <b>1</b>           | Y                     |                            | Y                     |                                    | Y                                 |
| <b>2</b>           | Y                     |                            |                       |                                    | Y                                 |
| <b>3</b>           | Y                     |                            | Y                     |                                    |                                   |
| <b>4</b>           | Y                     |                            |                       | Y                                  |                                   |
| <b>5</b>           | Y                     |                            | Y                     | Y                                  | Y                                 |
| <b>6</b>           | Y                     |                            |                       | Y                                  | Y                                 |
| <b>7</b>           | Y                     |                            | Y                     | Y                                  |                                   |
| <b>8</b>           |                       | Y                          | Y                     |                                    |                                   |
| <b>9</b>           |                       | Y                          | Y                     |                                    | Y                                 |
| <b>A</b>           |                       |                            |                       |                                    | Y                                 |
| <b>B</b>           |                       |                            |                       |                                    |                                   |
| <b>C</b>           |                       | Y                          | Y                     | Y                                  |                                   |
| <b>D</b>           |                       | Y                          | Y                     | Y                                  | Y                                 |
| <b>E</b>           |                       |                            |                       | Y                                  | Y                                 |
| <b>F</b>           |                       |                            |                       | Y                                  |                                   |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.

---

\* Automatic CRC-4 is also known as CRC-4 Interworking.

4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 8-26. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the  $abcd$  bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the  $abcd$  bits will be transmitted transparently.

If the "AIS in TS16" option is selected (y value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (y values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For y values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (y=8) or Timeslot Channel Numbering (y=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (y=C) or as an unframed clear 2Mbit/s interface (y=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 8-27. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )

3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B**. **However**, for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for **z = 4 and 8**) or 480 ms (for **z = 5 and 9**) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

8. z values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options (z = 6-7 or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms

- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

z=6 or A hardware timing

z=7 or B firmware timing (SFDT=2496 ms, CACT=624 ms)

- [iv] BER alarm level = DMA

**Specific Options for z= 6 or 7**

- [v] RBER alarm level = MI

- [vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

- [vii] RBER unalarmed

- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.



[ix] To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of  $xyz$  for the PA type NPC.

**Table 8-28. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations | Explanation                                                                                                                                                                                                                     |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                              | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking. The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                              |                                                                                                                                                                                                                                 |
| CCz                              |                                                                                                                                                                                                                                 |
| DCz                              |                                                                                                                                                                                                                                 |
| 0Dz                              | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                        |
| 1Dz                              |                                                                                                                                                                                                                                 |
| 2Dz                              |                                                                                                                                                                                                                                 |
| 3Dz                              |                                                                                                                                                                                                                                 |
| 4Dz                              |                                                                                                                                                                                                                                 |
| 5Dz                              |                                                                                                                                                                                                                                 |
| 6Dz                              |                                                                                                                                                                                                                                 |
| 7Dz                              |                                                                                                                                                                                                                                 |
| 8Dz                              |                                                                                                                                                                                                                                 |
| 9Dz                              |                                                                                                                                                                                                                                 |
| ADz                              |                                                                                                                                                                                                                                 |
| CDz                              |                                                                                                                                                                                                                                 |
| DDz                              |                                                                                                                                                                                                                                 |
| EDz                              |                                                                                                                                                                                                                                 |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 8-29. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z*= value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 8-30. Combinations of *x* and *z* Values**

| Invalid<br>xyz<br>Combinations                       | Explanation                                                                                                                                                                                                                                                       |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC<br>5yC<br>6yC<br>7yC<br>CyC<br>DyC<br>EyC<br>FyC | Use of NPC as Sync Source ( <i>x</i> 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( <i>z</i> value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |

**OPTS** - Options

Clear DS1 DE type FTU NPCs have a limited number of parameters for performance monitoring, 01 through 04 only. Clear DS1 TE type DS3U or HDS3U NPCs have only parameters 01 and 02.

**rr** - Facility performance parameter number

Variable *rr* specifies the parameter whose alarm threshold is being selected

**<m>** - Facility performance parameter threshold index (0 through 10 hex)

Variable *<m>* is used to select threshold values previously programmed for *rr*. The default threshold value, the value selected by *m*=0, for each parameter is shown below for each NPC type under the column heading "Default Threshold Value". Threshold values selected by values of *m* other than 0 must exist, that is, must have been programmed, prior to being selected. These other thresholds can be set by using the CHG::SETOP (38201) command.

**For PB and PC type NPCs:**

| rr | Parameter                          | Threshold      | Default            |
|----|------------------------------------|----------------|--------------------|
|    |                                    | Value<br>Range | Threshold<br>Value |
| 31 | Degraded Minutes, 1 hour           | 1-60           | 60                 |
| 32 | Degraded Minutes, 24 hours         | 1-1440         | 1440               |
| 33 | Severely Errored Seconds, 15 mins  | 1-900          | 900                |
| 34 | Severely Errored Seconds, 24 hours | 1-65535        | 65535              |
| 35 | Errored Seconds, 15 minutes        | 1-900          | 900                |
| 36 | Errored Seconds, 24 hours          | 1-65535        | 65535              |
| 37 | Unavailable Seconds, 15 minutes    | 1-900          | 900                |
| 38 | Unavailable Seconds, 24 hours      | 1-65535        | 65535              |
| 39 | Slips, 15 minutes                  | 1-900          | 900                |
| 40 | Slips, 24 hours                    | 1-65535        | 65535              |

**Note 1:** 24-hour thresholds must be greater than their respective 15-minute or 1-hour threshold.

**For PA type NPCs:**

**Table 8-31. Parameter Register Threshold Range and Default Values**

| rr | Parameter                        | Interval | Threshold Value Range | Default Threshold Value |
|----|----------------------------------|----------|-----------------------|-------------------------|
| 11 | CRC Block Errors                 | DAILY    | 1 - 79056000          | 176947                  |
| 12 | Framing Errors                   | DAILY    | 1 - 345600000         | 176947                  |
| 13 | Out of Frame Seconds             | DAILY    | 1 - 86400             | 4                       |
| 14 | Errored Seconds                  | DAILY    | 1 - 86400             | 4320                    |
| 15 | Severely Errored Seconds         | DAILY    | 1 - 86400             | 90                      |
| 16 | Controlled Slip Seconds          | DAILY    | 1 - 86400             | 4                       |
| 17 | Coding Violations                | DAILY    | 1 - 176947200         | 176947                  |
| 18 | Unavailable Seconds              | DAILY    | 1 - 86400             | 90                      |
| 19 | Unavailable Time Count           | DAILY    | 1 - 4320              | 9                       |
| 20 | Multiframe Errors                | DAILY    | 1 - 86400             | 4095                    |
| 21 | Far End Block Errors             | DAILY    | 1 - 79056000          | 176947                  |
| 22 | Far End Errored Seconds          | DAILY    | 1 - 86400             | 4320                    |
| 23 | Far End Severely Errored Seconds | DAILY    | 1 - 86400             | 90                      |
| 24 | Far End Unavailable Seconds      | DAILY    | 1 - 86400             | 90                      |
| 81 | CRC Block Errors                 | 15MIN    | 1 - 823500            | 18432                   |
| 82 | Framing Errors                   | 15MIN    | 1 - 3600000           | 18432                   |
| 83 | Out of Frame Seconds             | 15MIN    | 1 - 900               | 4                       |
| 84 | Errored Seconds                  | 15MIN    | 1 - 900               | 300                     |
| 85 | Severely Errored Seconds         | 15MIN    | 1 - 900               | 30                      |
| 86 | Controlled Slip Seconds          | 15MIN    | 1 - 900               | 1                       |
| 87 | Coding Violations                | 15MIN    | 1 - 1843200           | 18432                   |
| 88 | Unavailable Seconds              | 15MIN    | 1 - 900               | 30                      |
| 89 | Unavailable Time Count           | 15MIN    | 1 - 45                | 3                       |
| 90 | Multiframe Errors                | 15MIN    | 1 - 900               | 255                     |
| 91 | Far End Block Errors             | 15MIN    | 1 - 823500            | 18432                   |
| 92 | Far End Errored Seconds          | 15MIN    | 1 - 900               | 300                     |
| 93 | Far End Severely Errored Seconds | 15MIN    | 1 - 900               | 30                      |
| 94 | Far End Unavailable Seconds      | 15MIN    | 1 - 900               | 30                      |

**For PA, PB, and PC type NPCs:**

In the following table these definitions apply:

|              |                                          |
|--------------|------------------------------------------|
| MI           | Maintenance Information                  |
| DMA          | Deferred Maintenance Action Minor Alarm  |
| PMA Major    | Prompt Maintenance Action Major Alarm    |
| PMA Critical | Prompt Maintenance Action Critical Alarm |

| <m> | Threshold Value    | Alarm Type                             |
|-----|--------------------|----------------------------------------|
| 0   | Default            | MI (Maintenance Information)           |
| 1   | Default            | DMA (Deferred Maintenance Minor Alarm) |
| 2   | Default            | PMA (Prompt Maintenance Major Alarm)   |
| 3   | Set 1              | MI                                     |
| 4   | Set 1              | DMA                                    |
| 5   | Set 1              | PMA Major                              |
| 6   | Set 2              | MI                                     |
| 7   | Set 2              | DMA                                    |
| 8   | Set 2              | PMA Major                              |
| 9   | Set 3              | MI                                     |
| a   | Set 3              | DMA                                    |
| b   | Set 3              | PMA Major                              |
| c   | Threshold disabled | no alarm                               |
| d   | Default            | PMA Critical                           |
| e   | Set 1              | PMA Critical                           |
| f   | Set 2              | PMA Critical                           |
| 10  | Set 3              | PMA Critical                           |

**Note 1:** m = 0 is the default.

**Note 2:** Threshold values for Set 1, Set 2, and Set 3 must be set (programmed) by using the command mentioned in the explanation of m above before variable **m** can be used to select threshold levels and alarm types other than the defaults.

|             |                             |
|-------------|-----------------------------|
| <b>SLIP</b> | - Timing slip               |
| <b>BER</b>  | - Bit error rate            |
| <b>ERS</b>  | - Errored seconds           |
| <b>SERS</b> | - Severely errored seconds  |
| <b>COFA</b> | - Change of frame alignment |
| <b>SANE</b> | - Shelf Alarm Near End      |
| <b>SAFE</b> | - Shelf Alarm Far End       |

SLIP

- mmm** - Slip major alarm threshold (0 through 255)
- nnn** - Slip minor alarm threshold (0 through 255)
- e** - Slip major alarm option selection (0 through 3)
- f** - Slip minor alarm option selection (0 through 3)

BER (Bit Error Rate)

- p** - BER major alarm threshold, (1E-p, 3\* through 6†)
- q** - BER minor alarm threshold, (1E-q, 3\* through 6†)
  - \* 4 for clear-DS1 FTU NPC or DS type NPC
  - † 7 on T1DM and Fe framing
- g** - BER major alarm option selection (0 through 3)
- h** - BER minor alarm option selection (0 through 3)

ERS (Errored Seconds)

- rrrrr** - ERS threshold (1 through 65535)
- i** - ERS option selection (0 through 3)

SERS (Severely Errored Seconds)

- sss** - SERS threshold (1 through 255)
- j** - SERS option selection (0 through 3)

COFA (Change of Frame Alignment)

- ttt** - COFA major alarm threshold (1 through 511)
- uuu** - COFA minor alarm threshold (1 through 255)
- k** - COFA major alarm option selection (0 through 3)
- l** - COFA minor alarm option selection (0 through 3)

SANE (Shelf Alarm Near End)

- xxxxx** - SANE alarm threshold (00000 through 65535)
- m** - SANE alarm option selection (0 through 3)

SAFE (Shelf Alarm Far End)

- zzzzz** - SAFE alarm threshold (00000 through 65535)
- n** - SAFE alarm option selection (0 through 3)

For PB and PC type NPCs:

**DM** - Degraded Minutes  
**SERS** - Severely Errored Seconds  
**ERS** - Errored Seconds  
**US** - Unavailable Seconds  
**SLIP** - Slip Events

For SHORT INTERVAL, DM is calculated hourly and SERS, ERS, US and SLIP are calculated at 15-minute intervals.

**nnnnn** - 24-hour Degraded Minutes (DM) threshold  
**ppppp** - 24-hour Severely Errored Seconds (SERS) threshold  
**qqqqq** - 24-hour Errored Seconds (ERS) threshold  
**rrrrr** - 24-hour Unavailable Seconds (US) threshold  
**sssss** - 24-hour Slip Events (SLIP) threshold

**e** - 24-hour DM threshold/alarm selection  
**f** - 24-hour SERS threshold/alarm selection  
**g** - 24-hour ERS threshold/alarm selection  
**h** - 24-hour US threshold/alarm selection  
**i** - 24-hour SLIP threshold/alarm selection

**nnnnn** - 1-hour DM threshold  
**ppppp** - 15-minute SERS threshold  
**qqqqq** - 15-minute ERS threshold  
**rrrrr** - 15-minute US threshold  
**sssss** - 15-minute SLIP threshold

**e** - 1-hour DM threshold/alarm selection  
**f** - 15-minute SERS threshold/alarm selection  
**g** - 15-minute ES threshold/alarm selection  
**h** - 15-minute US threshold/alarm selection  
**i** - 15-minute SLIP threshold/alarm selection



For PA type NPCs:

**CRC** - CRC Block Errors  
**FRER** - Framing Errors  
**OFS** - Out of Frame Seconds  
**ES** - Errored Seconds  
**SES** - Severely Errored Seconds  
**CSS** - Controlled Slip Seconds  
**CV** - Coding Violations  
**UAS** - Unavailable Seconds  
**UATC** - Unavailable Time Count  
**MER** - Multiframe Errors  
**FEBE** - Far End Block Errors  
**FES** - Far End Errored Seconds  
**FSES** - Far End Severely Errored Seconds  
**FUAS** - Far End Unavailable Seconds

**aaaaaaaa**

- Daily CRC block error threshold value.

**bbbbbbbb**

- Daily framing error threshold value.

**cccc**

- Daily out of frame seconds threshold value.

**dddd**

- Daily errored second threshold value.

**eeee**

- Daily severely errored second threshold value.

**ffff**

- Daily controlled slip second threshold value.

**gggggggg**

- Daily coding violation threshold value.

**hhhh**

- Daily unavailable second threshold value.

**iiii**

- Daily unavailable time count threshold value.

**jjjj**

- Daily multiframe alignment error threshold value.

**kkkkkkkk**

- Daily far-end block error threshold value.

**llll**

- Daily far-end errored second threshold value.

**mmmm**

- Daily far-end severely errored second threshold value.

**nnnn**

- Daily far-end unavailable second threshold value.

- a** - Daily CRC block error threshold selection,
- b** - Daily framing error threshold selection,
- c** - Daily out of frame seconds threshold selection,
- d** - Daily errored second threshold selection,
- e** - Daily severely errored second threshold selection,
- f** - Daily controlled slip second threshold selection,
- g** - Daily coding violation threshold selection,
- h** - Daily unavailable second threshold selection,
- i** - Daily unavailable time count threshold selection,
- j** - Daily multiframe alignment error threshold selection,
- k** - Daily far-end path block error selection,
- l** - Daily far-end path second threshold selection,
- m** - Daily far-end severely errored second threshold selection,
- n** - Daily far-end unavailable second threshold selection,

The options can be from "0" to "c" as specified for the "m" of the "rr/<m>" field.

**aaaaaa** - 15-minute CRC block error threshold value.

**bbbbbb**

- 15-minute framing error threshold value.

**ccc** - 15-minute out of frame seconds threshold value.

**ddd** - 15-minute errored second threshold value.

**eee** - 15-minute severely errored second threshold value.

**fff** - 15-minute controlled slip second threshold value.

**ggggggg**

- 15-minute coding violation threshold value.

**hhh** - 15-minute unavailable second threshold value.

**ii** - 15-minute unavailable time count threshold value.

**jjj** - 15-minute multiframe alignment error threshold value.

**kkkkkk** - 15-minute far-end block error threshold value.

**lll** - 15-minute far-end errored second threshold value.

**mmm** - 15-minute far-end severely errored second threshold value.

**nnn** - 15-minute far-end unavailable second threshold value.

- a** - 15-minute CRC block error threshold selection,
- b** - 15-minute framing error threshold selection,
- c** - 15-minute out of frame seconds threshold selection,
- d** - 15-minute errored second threshold selection,
- e** - 15-minute severely errored second threshold selection,
- f** - 15-minute controlled slip second threshold selection,
- g** - 15-minute coding violation threshold selection,
- h** - 15-minute unavailable second threshold selection,
- i** - 15-minute unavailable time count threshold selection,
- j** - 15-minute multiframe alignment error threshold selection,
- k** - 15-minute far-end path block error selection,
- l** - 15-minute far-end path second threshold selection,
- m** - 15-minute far-end severely errored second threshold selection,
- n** - 15-minute far-end unavailable second threshold selection,

The options can be from "0" to "c" as specified for the "m" of the "rr/<m>" field.

**For PA type NPCs:**

Depending on which interface functions are enabled by the provisioning values of xyz, some parameters may not be applicable. In this case the threshold value, the parameter count (if present in the message) and the selection value will appear as dashes ("-"). In the table below "N/A" indicates that a parameter is not applicable for the given value of x or y.

Also, if the selection value m=c has been chosen for a parameter, the threshold value and the parameter count (if present in the message) will appear as dashes.

| For PA Type NPCs |                                    |                                            |                             |                                 |
|------------------|------------------------------------|--------------------------------------------|-----------------------------|---------------------------------|
| Parameter        | CRC-4 Mode Disabled<br>(x=A,B,E,F) | Far-End PM Disabled<br>(x=0,2,4,6,A,B,E,F) | CAS Disabled<br>(y=8,9,C,D) | Unframed Clear 2Mbit/s<br>(y=D) |
| CRC              | N/A                                |                                            |                             | N/A                             |
| FRER             |                                    |                                            |                             | N/A                             |
| OFS              |                                    |                                            |                             | N/A                             |
| ES               |                                    |                                            |                             | N/A                             |
| SES              |                                    |                                            |                             | N/A                             |
| CSS              |                                    |                                            |                             |                                 |
| CV               |                                    |                                            |                             |                                 |
| UAS              |                                    |                                            |                             | N/A                             |
| UATC             |                                    |                                            |                             | N/A                             |
| MER              |                                    |                                            | N/A                         | N/A                             |
| FEBE             |                                    | N/A                                        |                             | N/A                             |
| FES              |                                    | N/A                                        |                             | N/A                             |
| FSES             |                                    | N/A                                        |                             | N/A                             |
| FUAS             |                                    | N/A                                        |                             | N/A                             |

**THMODE** - Thresholding mode (for PA NPCs only)

**hhh** - Thresholding mode option

*hhh*                      *Explanation*

INH                      Inhibit thresholding

ALW                      Allow thresholding

The INH option is used to temporarily inhibit thresholding for all parameters of all NPCs provisioned with TYPE mnxyz whether the thresholding for a specific NPC is already inhibited or not. When it is entered, all thresholds for those NPCs are suspended; therefore, no new threshold crossing messages will be output after the inhibition.

The ALW option is the default option and can be used to turn-off the thresholding inhibition. Note that, this command with the "ALW" option can be used for TYPE mnxyz NPCs whose thresholding capability is inhibited due to the entry of command I.38221

When the "ALW" is entered, the thresholds applied before the inhibition will be re-applied unless the thresholds were changed during the inhibition. Option change requests are permitted while the NPC thresholding is inhibited.

**vv/k** - Parameter/option involved in denial

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 02** Subject entity is not equipped
- 10** Unit is not equipped
- 11** UC is out of service
- 12** UC is in service but failed
- 13** FTMI is not equipped
- 20** Option rr/m has not been set up on 2nd database
- 21** Minor  $\geq$  major for SLIP opt
- 22** Minor  $\leq$  major for BER opt
- 23** Minor  $\geq$  major for COFA opt
- 2A** DMI combined with T1DM
- 2B** Maj|Min BER threshold is 7, but not in T1DM or Fe mode
- 4F** BER must not be less than 4 for Clear DS1
- 83** Option not programmable for this NPC type

## **CHG,TYPE,THMODE**

### **CHANGE TYPE AND THRESHOLD MODE**

#### **Explanation Of Command**

This command inhibits or allows the threshold-crossing messages for all unequipped NPCs that will be provisioned as the specified NPC type. After the execution of this command, any NPCs that are subsequently provisioned as the specified NPC type will have their threshold-crossing messages inhibited or allowed.

The only NPC type that can be specified in this command is the PA type and no xyz options shall be specified in this command.

When this command is entered for inhibiting threshold-crossing messages, it shall not be denied even if the threshold-crossing messages are already inhibited; when this command is entered for allowing threshold-crossing messages, it shall not be denied even if the threshold-crossing messages are already allowed. In addition, if this command is never entered for a given NPC type, the threshold-crossing messages will be allowed for all NPCs that will be provisioned as that NPC type.

The execution of this command does not require any Unit or CCN/ECCN hardware entities to be in service, except for the Main Controller.

In contrast, the CHG,TYPE,OPTS,THMODE command (I.38231) can be used to inhibit or allow the threshold-crossing messages for all equipped NPCs that have been provisioned as PA type with the specified xyz option; the CHG,NPC,OPTS,THMODE command (I.38221) can be used to inhibit or allow the threshold-crossing messages for the specified NPC that has been provisioned as PA type.

#### **Command**

[I.38291]

**CHG:FRM xy,SEQ ww:TYPE mn,THMODE hhh!**

---

### Completion Message

[O.38291]

M hh:mm:ss xy,ww n[vv] CHG TYPE mn THMODE hhh COMPL

---

### Denial Message

[O.38291.01]

M hh:mm:ss xy,ww n[vv] CHG TYPE mn THMODE hhh COND cc DNY

---

### Autonomous Message

Not applicable.

---

### Explanation Of Parameters

**TYPE** - Type

**mn** - NPC type

| <i>mn</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |                                                   |
|----|---------------------------------------------------|
| PA | CEPT NPC (120-ohm twisted pair or 75-ohm coaxial) |
|----|---------------------------------------------------|

**THMODE** - Thresholding mode

**hhh** - Threshold-crossing message mode

| <i>hhh</i> | <i>Explanation</i> |
|------------|--------------------|
|------------|--------------------|

|     |                                     |
|-----|-------------------------------------|
| INH | Inhibit threshold-crossing messages |
|-----|-------------------------------------|

|     |                                   |
|-----|-----------------------------------|
| ALW | Allow threshold-crossing messages |
|-----|-----------------------------------|

The INH option is used to inhibit (turn off) the threshold-crossing messages for all NPCs that will be provisioned as the specified NPC type. After this option is selected, no threshold-crossing messages will be output for all NPCs that will be provisioned as the specified NPC type.

The ALW option can be used to allow (turn on) the threshold-crossing messages for all NPCs that will be provisioned as the specified NPC type. After this option is selected, threshold-crossing messages will be output for all NPCs that will be provisioned as the specified NPC type.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**26** NPC type error



## **CHG,UNIT,CONN**

### **CHANGE CONNECTIVITY**

#### **Explanation Of Command**

This command requests a change of a unit's connectivity. Timeslot interchange (TSI) circuit packs will be automatically grown and/ or degrown (deprovisioned) as needed.

New or degrown TSIs are listed at the end of the output message. They are listed pairwise with up to six pairs listed per message line. At most there will be 10 of these pairs when the connectivity of a unit is changed.

#### **Command**

[I.38101]

**CHG:FRM xy,SEQ ww:UNIT q,CONN(a[,b[,c[,d[,e[,f]]]]])!**

### **Completion Message**

---

[O.38101]

M hh:mm:ss xy,ww n[vv] CHG UNIT q CONN a b c d e f \  
5 LN MSG:

TOTAL TSIS tt NEW TSIS nn DEGROWN TSIS dd  
sft sft sft sft sft sft sft sft sft sft  
sft sft sft sft sft sft sft sft sft sft  
sft sft sft sft sft sft sft sft sft sft EOP

M hh:mm:ss xy,ww n[vv] CHG UNIT q CONN a b c d e f \  
5 LN MSG:

TOTAL TSIS tt NEW TSIS nn DEGROWN TSIS dd  
sft sft sft sft sft sft sft sft sft sft  
sft sft sft sft sft sft sft sft sft sft  
sft sft sft sft sft sft sft sft sft sft EOP

M hh:mm:ss xy,ww n[vv] CHG UNIT q CONN a b c d e f \  
5 LN MSG:

TOTAL TSIS tt NEW TSIS nn DEGROWN TSIS dd  
CHANGED TSIS sft sft ... sft sft

.  
.  
.

CHANGED TSIS sft sft ... sft sft COMPL

### **Denial Message**

---

[O.38101.01]

M hh:mm:ss xy,ww n[vv] CHG UNIT q CONN a b c d e f COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

|                    |                                                                             |
|--------------------|-----------------------------------------------------------------------------|
| <b>UNIT</b>        | - Unit                                                                      |
| <b>[q]q</b>        | - Unit number (1 through 16)                                                |
| <b>TSI</b>         | - Time slot interchange                                                     |
| <b>CONN</b>        | - Connectivity                                                              |
| <b>a b c d e f</b> | - The new complement of the subject unit's TSIs is changed to (1 through 6) |
| <b>tt</b>          | - Total number of grown TSIs in frame (02 through 72)                       |
| <b>nn</b>          | - Number of TSIs grown by command (00 through 10)                           |
| <b>dd</b>          | - Number of TSIs degrown by command (00 through 10)                         |
| <b>sft</b>         | - TSI equipped status                                                       |
| <b>s</b>           | - Service side (0 or 1)                                                     |
| <b>f</b>           | - FROM unit number<br>1 through 6 if equipped<br>- if not equipped          |
| <b>t</b>           | - TO unit number<br>1 through 6 if equipped<br>- if not equipped            |
| <b>cc</b>          | - Hexadecimal condition code                                                |
| <b>cc</b>          | <i>Explanation</i>                                                          |
| <b>02</b>          | Subject entity is not equipped                                              |
| <b>27</b>          | Illegal connectivity specified                                              |
| <b>28</b>          | Connectivity contains unequipped units                                      |
| <b>80</b>          | Some TSIs to degrow are in service                                          |
| <b>3E</b>          | Mapped slots exist on a tsi                                                 |

---

## **CHG,USER,LINK,INCL,SCR,GR,MCON,MCOFF**

### **CHANGE USER/LINK SCREENING**

#### **Explanation Of Command**

This command assigns the output message screening for a user or administrative link, including all virtual circuits in a X.25 link, on the DACS II system.

The command can also assign default values to the link options.

The function is denied if the user identification does not exist.

Output from this command is sent only to the link on which the command was input.

With the Message Logging feature, a request to retrieve logged messages will be sent to the link on which the retrieval command was input and the links with screening option 5 that are running MML.

#### **Command**

[I.38401]

```
CHG:FRM xy,SEQ ww:{USER <user id>|LINK j[mm][,INCL]}\
[,SCR n[,GR(a,b,c,d,e,f)]][, {MCON|MCOFF}][,INIT]!
```

#### **Completion Message**

[O.38401]

```
M hh:mm:ss xy,ww n[vv] CHG {USER <user id>|LINK j[mm][,INCL]}\
[SCR n[GR(a,b,c,d,e,f)]] [{MCON|MCOFF}][INIT] COMPL
```

## **Denial Message**

---

[O.38401.01]

M hh:mm:ss xy,ww n[vv] CHG {USER <user id>|LINK j[mm][,INCL]} \  
[ SCR n[ GR(a,b,c,d,e,f)]] [ {MCON|MCOFF}][ INIT] COND cc DNY

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**USER** - User

**user id**

- User identifier (two to eight alphabetic characters)

User login identification

**LINK** - Link

**j [mm]** - Administrative link number

**j** - Physical link number (1 through 6)

**mm** - Virtual circuit number (01 through 16, for l = 5 or 6)

If mm is specified, pp must be specified as 01.

**INCL** - Include

Include virtual circuits of links 5 and 6. The INCL keyword can only be entered with X.25 links 5 and 6, and no virtual circuit number is allowed when this keyword is used. That is, "mm" and "INCL" are mutually exclusive. In addition, the INCL keyword is also mutually exclusive with the "<user id>". When the INCL keyword is entered, it means that all provisioning data specified in this command, for example, SCR n, GR(a,b,c,d,e,f), and MCON/MCOFF, will be applied to all virtual circuits of the link (5 or 6).

**SCR** - Screening

**n** - Screening option number (1 through 5)

The screening option is used to limit responses on a given administrative link to one of the sets given in the table below. The set to be received is selected by the use of variable "n".

| <i>n</i> | <i>Explanation</i>                                                                                                  |
|----------|---------------------------------------------------------------------------------------------------------------------|
| 1        | Responses to input at the same link.                                                                                |
| 2        | Responses to input at the same link and autonomous messages.<br>This is the default value.                          |
| 3        | Responses to messages input at the same link and some specified sets of action verbs.                               |
| 4        | Responses to messages input at the same link and some specified sets of action verbs including autonomous messages. |
| 5        | Responses to input messages on all links and autonomous messages                                                    |

**GR** - Group

**a, b, c, d, e, f**

- Screening groups a through f (0 or 1)

The entry of the screening group option is allowed only if n = 3 or 4 was entered for the screening option number. The screening group option will not apply for n = 2; the default screening option. The restricted commands are not categorized by group and are always assigned the screening group value "1".

| <i>a*</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

- |   |                                                                                                                          |
|---|--------------------------------------------------------------------------------------------------------------------------|
| 0 | Messages in the message group represented by variable a will not be sent to the link or user specified in this command.  |
| 1 | Messages in the message group represented by variable a will also be sent to the link or user specified in this command. |
| - | Do not change the screening group option for variable a.                                                                 |

\* This table applies also to variables b through f.

DACS II has six groups of action verbs represented in this message by variables a, b, c, d, e, and f. The following table defines the variables assigned to each action verb.

| a<br>Circuit<br>Prov. | b<br>Equipment<br>Prov. | c<br>Maintenance | d<br>Test<br>Access | e<br>Monitoring | f<br>Common |
|-----------------------|-------------------------|------------------|---------------------|-----------------|-------------|
| TCON                  | GRTH                    | RMV              | TTST                | AUD             | CHG         |
| TDIS                  | DGRTH                   | RST              | STST                | UTL             | ED          |
| TCNT                  | ADD                     | DGN              |                     |                 | EXC         |
| BCON                  | DLT                     | CFR              |                     |                 | ACT         |
| BDIS                  |                         |                  |                     |                 | ADD         |
| OCON                  |                         |                  |                     |                 | DELETE      |
| ODIS                  |                         |                  |                     |                 | LIST        |
| OCNT                  |                         |                  |                     |                 | TOTAL       |
| SW                    |                         |                  |                     |                 |             |
| CONF                  |                         |                  |                     |                 |             |
| SECH                  |                         |                  |                     |                 |             |
| SDCH                  |                         |                  |                     |                 |             |
| SCON                  |                         |                  |                     |                 |             |
| SCNT                  |                         |                  |                     |                 |             |
| SDIS                  |                         |                  |                     |                 |             |

**MCON** - Macro on

Macro completion message screening ON. MCON is the default value.

**MCOFF** - Macro off

Macro completion message screening OFF

The MCON/MCOFF options are used to turn on or off the completion messages of the component commands inside a macro during its execution.

**INIT** - Initialize

Initialize the link or user options; all parameters are set to their default values except those specified in the command.

**cc** - Hexadecimal condition code

**cc** *Explanation*

- D3** User does not exist
- D7** Cannot execute privileged command
- DF** Command and protocol are inconsistent
- E1** Virtual circuit is not specified for X.25 link
- E2** Invalid link number specified
- E3** Invalid keyword(s) combination specified
- 41** Language "F" provisioned for this channel
- 83** Language is not allowed

## **CI,ECI,RESET**

### **STARTUP**

#### **Explanation Of Command**

DACS II outputs this message immediately after a hardware reset. The message notifies remote systems by the major alarm state (indicated by \*\*) that the frame has reset.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01201]

**\*\*{CI|ECI} RESET**



### **Explanation Of Parameters**

---

**CI** - Communications interface

**ECI** - Enhanced communications interface

**RESET** - Reset

Indicates a hardware reset of the frame

## **CI,ECI,STARTUP,STF,ATP**

### **STARTUP**

#### **Explanation Of Command**

The communications interface or enhanced communications interface has initialized itself and has performed self-diagnostics. The results of these diagnostics are reported as some tests failed or all tests passed.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01211]

{CI|ECI} STARTUP {STF|ATP}

### **Explanation Of Parameters**

---

**CI** - Communications interface

**ECI** - Enhanced communications interface

**STARTUP**

- Startup

Indicates initialization

**STF** - Some tests failed

**ATP** - All tests passed

## **CMD,MC,OOS,MCOND,INSERVICE,MPDBASE**

### **INPUT DENIAL**

#### **Explanation Of Command**

This autonomous message indicates that processing of the input message is **STOPPED** because the main controller is either out of service, in maintenance condition, in service, or the main processor data base is not loaded.

Output from this command is sent only to the link on which the command was input.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01111]

M hh:mm:ss xy,ww n[vv] CMD MC {OOS|MCOND|INSERVICE|MPDBASE} \

e LN MSG:

<First 70 characters of input message.>

<Remaining text of input message> STOPPED

### **Explanation Of Parameters**

---

**e** - Number of lines in message

**OOS** - Out-of-service

**MCOND** - Maintenance condition

**INSERVICE**

- In-service

**MPDBASE**

- MP data base

The main processor data base is not loaded

**STOPPED**

- Stopped

## **COPY,NPC,TO**

### **COPY NPC**

#### **Explanation Of Command**

This command is used to copy provisioning information from a previously provisioned network processing circuit (NPC) to an NPC to be provisioned (the destination NPC). It is used for international NPC types PA, PB, PC and TH. Intervention Level data for the NPC is also copied. Copying is limited to the combinations given below:

- PA to PA
- PB to PB
- PC to PC
- PB to PC
- PC to PB
- TH to TH

One output message is printed for each NPC successfully copied and provisioned.

When a range address crosses a Unit boundary, the command will be denied. The NPC numbers which are divisible by four with a remainder of zero are not a valid Hybrid DS3 Unit THxyz type NPC. However, the range of THxyz type NPC numbers is still supported with the understanding that there may be gaps in the NPC number range.

When an NPC range specified within a Unit crosses a Facility Terminating Module (FTM) boundary and the FTM type differs from that specified in this command then that FTM will be skipped and a summary denial message will be output. This message will give the range of NPCs for which the denial is effective and the reason for the denial. The NPC range covers successive NPCs in the range that are denied for the same reason.

Execution of the command then resumes at the NPC following the last one in the summary denial message and continues to the end of the specified range.

This command is very similar to the GRTH command. The input parameters that can be specified on the GRTH command will be copied from the source NPC to the destination NPC. The performance monitoring threshold parameters are also copied. Others that are defaulted by the GRTH command will be defaulted.

### **Command**

---

#### **Nonhierarchical**

---

[l.31521]

**COPY:FRM xy,SEQ ww:NPC [s]abc,TO [t]def[-[u]ghi]!**

#### **Hierarchical**

---

[l.31521]

**COPY:FRM xy,SEQ ww:NPC uvmnp,TO wxkqr[-ghikl]!**

### **Completion Message**

---

#### **Nonhierarchical**

---

If the destination NPC is PB or PC type, the output format is:

[O.31521]

```

M hh:mm:ss xy,ww n[vv] COPY [s]jkl TYPE mnxyz [IW pqr] \
AIS {MI|PMA|DMA|PMC} 4 LN MSG:
24 HOUR DM SERS ERS US \
 SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr \
 SSSSS
OPTIONS e f g h \
 i EOM

```

```

M hh:mm:ss xy,ww n[vv] COPY [s]jkl TYPE mnxyz [IW pqr] \
AIS {MI|PMA|DMA|PMC} 4 LN MSG:
SHORT INTERVAL DM SERS ERS US \
 SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr \
 SSSSS
OPTIONS e f g h \
 i EOM

```

```

M hh:mm:ss xy,ww n[vv] COPY [s]jkl TYPE mnxyz TS0 abcdefgh \
TS0M abcdefgh COMPL

```

If the destination NPC is PA or TH type, the output format is:



[O.31521]

```
M hh:mm:ss xy,ww n[vv] COPY [s]jkl TYPE mnxyz [IW pqr] \
AIS {MI|DMA|PMA|PMC} 4 LN MSG:
DAILY CRC FRER OFS ES SES CSS CV
THRESHOLDS aaaaaaaa bbbbbbbbb ccccc ddddd eeeee fffff gggggggggg
OPTIONS a b c d e f g EOM
```

```
M hh:mm:ss xy,ww n[vv] COPY [s]jkl TYPE mnxyz [IW pqr] \
AIS {MI|DMA|PMA|PMC} 4 LN MSG:
DAILY UAS UATC MER FEBE FES FSES FUAS
THRESHOLDS hhhhhh iiii jjjjj kkkkkkkk lllll mmmmnn nnnnn
OPTIONS h i j k l m n EOM
```

```
M hh:mm:ss xy,ww n[vv] COPY [s]jkl TYPE mnxyz [IW pqr] \
AIS {MI|DMA|PMA|PMC} 4 LN MSG:
15MIN CRC FRER OFS ES SES CSS CV
THRESHOLDS aaaaaa bbbbbbb ccc ddd eee fff gggggggg
OPTIONS a b c d e f g EOM
```

```
M hh:mm:ss xy,ww n[vv] COPY [s]jkl TYPE mnxyz [IW pqr] \
AIS {MI|DMA|PMA|PMC} 4 LN MSG:
15MIN UAS UATC MER FEBE FES FSES FUAS
THRESHOLDS hhh ii jjj kkkkkk lll mmm nnn
OPTIONS h i j k l m n EOM
```

```
M hh:mm:ss xy,ww n[vv] COPY [s]jkl TYPE mnxyz TS0 abcdefgh \
TS0M abcdefgh COMPL
```

Note that FEBE, FES, FSES and FUAS are not applicable for TH type NPCs.

## Hierarchical

If the destination NPC is PB or PC type, the output format is:

[O.31521]

```

M hh:mm:ss xy,ww n[vv] COPY uvjkl TYPE mnxyz [IW pqr] \
AIS {MI|PMA|DMA|PMC} 4 LN MSG:
24 HOUR DM SERS ERS US \
 SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr \
 SSSSS
OPTIONS e f g h \
 i EOM

```

```

M hh:mm:ss xy,ww n[vv] COPY uvjkl TYPE mnxyz [IW pq] \
AIS {MI|PMA|DMA|PMC} 4 LN MSG:
SHORT INTERVAL DM SERS ERS US \
 SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr \
 SSSSS
OPTIONS e f g h \
 i EOM

```

```

M hh:mm:ss xy,ww n[vv] COPY uvjkl TYPE mnxyz TS0 abcdefgh \
TS0M abcdefgh COMPL

```

If the destination NPC is PA or TH type, the output format is:

[O.31521]

```
M hh:mm:ss xy,ww n[vv] COPY uvjkl TYPE mnxyz [IW pqr] \
AIS {MI|DMA|PMA|PMC} 4 LN MSG:
DAILY CRC FRER OFS ES SES CSS CV
THRESHOLDS aaaaaaaa bbbbbbbbb ccccc ddddd eeeee fffff gggggggg
OPTIONS a b c d e f g EOM
```

```
M hh:mm:ss xy,ww n[vv] COPY uvjkl TYPE mnxyz [IW pqr] \
AIS {MI|DMA|PMA|PMC} 4 LN MSG:
DAILY UAS UATC MER FEBE FES FSES FUAS
THRESHOLDS hhhhh iiii jjjjj kkkkkkkk lllll mmmm nnnnn
OPTIONS h i j k l m n EOM
```

```
M hh:mm:ss xy,ww n[vv] COPY uvjkl TYPE mnxyz [IW pqr] \
AIS {MI|DMA|PMA|PMC} 4 LN MSG:
15MIN CRC FRER OFS ES SES CSS CV
THRESHOLDS aaaaaa bbbbbbb ccc ddd eee fff gggggg
OPTIONS a b c d e f g EOM
```

```
M hh:mm:ss xy,ww n[vv] COPY uvjkl TYPE mnxyz [IW pqr] \
AIS {MI|DMA|PMA|PMC} 4 LN MSG:
15MIN UAS UATC MER FEBE FES FSES FUAS
THRESHOLDS hhh ii jjj kkkkkk lll mmm nnn
OPTIONS h i j k l m n EOM
```

```
M hh:mm:ss xy,ww n[vv] COPY uvjkl TYPE mnxyz TS0 abcdefgh \
TS0M abcdefgh COMPL
```

Note that FEBE, FES, FSES and FUAS are not applicable for TH types NPCs.

## Denial Message

---

## Nonhierarchical

---

[O.31521.01]

```
M hh:mm:ss xy,ww n[vv] COPY NPC [s]abc TO [t]mno[-[u]vwx] COND cc DNY
```

## Hierarchical

---

[O.31521.01]

```
M hh:mm:ss xy,ww n[vv] COPY NPC uvmp TO bcdfe[-efhed] COND cc DNY
```

## Autonomous Message

---

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

**TO** - to

**TYPE** - type

**mnxyz** - NPC type identifier

| <i>mn</i> | <i>Explanation</i>              |
|-----------|---------------------------------|
| PA        | CEPT NPC (75- or 120-ohm)       |
| PB        | CEPT NPC (120-ohm twisted pair) |
| PC        | CEPT NPC (75-ohm coaxial)       |

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, denoting the source of the provisioning information.

**[t]def** - The 3- or 4-digit nonhierarchical NPC number, denoting the start of a range.

**[u]ghi** - The 3- or 4-digit nonhierarchical NPC number, denoting the end of a range.

**[s]jkl** - The 3- or 4-digit nonhierarchical NPC number of the NPC that was successfully equipped.

**[t]mno** - The 3- or 4-digit nonhierarchical NPC number of the first NPC in a range to be denied.

**[u]vwx** - The 3- or 4-digit nonhierarchical NPC number of the last NPC in a range to be denied.

**bcdfe** - Hierarchical NPC number of the first NPC in a range to be denied.

**efhed** - Hierarchical NPC number of the last NPC in a range to be denied.

**ghikl** - Hierarchical NPC number of the last NPC in a range to be equipped.

**uvjkl** - Hierarchical NPC number of the NPC that was successfully equipped.

**uvmnp** - Hierarchical NPC number denoting the source of the provisioning information to be copied.

**wxkqr** - Hierarchical NPC number of the NPC to be equipped or the first NPC in a range to be equipped.

**bc, ef, gh, uv, wx**  
- Unit number  
**d, h, i, j, k, m**  
- Module number  
**fe, ed, kl, np, qr**  
- NPC number within the module

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in hierarchical form, the valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**IW** - Insertion word

**pq** - Hexadecimal value of the insertion word.

An eight-bit code, called the growth insertion word, is transmitted by this NPC on unassigned DS0 channels. This code is specified by the optional keyword IW and its argument pq. This code was previously called the Disconnect Code (DCC), but that name is properly reserved for the cross-connect insertion word, which is transmitted when the disconnect message with the DDC specified is used.

Although any 2-digit hexadecimal code may be used, the default values are:

*pq Explanation*

7F Unassigned Channel Code (UAC), the default value for DE/TE type, DA/TA type, and DS type NPCs provisioned with D4 or ESF framing.

18 Unassigned Multiplex Code (UMC), the default value for DA/TA type NPCs provisioned with T1DM framing. This value should only be provisioned with T1DM framing (DE4yz/TE4yz, DA4yz/TA4yz), so the growth command enforces this restriction.

FF This is recommended for unconnected channels in the SLC® interface and CPI applications.

For Clear-DS1 NPCs, the insertion word option is **NOT** available and the message will be denied if this option is entered. The alarm indication signal (AIS) is transmitted in the disconnect or idle state.

**AIS** - Alarm indication signal

**INFO** - Information

Information message (not an alarm).

**MJ** - Major (alarm)

**MN** - Minor (alarm)

**BER** - Bit Error Rate

**ERS** - Errored seconds

**SERS** - Severe errored seconds

**COFA** - Change of frame alignment

**mmm** - SLIP major alarm threshold (0 through 255)  
**nnn** - SLIP minor alarm threshold (0 through 255)  
**e** - SLIP major option selection (0 through 3)  
**f** - SLIP minor option selection (0 through 3)

**p** - BER major alarm threshold (4 through 6)  
**q** - BER minor alarm threshold (4 through 6)  
**g** - BER major option selection (0 through 3)  
**h** - BER minor option selection (0 through 3)

**rrrrr** - ERS threshold (1 through 65535)  
**i** - ERS option selection (0 through 3)

**sss** - SERS threshold (1 through 255)  
**j** - SERS option selection (0 through 3)

**ttt** - COFA major alarm threshold (1 through 511)  
**uuu** - COFA minor alarm threshold (1 through 255)  
**k** - COFA major option selection (0 through 3)  
**l** - COFA minor option selection (0 through 3)

**xxxxx** - SANE threshold (0 through 65535)  
**v** - SANE option selection (0 through 3)

**zzzzz** - SAFE threshold (0 through 65535)  
**w** - SAFE option selection (0 through 3)

**Note:** For clear-DS1 FTU NPC only SLIP and BER parameters are listed.  
For clear-DS1 DS3U NPC only SLIP parameters are listed.

The SANE and SAFE parameters are not applicable to DS1yz and DS7yz type NPCs.

Except for BER, major thresholds may not be equal to or less than the minor thresholds. The BER major threshold can be equal to the BER minor threshold.



**PL** - Payload loopback

**ENA** - Enabled

Payload loopback commands received from far-end equipment on the ESF data link are recognized and performed by the ANSI NPC. This is the default option.

**DSA** - Disabled

Payload loopback commands received from far-end equipment on the ESF data link are ignored by the ANSI NPC. This prevents customer equipment from controlling network configurations.

**CVP** - Path Coding Violations

**ESP** - Path Errored Seconds

**SESP** - Path Severely Errored Seconds

**SEFS** - Severely Errored Framing Seconds

**CSSP** - Path Controlled Slip Seconds

**UASP** - Path Unavailable Seconds

**CVL** - Line Coding Violations

**ESL** - Line Errored Seconds

**SESL** - Line Severely Errored Seconds

aaaaaaaa

- Daily near-end path coding violation threshold, (000000000 through 134217727)

**a** - Daily near-end path coding violation threshold selection, (0 through 3)

**bbbb** - Daily near-end path errored second threshold, (00000 through 86400)

**b** - Daily near-end path errored second threshold selection, (0 through 3)

**cccc** - Daily near-end path severely errored second threshold, (00000 through 86400)

**c** - Daily near-end path severely errored second threshold selection, (0 through 3)

**dddd** - Daily near-end severely errored framing second threshold, (00000 through 86400)

**d** - Daily near-end severely errored framing second threshold selection, (0 through 3)

**eeeeee** - Daily near-end controlled slip second threshold, (00000 through 86400)

**e** - Daily near-end controlled slip second threshold selection,  
(0 through 3)

**ffffff** - Daily near-end unavailable second threshold, (00000 through 86400)

**f** - Daily near-end unavailable second threshold selection, (0 through 3)

**ggggggggg**

- Daily near-end line coding violation threshold,  
(000000000 through 134217727, or ----- if not applicable)

**g** - Daily near-end line coding violation threshold selection,  
(0 through 3)

**hhhhh** - Daily near-end line errored second threshold,  
(00000 through 86400, or ----- if not applicable)

**h** - Daily near-end line errored second threshold selection,  
(0 through 3)

**iiiii** - Daily near-end line severely errored second threshold,  
(00000 through 86400, or ----- if not applicable)

**i** - Daily near-end line severely errored second threshold selection,  
(0 through 3)

**jjjjjjj**

- Daily far-end path coding violation threshold,  
(000000000 through 134217727, or ----- if not applicable)

**j** - Daily far-end path coding violation threshold selection,  
(0 through 3)

**kkkkk** - Daily far-end path errored second threshold,  
(00000 through 86400, or ----- if not applicable)

**k** - Daily far-end path errored second threshold selection, (0 through 3)

**lllll** - Daily far-end path severely errored second threshold,  
(00000 through 86400, or ----- if not applicable)

**l** - Daily far-end path severely errored second threshold selection,  
(0 through 3)

**mmmmm** - Daily far-end severely errored framing second threshold,  
(00000 through 86400, or ----- if not applicable)

**m** - Daily far-end severely errored framing second threshold selection,  
(0 through 3)

- nnnnn** - Daily far-end controlled slip second threshold,  
(00000 through 86400, or ----- if not applicable)
- n** - Daily far-end controlled slip second threshold selection,  
(0 through 3)
- ooooo** - Daily far-end unavailable second threshold,  
(00000 through 86400)
- o** - Daily far-end unavailable second threshold selection, (0 through 3)
- ppppp** - Daily far-end line errored second threshold,  
(00000 through 86400, or ----- if not applicable)
- p** - Daily far-end line errored second threshold selection,  
(0 through 3)
- a a a a a a** - 15-Minute near-end path coding violation threshold,  
(0000000 through 2097151)
- a** - 15-Minute near-end path coding violation threshold selection,  
(0 through 3)
- bbb** - 15-Minute near-end path errored second threshold,  
(000 through 900)
- b** - 15-Minute near-end path errored second threshold selection,  
(0 through 3)
- ccc** - 15-Minute near-end path severely errored second threshold,  
(000 through 900)
- c** - 15-Minute near-end path severely errored second threshold selection,  
(0 through 3)
- ddd** - 15-Minute near-end severely errored framing second threshold,  
(000 through 900)
- d** - 15-Minute near-end severely errored framing second threshold  
selection, (0 through 3)
- eee** - 15-Minute near-end controlled slip second threshold,  
(000 through 900)
- e** - 15-Minute near-end controlled slip second threshold selection,  
(0 through 3)

**fff** - 15-Minute near-end unavailable second threshold,  
(000 through 900)

**f** - 15-Minute near-end unavailable second threshold selection,  
(0 through 3)

**g g g g g g g**  
- 15-Minute near-end line coding violation threshold,  
(0000000 through 2097151, or ----- if not applicable)

**g** - 15-Minute near-end line coding violation threshold selection,  
(0 through 3)

**hhh** - 15-Minute near-end line errored second threshold,  
(000 through 900, or --- if not applicable)

**h** - 15-Minute near-end line errored second threshold selection,  
(0 through 3)

**iii** - 15-Minute near-end line severely errored second threshold,  
(000 through 900, or --- if not applicable)

**i** - 15-Minute near-end line severely errored second threshold selection,  
(0 through 3)

**j j j j j j j**  
- 15-Minute far-end path coding violation threshold,  
(0000000 through 2097151, or ----- if not applicable)

**j** - 15-Minute far-end path coding violation threshold selection,  
(0 through 3)

**kkk** - 15-Minute far-end path errored second threshold,  
(000 through 900, or --- if not applicable)

**k** - 15-Minute far-end path errored second threshold selection,  
(0 through 3)

**lll** - 15-Minute far-end path severely errored second threshold,  
(000 through 900, or --- if not applicable)

**l** - 15-Minute far-end path severely errored second threshold selection,  
(0 through 3)

**mmm** - 15-Minute far-end severely errored framing second threshold,  
(000 through 900, or --- if not applicable)

**m** - 15-Minute far-end severely errored framing second threshold selection,  
(0 through 3)

- nnn** - 15-Minute far-end controlled slip second threshold,  
(000 through 900, or --- if not applicable)
- n** - 15-Minute far-end controlled slip second threshold selection,  
(0 through 3)
- ooo** - 15-Minute far-end unavailable second threshold,  
(000 through 900)
- o** - 15-Minute far-end unavailable second threshold selection,  
(0 through 3)
- ppp** - 15-Minute far-end line errored second threshold,  
(000 through 900, or --- if not applicable)
- p** - 15-Minute far-end line errored second threshold selection,  
(0 through 3)

**Note:** A threshold of zero for any parameter inhibits threshold crossing monitoring for that parameter.

**For PB/PC type:**

Note that:

- If the NPC is not located in a sync NPC location, bit "b" set to "1" will be denied.
- For telephone channel numbering, channels 16 to 30 occupy time slots 17 to 31.
- For time slot channel numbering, channels 16 to 30 occupy time slots 16 to 30.
- For NSA NPCs (bit d = 0), bits "f" and "g" are don't cares: any values are accepted.
- If bit "d" is set to "1" (that is, a CAS NPC) and "jkl" is "110" (that is, Transmic 1G), the command will be denied.
- If bit "d" is set to "1" (that is, a CAS NPC) and bit "e" is "1" for time slot channel numbering, the command will be denied.

- m** - Facility performance parameter threshold index (0 through 10 hexadecimal)

Variable m is used to select threshold values previously programmed for rr. The default threshold value for each parameter is shown in the table below under the column heading "Default Threshold Value". This is the value selected by m = 0, 1, or 2 in the table of m values following the parameter table. A given value of m selects both the performance monitoring threshold level and the alarm type associated with it as shown in that table. Threshold values selected by values of m greater than 2 must exist, that is, must have been programmed, prior to being selected. These other thresholds can be set by using the CHG,SETOP, TYPE,ALL,NPCOP command. Thresholds of all unspecified parameters will be set to the default value associated with m=0. Although the NPC type field is optional for PB and PC types, the options field must not be given without the NPC type field.

**For PB and PC type NPCs:**

| rr | Parameter                          | Threshold Value Range | Default Threshold Value |
|----|------------------------------------|-----------------------|-------------------------|
| 31 | Degraded Minutes, 1 hour           | 1-60                  | 60                      |
| 32 | Degraded Minutes, 24 hours         | 1-1440                | 1440                    |
| 33 | Severely Errored Seconds, 15 mins  | 1-900                 | 900                     |
| 34 | Severely Errored Seconds, 24 hours | 1-65535               | 65535                   |
| 35 | Errored Seconds, 15 minutes        | 1-900                 | 900                     |
| 36 | Errored Seconds, 24 hours          | 1-65535               | 65535                   |
| 37 | Unavailable Seconds, 15 minutes    | 1-900                 | 900                     |
| 38 | Unavailable Seconds, 24 hours      | 1-65535               | 65535                   |
| 39 | Slips, 15 minutes                  | 1-900                 | 900                     |
| 40 | Slips, 24 hours                    | 1-65535               | 65535                   |

**Note 1:** 24-hour thresholds must be greater than their respective 15-minute or 1-hour threshold.

**For PA, PB, and PC type NPCs:**

In the following table these definitions apply:

|              |                                          |
|--------------|------------------------------------------|
| MI           | Maintenance Information                  |
| DMA          | Deferred Maintenance Action Minor Alarm  |
| PMA Major    | Prompt Maintenance Action Major Alarm    |
| PMA Critical | Prompt Maintenance Action Critical Alarm |

| <m>       | Threshold Value    | Alarm Type                             |
|-----------|--------------------|----------------------------------------|
| <b>0</b>  | Default            | MI (Maintenance Information)           |
| <b>1</b>  | Default            | DMA (Deferred Maintenance Minor Alarm) |
| <b>2</b>  | Default            | PMA (Prompt Maintenance Major Alarm)   |
| <b>3</b>  | Set 1              | MI                                     |
| <b>4</b>  | Set 1              | DMA                                    |
| <b>5</b>  | Set 1              | PMA Major                              |
| <b>6</b>  | Set 2              | MI                                     |
| <b>7</b>  | Set 2              | DMA                                    |
| <b>8</b>  | Set 2              | PMA Major                              |
| <b>9</b>  | Set 3              | MI                                     |
| <b>a</b>  | Set 3              | DMA                                    |
| <b>b</b>  | Set 3              | PMA Major                              |
| <b>c</b>  | Threshold disabled | no alarm                               |
| <b>d</b>  | Default            | PMA Critical                           |
| <b>e</b>  | Set 1              | PMA Critical                           |
| <b>f</b>  | Set 2              | PMA Critical                           |
| <b>10</b> | Set 3              | PMA Critical                           |

**Note 1:** m = 0 is the default.

**Note 2:** Threshold values for Set 1, Set 2, and Set 3 must be set (programmed) by using the command mentioned in the explanation of m above before variable m can be used to select threshold levels and alarm types other than the defaults.

**Note:** If the queried NPC can not be accessed for some reason, for example because the Facility Terminating Module is not equipped or the FTMI or Unit Controller is out of service, then the NPC's parameter count fields are printed as a string of dashes to indicate that the counts are not available. The parameter thresholds and options will still be correctly output.

In addition, certain parameters do not apply. In the cases where specific parameters do not apply to the queried NPC, the respective parameter count fields, threshold values and threshold options are all displayed as a string of dashes.

IW - Insertion Word

pq[r] - Hexadecimal value of the Growth Insertion Word (GIW)

Used in the transmit direction on unassigned channels for CEPT NPCs.

pq transmitted data information  
r transmitted signaling information

A special code, called the Growth Insertion Word (GIW), is transmitted by this NPC on unassigned channels. This code is specified by the optional keyword **IW** and its argument **pq**.

*This code was previously called the Disconnect Code (DCC), but that name is properly reserved for the TCON Insertion Word, which is transmitted when the "TDIS: :FROM, TO, . . . , DCC" command is used.*

**IW** - Insertion word

**pqr** - Hexadecimal value of the insertion word.

For PB and PC type NPCs, the IW argument is X'pq[r], and the default GIW code is X'D5D (Binary: 11010101 1101). Hexadecimal digits "pq" represent the CEPT insertion word for cross-connected time slots and hexadecimal digit "r" represents the CEPT signaling option. The "r" digit is needed to accommodate the cross-connected CEPT time slot and its associated portion of TS16 used for signaling when provisioned for channel associated signaling (CAS).

Although the "r" digit is accepted on input, for NSA NPCs, it has no significance.

**AIS** - Alarm indication signal

AIS is not detected by unframed clear (unchannelized) 2Mbit/s PAXDz type NPCs. Therefore, specifying AIS with one of the alarm level types MI, DMA, or PMA, is unnecessary. However, the command will not be denied if AIS is specified with an alarm level for unframed clear PAXDz NPCs. AIS with its alarm level will simply never be reported for unframed clear PAXDz NPCs.

**MI** - Maintenance information

This is the default option.

**PMA** - Prompt Maintenance Action Major Alarm

**PMC** - Prompt Maintenance Action Critical Alarm

**DMA** - Deferred Maintenance Action Minor Alarm

For each NPC listed, this message prints out values of the states, counts, thresholds and options of the following facility performance parameters and the spare international and national bits in time slot 0 for CEPT NPCs.

For PB and PC type NPCs:

**DM** - Degraded Minutes

**nnnnn** - 24-hour Degraded Minutes threshold

**nnnnn** - 1-hour DM threshold

**e** - 24-hour Degraded Minutes threshold/alarm selection

**e** - 1-hour DM threshold/alarm selection



**SERS** - Severely Errored Seconds

**ppppp** - 24-hour Severely Errored Seconds threshold

**ppppp** - 15-minute SERS threshold

**f** - 24-hour Severely Errored Seconds threshold/alarm selection

**f** - 15-minute SERS threshold/alarm selection

**ERS** - Errored Seconds

**qqqqq** - 24-hour Errored Seconds threshold

**qqqqq** - 15-minute ERS threshold

**g** - 24-hour Errored Seconds threshold/alarm selection

**g** - 15-minute ES threshold/alarm selection

**US** - Unavailable Seconds

**rrrrr** - 24-hour Unavailable Seconds threshold

**rrrrr** - 15-minute US threshold

**h** - 24-hour Unavailable Seconds threshold/alarm selection

**h** - 15-minute US threshold/alarm selection

**SLIP** - Slip Events

**sssss** - 24-hour Slip Events threshold

**sssss** - 15-minute SLIP threshold

**i** - 24-hour Slip threshold/alarm selection

**i** - 15-minute SLIP threshold/alarm selection

For SHORT INTERVAL, DM is calculated hourly and SERS, ERS, US, and SLIP are calculated at 15 minute intervals.

The **TS0 abcdefgh** variables represent international and national bits in time slot'0, as defined by:

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

These variables are set to their default values "11011111" by this command, except for the Transmic'1G option, where the default is "11000000."

The variables may later be changed by setting the abcdefgh parameters in the TS0 field of the CHG::NPC command.

Each of the variables may then be set to "0", "1", or "P." "P" indicates that the incoming bit will be cross-connected unchanged.

When TS0 is cross-connected, the TS0 bits will be either passed, or set to "0" or "1" as indicated by the "abcdefgh" variable values. Note that bits which are used for alarms (bit 3 always; bits 4 and 5 if provisioned by the **mnxyz** values) may not be set to "P."

This is also true for NPCs assigned as test port NPCs.

The **TS0M abcdefgh** field allows monitoring of state changes in the received spare international bits, where the "abcdefgh" variables refer to the same TS0 bits as defined above for the TS0 "abcdefgh" variables.

The TS0M variables are specified for monitoring in the command as:

The default values for TS0M variables are **abcdefgh=00000000**, unless the **xyz** parameters set them differently, that is, for Transmic'1G the abcdefgh=00111111. The TS0M variables may later be provisioned by the CHG::TS0M'abcdefgh or the ED-PRMTR-EQPT TS0M-abcdefgh (38323) command.

**For PA type:**

Note that:

- If the NPC is not located in a sync NPC location, the value of "x" must be in the range 0 - 3 or 8 - B. Otherwise the command will be denied.
- For telephone channel numbering, channels 16 to 30 occupy time slots 17 to 31.
- For time slot channel numbering, channels 16 to 30 occupy time slots 16 to 30.
- If the value of "y" is 0, 2, 4 or 6 (i.e., a CAS NPC) and the value of "z" is C (i.e. Transmic 1G), the command will be denied.

**For TH type:**

Note that:

- For telephone channel numbering, channels 16 to 30 occupy time slots 17 to 31.
- For time slot channel numbering, channels 16 to 30 occupy time slots 16 to 30.

<m> - Facility performance parameter threshold index (0 through 10 hexadecimal)

Variable <m> is used to select the threshold value and alarm type previously programmed for parameter rr. There are four possible alarm thresholds and 4 different alarm levels. A given value of <m> selects one combination of threshold value and alarm level. The combinations of these two result in 16 possible values of m. There is a 17th <m> value which is used to disable the alarm threshold and the alarm. The values of <m> that produce the default values of the thresholds and alarms are shown in the table below under the column heading "Threshold Value". Threshold and alarm combinations selected by m = 3 through b and d-10 must exist, that is, must have been programmed, prior to being selected. The thresholds are programmed by using the ED-OPT-T1 command. Thresholds of all unspecified parameters will be set to the default value associated with m=0. Setting <m> = c disables thresholding for a given parameter.

For PA type NPCs:

**Table 8-32. Parameter Register Threshold Range and Default Values**

| rr | Parameter                        | Interval | Threshold Value Range | Default Threshold Value |
|----|----------------------------------|----------|-----------------------|-------------------------|
| 11 | CRC Block Errors                 | DAILY    | 1 - 79056000          | 176947                  |
| 12 | Framing Errors                   | DAILY    | 1 - 345600000         | 176947                  |
| 13 | Out of Frame Seconds             | DAILY    | 1 - 86400             | 4                       |
| 14 | Errored Seconds                  | DAILY    | 1 - 86400             | 4320                    |
| 15 | Severely Errored Seconds         | DAILY    | 1 - 86400             | 90                      |
| 16 | Controlled Slip Seconds          | DAILY    | 1 - 86400             | 4                       |
| 17 | Coding Violations                | DAILY    | 1 - 176947200         | 176947                  |
| 18 | Unavailable Seconds              | DAILY    | 1 - 86400             | 90                      |
| 19 | Unavailable Time Count           | DAILY    | 1 - 4320              | 9                       |
| 20 | Multiframe Errors                | DAILY    | 1 - 86400             | 4095                    |
| 21 | Far End Block Errors             | DAILY    | 1 - 79056000          | 176947                  |
| 22 | Far End Errored Seconds          | DAILY    | 1 - 86400             | 4320                    |
| 23 | Far End Severely Errored Seconds | DAILY    | 1 - 86400             | 90                      |
| 24 | Far End Unavailable Seconds      | DAILY    | 1 - 86400             | 90                      |
| 81 | CRC Block Errors                 | 15MIN    | 1 - 823500            | 18432                   |
| 82 | Framing Errors                   | 15MIN    | 1 - 3600000           | 18432                   |
| 83 | Out of Frame Seconds             | 15MIN    | 1 - 900               | 4                       |
| 84 | Errored Seconds                  | 15MIN    | 1 - 900               | 300                     |
| 85 | Severely Errored Seconds         | 15MIN    | 1 - 900               | 30                      |
| 86 | Controlled Slip Seconds          | 15MIN    | 1 - 900               | 1                       |
| 87 | Coding Violations                | 15MIN    | 1 - 1843200           | 18432                   |
| 88 | Unavailable Seconds              | 15MIN    | 1 - 900               | 30                      |
| 89 | Unavailable Time Count           | 15MIN    | 1 - 45                | 3                       |
| 90 | Multiframe Errors                | 15MIN    | 1 - 900               | 255                     |
| 91 | Far End Block Errors             | 15MIN    | 1 - 823500            | 18432                   |
| 92 | Far End Errored Seconds          | 15MIN    | 1 - 900               | 300                     |
| 93 | Far End Severely Errored Seconds | 15MIN    | 1 - 900               | 30                      |
| 94 | Far End Unavailable Seconds      | 15MIN    | 1 - 900               | 30                      |

**For PA, PB, and PC type NPCs:**

In the following table these definitions apply:

|              |                                          |
|--------------|------------------------------------------|
| MI           | Maintenance Information                  |
| DMA          | Deferred Maintenance Action Minor Alarm  |
| PMA Major    | Prompt Maintenance Action Major Alarm    |
| PMA Critical | Prompt Maintenance Action Critical Alarm |

| <m>       | Threshold Value    | Alarm Type                             |
|-----------|--------------------|----------------------------------------|
| <b>0</b>  | Default            | MI (Maintenance Information)           |
| <b>1</b>  | Default            | DMA (Deferred Maintenance Minor Alarm) |
| <b>2</b>  | Default            | PMA (Prompt Maintenance Major Alarm)   |
| <b>3</b>  | Set 1              | MI                                     |
| <b>4</b>  | Set 1              | DMA                                    |
| <b>5</b>  | Set 1              | PMA Major                              |
| <b>6</b>  | Set 2              | MI                                     |
| <b>7</b>  | Set 2              | DMA                                    |
| <b>8</b>  | Set 2              | PMA Major                              |
| <b>9</b>  | Set 3              | MI                                     |
| <b>a</b>  | Set 3              | DMA                                    |
| <b>b</b>  | Set 3              | PMA Major                              |
| <b>c</b>  | Threshold disabled | no alarm                               |
| <b>d</b>  | Default            | PMA Critical                           |
| <b>e</b>  | Set 1              | PMA Critical                           |
| <b>f</b>  | Set 2              | PMA Critical                           |
| <b>10</b> | Set 3              | PMA Critical                           |

**Note 1:** m = 0 is the default.

**Note 2:** Threshold values for Set 1, Set 2, and Set 3 must be set (programmed) by using the command mentioned in the explanation of m above before variable m can be used to select threshold levels and alarm types other than the defaults.

IW - Insertion Word

pq[r] - Hexadecimal value of the Growth Insertion Word (GIW)

Used in the transmit direction on unassigned channels for CEPT NPCs.

pq transmitted data information  
r transmitted signaling information

A special code, called the Growth Insertion Word (GIW), is transmitted by this NPC on unassigned channels. This code is specified by the optional keyword **IW** and its argument **pq**.

*This code was previously called the Disconnect Code (DCC), but that name is properly reserved for the TCON Insertion Word, which is transmitted when the "TDIS: :FROM, TO, . . . , DCC" command is used.*

**IW** - Insertion word

**pqr** - Hexadecimal value of the insertion word.

For PA type NPCs, the IW argument is X'pq[r]', and the default GIW code is X'D5D (Binary: 11010101 1101). The "pq" hex digits represent the CEPT insertion word for cross-connected time slots and the "r" hex digit represents the CEPT signaling options. The "r" digit is needed to accommodate the cross-connected CEPT time slot and its associated portion of TS16 used for signaling when provisioned for CAS.

Although the "r" digit is accepted on input, for NSA NPCs, it has no significance.

For each NPC listed, this message prints out values of the states, counts, thresholds and options of the following facility performance parameters and the spare international and national bits in time slot 0 for CEPT DPCs.

| parameter | explanation                      |
|-----------|----------------------------------|
| CRC       | CRC Block Errors                 |
| FRER      | Framing Errors                   |
| OFS       | Out of Frame Seconds             |
| ES        | Errored Seconds                  |
| SES       | Severely Errored Seconds         |
| CSS       | Controlled Slip Seconds          |
| CV        | Coding Violations                |
| UAS       | Unavailable Seconds              |
| UATC      | Unavailable Time Count           |
| MER       | Multiframe Errors                |
| FEBE      | Far End Block Errors             |
| FES       | Far End Errored Seconds          |
| FSES      | Far End Severely Errored Seconds |
| FUAS      | Far End Unavailable Seconds      |

Two sets of thresholds are kept for each parameter: One for DAILY intervals and one for 15 MINUTE intervals.

**For PA type NPCs:**

Depending on which interface functions are enabled by the provisioning values of xyz, some parameters may not be applicable. In this case the threshold value, the parameter count (if present in the message) and the selection value will appear as dashes ("-"). In the table below "N/A" indicates that a parameter is not applicable for the given value of x or y.

Also, if the selection value m=c has been chosen for a parameter, the threshold value and the parameter count (if present in the message) will appear as dashes.

| For PA Type NPCs |                                    |                                            |                             |                                 |
|------------------|------------------------------------|--------------------------------------------|-----------------------------|---------------------------------|
| Parameter        | CRC-4 Mode Disabled<br>(x=A,B,E,F) | Far-End PM Disabled<br>(x=0,2,4,6,A,B,E,F) | CAS Disabled<br>(y=8,9,C,D) | Unframed Clear 2Mbit/s<br>(y=D) |
| CRC              | N/A                                |                                            |                             | N/A                             |
| FRER             |                                    |                                            |                             | N/A                             |
| OFS              |                                    |                                            |                             | N/A                             |
| ES               |                                    |                                            |                             | N/A                             |
| SES              |                                    |                                            |                             | N/A                             |
| CSS              |                                    |                                            |                             |                                 |
| CV               |                                    |                                            |                             |                                 |
| UAS              |                                    |                                            |                             | N/A                             |
| UATC             |                                    |                                            |                             | N/A                             |
| MER              |                                    |                                            | N/A                         | N/A                             |
| FEBE             |                                    | N/A                                        |                             | N/A                             |
| FES              |                                    | N/A                                        |                             | N/A                             |
| FSES             |                                    | N/A                                        |                             | N/A                             |
| FUAS             |                                    | N/A                                        |                             | N/A                             |

aaaaaaa

- Daily CRC block error threshold value.

**a**

- Daily CRC block error threshold selection, (0 through 3)

bbbbbbbb

- Daily framing error threshold value.

**b**

- Daily framing error threshold selection, (0 through 3)

cccc

- Daily out of frame seconds threshold value.

**c**

- Daily out of frame seconds threshold selection, (0 through 3)

**dddd** - Daily errored second threshold value.  
**d** - Daily errored second threshold selection, (0 through 3)  
  
**eeee** - Daily severely errored second threshold value.  
**e** - Daily severely errored second threshold selection, (0 through 3)  
  
**ffff** - Daily controlled slip second threshold value.  
**f** - Daily controlled slip second threshold selection, (0 through 3)  
  
**ggggggggg** - Daily coding violation threshold value.  
**g** - Daily coding violation threshold selection, (0 through 3)  
  
**hhhh** - Daily unavailable second threshold value.  
**h** - Daily unavailable second threshold selection, (0 through 3)  
  
**iiii** - Daily unavailable time count threshold value.  
**i** - Daily unavailable time count threshold selection, (0 through 3)  
  
**jjjj** - Daily multiframe alignment error threshold value.  
**j** - Daily multiframe alignment error threshold selection, (0 through 3)  
  
**kkkkkkkk** - Daily far-end block error threshold value.  
**k** - Daily far-end path block error selection, (0 through 3)  
  
**lllll** - Daily far-end errored second threshold value.  
**l** - Daily far-end path second threshold selection, (0 through 3)  
  
**mmmm** - Daily far-end severely errored second threshold value.  
**m** - Daily far-end severely errored second threshold selection,  
(0 through 3)  
  
**nnnn** - Daily far-end unavailable second threshold value.  
**n** - Daily far-end unavailable second threshold selection, (0 through 3)  
  
**a a a a a** - 15-Minute CRC block error threshold value.  
**a** - 15-Minute CRC block error threshold selection, (0 through 3)



|                             |                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------|
| <b>bbbbbbb</b>              | - 15-Minute framing error threshold value.                                        |
| <b>b</b>                    | - 15-Minute framing error threshold selection, (0 through 3)                      |
| <b>ccc</b>                  | - 15-Minute out of frame seconds threshold value.                                 |
| <b>c</b>                    | - 15-Minute out of frame seconds threshold selection, (0 through 3)               |
| <b>ddd</b>                  | - 15-Minute errored second threshold value.                                       |
| <b>d</b>                    | - 15-Minute errored second threshold selection, (0 through 3)                     |
| <b>eee</b>                  | - 15-Minute severely errored second threshold value.                              |
| <b>e</b>                    | - 15-Minute severely errored second threshold selection, (0 through 3)            |
| <b>fff</b>                  | - 15-Minute controlled slip second threshold value.                               |
| <b>f</b>                    | - 15-Minute controlled slip second threshold selection, (0 through 3)             |
| <u><b>g g g g g g g</b></u> | - 15-Minute coding violation threshold value.                                     |
| <b>g</b>                    | - 15-Minute coding violation threshold selection, (0 through 3)                   |
| <b>hhh</b>                  | - 15-Minute unavailable second threshold value.                                   |
| <b>h</b>                    | - 15-Minute unavailable second threshold selection, (0 through 3)                 |
| <b>ii</b>                   | - 15-Minute unavailable time count threshold value.                               |
| <b>i</b>                    | - 15-Minute unavailable time count threshold selection, (0 through 3)             |
| <u><b>iii</b></u>           | - 15-Minute multiframe alignment error threshold value.                           |
| <b>j</b>                    | - 15-Minute multiframe alignment error threshold selection,<br>(0 through 3)      |
| <u><b>k k k k k k</b></u>   | - 15-Minute far-end block error threshold value.                                  |
| <b>k</b>                    | - 15-Minute far-end path block error selection, (0 through 3)                     |
| <b>lll</b>                  | - 15-Minute far-end errored second threshold value.                               |
| <b>l</b>                    | - 15-Minute far-end path second threshold selection, (0 through 3)                |
| <b>mmm</b>                  | - 15-Minute far-end severely errored second threshold value.                      |
| <b>m</b>                    | - 15-Minute far-end severely errored second threshold selection,<br>(0 through 3) |

- nnn** - 15-Minute far-end unavailable second threshold value.
- n** - 15-Minute far-end unavailable second threshold selection,  
(0 through 3)

The options {a,b,c,d,e,f,g,h,i,j,k,l,m,n} and {a,b,c,d,e,f,g,h,i,j,k,l,m,n} are **m values** as previously shown and specify the threshold sets of the performance parameters listed.

The **TS0 abcdefgh** variables represent international and national bits in time slot'0, as defined by:

- ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

- c** - Remote Alarm Indication
- de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.
- f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW  
if provisioned for RPSFI otherwise spare national bit.
- gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

These variables are set to their default values "11011111" by this command, except for the Transmic'1G option, where the default is "11000000."

The variables may later be changed by setting the abcdefgh parameters in the TS0 field of the ED-PRMTR-EQPT::NPC or CHG::NPC (38321) command. Each of the variables may then be set to "0", "1", "P" or "V." "P" indicates that the incoming bit will be cross-connected unchanged; "V" indicates that the bit received will be inverted.

When TS0 is cross-connected, the TS0 bits will be either passed, inverted or set to "0" or "1" as indicated by the "abcdefgh" variable values. Note that bits which are used for alarms (bit 3 always; bits 4 and 5 if provisioned by the **mnxyz** values) may not be set to "P."

This is also true for NPCs assigned as test port NPCs.

The **TS0M abcdefgh** field allows monitoring of state changes in the received spare international bits, where the "abcdefgh" variables refer to the same TS0 bits as defined above for the TS0 "abcdefgh" variables.

The TSOM variables are specified for monitoring in the command as:

The default values for TSOM variables are **abcdefgh=00000000**, unless the **xyz** parameters set them differently, i.e., for Transmic'1G the abcdefgh=00111111. The TSOM variables may later be provisioned by the CHG::TSOM'abcdefgh or the ED-PRMTR-EQPT TSOM-abcdefgh (38323) command.

## **CTST,FAD,AIS,INCL**

### **NON-CANNELIZED TEST, MONITOR,SPLIT,LOOP**

#### **Explanation Of Command**

For a one-way circuit under test, the test mode can only be MONE or SPLTA. The FROM and TO NPCs must be entered as the E- and F-end NPCs, respectively.

The AIS keyword is required for test modes SPLTE, SPLTF, SPLTEF, LOOPE and LOOPF, to indicate the idle signal for any idle output port that resulted from the interruption.

The INCL keyword is required if one or more of the NPC(s) under test is marked Red or Customer-controlled, except when changing to a monitor mode.

Once a test connection is set up, this command can be entered with either one or both FADs, in any order. The original order of FAD assignment will be used until test access is released.

The E- and F-end NPCs for non-channelized test access correspond to the FROM and TO NPCs of a cross-connection, respectively. The test session is the circuit connection under test.

During a test session, if a hard-reset or link failure occurs, the test session is released automatically. However, if the failure is such that it prevents release at the time of logoff or if the FAD fails, the test session is NOT automatically released and can be released by manual disconnection.

#### **Command**

#### **Nonhierarchical**

[I.20101]

**CTST:FRM xy,SEQ ww:<tmode>,FAD ([s]abc[, [t]def)][,AIS][,INCL]!**

### **Hierarchical**

---

[I.20101]

CTST:FRM xy,SEQ ww:<tmode>,FAD (uvmnp[,wxkqr])[,AIS][,INCL]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.20101]

M hh:mm:ss xy,ww n[vv] CTST <tmode> FAD ([s]abc[, [t]def]) \  
[u]ghi[, [v]jkl] 2 LN MSG:  
[AIS ][RDC ][CUS ][ONEWAY ]{UMPD|[EMODE <emode>] FMODE <fmode>} \  
COMPL

### **Hierarchical**

---

[O.20101]

M hh:mm:ss xy,ww n[vv] CTST <tmode> FAD (uvmnp[,wxkqr]) \  
eghij[,jklmn] 2 LN MSG:  
[AIS ][RDC ][CUS ][ONEWAY ]{UMPD|[EMODE <emode>] FMODE <fmode>} \  
COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.20101.01]

M hh:mm:ss xy,ww n[vv] CTST <tmode> FAD ([s]abc[, [t]def]) \  
2 LN MSG:  
[[t]klm][COND ]cc[ <st>] DNY

### **Hierarchical**

---

[O.20101.01]

M hh:mm:ss xy,ww n[vv] CTST <tmode> FAD (uvmnp[,wxkqr]) \  
2 LN MSG:  
[ghklm ][COND ]cc[ <st>] DNY

## **Autonomous Message**

Not applicable.

## **Explanation Of Parameters**

**FAD** - Facility access digroup  
The test NPC

**tmode** - Test mode

*tmode* *Explanation*

**MONE** Monitor signal from equipment end (E-end) NPC to facility end (F-end) NPC of unmapped or one-/two-way mapped test session

**MONF** Monitor signal from F-end NPC to E-end NPC of a two-way mapped test session

**MONEF** Monitor a two-way mapped connection in both directions; two FADs are connected for the test session, and test mode can only be changed to another mode using two FADs

**SPLTA** Split the A signal from the equipment E-end NPC to the facility F-end NPC of one-/two-way mapped test session

**SPLTB** Split the B signal from the F-end NPC to the E-end NPC of a mapped two-way test session

**SPLTAB** Split both A and B signals of a two-way test session; two FADs are connected for the test session, and test mode can only be changed to another mode using two FADs

**SPLTE** Split the input and output ports of E-end NPC of an unmapped or two-way mapped test session

**SPLTF** Split the input and output ports of F-end NPC of a two-way mapped test session

**SPLTEF** Split a two-way mapped test session in both directions; two FADs are connected for the test session, and test mode can only be changed to another mode using two FADs

**LOOPE**                      Loop the E-end input port to the output port, and connect the looped signal to the FAD; the test session may include an unmapped or two-way mapped connection

**LOOPF**                      Loop the F-end input port to the output port, and connect the looped signal to the FAD; only for a two-way mapped test session; not allowed for one-way broadcast tributaries

**[s]abc**    - The 3- or 4-digit nonhierarchical number of test NPC or FAD  
For MONEF, SPLTAB and SPLTEF modes this is one of two test NPCs; the message is denied if this NPC is currently not a FAD

**[t]def**    - Nonhierarchical number of second test NPC or FAD  
For MONEF, SPLTAB and SPLTEF modes this number can be entered or omitted; either and/or both of [s]abc and [t]def can be entered, in any order, the original order of FAD assignment will be used; the message is denied if this NPC is currently not a FAD

**[u]ghi**    - Nonhierarchical number of E-end NPC, this is the reference NPC for the test session; it is a mapped or unmapped NPC, or the backbone of a broadcast circuit, depending on the test session specified

**[v]jkl**    - Nonhierarchical number of current F-end NPC of the test session. It is defined only if it is mapped to the E-end NPC; if it is omitted, the NPC mapped to the E-end NPC becomes the F-end NPC, or if the test session involves a broadcast circuit, the full tributary becomes the F-end NPC, if one does not exist, the parameter must be given to specify the tributary being tested; it must be omitted if the E-end NPC is unmapped.

**[t]klm**    - Nonhierarchical number of problematic NPC.

The valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |



| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number for FAD  
**wxkqr** - Hierarchical NPC number of second FAD  
**eghij** - Hierarchical E-end NPC number of test session  
**jklmn** - Hierarchical F-end NPC number of a mapped test session  
**ghklm** - Hierarchical number of problematic NPC

**uv,wx, eg, jk, gh**  
- Unit number  
**m,k,h,l** - Module number  
**np, qr, ij, mn, lm**  
- NPC number

The valid values are listed below:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**AIS** - Alarm indication signal.

May be specified to be idle signal. Quasi-random signal source (QRSS) is the default idle signal. If QRSS is not provisioned or in service, AIS must be entered for all test modes resulting in idle output port(s): SPLTE, SPLTF, SPLTEF, LOOPE, and LOOPF. AIS input shall be denied for test access of an unmapped NPC, and all other test modes.

**INCL** - Inclusive

Required for test session with red or customer-controlled NPC(s), except for MONE, MONF and MONEF modes.

**RDC** - Red circuit

Test session has red NPC(s)

**CUS** - Customer

Customer-controlled circuit  
Test session has Customer-controlled NPC(s)

**ONEWAY** - One way cross-connection  
Test session has one-way cross-connection

**UMPD** - Unmapped  
Test session has unmapped NPC

**EMODE** - E-end termination status

**FMODE** - F-end termination status

*emode*

*fmode Explanation*

**NORM** - The circuit under test is not terminated in this direction

**TERM** - The circuit under test terminated in this direction

The emode output is omitted for one-way circuits

Both emode and fmode are omitted for unmapped circuits

**COND** - Condition

**cc** - Condition code

**st** - Status of denial

**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped

**04** Subject entity is out of service

**1E** Customer control or red circuit exists

**10** NPC out of service or failed

**12** Active CCN side not IS or failed or pested or hardware OOS

**13** UNIT not equipped, not in service, or failed

**14** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15** FTMI not equipped, not in service, or failed

**16** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**34** Termination is under customer control (CUS)

**35** Termination is protected (RDC)

**46** NPC Failed or Out of Service

**70** NPC invalid type

**72** Invalid test mode for an unmapped test session

**73** Invalid test mode for a one-way test session

**75** Test session already exists

**76** AIS not entered for SPLTE/SPLTF/SPLTEF/LOOPE/LOOPF

**79** NPC is not a Facility Access Digroup

**7A** NPC is not an E-end

**7B** Invalid change from previous mode

**cc**    *Explanation*

**7C**    NPC is not a F-end

**FF**    Termination is in process of being rolled

**FE**    AIS entered for MONE/MONF/MONEF/SPLTA/SPLTB/SPLTAB

**8C**    The two FADS entered are not associated with one another.

## **CTST,FAD,EMODE,FMODE,INCL**

### **NON-CANNELIZED TEST FAD, EMODE, FMODE**

#### **Explanation Of Command**

This message changes the output mode (also known as termination status) of a non-channelized circuit under test. The status can be normal data transmission (NORM), or terminate (TERM) and send idle signal(s) to output port(s). The change can be selectively specified for the circuit's E-end and/or F-end NPCs. At least one of the two <e/fmode> fields must be entered, or the message is denied.

If the cross-connected circuit is terminated before a test session is set up, this command can be used to change the state from TERM to NORM. When the test session is released, the most recent state remains until a change (CHG) termination command is entered.

During a test session, if a hard-reset or link failure occurs, the test session is released automatically. However, if the failure is such that it prevents release at the time of logout or if the FAD fails, the test session is NOT automatically released and can be released by manual disconnection.

The E- and F-end NPCs for non-channelized test access correspond to the FROM and TO NPCs of a cross connection, respectively. A test session is the circuit connection under test.

#### **Command**

#### **Nonhierarchical**

[I.20111]

```
CTST:FRM xy,SEQ ww:FAD ([s]abc[, [t]def])\
{[, EMODE <emode>][, FMODE <fmode>]}[, INCL];
```

### **Hierarchical**

---

[I.20111]

CTST:FRM xy,SEQ ww:FAD (uvmnp[,wxkqr])\  
{[,EMODE <emode>][,FMODE <fmode>]}[,INCL];

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.20111]

M hh:mm:ss xy,ww n[vv] CTST FAD ([s]abc[, [t]def) \  
[u]ghi,[v]jkl 2 LN MSG:  
[RDC ][CUS ][ONEWAY ][EMODE <emode> ]FMODE <fmode> COMPL

### **Hierarchical**

---

[O.20111]

M hh:mm:ss xy,ww n[vv] CTST FAD (uvmnp[,wxkqr]) \  
eghij,jklmn 2 LN MSG:  
[RDC ][CUS ][ONEWAY ][EMODE <emode> ]FMODE <fmode> COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.20111.01]

M hh:mm:ss xy,ww n[vv] CTST FAD ([s]abc[, [t]def) 2 LN MSG:  
[[t]klm ][COND ]cc[ <st>] DNY

### **Hierarchical**

---

[O.20111.01]

M hh:mm:ss xy,ww n[vv] CTST FAD (uvmnp[,wxkqr]) 2 LN MSG:  
[ghklm ][COND ]cc[ <st>] DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**FAD** - Facility access digroup

**[s]abc** - The 3- or 4-digit nonhierarchical number of test NPC or FAD  
For MONEF, SPLTAB and SPLTEF modes this is one of two test NPCs;  
the message is denied if this NPC is currently not a FAD

**[t]def** - Nonhierarchical number of second test NPC or FAD  
For MONEF, SPLTAB and SPLTEF modes this number can be entered or  
omitted; either and/or both of [s]abc and [t]def can be entered,  
in any order, the original order of FAD assignment will be used;  
the message is denied if this NPC is currently not a FAD

**[u]ghi** - Nonhierarchical number of E-end NPC of circuit under test

**[v]jkl** - Nonhierarchical number of current F-end NPC

**[t]klm** - Nonhierarchical number of problematic NPC

The valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number for FAD  
**wxkqr** - Hierarchical NPC number of second FAD  
**eghij** - Hierarchical E-end NPC number of test session  
**jklmn** - Hierarchical F-end NPC number of a mapped test session  
**ghklm** - Hierarchical number of problematic NPC

**uv,wx, eg, jk, gh**

- Unit number

**m,k,h,l** - Module number

**np,qr, ij, mn, lm**

- NPC number

The valid values are listed below:

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**EMODE** - Equipment-end mode

**emode** - Equipment-end termination status

**FMODE** - Facility-end mode

**fmode** - Facility-end termination status

*emode*

*fmode Explanation*

**NORM** The circuit under test is not terminated in this direction

**TERM** The circuit under test terminated in this direction

The emode cannot be changed and is omitted for one-way circuits

The fmode cannot be changed for modes SPLTE, SPLTEF and LOOPE

For an unmapped circuit neither the EMODE or FMODE can be changed.

If emode or fmode is omitted, the parameter retains its current value.

If either the E- or F-end NPC is out of service or failed, then is subsequently restored to service, the output modes remain as they were before the failure.

**RDC** - Red circuit

Test session has NPC(s) designated as red circuits



**CUS** - Customer

Test session has Customer-controlled NPC(s)

**INCL** - Inclusive

Required for circuits with customer-controlled or red NPC(s)

**ONEWAY** - One-way

Test session has a one-way cross-connection

**COND** - Condition

**st** - Status of denial

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>02</b> |              | Subject entity is not equipped                                        |
| <b>04</b> |              | Subject entity is out of service                                      |
| <b>1E</b> |              | Customer control or red circuit exists                                |
| <b>10</b> |              | NPC out of service or failed                                          |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>30</b> | <b>MCOND</b> | Termination is already assigned                                       |
| <b>34</b> |              | Termination is under customer control (CUS)                           |
| <b>35</b> |              | Termination is protected (RDC)                                        |
| <b>46</b> |              | NPC Failed or Out of Service                                          |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                                      |
| <b>71</b> |              | NPC is a Facility Access Digroup                                      |
| <b>72</b> |              | Invalid test mode for an unmapped test session                        |
| <b>73</b> |              | Invalid test mode for a one-way test session                          |
| <b>75</b> |              | Test session already exists                                           |
| <b>79</b> |              | NPC is not a Facility Access Digroup                                  |
| <b>7A</b> |              | NPC is not an E-end                                                   |
| <b>7B</b> |              | Invalid change from previous mode                                     |
| <b>7C</b> |              | NPC is not a F-end                                                    |
| <b>FF</b> |              | Termination is in process of being rolled                             |
| <b>8C</b> |              | The two FADS entered are not associated with one another.             |
| <b>8E</b> |              | No mapped circuit under test; emode/fmode can't be changed.           |

| <b>cc</b> | <b>st</b> | <i>Explanation</i>                                    |
|-----------|-----------|-------------------------------------------------------|
| <b>8F</b> |           | One-way circuit under test; emode can't be changed.   |
| <b>90</b> |           | emode/fmode can't be changed under current test mode. |

## **CTST,FAD,FROM,TO,AIS,INCL**

### **NON-CANNELIZED TEST ACCESS (MONITOR, SPLIT, OR LOOP)**

#### **Explanation Of Command**

This message sets up non-channelized test access in the monitor modes MONE, MONF, MONEF; the split modes SPLTA, SPLTB, SPLTAB, SPLTE, SPLTF, SPLTEF; and the loop modes LOOPE or LOOPF. The circuit under test can be one unmapped Network Processing Circuit (NPC), or a pair of mapped NPCs. The mapped circuit may be a one-way, two-way or broadcast circuit. A one-way circuit can only be tested in modes MONE and SPLTA. Only one test connection can exist at a time for any circuit.

For test modes MONEF, SPLTAB and SPLTEF two Facility Access Digroups (FADs), or test NPCs, are connected. The first FAD number is required; the second FAD can be user specified, or assigned by default to be NPC numbered n+1, where n is the NPC number of the first FAD. If n is the highest NPC number on the DACS II frame, the first NPC on the frame will be used as default for the second FAD. Whether a FAD is user specified or assigned by DACS II, the command will be denied if the FAD is assigned or has invalid type. One FAD is connected for all other modes.

During a test session, if a hard-reset or link failure occurs, the test session is released automatically. However, if the failure is such that it prevents release at the time of logoff, or if the FAD fails, the test session is NOT automatically released and can be released by manual disconnection.

The E- and F-end NPCs for non-channelized test access correspond to the FROM and TO NPCs of a cross-connection, respectively. For a broadcast circuit the full tributary is considered to be a two-way connection, and all other tributaries are one-way connections. Only one test session can exist for a circuit at a time. The FAD or test NPC corresponds to test ports for DS0 test access.

For modes SPLTE and LOOPE, the idle output port of the F-end NPC, and any other output ports the E-end is transmitting to, must be set to AIS.

For modes SPLTF and LOOPF, the idle output port of the E-end NPC, and any other output ports the F-end is transmitting to, must be set to AIS.

The output signal on all idle output ports related to a test session are restored to their previous values when the test modes are changed or test access is released. The OUTPUT modes can be overwritten when the NPC is test accessed.

## Command

---

### Nonhierarchical

---

[I.20001]

CTST:FRM xy,SEQ ww:<tmode>,FAD ([s]abc[, [t]def]),FROM [u]ghi\  
[,TO [v]jkl][,AIS][,INCL]!

### Hierarchical

---

[I.20001]

CTST:FRM xy,SEQ ww:<tmode>,FAD (uvmnp[,wxkqr]),FROM eghij\  
[,TO jklmn][,AIS][,INCL]!

## Completion Message

---

### Nonhierarchical

---

[O.20001]

M hh:mm:ss xy,ww n[vv] CTST <tmode> FAD ([s]abc[, [t]def]) \  
[u]ghi[, [v]jkl] 2 LN MSG:  
[AIS ][RDC ][CUS ][ONEWAY ][UMPD][EMODE <emode>] FMODE <fmode>} \  
COMPL

### **Hierarchical**

---

[O.20001]

M hh:mm:ss xy,ww n[vv] CTST <tmode> FAD (uvmnp[,wxkqr])\  
eghij[,jklmn] 2 LN MSG:  
[AIS ][RDC ][CUS ][ONEWAY ][UMPD][EMODE <emode>] FMODE <fmode>} \  
COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.20001.01]

M hh:mm:ss xy,ww n[vv] CTST <tmode> FAD ([s]abc[, [t]def]) \  
[u]ghi[, [v]jkl] 2 LN MSG:  
[[t]klm ][COND ]cc[ <st>] DNY

### **Hierarchical**

---

[O.20001.01]

M hh:mm:ss xy,ww n[vv] CTST <tmode> FAD (uvmnp[,wxkqr])  
eghij[,jklmn] 2 LN MSG:  
[ghklm ][COND ]cc[ <st>] DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**FAD** - Facility access digroup

**FROM** - FROM termination

**TO** - TO termination

**tmode** - Test mode

| <i>tmode</i> | <i>Explanation</i>                                                                                                                                                            |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MONE         | Monitor signal from equipment E-end NPC to facility F-end NPC of unmapped or one-/two-way mapped test session                                                                 |
| MONF         | Monitor signal from F-end NPC to E-end NPC of a two-way mapped test session                                                                                                   |
| MONEF        | Monitor a two-way mapped connection in both directions; two FADs are connected for the test session, and test mode can only be changed to another mode using two FADs         |
| SPLTA        | Split the A signal from the equipment E-end NPC to the facility F-end NPC of one-/two-way mapped test session                                                                 |
| SPLTB        | Split the B signal from the F-end NPC to the E-end NPC of a mapped two-way test session                                                                                       |
| SPLTAB       | Split both A and B signals of a two-way test session; two FADs are connected for the test session, and test mode can only be changed to another mode using two FADs           |
| SPLTE        | Split the input and output ports of E-end NPC of an unmapped or two-way mapped test session                                                                                   |
| SPLTF        | Split the input and output ports of F-end NPC of a two-way mapped test session                                                                                                |
| SPLTEF       | Split a two-way mapped test session in both directions; two FADs are connected for the test session, and test mode can only be changed to another mode using two FADs         |
| LOOPE        | Loop the E-end input port to the output port, and connect the looped signal to the FAD; the test session may include an unmapped or two-way mapped connection                 |
| LOOPF        | Loop the F-end input port to the output port, and connect the looped signal to the FAD; only for a two-way mapped test session; not allowed for one-way broadcast tributaries |

- [s]abc** - The 3- or 4-digit nonhierarchical number of test NPC or FAD  
For MONEF, SPLTAB and SPLTEF modes this is the first of two test NPCs; the message is denied if this NPC is assigned
- [t]def** - The 3- or 4-digit nonhierarchical number of second test NPC or FAD  
For MONEF, SPLTAB and SPLTEF modes this number can be user specified, if none is entered the next higher NPC number to [s]abc is used; the message is denied if it is assigned
- [u]ghi** - Nonhierarchical number of E-end NPC.  
This is the reference NPC for the test session; it is a mapped or unmapped NPC, or the backbone of a clear-DS1 broadcast circuit, depending on the test session specified
- [v]jkl** - Nonhierarchical number of current F-end NPC of the test session.  
This NPC is defined only if it is mapped to the E-end NPC. If this NPC is omitted from the input command, the NPC mapped to the E-end NPC becomes the F-end NPC or if the test session involves a broadcast circuit, the full tributary becomes the F-end NPC. If a full tributary does not exist, the NPC must be given to specify the tributary being tested. Omit this NPC if the E-end NPC is unmapped.
- [t]klm** - The 3- or 4-digit nonhierarchical number of problematic NPC

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical number of test NPC or FAD  
**wxkqr** - Hierarchical number of second FAD  
**eghij** - Hierarchical number of E-end NPC  
**jklmn** - Hierarchical number of F-end NPC of the test session  
**ghklm** - Hierarchical number of problematic NPC



**uv,wx, eg, jk, gh**

- Unit number

**m,k,h,l** - Module number

**np,qr, ij, mn, lm**

- NPC number

The valid values are listed below:

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**AIS** - Alarm indication signal.

May be specified to be idle signal. AIS must be entered for all test modes resulting in idle output port(s): SPLTE, SPLTF, SPLTEF, LOOPE, and LOOPF. AIS input will be denied for test access of an unmapped NPC, and all other test modes.

**INCL** - Inclusive

Required for test session with red or customer-controlled NPC(s), except for MONE, MONF and MONEF modes. INCL will be ignored if the circuit is NOT RDC or CUS.

**RDC** - Red circuit

Test session has red NPC(s)

**CUS** - Customer

Customer-controlled circuit. Test session has Customer-controlled NPC(s)

**ONEWAY** - One way cross-connection

Test session has one-way cross-connection

**UMPD** - Unmapped

Test session has unmapped NPC

**EMODE** - E-end termination status

**FMODE** - F-end termination status

*emode**fmode Explanation***NORM** - The circuit under test is not terminated in this direction**TERM** - The circuit under test is terminated in this direction

The emode output is omitted for one-way circuits

Both emode and fmode are omitted for unmapped circuits

**COND** - Condition**cc** - Condition code**st** - Status of denial**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>02</b> | <b>MCOND</b> | Subject entity is not equipped                                        |
| <b>04</b> |              | Subject entity is out of service                                      |
| <b>1E</b> |              | Customer control or red circuit exists                                |
| <b>10</b> |              | NPC out of service or failed                                          |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>30</b> |              | Termination is already assigned                                       |
| <b>34</b> |              | Termination is under customer control (CUS)                           |
| <b>35</b> |              | Termination is protected (RDC)                                        |
| <b>36</b> |              | Termination is not connected as indicated                             |
| <b>46</b> |              | NPC Failed or Out of Service                                          |
| <b>70</b> |              | NPC invalid type                                                      |
| <b>71</b> |              | NPC is a Facility Access Digroup                                      |
| <b>72</b> |              | Invalid test mode for an unmapped test session                        |
| <b>73</b> |              | Invalid test mode for a one-way test session                          |
| <b>75</b> |              | Test session already exists                                           |
| <b>76</b> |              | AIS not entered for SPLTE/SPLTF/SPLTEF/LOOPE/LOOPF                    |
| <b>7A</b> |              | NPC is not an E-end                                                   |
| <b>7C</b> |              | NPC is not a F-end                                                    |
| <b>FF</b> |              | Termination is in process of being rolled                             |
| <b>FE</b> |              | AIS entered for MONE/MONF/MONEF/SPLTA/SPLTB/SPLTAB                    |
| <b>8D</b> |              | Clear gateway test access disallowed.                                 |

## **CTST,HUB,FAD,TO,INCL**

### **NON-CHANNELIZED TEST HUB**

#### **Explanation Of Command**

This message sets up a non-channelized hub connection between a facility access digroup (FAD), or test network processing circuit (NPC) and a remote FAD. The FAD is connected to an NPC which is connected to a remote test NPC. The NPCs cannot be part of an existing mapped circuit or test connection.

During a hub test session if a hard-reset or link failure occurs the hub test session is released automatically. However, if the failure is such that it prevents release at the time of logout, or if the FAD fails, the hub test session is NOT automatically released and can be released by manual disconnection.

#### **Command**

##### **Nonhierarchical**

[I.20031]

**CTST:FRM xy,SEQ ww:HUB,FAD [s]abc,TO [t]jkl[,INCL]!**

##### **Hierarchical**

[I.20031]

**CTST:FRM xy,SEQ ww:HUB,FAD uvmnp,TO wxkqr[,INCL]!**

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.20031]

M hh:mm:ss xy,ww n[vv] CTST HUB FAD [s]abc,TO [t]jkl[ CUS] COMPL

#### **Hierarchical**

---

[O.20031]

M hh:mm:ss xy,ww n[vv] CTST HUB FAD uvmnp,TO wxkqr[ CUS] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.20031.01]

M hh:mm:ss xy,ww n[vv] CTST HUB FAD [s]abc,TO [t]jkl [[t]klm] \  
COND cc DNY

#### **Hierarchical**

---

[O.20031.01]

M hh:mm:ss xy,ww n[vv] CTST HUB FAD uvmnp,TO wxkqr [ghklm] \  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**HUB** - HUB connection

**FAD** - Facility access digroup

**[s]abc** - The 3- or 4-digit nonhierarchical number of test NPC or Facility Access Digroup (FAD).

**[t]jkl** - The 3- or 4-digit nonhierarchical number of TO NPC connected to the remote FAD

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number of test NPC or FAD  
**wxkqr** - Hierarchical NPC number of TO NPC connected to the remote FAD  
**ghklm** - Hierarchical number of problematic NPC

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**[t]klm** - The hierarchical number of the NPC that caused the denial

**INCL** - Inclusive  
Inclusive keyword may be entered for customer-controlled TO NPC

**CUS** - Customer  
Customer-controlled Circuit

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                                       |
|-----------|-----------------------------------------------------------------------|
| <b>02</b> | Subject entity is not equipped                                        |
| <b>04</b> | Subject entity is out of service                                      |
| <b>1E</b> | Customer control or red circuit exists                                |
| <b>10</b> | NPC out of service or failed                                          |
| <b>12</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>30</b> | Termination is already assigned                                       |
| <b>32</b> | Termination is under test                                             |
| <b>34</b> | Termination is under customer control (CUS)                           |
| <b>35</b> | Termination is protected (RDC)                                        |
| <b>46</b> | NPC Failed or Out of Service                                          |
| <b>70</b> | NPC invalid type                                                      |
| <b>71</b> | NPC is a Facility Access Digroup                                      |
| <b>73</b> | Invalid test mode for a one-way test session                          |
| <b>75</b> | Test session already exists                                           |
| <b>FF</b> | Termination is in process of being rolled                             |
| <b>8D</b> | Clear gateway test access disallowed.                                 |

## **CTST,LPBKT,FAD,INCL**

### **NON-CANNELIZED LOOP TEST ACCESS FACILITY**

#### **Explanation Of Command**

This message terminally loops back a non-channelized Facility Access Digroup (FAD) or test network processing circuit (NPC).

Terminal looping is defined as looping of a terminated signal; it is done in the cross-connect network.

#### **Command**

##### **Nonhierarchical**

[I.20301]

CTST:FRM xy,SEQ ww:LPBKT,FAD [s]abc[,INCL]!

##### **Hierarchical**

[I.20301]

CTST:FRM xy,SEQ ww:LPBKT,FAD uvmnp[,INCL]!

#### **Completion Message**

##### **Nonhierarchical**

[O.20301]

M hh:ss:mm xy,ww n[vv] CTST LPBKT FAD [s]abc[ CUS] COMPL



---

### Hierarchical

[O.20301]

M hh:ss:mm xy,ww n[vv] CTST LPBKT FAD uvmnp[ CUS] COMPL

---

### Denial Message

---

### Nonhierarchical

[O.20301.01]

M hh:ss:mm xy,ww n[vv] CTST LPBKT FAD [s]abc COND cc DNY

---

### Hierarchical

[O.20301.01]

M hh:ss:mm xy,ww n[vv] CTST LPBKT FAD uvmnp COND cc DNY

---

### Autonomous Message

Not applicable.

---

### Explanation Of Parameters

**FAD** - Facility access digroup

**[s]abc** - The 3- or 4-digit nonhierarchical FAD NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number of FAD

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The values are listed below:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**LPBKT** - Looped back

Test NPC terminal loopback

**INCL** - Inclusive

May be entered for customer-controlled NPC, is not required

**CUS** - Customer

NPC is marked as Customer-controlled

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                                       |
|-----------|-----------------------------------------------------------------------|
| <b>02</b> | Subject entity is not equipped                                        |
| <b>04</b> | Subject entity is out of service                                      |
| <b>1E</b> | Customer control or red circuit exists                                |
| <b>10</b> | NPC out of service or failed                                          |
| <b>12</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>30</b> | Termination is already assigned                                       |
| <b>32</b> | Termination is under test                                             |
| <b>34</b> | Termination is under customer control (CUS)                           |
| <b>35</b> | Termination is protected (RDC)                                        |
| <b>46</b> | NPC Failed or Out of Service                                          |
| <b>70</b> | NPC invalid type                                                      |
| <b>71</b> | NPC is a Facility Access Digroup                                      |
| <b>73</b> | Invalid test mode for a one-way test session                          |
| <b>75</b> | Test session already exists                                           |
| <b>FF</b> | Termination is in process of being rolled                             |

## **CTST,TNR,ALL,OOS**

### **NON-CANNELIZED TEST NPC RELEASE**

#### **Explanation Of Command**

This message releases ALL non-channelized facility access digroups (FADs), or test network processing circuits (NPCs) activated by the user, and restores the test session to its original mapped or unmapped state.

It is preceded by individual CTST,TNR,FAD,OOS messages printed for each test session which is in progress.

If the circuit under test was a mapped circuit before the test session started, upon release of the FAD, the original cross-connection is restored. If the circuit was unmapped, it is restored to the unmapped or idle state that existed prior to testing.

#### **Command**

[I.20202]

CTST:FRM xy,SEQ ww:TNR,ALL[,OOS]!

#### **Completion Message**

[O.20202]

M hh:mm:ss xy,ww n[vv] CTST TNR ALL COND cc COMPL

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**TNR** - Test NPC release

**ALL** - All  
Release all test NPCs

**OOS** - Out-of-service  
The OOS keyword must be entered to release one or more NPC(s) that are OOS. Mapped NPC(s) that are OOS will not be restored to original cross-connection until NPC(s) are returned to service.

**COND** - Condition code

**cc** - Hexadecimal condition code

**cc** *Explanation*

**00** No conditions

**01** No FADs were activated by link n

**02** One or more FADs could not be released

## **CTST,TNR,FAD,OOS**

### **NON-CANNELIZED TEST NPC RELEASE**

#### **Explanation Of Command**

This message releases a non-channelized facility access digroup (FAD) or test Network Processing Circuit (NPC) and restores the test session to its original mapped or unmapped state and releases ALL test NPCs activated by the user from the current link.

For test modes using two FADs, if one of the two FADs is entered, both FADs will be released from testing. If both FADs are entered, they must be associated with one another in the same test connection. Both FADs can be entered in any order and will still be released.

If the circuit under test was a mapped circuit before the test session start, upon release of FAD(s), the circuit is restored to cross-connection. If the circuit was unmapped, it is restored to the unmapped or idle state that existed prior to testing.

If the OOS keyword is input, NPC(s) that are out-of-service (OOS) should not be a reason for denial; 'NPC unequipped, failed, or not a test NPC' is a denial condition only for the case of one NPC.

#### **Command**

#### **Nonhierarchical**

[I.20201]

There are two alternate formats depending upon the number of FADs specified.

**CTST:FRM xy,SEQ ww:TNR,FAD [s]abc[,OOS]!**

**CTST:FRM xy,SEQ ww:TNR,FAD ([s]abc[, [t]def)][,OOS]!**

### **Hierarchical**

---

[I.20201]

There are two alternate formats depending upon the number of FADs specified.

**CTST:FRM xy,SEQ ww:TNR,FAD uvmnp[,OOS]!**

**CTST:FRM xy,SEQ ww:TNR,FAD (uvmnp[,wxkqr])[,OOS]!**

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.20201]

**M hh:mm:ss xy,ww n[vv] CTST TNR FAD [s]abc[ OOS]\**  
**[ [u]ghi[, [v]jkl]] 2 LN MSG:**  
**[RDC ][CUS ][{UMPD|[EMODE <emode> ]FMODE <fmode>} ][OOS ]COMPL**

**M hh:mm:ss xy,ww n[vv] CTST TNR FAD [s]abc[, [t]def][ OOS]\**  
**[ [u]ghi[, [v]jkl]] 2 LN MSG:**  
**[RDC ][CUS ][{UMPD|[EMODE <emode> ]FMODE <fmode>} ][OOS ]COMPL**

### **Hierarchical**

---

[O.20201]

**M hh:mm:ss xy,ww n[vv] CTST TNR FAD uvmnp[,wxkqr][ OOS]\**  
**[ eghij[, jklmn]] 2 LN MSG:**  
**[RDC ][CUS ][{UMPD|[EMODE <emode> ]FMODE <fmode>} ][OOS ]COMPL**

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.20201.01]

**M hh:mm:ss xy,ww n[vv] CTST TNR FAD [s]abc[, [t]def][ OOS]\**  
**[ COND] cc[ <st>] DNY**

### **Hierarchical**

---

[O.20201.01]

M hh:mm:ss xy,ww n[vv] CTST TNR FAD uvmnp[,wxkqr][ OOS]\  
[ COND] cc[ <st>] DNY

### **Autonomous Message**

---

### **Nonhierarchical**

---

[O.20201]

I hh:mm:ss xy,ww n[vv] CTST TNR FAD [s]abc[, [t]def]\  
[ [u]ghi[, [v]jkl]][ OOS] 2 LN MSG:  
[RDC ][CUS ][{UMPD|[EMODE <emode> ]FMODE <fmode>} ][OOS ]COMPL

[O.20201.01]

I hh:mm:ss xy,ww n[vv] CTST TNR FAD [s]abc[, [t]def][ OOS]  
[ COND] cc[ <st>] DNY

### **Hierarchical**

---

[O.20201]

I hh:mm:ss xy,ww n[vv] CTST TNR FAD uvmnp[,wxkqr][ eghij[,jklmn]]\  
[ OOS] 2 LN MSG:  
[RDC ][CUS ][{UNMAP|[EMODE <emode> ]FMODE <fmode>} ][OOS ]COMPL

[O.20201.01]

I hh:mm:ss xy,ww n[vv] CTST TNR FAD uvmnp[,wxkqr][ OOS]\  
[ COND] cc[ <st>] DNY



## Explanation Of Parameters

**TNR** - Test NPC release

**FAD** - Facility access digroup

**[s]abc** - The 3- or 4-digit nonhierarchical test NPC or Facility Access Digroup (FAD) number

**[t]def** - The second 3- or 4-digit nonhierarchical FAD number, if applicable

**[u]ghi** - The 3- or 4-digit nonhierarchical E-end NPC number of test session. Not applicable to loopback FAD

**[v]jkl** - The 3- or 4-digit nonhierarchical F-end NPC number of a mapped test session. Not applicable to loopback FAD

The values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number for FAD  
**wxkqr** - Hierarchical NPC number of second FAD, if applicable  
**eghij** - Hierarchical E-end NPC number of test session. Not applicable to loopback FAD  
**jklmn** - Hierarchical F-end NPC number of a mapped test session. Not applicable to loopback FAD

**uv,wx,eg,jk**

- Unit number

**m,k,h,l** - Module number

**np,qr,ij,mn**

- NPC number

The valid values are listed below:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**UMPD** - Unmapped

Test session has unmapped NPC

**EMODE** - E-end termination status

**FMODE** - F-end termination status

*emode*

*fmode Explanation*

**NORM** - The circuit under test is not terminated in this direction

**TERM** - The circuit under test terminated in this direction

The emode output is omitted for one-way circuits

Both emode and fmode are omitted for unmapped circuits

**OOS** - Out-of-service

The OOS keyword must be entered to release one or more NPC(s) that are OOS. Mapped NPC(s) that are OOS will not be restored to original cross-connection until NPC(s) are returned to service.

If the OOS keyword is entered in the input command it will appear in the first line of the output message. A second OOS keyword will appear in the last line of the output message if at least one NPC is out-of-service at the time the command is issued.

**RDC** - Red circuit

Test session has red circuit

**CUS** - Customer

Test session has customer-controlled Circuit

**COND** - Condition

**cc** - Condition code

**st** - Status of denial

**cc** - Hexadecimal condition code

**cc st Explanation**

**00** No conditions

**02** Subject entity is not equipped

**04** Subject entity is out of service

**10** NPC out of service or failed

**12 MCOND** Active CCN side not IS or failed or pested or hardware OOS

**13 MCOND** UNIT not equipped, not in service, or failed

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>46</b> |              | NPC Failed or Out of Service                                          |
| <b>70</b> | <b>MCOND</b> | NPC invalid type                                                      |
| <b>79</b> |              | NPC is not a Facility Access Digroup                                  |
| <b>8C</b> |              | The two FADS entered are not associated with one another.             |

---

**Contents**

|                             |     |
|-----------------------------|-----|
| <b>DDIS, FROM, TO</b>       | 9-2 |
| ■ Explanation Of Command    | 9-2 |
| ■ Command                   | 9-3 |
| ■ Nonhierarchical           | 9-3 |
| ■ Hierarchical              | 9-3 |
| ■ Completion Message        | 9-3 |
| ■ Nonhierarchical           | 9-3 |
| ■ Hierarchical              | 9-3 |
| ■ Denial Message            | 9-3 |
| ■ Nonhierarchical           | 9-3 |
| ■ Hierarchical              | 9-4 |
| ■ Autonomous Message        | 9-4 |
| ■ Explanation Of Parameters | 9-4 |
| <b>DELETE, END</b>          | 9-6 |
| ■ Explanation Of Command    | 9-6 |
| ■ Command                   | 9-6 |
| ■ Completion Message        | 9-6 |
| ■ Denial Message            | 9-6 |
| ■ Autonomous Message        | 9-6 |
| ■ Explanation Of Parameters | 9-7 |
| <b>DGN, CCB, CFT, X</b>     | 9-8 |
| ■ Explanation Of Command    | 9-8 |
| ■ Command                   | 9-8 |
| ■ Completion Message        | 9-8 |
| ■ Denial Message            | 9-8 |
| ■ Autonomous Message        | 9-9 |

---

## Contents

|                             |      |
|-----------------------------|------|
| ■ Explanation Of Parameters | 9-9  |
| <b>DGN,CCI,CFT,X</b>        | 9-15 |
| ■ Explanation Of Command    | 9-15 |
| ■ Command                   | 9-15 |
| ■ Completion Message        | 9-15 |
| ■ Denial Message            | 9-15 |
| ■ Autonomous Message        | 9-16 |
| ■ Explanation Of Parameters | 9-16 |
| <b>DGN,CCNI,CFT,X</b>       | 9-19 |
| ■ Explanation Of Command    | 9-19 |
| ■ Command                   | 9-19 |
| ■ Completion Message        | 9-19 |
| ■ Denial Message            | 9-19 |
| ■ Autonomous Message        | 9-20 |
| ■ Explanation Of Parameters | 9-20 |
| <b>DGN,CI,CFT,X</b>         | 9-25 |
| ■ Explanation Of Command    | 9-25 |
| ■ Command                   | 9-25 |
| ■ Completion Message        | 9-25 |
| ■ Denial Message            | 9-26 |
| ■ Autonomous Message        | 9-26 |
| ■ Explanation Of Parameters | 9-26 |
| <b>DGN,ETSI,CFT,X</b>       | 9-29 |
| ■ Explanation Of Command    | 9-29 |
| ■ Command                   | 9-29 |
| ■ Completion Message        | 9-29 |
| ■ Denial Message            | 9-29 |
| ■ Autonomous Message        | 9-30 |
| ■ Explanation Of Parameters | 9-30 |
| <b>DGN,ETSI,ECCN,ALL</b>    | 9-33 |
| ■ Explanation Of Command    | 9-33 |
| ■ Command                   | 9-33 |
| ■ Completion Message        | 9-33 |
| ■ Denial Message            | 9-33 |
| ■ Autonomous Message        | 9-34 |
| ■ Explanation Of Parameters | 9-34 |

---

## Contents

|                             |      |
|-----------------------------|------|
| <b>DGN,IN,PROGRESS</b>      | 9-36 |
| ■ Explanation Of Command    | 9-36 |
| ■ Command                   | 9-36 |
| ■ Completion Message        | 9-36 |
| ■ Denial Message            | 9-36 |
| ■ Autonomous Message        | 9-36 |
| ■ Explanation Of Parameters | 9-37 |
| <b>DGN,LINK,CFT,X</b>       | 9-38 |
| ■ Explanation Of Command    | 9-38 |
| ■ Command                   | 9-38 |
| ■ Completion Message        | 9-38 |
| ■ Denial Message            | 9-38 |
| ■ Autonomous Message        | 9-38 |
| ■ Explanation Of Parameters | 9-39 |
| <b>DGN,MC,CFT,X</b>         | 9-41 |
| ■ Explanation Of Command    | 9-41 |
| ■ Command                   | 9-41 |
| ■ Completion Message        | 9-41 |
| ■ Denial Message            | 9-42 |
| ■ Autonomous Message        | 9-42 |
| ■ Explanation Of Parameters | 9-42 |
| <b>DGN,MP,CFT,X</b>         | 9-45 |
| ■ Explanation Of Command    | 9-45 |
| ■ Command                   | 9-45 |
| ■ Completion Message        | 9-45 |
| ■ Denial Message            | 9-46 |
| ■ Autonomous Message        | 9-46 |
| ■ Explanation Of Parameters | 9-46 |
| <b>DGN,NPC</b>              | 9-48 |
| ■ Explanation Of Command    | 9-48 |
| ■ Command                   | 9-48 |
| ■ Nonhierarchical           | 9-48 |
| ■ Hierarchical              | 9-48 |
| ■ Completion Message        | 9-49 |
| ■ Nonhierarchical           | 9-49 |
| ■ Hierarchical              | 9-49 |
| ■ Denial Message            | 9-49 |

---

## Contents

|                                              |      |
|----------------------------------------------|------|
| ■ Nonhierarchical                            | 9-49 |
| ■ Hierarchical                               | 9-49 |
| ■ Autonomous Message                         | 9-50 |
| ■ Nonhierarchical                            | 9-50 |
| ■ Hierarchical                               | 9-50 |
| ■ Explanation Of Parameters                  | 9-50 |
| <b>DGN,NPC,SIDE,CFT,X</b>                    | 9-54 |
| ■ Explanation Of Command                     | 9-54 |
| ■ Command                                    | 9-54 |
| ■ Nonhierarchical                            | 9-54 |
| ■ Hierarchical                               | 9-54 |
| ■ Completion Message                         | 9-55 |
| ■ Nonhierarchical                            | 9-55 |
| ■ Hierarchical                               | 9-55 |
| ■ Denial Message                             | 9-56 |
| ■ Nonhierarchical                            | 9-56 |
| ■ Hierarchical                               | 9-56 |
| ■ Autonomous Message                         | 9-56 |
| ■ Nonhierarchical                            | 9-56 |
| ■ Hierarchical                               | 9-56 |
| ■ Explanation Of Parameters                  | 9-57 |
| <b>DGN,PMEM,SMEM,CFT,X,EXCT,DBASE,VERIFY</b> | 9-74 |
| ■ Explanation Of Command                     | 9-74 |
| ■ Command                                    | 9-74 |
| ■ Completion Message                         | 9-74 |
| ■ Denial Message                             | 9-75 |
| ■ Autonomous Message                         | 9-75 |
| ■ Explanation Of Parameters                  | 9-75 |
| <b>DGN,SYNC</b>                              | 9-79 |
| ■ Explanation Of Command                     | 9-79 |
| ■ Command                                    | 9-79 |
| ■ Completion Message                         | 9-79 |
| ■ Denial Message                             | 9-79 |
| ■ Autonomous Message                         | 9-80 |
| ■ Explanation Of Parameters                  | 9-80 |
| <b>DGN,SYNC,TLI,CRO</b>                      | 9-82 |
| ■ Explanation Of Command                     | 9-82 |



---

## Contents

|                               |       |
|-------------------------------|-------|
| ■ Command                     | 9-82  |
| ■ Completion Message          | 9-82  |
| ■ Denial Message              | 9-82  |
| ■ Autonomous Message          | 9-83  |
| ■ Explanation Of Parameters   | 9-83  |
| <b>DGN,SYNC,TLI,SSP</b>       | 9-85  |
| ■ Explanation Of Command      | 9-85  |
| ■ Command                     | 9-85  |
| ■ Completion Message          | 9-85  |
| ■ Denial Message              | 9-86  |
| ■ Autonomous Message          | 9-86  |
| ■ Explanation Of Parameters   | 9-86  |
| <b>DGN,TSI,CFT,X</b>          | 9-88  |
| ■ Explanation Of Command      | 9-88  |
| ■ Command                     | 9-88  |
| ■ Completion Message          | 9-88  |
| ■ Denial Message              | 9-89  |
| ■ Autonomous Message          | 9-89  |
| ■ Explanation Of Parameters   | 9-89  |
| <b>DGN,TSIS,CCN,ALL</b>       | 9-96  |
| ■ Explanation Of Command      | 9-96  |
| ■ Command                     | 9-96  |
| ■ Completion Message          | 9-96  |
| ■ Denial Message              | 9-97  |
| ■ Autonomous Message          | 9-97  |
| ■ Explanation Of Parameters   | 9-97  |
| <b>DGN,TSIS,CCN,UNIT,CONN</b> | 9-99  |
| ■ Explanation Of Command      | 9-99  |
| ■ Command                     | 9-99  |
| ■ Completion Message          | 9-99  |
| ■ Denial Message              | 9-100 |
| ■ Autonomous Message          | 9-100 |
| ■ Explanation Of Parameters   | 9-100 |
| <b>DGN,UNIT,DSPI,CFT,X</b>    | 9-102 |
| ■ Explanation Of Command      | 9-102 |
| ■ Command                     | 9-102 |
| ■ Completion Message          | 9-102 |

---

## Contents

|                             |       |
|-----------------------------|-------|
| ■ Denial Message            | 9-102 |
| ■ Autonomous Message        | 9-103 |
| ■ Explanation Of Parameters | 9-103 |
| <b>DGN,UNIT,FC,CFT,X</b>    | 9-105 |
| ■ Explanation Of Command    | 9-105 |
| ■ Command                   | 9-105 |
| ■ Completion Message        | 9-105 |
| ■ Denial Message            | 9-105 |
| ■ Autonomous Message        | 9-106 |
| ■ Explanation Of Parameters | 9-106 |
| <b>DGN,UNIT,FTMI,CFT,X</b>  | 9-110 |
| ■ Explanation Of Command    | 9-110 |
| ■ Command                   | 9-110 |
| ■ Completion Message        | 9-110 |
| ■ Denial Message            | 9-110 |
| ■ Autonomous Message        | 9-111 |
| ■ Explanation Of Parameters | 9-111 |
| <b>DGN,UNIT,UC,CFT,X</b>    | 9-113 |
| ■ Explanation Of Command    | 9-113 |
| ■ Command                   | 9-113 |
| ■ Completion Message        | 9-113 |
| ■ Denial Message            | 9-113 |
| ■ Autonomous Message        | 9-114 |
| ■ Explanation Of Parameters | 9-114 |

---

## **DDIS — DGN**

---

## **DDIS — DGN**

---

This section documents the commands **DDIS** through **DGN**.

## **DDIS,FROM,TO**

### **DISCONNECTION OF CIRCUITS FROM/TO DSP APPLICATION CARD**

#### **Explanation Of Command**

This command is used to disconnect a circuit (or a range of circuits) between an NPC that is not a DSP application and an NPC that **is** a DSP application NPC. The circuit may be a two-way or a one-way circuit. This command is also used to disconnect a circuit between two application cards.

**This command should only be used for clean-up purposes if the cross-connect cannot be disconnected by commands to the application itself.** Before issuing the command the user should perhaps try to remove and restore the application and try to issue the disconnect command through the application; keeping in mind, however, that a remove and subsequent restore will result in a momentary service loss.

This command is restricted to only the users who have the RMON (Restricted Maintenance privilege ON) privilege. Also, this command is not available via the on-line help feature.

This command will work if the facility terminating NPC and/or the application NPC are/is out-of-service. This command will also work for Red circuits.

This command should also be used if a test port connection to an application has been released using the FRC keyword in the TTST::TPR,TP,FRC command (I.27001), but the cross-connection that was used for the test port connection, which is a cross-connection between two of the application channels, still needs to be disconnected. The user should use the command UTL::QRY,CMAP (I.52011) to find the channel pair used by the application for the test port before executing this command.

### **Command**

---

#### **Nonhierarchical**

---

[I.15061]

DDIS:[FRM xy,SEQ ww]:FROM [s]abcddd[-eee],TO [v]ghijjj[-kkk]!

#### **Hierarchical**

---

[I.15061]

DDIS:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.15061]

M hh:mm:ss xy,ww n[vv] DDIS [s]abcddd[-eee],[v]ghijjj[-kkk][ OOS][ RDC] COMPL

#### **Hierarchical**

---

[O.15061]

M hh:mm:ss xy,ww n[vv] DDIS uvmnpddd[-eee],wxkqrjjj[-kkk][ OOS][ RDC] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.15061.01]

M hh:mm:ss xy,ww n[vv] DDIS [s]abcddd[-eee],[v]ghijjj[-kkk][ mmm,nnn] cc <st> DNY

[O.15061.02]

M hh:mm:ss xy,ww n[vv] DDIS [s]abcddd[-eee],[v]ghijjj[-kkk][ mmm,nnn] <d> <st> DNY

## Hierarchical

[O.15061.01]

M hh:mm:ss xy,ww n[vv] DDIS uvmnpddd[-eee],wxkqrjjj[-kkk][ mmm,nnn] cc <st> DNY

[O.15061.02]

M hh:mm:ss xy,ww n[vv] DDIS uvmnpddd[-eee],wxkqrjjj[-kkk][ mmm,nnn] <d> <st> DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

[s]abc - The From termination NPC number (3- or 4-digit)

uvmnp - The From termination NPC number (hierarchical)

[v]ghi - The To termination NPC number (3- or 4-digit)

wxkqr - The To termination NPC number (hierarchical)

ddd, jjj

- Channel numbers

eee, kkk

- Channel numbers, denoting the end of a range.

**Range**

*Type*

**001-024** DE, DA, TE and TA type NPCs

**000-031** PA, PB, PC and TH type NPCs

**001-064** SDxyz type application, see your application manual for details

**OOS** - At least one of the NPCs was out-of-service.

**RDC** - The disconnected circuit was a Red circuit

**mmm, nnn**

- Channel number involved in the denial. Otherwise the same as ddd.

**d** - Direction

**d** *Explanation*

**F** From

**T** To

**B** Both

**st** - Status of denial

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>06</b> | <b>INERR</b> | Invalid range for specified FROM NPC type                             |
| <b>07</b> | <b>INERR</b> | Invalid range for specified TO NPC type                               |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>D6</b> | <b>INERR</b> | Invalid FROM channel number                                           |
| <b>D7</b> | <b>INERR</b> | Invalid TO channel number                                             |
| <b>D9</b> | <b>INERR</b> | Invalid FROM channel number range                                     |
| <b>DA</b> | <b>INERR</b> | Invalid TO channel number range                                       |
| <b>DC</b> | <b>INERR</b> | A loopback is active on the FROM termination                          |
| <b>DD</b> | <b>INERR</b> | A loopback is active on the TO termination                            |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                               |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                        |
| <b>ED</b> | <b>INERR</b> | Invalid channel 031 cross-connection specified                        |
| <b>42</b> | <b>MCOND</b> | DSPP not in service, or failed                                        |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |

| <b>st</b>      | <b>d</b>       | <i>Explanation</i>                  |
|----------------|----------------|-------------------------------------|
| <b>FAIL</b>    | <b>{F T B}</b> | Failed                              |
| <b>NOMTH</b>   | <b>{F T B}</b> | No Match                            |
| <b>TP</b>      | <b>{F T B}</b> | NPC is used for test access         |
| <b>UNPASGN</b> | <b>{F T B}</b> | Unassigned or Not Properly Assigned |
| <b>UEQD</b>    | <b>{F T B}</b> | Unequipped                          |
| <b>UTST</b>    | <b>{F T B}</b> | Under Test                          |

## **DELETE,END**

### **DELETE LINES FROM MACRO**

#### **Explanation Of Command**

This command is used to delete one or more commands from an existing macro while in a macro session. If neither a range of line numbers nor END is specified then the line pointed to by the line pointer (the current line) is deleted.

#### **Command**

[I.19051]

```
DELETE[:FRM xy,SEQ ww:{<starting line>|END}[-{<ending line>\
|END}]]!
```

#### **Completion Message**

[O.19051]

```
M hh:mm:ss xy,ww n[vv] DELETE[{<starting line>\
|END}[-{<ending line>|END}]] COMPL
```

#### **Denial Message**

[O.19051.01]

```
M hh:mm:ss xy,ww n[vv] DELETE[{<starting line>|\
END}[-{<ending line>|END}]] COND cc DNY
```

#### **Autonomous Message**

Not applicable.



### **Explanation Of Parameters**

{<starting line>|END}{-<ending line>\ {<starting line>|END}{-<ending line>|END}:\

#### **starting line**

- Beginning line number of a line range (1, 2, ..., n)

Starting line indicates the line number of the first line of a range of lines to be deleted from a macro.

#### **ending line**

- Ending line number of a line range (2, 3, ..., n+1)

Ending line indicates the line number of the last line of a range of lines to be deleted from a macro.

#### **END**

- End

Line number of the line at the end of the macro.

#### **COND**

- Condition

#### **cc**

- Hexadecimal condition code

**cc**    *Explanation*

**6B**    Invalid line number

**6E**    No edit session active

## **DGN,CCB,CFT,X**

### **DIAGNOSE CROSS-CONNECT BUFFER**

#### **Explanation Of Command**

This message requests diagnostics to be run on the cross-connect buffer.

#### **Command**

[I.41211]

**DGN:FRM xy,SEQ ww:CCB sf[,CFT X'vwxy]!**

#### **Completion Message**

[O.41211]

**M hh:mm:ss xy,ww n[vv] DGN CCB sf ATP COMPL**

[O.41212]

**M hh:mm:ss xy,ww n[vv] DGN CCB sf CATP cc COMPL**

[O.41213]

**M hh:mm:ss xy,ww n[vv] DGN CCB sf STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL**

#### **Denial Message**

[O.41211.01]

**M hh:mm:ss xy,ww n[vv] DGN CCB sf COND cc DNY**

## Autonomous Message

[O.41211]

**I** hh:mm:ss xy,ww DGN CCB sf ATP COMPL

[O.41212]

**I** hh:mm:ss xy,ww DGN CCB sf CATP cc COMPL

[O.41213]

**I** hh:mm:ss xy,ww DGN CCB sf STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41211.01]

**I** hh:mm:ss xy,ww DGN CCB sf COND cc DNY

## Explanation Of Parameters

**CCB** - Cross-connect buffer

**s** - Cross-Connect Buffer side number (0 or 1)

**f** - Cross-Connect Buffer number (1 through 6)

**CFT** - Craft

The optional craft diagnostic test code field indicates which test(s) of the diagnostic is to be run under craft control. If this field is omitted, all tests of this diagnostic will be run.

All tests can be run while out of service. Test 0004 will not run if any TSI on this Cross-connect Buffer (that is, TSI1 through TSI6) is in service.

**vwxy** - Diagnostic test number

| Test                        | vwxy |
|-----------------------------|------|
| Sync energy detector test   | 0001 |
| Port alarm test             | 0002 |
| Port alarm test             | 0004 |
| Clock energy detector test. | 0008 |

**ATP** - All tests passed

**CATP** - Conditional all tests passed

**cc** - Condition code for CATP

| <i>cc</i> | <i>Explanation</i>                                             |
|-----------|----------------------------------------------------------------|
| 03        | CCB in service                                                 |
| 39        | Not all buses have mapped time slot, or some TSI is in service |
| 3A        | No unmapped time slots on one of the buses                     |
| 44        | DMB type NPCs on unit f on side s is in service.               |

**STF** - Some tests failed

**ppqq** - Trouble number for the craft

pp - Failing diagnostic number in hexadecimal form  
qq - Test number in hexadecimal form.

| <i>ppqq</i> | <i>Explanation</i>                                             |
|-------------|----------------------------------------------------------------|
| 0480        | Clock energy detector test. Circuit pack identification wrong. |
| 0410        | Clock energy detector test. Error bit not set.                 |
| 0440        | Clock energy detector test. Overall error summary not set.     |

**Note:** Involves CCNI register; could be a CCNI problem.

|      |                                                          |
|------|----------------------------------------------------------|
| 04a0 | Clock energy detector test. Error bit not cleared.       |
| 0420 | Clock energy detector test. Error returns after clear.   |
| 04b0 | Clock energy detector test. Summary returns after clear. |

**Note:** Involves CCNI register; could be a CCNI problem.

|      |                                                              |
|------|--------------------------------------------------------------|
| 04f0 | Clock energy detector test. Software error.                  |
| 0180 | Port alarm register test. Circuit pack identification wrong. |
| 0110 | Port alarm register test. Error bit not set.                 |
| 0140 | Port alarm register test. Overall error summary not set.     |

**Note:** Involves CCNI register; could be a CCNI problem.

|      |                                                        |
|------|--------------------------------------------------------|
| 01a0 | Port alarm register test. Error bit not cleared.       |
| 0120 | Port alarm register test. Error returns after clear.   |
| 01b0 | Port alarm register test. Summary returns after clear. |

**Note:** Involves CCNI register; could be a CCNI problem.

01f0 Port alarm register test. Software error.  
0280 SYNC energy detector test. Circuit pack identification wrong.  
0210 SYNC energy detector test. Error bit not set.  
0240 SYNC energy detector test. Overall error summary not set.

**Note:** Involves CCNI register; could be a CCNI problem.

02a0 SYNC energy detector test. Error bit not cleared.  
0220 SYNC energy detector test. Error returns after clear.  
02b0 SYNC energy detector test. Summary returns after clear.  
02f0 SYNC energy detector test. Software error.  
031N Port alarm in-service test. Port alarm set in ESR N. N=0-2.  
038N Port Alarm in-service test. Circuit pack identification wrong in ESR N.  
034N Port alarm in-service test. Overall error bit not set when test bus B. B=0-3.

**Note:** Involves CCNI register; could be a CCNI problem.

03aN Port alarm in-service test. Error bit not cleared in ESR N.  
032N Port alarm in-service test. Error returns after clear in ESR N.  
03b0 Port alarm in-service test. Summary returns after clear.

**Note:** Involves CCNI register; could be a CCNI problem.

03f0 Port alarm in-service test. Software error.  
0b00 Could not initialize pack.

**d5 - d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

**d5** - CCNI Error Source Register 5

Each data field contains sixteen bits. The significance of each data field and its individual bits is as follows:

| <i>Bit</i> | <i>Explanation</i>                        |
|------------|-------------------------------------------|
| 15-8       | Don't care                                |
| 7          | Error on autonomous switch enable circuit |
| 6          | Error on BSR parity                       |
| 5          | Parity error on high byte of data         |
| 4          | Parity error on low byte of data          |
| 3          | Address bus parity error                  |
| 2          | Synchronizer error                        |
| 1          | Error on CCB 6                            |
| 0          | Error on CCB 5                            |

**d4** - CCNI Error Source Register 4.

Each bit indicates an error on a pack connected to this CCNI.

| <i>Bit</i> | <i>Explanation</i>     |
|------------|------------------------|
| 15         | Error on CCB 4         |
| 14         | Error on CCB 3         |
| 13         | Error on CCB 2         |
| 12         | Error on CCB 1         |
| 11         | Error on FTM 4, Unit 6 |
| 10         | Error on FTM 3, Unit 6 |
| 09         | Error on FTM 2, Unit 6 |
| 08         | Error on FTM 1, Unit 6 |
| 07         | Error on FTM 4, Unit 5 |
| 06         | Error on FTM 3, Unit 5 |
| 05         | Error on FTM 2, Unit 5 |
| 04         | Error on FTM 1, Unit 5 |
| 03         | Error on FTM 4, Unit 4 |
| 02         | Error on FTM 3, Unit 4 |
| 01         | Error on FTM 2, Unit 4 |
| 00         | Error on FTM 1, Unit 4 |

**d3** - CCNI Error Source Register 3.

Each bit indicates an error on a pack connected to this CCNI.

| <i>Bit</i> | <i>Explanation</i>     |
|------------|------------------------|
| 15         | Error on FTM 4, Unit 3 |
| 14         | Error on FTM 3, Unit 3 |
| 13         | Error on FTM 2, Unit 3 |
| 12         | Error on FTM 1, Unit 3 |
| 11         | Error on FTM 4, Unit 2 |
| 10         | Error on FTM 3, Unit 2 |
| 09         | Error on FTM 2, Unit 2 |
| 08         | Error on FTM 1, Unit 2 |
| 07         | Error on FTM 4, Unit 1 |
| 06         | Error on FTM 3, Unit 1 |
| 05         | Error on FTM 2, Unit 1 |
| 04         | Error on FTM 1, Unit 1 |
| 03         | Error on TSI 66        |
| 02         | Error on TSI 56        |
| 01         | Error on TSI 46        |
| 00         | Error on TSI 36        |

**d2** - CCNI Error Source Register 2.

Each bit indicates an error on a pack connected to this CCNI.

| <i>Bit</i> | <i>Explanation</i> |
|------------|--------------------|
| 15         | Error on TSI 26    |
| 14         | Error on TSI 16    |
| 13         | Error on TSI 65    |
| 12         | Error on TSI 55    |
| 11         | Error on TSI 45    |
| 10         | Error on TSI 35    |
| 09         | Error on TSI 25    |
| 08         | Error on TSI 15    |
| 07         | Error on TSI 64    |
| 06         | Error on TSI 54    |
| 05         | Error on TSI 44    |
| 04         | Error on TSI 34    |
| 03         | Error on TSI 24    |
| 02         | Error on TSI 14    |
| 01         | Error on TSI 63    |
| 00         | Error on TSI 53    |

**d1** - CCNI Error Source Register 1.

Each bit indicates an error on a pack connected to this CCNI.

| <i>Bit</i> | <i>Explanation</i> |
|------------|--------------------|
| 15         | Error on TSI 43    |
| 14         | Error on TSI 33    |
| 13         | Error on TSI 23    |
| 12         | Error on TSI 13    |
| 11         | Error on TSI 62    |
| 10         | Error on TSI 52    |
| 09         | Error on TSI 42    |
| 08         | Error on TSI 32    |
| 07         | Error on TSI 22    |
| 06         | Error on TSI 12    |
| 05         | Error on TSI 61    |
| 04         | Error on TSI 51    |
| 03         | Error on TSI 41    |
| 02         | Error on TSI 31    |
| 01         | Error on TSI 21    |
| 00         | Error on TSI 11    |

**d0** - Contents of Bus Status Register on CCNI

| <i>Bit</i> | <i>Explanation</i>                                                                                                                                          |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15-04      | Not used.                                                                                                                                                   |
| 03         | Indicates what side of the network is active. This bit is read by the unit controllers.                                                                     |
| 02         | Indicates what side of the network is active. This bit is written by the MP.                                                                                |
| 01         | ASE (Autonomous Switch Enable) bit<br>1 = ASE circuit controls the value of Bit 02<br>0 = MP controls the value of Bit 02<br>This bit is read by the units. |
| 00         | Odd parity over bits 02-00 of this register.                                                                                                                |

**cc** - Hexadecimal condition code

**cc Explanation**

|           |                                       |
|-----------|---------------------------------------|
| <b>02</b> | <b>Subject entity is not equipped</b> |
| <b>03</b> | <b>Subject entity is in service</b>   |
| <b>39</b> | <b>Not enough TSIs for CCB test</b>   |
| <b>3A</b> | <b>No unmapped slots on a bus</b>     |



---

## **DGN,CCI,CFT,X**

---

### **DIAGNOSTICS, CCI AND BT PACKS**

#### **Explanation Of Command**

---

This command requests diagnostics to be run on the clock and control interface (CCI) and the bus terminator (BT) packs.

#### **Command**

---

[I.41251]

**DGN:FRM xy,SEQ ww:CCI s[,CFT X'vwxy]!**

#### **Completion Message**

---

[O.41251]

**M hh:mm:ss xy,ww n[vv] DGN CCI s ATP COMPL**

[O.41252]

**M hh:mm:ss xy,ww n[vv] DGN CCI s CATP CC COMPL**

[O.41253]

**M hh:mm:ss xy,ww n[vv] DGN CCI s[ BT sf] STF ppqq 3 LN MSG:  
wd21 wd20 wd19 wd18 wd17 wd16 wd15 wd14 wd13 wd12 wd11  
wd10 wd09 wd08 wd07 wd06 wd05 wd04 wd03 wd02 wd01 wd00 COMPL**

#### **Denial Message**

---

[O.41251.01]

**M hh:mm:ss xy,ww n[vv] DGN CCI s[ BT sf] COND cc DNY**

---

**Autonomous Message**

---

[O.41251]

**I hh:mm:ss xy,ww n[vv] DGN CCI s ATP COMPL**

[O.41251.01]

**I hh:mm:ss xy,ww n[vv] DGN CCI s[ BT sf] COND cc DNY**

---

**Explanation Of Parameters**

---

|                                          |                                        |
|------------------------------------------|----------------------------------------|
| <b>CCI</b>                               | - Clock and control interface          |
| <b>s</b>                                 | - Cross-connect side number (0 or 1)   |
| <b>CFT</b>                               | - Craft code                           |
| <b>vwxy</b>                              | - Diagnostic test number (hexadecimal) |
| <i>Test</i>                              | <i>vwxy</i>                            |
| Address and Data Parity Exercise         | 0001                                   |
| CCI Sync and Clock Exercise              | 0002                                   |
| ETSI alarm exercise                      | 0004                                   |
| Sync summary alarm exercise              | 0008                                   |
| Unit Summary Alarm Exercise              | 0010                                   |
| CCI Power Alarm Exercise                 | 0020*                                  |
| Bus Status Register Parity Test          | 0040                                   |
| Logic Cell Array (LCA) readback Test     | 0080                                   |
| Bus Termination (BT) Pack Alarm Exercise | 0100                                   |
| Out-of-service Bus Status Register       |                                        |
| Diagnostics                              | 0200*                                  |
| CCI reset register check                 | 0400*                                  |
| ETSI reset register check                | 0800*                                  |

\* Can be run only when the Expanded Cross-Connect Network (ECCN) side is out-of-service

The optional craft diagnostic code field indicates which test(s) of the diagnostic is to be run under craft control. If this field is omitted, all tests of this diagnostic will be run.

**BT** - Bus termination

**sf** - BT identifier

**s** - Cross-connect side number (0 or 1)

**f** - Failed BT indicator

*f* *Explanation*

1 BT 1

2 BT 2

B Both BTs

**ATP** - All tests passed

**CATP** - Conditional all tests passed

**cc** - Completion condition code (hexadecimal) (see cc for explanation)

**STF** - Some tests failed

**ppqq** - Trouble number for the craft (hexadecimal)

pp - Failing diagnostic number

qq - Test number

*ppqq* *Explanation*

0001 Address and Data Parity Exercise failed

0002 CCI Sync and Clock Exercise failed

0004 ETSI alarm exercise failed

0008 Sync summary alarm exercise failed

0010 Unit Summary Alarm Exercise failed

0020\* CCI Power Alarm Exercise failed

0040 Bus Status Register Parity Test failed

0080 Logic Cell Arrays (LCA) readback Test failed

0100 Bus Terminator (BT) Pack Alarm Exercise failed

0200\* Out-of-service Bus Status Register Diagnostics failed

0400\* CCI reset register check failed

0800\* ETSI reset register check failed

8000 CCI failed hardware initialization

\* ECCN out-of-service test

wd21, ..., wd00

- Raw data words

These words are related to the diagnostic failure. Each word contains two bytes, and each byte is shown as a 2-digit hexadecimal number.

**cc** - Hexadecimal condition code

**cc Explanation**

**02 Subject entity is not equipped**  
**03 Subject entity is in service**  
**55 Invalid CFT code**  
**56 Unrunnable CFT code**

## **DGN,CCNI,CFT,X**

### **DIAGNOSE CCNI**

#### **Explanation Of Command**

This message requests diagnostics to be run on the cross-connect network interface (CCNI).

#### **Command**

[I.41201]

**DGN:FRM xy,SEQ ww:CCNI s[,CFT X'vwxy]!**

#### **Completion Message**

[O.41201]

**M hh:mm:ss xy,ww n[vv] DGN CCNI s ATP COMPL**

[O.41202]

**M hh:mm:ss xy,ww n[vv] DGN CCNI s CATP cc COMPL**

[O.41203]

**M hh:mm:ss xy,ww n[vv] DGN CCNI s STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2><d1> <d0> COMPL**

#### **Denial Message**

[O.41201.01]

**M hh:mm:ss xy,ww n[vv] DGN CCNI COND cc DNY**

---

**Autonomous Message**

---

[O.41201]

**I hh:mm:ss xy,ww DGN CCNI s ATP COMPL**

[O.41202]

**I hh:mm:ss xy,ww DGN CCNI s CATP cc COMPL**

[O.41203]

**I hh:mm:ss xy,ww DGN CCNI s STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL**

[O.41201.01]

**I hh:mm:ss xy,ww DGN CCNI COND cc DNY**

---

**Explanation Of Parameters**

---

**CCNI** - Cross-connect network interface**s** - Cross-connect side number (0 or 1)**CFT** - Craft

The optional craft diagnostic code field indicates which test(s) of the diagnostic is to be run under craft control. If this field is omitted, all tests of this diagnostic will be run. All diagnostic tests can be run in or out of service.

**vwxy** - Diagnostic test number

| <i>Test</i>                  | <i>vwxy</i> |
|------------------------------|-------------|
| Unmask test                  | 0001        |
| Lowbyte/highbyte parity test | 0002        |
| ESR/EMR test                 | 0004        |
| Bus status register test     | 0008        |
| Autonomous switch test       | 0010        |
| Address bus parity test      | 0020        |

**ATP** - All tests passed**STF** - Some tests failed

**ppqq** - Trouble number for the craft

pp - Failing diagnostic number in hexadecimal form

qq - Test number in hexadecimal form

| <i>ppqq</i> | <i>Explanation</i>                                                                                                                                          |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0110        | Autonomous switch enable test: error bit not set                                                                                                            |
| 0120        | Error bit returns after clear                                                                                                                               |
| 01f0        | Software error                                                                                                                                              |
| 0210        | Bus status register test: error bit not set                                                                                                                 |
| 0220        | Error bit returns after clear                                                                                                                               |
| 02f0        | Software error                                                                                                                                              |
| 0311        | Low/high byte parity test: low byte parity error not set                                                                                                    |
| 0312        | High byte parity error not set                                                                                                                              |
| 0313        | Low and high byte errors not set                                                                                                                            |
| 0320        | Errors return after clear                                                                                                                                   |
| 03f0        | Software error                                                                                                                                              |
| 0520        | Unmask test: unmask failed                                                                                                                                  |
| 05f0        | Software error                                                                                                                                              |
| 0620        | Mask test: error bits set on entry                                                                                                                          |
| 06c0        | Mask bits failed to set                                                                                                                                     |
| 06f0        | Software error                                                                                                                                              |
| 071R        | Error bit not set                                                                                                                                           |
| 074R        | Overall error summary bit does not set (this may involve a problem with the BX board, so if replacing this pack doesn't solve the problem, replace the BX)  |
| 07bR        | Overall summary bit returns after clear (this may involve a problem with the BX board, so if replacing this pack doesn't solve the problem, replace the BX) |
| 07cR        | ESR/EMR tests: mask bit does not set: R is EMR or ESR number--[1,5] B is bit number--[0,f]                                                                  |
| 07dR        | Mask bit does not clear                                                                                                                                     |
| 07f0        | Software error                                                                                                                                              |
| 0810        | Address bus parity test: error bit not set                                                                                                                  |
| 0820        | Error bit returns after clear                                                                                                                               |
| 08a0        | Error bit not cleared                                                                                                                                       |
| 08f0        | Software error                                                                                                                                              |
| 0b00        | Could not initialize pack                                                                                                                                   |

**CATP** - Conditional all tests passed

**cc** - Hexadecimal condition code

**d5-d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

**d5** - CCNI Error Source Register 5

Each data field contains sixteen bits. The significance of each data field and its individual bits is as follows:

| <i>Bit</i> | <i>Explanation</i>                        |
|------------|-------------------------------------------|
| 15-8       | Don't care                                |
| 7          | Error on autonomous switch enable circuit |
| 6          | Error on BSR parity                       |
| 5          | Parity error on high byte of data         |
| 4          | Parity error on low byte of data          |
| 3          | Address bus parity error                  |
| 2          | Synchronizer error                        |
| 1          | Error on CCB 6                            |
| 0          | Error on CCB 5                            |

**d4** - CCNI Error Source Register 4. Each bit indicates an error on a pack connected to this CCNI.

| <i>Bit</i> | <i>Explanation</i>     |
|------------|------------------------|
| 15         | Error on CCB 4         |
| 14         | Error on CCB 3         |
| 13         | Error on CCB 2         |
| 12         | Error on CCB 1         |
| 11         | Error on FTM 4, Unit 6 |
| 10         | Error on FTM 3, Unit 6 |
| 09         | Error on FTM 2, Unit 6 |
| 08         | Error on FTM 1, Unit 6 |
| 07         | Error on FTM 4, Unit 5 |
| 06         | Error on FTM 3, Unit 5 |
| 05         | Error on FTM 2, Unit 5 |
| 04         | Error on FTM 1, Unit 5 |
| 03         | Error on FTM 4, Unit 4 |
| 02         | Error on FTM 3, Unit 4 |
| 01         | Error on FTM 2, Unit 4 |
| 00         | Error on FTM 1, Unit 4 |



**d3** - CCNI Error Source Register 3. Each bit indicates an error on a pack connected to this CCNI.

| <i>Bit</i> | <i>Explanation</i>     |
|------------|------------------------|
| 15         | Error on FTM 4, Unit 3 |
| 14         | Error on FTM 3, Unit 3 |
| 13         | Error on FTM 2, Unit 3 |
| 12         | Error on FTM 1, Unit 3 |
| 11         | Error on FTM 4, Unit 2 |
| 10         | Error on FTM 3, Unit 2 |
| 09         | Error on FTM 2, Unit 2 |
| 08         | Error on FTM 1, Unit 2 |
| 07         | Error on FTM 4, Unit 1 |
| 06         | Error on FTM 3, Unit 1 |
| 05         | Error on FTM 2, Unit 1 |
| 04         | Error on FTM 1, Unit 1 |
| 03         | Error on TSI 66        |
| 02         | Error on TSI 56        |
| 01         | Error on TSI 46        |
| 00         | Error on TSI 36        |

**d2** - CCNI Error Source Register 2. Each bit indicates an error on a pack connected to this CCNI.

| <i>Bit</i> | <i>Explanation</i> |
|------------|--------------------|
| 15         | Error on TSI 26    |
| 14         | Error on TSI 16    |
| 13         | Error on TSI 65    |
| 12         | Error on TSI 55    |
| 11         | Error on TSI 45    |
| 10         | Error on TSI 35    |
| 09         | Error on TSI 25    |
| 08         | Error on TSI 15    |
| 07         | Error on TSI 64    |
| 06         | Error on TSI 54    |
| 05         | Error on TSI 44    |
| 04         | Error on TSI 34    |
| 03         | Error on TSI 24    |
| 02         | Error on TSI 14    |
| 01         | Error on TSI 63    |
| 00         | Error on TSI 53    |

**d1** - CCNI Error Source Register 1. Each bit indicates an error on a pack connected to this CCNI.

| <i>Bit</i> | <i>Explanation</i> |
|------------|--------------------|
| 15         | Error on TSI 43    |
| 14         | Error on TSI 33    |
| 13         | Error on TSI 23    |
| 12         | Error on TSI 13    |
| 11         | Error on TSI 62    |
| 10         | Error on TSI 52    |
| 09         | Error on TSI 42    |
| 08         | Error on TSI 32    |
| 07         | Error on TSI 22    |
| 06         | Error on TSI 12    |
| 05         | Error on TSI 61    |
| 04         | Error on TSI 51    |
| 03         | Error on TSI 41    |
| 02         | Error on TSI 31    |
| 01         | Error on TSI 21    |
| 00         | Error on TSI 11    |

**d0** - Contents of Bus Status Register on CCNI

| <i>Bit</i> | <i>Explanation</i>                                                                                                                                          |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15-04      | Not used.                                                                                                                                                   |
| 03         | Indicates what side of the network is active. This bit is read by the unit controllers.                                                                     |
| 02         | Indicates what side of the network is active. This bit is written by the MP.                                                                                |
| 01         | ASE (Autonomous Switch Enable) bit<br>1 = ASE circuit controls the value of Bit 02<br>0 = MP controls the value of Bit 02<br>This bit is read by the units. |
| 00         | Odd parity over bits 02-00 of this register.                                                                                                                |

**cc** - Hexadecimal condition code

**cc**    **Explanation**

**55**    **Invalid CFT code**

**56**    **Unrunnable CFT code**

---

## **DGN,CI,CFT,X**

---

### **DIAGNOSE COMMUNICATIONS INTERFACE**

#### **Explanation Of Command**

---

This message requests diagnostics to be run on the communications interface (CI). The optional craft (CFT) field specifies which test(s) vwxy is to be run on the CI. The remainder of the CI diagnostics will then not be run.

An in progress message (O.41004) is output every 20 seconds while CI is being diagnosed until the command response or the autonomous report is output.

#### **Command**

---

[I.41031]

**DGN:FRM xy,SEQ ww:CI[,CFT X'vwxy]!**

#### **Completion Message**

---

[O.41031]

**M hh:mm:ss xy,ww n[vv] DGN CI ATP COMPL**

[O.41032]

**M hh:mm:ss xy,ww n[vv] DGN CI CATP    COMPL**

[O.41033]

**M hh:mm:ss xy,ww n[vv] DGN CI STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL**

### Denial Message

[O.41031.01]

M hh:mm:ss xy,ww n[vv] DGN CI COND cc DNY

### Autonomous Message

[O.41031]

I hh:mm:ss xy,ww DGN CI ATP COMPL

[O.41032]

I hh:mm:ss xy,ww DGN CI CATP cc COMPL

[O.41033]

I hh:mm:ss xy,ww DGN CI STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41031.01]

I hh:mm:ss xy,ww DGN CI COND cc DNY

### Explanation Of Parameters

**CI** - Communications Interface

**CFT** - Craft

**vwxy** - Diagnostic test number (hexadecimal)

| Test                             | vwxy  |
|----------------------------------|-------|
| CI RAM Test                      | 0001* |
| CI ROM Test                      | 0002  |
| CI DMA Controller Test           | 0004* |
| CI LAN Controller Test           | 0008* |
| CI Acknowledge Test              | 0010  |
| CI Timer Test.                   | 0020  |
| CI Debug Port Test               | 0040* |
| CI Additional Memory Enable Test | 0080* |

\*Out-of-service test.

**ATP** - All Tests Passed

**CATP** - Conditional All Tests Passed

**cc** - Hexadecimal completion condition code  
*To interpret values of cc see the cc table below.*

**STF** - Some Tests Failed

**ppqq** - Trouble number for the craft (hexadecimal)  
pp - Failing diagnostic number  
qq - Test number

| <i>ppqq</i> | <i>Explanation</i>                                 |
|-------------|----------------------------------------------------|
| 0101        | RAM Data Fail                                      |
| 0102        | RAM Address Fail                                   |
| 0103        | RAM Access Fault                                   |
| 0104        | RAM Refresh Fail                                   |
| 0105        | RAM Parity Fail                                    |
| 0200        | ROM Fail                                           |
| 0400        | Timer Fail                                         |
| 0500        | Input Port Fail                                    |
| 0600        | DMA Controller Fail                                |
| 0700        | LAN Controller Fail                                |
| 0900        | Acknowledge Fail                                   |
| 0831        | The input port is unstable                         |
| 0832        | The timer failed to generate an interrupt in time  |
| 0840        | Timeout occurred during loopback                   |
| 0841        | Character overrun occurred during loopback         |
| 0842        | Framing error occurred during loopback             |
| 0843        | Looped character had a parity error                |
| 0844        | Received break during loopback test                |
| 0845        | Transmit and Receive buffers don't match           |
| 0846        | Too many characters looped back                    |
| 0847        | An unknown condition occurred                      |
| 0301        | Additional memory IS enabled when it should not be |
| 0302        | Additional memory IS NOT enabled when it should be |

**d5 - d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

| <i>Data Byte</i> | <i>Value</i> |
|------------------|--------------|
| d5               | Unused       |
| d4               | Unused       |
| d3               | Unused       |
| d2               | Unused       |
| d1               | Unused       |
| d0               | Unused       |

**cc** - Hexadecimal condition code

**cc**    **Explanation**

**55**    **Invalid CFT code**

**56**    **Unrunnable CFT code**

---

## **DGN,ETSI,CFT,X**

---

### **DIAGNOSE ETSI**

#### **Explanation Of Command**

---

This message requests diagnostics to be run on an expanded time slot interchanger (ETSI).

#### **Command**

---

[I.41261]

**DGN:FRM xy,SEQ ww:ETSI sqq[,CFT X'vwxy]!**

#### **Completion Message**

---

[O.41261]

**M hh:mm:ss xy,ww n[vv] DGN ETSI sqq ATP COMPL**

[O.41262]

**M hh:mm:ss xy,ww n[vv] DGN ETSI sqq CATP kk COMPL**

[O.41263]

**M hh:mm:ss xy,ww n[vv] DGN ETSI sqq[ ETSI snn] STF ppqq \**

**3 LN MSG:**

**wd15 wd14 wd13 wd12wd11 wd10 wd09 wd08**

**wd07 wd06 wd05 wd04 wd03 wd02 wd01 wd00 COMPL**

#### **Denial Message**

---

[O.41261.01]

**M hh:mm:ss xy,ww n[vv] DGN ETSI sqq COND cc DNY**

## Autonomous Message

Not applicable.

## Explanation Of Parameters

|             |                                            |
|-------------|--------------------------------------------|
| <b>ETSI</b> | - Expanded Time slot Interchanger          |
| <b>s</b>    | - Side number (0 or 1)                     |
| <b>qq</b>   | - Unit number (01 through 16)              |
| <b>CFT</b>  | - Craft code                               |
| <b>vwx</b>  | - Diagnostic test number (hexadecimal)     |
|             | <i>Test</i>                                |
|             | <i>vwx</i>                                 |
|             | Clock and Sync exercise 0001               |
|             | Control RAM and data RAM memory test 0002* |
|             | Address and data parity exercise 0004      |
|             | Power monitor exercise 0008                |
|             | Data source time slot exercise 0010        |
|             | In-service port alarm exercise 0020        |
|             | Out-of-service port alarm exercise 0040*   |
|             | Data source and access test 0080           |
|             | Receive multiplexer port alarm 0100        |
|             | Control RAM parity exercise 0400           |
|             | Unmapped code test 0800*                   |
|             | Data RAM unmapped test 1000*               |

\* Can only be tested if the ETSI is out of service

The optional craft diagnostic test code field indicates which test(s) of the diagnostic is to be run under craft control. If this field is not entered, all tests of this diagnostic will be run.

**nn** - Unit number of the questionable in-service ETSI pack, (01 through 16)

**ATP** - All tests passed

This applies to the diagnostic of the ETSI pack, its connection with other in-service ETSIs and its cable.

**STF** - Some tests failed

This applies to the diagnostic of the ETSI pack, its connection with other in-service ETSIs and its cable.



**ppqq** - Trouble number for the craft (hexadecimal)

pp - Failing diagnostic number  
qq - Test number

| <i>ppqq</i> | <i>Explanation</i>                            |
|-------------|-----------------------------------------------|
| 0001        | Clock and sync exercise failed                |
| 0002        | Control RAM and data RAM memory test failed   |
| 0004        | Address and data parity exercise failed       |
| 0008        | Power monitor exercise failed                 |
| 0010        | Data source time slot exercise failed         |
| 0020        | In-service port alarm exercise failed         |
| 0040        | Out-of-service port alarm test failed         |
| 0080        | Data source and access test failed            |
| 0100        | Receive multiplexer port alarm test failed    |
| 0200        | Transmit demultiplexer port alarm test failed |
| 0400        | Control RAM parity exercise failed            |
| 0800        | Unmapped code test failed                     |
| 1000        | Data RAM unmapped test failed                 |
| 8000        | ETSI Hardware initialization failed           |

**wd15, ..., wd00**

- Raw data

Sixteen raw data words relating to the failed diagnostic detected. Each data word contains two bytes, and each byte is presented as a two-digit hexadecimal number. The interpretation of raw data values cannot be done by a craftsman.

|             |                                             |
|-------------|---------------------------------------------|
| <b>wd15</b> | - Low-level Diagnostic Actual Data          |
| <b>wd14</b> | - Low-level Diagnostic Expected Data        |
| <b>wd13</b> | - Low-level Diagnostic Return Code          |
| <b>wd12</b> | - CCI ETSI Mask Register                    |
| <b>wd11</b> | - CCI ETSI ESR4                             |
| <b>wd10</b> | - CCI ETSI ESR3                             |
| <b>wd09</b> | - CCI ETSI ESR2                             |
| <b>wd08</b> | - CCI ETSI ESR1                             |
| <b>wd07</b> | - ETSI Receive Demultiplexer Mask Register  |
| <b>wd06</b> | - ETSI Receive Multiplexer Mask Register    |
| <b>wd05</b> | - ETSI Data Ram Alarm Register              |
| <b>wd04</b> | - ETSI Control Ram Port Alarm Register      |
| <b>wd03</b> | - ETSI Control Ram Exercise-Status Register |
| <b>wd02</b> | - ETSI Transmit Demultiplexer Status        |
| <b>wd01</b> | - ETSI Receive Multiplexer Status           |
| <b>wd00</b> | - ETSI Circuit Pack Summary Register        |

**CATP** - Conditional all tests passed

**kk** - Hexadecimal completion condition code

To interpret the values of kk see cc below.

**cc** - Hexadecimal condition code

**cc Explanation**

|           |                                       |
|-----------|---------------------------------------|
| <b>00</b> | <b>No conditions</b>                  |
| <b>02</b> | <b>Subject entity is not equipped</b> |
| <b>03</b> | <b>Subject entity is in service</b>   |
| <b>10</b> | <b>Unit is not equipped</b>           |
| <b>55</b> | <b>Invalid CFT code</b>               |
| <b>56</b> | <b>Unrunnable CFT code</b>            |
| <b>A9</b> | <b>No unmapped time slot</b>          |
| <b>CE</b> | <b>CCI is out of service</b>          |

---

## **DGN,ET SIS,ECCN,ALL**

---

### **DIAGNOSTICS**

#### **Explanation Of Command**

---

This message requests diagnostic tests to be run on ALL expanded time slot interchangers (ET SIS) on an expanded cross-connect network (ECCN) side.

#### **Command**

---

[I.41271]

DGN:FRM xy,SEQ ww:ET SIS,ECCN s,ALL!

#### **Completion Message**

---

[O.41271]

M hh:mm:ss xy,ww n[vv] DGN ET SIS ECCN s ALL 5 LN MSG:  
TOTAL ET SIS tt  
s01 r nn s02 r nn s03 r nn s04 r nn s05 r nn \  
s06 r nn  
s07 r nn s08 r nn s09 r nn s10 r nn s11 r nn \  
s12 r nn  
s13 r nn s14 r nn s15 r nn s16 r nn \  
COND kk COMPL

#### **Denial Message**

---

[O.41271.01]

M hh:mm:ss xy,ww n[vv] DGN ET SIS ECCN s ALL COND cc DNY

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**ET SIS** - Expanded time slot interchangers

**ECCN** - Expanded cross-connect network

**s** - Side number (0 or 1)

**pa** - Priority of action

*pa*            *Explanation*

M^            Manual response

I^            Information from an autonomous activity

**r** - Diagnostic status for an individual ETSI

*r*            *Explanation*

A            All tests passed (ATP)

C            Conditional all tests passed (CATP)

S            Some tests failed (STF)

-            unequipped ETSI

**nn** - Condition code (hexadecimal) for an individual ETSI

**nn**            *Explanation*

--            Unequipped ETSI

To interpret other values of nn see cc below.

**tt** - Total number of ETSIs equipped in the ECCN side (01 through 16)

**kk** - Completion condition code (hexadecimal) for the whole message

To interpret values of kk see cc below.

**cc** - Condition code (hexadecimal)

**cc** - Hexadecimal condition code

**cc Explanation**

|    |                                |
|----|--------------------------------|
| 02 | Subject entity is not equipped |
| 03 | Subject entity is in service   |
| 16 | SYNC TB is not equipped        |
| 17 | SYNC is out of service         |
| 55 | Invalid CFT code               |
| 56 | Unrunnable CFT code            |
| A9 | No unmapped time slot          |
| CE | CCI is out of service          |
| CF | SYNC is inservice but failed   |
| D1 | CCI is not present             |
| D4 | CCI is inservice but failed    |

## **DGN,IN,PROGRESS**

### **DIAGNOSTIC IN PROGRESS**

#### **Explanation Of Command**

This message indicates that the diagnosis of the specified entity is in progress. This message will be output every 20 seconds while waiting for the response to the diagnostic command or the autonomous diagnostic report to be output.

#### **Command**

Not applicable.

#### **Completion Message**

[O.41004]

M hh:mm:ss xy,ww n[vv] DGN <entity> IN PROGRESS

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

---

**entity** - The name of the entity being diagnosed

| <b>entity</b> | <i>Explanation</i>                       |
|---------------|------------------------------------------|
| CCB           | Cross-connect buffer                     |
| CCI           | Clock and control interface              |
| CCNI          | Cross-connect network interface (NonCEF) |
| CI            | Communications interface                 |
| DISK          | Disk                                     |
| DSPI          | Digital signal processing interface      |
| FC            | Format converter                         |
| FLI           | Facility line interface                  |
| FMT           | Formatter                                |
| FTMI          | Facility terminating module interface    |
| LINK          | Link                                     |
| MC            | Main controller                          |
| MIU           | Multiplexer interface unit               |
| MP            | Main processor                           |
| MXR           | Multiplexer                              |
| NPC           | Network processing circuit               |
| SSC           | Secondary storage controller             |
| SYNC          | Synchronizer                             |
| TAPE          | Tape                                     |
| TLI           | Timing link interface                    |
| TSI           | Time slot interchange                    |
| ETSI          | Expanded time slot interchanger          |
| XC            | Cross-connect                            |
| UC            | Unit controller                          |

## **DGN, LINK, CFT, X**

### **DIAGNOSE LINK**

#### **Explanation Of Command**

This message requests that diagnostic tests be run on an administrative link.

#### **Command**

[I.41011]

DGN:FRM xy,SEQ ww:LINK a[,CFT X'vwxy]!

#### **Completion Message**

[O.41011]

M hh:mm:ss xy,ww n[vv] DGN LINK a ATP COMPL

[O.41011]

M hh:mm:ss xy,ww n[vv] DGN LINK a STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

#### **Denial Message**

[O.41011.01]

M hh:mm:ss xy,ww n[vv] DGN LINK a COND cc DNY

#### **Autonomous Message**

[O.41011]

I hh:mm:ss xy,ww DGN LINK a ATP COMPL



[O.41011]

**I** hh:mm:ss xy,ww DGN LINK a STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41011.01]

**I** hh:mm:ss xy,ww DGN LINK a COND cc DNY

### Explanation Of Parameters

**CFT** - Craft

**vwxy** - Diagnostic test number

|                         |             |
|-------------------------|-------------|
| <i>test</i>             | <i>vwxy</i> |
| Link Loopback Test      | 0001        |
| Input Port & Timer Test | 0002        |

**LINK** - Link

**a** - Administrative link number (1 through 6)

**ATP** - All tests passed

**STF** - Some tests failed

**ppqq** - Diagnostic trouble number

| <i>ppqq</i> | <i>Explanation</i>          |
|-------------|-----------------------------|
| 0100        | Link fail                   |
| 0300        | DUART test fail             |
| 0400        | Timer test fail             |
| 0500        | Input/output port test fail |

**pp** - Failing diagnostic number (hexadecimal)

**qq** - Test number (hexadecimal)

**d5,**

**d4,**

**...,**

**d0**

- Hexadecimal raw data bytes relating to the failed diagnostic detected

These data bytes can only be interpreted by a Lucent Technologies design engineer.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**03** Subject entity is in service

**BE** Hardware mismatch or not present

**F0** Clock absent for XPC to loop back

---

## **DGN,MC,CFT,X**

---

### **DIAGNOSE MAIN CONTROLLER**

#### **Explanation Of Command**

---

This message requests diagnostics to be run on the main controller (MC). The optional CFT field specifies which test(s) is to be run on the MC.

The DGN <entity> IN PROGRESS message (O.41004) is output every 20 seconds while the MC is being diagnosed until the command response or the autonomous report is output.

#### **Command**

---

[I.41001]

**DGN:FRM xy,SEQ ww:MC[,CFT X'vwxy]!**

#### **Completion Message**

---

[O.41001]

**M hh:mm:ss xy,ww n[vv] DGN MC ATP COMPL**

[O.41002]

**M hh:mm:ss xy,ww n[vv] DGN MC CATP    COMPL**

[O.41003]

**M hh:mm:ss xy,ww n[vv] DGN MC STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL**

### Denial Message

---

[O.41001.01]

M hh:mm:ss xy,ww n[vv] DGN MC COND cc DNY

### Autonomous Message

---

[O.41001]

I hh:mm:ss xy,ww DGN MC ATP COMPL

[O.41002]

I hh:mm:ss xy,ww DGN MC CATP cc COMPL

[O.41003]

I hh:mm:ss xy,ww DGN MC STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41001.01]

I hh:mm:ss xy,ww DGN MC COND cc DNY

### Explanation Of Parameters

---

MC - Main controller

CFT - Craft

vwxy - Diagnostic test number (hexadecimal)

| TEST                           | vwxy  |
|--------------------------------|-------|
| MP Test                        | 0001  |
| PMEM Test                      | 0004† |
| SMEM Test                      | 0008† |
| CI Test                        | 0010  |
| EMTC/MTC Acknowledge Test      | 0020  |
| EMTC/MTC Interrupt Test        | 0040* |
| EMTC/MTC Sanity Reg. Test      | 0080* |
| EMTC/MTC LAN Disable Test      | 0100* |
| EMTC/MTC Autonomous Alarm Test | 0200* |

|                                 |       |
|---------------------------------|-------|
| EBX/BX Interrupt Test           | 0400* |
| EBX/BX Acknowledge Test         | 0800  |
| EBX/BX Data/Address Parity Test | 1000* |

\*Out-of-service test (not performed if MC is in-service)

†In-service test (not performed if MC is out-of-service or in maintenance condition (MCOND))

**ATP** - All tests passed

**CATP** - Conditional all tests passed

**cc** - Hexadecimal completion condition code

*To interpret values of cc see the table of cc values below.*

**STF** - Some tests failed

**ppqq** - Trouble number for the craft (hexadecimal)

**pp** - Failing diagnostic number

**qq** - Test number

**ppqq** *Explanation*

0100 MP Fail

0200 CI Fail

0400 PMEM Fail

0500 SMEM Fail

0600 EMTC/MTC Interrupt Fail

0700 EMTC/MTC Acknowledge Fail

0800 EMTC/MTC Sanity Reg. Fail

0900 EMTC/MTC LAN Disable Fail

0E00 EMTC/MTC Autonomous Alarm Failed

|      |                                 |
|------|---------------------------------|
| 0A01 | EBX/BX RAM Data Fail            |
| 0A02 | EBX/BX RAM Address Fail         |
| 0A03 | EBX/BX RAM Access Fail          |
| 0A04 | EBX/BX RAM Refresh Fail         |
| 0A05 | EBX/BX RAM Parity Fail          |
| 0Bxx | EBX/BX Interrupt Fail           |
| 0C00 | EBX/BX Acknowledge Fail         |
| 0D00 | EBX/BX Data/Address Parity Fail |
| 0D01 | EBX/BX Data Parity Write Failed |
| 0D02 | EBX/BX Data Parity Read Failed  |
| 0D03 | EBX/BX Address Parity Failed    |

**xx** indicates a low level test failure point which can only be interpreted by a Lucent Technologies design engineer.

**d5 - d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

These data bytes can only be interpreted by a Lucent Technologies design engineer.

An in-progress message (O.41004) is output every 20 seconds while the MP is being diagnosed until the command response or the autonomous report is output.

**cc** - Hexadecimal condition code

**cc**    *Explanation*

|           |                                                           |
|-----------|-----------------------------------------------------------|
| <b>03</b> | Subject entity is in service                              |
| <b>04</b> | Subject entity is out of service                          |
| <b>BE</b> | Hardware mismatch or not present                          |
| <b>55</b> | Invalid CFT code                                          |
| <b>56</b> | Unrunnable CFT code                                       |
| <b>84</b> | Problem occurred while accessing SMEM or unformatted SMEM |
| <b>85</b> | Problem occurred while accessing PMEM                     |
| <b>93</b> | SMEM is not present                                       |
| <b>94</b> | SMEM unit is not restored                                 |

---

## **DGN,MP,CFT,X**

---

### **DIAGNOSE MAIN PROCESSOR**

#### **Explanation Of Command**

---

This message requests diagnostics to be run on the main processor (MP). If the craft (CFT) option is used, the value supplied for *vwxy* will determine the diagnostic run. The remainder of the diagnostics will then not be run. If the CFT option is not used, all the diagnostics listed under *vwxy* will be run.

An in-progress message (O.41004) is output every 20 seconds while the MP is being diagnosed until the command response or the autonomous report is output.

#### **Command**

---

[I.41021]

**DGN:FRM xy,SEQ ww:MP[,CFT X'vwxy]!**

#### **Completion Message**

---

[O.41021]

**M hh:mm:ss xy,ww n[vv] DGN MP ATP COMPL**

[O.41022]

**M hh:mm:ss xy,ww n[vv] DGN MP CATP    COMPL**

[O.41023]

**M hh:mm:ss xy,ww n[vv] DGN MP STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL**

## Denial Message

[O.41021.01]

M hh:mm:ss xy,ww n[vv] DGN MP COND cc DNY

## Autonomous Message

[O.41021]

I hh:mm:ss xy,ww DGN MP ATP COMPL

[O.41022]

I hh:mm:ss xy,ww DGN MP CATP cc COMPL

[O.41023]

I hh:mm:ss xy,ww DGN MP STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41021.01]

I hh:mm:ss xy,ww DGN MP COND cc DNY

## Explanation Of Parameters

**MP** - Main Processor

**CFT** - Craft

**vwxy** - Diagnostic test number

| Test                   | vwxy  |
|------------------------|-------|
| MP RAM Test            | 0001* |
| MP ROM Test            | 0002  |
| MP DMA Controller Test | 0010* |
| MP LAN Controller Test | 0020* |
| MP Acknowledge Test    | 0080  |

\*Out-of-service test.

**ATP** - All tests passed

**CATP** - Conditional all tests passed

**cc** - Completion condition code (hexadecimal)

To interpret these codes see cc.



**STF** - Some tests failed

**ppqq** - Trouble number

pp - Failing diagnostic number (hexadecimal)

qq - Test number (hexadecimal)

*ppqq Explanation*

**01xx** RAM Tests Fail

**0101** RAM Data Fail

**0102** RAM Address Fail

**0103** RAM Access Fail

**0104** RAM Refresh Fail

**02xx** ROM Fail

**0500** Input Port Fail

**06xx** DMA Controller Fail

**07xx** LAN Controller Fail

**0900** Acknowledge Fail

xx indicates a low level test failure point which can only be interpreted by a Lucent Technologies design engineer.

**d5-d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

These data bytes can only be interpreted by a Lucent Technologies design engineer.

An in-progress message (O.41004) is output every 20 seconds while the MP is being diagnosed until the command response or the autonomous report is output.

**cc** - Hexadecimal condition code

**cc Explanation**

**03 Subject entity is in service**

**55 Invalid CFT code**

**56 Unrunnable CFT code**

## **DGN,NPC**

---

### **DIAGNOSE NETWORK PROCESSING CIRCUITS**

#### **Explanation Of Command**

---

This command requests the diagnosis of a range of network processing circuits (NPCs) in a Facility Terminating Unit (FTU). It cannot be used to request the diagnosis of NPCs in a digital signal processing unit.

This command will be denied if the requested NPC range crosses a unit boundary. This command cannot be used to request the diagnosis of NPCs in a DS3 unit (DS3U) or a Hybrid DS3 unit (HDS3U). If this command is specified for a range of NPCs and the first or last NPC in the range request in is a CEPT GAP the entire command will be denied. If the CEPT GAP is contained within the range requested the gap NPCs are ignored and all equipped NPCs are diagnosed.

#### **Command**

---

##### **Nonhierarchical**

---

[I.41361]

**DGN:[FRM xy,SEQ ww]:NPC [s]abc-[t]def!**

##### **Hierarchical**

---

[I.41361]

**DGN:[FRM xy,SEQ ww]:NPC uvmnp-uvkqr!**

---

## Completion Message

---

### Nonhierarchical

---

[O.41361]

M hh:mm:ss xy,ww n[vv] DGN NPC [s]ghi-[t]jkl TOT ttt \\  
5 LN MSG:  
r kk r kk r kk r kk r kk r kk r kk r kk  
r kk r kk r kk r kk r kk r kk r kk r kk  
r kk r kk r kk r kk r kk r kk r kk r kk  
r kk r kk r kk r kk r kk r kk r kk r kk {EOM|COMPL}

### Hierarchical

---

[O.41361]

M hh:mm:ss xy,ww n[vv] DGN NPC abcde-abcfg TOT ttt 5 LN MSG:  
r kk r kk r kk r kk r kk r kk r kk r kk  
r kk r kk r kk r kk r kk r kk r kk r kk  
r kk r kk r kk r kk r kk r kk r kk r kk  
r kk r kk r kk r kk r kk r kk r kk r kk {EOM|COMPL}

---

## Denial Message

---

### Nonhierarchical

---

[O.41361.01]

M hh:mm:ss xy,ww n[vv] DGN NPC [s]abc-[t]def COND cc DNY

### Hierarchical

---

[O.41361.01]

M hh:mm:ss xy,ww n[vv] DGN NPC uvmnp-uvkqr COND cc DNY

## Autonomous Message

---

### Nonhierarchical

---

[O.41361]

```
I hh:mm:ss xy,ww n[vv] DGN NPC [s]ghi-[t]jkl TOT ttt \
5 LN MSG:
r kk r kk r kk r kk r kk r kk r kk r kk r kk
r kk r kk r kk r kk r kk r kk r kk r kk r kk
r kk r kk r kk r kk r kk r kk r kk r kk r kk
r kk r kk r kk r kk r kk r kk r kk r kk r kk {EOM|COMPL}
```

### Hierarchical

---

[O.41361]

```
I hh:mm:ss xy,ww n[vv] DGN NPC abcde-abcfg TOT ttt 5 LN MSG:
r kk r kk r kk r kk r kk r kk r kk r kk r kk
r kk r kk r kk r kk r kk r kk r kk r kk r kk
r kk r kk r kk r kk r kk r kk r kk r kk r kk
r kk r kk r kk r kk r kk r kk r kk r kk r kk {EOM|COMPL}
```

## Explanation Of Parameters

---

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, denoting the beginning of a range.

**[t]def** - The 3- or 4-digit nonhierarchical NPC number, denoting the end of a range.

[s]abc and [t]def must be in the same unit.

**[s]ghi** - Lowest NPC number in the FTM being reported ([s]abc through [s]def)

**[t]jkl** - Highest NPC number in the FTM being reported ([s]abc through [s]def)

The command may specify an NPC range that spans more than one facility terminating module (FTM) in the facility terminating unit or it may specify all or a subset of the NPCs in a given FTM. Hence the NPC numbers reported in a message segment for a given FTM will, in general, be numbers within the range given in the input command and may include the end points of the specified range.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1952  | 2081-2112  | 2241-2272  | 2401-2432  |
| 1961-1992  | 2121-2152  | 2281-2312  | 2441-2472  |
| 2001-2032  | 2161-2192  | 2321-2352  | 2481-2512  |
| 2041-2072  | 2201-2232  | 2361-2392  | 2521-2552  |

**uvmnp** - Hierarchical NPC number, denoting the beginning of a range.

**uvkqr** - Hierarchical NPC number, denoting the end of a range.

**abcde** - Lowest NPC number in the FTM being reported (**uvmnp** through **uvkqr**)

**abcfg** - Highest NPC number in the FTM being reported (**uvmnp** through **uvkqr**)

**uv, ab**

- Unit number

**m, k, c**

- Module number

**np, qr, de, fg**

- NPC number within the module

The command may specify an NPC range that spans more than one facility terminating module (FTM) in the facility terminating unit or it may specify all or a subset of the NPCs in a given FTM. Hence the NPC numbers reported in a message segment for a given FTM will, in general, be numbers within the range given in the input command and may include the end points of the specified range.

Valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

**TOT** - Total

**ttt** - Total number of equipped NPCs in a CEPT FTM (**001** through **032**).

**pa** - Priority of action

**pa**      *Explanation*

**\*\***      Major

**M**      Manual

**r** - Result of diagnostics

| <b>r</b> | <i>Explanation</i>           |
|----------|------------------------------|
| <b>A</b> | All tests passed             |
| <b>C</b> | Conditional all tests passed |
| <b>S</b> | Some tests failed            |
| <b>D</b> | Diagnostics denied           |
| <b>N</b> | NPC is not in the range      |
| <b>-</b> | NPC is not equipped          |

If the diagnostic result is Some Test Failed, one output message will be generated for each NPC.

**kk** - Completion condition code for each NPC diagnostic (hexadecimal)

To interpret values of kk see cc in the condition code table. One special value is given below.

| <b>kk</b> | <i>Explanation</i> |
|-----------|--------------------|
| <b>--</b> | Not applicable     |

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b>               |
|-----------|----------------------------------|
| <b>00</b> | No conditions                    |
| <b>02</b> | Subject entity is not equipped   |
| <b>03</b> | Subject entity is in service     |
| <b>04</b> | Subject entity is out of service |
| <b>10</b> | Unit is not equipped             |
| <b>11</b> | UC is out of service             |
| <b>13</b> | FTMI is not equipped             |
| <b>14</b> | FTMI is out of service           |
| <b>15</b> | NPC is unequipped                |
| <b>36</b> | DSPI not equipped                |
| <b>37</b> | DSPI out-of-service              |
| <b>40</b> | FC out of service                |
| <b>43</b> | (NPC) Hardware mismatch          |
| <b>0B</b> | Invalid CEPT NPC                 |
| <b>FD</b> | NPC range crosses unit boundary  |

## **DGN,NPC,SIDE,CFT,X**

### **DIAGNOSE NPC**

#### **Explanation Of Command**

This command requests diagnostics to be run on a single network processing circuit (NPC) in a facility terminating unit (FTU) or a digital signal processing unit (DSPU). For a Capacity Expansion Frame (CEF), if the NPC is in a DSPU (that is, NPC types MB, SR, or MJ), this message also initiates the continuity test for the cable between the NPC and its corresponding expanded time slot interchanger (ETSI). However, the continuity test will not be run if the optional craft code is entered.

This command is not valid for NPCs in a DS3 unit (DS3U) or Hybrid DS3 unit (HDS3U).

#### **Command**

##### **Nonhierarchical**

[I.41351]

DGN:[FRM xy,SEQ ww]:NPC [s]abc[,SIDE s][,CFT X'vwxy]!

##### **Hierarchical**

[I.41351]

DGN:[FRM xy,SEQ ww]:NPC uvmnp[,SIDE s][,CFT X'vwxy]!



## **Completion Message**

---

### **Nonhierarchical**

---

[O.41351]

M hh:mm:ss xy,ww n[vv] DGN NPC [s]abc[-[t]def][ SIDE s] TYPE mnxyz \  
ATP COMPL

[O.41352]

M hh:mm:ss xy,ww n[vv] DGN NPC [s]abc[-[t]def][ SIDE s] TYPE mnxyz \  
CATP cc COMPL

[O.41353]

M hh:mm:ss xy,ww n[vv] DGN NPC [s]abc[-[t]def][ SIDE s] TYPE mnxyz \  
e LN MSG:  
[UNIT qq UPN=<upn> XPN=<xpn>[ BIT={TD|RD}bb]]\  
STF ppqq <d5> <d4> <d3> <d2> <d1> <d0> COMPL

### **Hierarchical**

---

[O.41351]

M hh:mm:ss xy,ww n[vv] DGN NPC uvmnp[-uvmqr][ SIDE s] TYPE mnxyz \  
ATP COMPL

[O.41352]

M hh:mm:ss xy,ww n[vv] DGN NPC uvmnp[-uvmqr][ SIDE s] TYPE mnxyz \  
CATP cc COMPL

[O.41353]

M hh:mm:ss xy,ww n[vv] DGN NPC uvmnp[-uvmqr][ SIDE s] TYPE mnxyz \  
e LN MSG:  
[UNIT qq UPN=<upn> XPN=<xpn>[ BIT={TD|RD}bb]]  
STF ppqq <d5> <d4> <d3> <d2> <d1> <d0> COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.41351.01]

M hh:mm:ss xy,ww n[vv] DGN NPC [s]abc[-[t]def][ SIDE s] TYPE mnxyz \  
COND cc DNY

#### **Hierarchical**

---

[O.41351.01]

M hh:mm:ss xy,ww n[vv] DGN NPC uvmnp[-uvmqr][ SIDE s] TYPE mnxyz \  
COND cc DNY

### **Autonomous Message**

---

#### **Nonhierarchical**

---

[O.41351]

I hh:mm:ss xy,ww DGN NPC [s]abc[-[t]def][ SIDE s] TYPE mnxyz \  
ATP COMPL

[O.41352]

I hh:mm:ss xy,ww DGN NPC [s]abc[-[t]def][ SIDE s] TYPE mnxyz \  
CATP cc COMPL

[O.41353]

I hh:mm:ss xy,ww DGN NPC [s]abc[-[t]def][ SIDE s] TYPE mnxyz \  
e LN MSG:  
[UNIT qq UPN=<upn> XPN=<xpn>[ BIT={TD|RD}bb]]\  
STF ppqq <d5> <d4> <d3> <d2> <d1> <d0> COMPL

#### **Hierarchical**

---

[O.41351]

I hh:mm:ss xy,ww DGN NPC uvmnp[-uvmqr][ SIDE s] TYPE mnxyz \  
ATP COMPL

[O.41352]

**I** hh:mm:ss xy,ww DGN NPC uvmnp[-uvmqr][ SIDE s] \  
TYPE mnxyz CATP cc COMPL

[O.41353]

**I** hh:mm:ss xy,ww DGN NPC uvmnp[-uvmqr][ SIDE s] TYPE mnxyz \  
e LN MSG:  
[UNIT qq UPN=<upn> XPN=<xpn>[ BIT={TD|RD}bb]]  
STF ppqq <d5> <d4> <d3> <d2> <d1> <d0> COMPL

### Explanation Of Parameters

[s]abc - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0032 | 0161-0192 | 0321-0352 | 0481-0512 |
| 0041-0072 | 0201-0232 | 0361-0392 | 0521-0552 |
| 0081-0112 | 0241-0272 | 0401-0432 | 0561-0592 |
| 0121-0152 | 0281-0312 | 0441-0472 | 0601-0632 |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |

| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|
| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The values are:



PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

|              |            |           |
|--------------|------------|-----------|
| Unit         | Module     | NPC       |
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**SIDE** - Side

**s** - Side number (s = 0 or 1)

Side of the duplicated NPC circuit pack in a DSPU that is to be diagnosed.

**CFT** - Craft

**vwxy** - Diagnostic test number

The optional craft code field indicates the diagnostic test(s) to be run. If this field is omitted, all tests of this diagnostic will be run. If the NPC is in-service, only in-service diagnostics are run.

**Craft codes for the CB type NPC are listed below:**

| <i>Test</i>                              | <i>vwx</i> y |
|------------------------------------------|--------------|
| Out of service LCA device initialization | 0001*        |
| Interrupt and mask register test         | 0002*        |
| Out of service RAM test                  | 0004         |
| Status and mask register test            | 0008         |
| Parity checker test                      | 0010         |
| State machine exercise                   | 0020         |
| Receive CCN exercise                     | 0040         |
| Loss of clock exercise                   | 0080         |
| C-bit interface test                     | 0100         |
| In-service RAM test                      | 0200         |

\* Out-of-service only test

**Craft codes for the MB type NPC are listed below:**

| <i>Test</i>                      | <i>vwx</i> y |
|----------------------------------|--------------|
| RAM test                         | 0001*        |
| Interrupt and mask register test | 0002         |
| Data processing error test       | 0004         |
| Clock error test                 | 0008         |
| Serial interface error test      | 0010         |
| Control memory 0 test            | 0020         |
| Control memory 1 test            | 0040         |
| Conference 0 test                | 0080         |
| Conference 1 test                | 0100         |

\* Out-of-service only test

**Craft codes for the PA type NPC are listed below:**

| <i>Test</i>                            | <i>vwx</i> |
|----------------------------------------|------------|
| CI stuck bit test                      | 0001       |
| CI sanity test                         | 0002       |
| CI serial link test                    | 0004       |
| TG192 RAM test                         | 0008       |
| Channel controller tests               | 0010*      |
| Transceiver tests                      | 0020       |
| Miscellaneous register tests           | 0040       |
| Real-time clock test                   | 0080       |
| CC to format converter continuity test | 0100       |

\* In-service test

**Craft codes for the PB and PC type NPCs are listed below:**

| <i>Test</i>                                                                                                                                                 | <i>vwx</i> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| CI stuck bit and device alarm tests                                                                                                                         | 0001       |
| CI sanity timer test                                                                                                                                        | 0002       |
| CI serial link test                                                                                                                                         | 0004       |
| CC stuck bit test on read and write registers                                                                                                               | 0008       |
| CC Instruction RAM stuck bit test                                                                                                                           | 0010       |
| CC receive data parity alarm test                                                                                                                           | 0020       |
| Memory test                                                                                                                                                 | 0040       |
| DSI LFV exercise and transceiver LFV counter test                                                                                                           | 0080*      |
| Data path, CC monitor, and DSI loopback tests AND CC PCM conversion and signaling mode test AND CC conditional substitution and transceiver EFG source test | 0100       |

|                                                                                                         |       |
|---------------------------------------------------------------------------------------------------------|-------|
| SLIP/SKIP tests                                                                                         | 0200* |
| Line coding format test                                                                                 | 0400* |
| Diframe framing, NSA signaling<br>mode tests AND CRC framing mode<br>tests AND CAS signaling mode tests | 0800* |
| CC device alarm exercises                                                                               | 1000  |
| Transceiver r/w reg. stuck bit test and<br>device alarm exercises                                       | 2000* |
| Miscellaneous register stuck bit test                                                                   | 4000  |
| Time slot 0/16 source test                                                                              | 8000* |

Notes:

1. Only tests 0001 and 1000 can be run when the NPC is in service.
2. If the requested NPC is Out-of-Service and its mate is In Service, only the tests marked with "\*" can be run:
3. If both the requested NPC and its mate are Out-of-Service, any test may be run.

**Craft codes for the SD type NPCs are listed below:**

|                                 |            |
|---------------------------------|------------|
| <i>Test</i>                     | <i>vwx</i> |
| CI stuck bit test               | 0001       |
| CI sanity test                  | 0002       |
| CI serial link test             | 0004       |
| TG193 CC Config. Reg. test      | 0008       |
| TG193 CC IRAM etc. tests        | 0010       |
| TG193 clock & synch error tests | 0020*      |
| TG193 RAM tests                 | 0040       |
| Miscellaneous register test     | 0080       |

**Note:** \* denotes that the test can be run while the NPC is In Service

**[t]def** - The 3- or 4-digit nonhierarchical MB type NPC number  
([t]def= [s]abc + 1)

**uvmnp** - Hierarchical MB type NPC number

**uvmqr** - Hierarchical MB type NPC number

**qr** - MB type NPC number within module "m" (qr = np +1).

**TYPE** - Type

**mnxyz** - NPC type identifier

*mnxyz NPC type*

**CB10z** C-bit processor

**MB100** Digital Multipoint Bridge

**PAxyz** CEPT Type NPC (120-ohm twisted pair or 75-ohm coaxial)

**PBxyz** CEPT Type NPC

**PCxyz** CEPT Type NPC

**SDxyz** DSP Platform Applications

**e** - Number of lines in the message (2 or 3)

**qq** - Unit number (01 through 16)

**UPN** - Unit plug number

**upn** - The value of the UPN.

**XPN** - ECCN plug number

**xpn** - The value of the XPN

**BIT** - Bit number of the data bus

**TD** - Transmit data

**RD** - Receive data

**bb** - Bit number (00 through 15)

The optional line which contains the unit, port, and pin information will only be output if the NPC is in a DSPU and if the continuity check between the NPC and the ECCN is failed. In addition, the completion condition must always be STF. The valid values and the associated information of the UPN and XPN are shown below. Note that the numbers shown in the output are exactly the same as the numbers on the backplane.

| Unit Plug No. | ECCN Plug No. | Side | Direction | Associated DSP Packs  |
|---------------|---------------|------|-----------|-----------------------|
| P1            | PqqA*         | 0    | Receive   | 1st and 2nd DSP Packs |
| P2            | PqqE          | 0    | Transmit  | 1st and 2nd DSP Packs |
| P3            | PqqB          | 0    | Receive   | 3rd and 4th DSP Packs |
| P4            | PqqF          | 0    | Transmit  | 3rd and 4th DSP Packs |
| P5            | PqqC          | 0    | Receive   | 5th and 6th DSP Packs |
| P6            | PqqG          | 0    | Transmit  | 5th and 6th DSP Packs |
| P7            | PqqD          | 0    | Receive   | 7th and 8th DSP Packs |
| P8            | PqqH          | 0    | Transmit  | 7th and 8th DSP Packs |
| P10           | PqqA          | 1    | Receive   | 1st and 2nd DSP Packs |
| P11           | PqqE          | 1    | Transmit  | 1st and 2nd DSP Packs |
| P12           | PqqB          | 1    | Receive   | 3rd and 4th DSP Packs |
| P13           | PqqF          | 1    | Transmit  | 3rd and 4th DSP Packs |
| P14           | PqqC          | 1    | Receive   | 5th and 6th DSP Packs |
| P15           | PqqG          | 1    | Transmit  | 5th and 6th DSP Packs |
| P16           | PqqD          | 1    | Receive   | 7th and 2nd DSP Packs |
| P17           | PqqH          | 1    | Transmit  | 7th and 8th DSP Packs |

\* qq is the unit number

The bit number (that is, BIT = TDRD bb) will be shown if the software identifies the bit of the data bus as the failed one.

**ATP** - All tests passed

All tests passed on the diagnostic of NPC

**CATP** - Conditional all tests passed

The reason for the conditional completion is indicated by cc.

**STF** - Some tests failed

Some tests failed on the diagnostic of NPC.

**ppqq** - Trouble number for the craft

pp Failing diagnostic number (hexadecimal)

qq Test number (hexadecimal)

#### **Trouble numbers for the PA type NPC are listed below:**

The TG192 circuit pack can be grown as either a PA or PB/PC type. As a consequence the trouble numbers for the PB type apply in addition to those shown below.

*ppqq Cause of failure*

|             |                                                     |
|-------------|-----------------------------------------------------|
| <b>0001</b> | TG192 Initialization - Phase 1                      |
| <b>0002</b> | TG192 Initialization - Phase 2                      |
| <b>0003</b> | digroup physical type verification                  |
| <b>0004</b> | devices/registers on the FC could not be accessed   |
| <b>0005</b> | devices/registers on the FTMI could not be accessed |
| <b>01--</b> | CI stuck bit test                                   |
| <b>02--</b> | CI sanity timer test                                |
| <b>03--</b> | CI serial link test                                 |
| <b>04--</b> | TG192 ram test                                      |
| <b>05--</b> | channel controller driver                           |
| <b>06--</b> | transceiver driver                                  |
| <b>07--</b> | miscellaneous register tests                        |
| <b>08--</b> | read-time clock test                                |
| <b>09--</b> | CC alarm test                                       |
| <b>0A--</b> | CC stuck bit test                                   |
| <b>0B--</b> | CC conditional substitution and SCVR EFG SRC test   |
| <b>0C--</b> | CC device initialization test                       |
| <b>0D--</b> | CC IRAM stuck bit test                              |
| <b>0E--</b> | CC PCM conversion and signaling mode test           |
| <b>0F--</b> | CC receive data parity alarm test                   |
| <b>10--</b> | CI initialization test                              |
| <b>11--</b> | miscellaneous register R/W test                     |
| <b>12--</b> | CC and XCVR initialization test                     |
| <b>13--</b> | XCVR initialization test                            |
| <b>14--</b> | CC read channel data ABCDEFG bits verification      |
| <b>15--</b> | CC read channel data verification                   |
| <b>16--</b> | XCVR write verification                             |
| <b>17--</b> | CC IRAM R/W verification                            |
| <b>18--</b> | XCVR BIST                                           |
| <b>19--</b> | CC to SCVR to DSI data transmission test            |
| <b>1A--</b> | LOS and LFV tests                                   |
| <b>1B--</b> | XCVR R/W register test                              |
| <b>1C--</b> | CC to XCVR to DSI signaling test                    |
| <b>1D--</b> | CC to FC continuity test                            |

**Note:** "--" indicates a two-digit hexadecimal value indicating a decision point within the source program. This value can only be interpreted by a programmer with access to the source program.

**Trouble numbers for PB and PC type NPCs are listed below:**

The TG192 circuit pack can be grown as either a PA or PB/PC type. As a consequence the trouble numbers for the PA type apply in addition to those shown below.

*ppqq Cause of failure*

**0B01** DPC NSA Signaling Mode failure  
**0B02** DPC CRC Signaling Mode failure  
**0B03** DPC CAS Signaling Mode failure  
**1100** DPC Channel Controller/PCM Conversion failure  
**1200** DPC CC Conditional Substitution failure  
**1300** DPC Channel Controller Alarm failure  
**1700** DPC Line Format Violation failure  
**1A00** DPC Line Coding Format(AMI/HDB3) failure  
**1C00** DPC Misc. Register Stuck Bit failure  
**1D00** DPC Timeslot 0/16 Spare Bit failure  
**1E00** DPC CI Device Alarm failure  
**1F00** DPC Channel Controller Data Path failure

**Trouble numbers for MB and CB type NPCs are listed below:**

*ppqq Cause of failure*

**0F00** Error Summary Failure  
**0F01** Hardware Fail on ECCI pack  
**0F02** Hardware Fail on ETSI pack  
**0F03** RCV Network Data Bus Failure  
badbit, baddirection & badport  
**0F04** RCV Network Data Bus Failure  
baddirection & badport  
**0F05** XMIT Network Data Bus Failure  
badbit, baddirection & badport  
**0F06** XMIT Network Data Bus Failure  
baddirection & badport  
**0F07** Pack hardware failure  
**0F0A** Parent pack failed, for DSP packs  
**0F0C** Network Parity or Frame Sync. or  
Network Data Bus error



**Trouble numbers for only the MB type NPCs are listed below:**

*ppqq Cause of failure*

- 0F08** Pack Failed to Initialize for CT
- 0F0B** DMB clock problem during initialization

**Trouble numbers for the SD type NPCs are listed below:**

*ppqq Cause of failure*

- 0001** TG193 Initialization - Phase 1
- 0002** TG193 Initializaiton - Phase 2
- 0003** circuit pack physical type verification
- 0004** devices/registers on the SXC could not be accessed
- 0005** devices/registers on the MC could not be accessed
- 01--** happened during initialization of TG193 circuit pack
- 02--** CI stuck bit test
- 03--** CI sanity timer test
- 04--** CI serial link test
- 05--** CC configuration register test
- 06--** CC instruction RAM test
- 07--** loss of clock detector test
- 08--** synch error detector test
- 09--** synch & loss of clock error detector test
- 0A--** configuration register parity checker test
- 0B--** instruction RAM parity checker test
- 0C--** transmit data parity error detector test
- 0D--** receive data parity error detector test
- 0E--** shared RAM test
- 10--** miscellaneous and page register tests
- 11--** happened during download
- 12--** no file to download
- 13--** happened during identification of circuit pack

**Note:** "--" indicates a two-digit hexadecimal value indicating a decision point within the source program. This value can only be interpreted by a Lucent Technologies design engineer.

**d5-d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.  
These fields can only be interpreted by an Lucent Technologies design engineer.

**d5-d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

For CPR and DMB circuit packs, the values of d5-d0 are the same.

*Data*

| <i>Byte</i> | <i>Value</i> |
|-------------|--------------|
| <b>d5</b>   | Unused       |
| <b>d4</b>   | Unused       |
| <b>d3</b>   | Unused       |
| <b>d2</b>   | Unused       |
| <b>d1</b>   | Unused       |
| <b>d0</b>   | Unused       |

**cc** - Hexadecimal condition code

**cc Explanation**

|           |                                                                          |
|-----------|--------------------------------------------------------------------------|
| <b>03</b> | Subject entity is in service                                             |
| <b>10</b> | Unit is not equipped                                                     |
| <b>11</b> | UC is out of service                                                     |
| <b>13</b> | FTMI is not equipped                                                     |
| <b>14</b> | FTMI is out of service                                                   |
| <b>15</b> | NPC is unequipped                                                        |
| <b>17</b> | SYNC is out of service                                                   |
| <b>36</b> | DSPI not equipped                                                        |
| <b>37</b> | DSPI out-of-service                                                      |
| <b>38</b> | FC not equipped                                                          |
| <b>40</b> | FC out of service                                                        |
| <b>43</b> | (NPC) Hardware mismatch                                                  |
| <b>0B</b> | Invalid CEPT NPC                                                         |
| <b>55</b> | Invalid CFT code                                                         |
| <b>56</b> | Unrunnable CFT code                                                      |
| <b>FD</b> | NPC range crosses unit boundary                                          |
| <b>C2</b> | ETSI cannot be initialized when ECCN side is OOS or inservice but pested |
| <b>C3</b> | XMIT continuity test won't be run: CFT code specified                    |
| <b>C4</b> | XMIT continuity test won't be run: no XMIT timeslots available           |

**cc Explanation**

- C7** RCV continuity test won't be run: no DMB timeslots available
- C8** RCV continuity test won't be run: at least one timeslot in use
- CB** Skip error summary since adjacent pack not in service or pested
- CE** CCI is out of service
- E0** ETSI not equipped, not in service, or failed

## **DGN,PMEM,SMEM,CFT,X,EXCT,DBASE,VERIFY**

### **RUN DIAGNOSTICS ON NON-VOLATILE MEMORY CARD**

#### **Explanation Of Command**

This command requests diagnostics to be run on the specified non-volatile memory card; either the primary memory card (PMEM) or the secondary memory card (SMEM). The diagnostics test the operation of the underlying hardware of the specified memory card. By default, the entire set of in-service or out-of-service diagnostics are run except for the database and executable tests. If the craft option is used, the value supplied for *vwxy* will determine the diagnostics run and can include database and executable tests.

Using the optional keywords EXCT or DBASE, allows the user to test the system's ability to correctly read either the executable program or the database stored on a memory card. When a single or multiple diagnostic test is specified via the CFT parameter, only those tests specified by the CFT parameter are run, all other possible tests are not run. The **DGN IN PROGRESS** message is output every 20 seconds while the diagnostics are being executed until the command response or the autonomous report is output.

#### **Command**

[I.41051]

**DGN: [FRM xy,SEQ ww]:{PMEM|SMEM}[,{CFT X'vwxy|EXCT|DBASE}][,VERIFY]!**

#### **Completion Message**

[O.41051]

**M hh:mm:ss xy,ww n[vv] DGN {PMEM|SMEM}[ {EXCT|DBASE}] [VERIFY] ATP COMPL**

[O.41052]

M hh:mm:ss xy,ww n[vv] DGN {PMEM|SMEM}[ {EXCT|DBASE}][VERIFY] \  
STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41053]

M hh:mm:ss xy,ww n[vv] DGN {PMEM|SMEM}[ {EXCT|DBASE}] [VERIFY] CATP COMPL

### **Denial Message**

---

[O.41051.01]

M hh:mm:ss xy,ww n[vv] DGN {PMEM|SMEM}[ {EXCT|DBASE}][VERIFY] COND cc DNY

### **Autonomous Message**

---

[O.41051]

I hh:mm:ss xy,ww DGN {PMEM|SMEM}[ {EXCT|DBASE}] ATP COMPL

[O.41052]

I hh:mm:ss xy,ww DGN {PMEM|SMEM}[ {EXCT|DBASE}] STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41053]

I hh:mm:ss xy,ww DGN {PMEM|SMEM}[ {EXCT|DBASE}] CATP COMPL

[O.41051.01]

I hh:mm:ss xy,ww DGN {PMEM|SMEM}[ EXCT|DBASE}] COND cc DNY

### **Explanation Of Parameters**

---

**PMEM** - Primary memory card.

**SMEM** - Secondary memory card.

**CFT** - Craft

**X** - Hexidecimal

**vwxy** - Diagnostic test number

The optional craft code field specifies which test is to be run on the PMEM/SMEM. The card status test is always performed. The remainder of the PMEM/SMEM diagnostics will not be run.

**vwyx** *Test*

**0001** Card Status Test

**0002** Wear Level Test

**0004\*** Card Diagnostic Test

0010\*+ Validate Data Base Test

0020\*% Validate Boot Block Test

0040\*% Validate Executable Header Test

0080\*% Validate Executable Test

**0100\*** Read/Write DGN Volume Test

**0200\*** Mount/Unmount All Volumes Test

\* out-of-service tests (not performed if PMEM/SMEM card is in the in-service state and the main controller is also in the in-service state).

+ Database tests (performed when DBASE keyword is specified).

% Executable tests (performed when EXCT keyword is specified).

**DBASE** - Database

This keyword is used to test the ability to correctly read the data base files stored on the PMEM/SMEM. This diagnostic will be run only if the DBASE keyword is entered or if the specific test CFT field is specified.

PMEM/SMEM must be out-of-service (OOS) or the main controller must be in maintenance condition (MCOND) when using this keyword.

**EXCT** - Executables

This keyword is used to test the ability to correctly read the executables stored on the PMEM/SMEM. This diagnostic will be run only if the EXCT keyword is entered or if the specific test CFT field is specified.

PMEM/SMEM must be out-of-service (OOS) or the main controller must be in maintenance condition (MCOND) when using this keyword.

**ATP** - All tests passed

**CATP** - Conditional all tests passed

**STF** - Some tests failed

**ppqq** - Trouble number for the craft

**pp** - Failing Diagnostic Number (hexadecimal)

**qq** - Test number (hexadecimal)

| <b>ppqq</b>       | <i>Explanation</i>                                                                               |
|-------------------|--------------------------------------------------------------------------------------------------|
| <b>01xx</b>       | PMEM/SMEM Tests Failed                                                                           |
| <b>0103</b>       | Wear Level Failed                                                                                |
| <b>0104</b>       | Card Diagnostic Failed                                                                           |
| <b>0108</b>       | Validate Database Failed<br>(both database volumes marked bad)                                   |
| <b>0109</b>       | Validata Database Failed<br>(cannot mount database volume)                                       |
| <b>0110</b>       | Validate Database Failed<br>(MP & CI database not present)                                       |
| <b>0111</b>       | Validate Database Failed<br>(database present but failed)                                        |
| <b>0114</b>       | Validate Boot Block Failed                                                                       |
| <b>0116</b>       | Validate Executable Header Failed                                                                |
| <b>0118</b>       | Validate Executable Failed<br>(cannot mount executable volume)                                   |
| <b>0119</b>       | Validate Executable Failed<br>(validate executables failed)                                      |
| <b>0121</b>       | Read/Write DGN Volume Failed<br>(read/write dgn volume failed)                                   |
| <b>0121</b>       | Read/Write DGN Volume Failed<br>(cannot mount dgn volume)                                        |
| <b>0121</b>       | Read/Write DGN Volume Failed<br>(failed to close or remove file or failed to unmount dgn volume) |
| <b>0123</b>       | Mount/Unmount All Volumes Failed                                                                 |
| <b>0124, 0126</b> | Keyword=VERIFY Test Failed                                                                       |

**d5-d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

These data bytes can only be interpreted by a Lucent engineer.

An in-progress message (O.41004) is output every 20 seconds while the device is being diagnosed until the command response or autonomous report is output.

**VERIFY** - Verify

This option causes block checking to be performed.

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 03** Subject entity is in service
- 04** Subject entity is out of service
- 55** Invalid CFT code
- 56** Unrunnable CFT code
- 84** Problem occurred while accessing SMEM or unformatted SMEM
- 85** Problem occurred while accessing PMEM



## **DGN,SYNC**

### **DIAGNOSE SYNCHRONIZER**

#### **Explanation Of Command**

This message runs diagnostics on the digital phase-locked loop (DPLL) and the time base (TB) of the specified synchronizer side.

#### **Command**

[I.41101]

**DGN:FRM xy,SEQ ww:SYNC a!**

#### **Completion Message**

[O.41101]

**M hh:mm:ss xy,ww n[vv] DGN SYNC a ATP COMPL**

[O.41101]

**M hh:mm:ss xy,ww n[vv] DGN SYNC a CATP cc COMPL**

[O.41102]

**M hh:mm:ss xy,ww n[vv] DGN SYNC a STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL**

#### **Denial Message**

[O.41101.01]

**M hh:mm:ss xy,ww n[vv] DGN SYNC a COND cc DNY**

### **Autonomous Message**

---

[O.41101]

**I hh:mm:ss xy,ww DGN SYNC a ATP COMPL**

[O.41101]

**I hh:mm:ss xy,ww DGN SYNC a CATP cc COMPL**

[O.41102]

**I hh:mm:ss xy,ww DGN SYNC a STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL**

[O.41101.01]

**I hh:mm:ss xy,ww DGN SYNC a COND cc DNY**

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**a** - Synchronizer side (0 or 1)

**ATP** - All tests passed

**CATP** - Conditional all tests passed

**cc** - Hexadecimal completion code

**STF** - Some tests failed

**ppqq** - Trouble number for the craft

*ppqq Explanation*

0100 Sync diagnostic command returned error

0200 Hardware status query showed error

**d5-d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

These data bytes can only be interpreted by a Lucent Technologies design engineer.

**cc** - Hexadecimal condition code

**cc Explanation**

**02 Subject entity is not equipped**  
**8F Can't lock or unlock ram database**  
**AB Bad sync mode**

## **DGN,SYNC,TLI,CRO**

### **DIAGNOSE SYNCHRONIZER**

#### **Explanation Of Command**

This message requests diagnostics to be run on the synchronizer's timing link interface 3 when provisioned as a clock reference oscillator. The command will be denied if a clock reference oscillator is not provisioned.

#### **Command**

[I.41111]

DGN:FRM xy,SEQ ww:SYNC,TLI 3,CRO!

#### **Completion Message**

[O.41111]

M hh:mm:ss xy,ww n[vv] DGN SYNC TLI 3 CRO ATP COMPL

[O.41111]

M hh:mm:ss xy,ww n[vv] DGN SYNC TLI 3 CRO CATP cc COMPL

[O.41112]

M hh:mm:ss xy,ww n[vv] DGN SYNC TLI 3 CRO STF \  
ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

#### **Denial Message**

[O.41111.01]

M hh:mm:ss xy,ww n[vv] DGN SYNC TLI 3 CRO COND cc DNY

### **Autonomous Message**

---

[O.41111]

**I** hh:mm:ss xy,ww    **DGN SYNC TLI 3 CRO ATP \**  
**COMPL**

[O.41111]

**I** hh:mm:ss xy,ww    **DGN SYNC TLI 3 CRO CATP cc \**  
**COMPL**

[O.41112]

**I** hh:mm:ss xy,ww    **DGN SYNC TLI 3 CRO STF ppqq \**  
**2 LN MSG:**  
<d5> <d4> <d3> <d2> <d1> <d0> **COMPL**  
**[O.41111.01]**

**I** hh:mm:ss xy,ww    **DGN SYNC TLI 3 CRO \**  
**COND cc DNY**

### **Explanation Of Parameters**

---

**SYNC**    - Synchronizer

**TLI**      - Timing link interface

**3**        - TLI number 3

**CRO**      - Clock reference oscillator

**ATP**      - All tests pass

**CATP**    - Conditional All Tests Pass

**STF**      - Some tests failed

**ppqq**    - Trouble number for the craft

*ppqq    Explanation*

0300    TLI status query showed error

0400    TLI status query showed error

0500    CRO status query showed error

0600    CRO frequency offset flag

**d5,**  
**d4,**  
...,  
**d0** - Hexadecimal data bytes.

| Data<br>Byte | Value  |
|--------------|--------|
| d5           | Unused |
| d4           | Unused |
| d3           | Unused |
| d2           | Unused |
| d1           | Unused |
| d0           | Unused |

**cc** - Hexadecimal condition code

**cc Explanation**

**02 Subject entity is not equipped**  
**8F Can't lock or unlock ram database**

---

## **DGN,SYNC,TLI,SSP**

---

### **DIAGNOSE SYNCHRONIZER TIMING LINK INTERFACE**

#### **Explanation Of Command**

---

This command requests the diagnosis of a timing link interface on the synchronizer side. If the optional synchronizer sync port parameter is specified, only that single SSP is diagnosed. For autonomous diagnostics of a TD-type TLI circuit pack, the SSP field does not appear in the output message. Both arguments appear for autonomous removal of a timing extractor type TLI.

#### **Command**

---

[I.41121]

**DGN:FRM xy,SEQ ww:SYNC a,TLI m[,SSP b]!**

#### **Completion Message**

---

[O.41121]

**M hh:mm:ss xy,ww n[vv] DGN SYNC a TLI m[ SSP b[ 1]] ATP \**  
**COMPL**

[O.41122]

**M hh:mm:ss xy,ww n[vv] DGN SYNC a TLI m[ SSP b[ 1]] STF ppqq \**  
**2 LN MSG:**  
**<d5> <d4> <d3> <d2> <d1> <d0> COMPL**

### **Denial Message**

---

[O.41121.01]

M hh:mm:ss xy,ww n[vv] DGN SYNC a TLI m[ SSP b[ 1]] \  
COND cc DNY

### **Autonomous Message**

---

[O.41121]

I hh:mm:ss xy,ww DGN SYNC a TLI m[ SSP b[ 1]] ATP COMPL

[O.41122]

I hh:mm:ss xy,ww DGN SYNC a TLI m[ SSP b[ 1]] STF ppqq \  
2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41121.01]

I hh:mm:ss xy,ww DGN SYNC a TLI m[ SSP b[ 1]] COND cc DNY

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**a** - Synchronizer side number (0 or 1)

**TLI** - Timing link interface

**m** - Timing link interface number (1 through 4)

**SSP** - Synchronizer synchronization port

**b** - Synchronizer Synchronization Port number (0 or 1)

**Note 1:** SSP must be specified if the TLI is a timing extractor type NPC.

**Note 2:** If the SSP parameter is supplied, only that SSP is diagnosed. Otherwise both SSPs are diagnosed.

**ATP** - All tests passed

**STF** - Some tests failed



**ppqq** - Trouble number for the craft

Valid values are listed below:

| <i>ppqq</i> | <i>Explanation</i> |
|-------------|--------------------|
|-------------|--------------------|

|      |                               |
|------|-------------------------------|
| 0300 | TLI status query showed error |
|------|-------------------------------|

|      |                               |
|------|-------------------------------|
| 0400 | TLI status query showed error |
|------|-------------------------------|

**d5 - d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

These data bytes can only be interpreted by a Lucent Technologies design engineer.

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                |
|-----------|--------------------------------|
| <b>02</b> | Subject entity is not equipped |
|-----------|--------------------------------|

|           |                |
|-----------|----------------|
| <b>33</b> | Wrong TLI type |
|-----------|----------------|

|           |                                   |
|-----------|-----------------------------------|
| <b>8F</b> | Can't lock or unlock ram database |
|-----------|-----------------------------------|

|           |               |
|-----------|---------------|
| <b>AB</b> | Bad sync mode |
|-----------|---------------|

## **DGN,TSI,CFT,X**

### **DIAGNOSE TIME SLOT INTERCHANGE**

#### **Explanation Of Command**

This command requests diagnostics to be run on a specific time slot interchange.

The optional **CFT** field indicates which test(s) of the diagnostic is to be run under craft control. If this field is omitted, all tests of this diagnostic will be run.

If there are no mapped TSI slots, DACS II will respond with some tests failed (STF).

#### **Command**

[I.41221]

**DGN:FRM xy,SEQ ww:TSI sft[,CFT X'vwxy]!**

#### **Completion Message**

[O.41221]

**M hh:mm:ss xy,ww n[vv] DGN TSI sft ATP COMPL**

[O.41222]

**M hh:mm:ss xy,ww n[vv] DGN TSI sft CATP cc COMPL**

[O.41223]

**M hh:mm:ss xy,ww n[vv] DGN TSI sft STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL**

### **Denial Message**

---

[O.41221.01]

**M** hh:mm:ss xy,ww n[vv] DGN TSI sft COND cc DNY

### **Autonomous Message**

---

[O.41221]

**I** hh:mm:ss xy,ww DGN TSI sft ATP COMPL

[O.41222]

**I** hh:mm:ss xy,ww DGN TSI sft CATP cc COMPL

[O.41223]

**M** hh:mm:ss xy,ww DGN TSI sft STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41221.01]

**I** hh:mm:ss xy,ww DGN TSI sft COND cc DNY

### **Explanation Of Parameters**

---

**TSI** - Time slot interchange  
**s** - Cross-connect network side number (0 or 1)  
**f** - FROM unit number (1 through 6)  
**t** - TO unit number (1 through 6)

**CFT** - Craft

**vwxy** - Diagnostic test number

| <i>Test</i>                     | <b>vwxy</b> |
|---------------------------------|-------------|
| Output data checker exercise    | 0001        |
| Memory test                     | 0002        |
| Memory diagnostic               | 0004        |
| Address bus parity test         | 0008        |
| Loss of clock exercise 2        | 0010        |
| Loss of clock exercise 1        | 0020        |
| Memory diagnostic exercise      | 0040        |
| Control RAM checker exercise    | 0080        |
| Communication test              | 0100        |
| Memory and Alarms diagnostic(s) | 0200        |

**Note:**

1. If the CFT field is omitted, all tests of this diagnostic will be run.
2. Tests 0200, 0040, 0020, 0010, 0004, and 0002 can only be run when the TSI is out-of-service. All other tests can be run when the TSI is in service.

**ATP** - All tests passed

**CATP** - Conditional all tests passed

**STF** - Some tests failed

**ppqq** - Trouble number for the craft

pp - Failing diagnostic number in hexadecimal form

qq - Test number in hexadecimal form.

| <b>ppqq</b> | <i>Explanation</i>                                                                                               |
|-------------|------------------------------------------------------------------------------------------------------------------|
| 011N        | Address Bus Parity test: error bit not set.<br>N is the circuit number where failure occurred: [0,f]             |
| 012N        | Address Bus Parity test: error returns after clear.<br>N is the circuit number where the failure occurred: [0,f] |
| 013N        | Status bit BUSERR not set                                                                                        |
| 014N        | Ccni error summary bit not set (involves ccni register, could be a ccni problem)                                 |
| 01B0        | Ccni error summary not clear (involves ccni register, could be a ccni problem)                                   |
| 01F0        | Software error                                                                                                   |
| 021N        | LOTDEX2 test: error bit not set                                                                                  |
| 0220        | Error returns after clear                                                                                        |
| 023N        | Status bit not set                                                                                               |
| 02F0        | Software error                                                                                                   |
| 031N        | LOTDEX1 test: error bit not set                                                                                  |
| 0320        | Error returns after clear                                                                                        |
| 032N        | LOTDEX1 test: error returns after clear.<br>N is the circuit number where the failure occurred: [0,f]            |
| 033N        | Status bit not set                                                                                               |
| 03F0        | Software error                                                                                                   |
| 041N        | Error bit not set                                                                                                |
| 0420        | Software error                                                                                                   |
| 043N        | Status bit not set                                                                                               |
| 047N        | ODEX test: exercise bit not set                                                                                  |
| 051N        | CREX test: error bit not set                                                                                     |
| 0520        | Error returns after clear                                                                                        |
| 053N        | Status bit not set                                                                                               |
| 0540        | Summary register on CCNI not set (NOTE this could be a CCNI problem)                                             |
| 05B0        | Summary register on CCNI not cleared (NOTE this could be a CCNI problem)                                         |
| 05F0        | Software error                                                                                                   |
| 064N        | Memory test: overall error summary not set                                                                       |
| 066N        | Value stored incorrectly in memory                                                                               |
| 06F0        | Software error                                                                                                   |
| 072N        | MEMDGN test: memory diagnostic failed                                                                            |
| 07F0        | Software error                                                                                                   |
| 081N        | Error bit not set                                                                                                |
| 0820        | Error returns after clear                                                                                        |
| 084N        | Overall summary bit not set                                                                                      |
| 0850        | MEMDGN/DGNEX test: Busy bit not set                                                                              |
| 08F0        | Software error                                                                                                   |
| 0980        | Communication test: Circuit pack id is wrong                                                                     |

|      |                                                   |
|------|---------------------------------------------------|
| 099N | Circuit id is wrong                               |
| 09F0 | Software error                                    |
| 0A2N | RAM test: status register bit was set on ram test |
| 0A6N | Value stored incorrectly in memory                |
| 0ABN | Error summary bit set during test                 |
| 0AFN | Software error                                    |
| 0B00 | Could not initialize pack                         |

**d5 - d0** - Raw data relating to the failed diagnostic detected.

Four hex digits each. Each data field contains sixteen bits. The significance of each data field and its individual bits is as follows:

**d5** - CCNI Error Source Register 5

| Bit  | Explanation                               |
|------|-------------------------------------------|
| 15-8 | Don't care                                |
| 7    | Error on autonomous switch enable circuit |
| 6    | Error on BSR parity                       |
| 5    | Parity error on high byte of data         |
| 4    | Parity error on low byte of data          |
| 3    | Address bus parity error                  |
| 2    | Synchronizer error                        |
| 1    | Error on CCB 6                            |
| 0    | Error on CCB 5                            |

**d4** - CCNI Error Source Register 4.

Each bit indicates an error on a pack connected to this CCNI

| Bit | Explanation            |
|-----|------------------------|
| 15  | Error on CCB 4         |
| 14  | Error on CCB 3         |
| 13  | Error on CCB 2         |
| 12  | Error on CCB 1         |
| 11  | Error on FTM 4, Unit 6 |
| 10  | Error on FTM 3, Unit 6 |
| 09  | Error on FTM 2, Unit 6 |
| 08  | Error on FTM 1, Unit 6 |
| 07  | Error on FTM 4, Unit 5 |
| 06  | Error on FTM 3, Unit 5 |
| 05  | Error on FTM 2, Unit 5 |
| 04  | Error on FTM 1, Unit 5 |
| 03  | Error on FTM 4, Unit 4 |
| 02  | Error on FTM 3, Unit 4 |
| 01  | Error on FTM 2, Unit 4 |
| 00  | Error on FTM 1, Unit 4 |

**d3** - CCNI Error Source Register 3.

Each bit indicates an error on a pack connected to this CCNI.

| Bit | Explanation            |
|-----|------------------------|
| 15  | Error on FTM 4, Unit 3 |
| 14  | Error on FTM 3, Unit 3 |
| 13  | Error on FTM 2, Unit 3 |
| 12  | Error on FTM 1, Unit 3 |
| 11  | Error on FTM 4, Unit 2 |
| 10  | Error on FTM 3, Unit 2 |
| 09  | Error on FTM 2, Unit 2 |
| 08  | Error on FTM 1, Unit 2 |
| 07  | Error on FTM 4, Unit 1 |
| 06  | Error on FTM 3, Unit 1 |
| 05  | Error on FTM 2, Unit 1 |
| 04  | Error on FTM 1, Unit 1 |
| 03  | Error on TSI 66        |
| 02  | Error on TSI 56        |
| 01  | Error on TSI 46        |
| 00  | Error on TSI 36        |

**d2** - CCNI Error Source Register 2.

Each bit indicates an error on a pack connected to this CCNI:

| Bit | Explanation     |
|-----|-----------------|
| 15  | Error on TSI 26 |
| 14  | Error on TSI 16 |
| 13  | Error on TSI 65 |
| 12  | Error on TSI 55 |
| 11  | Error on TSI 45 |
| 10  | Error on TSI 35 |
| 09  | Error on TSI 25 |
| 08  | Error on TSI 15 |
| 07  | Error on TSI 64 |
| 06  | Error on TSI 54 |
| 05  | Error on TSI 44 |
| 04  | Error on TSI 34 |
| 03  | Error on TSI 24 |
| 02  | Error on TSI 14 |
| 01  | Error on TSI 63 |
| 00  | Error on TSI 53 |

**d1** - CCNI Error Source Register 1.

Each bit indicates an error on a pack connected to this CCNI:

| Bit | Explanation     |
|-----|-----------------|
| 15  | Error on TSI 43 |
| 14  | Error on TSI 33 |
| 13  | Error on TSI 23 |
| 12  | Error on TSI 13 |
| 11  | Error on TSI 62 |
| 10  | Error on TSI 52 |
| 09  | Error on TSI 42 |
| 08  | Error on TSI 32 |
| 07  | Error on TSI 22 |
| 06  | Error on TSI 12 |
| 05  | Error on TSI 61 |
| 04  | Error on TSI 51 |
| 03  | Error on TSI 41 |
| 02  | Error on TSI 31 |
| 01  | Error on TSI 21 |
| 00  | Error on TSI 11 |

**d0** - Contents of Bus Status Register on CCNI

| Bit   | Explanation                                                                                                                                                 |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15-04 | Not used.                                                                                                                                                   |
| 03    | Indicates what side of the network is active.<br>This bit is read by the unit controllers.                                                                  |
| 02    | Indicates what side of the network is active.<br>This bit is written by the MP.                                                                             |
| 01    | ASE (Autonomous Switch Enable) bit<br>1 = ASE circuit controls the value of Bit 02<br>0 = MP controls the value of Bit 02<br>This bit is read by the units. |
| 00    | Odd parity over bits 02-00 of this register.                                                                                                                |



**cc** - Hexadecimal condition code

**cc Explanation**

**02 Subject entity is not equipped**  
**03 Subject entity is in service**  
**1B CCN side s is in service**  
**3D No mapped slots on a tsi**  
**45 A DMB on the UNIT is OOS**  
**50 Can't run test on active side**  
**55 Invalid CFT code**  
**56 Unrunnable CFT code**

---

## DGN,TSIS,CCN,ALL

---

### DIAGNOSE TIME SLOT INTERCHANGES

#### Explanation Of Command

---

This command requests diagnostics to be run on all time slot interchangers (TSIs) on cross-connect side **s**.

#### Command

---

[I.41241]

DGN:FRM xy,SEQ ww:TSIS,CCN s,ALL!

#### Completion Message

---

[O.41241]

pahh:mm:ss xy,ww n[vv] DGN TSI ALL 5 LN MSG:

TOTAL TSIS tt

sft r nn sft r nn sft r nn sft r nn sft r nn \

sft r nn

sft r nn sft r nn sft r nn sft r nn sft r nn \

sft r nn

sft r nn sft r nn sft r nn sft r nn sft r nn \

sft r nn EOP

pahh:mm:ss xy,ww n[vv] DGN TSI ALL 5 LN MSG:

TOTAL TSIS tt

sft r nn sft r nn sft r nn sft r nn sft r nn \

sft r nn

sft r nn sft r nn sft r nn sft r nn sft r nn \

sft r nn

sft r nn sft r nn sft r nn sft r nn sft r nn \

sft r nn COND cc COMPL

### **Denial Message**

---

[O.41241.01]

**pahh:mm:ss xy,ww n[vv] DGN TSI ALL COND cc DNY**

For any TSI that fails, the following message is also output:

[O.41223]

**pahh:mm:ss xy,ww n[vv] DGN TSI sft STF ppqq d5 d4 d3 d2 \  
d1 d0 COMPL**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

|                                  |                                         |
|----------------------------------|-----------------------------------------|
| <b>TSIS</b>                      | - Time slot interchangers               |
| <b>CCN</b>                       | - Cross-connect network                 |
| <b>s</b>                         | - CCN side number                       |
| <b>ALL</b>                       | - All                                   |
| <b>pa</b>                        | - Priority of action.                   |
| <i>pa</i>                        | <i>Explanation</i>                      |
| M^                               | Manual response                         |
| I^                               | Information from an autonomous activity |
| (A "^" represents a blank space) |                                         |
| <b>s</b>                         | - See s under CCN above                 |
| <b>f</b>                         | - FROM Unit (1 through 6)               |
| <b>t</b>                         | - TO Unit (1 through 6)                 |

**r** - Diagnostic status for individual TSI:

| <i>r</i> | <i>Explanation</i>                        |
|----------|-------------------------------------------|
| A        | ATP COMPL (All Tests Passed)              |
| C        | CATP COMPL (Conditional All Tests Passed) |
| S        | STF COMPL (Some Tests Failed)             |
| D        | DNY (Deny)                                |
| -        | unequipped TSIs                           |

**nn** - Condition code for each TSI addressed (-- for unequipped TSIs)

To interpret values of nn use the cc table below.

**TOT** - Total

**tt** - Total number of TSIs diagnosed

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b>             |
|-----------|--------------------------------|
| 02        | Subject entity is not equipped |
| 03        | Subject entity is in service   |
| 1B        | CCN side s is in service       |
| 3D        | No mapped slots on a tsi       |
| 45        | A DMB on the UNIT is OOS       |
| 50        | Can't run test on active side  |
| 55        | Invalid CFT code               |
| 56        | Unrunnable CFT code            |



### Denial Message

[O.41232.01]

M hh:mm:ss xy,ww n[vv] DGN TSIS CCN s UNIT q\  
[ CONN [ a[ b[ c[ d[ e[ f]]]]]]] COND cc DNY

### Autonomous Message

[O.41232]

I hh:mm:ss xy,ww n[vv] DGN TSIS CCN s UNIT q[ CONN \  
[ a[ b[ c[ d[ e[ f]]]]]]] e LN MSG:  
sft r nn sft r nn sft r nn sft r nn sft r nn \  
sft r nn  
.  
.  
.  
sft r nn sft r nn sft r nn sft r nn sft r nn \  
sft r nn COND cc COMPL

**Note:** There are up to six sets of data on each line and up to six data lines.

[O.41232.01]

M hh:mm:ss xy,ww n[vv] DGN TSIS CCN s UNIT q[ CONN \  
[ a[ b[ c[ d[ e[ f]]]]]]] COND cc DNY

### Explanation Of Parameters

**TSIS** - Time slot interchangers

**CCN** - Cross-connect network

**s** - Cross-Connect Network side number (0 or 1)

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**CONN** - Unit connection

**a, b, c, d, e, f**

- Connected unit number

If the connected unit field is omitted, then all TSIs connected to the specified unit will be diagnosed.

**sft** - TSI identifier

**s** - See s under CCN above

**f** - FROM Unit

**t** - TO Unit

**e** - Number of lines in the message

**r** - Diagnostic status for an individual TSI

*r Explanation*

A ATP COMPL (All Tests Passed)

C CATP COMPL (Conditional All Tests Passed)

S STF COMPL (Some Tests Failed)

D DNY (Deny)

- unequipped TSIs

**nn** - Condition code for each TSI addressed (-- for unequipped TSIs)

See cc below to interpret values of nn.

**cc** - Hexadecimal condition code

**cc Explanation**

**02 Subject entity is not equipped**

**45 A DMB on the UNIT is 00S**

## **DGN,UNIT,DSPI,CFT,X**

### **DIAGNOSE DSPU**

#### **Explanation Of Command**

This message requests diagnostics to be run on the specified unit's digital signal processing interface.

#### **Command**

[I.41341]

DGN:FRM xy,SEQ ww:UNIT [q]q,DSPI[,CFT X'vwxy]!

#### **Completion Message**

[O.41341]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q DSPI ATP COMPL

[O.41342]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q DSPI CATP cc COMPL

[O.41343]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q DSPI STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

#### **Denial Message**

[O.41341.01]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q DSPI COND cc DNY



### Autonomous Message

[O.41341]

**I** hh:mm:ss xy,ww DGN UNIT [q]q DSPI ATP COMPL

[O.41342]

**I** hh:mm:ss xy,ww DGN UNIT [q]q DSPI CATP cc COMPL

[O.41343]

**I** hh:mm:ss xy,ww DGN UNIT [q]q DSPI STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41341.01]

**I** hh:mm:ss xy,ww DGN UNIT [q]q DSPI COND cc DNY

### Explanation Of Parameters

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**DSPI** - Digital signal processing interface

**CFT** - Craft

**vwxy** - Diagnostic test number

| Test                                                   | vwxy |
|--------------------------------------------------------|------|
| Processor bus parity checker test<br>(in-service test) | 0001 |
| Interrupt and mask register test<br>(in-service test)  | 0002 |
| Serial interface (in-service test)                     | 0004 |
| Serial interface (out-of-service test)                 | 0008 |

The optional CFT field is used to indicate which diagnostic test(s) is to be run. If this field is omitted, all DSPI diagnostic tests will be run.

**ATP** - All tests passed

**CATP** - Conditional all tests passed

**cc** - Hexadecimal completion condition code for CATP

| <i>cc</i> | <i>Explanation</i>                                                                 |
|-----------|------------------------------------------------------------------------------------|
| 03        | Subject entity is in-service                                                       |
| 37        | DSPI out-of-service                                                                |
| 44        | DSPI is out-of-service; Digital Signaling Processing Circuit (DSPC) is in-service. |

**STF** - Some tests failed

**ppqq** - Trouble number for the craft

|    |                                               |
|----|-----------------------------------------------|
| pp | Failing diagnostic number in hexadecimal form |
| qq | Test number in hexadecimal form.              |

| <i>ppqq</i> | <i>Explanation</i>      |
|-------------|-------------------------|
| 0100        | MP Fail                 |
| 0600        | EMTC/MTC Interrupt Fail |
| 0A01        | EBX/BX RAM Data Fail    |
| 0B00        | EBX/BX Interrupt Fail   |
| 0C00        | EBX/BX Acknowledge Fail |

**d5 - d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

| <i>Data Byte</i> | <i>Description</i>                       |
|------------------|------------------------------------------|
| d5               | Upper byte of interrupt register 0       |
| d4               | Lower byte of interrupt register 0       |
| d3               | Interrupt register 1                     |
| d2               | Upper byte of side 0 service register 0  |
| d1               | Lower byte of side 0- service register 0 |
| d0               | Unused                                   |

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b>   |
|-----------|----------------------|
| 10        | Unit is not equipped |
| 11        | UC is out of service |
| 36        | DSPI not equipped    |
| 4D        | DSPI is in service   |
| 55        | Invalid CFT code     |
| 56        | Unrunnable CFT code  |

## **DGN,UNIT,FC,CFT,X**

### **DIAGNOSE FORMAT CONVERTER**

#### **Explanation Of Command**

This command requests diagnostics to be run on the specified format converter **UNIT-q**.

#### **Command**

[I.41331]

DGN:FRM xy,SEQ ww:UNIT [q]q,FC sb[,CFT X'vwxy]!

#### **Completion Message**

[O.41331]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q FC sb ATP COMPL

[O.41332]

M hh:mm:ss xy,ww n[vv] DGN UNIT qq FC sb e LN MSG:  
[UPN=<upn> XPN=<xpn>[ BIT={TD|RD}bb]]  
STF ppqq d5 d4 d3 d2 d1 d0 COMPL

[O.41333]

M hh:mm:ss xy,ww n[vv] DGN UNIT qq FC sb CATP COND kk COMPL

#### **Denial Message**

[O.41331.01]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q FC sb COND cc DNY

### Autonomous Message

[O.41331]

I hh:mm:ss xy,ww DGN UNIT [q]q FC sb ATP COMPL

[O.41332]

I hh:mm:ss xy,ww DGN UNIT qq FC sb e LN MSG:  
[UPN=<upn> XPN=<xpn>[ BIT={TD|RD}bb]]  
STF ppqq d5 d4 d3 d2 d1 d0 COMPL

[O.41333]

I hh:mm:ss xy,ww DGN UNIT qq FC sb CATP COND kk COMPL

[O.41331.01]

I hh:mm:ss xy,ww DGN UNIT [q]q FC sb COND cc DNY

### Explanation Of Parameters

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FC** - Format converter

**s** - Side number (0 or 1)

**b** - FC number (1 through 4)

**CFT** - Craft

**vwxy** - Diagnostic test number

|                  |             |
|------------------|-------------|
| <i>Test</i>      | <i>vwxy</i> |
| CI device test   | 0001        |
| Receiver test    | 0002        |
| Transmitter test | 0004        |

The optional craft diagnostic test number indicates which test(s) of the diagnostic is to be run under craft control. If this number is omitted, all tests including the continuity check will be run.

**ATP** - All tests passed

**STF** - Some tests failed

**e** - Number of lines in the segment (2 or 3)

**UPN** - Unit plug number

**upn** - The value of UPN.

**XPN** - ECCN plug number

**xpn** - The value of XPN

**BIT** - Bit number of the data bus

**TD** - Transmit data

**RD** - Receive data

**bb** - Bit number (00 through 15)

The optional line which contains the unit, plug, and bit information will only be output if continuity checks between the NPC and the ECCN failed. The bit number (i.e., BIT={TD|RD}bb) will be shown if software identifies the bit of the data bus as the failed one. The optional line will always be output with the STF keyword. Valid values of the UPN and XPN are shown below. Note that the numbers shown in the output are exactly the same as the numbers on the backplane.

| Unit Plug<br>Number(FIB†) | Unit Plug<br>Number(OIB‡) | ECCN Plug<br>Number | Direction | Corresponding<br>FC |
|---------------------------|---------------------------|---------------------|-----------|---------------------|
| P01                       | P02                       | PqqA*               | Receive   | FC 01               |
| P02                       | P01                       | PqqE                | Transmit  | FC 01               |
| P03                       | P07                       | PqqB                | Receive   | FC 02               |
| P04                       | P06                       | PqqF                | Transmit  | FC 02               |
| P05                       | P12                       | PqqC                | Receive   | FC 03               |
| P06                       | P11                       | PqqG                | Transmit  | FC 03               |
| P07                       | P17                       | PqqD                | Receive   | FC 04               |
| P08                       | P16                       | PqqH                | Transmit  | FC 04               |
| P10                       | P05                       | PqqA                | Receive   | FC 11               |
| P11                       | P04                       | PqqE                | Transmit  | FC 11               |
| P12                       | P10                       | PqqB                | Receive   | FC 12               |
| P13                       | P09                       | PqqF                | Transmit  | FC 12               |
| P14                       | P15                       | PqqC                | Receive   | FC 13               |
| P15                       | P14                       | PqqG                | Transmit  | FC 13               |
| P16                       | P20                       | PqqD                | Receive   | FC 14               |
| P17                       | P19                       | PqqH                | Transmit  | FC 14               |

\* qq is the unit number

† FIB - Flexible Interface Bay

‡ OIB - Original Interface Bay

|                |                                                                          |  |
|----------------|--------------------------------------------------------------------------|--|
| <b>ppqq</b>    | - Trouble number for the craft (STF code)                                |  |
| pp             | Failing diagnostic number in hexadecimal form                            |  |
| qq             | Test number in hexadecimal form.                                         |  |
| <i>ppqq</i>    | <i>Explanation</i>                                                       |  |
| 0100           | CI device test fail                                                      |  |
| 0200           | Receiver test fail                                                       |  |
| 0300           | Transmitter test fail                                                    |  |
| 0F00           | Error Summary Failure                                                    |  |
| 0F01           | Hardware Fail on ECCI pack                                               |  |
| 0F02           | Hardware Fail on ETSI pack                                               |  |
| 0F03           | RCV Network Data Bus Failure<br>badbit, baddirection & badport           |  |
| 0F04           | RCV Network Data Bus Failure<br>baddirection & badport                   |  |
| 0F05           | XMIT Network Data Bus Failure<br>badbit, baddirection & badport          |  |
| 0F06           | XMIT Network Data Bus Failure<br>baddirection & badport                  |  |
| 0F07           | Pack hardware failure                                                    |  |
| 0F08           | Pack Failed to Initialize for CT                                         |  |
| 0F09           | NPC failed when sourcing                                                 |  |
| 0F0A           | Parent pack failed. For DSP packs DSPI.<br>For FC, FTMI. For FMT, UA.    |  |
| 0F0D           | FC RCV Port alarms before RCV continuity Test                            |  |
| 0F0E           | FC RCV Port alarms after sourcing from MXR/DDC pack                      |  |
| <b>d5 - d0</b> | - Hexadecimal raw data bytes relating to the failed diagnostic detected. |  |
| <i>Byte</i>    | <i>Explanation</i>                                                       |  |
| d5             | Communication interface error source register 0 (ESR0)                   |  |
| d4             | Receive formatter (RF) ESR0                                              |  |
| d3             | RF ESR1                                                                  |  |
| d2             | RF ESR2                                                                  |  |
| d1             | RF STATUS                                                                |  |
| d0             | Transmit formatter (TF) STATUS                                           |  |
| <b>CATP</b>    | - Conditional all test passed on the diagnostic of FC                    |  |
| <b>kk</b>      | - Hexadecimal completion condition code                                  |  |
|                | To interpret values of kk see cc below.                                  |  |

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b>                                                                  |
|-----------|-------------------------------------------------------------------------------------|
| <b>10</b> | Unit is not equipped                                                                |
| <b>11</b> | UC is out of service                                                                |
| <b>13</b> | FTMI is not equipped                                                                |
| <b>14</b> | FTMI is out of service                                                              |
| <b>55</b> | Invalid CFT code                                                                    |
| <b>56</b> | Unrunnable CFT code                                                                 |
| <b>C3</b> | XMIT continuity test<br>won't be run: CFT code<br>specified                         |
| <b>C4</b> | XMIT continuity test<br>won't be run: no XMIT<br>timeslots available                |
| <b>C5</b> | RCV continuity test<br>won't be run: no<br>available inservice<br>NPCS for FC/FMT   |
| <b>C6</b> | No available timeslots<br>on any of the<br>inservice NPCS<br>associated with FC/FMT |
| <b>C7</b> | RCV continuity test<br>won't be run: no DMB<br>timeslots available                  |
| <b>CC</b> | RCV continuity test<br>won't be run: SYNC OOS<br>or pested                          |

## **DGN,UNIT,FTMI,CFT,X**

### **DIAGNOSE FACILITY TERMINATING MODULE INTERFACE**

#### **Explanation Of Command**

This message requests diagnostics to be run on the unit's facility terminating module interface.

#### **Command**

[I.41321]

DGN:FRM xy,SEQ ww:UNIT [q]q,FTMI d[,CFT X'vwxy]!

#### **Completion Message**

[O.41321]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q FTMI d ATP COMPL

[O.41322]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q FTMI d STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

#### **Denial Message**

[O.41321.01]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q FTMI d COND cc DNY



### Autonomous Message

[O.41321]

**I** hh:mm:ss xy,ww DGN UNIT [q]q FTMI d ATP COMPL

[O.41322]

**I** hh:mm:ss xy,ww DGN UNIT [q]q FTMI d STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41321.01]

**I** hh:mm:ss xy,ww DGN UNIT [q]q FTMI d COND cc DNY

### Explanation Of Parameters

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FTMI** - Facility Terminating Module Interface

**d** - FTMI number (1 through 4)

**CFT** - Craft

**vwxy** - Diagnostic test number

| <i>Test</i>           | <i>vwxy</i> |
|-----------------------|-------------|
| Register test         | 0001        |
| Address parity test   | 0002        |
| High data parity test | 0004        |
| Low data parity test  | 0008        |
| CI A data strobe test | 0010        |
| CI A pack id test     | 0020        |
| CI B data strobe test | 0040        |
| CI B pack id test     | 0080        |
| CI C data strobe test | 0100        |
| CI C pack id test.    | 0200        |

All tests listed above can be run in-service.

**Note:** The optional **CFT** field indicates which test(s) of the diagnostic is to be run under craft control. If this field is omitted, all tests of this diagnostic will be run.

**ATP** - All tests passed

**STF** - Some tests failed

**ppqq** - Trouble number for the craft

pp Failing diagnostic number in hexadecimal form

qq Test number in hexadecimal form.

*ppqq Explanation*

0100 Register Test Fail

0200 Address Parity Test Fail

0300 High Data Parity Test Fail

0400 Low Data Parity Test Fail

0500 Data Strobe A Test Fail

0600 Pack ID A Test Fail

0700 Data Strobe B Test Fail

0800 Pack ID B Test Fail

0900 Data Strobe C Test Fail

0A00 Pack ID C Test Fail

**d5-d0** - Raw data

Hexadecimal raw data bytes relating to the failed diagnostic detected.

These data bytes are only used for system development.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**11** UC is out of service

**13** FTMI is not equipped

**55** Invalid CFT code

**56** Unrunnable CFT code

## **DGN,UNIT,UC,CFT,X**

### **DIAGNOSE UNIT CONTROLLER**

#### **Explanation Of Command**

This command requests diagnostics to be run on the specified unit controller.

#### **Command**

[I.41311]

DGN:FRM xy,SEQ ww:UNIT [q]q,UC[,CFT X'vwxy]!

#### **Completion Message**

[O.41311]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q UC ATP COMPL

[O.41312]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q UC CATP cc COMPL

[O.41313]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q UC STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2><d1> <d0> COMPL

#### **Denial Message**

[O.41311.01]

M hh:mm:ss xy,ww n[vv] DGN UNIT [q]q UC COND cc DNY

### Autonomous Message

[O.41311]

I hh:mm:ss xy,ww DGN UNIT [q]q UC ATP COMPL

[O.41312]

I hh:mm:ss xy,ww DGN UNIT [q]q UC CATP cc COMPL

[O.41313]

I hh:mm:ss xy,ww DGN UNIT [q]q UC STF ppqq 2 LN MSG:  
<d5> <d4> <d3> <d2> <d1> <d0> COMPL

[O.41311.01]

I hh:mm:ss xy,ww DGN UNIT [q]q UC COND cc DNY

### Explanation Of Parameters

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**UC** - Unit controller

**CFT** - Craft diagnostic test code

**vwxy** - Diagnostic test number (hexadecimal)

| <i>Test</i>                             | <i>vwxy</i> |
|-----------------------------------------|-------------|
| UC RAM test (out-of-service test)       | 0001        |
| UC ROM test (in-service test)           | 0002        |
| UC timer test (in-service test)         | 0004        |
| UC DMA test (out-of-service test)       | 0008        |
| UC LAN test (out-of-service test)       | 0010        |
| UC bus error test (in-service test)     | 0020        |
| UBX register test (out-of-service test) | 0040        |
| UBX sanity test (out-of-service test)   | 0080        |

### Notes:

1. The optional **CFT** field indicates which test(s) of the diagnostic is to be run under craft control. If this field is omitted, all tests of this diagnostic will be run.
2. Out-of-service diagnostics on the UC will run successfully only if the UC circuit pack is present in the frame and the diagnostic program can communicate with the unit. Otherwise, this message will be denied.
3. The UC DMA test cannot be run on the KER6 Unit Controller which is used on Hybrid DS3Us and DS3Us that are shipped with Release 8.0 and later

Releases.

4. The UBX tests are only valid on FTUs and IFTUs.

**ATP** - All tests passed

**CATP** - Conditional all tests passed  
The reason for the conditional completion is indicated by cc.

**STF** - Some tests failed

**ppqq** - Trouble number for the craft (hexadecimal)

pp Failing diagnostic number  
qq Test number

*ppqq Explanation*

|      |                                      |
|------|--------------------------------------|
| 0101 | RAM Test Failed - Data Error         |
| 0102 | RAM Test Failed - Address Error      |
| 0103 | RAM Test Failed - Access Error       |
| 0104 | RAM Test Failed - Refresh Error      |
| 0105 | RAM Test Failed - Parity Error       |
| 0200 | ROM Test Failed                      |
| 0400 | Timer Test Failed - Timer Error      |
| 0500 | Timer Test Failed - Input Port Error |
| 0600 | DMA Test Failed                      |
| 0700 | LAN Test Failed                      |
| 0900 | Bus Error Test Failed                |
| 0A00 | UBX Register Test Failed             |
| 0B00 | UBX Sanity Test Failed               |

**d5 - d0** - Hexadecimal raw data bytes relating to the failed diagnostic detected.

*Data Byte Value*

|    |        |
|----|--------|
| d5 | Unused |
| d4 | Unused |
| d3 | Unused |
| d2 | Unused |
| d1 | Unused |
| d0 | Unused |

For in-service UC:

- In-service tests will return ATP (All Tests Passed)
- Out-of-service tests will return CATP (Conditional All Tests Passed)

For out-of-service UC:

- In-service tests will return ATP
- Out-of-service tests will return ATP

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b>                      |
|-----------|-----------------------------------------|
| <b>03</b> | <b>Subject entity is in service</b>     |
| <b>03</b> | <b>Subject entity is in service</b>     |
| <b>04</b> | <b>Subject entity is out of service</b> |
| <b>10</b> | <b>Unit is not equipped</b>             |
| <b>42</b> | <b>RST failed to boot program</b>       |
| <b>55</b> | <b>Invalid CFT code</b>                 |
| <b>56</b> | <b>Unrunnable CFT code</b>              |

---

# Index

The following keys are used in this index to indicate the appropriate volume:

**VL-1** Volume 1

**VL-2** Volume 2

**VL-3** Volume 3

---

## A

ABT, 6-2  
ACO, ACTIVE, 6-5  
ACT, MAP, CLR, INCL, 6-7  
ADD, LINK, K, T1, T3, N2, A, B, 6-14  
ADD, LINK, PTCOL, S, X, T, M, BAUD, ALM, BS, ENQ, 6-16  
ADD, LINK, W, P, T20, T22, T23, T25, T26, R20, 6-21  
ADD, NPC, 6-28  
ADD, USER, LINK, INCL, ALL, LANG, M, P, F, 6-31  
ADD, USER, NEW, PASSWD, 6-38  
ALM, IDLD, AI, NPC, 6-41  
ALM, NPC, 6-45  
ALM, NPC, AI, COUNT, THLEV, 6-49  
ALM, PMC, PMA, DMA, MI, CCN, OOS, 6-53  
ALM, PMC, PMA, DMA, MI, ECCN, OOS, 6-55  
ALM, PMC, PMA, DMA, MI, NPC, RPSFI, IDLD, 6-57  
ALM, PMC, PMA, DMA, MI, SMEM, 6-60  
ALM, RESET, DATE, TOD, FORMAT, MDY, DMY, PMC, 6-62  
ALWSW, UNIT, MMFG, TOPRTN, TOSRVC, 6-64  
APPEND, END, 6-66  
APPL, RESET, IN, PROGRESS, 6-68  
AR01, MISC, ALM, IDLD, PBA, 6-70  
AR01, MISC, ALM, PBA, 6-74  
AUD, PARAMS, 6-79  
AUD, QRY, BER, ALL, NPCS, TOT, 6-81  
AUD, QRY, BER, ALL, NPCS, TOT, EOM, 6-83  
AUD, QRY, CFA, CGA, LOS, 6-89, 6-97, 6-107

---

## B

BADVERB, BAD, SYNTAX, STOPPED, 7-2  
BADVERB, CMD, INERR, STOPPED, 7-4  
BC, R, TO, X, ZO, NA, 7-7  
BCON, FROM, TO, NTR, LPD, CONV, NAM, CUS, INCL, 7-9  
BCON, FROM, TO, RDC, CUS, INCL, NTR, LPD, CONV, 7-20  
BCON, FROM, TOX, 7-26  
BCON, FROM, TOX, NTR, LPD, CONV, NAM, CUS, 7-33  
BCON, FROM, TOX, RDC, CUS, INCL, NTR, LPD, 7-45  
BDIS, FROM, TO, CONV, OOS, DCC, INCL, 7-51  
BDIS, FROM, TO, OOS, INCL, CONV, 7-58  
BDIS, FROM, TOX, CONV, OOS, DCC, INCL, 7-63  
BDIS, FROM, TOX, OOS, INCL, CONV, 7-70  
BOOT, FAILED, BAD, DEVICE, 7-76  
BOOT, FROM, PMEM, FAILED, ATTEMPTING, TO, 7-78  
BOOT, FROM, PMEM, SMEM, 7-80  
BX2, STF, ATP, 7-82

---

## C

CBOFL, SIDE, EOM, 8-2  
CFR, FRAME, 8-9  
CFR, SYNC, FPLL, 8-11  
CFR, SYNC, MASTER, SLAVED, 8-13  
CFR, SYNC, STRATUM, STR2, STR3, TOLL, LOCAL, 8-15  
CFR, XC, INCL, 8-17  
CHG, ALMS, ON, OFF, 8-19  
CHG, BC, X, TO, 8-21  
CHG, BCOFF, TO, 8-26  
CHG, DD, TO, 8-31  
CHG, ERB, TYPE, 8-36  
CHG, FALMS, TYPE, PMACR, PMAMJ, DMAMN, MI, 8-38  
CHG, FROM, TO, NOT, TLA, TLR, F, T, B, A, INCL, 8-54  
CHG, FROM, TO, NOT, TLA, TLR, F, T, B, L, G, A, 8-60  
CHG, FROM, TO, TLP, NG, ES, INCL, 8-68  
CHG, INTV, ON, OFF, 8-75  
CHG, MACRO, MAP, SPACE, 8-77  
CHG, MSGLOG, ON, OFF, 8-79  
CHG, NPC, ALL, TLI, SYNC, CCN, LEV, 8-81  
CHG, NPC, ALMOPT, AIS, MI, PMA, PMC, DMA, 8-86  
CHG, NPC, CBTIMER, 8-92  
CHG, NPC, LPBK, 8-95  
CHG, NPC, NFS, 8-102  
CHG, NPC, OPTS, THMODE, 8-108  
CHG, NPC, TS0, 8-136  
CHG, NPC, TS0M, 8-142  
CHG, NPC, TYPE, IW, X, 8-148

CHG,NPC,TYPE,IW,X,INCL, 8-166  
CHG,PASSWD,OLD,NEW, 8-171  
CHG,SALMS,PMACR,PMAMJ,DMAMN,MI,RESET, 8-174  
CHG,SETOP,TYPE,ALL,NPCOP, 8-176  
CHG,SWCH,TOX,INCL, 8-186, 8-192  
CHG,SYNC,TLI,SSP,TYPE,NPC,SRC, 8-197  
CHG,TYPE,OPTS,THMODE, 8-204  
CHG,TYPE,THMODE, 8-230  
CHG,UNIT,CONN, 8-233  
CHG,USER,LINK,INCL,SCR,GR,MCON,MCOFF, 8-236  
CI,ECI,RESET, 8-240  
CI,ECI,STARTUP,STF,ATP, 8-242  
CMD,MC,OOS,MCOND,INSERVICE,MPDBASE, 8-244  
COPY,NPC,TO, 8-246  
CTST,FAD,AIS,INCL, 8-276  
CTST,FAD,EMODE,FMODE,INCL, 8-284  
CTST,FAD,FROM,TO,AIS,INCL, 8-291  
CTST,HUB,FAD,TO,INCL, 8-299  
CTST,LPBKT,FAD,INCL, 8-304  
CTST,TNR,ALL,OOS, 8-308  
CTST,TNR,FAD,OOS, 8-310

---

## D

DDIS,FROM,TO, 9-2  
DELETE,END, 9-6  
DGN,CCB,CFT,X, 9-8  
DGN,CCI,CFT,X, 9-15  
DGN,CCNI,CFT,X, 9-19  
DGN,CI,CFT,X, 9-25  
DGN,ETSI,CFT,X, 9-29  
DGN,ETSI,ECCN,ALL, 9-33  
DGN,IN,PROGRESS, 9-36  
DGN,LINK,CFT,X, 9-38  
DGN,MC,CFT,X, 9-41  
DGN,MP,CFT,X, 9-45  
DGN,NPC, 9-48  
DGN,NPC,SIDE,CFT,X, 9-54  
DGN,PMEM,SMEM,CFT,X,EXCT,DBASE,VERIFY, 9-74  
DGN,SYNC, 9-79  
DGN,SYNC,TLI,CRO, 9-82  
DGN,SYNC,TLI,SSP, 9-85  
DGN,TSI,CFT,X, 9-88  
DGN,TSIS,CCN,ALL, 9-96  
DGN,TSIS,CCN,UNIT,CONN, 9-99  
DGN,UNIT,DSPI,CFT,X, 9-102  
DGN,UNIT,FC,CFT,X, 9-105  
DGN,UNIT,FTMI,CFT,X, 9-110  
DGN,UNIT,UC,CFT,X, 9-113

DGRTH,NPC, 10-2  
DGRTH,NPC,NPCTG,TGR, 10-14  
DGRTH,NPC,NPCTP,TPR, 10-19  
DGRTH,SYNC,TB, 10-24  
DGRTH,SYNC,TLI,SSP, 10-26  
DGRTH,TG, 10-31  
DGRTH,TP, 10-33  
DGRTH,UNIT, 10-35  
DGRTH,UNIT,FTMI, 10-40  
DGRTH,UNIT,MXR, 10-42  
DLT,FPKG, 10-44  
DLT,MACRO,MAP,USER, 10-48  
DLT,NPC, 10-50  
DLT,USER, 10-54  
DSPC, 10-56

---

## E

EBX,STARTUP,STF,ATP, 11-2  
ED,CRET,MAP,PIC, 11-4  
ED,MACRO,MAP, 11-8  
EMTC,STARTUP,STF,ATP, 11-14  
ERR,CMD,ABT,TN,STOPPED, 11-16  
ERR,ESR,ANALYSIS,REPORT,EVENT, 11-18  
ERR,ESR,CCB,TN,EVENT,COND, 11-21  
ERR,ESR,CCI,TN,EVENT,COND, 11-23  
ERR,ESR,CCNI,TN,EVENT,COND, 11-26  
ERR,ESR,ETSI,TN,EVENT,COND, 11-33  
ERR,ESR,MC,MP,CI,TN, 11-36  
ERR,ESR,MC,MP,TN,EVENT,COND,CI,BX,EBX, 11-38  
ERR,ESR,NPC,SIDE,TN,EVENT,COND, 11-42  
ERR,ESR,NPC,TN,EVENT,COND, 11-48  
ERR,ESR,SYNC,TLI,SSP,TN,EVENT,NPC,COND, 11-53  
ERR,ESR,SYNC,TLI,TN,EVENT,COND, 11-59  
ERR,ESR,SYNC,TN,EVENT,COND, 11-63  
ERR,ESR,TSI,TN,EVENT,COND, 11-68  
ERR,ESR,UNIT,DSPI,TN,EVENT,COND, 11-72  
ERR,ESR,UNIT,FC,TN,EVENT,COND, 11-75  
ERR,ESR,UNIT,FTMI,TN,EVENT,COND, 11-78  
ERR,ESR,UNIT,UC,UBX,TN,EVENT,COND, 11-81  
ERR,HARDWARE,TN,COND,EVENT,ACTION, 11-84  
ERR,LINK,TN,STATUS, 11-88  
ERR,MSG,TO,LOG,DISCARDED, 11-91  
ERR,PMEM,SMEM,TN,EVENT,COND, 11-93  
ERR,PWR,PMC,PMA,DMA,MI,TN, 11-95  
ERR,SOFTWARE,MC,ERROR,MID,TN,RC,ACTION, 11-98  
ERR,SYNC,MODE,FAST,HOLDOVER,NORMAL, 11-102  
ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN, 11-107,  
11-112



EXC,MACRO, 11-117

---

## F

FRADTS,BMCMP, 12-2  
FRADTS,DGN, 12-4  
FRADTS,FRCMP, 12-7  
FRADTS,MC,DGN, 12-107

---

## G

GRTH,FRAME,CHAR,UID, 12-109  
GRTH,NPC,NPCTG, 12-112  
GRTH,NPC,NPCTP, 12-116  
GRTH,NPC,TYPE, 12-120  
GRTH,NPC,TYPE,CBTIMER, 12-127  
GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,DMA, 12-132  
GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,PMC, 12-157  
GRTH,SYNC,TB,TYPE, 12-177  
GRTH,SYNC,TLI,TYPE, 12-179  
GRTH,SYNC,TLI,TYPE,SSP,SRC,NPC, 12-181  
GRTH,TG,NPCTG, 12-187  
GRTH,TP, 12-190  
GRTH,UNIT,FTMI,IMP, 12-194  
GRTH,UNIT,MXR,TYPE,BERM,BERT,LBO, 12-196  
GRTH,UNIT,TYPE,CONN, 12-199

---

## I

IN,PROGRESS, 12-204  
INHSW,UNIT,MMFG,TOPRTN,TOSRVC, 12-206  
INSTALL, 12-208  
INVALID,SFW,ID,BLOCK,COND, 12-216

---

## L

LINE, 12-218  
LIST,END, 12-220  
LOGIN,USER,PASSWD, 12-223  
LOGOFF,USER,LINK,INCL, 12-226

---

## M

MC,MCOND, 13-2  
MC,RESET,RELEASE,ISSUE,FPKG,COND, 13-4  
MOVE,FROM,END,TO, 13-8  
MP,STARTUP,STF,ATP, 13-10  
MTC,STF,ATP, 13-12

---

## O

OCNT,FROM,TO,MPM,NAM,CUS,INCL,RDC, 14-2  
OCNT,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT, 14-11  
OCNT,FROM,TO,RDC,CUS,INCL,PRIOUT, 14-21  
OCON,FROM,TO,MPM,CUS,INCL,RDC,NAM, 14-26  
OCON,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT, 14-35  
OCON,FROM,TO,RDC,CUS,INCL,PRIOUT, 14-45  
ODIS,FROM,TO,INCL,OOS,DCC, 14-50  
ODIS,FROM,TO,INCL,OOS,DCC,PRIOUT, 14-57  
ODIS,FROM,TO,OOS,INCL,PRIOUT, 14-63  
OVERLOAD,MP,CI,UNIT,UC,TN,PROCESSOR, 14-68

---

## R

RESET,DATE,TOD,FORMAT,MDY,DMY, 15-2  
RESET,STOPPED, 15-4  
RMV,CCB, 15-5  
RMV,CCI, 15-7  
RMV,CCNI, 15-10  
RMV,ETSI, 15-12  
RMV,ETSI,ECCN,ALL, 15-14  
RMV,LINK, 15-16  
RMV,MC, 15-18  
RMV,NPC,SIDE,INCL, 15-20  
RMV,SMEM,PMEM, 15-46  
RMV,SYNC, 15-49  
RMV,SYNC,TLI,CRO, 15-51  
RMV,SYNC,TLI,PMC,PMA,DMA,MI,COND, 15-53  
RMV,SYNC,TLI,SSP, 15-55  
RMV,TSI, 15-58  
RMV,TSIS,CCN,ALL, 15-60  
RMV,TSIS,CCN,UNIT,CONN, 15-63  
RMV,UNIT,FC, 15-66  
RMV,UNIT,FLI, 15-69  
RMV,UNIT,FMT, 15-71

RMV,UNIT,FTMI,DSPI, 15-73  
RMV,UNIT,MMFG,FRC,INCL, 15-76  
RMV,UNIT,UC, 15-79  
RST,CCB, 16-2  
RST,CCI, 16-4  
RST,CCNI, 16-6  
RST,ETSI, 16-8  
RST,ETSI,ECCN,ALL, 16-10  
RST,LINK, 16-13  
RST,MC,MCOND,NOJRN,CLR,ALL, 16-15  
RST,NPC,MON, 16-20  
RST,NPC,SIDE, 16-25  
RST,NPC,TSOM, 16-49  
RST,PMEM,SMEM,CLR,FRC,BKGRND, 16-53  
RST,SYNC, 16-59  
RST,SYNC,TLI,CRO, 16-61  
RST,SYNC,TLI,SSP, 16-63  
RST,TSI, 16-65  
RST,TSIS,CCN,ALL, 16-67  
RST,TSIS,CCN,UNIT,CONN, 16-70  
RST,UNIT,FC, 16-73  
RST,UNIT,FLI, 16-75  
RST,UNIT,FMT, 16-77  
RST,UNIT,FTMI,DSPI, 16-79  
RST,UNIT,UC, 16-81

---

## S

SAVE, 17-2  
STOP,MACRO,LINK, 17-4  
SW,BCAST,OLD,NEW,INCL, 17-6, 17-13  
SW,DISC,OOS, 17-21, 17-26  
SW,ROLL,OLD,NEW,INCL,FRC,OOS, 17-33  
SW,ROLL,OLD,NEW,INCL,FRC,OOS,TWAY, 17-39  
SW,UNIT,FLI,TOPRTN, 17-45  
SW,UNIT,FLI,TOSRVC, 17-47  
SW,UNIT,MMFG,TOPRTN,FRC, 17-49  
SW,UNIT,MMFG,TOSRVC, 17-52

---

## T

TCNT,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL, 18-2  
TCNT,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT, 18-13  
TCNT,FROM,TO,PFW,NFW, 18-25  
TCNT,FROM,TO,RDC,CUS,INCL,PRIOUT, 18-32  
TCON,FROM,CB,CUS,RDC,INCL, 18-37

TCON,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL, 18-43  
TCON,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT, 18-54  
TCON,FROM,TO,PFW,NFW, 18-66  
TCON,FROM,TO,RDC,CUS,INCL,PRIOUT, 18-73  
TDIS,FROM,CB,INCL,OOS, 18-78  
TDIS,FROM,TO,INCL,OOS,DCC, 18-83  
TDIS,FROM,TO,INCL,OOS,DCC,PRIOUT, 18-90  
TDIS,FROM,TO,OOS,INCL,PRIOUT, 18-96  
TSO,R,NPC,OLD,NEW, 18-101  
TSOMBOFL, 18-105  
TTST,HUB,TO,TG, 18-108  
TTST,HUB,TO,TP,NAM, 18-115  
TTST,LPD,TG, 18-122  
TTST,LPD,TP, 18-124  
TTST,MON,TG, 18-128  
TTST,MON,TO,NAM,TP, 18-134  
TTST,MON,TO,TG, 18-145  
TTST,SPL,TG, 18-153  
TTST,SPL,TP, 18-159  
TTST,TGR,TG,OOS, 18-164  
TTST,TLA,NOT,TP, 18-172  
TTST,TLA,TG, 18-179  
TTST,TLR,NOT,TP, 18-184  
TTST,TLR,TG, 18-191  
TTST,TPR,ALL,OOS, 18-196  
TTST,TPR,TP,OOS,FRC, 18-198

---

## U

UTL,ACO, 19-2  
UTL,BMTR,FROM,TO,EXCT,INCL,UPGRD, 19-4  
UTL,BOOT,FRAME,CLR, 19-10  
UTL,CLR,ALL, 19-12  
UTL,CLR,ERR,HWER,SWER, 19-14  
UTL,CLR,NPC, 19-16  
UTL,CLR,NPC,ALL,AI,MONDAT,MONTIM, 19-22  
UTL,CLR,NPC,PARAMS, 19-30  
UTL,CLR,PWR, 19-34  
UTL,DATE,FORMAT,INT, 19-36  
UTL,INIT,ALM, 19-39  
UTL,LOC, 19-41  
UTL,QRY,ALL, 19-53  
UTL,QRY,ALL,COMMON, 19-60  
UTL,QRY,ALL,UNIT, 19-66  
UTL,QRY,ALM,INTV, 19-86  
UTL,QRY,ALMOPT,NPC,AIS, 19-88  
UTL,QRY,ALMS, 19-97  
UTL,QRY,ALMS,DBASE, 19-124  
UTL,QRY,APPL,NPC,ALL, 19-137

UTL, QRY, BC, NPC, ALL, 19-143  
UTL, QRY, BC, TO, 19-152  
UTL, QRY, BCAST, ALL, 19-157  
UTL, QRY, BCAST, FROM, 19-161, 19-167  
UTL, QRY, CMAP, 19-172  
UTL, QRY, CNFGR, 19-204  
UTL, QRY, DATE, 19-207  
UTL, QRY, DD, 19-209  
UTL, QRY, DD, NPC, DDCT, ALL, 19-214  
UTL, QRY, DMAP, 19-220  
UTL, QRY, DS3, BERMT, UNIT, 19-249  
UTL, QRY, DS3, LBO, 19-251  
UTL, QRY, EQD, COMMON, 19-253  
UTL, QRY, EQD, CONN, 19-257  
UTL, QRY, EQD, ETSIS, 19-259  
UTL, QRY, EQD, MXRS, 19-261  
UTL, QRY, EQD, NPC, TOTAL, UNIT, 19-263  
UTL, QRY, EQD, TSIS, 19-276  
UTL, QRY, EQD, UNIT, 19-278  
UTL, QRY, EQD, UNITS, 19-297  
UTL, QRY, ERR, SWER, HWER, INT, DATE, TOD, TN, 19-299  
UTL, QRY, ESR, CCN, 19-309  
UTL, QRY, ESR, ECCN, 19-312  
UTL, QRY, ESR, MP, 19-316  
UTL, QRY, ESR, NPC, SIDE, 19-321  
UTL, QRY, ESR, UNIT, 19-329  
UTL, QRY, ESR, UNIT, DSPI, 19-333  
UTL, QRY, ESR, UNIT, FC, 19-335  
UTL, QRY, ESR, UNIT, FLI, 19-338  
UTL, QRY, ESR, UNIT, FTMI, 19-341  
UTL, QRY, ESR, UNIT, MXR, 19-345  
UTL, QRY, FALMS, TYPE, ALL, 19-350  
UTL, QRY, FPKG, 19-368  
UTL, QRY, FROM, 19-372, 19-393  
UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC, 19-398  
UTL, QRY, LIST, MACRO, USER, 19-408  
UTL, QRY, LIST, MAP, USER, 19-411  
UTL, QRY, LOG, ALL, 19-414  
UTL, QRY, LPBK, NPC, 19-418  
UTL, QRY, MACRO, ATTR, USER, ALL, 19-425  
UTL, QRY, MACRO, MAP, SPACE, USER, ALL, 19-429  
UTL, QRY, MACRO, USER, 19-432  
UTL, QRY, MAP, ATTR, ALL, USER, MAPNM, 19-435  
UTL, QRY, MARK, 19-438, 19-448  
UTL, QRY, MEMSTAT, 19-458  
UTL, QRY, NFS, NPC, 19-466  
UTL, QRY, NPC, 19-471  
UTL, QRY, NPC, ALL, AI, LV, MONDAT, MONTIM, 19-483  
UTL, QRY, NPC, CBTIMER, 19-495  
UTL, QRY, NPC, MAP, USER, 19-498  
UTL, QRY, NPCTG, 19-503  
UTL, QRY, OPT, TYPE, ALL, NPC, 19-508  
UTL, QRY, PEST, FAIL, OOS, COMMON, 19-513  
UTL, QRY, PEST, FAIL, OOS, UNIT, 19-518  
UTL, QRY, ROLL, DS0, NPC, ALL, UNIT, 19-538  
UTL, QRY, ROLL, DS1, NPC, ALL, UNIT, 19-545  
UTL, QRY, RPSFI, 19-552  
UTL, QRY, SALMS, ALL, 19-554  
UTL, QRY, SCR, LINK, USER, LINKS, USERS, 19-557  
UTL, QRY, SIGST, 19-565  
UTL, QRY, SQN, 19-571  
UTL, QRY, STATE, ACO, 19-573  
UTL, QRY, STATE, NPC, 19-575, 19-605  
UTL, QRY, STATE, SYNC, 19-628  
UTL, QRY, STR, LINK, 19-631  
UTL, QRY, STR, SYNC, 19-641  
UTL, QRY, STR, SYNC, TLI, 19-647  
UTL, QRY, STR, SYNC, TLI, SSP, 19-650  
UTL, QRY, STR, XC, 19-655  
UTL, QRY, SYNC, TYPE, 19-657  
UTL, QRY, TGS, 19-660  
UTL, QRY, TO, 19-665, 19-700  
UTL, QRY, TOD, CFA, MONDAT, 19-718  
UTL, QRY, TPS, 19-721  
UTL, QRY, TS0, NPC, 19-727  
UTL, QRY, TS0M, NPC, 19-732  
UTL, QRY, UNIT, FTMI, IMP, 19-737  
UTL, QRY, WHO, 19-739  
UTL, QRY, XCSB, UNIT, 19-742  
UTL, RCY, COND, IN, PROGRESS, 19-749  
UTL, RCY, PASSWD, 19-752  
UTL, TOD, CFA, PRIM, X, MONDAT, 19-754



**Lucent Technologies**  
Bell Labs Innovations



**DACS II**  
**Release 8.2.3, PDS**  
**2.048-Mb/s Interface**  
**Command and Message Manual**

**Volume II**

365-353-242  
Issue 1  
February 1999

**Copyright © 1999 Lucent Technologies**  
**All Rights Reserved**  
**Printed in U.S.A**

### **Notice**

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

### **Security Statement**

In rare instances, unauthorized individuals make connections to the telecommunications network through the use of remote access features. In such event, applicable tariffs require that the customer pay all network charges for traffic. Lucent Technologies cannot be responsible for such charges, and will not make any allowance or give any credit for charges that result from unauthorized access.

### **Documentation Ordering Information**

The ordering number for this document is 365-353-242. To order this document, call the Lucent Technologies Customer Information Center in Indianapolis, Indiana, on 1-888-582-3688. For more ordering information, refer to "How to Order Documentation" in the section "About this Document."

### **Technical Support Telephone Number**

The Lucent Technologies Regional Technical Assistance Center (RTAC) provides a technical assistance telephone number which is staffed 24 hours a day. For technical assistance, simply call 1-800-225-RTAC.

### **Documentation Support Telephone Number**

Lucent Technologies provides a telephone number for you to report errors or to ask questions about the information in this document. The support telephone numbers are:

Outside North Carolina - 1-800-334-0404  
Inside North Carolina - 1-919-727-6681.

Developed by The Lucent Technologies Customer Training & Information Products Organization

## How Are We Doing?

Document Title: DACS II Release 8.2.3, PDS 2.048-Mb/s Interface Command and Message Manual Volume II

Document No.: 365-353-242

Issue 1

Date: February 1999

Lucent Technologies welcomes your feedback on this document. Your comments can be of great value in helping us improve our documentation.

1. Please rate the effectiveness of this document in the following areas:

|                      | Excellent | Good | Fair | Poor | Not Applicable       |
|----------------------|-----------|------|------|------|----------------------|
| Ease of Use          |           |      |      |      | //////////////////// |
| Clarity              |           |      |      |      | //////////////////// |
| Completeness         |           |      |      |      | //////////////////// |
| Accuracy             |           |      |      |      | //////////////////// |
| Organization         |           |      |      |      | //////////////////// |
| Appearance           |           |      |      |      | //////////////////// |
| Examples             |           |      |      |      |                      |
| Illustrations        |           |      |      |      |                      |
| Overall Satisfaction |           |      |      |      | //////////////////// |

2. Please check the ways you feel we could improve this document:

- |                                                            |                                                                     |
|------------------------------------------------------------|---------------------------------------------------------------------|
| <input type="checkbox"/> Improve the overview/introduction | <input type="checkbox"/> Make it more concise/brief                 |
| <input type="checkbox"/> Improve the table of contents     | <input type="checkbox"/> Add more step-by-step procedures/tutorials |
| <input type="checkbox"/> Improve the organization          | <input type="checkbox"/> Add more troubleshooting information       |
| <input type="checkbox"/> Include more figures              | <input type="checkbox"/> Make it less technical                     |
| <input type="checkbox"/> Add more examples                 | <input type="checkbox"/> Add more/better quick reference aids       |
| <input type="checkbox"/> Add more detail                   | <input type="checkbox"/> Improve the index                          |

Please provide details for the suggested improvement. \_\_\_\_\_

3. What did you like most about this document?

---

---

4. Feel free to write any comments below or on an attached sheet.

---

---

---

---

If we may contact you concerning your comments, please complete the following:

Name: \_\_\_\_\_ Telephone Number: \_\_\_\_\_

Company/Organization: \_\_\_\_\_ Date: \_\_\_\_\_

Address: \_\_\_\_\_

When you have completed this form, please fold, tape, and return to address on back or Fax to: 910-727-3043.

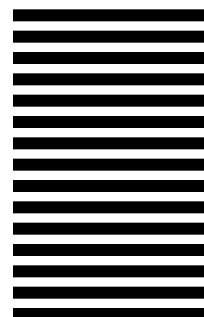
**Lucent Technologies**  
Bell Labs Innovations



-----Do Not Cut—Fold Here And Tape-----



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT NO. 1999 GREENSBORO, N.C.

POSTAGE WILL BE PAID BY ADDRESSEE

**DOCUMENTATION SERVICES**  
**2400 Reynolda Road**  
**Winston-Salem, NC 27199-2029**





---

# Contents

---

|                                |      |
|--------------------------------|------|
| <b>Introduction</b>            | 1-1  |
| ■ DACS II Messages             | 1-2  |
| ■ Communicating With DACS II   | 1-5  |
| ■ DACS II Administrative Links | 1-23 |
| ■ NPC Addressing               | 1-24 |
| ■ On-Line Help Feature         | 1-25 |
| ■ System Configuration         | 1-30 |
| ■ Documentation Support        | 1-46 |
| ■ Glossary                     | 1-58 |

---

|                                    |     |
|------------------------------------|-----|
| <b>Alphabetic List of Messages</b> | 2-1 |
| ■ Alphabetic List of Keywords      | 2-1 |

---

|                                   |     |
|-----------------------------------|-----|
| <b>Numerical List of Messages</b> | 3-1 |
| ■ Numeric List of Keywords        | 3-1 |

---

|                                  |      |
|----------------------------------|------|
| <b>Summary of Input Commands</b> | 4-1  |
| ■ Alphabetic Command Summary     | 4-2  |
| ■ Numeric Command Summary        | 4-35 |

---

|                            |      |
|----------------------------|------|
| <b>Autonomous Messages</b> | 5-1  |
| ■ Alarms Messages          | 5-2  |
| ■ Audits Messages          | 5-5  |
| ■ Error Recovery Messages  | 5-10 |
| ■ Event Reporting Messages | 5-16 |
| ■ Input Denials Messages   | 5-17 |

---

## Contents

|                    |      |
|--------------------|------|
| ■ Startup Messages | 5-18 |
|--------------------|------|

---

|                                          |       |
|------------------------------------------|-------|
| <b>ABT — AUD</b>                         | 6-1   |
| ■ ABT                                    | 6-2   |
| ■ ACO,ACTIVE                             | 6-5   |
| ■ ACT,MAP,CLR,INCL                       | 6-7   |
| ■ ADD,LINK,K,T1,T3,N2,A,B                | 6-14  |
| ■ ADD,LINK,PTCOL,S,X,T,M,BAUD,ALM,BS,ENQ | 6-16  |
| ■ ADD,LINK,W,P,T20,T22,T23,T25,T26,R20   | 6-21  |
| ■ ADD,NPC                                | 6-28  |
| ■ ADD,USER,LINK,INCL,ALL,LANG,M,P,F      | 6-31  |
| ■ ADD,USER,NEW,PASSWD                    | 6-38  |
| ■ ALM,IDLD,AI,NPC                        | 6-41  |
| ■ ALM,NPC                                | 6-45  |
| ■ ALM,NPC,AI,COUNT,THLEV                 | 6-49  |
| ■ ALM,PMC,PMA,DMA,MI,CCN,OOS             | 6-53  |
| ■ ALM,PMC,PMA,DMA,MI,ECCN,OOS            | 6-55  |
| ■ ALM,PMC,PMA,DMA,MI,NPC,RPSFI,IDLD      | 6-57  |
| ■ ALM,PMC,PMA,DMA,MI,SMEM                | 6-60  |
| ■ ALM,RESET,DATE,TOD,FORMAT,MDY,DMY,PMC  | 6-62  |
| ■ ALWSW,UNIT,MMFG,TOPRTN,TOSRVC          | 6-64  |
| ■ APPEND,END                             | 6-66  |
| ■ APPL,RESET,IN,PROGRESS                 | 6-68  |
| ■ AR01,MISC,ALM,IDLD,PBA                 | 6-70  |
| ■ AR01,MISC,ALM,PBA                      | 6-74  |
| ■ AUD,PARAMS                             | 6-79  |
| ■ AUD,QRY,BER,ALL,NPCS,TOT               | 6-81  |
| ■ AUD,QRY,BER,ALL,NPCS,TOT,EOM           | 6-83  |
| ■ AUD,QRY,CFA,CGA,LOS                    | 6-89  |
| ■ AUD,QRY,CFA,CGA,LOS                    | 6-97  |
| ■ AUD,QRY,CFA,CGA,LOS                    | 6-107 |

---

|                      |     |
|----------------------|-----|
| <b>BADVERB — BX2</b> | 7-1 |
|----------------------|-----|

---

## Contents

|                                          |      |
|------------------------------------------|------|
| ■ BADVERB,BAD,SYNTAX,STOPPED             | 7-2  |
| ■ BADVERB,CMD,INERR,STOPPED              | 7-4  |
| ■ BC,R,TO,X,ZO,NA                        | 7-7  |
| ■ BCON,FROM,TO,NTR,LPD,CONV,NAM,CUS,INCL | 7-9  |
| ■ BCON,FROM,TO,RDC,CUS,INCL,NTR,LPD,CONV | 7-20 |
| ■ BCON,FROM,TOX                          | 7-26 |
| ■ BCON,FROM,TOX,NTR,LPD,CONV,NAM,CUS     | 7-33 |
| ■ BCON,FROM,TOX,RDC,CUS,INCL,NTR,LPD     | 7-45 |
| ■ BDIS,FROM,TO,CONV,OOS,DCC,INCL         | 7-51 |
| ■ BDIS,FROM,TO,OOS,INCL,CONV             | 7-58 |
| ■ BDIS,FROM,TOX,CONV,OOS,DCC,INCL        | 7-63 |
| ■ BDIS,FROM,TOX,OOS,INCL,CONV            | 7-70 |
| ■ BOOT,FAILED,BAD,DEVICE                 | 7-76 |
| ■ BOOT,FROM,PMEM,FAILED,ATTEMPTING,TO    | 7-78 |
| ■ BOOT,FROM,PMEM,SMEM                    | 7-80 |
| ■ BX2,STF,ATP                            | 7-82 |

---

|                                         |      |
|-----------------------------------------|------|
| <b>CBOFL — CTST</b>                     | 8-1  |
| ■ CBOFL,SIDE,EOM                        | 8-2  |
| ■ CFR,FRAME                             | 8-9  |
| ■ CFR,SYNC,FPLL                         | 8-11 |
| ■ CFR,SYNC,MASTER,SLAVED                | 8-13 |
| ■ CFR,SYNC,STRATUM,STR2,STR3,TOLL,LOCAL | 8-15 |
| ■ CFR,XC,INCL                           | 8-17 |
| ■ CHG,ALMS,ON,OFF                       | 8-19 |
| ■ CHG,BC,X,TO                           | 8-21 |
| ■ CHG,BCOFF,TO                          | 8-26 |
| ■ CHG,DD,TO                             | 8-31 |
| ■ CHG,ERB,TYPE                          | 8-36 |
| ■ CHG,FALMS,TYPE,PMACR,PMAMJ,DMAMN,MI   | 8-38 |
| ■ CHG,FROM,TO,NOT,TLA,TLR,F,T,B,A,INCL  | 8-54 |
| ■ CHG,FROM,TO,NOT,TLA,TLR,F,T,B,L,G,A   | 8-60 |
| ■ CHG,FROM,TO,TLP,NG,ES,INCL            | 8-68 |
| ■ CHG,INTV,ON,OFF                       | 8-75 |
| ■ CHG,MACRO,MAP,SPACE                   | 8-77 |
| ■ CHG,MSGLOG,ON,OFF                     | 8-79 |

---

## Contents

|                                        |       |
|----------------------------------------|-------|
| ■ CHG,NPC,ALL,TLI,SYNC,CCN,LEV         | 8-81  |
| ■ CHG,NPC,ALMOPT,AIS,MI,PMA,PMC,DMA    | 8-86  |
| ■ CHG,NPC,CBTIMER                      | 8-92  |
| ■ CHG,NPC,LPBK                         | 8-95  |
| ■ CHG,NPC,NFS                          | 8-102 |
| ■ CHG,NPC,OPTS,THMODE                  | 8-108 |
| ■ CHG,NPC,TS0                          | 8-136 |
| ■ CHG,NPC,TS0M                         | 8-142 |
| ■ CHG,NPC,TYPE,IW,X                    | 8-148 |
| ■ CHG,NPC,TYPE,IW,X,INCL               | 8-166 |
| ■ CHG,PASSWD,OLD,NEW                   | 8-171 |
| ■ CHG,SALMS,PMACR,PMAMJ,DMAMN,MI,RESET | 8-174 |
| ■ CHG,SETOP,TYPE,ALL,NPCOP             | 8-176 |
| ■ CHG,SWCH,TOX,INCL                    | 8-186 |
| ■ CHG,SWCH,TOX,INCL                    | 8-192 |
| ■ CHG,SYNC,TLI,SSP,TYPE,NPC,SRC        | 8-197 |
| ■ CHG,TYPE,OPTS,THMODE                 | 8-204 |
| ■ CHG,TYPE,THMODE                      | 8-230 |
| ■ CHG,UNIT,CONN                        | 8-233 |
| ■ CHG,USER,LINK,INCL,SCR,GR,MCON,MCOFF | 8-236 |
| ■ CI,ECI,RESET                         | 8-240 |
| ■ CI,ECI,STARTUP,STF,ATP               | 8-242 |
| ■ CMD,MC,OOS,MCOND,INSERVICE,MPDBASE   | 8-244 |
| ■ COPY,NPC,TO                          | 8-246 |
| ■ CTST,FAD,AIS,INCL                    | 8-276 |
| ■ CTST,FAD,EMODE,FMODE,INCL            | 8-284 |
| ■ CTST,FAD,FROM,TO,AIS,INCL            | 8-291 |
| ■ CTST,HUB,FAD,TO,INCL                 | 8-299 |
| ■ CTST,LPBKT,FAD,INCL                  | 8-304 |
| ■ CTST,TNR,ALL,OOS                     | 8-308 |
| ■ CTST,TNR,FAD,OOS                     | 8-310 |

---

|                   |            |
|-------------------|------------|
| <b>DDIS — DGN</b> | <b>9-1</b> |
| ■ DDIS,FROM,TO    | 9-2        |
| ■ DELETE,END      | 9-6        |
| ■ DGN,CCB,CFT,X   | 9-8        |

---

## Contents

|                                         |       |
|-----------------------------------------|-------|
| ■ DGN,CCI,CFT,X                         | 9-15  |
| ■ DGN,CCNI,CFT,X                        | 9-19  |
| ■ DGN,CI,CFT,X                          | 9-25  |
| ■ DGN,ETSI,CFT,X                        | 9-29  |
| ■ DGN,ETSI,ECCN,ALL                     | 9-33  |
| ■ DGN,IN,PROGRESS                       | 9-36  |
| ■ DGN,LINK,CFT,X                        | 9-38  |
| ■ DGN,MC,CFT,X                          | 9-41  |
| ■ DGN,MP,CFT,X                          | 9-45  |
| ■ DGN,NPC                               | 9-48  |
| ■ DGN,NPC,SIDE,CFT,X                    | 9-54  |
| ■ DGN,PMEM,SMEM,CFT,X,EXCT,DBASE,VERIFY | 9-74  |
| ■ DGN,SYNC                              | 9-79  |
| ■ DGN,SYNC,TLI,CRO                      | 9-82  |
| ■ DGN,SYNC,TLI,SSP                      | 9-85  |
| ■ DGN,TSI,CFT,X                         | 9-88  |
| ■ DGN,TSIS,CCN,ALL                      | 9-96  |
| ■ DGN,TSIS,CCN,UNIT,CONN                | 9-99  |
| ■ DGN,UNIT,DSPI,CFT,X                   | 9-102 |
| ■ DGN,UNIT,FC,CFT,X                     | 9-105 |
| ■ DGN,UNIT,FTMI,CFT,X                   | 9-110 |
| ■ DGN,UNIT,UC,CFT,X                     | 9-113 |

---

|                       |             |
|-----------------------|-------------|
| <b>DGRTH — DSPC</b>   | <b>10-1</b> |
| ■ DGRTH,NPC           | 10-2        |
| ■ DGRTH,NPC,NPCTG,TGR | 10-14       |
| ■ DGRTH,NPC,NPCTP,TPR | 10-19       |
| ■ DGRTH,SYNC,TB       | 10-24       |
| ■ DGRTH,SYNC,TLI,SSP  | 10-26       |
| ■ DGRTH,TG            | 10-31       |
| ■ DGRTH,TP            | 10-33       |
| ■ DGRTH,UNIT          | 10-35       |
| ■ DGRTH,UNIT,FTMI     | 10-40       |
| ■ DGRTH,UNIT,MXR      | 10-42       |
| ■ DLT,FPKG            | 10-44       |
| ■ DLT,MACRO,MAP,USER  | 10-48       |

---

## Contents

|            |       |
|------------|-------|
| ■ DLT,NPC  | 10-50 |
| ■ DLT,USER | 10-54 |
| ■ DSPC     | 10-56 |

---

|                                          |             |
|------------------------------------------|-------------|
| <b>EBX — EXC</b>                         | <b>11-1</b> |
| ■ EBX,STARTUP,STF,ATP                    | 11-2        |
| ■ ED,CRET,MAP,PIC                        | 11-4        |
| ■ ED,MACRO,MAP                           | 11-8        |
| ■ EMTC,STARTUP,STF,ATP                   | 11-14       |
| ■ ERR,CMD,ABT,TN,STOPPED                 | 11-16       |
| ■ ERR,ESR,ANALYSIS,REPORT,EVENT          | 11-18       |
| ■ ERR,ESR,CCB,TN,EVENT,COND              | 11-21       |
| ■ ERR,ESR,CCI,TN,EVENT,COND              | 11-23       |
| ■ ERR,ESR,CCNI,TN,EVENT,COND             | 11-26       |
| ■ ERR,ESR,ETSI,TN,EVENT,COND             | 11-33       |
| ■ ERR,ESR,MC,MP,CI,TN                    | 11-36       |
| ■ ERR,ESR,MC,MP,TN,EVENT,COND,CI,BX,EBX  | 11-38       |
| ■ ERR,ESR,NPC,SIDE,TN,EVENT,COND         | 11-42       |
| ■ ERR,ESR,NPC,TN,EVENT,COND              | 11-48       |
| ■ ERR,ESR,SYNC,TLI,SSP,TN,EVENT,NPC,COND | 11-53       |
| ■ ERR,ESR,SYNC,TLI,TN,EVENT,COND         | 11-59       |
| ■ ERR,ESR,SYNC,TN,EVENT,COND             | 11-63       |
| ■ ERR,ESR,TSI,TN,EVENT,COND              | 11-68       |
| ■ ERR,ESR,UNIT,DSPI,TN,EVENT,COND        | 11-72       |
| ■ ERR,ESR,UNIT,FC,TN,EVENT,COND          | 11-75       |
| ■ ERR,ESR,UNIT,FTMI,TN,EVENT,COND        | 11-78       |
| ■ ERR,ESR,UNIT,UC,UBX,TN,EVENT,COND      | 11-81       |
| ■ ERR,HARDWARE,TN,COND,EVENT,ACTION      | 11-84       |
| ■ ERR,LINK,TN,STATUS                     | 11-88       |
| ■ ERR,MSGs,TO,LOG,DISCARDED              | 11-91       |
| ■ ERR,PMEM,SMEM,TN,EVENT,COND            | 11-93       |
| ■ ERR,PWR,PMC,PMA,DMA,MI,TN              | 11-95       |
| ■ ERR,SOFTWARE,MC,ERROR,MID,TN,RC,ACTION | 11-98       |
| ■ ERR,SYNC,MODE,FAST,HOLDOVER,NORMAL     | 11-102      |
| ■ ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN    | 11-107      |
| ■ ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN    | 11-112      |

---

## Contents

|             |        |
|-------------|--------|
| ■ EXC,MACRO | 11-117 |
|-------------|--------|

---

|                                          |        |
|------------------------------------------|--------|
| <b>FRADTS — LOGOFF</b>                   | 12-1   |
| ■ FRADTS,BMCMP                           | 12-2   |
| ■ FRADTS,DGN                             | 12-4   |
| ■ FRADTS,FRCMP                           | 12-7   |
| ■ FRADTS,MC,DGN                          | 12-107 |
| ■ GRTH,FRAME,CHAR,UID                    | 12-109 |
| ■ GRTH,NPC,NPCTG                         | 12-112 |
| ■ GRTH,NPC,NPCTP                         | 12-116 |
| ■ GRTH,NPC,TYPE                          | 12-120 |
| ■ GRTH,NPC,TYPE,CBTIMER                  | 12-127 |
| ■ GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,DMA | 12-132 |
| ■ GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,PMC | 12-157 |
| ■ GRTH,SYNC,TB,TYPE                      | 12-177 |
| ■ GRTH,SYNC,TLI,TYPE                     | 12-179 |
| ■ GRTH,SYNC,TLI,TYPE,SSP,SRC,NPC         | 12-181 |
| ■ GRTH,TG,NPCTG                          | 12-187 |
| ■ GRTH,TP                                | 12-190 |
| ■ GRTH,UNIT,FTMI,IMP                     | 12-194 |
| ■ GRTH,UNIT,MXR,TYPE,BERM,BERT,LBO       | 12-196 |
| ■ GRTH,UNIT,TYPE,CONN                    | 12-199 |
| ■ IN,PROGRESS                            | 12-204 |
| ■ INHSW,UNIT,MMFG,TOPRTN,TOSRVC          | 12-206 |
| ■ INSTALL                                | 12-208 |
| ■ INVALID,SFW,ID,BLOCK,COND              | 12-216 |
| ■ LINE                                   | 12-218 |
| ■ LIST,END                               | 12-220 |
| ■ LOGIN,USER,PASSWD                      | 12-223 |
| ■ LOGOFF,USER,LINK,INCL                  | 12-226 |

---

|                 |      |
|-----------------|------|
| <b>MC — MTC</b> | 13-1 |
| ■ MC,MCOND      | 13-2 |

---

## Contents

|                                    |       |
|------------------------------------|-------|
| ■ MC,RESET,RELEASE,ISSUE,FPKG,COND | 13-4  |
| ■ MOVE,FROM,END,TO                 | 13-8  |
| ■ MP,STARTUP,STF,ATP               | 13-10 |
| ■ MTC,STF,ATP                      | 13-12 |

---

|                                        |       |
|----------------------------------------|-------|
| <b>OCNT — OVERLOAD</b>                 | 14-1  |
| ■ OCNT,FROM,TO,MPM,NAM,CUS,INCL,RDC    | 14-2  |
| ■ OCNT,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT | 14-11 |
| ■ OCNT,FROM,TO,RDC,CUS,INCL,PRIOUT     | 14-21 |
| ■ OCON,FROM,TO,MPM,CUS,INCL,RDC,NAM    | 14-26 |
| ■ OCON,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT | 14-35 |
| ■ OCON,FROM,TO,RDC,CUS,INCL,PRIOUT     | 14-45 |
| ■ ODIS,FROM,TO,INCL,OOS,DCC            | 14-50 |
| ■ ODIS,FROM,TO,INCL,OOS,DCC,PRIOUT     | 14-57 |
| ■ ODIS,FROM,TO,OOS,INCL,PRIOUT         | 14-63 |
| ■ OVERLOAD,MP,CI,UNIT,UC,TN,PROCESSOR  | 14-68 |

---

|                                    |       |
|------------------------------------|-------|
| <b>RESET — RMV</b>                 | 15-1  |
| ■ RESET,DATE,TOD,FORMAT,MDY,DMY    | 15-2  |
| ■ RESET,STOPPED                    | 15-4  |
| ■ RMV,CCB                          | 15-5  |
| ■ RMV,CCI                          | 15-7  |
| ■ RMV,CCNI                         | 15-10 |
| ■ RMV,ETSI                         | 15-12 |
| ■ RMV,ETSI,ECCN,ALL                | 15-14 |
| ■ RMV,LINK                         | 15-16 |
| ■ RMV,MC                           | 15-18 |
| ■ RMV,NPC,SIDE,INCL                | 15-20 |
| ■ RMV,SMEM,PMEM                    | 15-46 |
| ■ RMV,SYNC                         | 15-49 |
| ■ RMV,SYNC,TLI,CRO                 | 15-51 |
| ■ RMV,SYNC,TLI,PMC,PMA,DMA,MI,COND | 15-53 |
| ■ RMV,SYNC,TLI,SSP                 | 15-55 |



---

## Contents

|                          |       |
|--------------------------|-------|
| ■ RMV,TSI                | 15-58 |
| ■ RMV,TSIS,CCN,ALL       | 15-60 |
| ■ RMV,TSIS,CCN,UNIT,CONN | 15-63 |
| ■ RMV,UNIT,FC            | 15-66 |
| ■ RMV,UNIT,FLI           | 15-69 |
| ■ RMV,UNIT,FMT           | 15-71 |
| ■ RMV,UNIT,FTMI,DSPI     | 15-73 |
| ■ RMV,UNIT,MMFG,FRC,INCL | 15-76 |
| ■ RMV,UNIT,UC            | 15-79 |

---

|                                |       |
|--------------------------------|-------|
| <b>RST</b>                     | 16-1  |
| ■ RST,CCB                      | 16-2  |
| ■ RST,CCI                      | 16-4  |
| ■ RST,CCNI                     | 16-6  |
| ■ RST,ETSI                     | 16-8  |
| ■ RST,ETSI,ECCN,ALL            | 16-10 |
| ■ RST,LINK                     | 16-13 |
| ■ RST,MC,MCOND,NOJRN,CLR,ALL   | 16-15 |
| ■ RST,NPC,MON                  | 16-20 |
| ■ RST,NPC,SIDE                 | 16-25 |
| ■ RST,NPC,TS0M                 | 16-49 |
| ■ RST,PMEM,SMEM,CLR,FRC,BKGRND | 16-53 |
| ■ RST,SYNC                     | 16-59 |
| ■ RST,SYNC,TLI,CRO             | 16-61 |
| ■ RST,SYNC,TLI,SSP             | 16-63 |
| ■ RST,TSI                      | 16-65 |
| ■ RST,TSIS,CCN,ALL             | 16-67 |
| ■ RST,TSIS,CCN,UNIT,CONN       | 16-70 |
| ■ RST,UNIT,FC                  | 16-73 |
| ■ RST,UNIT,FLI                 | 16-75 |
| ■ RST,UNIT,FMT                 | 16-77 |
| ■ RST,UNIT,FTMI,DSPI           | 16-79 |
| ■ RST,UNIT,UC                  | 16-81 |

---

|                  |      |
|------------------|------|
| <b>SAVE — SW</b> | 17-1 |
|------------------|------|

---

## Contents

|                                     |       |
|-------------------------------------|-------|
| ■ SAVE                              | 17-2  |
| ■ STOP,MACRO,LINK                   | 17-4  |
| ■ SW,BCAST,OLD,NEW,INCL             | 17-6  |
| ■ SW,BCAST,OLD,NEW,INCL             | 17-13 |
| ■ SW,DISC,OOS                       | 17-21 |
| ■ SW,DISC,OOS                       | 17-26 |
| ■ SW,ROLL,OLD,NEW,INCL,FRC,OOS      | 17-33 |
| ■ SW,ROLL,OLD,NEW,INCL,FRC,OOS,TWAY | 17-39 |
| ■ SW,UNIT,FLI,TOPTN                 | 17-45 |
| ■ SW,UNIT,FLI,TOSRVC                | 17-47 |
| ■ SW,UNIT,MMFG,TOPTN,FRC            | 17-49 |
| ■ SW,UNIT,MMFG,TOSRVC               | 17-52 |

---

|                                         |             |
|-----------------------------------------|-------------|
| <b>TCNT — TTST</b>                      | <b>18-1</b> |
| ■ TCNT,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL | 18-2        |
| ■ TCNT,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT  | 18-13       |
| ■ TCNT,FROM,TO,PFW,NFW                  | 18-25       |
| ■ TCNT,FROM,TO,RDC,CUS,INCL,PRIOUT      | 18-32       |
| ■ TCON,FROM,CB,CUS,RDC,INCL             | 18-37       |
| ■ TCON,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL | 18-43       |
| ■ TCON,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT  | 18-54       |
| ■ TCON,FROM,TO,PFW,NFW                  | 18-66       |
| ■ TCON,FROM,TO,RDC,CUS,INCL,PRIOUT      | 18-73       |
| ■ TDIS,FROM,CB,INCL,OOS                 | 18-78       |
| ■ TDIS,FROM,TO,INCL,OOS,DCC             | 18-83       |
| ■ TDIS,FROM,TO,INCL,OOS,DCC,PRIOUT      | 18-90       |
| ■ TDIS,FROM,TO,OOS,INCL,PRIOUT          | 18-96       |
| ■ TS0,R,NPC,OLD,NEW                     | 18-101      |
| ■ TS0MBOFL                              | 18-105      |
| ■ TTST,HUB,TO,TG                        | 18-108      |
| ■ TTST,HUB,TO,TP,NAM                    | 18-115      |
| ■ TTST,LPD,TG                           | 18-122      |
| ■ TTST,LPD,TP                           | 18-124      |
| ■ TTST,MON,TG                           | 18-128      |
| ■ TTST,MON,TO,NAM,TP                    | 18-134      |
| ■ TTST,MON,TO,TG                        | 18-145      |

---

## Contents

|                       |        |
|-----------------------|--------|
| ■ TTST,SPL,TG         | 18-153 |
| ■ TTST,SPL,TP         | 18-159 |
| ■ TTST,TGR,TG,OOS     | 18-164 |
| ■ TTST,TLA,NOT,TP     | 18-172 |
| ■ TTST,TLA,TG         | 18-179 |
| ■ TTST,TLR,NOT,TP     | 18-184 |
| ■ TTST,TLR,TG         | 18-191 |
| ■ TTST,TPR,ALL,OOS    | 18-196 |
| ■ TTST,TPR,TP,OOS,FRC | 18-198 |

---

|                                    |        |
|------------------------------------|--------|
| <b>UTL</b>                         | 19-1   |
| ■ UTL,ACO                          | 19-2   |
| ■ UTL,BMTR,FROM,TO,EXCT,INCL,UPGRD | 19-4   |
| ■ UTL,BOOT,FRAME,CLR               | 19-10  |
| ■ UTL,CLR,ALL                      | 19-12  |
| ■ UTL,CLR,ERR,HWER,SWER            | 19-14  |
| ■ UTL,CLR,NPC                      | 19-16  |
| ■ UTL,CLR,NPC,ALL,AI,MONDAT,MONTIM | 19-22  |
| ■ UTL,CLR,NPC,PARAMS               | 19-30  |
| ■ UTL,CLR,PWR                      | 19-34  |
| ■ UTL,DATE,FORMAT,INT              | 19-36  |
| ■ UTL,INIT,ALM                     | 19-39  |
| ■ UTL,LOC                          | 19-41  |
| ■ UTL,QRY,ALL                      | 19-53  |
| ■ UTL,QRY,ALL,COMMON               | 19-60  |
| ■ UTL,QRY,ALL,UNIT                 | 19-66  |
| ■ UTL,QRY,ALM,INTV                 | 19-86  |
| ■ UTL,QRY,ALMOPT,NPC,AIS           | 19-88  |
| ■ UTL,QRY,ALMS                     | 19-97  |
| ■ UTL,QRY,ALMS,DBASE               | 19-124 |
| ■ UTL,QRY,APPL,NPC,ALL             | 19-137 |
| ■ UTL,QRY,BC,NPC,ALL               | 19-143 |
| ■ UTL,QRY,BC,TO                    | 19-152 |
| ■ UTL,QRY,BCAST,ALL                | 19-157 |
| ■ UTL,QRY,BCAST,FROM               | 19-161 |
| ■ UTL,QRY,BCAST,FROM               | 19-167 |

---

## Contents

|                                                 |        |
|-------------------------------------------------|--------|
| ■ UTL, QRY, CMAP                                | 19-172 |
| ■ UTL, QRY, CNFGR                               | 19-204 |
| ■ UTL, QRY, DATE                                | 19-207 |
| ■ UTL, QRY, DD                                  | 19-209 |
| ■ UTL, QRY, DD, NPC, DDCT, ALL                  | 19-214 |
| ■ UTL, QRY, DMAP                                | 19-220 |
| ■ UTL, QRY, DS3, BERMT, UNIT                    | 19-249 |
| ■ UTL, QRY, DS3, LBO                            | 19-251 |
| ■ UTL, QRY, EQD, COMMON                         | 19-253 |
| ■ UTL, QRY, EQD, CONN                           | 19-257 |
| ■ UTL, QRY, EQD, ETSIS                          | 19-259 |
| ■ UTL, QRY, EQD, MXRS                           | 19-261 |
| ■ UTL, QRY, EQD, NPCS, TOTAL, UNIT              | 19-263 |
| ■ UTL, QRY, EQD, TSIS                           | 19-276 |
| ■ UTL, QRY, EQD, UNIT                           | 19-278 |
| ■ UTL, QRY, EQD, UNITS                          | 19-297 |
| ■ UTL, QRY, ERR, SWER, HWER, INT, DATE, TOD, TN | 19-299 |
| ■ UTL, QRY, ESR, CCN                            | 19-309 |
| ■ UTL, QRY, ESR, ECCN                           | 19-312 |
| ■ UTL, QRY, ESR, MP                             | 19-316 |
| ■ UTL, QRY, ESR, NPC, SIDE                      | 19-321 |
| ■ UTL, QRY, ESR, UNIT                           | 19-329 |
| ■ UTL, QRY, ESR, UNIT, DSPI                     | 19-333 |
| ■ UTL, QRY, ESR, UNIT, FC                       | 19-335 |
| ■ UTL, QRY, ESR, UNIT, FLI                      | 19-338 |
| ■ UTL, QRY, ESR, UNIT, FTMI                     | 19-341 |
| ■ UTL, QRY, ESR, UNIT, MXR                      | 19-345 |
| ■ UTL, QRY, FALMS, TYPE, ALL                    | 19-350 |
| ■ UTL, QRY, FPKG                                | 19-368 |
| ■ UTL, QRY, FROM                                | 19-372 |
| ■ UTL, QRY, FROM                                | 19-393 |
| ■ UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC      | 19-398 |
| ■ UTL, QRY, LIST, MACRO, USER                   | 19-408 |
| ■ UTL, QRY, LIST, MAP, USER                     | 19-411 |
| ■ UTL, QRY, LOG, ALL                            | 19-414 |
| ■ UTL, QRY, LPBK, NPC                           | 19-418 |
| ■ UTL, QRY, MACRO, ATTR, USER, ALL              | 19-425 |
| ■ UTL, QRY, MACRO, MAP, SPACE, USER, ALL        | 19-429 |

---

## Contents

|                                              |        |
|----------------------------------------------|--------|
| ■ UTL, QRY, MACRO, USER                      | 19-432 |
| ■ UTL, QRY, MAP, ATTR, ALL, USER, MAPNM      | 19-435 |
| ■ UTL, QRY, MARK                             | 19-438 |
| ■ UTL, QRY, MARK                             | 19-448 |
| ■ UTL, QRY, MEMSTAT                          | 19-458 |
| ■ UTL, QRY, NFS, NPC                         | 19-466 |
| ■ UTL, QRY, NPC                              | 19-471 |
| ■ UTL, QRY, NPC, ALL, AI, LV, MONDAT, MONTIM | 19-483 |
| ■ UTL, QRY, NPC, CBTIMER                     | 19-495 |
| ■ UTL, QRY, NPC, MAP, USER                   | 19-498 |
| ■ UTL, QRY, NPCTG                            | 19-503 |
| ■ UTL, QRY, OPT, TYPE, ALL, NPCS             | 19-508 |
| ■ UTL, QRY, PEST, FAIL, OOS, COMMON          | 19-513 |
| ■ UTL, QRY, PEST, FAIL, OOS, UNIT            | 19-518 |
| ■ UTL, QRY, ROLL, DS0, NPC, ALL, UNIT        | 19-538 |
| ■ UTL, QRY, ROLL, DS1, NPC, ALL, UNIT        | 19-545 |
| ■ UTL, QRY, RPSFI                            | 19-552 |
| ■ UTL, QRY, SALMS, ALL                       | 19-554 |
| ■ UTL, QRY, SCR, LINK, USER, LINKS, USERS    | 19-557 |
| ■ UTL, QRY, SIGST                            | 19-565 |
| ■ UTL, QRY, SQN                              | 19-571 |
| ■ UTL, QRY, STATE, ACO                       | 19-573 |
| ■ UTL, QRY, STATE, NPC                       | 19-575 |
| ■ UTL, QRY, STATE, NPC                       | 19-605 |
| ■ UTL, QRY, STATE, SYNC                      | 19-628 |
| ■ UTL, QRY, STR, LINK                        | 19-631 |
| ■ UTL, QRY, STR, SYNC                        | 19-641 |
| ■ UTL, QRY, STR, SYNC, TLI                   | 19-647 |
| ■ UTL, QRY, STR, SYNC, TLI, SSP              | 19-650 |
| ■ UTL, QRY, STR, XC                          | 19-655 |
| ■ UTL, QRY, SYNC, TYPE                       | 19-657 |
| ■ UTL, QRY, TGS                              | 19-660 |
| ■ UTL, QRY, TO                               | 19-665 |
| ■ UTL, QRY, TO                               | 19-700 |
| ■ UTL, QRY, TOD, CFA, MONDAT                 | 19-718 |
| ■ UTL, QRY, TPS                              | 19-721 |
| ■ UTL, QRY, TS0, NPC                         | 19-727 |
| ■ UTL, QRY, TS0M, NPC                        | 19-732 |

---

## Contents

|                                  |        |
|----------------------------------|--------|
| ■ UTL, QRY, UNIT, FTMI, IMP      | 19-737 |
| ■ UTL, QRY, WHO                  | 19-739 |
| ■ UTL, QRY, XCSB, UNIT           | 19-742 |
| ■ UTL, RCY, COND, IN, PROGRESS   | 19-749 |
| ■ UTL, RCY, PASSWD               | 19-752 |
| ■ UTL, TOD, CFA, PRIM, X, MONDAT | 19-754 |

---

## Glossary

G-1

---

## IN

## Index

IN-1

---

## Tables

|       |                                                             |       |
|-------|-------------------------------------------------------------|-------|
| 7-1.  | Allowable Signaling Type and Signaling<br>Consequent Action | 7-15  |
| 7-2.  | Allowable Cross-Connected Time slot<br>Consequent Action    | 7-15  |
| 7-3.  | Allowable Cross-Connected Time slot<br>Consequence Action   | 7-30  |
| 7-4.  | Allowable Signaling Type and Signaling<br>Consequent Action | 7-39  |
| 7-5.  | Allowable Cross-Connected Time slot<br>Consequence Action   | 7-40  |
| 8-1.  | Provisioning values for $x$                                 | 8-39  |
| 8-2.  | Provisioning values for $y$                                 | 8-41  |
| 8-3.  | Provisioning values for $z$                                 | 8-42  |
| 8-4.  | Combinations of $x$ and $y$ Values                          | 8-45  |
| 8-5.  | Combinations of $y$ and $z$ Values                          | 8-46  |
| 8-6.  | Combinations of $x$ and $z$ Values                          | 8-47  |
| 8-7.  | NPC Provisioning Options                                    | 8-47  |
| 8-8.  | Parameter Register Threshold Range and<br>Default Values    | 8-115 |
| 8-9.  | Provisioning values for $x$                                 | 8-117 |
| 8-10. | Provisioning values for $y$                                 | 8-118 |
| 8-11. | Provisioning values for $z$                                 | 8-119 |
| 8-12. | Combinations of $x$ and $y$ Values                          | 8-122 |
| 8-13. | Combinations of $y$ and $z$ Values                          | 8-123 |
| 8-14. | Combinations of $x$ and $z$ Values                          | 8-124 |
| 8-15. | NPC Provisioning Options                                    | 8-124 |
| 8-16. | Provisioning values for $x$                                 | 8-152 |
| 8-17. | Provisioning values for $y$                                 | 8-153 |
| 8-18. | Provisioning values for $z$                                 | 8-154 |
| 8-19. | Combinations of $x$ and $y$ Values                          | 8-157 |
| 8-20. | Combinations of $y$ and $z$ Values                          | 8-158 |
| 8-21. | Combinations of $x$ and $z$ Values                          | 8-159 |
| 8-22. | NPC Provisioning Options                                    | 8-159 |
| 8-23. | Parameter Register Threshold Range and<br>Default Values    | 8-179 |
| 8-24. | NPC Provisioning Options                                    | 8-206 |
| 8-25. | Provisioning values for $x$                                 | 8-212 |
| 8-26. | Provisioning values for $y$                                 | 8-213 |
| 8-27. | Provisioning values for $z$                                 | 8-214 |

---

## Tables

|       |                                                          |        |
|-------|----------------------------------------------------------|--------|
| 8-28. | Combinations of $x$ and $y$ Values                       | 8-217  |
| 8-29. | Combinations of $y$ and $z$ Values                       | 8-218  |
| 8-30. | Combinations of $x$ and $z$ Values                       | 8-219  |
| 8-31. | Parameter Register Threshold Range and Default Values    | 8-221  |
| 8-32. | Parameter Register Threshold Range and Default Values    | 8-268  |
| 12-1. | Provisioning values for $x$                              | 12-138 |
| 12-2. | Provisioning values for $y$                              | 12-139 |
| 12-3. | Provisioning values for $z$                              | 12-141 |
| 12-4. | Combinations of $x$ and $y$ Values                       | 12-144 |
| 12-5. | Combinations of $y$ and $z$ Values                       | 12-145 |
| 12-6. | Combinations of $x$ and $z$ Values                       | 12-146 |
| 12-7. | Parameter Register Threshold Range and Default Values    | 12-148 |
| 12-8. | NPC Provisioning Options                                 | 12-163 |
| 14-1. | Allowable Signaling Type and Signaling Consequent Action | 14-17  |
| 14-2. | Allowable Cross-Connected Time slot Consequent Action    | 14-17  |
| 14-3. | Allowable Signaling Type and Signaling Consequent Action | 14-40  |
| 14-4. | Allowable Cross-Connected Time slot Consequent Action    | 14-41  |
| 15-1. | NPC Provisioning Options                                 | 15-32  |
| 15-2. | Provisioning values for $x$                              | 15-37  |
| 15-3. | Provisioning values for $y$                              | 15-38  |
| 15-4. | Provisioning values for $z$                              | 15-39  |
| 15-5. | Combinations of $x$ and $y$ Values                       | 15-42  |
| 15-6. | Combinations of $y$ and $z$ Values                       | 15-43  |
| 15-7. | Combinations of $x$ and $z$ Values                       | 15-44  |
| 16-1. | NPC Provisioning Options                                 | 16-35  |
| 16-2. | Provisioning values for $x$                              | 16-40  |
| 16-3. | Provisioning values for $y$                              | 16-41  |
| 16-4. | Provisioning values for $z$                              | 16-42  |
| 16-5. | Combinations of $x$ and $y$ Values                       | 16-45  |
| 16-6. | Combinations of $y$ and $z$ Values                       | 16-46  |
| 16-7. | Combinations of $x$ and $z$ Values                       | 16-47  |



---

## Tables

|        |                                                          |        |
|--------|----------------------------------------------------------|--------|
| 18-1.  | Allowable Signaling Type and Signaling Consequent Action | 18-19  |
| 18-2.  | Allowable Cross-Connected Time Slot Consequent Action    | 18-20  |
| 18-3.  | Allowable Signaling Type and Signaling Consequent Action | 18-60  |
| 18-4.  | Allowable Cross-Connected Time Slot Consequent Action    | 18-61  |
| 19-1.  | NPC Provisioning Options                                 | 19-187 |
| 19-2.  | Provisioning values for $x$                              | 19-192 |
| 19-3.  | Provisioning values for $y$                              | 19-193 |
| 19-4.  | Provisioning values for $z$                              | 19-194 |
| 19-5.  | Combinations of $x$ and $y$ Values                       | 19-197 |
| 19-6.  | Combinations of $y$ and $z$ Values                       | 19-199 |
| 19-7.  | Combinations of $x$ and $z$ Values                       | 19-200 |
| 19-8.  | NPC Provisioning Options                                 | 19-231 |
| 19-9.  | Provisioning values for $x$                              | 19-236 |
| 19-10. | Provisioning values for $y$                              | 19-237 |
| 19-11. | Provisioning values for $z$                              | 19-238 |
| 19-12. | Combinations of $x$ and $y$ Values                       | 19-241 |
| 19-13. | Combinations of $y$ and $z$ Values                       | 19-242 |
| 19-14. | Combinations of $x$ and $z$ Values                       | 19-243 |
| 19-15. | Provisioning values for $x$                              | 19-354 |
| 19-16. | Provisioning values for $y$                              | 19-355 |
| 19-17. | Provisioning values for $z$                              | 19-357 |
| 19-18. | Combinations of $x$ and $y$ Values                       | 19-360 |
| 19-19. | Combinations of $y$ and $z$ Values                       | 19-361 |
| 19-20. | Combinations of $x$ and $z$ Values                       | 19-362 |
| 19-21. | NPC Provisioning Options                                 | 19-362 |
| 19-22. | Provisioning values for $x$                              | 19-377 |
| 19-23. | Provisioning values for $y$                              | 19-379 |
| 19-24. | Provisioning values for $z$                              | 19-380 |
| 19-25. | Combinations of $x$ and $y$ Values                       | 19-383 |
| 19-26. | Combinations of $y$ and $z$ Values                       | 19-384 |
| 19-27. | Combinations of $x$ and $z$ Values                       | 19-385 |
| 19-28. | NPC Provisioning Options                                 | 19-385 |
| 19-29. | NPC Provisioning Options                                 | 19-585 |
| 19-30. | Provisioning values for $x$                              | 19-590 |
| 19-31. | Provisioning values for $y$                              | 19-591 |

---

## Tables

|        |                                    |        |
|--------|------------------------------------|--------|
| 19-32. | Provisioning values for $z$        | 19-592 |
| 19-33. | Combinations of $x$ and $y$ Values | 19-595 |
| 19-34. | Combinations of $y$ and $z$ Values | 19-596 |
| 19-35. | Combinations of $x$ and $z$ Values | 19-597 |
| 19-36. | Provisioning values for $x$        | 19-610 |
| 19-37. | Provisioning values for $y$        | 19-611 |
| 19-38. | Provisioning values for $z$        | 19-612 |
| 19-39. | Combinations of $x$ and $y$ Values | 19-615 |
| 19-40. | Combinations of $y$ and $z$ Values | 19-616 |
| 19-41. | Combinations of $x$ and $z$ Values | 19-617 |
| 19-42. | Provisioning values for $x$        | 19-680 |
| 19-43. | Provisioning values for $y$        | 19-681 |
| 19-44. | Provisioning values for $z$        | 19-683 |
| 19-45. | Combinations of $x$ and $y$ Values | 19-686 |
| 19-46. | Combinations of $y$ and $z$ Values | 19-687 |
| 19-47. | Combinations of $x$ and $z$ Values | 19-688 |
| 19-48. | NPC Provisioning Options           | 19-688 |
| 19-49. | Provisioning values for $x$        | 19-704 |
| 19-50. | Provisioning values for $y$        | 19-705 |
| 19-51. | Provisioning values for $z$        | 19-706 |
| 19-52. | Combinations of $x$ and $y$ Values | 19-709 |
| 19-53. | Combinations of $y$ and $z$ Values | 19-710 |
| 19-54. | Combinations of $x$ and $z$ Values | 19-711 |
| 19-55. | NPC Provisioning Options           | 19-711 |

---

## About This Document

---

### Purpose

---

The *DACS II Release 8.2.3 Command and Message Manual* describes the input commands and output messages of Release 8.2.3 of the Digital Access and Cross-Connect System II (DACS II). In addition, it provides full support for previous product releases.

**⇒ NOTE:**

Those customers using this manual with Releases 3 through 7.0.3 software should be aware that all features of a particular message shown for Release 8.2.3 may or may not apply to previous releases.

This manual consists of three volumes as follows:

- **Volume I** - This volume contains general information about the document, a detailed introduction that defines DACS II messages, relates how to communicate with DACS II, introduces the administrative links, and discusses in detail NPC addressing, on-line help feature, system configuration and features a listing of related documentation. Message listings in this volume include alphabetical and numerical, summary list of input commands and a list of autonomous messages. A comprehensive presentation of input commands and output messages (ABT through DGN) concludes this volume.
- **Volume II and III** - These two volumes contain input commands and output messages in the following order:
  - **Volume II** - DGRTH through RST
  - **Volume III** - SAVE through UTL and the Glossary

---

## **Reason for Issue**

---

The *DACS II Release 8.2.3 Command and Message Manual* has been issued to include updated and new commands applicable to Release 8.2.3.

## **Intended Audiences**

---

This manual is a catalog of messages intended for reference by a technician or craftperson who needs additional details about a message. It provides the user with supplemental information for the Digital Access and Cross-Connect System II (DACS II) that is programmed in the Program Documentation Standards (PDS) language. An example of a user is someone performing a task from an operation and maintenance manual who needs the definition of a specific keyword to complete the task.

## **How to Order Documentation**

---

To order additional copies of this document, send or call in an order as follows:

- To order by Mail:

Lucent Technologies  
Customer Information Center  
Attention: Order Entry Section  
2855 N. Franklin Road  
P. O. Box 19901  
Indianapolis, IN 46219

- 
- To order by Telephone (Monday through Friday);

Within the United States of America:

**1-800-LUCENT8 (582-3688)** (7:30 a.m. to 6:30 p.m. EST)

From Canada:

**1-800-255-1242**

Worldwide:

Toll: **1-317-352-8557**

FAX: **1-317-352-8484**

For RBOC/BOC customers, process orders through your Company Documentation Coordinator.

For commercial customers, a check, money order, purchase order number, or charge card number is required with all orders. Make checks payable to Lucent Technologies.

Lucent Technologies entities should use Form IND 1-80.80 FA, available through the Customer Information Center.

One-time orders include a binder (if applicable) and the document contents for the current issue in effect at the time of order. After placing a one-time order, you can request a standing order for any document revisions *of that software release*. Documents for new software releases do *not* go to standing-order customers. You will only get those documents if you order the new software release.

## **How to Comment on This Document**

A feedback form is located at the beginning of this publication, immediately after the title page. Please fill out the feedback form and return it (postage free) to the address on the back.

If the feedback form is missing, send comment on this publication to:

Lucent Technologies  
DACS II Documentation Coordinator  
Attn: Tabatha Wright  
101 Crawfords Corner Road  
Room 1B-320  
Holmdel, NJ 07733-3030 USA



---

**Contents**

|                             |       |
|-----------------------------|-------|
| <b>DGRTH,NPC</b>            | 10-2  |
| ■ Explanation Of Command    | 10-2  |
| ■ Command                   | 10-3  |
| ■ Nonhierarchical           | 10-3  |
| ■ Hierarchical              | 10-3  |
| ■ Completion Message        | 10-3  |
| ■ Nonhierarchical           | 10-3  |
| ■ Hierarchical              | 10-3  |
| ■ Denial Message            | 10-4  |
| ■ Nonhierarchical           | 10-4  |
| ■ Hierarchical              | 10-4  |
| ■ Autonomous Message        | 10-4  |
| ■ Explanation Of Parameters | 10-5  |
| <b>DGRTH,NPC,NPCTG,TGR</b>  | 10-14 |
| ■ Explanation Of Command    | 10-14 |
| ■ Command                   | 10-14 |
| ■ Nonhierarchical           | 10-14 |
| ■ Hierarchical              | 10-14 |
| ■ Completion Message        | 10-15 |
| ■ Nonhierarchical           | 10-15 |
| ■ Hierarchical              | 10-15 |
| ■ Denial Message            | 10-15 |
| ■ Nonhierarchical           | 10-15 |
| ■ Hierarchical              | 10-16 |
| ■ Autonomous Message        | 10-16 |
| ■ Explanation Of Parameters | 10-16 |

---

## Contents

|                             |       |
|-----------------------------|-------|
| <b>DGRTH,NPC,NPCTP,TPR</b>  | 10-19 |
| ■ Explanation Of Command    | 10-19 |
| ■ Command                   | 10-19 |
| ■ Nonhierarchical           | 10-19 |
| ■ Hierarchical              | 10-19 |
| ■ Completion Message        | 10-19 |
| ■ Nonhierarchical           | 10-19 |
| ■ Hierarchical              | 10-20 |
| ■ Denial Message            | 10-20 |
| ■ Nonhierarchical           | 10-20 |
| ■ Hierarchical              | 10-20 |
| ■ Autonomous Message        | 10-20 |
| ■ Explanation Of Parameters | 10-20 |
| <b>DGRTH,SYNC,TB</b>        | 10-24 |
| ■ Explanation Of Command    | 10-24 |
| ■ Command                   | 10-24 |
| ■ Completion Message        | 10-24 |
| ■ Denial Message            | 10-24 |
| ■ Autonomous Message        | 10-24 |
| ■ Explanation Of Parameters | 10-25 |
| <b>DGRTH,SYNC,TLI,SSP</b>   | 10-26 |
| ■ Explanation Of Command    | 10-26 |
| ■ Command                   | 10-26 |
| ■ Completion Message        | 10-26 |
| ■ Nonhierarchical           | 10-26 |
| ■ Hierarchical              | 10-27 |
| ■ Denial Message            | 10-27 |
| ■ Nonhierarchical           | 10-27 |
| ■ Hierarchical              | 10-27 |
| ■ Autonomous Message        | 10-27 |
| ■ Explanation Of Parameters | 10-27 |
| <b>DGRTH,TG</b>             | 10-31 |
| ■ Explanation Of Command    | 10-31 |
| ■ Command                   | 10-31 |
| ■ Completion Message        | 10-31 |
| ■ Denial Message            | 10-31 |
| ■ Autonomous Message        | 10-31 |



---

## Contents

|                             |       |
|-----------------------------|-------|
| ■ Explanation Of Parameters | 10-32 |
| <b>DGRTH,TP</b>             | 10-33 |
| ■ Explanation Of Command    | 10-33 |
| ■ Command                   | 10-33 |
| ■ Completion Message        | 10-33 |
| ■ Denial Message            | 10-33 |
| ■ Autonomous Message        | 10-34 |
| ■ Explanation Of Parameters | 10-34 |
| <b>DGRTH,UNIT</b>           | 10-35 |
| ■ Explanation Of Command    | 10-35 |
| ■ Command                   | 10-35 |
| ■ Completion Message        | 10-36 |
| ■ Denial Message            | 10-36 |
| ■ Autonomous Message        | 10-37 |
| ■ Explanation Of Parameters | 10-37 |
| <b>DGRTH,UNIT,FTMI</b>      | 10-40 |
| ■ Explanation Of Command    | 10-40 |
| ■ Command                   | 10-40 |
| ■ Completion Message        | 10-40 |
| ■ Denial Message            | 10-40 |
| ■ Autonomous Message        | 10-40 |
| ■ Explanation Of Parameters | 10-41 |
| <b>DGRTH,UNIT,MXR</b>       | 10-42 |
| ■ Explanation Of Command    | 10-42 |
| ■ Command                   | 10-42 |
| ■ Completion Message        | 10-42 |
| ■ Denial Message            | 10-42 |
| ■ Autonomous Message        | 10-42 |
| ■ Explanation Of Parameters | 10-43 |
| <b>DLT,FPKG</b>             | 10-44 |
| ■ Explanation Of Command    | 10-44 |
| ■ Command                   | 10-44 |
| ■ Completion Message        | 10-44 |
| ■ Denial Message            | 10-45 |
| ■ Autonomous Message        | 10-45 |
| ■ Explanation Of Parameters | 10-45 |

---

## Contents

|                             |       |
|-----------------------------|-------|
| <b>DLT,MACRO,MAP,USER</b>   | 10-48 |
| ■ Explanation Of Command    | 10-48 |
| ■ Command                   | 10-48 |
| ■ Completion Message        | 10-48 |
| ■ Denial Message            | 10-48 |
| ■ Autonomous Message        | 10-48 |
| ■ Explanation Of Parameters | 10-49 |
| <b>DLT,NPC</b>              | 10-50 |
| ■ Explanation Of Command    | 10-50 |
| ■ Command                   | 10-50 |
| ■ Nonhierarchical           | 10-50 |
| ■ Hierarchical              | 10-51 |
| ■ Completion Message        | 10-51 |
| ■ Denial Message            | 10-51 |
| ■ Autonomous Message        | 10-51 |
| ■ Explanation Of Parameters | 10-51 |
| <b>DLT,USER</b>             | 10-54 |
| ■ Explanation Of Command    | 10-54 |
| ■ Command                   | 10-54 |
| ■ Completion Message        | 10-54 |
| ■ Denial Message            | 10-54 |
| ■ Autonomous Message        | 10-55 |
| ■ Explanation Of Parameters | 10-55 |
| <b>DSPC</b>                 | 10-56 |
| ■ Explanation Of Command    | 10-56 |
| ■ Command                   | 10-56 |
| ■ Nonhierarchical           | 10-56 |
| ■ Hierarchical              | 10-57 |
| ■ Completion Message        | 10-57 |
| ■ Nonhierarchical           | 10-57 |
| ■ Hierarchical              | 10-57 |
| ■ Denial Message            | 10-58 |
| ■ Nonhierarchical           | 10-58 |
| ■ Hierarchical              | 10-59 |
| ■ Autonomous Message        | 10-60 |
| ■ Nonhierarchical           | 10-60 |
| ■ Hierarchical              | 10-60 |

---

## Contents

|                             |       |
|-----------------------------|-------|
| ■ Explanation Of Parameters | 10-60 |
|-----------------------------|-------|



---

## **DGRTH — DSPC**

---

## **DGRTH — DSPC**

---

This section documents the commands **DGRTH** through **DSPC**.

## **DGRTH,NPC**

### **DEGROWTH NPC**

#### **Explanation Of Command**

This command unequips network processing circuits (NPCs) in DACS II Facility Terminating Units (FTU/IFTU/IFTU2), DS3 Units (DS3U), Hybrid DS3 Units (HDS3U) and Digital Signal Processing Units (DSPU).

It may be used to unequip a single NPC or a range of NPCs in an FTU (IFTU or IFTU2), a DS3U or an HDS3U. The HDS3U supports type TExyz and THxyz NPCs. The NPC numbers which are divisible by four with remainder zero, are not valid THxyz NPCs. However, the range of THxyz type NPC numbers is still supported with the understanding that there may be gaps in the NPC number range.

C-bit processing DSPU circuit packs (**CB**-type NPCs) as well as other DSPU circuit packs must be individually unequipped.

When ranges of NPCs are addressed, the **DGRTH** command will show a completion indication after the last NPC in the range that has been unequipped or the highest numbered NPC that has been successfully unequipped. **Before** the completion indication is output, individual denial messages will be output for each **NPC that is denied unequipage**.

One output message is printed for each NPC that is successfully unequipped.

Degrowth commands where the range address crosses a unit boundary will be completely denied.

Within an NPC range the degrowth command will be denied for specific NPCs or sets of NPCs for any one of the following reasons:

1. A Facility Terminating Module (FTM) within the range is unequipped.
2. The NPC is unequipped.
3. The NPC is in-service.
4. The NPC is a testport or testgroup NPC.

5. The NPC has active terminations or circuits under test.

The denial for two or more successive NPCs that need to be denied for the same reason will be formatted in a summary message using the **Floating Window Denial Message** format. In that format a summary denial message will be output, giving the range of NPCs denied, and the reason. The execution of normal completions or of denials for other reasons then resumes at the next NPC, up to the end of the range.

### **Command**

---

#### **Nonhierarchical**

---

[I.32341]

DGRTH:FRM xy,SEQ ww:NPC [s]abc[-[t]def]!

#### **Hierarchical**

---

[I.32341]

DGRTH:FRM xy,SEQ ww:NPC uvmnp[-uvkqr]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.32341]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]ghi TYPE mnxyz COMPL

#### **Hierarchical**

---

[O.32341]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvghi TYPE mnxyz COMPL

## Denial Message

---

### Nonhierarchical

---

[O.32341.01]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc{[-[t]def]| TYPE -----} UEQD DNY

[O.32341.02]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc{[-[t]def]| TYPE mnxyz} IS DNY

[O.32341.03]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc{[-[t]def]| TYPE mnxyz} {NPCTP|NPCTG} DNY

[O.32341.04]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc{[-[t]def]| TYPE mnxyz} TERM ASGN \ DNY

[O.32341.05]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc{[-[t]def]| TYPE mnxyz} COND cc DNY

### Hierarchical

---

[O.32341.01]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp{[-uvkqr]| TYPE -----} UEQD DNY

[O.32341.02]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp{[-uvkqr]| TYPE mnxyz} IS DNY

[O.32341.03]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp{[-uvkqr]| TYPE mnxyz} {NPCTP|NPCTG} DNY

[O.32341.04]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp{[-uvkqr]| TYPE mnxyz} TERM ASGN DNY

[O.32341.05]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp{[-uvkqr]| TYPE mnxyz} COND cc DNY

### Autonomous Message

---

Not applicable.



## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, denoting the beginning of the range.

**[t]def** - The 3- or 4-digit nonhierarchical NPC number, denoting the end of the range.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921       | 2081       | 2241       | 2401       |
| 1941       | 2101       | 2261       | 2421       |
| 1961       | 2121       | 2281       | 2441       |
| 1981       | 2141       | 2301       | 2461       |
| 2001       | 2161       | 2321       | 2481       |
| 2021       | 2181       | 2341       | 2501       |
| 2041       | 2201       | 2361       | 2521       |
| 2061       | 2221       | 2381       | 2541       |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-031   | 161-191   | 321-351   | 481-511   | 641-671   | 801-831   |
| 041-071   | 201-231   | 361-391   | 521-551   | 681-711   | 841-871   |
| 081-111   | 241-271   | 401-431   | 561-591   | 721-751   | 881-911   |
| 121-151   | 281-311   | 441-471   | 601-631   | 761-791   | 921-951   |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0031 | 0161-0191 | 0321-0351 | 0481-0511 |
| 0041-0071 | 0201-0231 | 0361-0391 | 0521-0551 |
| 0081-0111 | 0241-0271 | 0401-0431 | 0561-0591 |
| 0121-0151 | 0281-0311 | 0441-0471 | 0601-0631 |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|
| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

# **uvmnp, uvkqr**

- Hierarchical NPC numbers

**uv** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

CB type NPC numbers listed by unit, module, and NPC Number

Unit Type DP (DSPU)

|              |            |           |
|--------------|------------|-----------|
| Unit         | Module     | NPC       |
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**Note:** Range is not allowed for DSPU NPC degrowth.

With exceptions, an NPC must first be removed from service with the RMV,NPC,SIDE,INCL command before it can be degrown.

The exceptions are DSPU NPCs. However, if a cross-connected channel or a channel under test is present on the NPC, the command will be denied.

Degrowth of DMB NPCs results in degrowth of both duplicated NPCs in the DMB circuit packs in the DSPU. For other DSPU NPCs, there is only one NPC per circuit pack. One of the duplicated NPCs may first be removed from service with the RMV,NPC,SIDE,INCL

message.

If both NPCs are in service, both will be automatically removed during the degrowth of NPC operation. If a cross-connected channel is present on the NPC, the message will be denied.

SLC carrier terminated digroups must be deleted from the SLC carrier bank by executing the DLT,RT,DL,DGA,DGB,DGC,DGD,DGP command.

**[s]ghi** - The 3- or 4-digit nonhierarchical NPC number ([s]abc through [t]def)  
**[s]jkl** - The 3- or 4-digit nonhierarchical NPC number ([s]abc through [t]mno)  
**[t]mno** - The 3- or 4-digit nonhierarchical NPC number ([s]ghi through [t]def)

**uvghi** - Hierarchical NPC number within the range of uvmnp and uvkqr  
**uvjkl** - Hierarchical NPC number within the range of uvmnp and uvmno  
**uvmno** - Hierarchical NPC number within the range of uvjkl and uvkqr

**TYPE** - Type

**mnxyz** - NPC-type identifier

| mn | Explanation                                        |
|----|----------------------------------------------------|
| CB | C-bit processor (CPR) NPC                          |
| PA | CEPT NPC (75- or 120-ohm)                          |
| PB | CEPT NPC (120-ohm twisted pair)                    |
| PC | CEPT NPC (75-ohm coaxial)                          |
| SD | Digital Signal Processing Application Circuit Pack |

**UEQD** - Unequipped  
The specified NPC is already unequipped

**IS** - In-service  
The specified NPC is in service

**NPCTP** - NPC (for) test port  
The specified NPC is designated for DS0 test ports

**NPCTG** - NPC (for) test group  
The specified NPC is designated for Nx64Kbit/s test groups



**TERM** - Termination

**ASGN** - Assigned

The specified NPC has active or under-test assigned termination

**COND** - Condition

The specified NPC is denied due to condition given by cc

**cc** - Hexadecimal condition code

**cc**    *Explanation*

|           |                                               |
|-----------|-----------------------------------------------|
| <b>00</b> | No conditions                                 |
| <b>10</b> | Unit is not equipped                          |
| <b>11</b> | UC is out of service                          |
| <b>12</b> | UC is in service but failed                   |
| <b>13</b> | FTMI is not equipped                          |
| <b>15</b> | NPC is unequipped                             |
| <b>24</b> | Unit type error                               |
| <b>35</b> | NPC has active circuit                        |
| <b>3F</b> | Conference exists in a DMB                    |
| <b>8F</b> | NPC not deleted                               |
| <b>9C</b> | SRDC timeslots are allocated on this NPC      |
| <b>F2</b> | Invalid NPC number specified                  |
| <b>FD</b> | NPC range crosses unit boundary               |
| <b>6A</b> | Pseudochannels exist which reference this NPC |

## **DGRTH,NPC,NPCTG,TGR**

### **DEGROWTH TEST-ACCESS GROUP NPC**

#### **Explanation Of Command**

This command is used to request the removal of the test-access group (TG) designation from a network processing circuit for test-access groups. All TGs associated with this NPCTG must be released before the NPCTG can be deprovisioned. If "TGR" is specified in the command all active TGs will be released and deprovisioned before the NPCTG is deprovisioned. Any out-of-serve (OOS) condition will be bypassed.

A TG may be supported by one or two NPCTGs. Deprovisioning of an NPCTG that supports half (one bundle) of an active TG, will result in the release and deprovisioning of the entire TG; provided "TGR" was specified.

#### **Command**

##### **Nonhierarchical**

[I.32401]

**DGRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTG rrr[,TGR]!**

##### **Hierarchical**

[I.32401]

**DGRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTG rrr[,TGR]!**

---

## Completion Message

---

### Nonhierarchical

---

[O.32401]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc NPCTG rrr COMPL

or

[O.32402]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc NPCTG rrr[ TGR] p LN MSG:  
TGS mmm[,mmm][,mmm][,mmm][,mmm][,mmm][,mmm][,mmm]  
[TGS mmm[,mmm][,mmm][,mmm][,mmm][,mmm][,mmm][,mmm]  
[TGS mmm[,mmm][,mmm][,mmm][,mmm][,mmm][,mmm][,mmm]  
[TGS mmm[,mmm][,mmm][,mmm][,mmm][,mmm][,mmm][,mmm] COMPL

### Hierarchical

---

[O.32401]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp NPCTG rrr COMPL

or

[O.32402]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp NPCTG rrr[ TGR] p LN MSG:  
TGS mmm[,mmm][,mmm][,mmm][,mmm][,mmm][,mmm][,mmm]  
[TGS mmm[,mmm][,mmm][,mmm][,mmm][,mmm][,mmm][,mmm]  
[TGS mmm[,mmm][,mmm][,mmm][,mmm][,mmm][,mmm][,mmm]  
[TGS mmm[,mmm][,mmm][,mmm][,mmm][,mmm][,mmm][,mmm] COMPL

---

## Denial Message

---

### Nonhierarchical

---

[O.32401.01]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc NPCTG rrr[ TGR][ TG mmm] COND cc DNY

## Hierarchical

[O.32401.01]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp NPCTG rrr[ TGR][ TG mmm] COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**NPCTG** - NPC (for) test group

**rrr** - NPCTG number (1 through 400)

**TGR** - TG release

This keyword causes any active TGs supported by this NPCTG to be released from testing and degrown before the NPCTG is degrown. It is required if the NPCTG has active TGs.

**TGS** - TGs supported by the NPCTG

**mmm** - TG number (1 through 400)

Lowest TG number supported by the NPCTG. This number will be '000' if all TGs have been degrown.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc**    *Explanation*

|           |                                                   |
|-----------|---------------------------------------------------|
| <b>15</b> | NPC is unequipped                                 |
| <b>89</b> | NPC is not designated for this NPCTP/NPCTG        |
| <b>A4</b> | NPC is not a NPCTG                                |
| <b>A5</b> | Test group is not idle or frame is not In Service |
| <b>A6</b> | Test group release failed                         |
| <b>A8</b> | NPCTG not grown                                   |

## **DGRTH,NPC,NPCTP,TPR**

### **DEGROWTH TEST PORT NPC**

#### **Explanation Of Command**

This message requests removal of the specified test port designation from the network processing circuit. It deprovisions all test ports in all four test access digroups.

#### **Command**

##### **Nonhierarchical**

[I.32381]

DGRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTP n[,TPR]!

##### **Hierarchical**

[I.32381]

DGRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTP n[,TPR]!

#### **Completion Message**

##### **Nonhierarchical**

[O.32381]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc NPCTP n TPS kk-nn\  
[ TPR] COMPL

### **Hierarchical**

---

[O.32381]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp NPCTP n TPS kk-nn\  
[ TPR] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.32381.01]

M hh:mm:ss xy,ww n[vv] DGRTH NPC [s]abc NPCTP n[ TPR] \  
COND cc DNY

### **Hierarchical**

---

[O.32381.01]

M hh:mm:ss xy,ww n[vv] DGRTH NPC uvmnp NPCTP n[ TPR] \  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number



If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**NPCTP** - NPC test port  
**n** - NPCTP number (1 through 8)

**TPR** - Test port release

This keyword causes any active test ports to be released from service before the test port NPC is degrown. Without the TPR keyword, the test ports must all be idle or the command is denied.

**TPS** - Test ports

**kk** - Beginning test port number

**nn** - Ending test port number

kk and nn indicate the range of test port numbers which the named NPC included

| <i>n</i> | <i>kk</i> | <i>nn</i> |
|----------|-----------|-----------|
| 1        | 01        | 12        |
| 2        | 13        | 24        |
| 3        | 25        | 36        |
| 4        | 37        | 48        |
| 5        | 49        | 60        |
| 6        | 61        | 72        |
| 7        | 73        | 84        |
| 8        | 85        | 96        |

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                 |
|-----------|-------------------------------------------------|
| <b>15</b> | NPC is unequipped                               |
| <b>88</b> | NPC is not a NPCTP                              |
| <b>89</b> | NPC is not designated for this NPCTP/NPCTG      |
| <b>8A</b> | NPCTP is not grown                              |
| <b>8B</b> | Test port is not idle or frame is not inservice |
| <b>98</b> | Test Port release failed                        |

## **DGRTH,SYNC,TB**

### **DEGROWTH SYNCHRONIZER TIME BASE**

#### **Explanation Of Command**

This command requests the deprovisioning of the synchronizer time base.

#### **Command**

[I.32101]

**DGRTH:FRM xy,SEQ ww:SYNC,TB!**

#### **Completion Message**

[O.32101]

**M hh:mm:ss xy,ww n[vv] DGRTH SYNC TB TYPE TBpqr COMPL**

#### **Denial Message**

[O.32101.01]

**M hh:mm:ss xy,ww n[vv] DGRTH SYNC TB TYPE TBpqr COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**TYPE** - Type

**TB** - Time base

**p** - Time base identifier

**qr** - Unassigned

q and r can take any value from 0 through 9

**p**      *Time base*

**0**      Stratum 3

**1**      CEPT Local

**2**      CEPT Toll

**3**      Stratum 2

**Note:** pqr will be shown as "---" if the synchronizer is not equipped.

**cc** - Hexadecimal condition code

**cc**      *Explanation*

**16**      SYNC TB is not equipped

**A4**      Both syncs are in-service

## **DGRTH,SYNC,TLI,SSP**

### **DEPROVISION SYNCHRONIZER TIMING LINK INTERFACE**

#### **Explanation Of Command**

This message requests the deprovisioning of the synchronizer's timing link interface.

If the timing link interface was configured as a timing extractor (**TYPE - txyz**), the synchronizer sync port must be specified as well.

On output, note that the NPC option can be a source of synchronization for a timing link interface. When a TU type TLI receiving its input from an NPC is degrown, the NPC must be marked as no longer being a synchronizer source.

#### **Command**

[I.32121]

**DGRTH:FRM xy,SEQ ww:SYNC,TLI m[,SSP a]!**

#### **Completion Message**

#### **Nonhierarchical**

[O.32121]

**M hh:mm:ss xy,ww n[vv] DGRTH SYNC TLI m 2 LN MSG:  
{SSP a SRC p TYPE txyz[ NPC [s]abc]|TYPE TDpqr|TYPE TBpqr} \  
COMPL**

### **Hierarchical**

---

[O.32121]

M hh:mm:ss xy,ww n[vv] DGRTH SYNC TLI m 2 LN MSG:  
{SSP a SRC p TYPE texyz[ NPC uvmnp]|TYPE TDpqr|TBpqr} COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.32121.01]

M hh:mm:ss xy,ww n[vv] DGRTH SYNC TLI m 2 LN MSG:  
{SSP a SRC p TYPE texyz[ NPC [s]abc]|TYPE TDpqr|TYPE TBpqr} \  
COND cc DNY

### **Hierarchical**

---

[O.32121.01]

M hh:mm:ss xy,ww n[vv] DGRTH SYNC TLI m 2 LN MSG:  
{SSP a SRC p TYPE tepgr[ NPC uvmnp]|TYPE TDpqr|TBpqr} \  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**TLI** - Timing link interface

**m** - TLI number (1 through 4)

**SSP** - Synchronizer synchronization port

**a** - SSP number (0 or 1)

**SRC** - Source

**p** - Synchronization port priority (1 through 8)

*p*      *Explanation*

1      HIGHEST priority

8      LOWEST priority

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, PB/PC type

The valid values are:

NPC type      NPC number

PB,PC      [0]030, [0]032, [0]070, [0]072, [0]190, [0]192, [0]230, [0]232

**uvmnp** - Hierarchical NPC number, PB/PC type

NPC type      Unit No.      Module No.      NPC No.

PB,PC      01      1,2      30,32

02      1,2      30,32

Option NPC ([s]abc or uvmnp) is only used with the SSP variable and TLI type TUxyz.

**TYPE** - Type

**texyz** - Timing extractor type

*texyz*      *Explanation*

TCxyz      Composite Clock Timing Extractor

TExyz      DS1 Timing extractor

TPxyz      Primary Block Timing Extractor (xyz values are listed below)

TRxyz      Basic System Reference Frequency

TUxyz      Unipolar Clock Timing Extractor

-----      Not Equipped



TP-type TLI xyz fields

|             |                                       |
|-------------|---------------------------------------|
| <b>x</b>    | - Frame format                        |
| <b>x</b>    | <i>Explanation</i>                    |
| <b>1, 5</b> | Common Channel Signaling              |
| <b>2, 6</b> | Channel Associated Signaling - Mode 0 |
| <b>3, 7</b> | Channel Associated Signaling - Mode 1 |
| <b>4, 8</b> | European Remote Switching Module      |
| <b>0, 9</b> | Invalid                               |
| <b>y</b>    | - Line format                         |
| <b>y</b>    | <i>Explanation</i>                    |
| <b>0, 2</b> | Alternate Mark Inversion (Bipolar)    |
| <b>1, 3</b> | High Density Bipolar (HDB3)           |
| <b>4-9</b>  | Invalid                               |
| <b>z</b>    | - Channel format                      |
| <b>z</b>    | <i>Explanation</i>                    |
| <b>0-9</b>  | Unassigned                            |

TC, TR, and TU-type TLI xyz fields

|           |                                                                          |
|-----------|--------------------------------------------------------------------------|
| <b>x</b>  | - Frame format                                                           |
| <b>y</b>  | - Line format                                                            |
| <b>z</b>  | - Channel format                                                         |
|           | Values for x, y, and z are unassigned.                                   |
| <b>TD</b> | - Timing distributor                                                     |
| <b>p</b>  | - Timing distributor identification                                      |
|           | Variable TDpqr equals "-----" if the timing distributor is not equipped. |
| <b>p</b>  | <i>Explanation</i>                                                       |
| <b>1</b>  | Composite clock timing distribution                                      |
| <b>2</b>  | Sinusoidal 2.048 MHz timing distribution                                 |
| <b>qr</b> | Unassigned                                                               |

**TB** - Time base

**p** - Time base identifier

**qr** - Unassigned

q and r can take any value from 0 through 9

**p** *Time base*

**0** Stratum 3

**1** CEPT Local

**2** CEPT Toll

**3** Stratum 2

**Note:** pqr will be shown as "---" if the synchronizer is not equipped.

**cc** - Hexadecimal condition code

**cc** **Explanation**

**02** Subject entity is not equipped

**03** Subject entity is in service

**A1** CRO type TLI (SSP portion not required)

**A2** SSP number is illegal

**A3** SSP number required

**B8** CRO is still equipped

**BE** Hardware mismatch or not present

**CC** NPC is still provisioned to provide  
sync timing

---

## **DGRTH,TG**

---

### **DEGROWTH TEST-ACCESS GROUP**

#### **Explanation Of Command**

---

This command is used to request the deprovisioning of one or more idle test-access groups.

#### **Command**

---

[I.32421]

**DGRTH:FRM xy,SEQ ww:TG mmm[-nnn]!**

#### **Completion Message**

---

[O.32421]

M hh:mm:ss xy,ww n[vv] DGRTH TG mmm[-nnn] p LN MSG:  
TG mmm,rrr,sss[ TG mmm,rrr,sss][ TG mmm,rrr,sss][ TG mmm,rrr,sss]  
[TG mmm,rrr,sss][ TG mmm,rrr,sss][ TG mmm,rrr,sss][ TG mmm,rrr,sss]  
[TG mmm,rrr,sss][ TG mmm,rrr,sss][ TG mmm,rrr,sss][ TG mmm,rrr,sss]  
[TG mmm,rrr,sss][ TG mmm,rrr,sss][ TG mmm,rrr,sss][ TG mmm,rrr,sss] {EOM|COMPL}

or

M hh:mm:ss xy,ww n[vv] DGRTH TG ppp[-qqq] UEQD {EOM|COMPL}

#### **Denial Message**

---

[O.32421.01]

M hh:mm:ss xy,ww n[vv] DGRTH TG mmm[-nnn] [TGS ttt[-uuu]] COND cc DNY

#### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

|                |                                                   |
|----------------|---------------------------------------------------|
| <b>TG</b>      | - Test-access Group                               |
| <b>mmm</b>     | - TG number (1 through 400)                       |
| <b>nnn</b>     | - End of TG range number (1 through 400)          |
| <b>rrr</b>     | - East-bundle NPCTG number (1 through 400)        |
| <b>sss</b>     | - West-bundle NPCTG number (1 through 400)        |
| <b>UEQD</b>    | - Unequipped                                      |
| <b>ppp,qqq</b> | - Unequipped TGs in specified range               |
| <b>ttt,uuu</b> | - Active TGs in specified range                   |
| <b>cc</b>      | - Hexadecimal condition code                      |
| <b>cc</b>      | <i>Explanation</i>                                |
| <b>63</b>      | None of the designated TG(s) are equipped         |
| <b>A5</b>      | Test group is not idle or frame is not In Service |

## **DGRTH,TP**

### **DEGROWTH**

#### **Explanation Of Command**

This message requests the unequipage of a specified test port. Any subsequent test access requests for this test port will be denied. Also, if the specified test port is in use, the command will be denied.

When degrowth of the specified test port is completed, the channel units associated with this test port are no longer assumed in place, and no test ports with numbers greater than the one specified remain equipped.

#### **Command**

[I.32411]

**DGRTH:FRM xy,SEQ ww:TP kk!**

#### **Completion Message**

[O.32411]

**M hh:mm:ss xy,ww n[vv] DGRTH TP kk COMPL**

#### **Denial Message**

[O.32411.01]

**M hh:mm:ss xy,ww n[vv] DGRTH TP kk NPCTP UEQD DNY**

[O.32411.02]

**M hh:mm:ss xy,ww n[vv] DGRTH TP kk NOT IDLE DNY**

[O.32411.03]

M hh:mm:ss xy,ww n[vv] DGRTH TP kk TPMAX nn TP NSO DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**TP** - Test port

**kk** - Test port number (01 through 96)

**NPCTP** - NPC for test ports

**UEQD** - Unequipped

**TPMAX** - Test port maximum

**nn** - Test port number (01 through 96)

**NSO** - Not in sequence order

Degrowth of test port kk can be denied under the following conditions:

- The NPCTP (network processing circuit for test ports) has not been designated or UEQD.
- The requested test port is not idle. The test port is currently assigned to a cross-connected channel for test access (NOT-IDLE).
- The requested test port is NSO (not in sequence order) (TPMAX=nn, TP, NSO). That is, kk is not equal to the highest existing test port number nn in the NPCTP.

## **DGRTH,UNIT**

### **DEGROW UNIT**

#### **Explanation Of Command**

When this request is completed, the two ETSI circuit packs required by the subject unit to cross-connect to other grown units are unequipped.

This message requests the degrowth of a DACS II unit.

When this request is completed, all cross-connect buffer and time slot interchange circuit packs required by the subject unit to cross-connect to other grown units are degrown.

When this request is completed, the two ETSI circuit packs required by the subject unit to cross-connect to other grown units are degrown.

#### **Command**

[I.32211]

**DGRTH:FRM xy,SEQ ww:UNIT [q]q!**

### Completion Message

For DACS II Non-CEF frames:  
[O.32211]

M hh:mm:ss xy,ww n[vv] DGRTH UNIT q 5 LN MSG:  
TOTAL TSIS tt DEGROWN TSIS dd  
sft sft sft sft sft sft sft sft sft sft  
sft sft sft sft sft sft sft sft sft sft  
sft sft sft sft sft sft sft sft sft sft EOM

M hh:mm:ss xy,ww n[vv] DGRTH UNIT q 5 LN MSG:  
TOTAL TSIS tt DEGROWN TSIS dd  
sft sft sft sft sft sft sft sft sft sft  
sft sft sft sft sft sft sft sft sft sft  
sft sft sft sft sft sft sft sft sft sft EOM

M hh:mm:ss xy,ww n[vv] DGRTH UNIT q e LN MSG:  
TOTAL TSIS tt DEGROWN TSIS dd  
DEGROWN TSIS sft sft ... sft sft

.  
.  
.  
DEGROWN TSIS sft sft ... sft sft {EOM|COMPL}

For DACS II CEF frames:  
[O.32212]

M hh:mm:ss xy,ww n[vv] DGRTH UNIT qq 4 LN MSG:  
TOTAL ETSIS kk DEGROWN ETSI 0qq 1qq  
0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr \  
0rr 1rr  
0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr \  
0rr 1rr {EOM|COMPL}

### Denial Message

[O.32211.01]

M hh:mm:ss xy,ww n[vv] DGRTH UNIT [q]q UEQD DNY

[O.32211.02]

M hh:mm:ss xy,ww n[vv] DGRTH UNIT [q]q {FTMI m|NPC l} EQD \  
DNY

[O.32211.03]

M hh:mm:ss xy,ww n[vv] DGRTH UNIT [q]q COND cc DNY



## Autonomous Message

Not applicable.

## Explanation Of Parameters

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**TOTAL** - Total

**TSIS** - Time slot interchangers

**tt** - Total number of provisioned TSIs in frame after unit is degrown  
(00 through 70)

**dd** - Number of TSIs deprovisioned by command (00 through 22)

**sft** - TSI equipped status

**s** - Service side number (0 or 1)

**f**  
- FROM unit number

*f* *Explanation*

*n* Unit number *n* (equals 1 through 6) is equipped  
- Not equipped

**t**  
- TO unit number

*t* *Explanation*

*n* Unit number *n* (equals 1 through 6) is equipped  
- Not equipped

**e** - Number of lines in the output message segment (2 through 4)

### DEGROWN

- Degrown

Degrowth of UNIT *q* (1 through 6) can be denied because:

**kk** - Total number of equipped ETSIs in the frame after the unit is degrown  
(00 through 30)

**ETSIS** - Expanded time slot interchangers

**ETSI** - Expanded time slot interchanger

**0qq** - ETSI number side 0

**1qq** - ETSI number side 1

0qq and 1qq identify the ETSI packs deprovisioned by this command.  
qq is the unit number (see UNIT above).

Three dashes "---" are shown if an ETSI pack is not provisioned.

**0rr** - ETSI number side 0

**1rr** - ETSI number side 1

0rr and 1rr give the ETSIs equipage status. rr is the unit number  
(see UNIT above)

Three dashes "---" are shown if an ETSI pack is not provisioned.

- The unit is already degrown (UEQD), or
- The FTU is still equipped with m FTMIs (facility terminating module interfaces), or
- The DSPU is supporting l NPCs, or
- The unit controller (UC) is in service (IS)
- The DS3U is still equipped with k multiplexers (MXRs) or Hybrid multiplexers (HMXR) and/or the protection multiple interface unit (MIU P), or
- The DS3U or Hybrid DS3U is supporting at least one in-service facility line interface (FLI),

Note that Hybrid DS3U does not support MIU.

**FLI** - Facility line interface

**S** - Service

**P** - Protection

**FMT** - Formatter or Hybrid Formatter

**0** - Side number 0

**1** - Side number 1

**MIU** - Multiple interface unit

**MXR** - Multiplexer or Hybrid Multiplexer

**P** - Protection

**FTMI** - Facility terminating module interface

**m** - Number of FTMIs (1 through 4). Will appear if the unit is equipped as an FTU.

**NPC** - Network processing circuit

**l** - Number of NPCs in DSP unit (1 through 8). Will appear if the unit is equipped as a DSPU.

**k** - Number of MXRs or HMXRs (1 through 6). Will appear if the unit is equipped as a DS3U or a HDS3U.

**c** - Number of FLIs that are in service (1 or 2). Will appear if the unit is equipped as a DS3U or a HDS3U.

**EQD** - Equipped

**cc** - Hexadecimal condition code

**cc** *Explanation*

**00** No conditions

**03** Subject entity is in service

**4D** DSPI is in service

## **DGRTH,UNIT,FTMI**

### **DEPROVISION FACILITY TERMINATING MODULE INTERFACE**

#### **Explanation Of Command**

This command requests unequipage of a DACS II facility terminating module and its associated facility terminating module interface.

#### **Command**

[I.32321]

DGRTH:FRM xy,SEQ ww:UNIT [q]q,FTMI d!

#### **Completion Message**

[O.32321]

M hh:mm:ss xy,ww n[vv] DGRTH UNIT [q]q FTMI d FC 0d 1d COMPL

#### **Denial Message**

[O.32321.01]

M hh:mm:ss xy,ww n[vv] DGRTH UNIT [q]q FTMI d\  
[ FC sd][ NPC n] {UEQD|EQD|IS} DNY

[O.32321.02]

M hh:mm:ss xy,ww n[vv] DGRTH UNIT [q]q FTMI d FC 0d 1d \  
COND cc DNY

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

|             |                                                                       |
|-------------|-----------------------------------------------------------------------|
| <b>UNIT</b> | - Unit                                                                |
| <b>[q]q</b> | - Unit number (1 through 16)                                          |
| <b>FTMI</b> | - Facility terminating module interface                               |
| <b>d</b>    | - FTMI number in the DACS II unit (1 through 4)                       |
| <b>FC</b>   | - Format converter                                                    |
| <b>s</b>    | - Side of in-service FC                                               |
| <b>s</b>    | <i>Explanation</i>                                                    |
| 0           | Side 0 FC in-service                                                  |
| 1           | Side 1 FC in-service                                                  |
| 2           | Both sides in-service                                                 |
| <b>NPC</b>  | - Network processing circuit                                          |
| <b>n</b>    | - Number of the NPC in the FTM that are still equipped (1 through 40) |
| <b>UEQD</b> | - The FTMI is unequipped                                              |
| <b>EQD</b>  | - Equipped                                                            |
| <b>IS</b>   | - In service                                                          |
|             | Format converter side (FC sd) is still in-service                     |
| <b>cc</b>   | - Hexadecimal condition code                                          |
| <b>cc</b>   | <i>Explanation</i>                                                    |
| 00          | No conditions                                                         |
| 03          | Subject entity is in service                                          |
| 10          | Unit is not equipped                                                  |
| 11          | UC is out of service                                                  |
| 12          | UC is in service but failed                                           |
| 30          | Unit is not FTU type                                                  |

## **DGRTH,UNIT,MXR**

### **DEGROWTH MULTIPLEXER**

#### **Explanation Of Command**

This message requests and reports the degrowth of one or more Multiplexers (MXRs) and associated DS3 facilities in the service slots of a DS3 unit. It is also used to request and report the degrowth of one or more Hybrid Multiplexers (HMXRs) and associated DS3 facilities in the service slots of a Hybrid DS3 unit.

#### **Command**

[I.32501]

**DGRTH:FRM xy,SEQ ww:UNIT [q]q,MXR c[-d]!**

#### **Completion Message**

[O.32501]

**M hh:mm:ss xy,ww n[vv] DGRTH UNIT [q]q MXR a TYPE mnxyz COMPL**

#### **Denial Message**

[O.32501.01]

**M hh:mm:ss xy,ww n[vv] DGRTH UNIT [q]q MXR a[ TYPE mnxyz] \  
COND cc DNY**

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**MXR** - Multiplexer

**c, d** - The number of the MXR within the unit ( $1 \leq c, d \leq 6$ )

**Note:** The Protection MXR is degrown along with the UNIT.

**a** - MXR number within the range of c and d

**TYPE** - The requested DS3 format that will be processed by the MXR.

**mnxyz** - The DS3 format processed by the MXR:

**mn** - the type of DS3 facility

MX : the original R4.0 DS3 facility type supported by the Multiplexer (MXR) circuit pack (KCR-1).

EX : the enhanced R6.0 DS3 facility type supported by the Enhanced Multiplexer (EMXR) circuit pack (KCR-5).

HX : The hybrid facility type supported by the Hybrid Multiplexer (HMXR) circuit pack (KCR-8).

If the unit is a regular DS3U of unit type DT100, then the Default is the MX type for backward compatibility.

If the unit is a Hybrid DS3U of unit type HT100, then the default is HX.

**x** - the DS3 framing format

1 - M13 format.(default)

2 - C-bit parity format, not supported by HMXR

**y** - not assigned (the only valid value is 0)

**z** - not assigned (the only valid value is 0)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

**55** Some associated NPCs are equipped

## **DLT,FPKG**

### **DELETE FEATURE PACKAGE IDENTIFICATION**

#### **Explanation Of Command**

The frame administrator enters this command to change the feature package identification code. This command is used to reduce the feature package set by a single feature at a time.

**Note:** The execution of this command requires DACS II superuser privileges. The frame must be in the **MCOND** (maintenance condition) state at execution.

**WARNING:** A manual backup from RAM to MEM (PMEM & SMEM together) must be invoked prior to entering Maintenance Condition, else the command may not complete.

Because of the impact of this command on the available features, the following dialogue will be displayed by DACS II.

ARE YOU SURE?

The user must respond with an affirmative Y for the command to be executed.

#### **Command**

[I.37301]

**DLT:FRM xy,SEQ ww:FPKG nnnnnnnn!**

#### **Completion Message**

[O.37301]

**M hh:mm:ss xy,ww n[vv] DLT FPKG nnnnnnnn NEW aabbccdd \  
OLD kkttuuvv COMPL**



### Denial Message

[O.37301.01]

M hh:mm:ss xy,ww n[vv] DLT FPKG nnnnnnnn COND cc DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

**FPKG** - Feature package

**nnnnnnnn**

- Feature Package number (hexadecimal)

*nnnnnnnn Explanation*

|          |                                               |                    |
|----------|-----------------------------------------------|--------------------|
| 00000001 | DS1                                           |                    |
| 00000002 | CEPT                                          |                    |
| 00000004 | Subrate                                       |                    |
| 00000008 | Direct SLC® 96 and Series 5 Carrier Interface |                    |
| 00000010 | DS3 Terminations                              |                    |
| 00000020 | Enhanced CEPT                                 |                    |
|          |                                               | C-bit              |
|          |                                               | C-bit filtering    |
|          |                                               | RPSFI              |
| 00000040 | Switched Teleconferencing                     |                    |
| 00000080 | CEF                                           |                    |
| 00000100 | Enhanced DS1 Performance Monitoring           |                    |
| 00000200 | DS0/DS1 Roll                                  |                    |
| 00000400 | Security Warning Message                      |                    |
| 00000800 | Nx64kbit Test Access                          |                    |
| 00001000 | Clear 2MB/s Interface                         |                    |
| 00002000 | TS0 to Non-TS0 Cross-connection               |                    |
| 00004000 | 2MB/S Roll                                    |                    |
| 00008000 | SPARE                                         |                    |
| 00010000 | TRT/FT Features                               |                    |
|          |                                               | Intervention Level |
| 00020000 | DS3 Hybrid                                    |                    |

**NEW** - New

**aabbccdd**

- New feature package identification code (hexadecimal)

OLD - Old

**kkttuuvv**

- Old feature package identification code (hexadecimal)

*aabbccdd*

*kkttuuvv Explanation*

|          |                                               |                    |
|----------|-----------------------------------------------|--------------------|
| 00000001 | DS1                                           |                    |
| 00000002 | CEPT                                          |                    |
| 00000004 | Subrate                                       |                    |
| 00000008 | Direct SLC® 96 and Series 5 Carrier Interface |                    |
| 00000010 | DS3 Terminations                              |                    |
| 00000020 | Enhanced CEPT                                 |                    |
|          |                                               | C-bit              |
|          |                                               | C-bit filtering    |
|          |                                               | RPSFI              |
| 00000040 | Switched Teleconferencing                     |                    |
| 00000080 | CEF                                           |                    |
| 00000100 | Enhanced DS1 Performance Monitoring           |                    |
| 00000200 | DS0/DS1 Roll                                  |                    |
| 00000400 | Security Warning Message                      |                    |
| 00000800 | Nx64kbit Test Access                          |                    |
| 00001000 | Clear 2MB/s Interface                         |                    |
| 00002000 | TS0 to Non-TS0 Cross-connection               |                    |
| 00004000 | 2MB/S Roll                                    |                    |
| 00008000 | SPARE                                         |                    |
| 00010000 | TRT/FT Features                               |                    |
|          |                                               | Intervention Level |
| 00020000 | DS3 Hybrid                                    |                    |

In general a feature package identification code is a combination of several individual feature package numbers. To determine the individual features that make up a feature package it is necessary to decode the feature package identification code. This code is an eight digit hexadecimal number. Each hexadecimal number represents a four-bit binary number. Within this binary number each feature is associated with one particular bit. Consequently to determine the feature list from a feature package identification code it is necessary to convert each hexadecimal digit to its binary equivalent and look up the features in the list above. For example the feature package identification code 0000000F can be converted to the following binary number working from left to right one hex digit at a time.

0000 0000 0000 0000 0000 0000 0000 1111

This number contains eight binary numbers each representing one of the hexadecimal numbers in the feature package identification code 0000000F. The rightmost number of the code contains four features since there are four bits set to one. This would be decoded as follows using the table of features above.

|       | binary | hex | Feature                      |
|-------|--------|-----|------------------------------|
|       | 0001   | 1   | DS1                          |
|       | 0010   | 2   | CEPT                         |
|       | 0100   | 4   | Subrate                      |
|       | 1000   | 8   | Direct SLC                   |
| Total | 1111   | F   | (DS1 + CEPT + Subrate + SLC) |

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 96** Unit(s) OOS, and additional backup required
- 25** Invalid FPI value
- 26** Feature deactivation would leave system with core software
- 27** Disable not allowed - supports another feature
- 28** Feature is active
- 29** Feature not enabled
- 2A** Database not loaded
- 2B** Reading Feature Package Id from PMEM failed
- 2C** Writing Feature Package Id to PMEM failed
- 01** Backup required before executing this command

## **DLT,MACRO,MAP,USER**

### **DELETE MACRO**

#### **Explanation Of Command**

This command requests the deletion of a macro or alternate map from the DACS II system.

**Note:** Only the DACS II frame administrator can remove a public macro or another user's macros and maps. The names of public macros begin with the letter P.

#### **Command**

[I.37201]

DLT:FRM xy,SEQ ww:{MACRO <macro name>|MAP <map name>}\  
[,USER <user id>]!

#### **Completion Message**

[O.37201]

M hh:mm:ss xy,ww n[vv] DLT {MACRO <macro name>|MAP <map name>}\  
[ USER <user id>] COMPL

#### **Denial Message**

[O.37201.01]

M hh:mm:ss xy,ww n[vv] DLT {MACRO <macro name>|MAP <map name>}\  
[ USER <user id>] COND cc DNY

#### **Autonomous Message**

Not applicable.

## **Explanation Of Parameters**

---

### **macro name**

- Macro name (seven characters maximum length)

The name of a collection of DACS II commands executed as a group.

A macro name is a string of capitalized alphanumeric characters. There are two type of macros; public and private. A private macros is created by a user in space allocated to the user by the system administrator. Only the user that created it can execute or read (LIST) a private macro. A public macro is created by the system administrator and is executable and readable by all users. A public macro name must start with the letter "P". A private macro name must not start with the letter "P".

### **map name**

- Map name (seven characters maximum length)

The name of a collection of DACS II cross-connect commands that can be activated as a group to produce a new set of cross-connections (a new cross-connect map).

A map name is a string of capitalized alphanumeric characters.

### **user id**

- User identifier (two to eight alphabetic characters)

The user field is the user's login identifier. It is used only by the frame administrator to delete a private macro or map owned by the user specified. A user does not need to specify this information in order to delete a personally owned (private) macro or map.

- cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

- |           |                                            |
|-----------|--------------------------------------------|
| <b>62</b> | File is being accessed                     |
| <b>64</b> | File doesn't exist/can't be accessed       |
| <b>D0</b> | Command is Frame administrator (DAX) only. |
| <b>D3</b> | User does not exist                        |
| <b>D5</b> | No user is logged in on the link/vc        |

## **DLT,NPC**

---

### **EDIT DELETE MAP**

#### **Explanation Of Command**

---

This command is only used in the open and create session of the alternate map feature. It is not intended to be used as a regular command under any circumstances.

This message is used to *delete* a single NPC, a range of NPCs, or a list of NPCs, from an alternate map.

To delete circuits from an alternate map, enter the **TCON : : FRM, TO** command (I.11001) with the DLT keyword at the end.

The only system response to this command is:

OK

Denials in response to this command are sent only to the link on which the command was input.

#### **Command**

---

#### **Nonhierarchical**

---

[I.37001]

**DLT:FRM xy,SEQ ww:NPC {[s]abc-[t]def|[s]abc[, [s]ghi]...\  
[, [t]def]]}!**

### **Hierarchical**

[I.37001]

**DLT:FRM xy,SEQ ww:NPC {uvmnp-wxkqr|uvmnp[,abcde]...[,wxkqr]}!**

### **Completion Message**

If the command is accepted by DACS II, the following input acknowledgement is output.

**OK**

### **Denial Message**

Not applicable.

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**[s]abc, [t]def, [s]ghi**

- The 3- or 4-digit non-hierarchical NPC numbers

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
|                  |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
|                  |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
|                  |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |



**uvmnp, wkxqr, abcde**

- Hierarchical NPC number

**uv, wk, ab**

- Unit number

**m, x, c**

- Module number

**np, qr, de**

- NPC number

The values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**cc** - Hexadecimal condition code

**cc** *Explanation*

**7A** The NPC to delete has not been previously added to map

## **DLT,USER**

---

### **DELETE USER**

#### **Explanation Of Command**

---

This command requests the deletion of **<user id>** from the DACS II system.

Output from this command is sent only to the link on which the command was input.

#### **⇒ NOTE:**

**Note:** This command may be used only by the DACS II frame administrator. It may be executed on any administrative link.

#### **Command**

---

[I.37101]

**DLT:FRM xy,SEQ ww:USER <user id>!**

#### **Completion Message**

---

[O.37101]

**M hh:mm:ss xy,ww n[vv] DLT USER <user id> COMPL**

#### **Denial Message**

---

[O.37101.01]

**M hh:mm:ss xy,ww n[vv] DLT USER <user id> COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**USER** - User

**user id**

- User identifier

User login identification (two to eight alphabetic characters)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**D0** Command is Frame administrator (DAX) only.

**D3** User does not exist

**D8** Cannot remove Frame administrator

**D9** User has logged in somewhere

**DB** User still owns files

## **DSPC**

---

### **DIGITAL SIGNAL PROCESSING PLATFORM APPLICATION COMMANDS**

#### **Explanation Of Command**

---

This command explains the command syntax from the DACS II point of view for all applications that run on the Digital Signal Processing Platform (DSPP) circuit pack (TG193). All applications use a prefix system for both input commands and output messages of all types for communication between the user and the application. This prefix system is defined in the subsequent commands and messages. The prefix system permits DACS II to send a command to an application without parsing and/or examining that command. Any return message from the application uses a prefix also, which is simply prepended to the return message from the application by DACS II. Similarly, an autonomous message from an application is prepended with a prefix that identifies the NPC number of the particular DSPP circuit pack on which the message was issued.

The commands for a particular application are given in detailed form in the documentation package for that application. In that documentation the prefix notation that is explained here is also given, so that the user sees a complete command structure. Depending on the individual command that command may be sent to an individual DSPP circuit pack running that application, a range of circuit packs running that application, or all circuit packs running that application restored in the frame.

#### **Command**

---

#### **Nonhierarchical**

---

[I.14901]

**DSPC:** [FRM xy,SEQ ww]:{[s]aaa|[s]aaa-[v]bbb|SDxyz}:<pds\_application command>

---

## Hierarchical

[I.14901]

DSPC:[FRM xy,SEQ ww]:{uvnmp|uvnmp-wxkqr|SDxyz}:<pds\_application command>

---

## Completion Message

---

### Nonhierarchical

Command using single NPC

[O.14901]

M hh:mm:ss xy,ww n[vv] DSPC [s]aaa <pds\_application\_response for NPC [s]aaa>

Command using range of NPCs

[O.14901]

M hh:mm:ss xy,ww n[vv] DSPC [s]aaa <pds\_application\_response for NPC [s]aaa>

.  
.  
.

M hh:mm:ss xy,ww n[vv] DSPC [v]bbb <pds\_application\_response for NPC [v]bbb>

M hh:mm:ss xy,ww n[vv] DSPC [s]aaa-[v]bbb <pds\_input\_command - truncated>....COMPL

Command using NPC type

[O.14901]

M hh:mm:ss xy,ww n[vv] DSPC [s]aaa <pds\_application\_response for NPC [s]aaa>

.  
.  
.

M hh:mm:ss xy,ww n[vv] DSPC [v]bbb <pds\_application\_response for NPC [v]bbb>

M hh:mm:ss xy,ww n[vv] DSPC SDxyz <pds\_input\_command - truncated>....COMPL

---

## Hierarchical

Command using single NPC

[O.14901]

M hh:mm:ss xy,ww n[vv] DSPC uvnmp <pds\_application\_response for NPC uvnmp>

Command using range of NPCs  
[O.14901]

```
M hh:mm:ss xy,ww n[vv] DSPC uvnmp <pds_application_response for NPC uvnmp>
.
.
.
M hh:mm:ss xy,ww n[vv] DSPC wxkqr <pds_application_response for NPC wxkqr>
M hh:mm:ss xy,ww n[vv] DSPC uvnmp-wxkqr <pds_input_command - truncated>...COMPL
```

Command using NPC type  
[O.14901]

```
M hh:mm:ss xy,ww n[vv] DSPC uvnmp <pds_application_response for NPC uvnmp>
.
.
.
M hh:mm:ss xy,ww n[vv] DSPC wxkqr <pds_application_response for NPC wxkqr>
M hh:mm:ss xy,ww n[vv] DSPC SDxyz <pds_input_command - truncated>...COMPL
```

## Denial Message

---

### Nonhierarchical

---

Command using single NPC  
[O.14901.01]

```
M hh:mm:ss xy,ww n[vv] DSPC [s]aaa <pds_application_error_response for NPC [s]aaa>
```

Command using range of NPCs  
[O.14901.01]

```
M hh:mm:ss xy,ww n[vv] DSPC [s]aaa <pds_application_error_response for NPC [s]aaa>
.
.
.
M hh:mm:ss xy,ww n[vv] DSPC [v]bbb <pds_application_error_response for NPC [v]bbb>
M hh:mm:ss xy,ww n[vv] DSPC [s]aaa-[v]bbb \
<pds_input_command - truncated>...COND cc DNY
```

Command using NPC type  
[O.14901.01]

```
M hh:mm:ss xy,ww n[vv] DSPC [s]aaa <pds_application_error_response for NPC [s]aaa>
.
.
.
M hh:mm:ss xy,ww n[vv] DSPC [v]bbb <pds_application_error_response for NPC [v]bbb>
M hh:mm:ss xy,ww n[vv] DSPC SDxyz <pds_input_command - truncated>...COND cc DNY
```

Command of any type when no DSPP circuit pack with application is responding  
[O.14901.01]

```
M hh:mm:ss xy,ww n[vv] DSPC {[s]aaa|[s]aaa-[v]bbb|SDxyz} \
<pds_input_command - truncated>.... COND cc DNY
```

## **Hierarchical**

---

Command using single NPC  
[O.14901.01]

```
M hh:mm:ss xy,ww n[vv] DSPC uvnmp <pds_application_error_response for NPC uvnmp>
```

Command using range of NPCs  
[O.14901.01]

```
M hh:mm:ss xy,ww n[vv] DSPC uvnmp <pds_application_error_response for NPC uvnmp>
.
.
.
M hh:mm:ss xy,ww n[vv] DSPC wxkqr <pds_application_error_response for NPC wxkqr>
M hh:mm:ss xy,ww n[vv] DSPC uvnmp-wxkqr \
<pds_input_command - truncated>....COND cc DNY
```

Command using NPC type  
[O.14901.01]

```
M hh:mm:ss xy,ww n[vv] DSPC uvnmp <pds_application_error_response for NPC uvnmp>
.
.
.
M hh:mm:ss xy,ww n[vv] DSPC wxkqr <pds_application_error_response for NPC wxkqr>
M hh:mm:ss xy,ww n[vv] DSPC SDxyz \
<pds_input command - truncated>....COND cc DNY
```

Command of any type when no DSPP circuit pack with application is responding  
[O.14901.01]

```
M hh:mm:ss xy,ww n[vv] DSPC {uvnmp|uvnmp-wxkqr|SDxyz} \
<pds_input_command - truncated>.... COND cc DNY
```

## **Autonomous Message**

---

### **Nonhierarchical**

---

[O.14901]

**I** hh:mm:ss xy,ww ALM DSPC [s]aaa <pds\_application\_autonomous\_message>

### **Hierarchical**

---

[O.14901]

**I** hh:mm:ss xy,ww ALM DSPC uvnmp <pds\_application\_autonomous\_message>

## **Explanation Of Parameters**

---

**DSPC** - Execute <pds\_application\_command> on  
Digital Signal Processing Platform (DSPP)

**[s]aaa** - NPC number of DSPP Platform running application that will  
receive command or NPC number at beginning of range  
(3- or 4-digit)

**uvnmp** - NPC number of DSPP Platform running application that will  
receive command or NPC number at beginning of range  
(hierarchical)

**[v]bbb** - NPC number for end of range specified or last NPC number  
in frame of type SDxyz (3- or 4-digit)

**wxkqr** - NPC number for end of range specified or last NPC number  
in frame of type SDxyz (hierarchical)

**SDxyz** - Type designation for DSPP Platform running application "x".

This addresses all DSPP circuit packs that run application "x". Where "x" is a hexadecimal number that identifies the application. Values "y" and "z" are ignored, because they are possibly used internally by the application at the time the application is restored. Please note that "SDxyz" is also used at the time a DSPP circuit pack is grown to run a particular application.



- <pds\_application\_command> - This is a PDS command string that is sent to the application.
- <pds\_application\_response for NPC hhh> - This is an application command response in PDS for the particular NPC designated by the number hhh
- <pds\_application\_error\_response for NPC hhh> - This is a PDS error message generated when the application running on NPC hhh found an error in a command
- <pds\_application\_autonomous\_message> - This is an application autonomous message in PDS

Beyond the prefix notation that is explained here no specific conventions for an application are documented here. Instead, the exact command structure for commands that are handled by an application is given by the documentation for that application. This includes such items as terminating "!" for PDS strings and terminating ";" for MML strings. All error messages and condition codes generated by the application are given in the application documentation.

**cc** - Hexadecimal condition code

**cc**    *Explanation*

- 02**    Subject entity is not equipped  
**04**    Subject entity is out of service  
**26**    NPC type error  
**07**    Application circuit pack is out of service  
**F2**    Invalid NPC number specified  
**E9**    Platform Communication Error  
**EA**    The (last) destination NPC denies the DSPC command  
**EB**    The (last) destination NPC failed, and was rebooted  
**B3**    Initialization of application in progress, retry command later



---

**Contents**

|                             |       |
|-----------------------------|-------|
| <b>EBX,STARTUP,STF,ATP</b>  | 11-2  |
| ■ Explanation Of Command    | 11-2  |
| ■ Command                   | 11-2  |
| ■ Completion Message        | 11-2  |
| ■ Denial Message            | 11-2  |
| ■ Autonomous Message        | 11-2  |
| ■ Explanation Of Parameters | 11-3  |
| <b>ED,CRET,MAP,PIC</b>      | 11-4  |
| ■ Explanation Of Command    | 11-4  |
| ■ Command                   | 11-4  |
| ■ Completion Message        | 11-4  |
| ■ Nonhierarchical           | 11-4  |
| ■ Hierarchical              | 11-5  |
| ■ Denial Message            | 11-5  |
| ■ Autonomous Message        | 11-5  |
| ■ Explanation Of Parameters | 11-5  |
| <b>ED,MACRO,MAP</b>         | 11-8  |
| ■ Explanation Of Command    | 11-8  |
| ■ Command                   | 11-11 |
| ■ Completion Message        | 11-11 |
| ■ Denial Message            | 11-11 |
| ■ Autonomous Message        | 11-12 |
| ■ Explanation Of Parameters | 11-12 |
| <b>EMTC,STARTUP,STF,ATP</b> | 11-14 |
| ■ Explanation Of Command    | 11-14 |
| ■ Command                   | 11-14 |

---

## Contents

|                                      |       |
|--------------------------------------|-------|
| ■ Completion Message                 | 11-14 |
| ■ Denial Message                     | 11-14 |
| ■ Autonomous Message                 | 11-14 |
| ■ Explanation Of Parameters          | 11-15 |
| <b>ERR,CMD,ABT,TN,STOPPED</b>        | 11-16 |
| ■ Explanation Of Command             | 11-16 |
| ■ Command                            | 11-16 |
| ■ Completion Message                 | 11-16 |
| ■ Denial Message                     | 11-16 |
| ■ Autonomous Message                 | 11-16 |
| ■ Explanation Of Parameters          | 11-17 |
| <b>ERR,ESR,ANALYSIS,REPORT,EVENT</b> | 11-18 |
| ■ Explanation Of Command             | 11-18 |
| ■ Command                            | 11-18 |
| ■ Completion Message                 | 11-18 |
| ■ Denial Message                     | 11-18 |
| ■ Autonomous Message                 | 11-18 |
| ■ Explanation Of Parameters          | 11-19 |
| <b>ERR,ESR,CCB,TN,EVENT,COND</b>     | 11-21 |
| ■ Explanation Of Command             | 11-21 |
| ■ Command                            | 11-21 |
| ■ Completion Message                 | 11-21 |
| ■ Denial Message                     | 11-21 |
| ■ Autonomous Message                 | 11-21 |
| ■ Explanation Of Parameters          | 11-22 |
| <b>ERR,ESR,CCI,TN,EVENT,COND</b>     | 11-23 |
| ■ Explanation Of Command             | 11-23 |
| ■ Command                            | 11-23 |
| ■ Completion Message                 | 11-23 |
| ■ Denial Message                     | 11-23 |
| ■ Autonomous Message                 | 11-23 |
| ■ Explanation Of Parameters          | 11-24 |
| <b>ERR,ESR,CCNI,TN,EVENT,COND</b>    | 11-26 |
| ■ Explanation Of Command             | 11-26 |
| ■ Command                            | 11-26 |
| ■ Completion Message                 | 11-26 |
| ■ Denial Message                     | 11-26 |

---

## Contents

|                                              |       |
|----------------------------------------------|-------|
| ■ Autonomous Message                         | 11-26 |
| ■ Explanation Of Parameters                  | 11-27 |
| <b>ERR,ESR,ETSI,TN,EVENT,COND</b>            | 11-33 |
| ■ Explanation Of Command                     | 11-33 |
| ■ Command                                    | 11-33 |
| ■ Completion Message                         | 11-33 |
| ■ Denial Message                             | 11-33 |
| ■ Autonomous Message                         | 11-33 |
| ■ Explanation Of Parameters                  | 11-34 |
| <b>ERR,ESR,MC,MP,CI,TN</b>                   | 11-36 |
| ■ Explanation Of Command                     | 11-36 |
| ■ Command                                    | 11-36 |
| ■ Completion Message                         | 11-36 |
| ■ Denial Message                             | 11-36 |
| ■ Autonomous Message                         | 11-36 |
| ■ Explanation Of Parameters                  | 11-37 |
| <b>ERR,ESR,MC,MP,TN,EVENT,COND,CI,BX,EBX</b> | 11-38 |
| ■ Explanation Of Command                     | 11-38 |
| ■ Command                                    | 11-38 |
| ■ Completion Message                         | 11-38 |
| ■ Denial Message                             | 11-38 |
| ■ Autonomous Message                         | 11-38 |
| ■ Explanation Of Parameters                  | 11-39 |
| <b>ERR,ESR,NPC,SIDE,TN,EVENT,COND</b>        | 11-42 |
| ■ Explanation Of Command                     | 11-42 |
| ■ Command                                    | 11-42 |
| ■ Completion Message                         | 11-42 |
| ■ Denial Message                             | 11-42 |
| ■ Autonomous Message                         | 11-42 |
| ■ Nonhierarchical                            | 11-42 |
| ■ Hierarchical                               | 11-43 |
| ■ Explanation Of Parameters                  | 11-43 |
| <b>ERR,ESR,NPC,TN,EVENT,COND</b>             | 11-48 |
| ■ Explanation Of Command                     | 11-48 |
| ■ Command                                    | 11-48 |
| ■ Completion Message                         | 11-48 |
| ■ Denial Message                             | 11-48 |

---

## Contents

|                                               |       |
|-----------------------------------------------|-------|
| ■ Autonomous Message                          | 11-48 |
| ■ Nonhierarchical                             | 11-48 |
| ■ Hierarchical                                | 11-49 |
| ■ Explanation Of Parameters                   | 11-49 |
| <b>ERR,ESR,SYNC,TLI,SSP,TN,EVENT,NPC,COND</b> | 11-53 |
| ■ Explanation Of Command                      | 11-53 |
| ■ Command                                     | 11-53 |
| ■ Completion Message                          | 11-53 |
| ■ Denial Message                              | 11-53 |
| ■ Autonomous Message                          | 11-53 |
| ■ Nonhierarchical                             | 11-53 |
| ■ Hierarchical                                | 11-54 |
| ■ Explanation Of Parameters                   | 11-54 |
| <b>ERR,ESR,SYNC,TLI,TN,EVENT,COND</b>         | 11-59 |
| ■ Explanation Of Command                      | 11-59 |
| ■ Command                                     | 11-59 |
| ■ Completion Message                          | 11-59 |
| ■ Denial Message                              | 11-59 |
| ■ Autonomous Message                          | 11-59 |
| ■ Explanation Of Parameters                   | 11-60 |
| <b>ERR,ESR,SYNC,TN,EVENT,COND</b>             | 11-63 |
| ■ Explanation Of Command                      | 11-63 |
| ■ Command                                     | 11-63 |
| ■ Completion Message                          | 11-63 |
| ■ Denial Message                              | 11-63 |
| ■ Autonomous Message                          | 11-63 |
| ■ Explanation Of Parameters                   | 11-64 |
| <b>ERR,ESR,TSI,TN,EVENT,COND</b>              | 11-68 |
| ■ Explanation Of Command                      | 11-68 |
| ■ Command                                     | 11-68 |
| ■ Completion Message                          | 11-68 |
| ■ Denial Message                              | 11-68 |
| ■ Autonomous Message                          | 11-68 |
| ■ Explanation Of Parameters                   | 11-69 |
| <b>ERR,ESR,UNIT,DSPI,TN,EVENT,COND</b>        | 11-72 |
| ■ Explanation Of Command                      | 11-72 |
| ■ Command                                     | 11-72 |

---

## Contents

|                                          |       |
|------------------------------------------|-------|
| ■ Completion Message                     | 11-72 |
| ■ Denial Message                         | 11-72 |
| ■ Autonomous Message                     | 11-72 |
| ■ Explanation Of Parameters              | 11-73 |
| <b>ERR,ESR,UNIT,FC,TN,EVENT,COND</b>     | 11-75 |
| ■ Explanation Of Command                 | 11-75 |
| ■ Command                                | 11-75 |
| ■ Completion Message                     | 11-75 |
| ■ Denial Message                         | 11-75 |
| ■ Autonomous Message                     | 11-75 |
| ■ Explanation Of Parameters              | 11-76 |
| <b>ERR,ESR,UNIT,FTMI,TN,EVENT,COND</b>   | 11-78 |
| ■ Explanation Of Command                 | 11-78 |
| ■ Command                                | 11-78 |
| ■ Completion Message                     | 11-78 |
| ■ Denial Message                         | 11-78 |
| ■ Autonomous Message                     | 11-78 |
| ■ Explanation Of Parameters              | 11-79 |
| <b>ERR,ESR,UNIT,UC,UBX,TN,EVENT,COND</b> | 11-81 |
| ■ Explanation Of Command                 | 11-81 |
| ■ Command                                | 11-81 |
| ■ Completion Message                     | 11-81 |
| ■ Denial Message                         | 11-81 |
| ■ Autonomous Message                     | 11-81 |
| ■ Explanation Of Parameters              | 11-82 |
| <b>ERR,HARDWARE,TN,COND,EVENT,ACTION</b> | 11-84 |
| ■ Explanation Of Command                 | 11-84 |
| ■ Command                                | 11-84 |
| ■ Completion Message                     | 11-84 |
| ■ Denial Message                         | 11-84 |
| ■ Autonomous Message                     | 11-84 |
| ■ Explanation Of Parameters              | 11-85 |
| <b>ERR,LINK,TN,STATUS</b>                | 11-88 |
| ■ Explanation Of Command                 | 11-88 |
| ■ Command                                | 11-88 |
| ■ Completion Message                     | 11-88 |
| ■ Denial Message                         | 11-88 |

---

## Contents

|                                               |        |
|-----------------------------------------------|--------|
| ■ Autonomous Message                          | 11-88  |
| ■ Explanation Of Parameters                   | 11-89  |
| <b>ERR,MSG,TO,LOG,DISCARDED</b>               | 11-91  |
| ■ Explanation Of Command                      | 11-91  |
| ■ Command                                     | 11-91  |
| ■ Completion Message                          | 11-91  |
| ■ Denial Message                              | 11-91  |
| ■ Autonomous Message                          | 11-91  |
| ■ Explanation Of Parameters                   | 11-92  |
| <b>ERR,PMEM,SMEM,TN,EVENT,COND</b>            | 11-93  |
| ■ Explanation Of Command                      | 11-93  |
| ■ Command                                     | 11-93  |
| ■ Completion Message                          | 11-93  |
| ■ Denial Message                              | 11-93  |
| ■ Autonomous Message                          | 11-93  |
| ■ Explanation Of Parameters                   | 11-94  |
| <b>ERR,PWR,PMC,PMA,DMA,MI,TN</b>              | 11-95  |
| ■ Explanation Of Command                      | 11-95  |
| ■ Command                                     | 11-95  |
| ■ Completion Message                          | 11-95  |
| ■ Denial Message                              | 11-95  |
| ■ Autonomous Message                          | 11-95  |
| ■ Explanation Of Parameters                   | 11-96  |
| <b>ERR,SOFTWARE,MC,ERROR,MID,TN,RC,ACTION</b> | 11-98  |
| ■ Explanation Of Command                      | 11-98  |
| ■ Command                                     | 11-98  |
| ■ Completion Message                          | 11-98  |
| ■ Denial Message                              | 11-98  |
| ■ Autonomous Message                          | 11-99  |
| ■ Explanation Of Parameters                   | 11-99  |
| <b>ERR,SYNC,MODE,FAST,HOLD,OVER,NORMAL</b>    | 11-102 |
| ■ Explanation Of Command                      | 11-102 |
| ■ Command                                     | 11-102 |
| ■ Completion Message                          | 11-102 |
| ■ Denial Message                              | 11-102 |
| ■ Autonomous Message                          | 11-102 |
| ■ Explanation Of Parameters                   | 11-103 |



---

## Contents

|                                            |        |
|--------------------------------------------|--------|
| <b>ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN</b> | 11-107 |
| ■ Explanation Of Command                   | 11-107 |
| ■ Command                                  | 11-107 |
| ■ Completion Message                       | 11-107 |
| ■ Denial Message                           | 11-107 |
| ■ Autonomous Message                       | 11-108 |
| ■ Nonhierarchical                          | 11-108 |
| ■ Hierarchical                             | 11-108 |
| ■ Explanation Of Parameters                | 11-108 |
| <b>ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN</b> | 11-112 |
| ■ Explanation Of Command                   | 11-112 |
| ■ Command                                  | 11-112 |
| ■ Completion Message                       | 11-112 |
| ■ Denial Message                           | 11-112 |
| ■ Autonomous Message                       | 11-112 |
| ■ Nonhierarchical                          | 11-112 |
| ■ Hierarchical                             | 11-113 |
| ■ Explanation Of Parameters                | 11-113 |
| <b>EXC,MACRO</b>                           | 11-117 |
| ■ Explanation Of Command                   | 11-117 |
| ■ Command                                  | 11-117 |
| ■ Completion Message                       | 11-117 |
| ■ Denial Message                           | 11-118 |
| ■ Autonomous Message                       | 11-118 |
| ■ Explanation Of Parameters                | 11-118 |



---

## **EBX — EXC**

---

## **EBX — EXC**

---

This section documents the commands **EBX** through **EXC**.

## **EBX,STARTUP,STF,ATP**

### **EXPANDED BUS EXTENDER STARTUP**

#### **Explanation Of Command**

This message reports that the expanded bus extender has initialized itself and has performed self-diagnostics. The results of these diagnostics are reported. For all tests passed, no action is required.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01272]

**EBX STARTUP {STF|ATP}**

### **Explanation Of Parameters**

---

**EBX** - Expanded bus extender

**STARTUP**

- Startup

Indicates initialization

**STF** - Some tests failed

**ATP** - All tests passed

## **ED,CRET,MAP,PIC**

### **CREATE PICTURE ALTERNATE MAP**

#### **Explanation Of Command**

This command takes a **PIC** (picture) of currently-implemented cross-connections and stores them in the **new map name**. **reference map name** is the name of the map that contains the desired list of cross-connections.

**one to seven characters long.**

Output from this command is sent only to the link on which the command was input.

#### **Command**

[I.19031]

**ED:FRM xy,SEQ ww:CRET,MAP <new map name>\  
,PIC <reference map name>!**

#### **Completion Message**

#### **Nonhierarchical**

[O.19031]

**M hh:mm:ss xy,ww n[vv] ED CRET MAP <new map name> \  
PIC <reference map name>  
[ NPC [s]abc] COND kk COMPL**

## **Hierarchical**

---

[O.19031]

**M** hh:mm:ss xy,ww n[vv] **ED** **CRET** **MAP** <new map name> \  
**PIC** <reference map name> [ **NPC** uvmnp] **COND** kk **COMPL**

## **Denial Message**

---

[O.19031.01]

**M** hh:mm:ss xy,ww n[vv] **ED** **CRET** **MAP** <new map name> \  
**PIC** <reference map name> **COND** cc **DNY**

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**CRET** - Create

**MAP** - Map

new map name

- The new alternate map to be created by this message

"new map name" is a string of capitalized alphanumeric characters.  
The first character must be an alphabetic character. The maximum  
length of a map name is seven characters.

**PIC** - Picture

reference map name

- The existing alternate map

"reference map name" is a string of capitalized alphanumeric characters.  
The first character must be an alphabetic character. The maximum  
length of a map name is seven characters.

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

This number identifies the first NPC that contains either a  
non-two-way, two-point cross-connection, or a cross-connection with a  
termination on an NPC not found in the reference alternate map.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |



| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1952  | 2081-2112  | 2241-2272  | 2401-2432  |
| 1961-1992  | 2121-2152  | 2281-2312  | 2441-2472  |
| 2001-2032  | 2161-2192  | 2321-2352  | 2481-2512  |
| 2041-2072  | 2201-2232  | 2361-2392  | 2521-2552  |

**uvmnp** - Hierarchical NPC number

This number identifies the first NPC that contains either a non-two-way, two-point cross-connection, or a cross-connection with a termination on an NPC not found in reference alternate map.

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

**cc** - Hexadecimal condition code

**cc**    *Explanation*

|    |                                                 |
|----|-------------------------------------------------|
| 00 | No conditions                                   |
| 60 | User macro/map space is full                    |
| 61 | System macro/map space is full                  |
| 62 | File is being accessed                          |
| 63 | File already exists                             |
| 70 | Some circuits not activated,cleared or pictured |
| 71 | The reference map does not exist                |
| D5 | No user is logged in on the link/vc             |

## **ED,MACRO,MAP**

### **CREATE OR EDIT A MACRO OR MAP**

#### **Explanation Of Command**

This command is dual purpose. It can be used to create a new macro or alternate map or to edit an existing macro or map. A macro is a collection of DACS II commands that can be executed as a group by a single command. A map is a collection of DACS II cross-connect commands that can be activated as a group by a single command to create a new cross-connect map.

Once a macro has been created, and is free of errors, it can be executed repeatedly. For commonly used command sequences this saves a lot of typing, speeds execution, and assures the user of repeatability. Similarly a map, once created, can be repeatedly activated. However, prior to each activation of a map the information specified in the map must be edited to create a new map. On the other hand the information in a macro can be changed, without editing, when the command is executed. The new information is inserted into the command line and replaces information within the macro at execution time.

The commands used in the macro, the macro commands, will always be executed in the order they are listed in the macro. However, because the commands can use variables as well as constants, the information within the macro can vary with each execution. A command within the macro that addresses a given NPC can be made to address a different NPC the next time the macro is executed. This is done by replacing the constant, representing the NPC number, listed in the macro command with a variable. Many other command parameters can be changed from execution to execution by the use of variables in the macro commands.

Consider the private macro named "DEMO" below. Some elements of these macro commands have been omitted in order to focus on the use of variables.

```
TDIS::FROM 00101,TO 00301,STOP!OK
TCON::FROM 00101,TO 00501!OK
TCON::FROM 00102,TO 00502!OK
TCON::FROM 00103,TO 00503!OK
UTL::QRY,CMAP 001!OK
```

This macro will always disconnect, connect, and query the same NPCs. If DEMO were written as follows, using variables, the NPCs affected could be specified each time the macro was executed without having to reenter the macro. A macro written in this manner is referred to as a universal macro. This particular macro would be even more universal if the channel numbers were represented by variables.

```
TDIS::FROM #0101,TO 00301,STOP!OK
TCON::FROM #0101,TO #0201!OK
TCON::FROM #0102,TO #0202!OK
TCON::FROM #0103,TO #0203!OK
UTL::QRY,CMAP #01!OK
```

Variables have replaced some of the constants in macro DEMO. NPC number 001 has been replaced with variable #01 and NPC number 005 has been replaced with variable #02. The numbers in these variable names refer to the position of the replacement in the command used to execute the macro. To execute this macro replacing #01 with 020 and #02 with 040 we would enter the following command.

```
EXC::MACRO DEMO,(020,040)!
```

The variables used in the macro commands of macro DEMO are replaced, upon execution of this command, by parameters included in the command. The first parameter replaces variable #01 and the second parameter replaces #02. After variable replacement macro DEMO would look as follows.

```
TDIS::FROM 02001,TO 00301,STOP!OK
TCON::FROM 02001,TO 04001!OK
TCON::FROM 02002,TO 04002!OK
TCON::FROM 02003,TO 04003!OK
UTL::QRY,CMAP 020!OK
```

Variables may be used for any macro command parameter except action verbs and punctuation. The number of variables used in a macro is limited to 10. A variable may be used wherever its value is needed, that is, it is not restricted to an NPC number just because it was used for that purpose at some other point in the macro. If the user wished to address NPC number 003 and channel 003 the variable #01 with value 003 could be used for both the NPC number and the channel number. The macro command would look as follows.

TCON::FROM #01#01,...!

At execution time this would translate to the following.

TCON::FROM 003003,...!

 **NOTE:**

To represent hierarchical NPC numbers a variable must be used for each part (unit, module, NPC) of the NPC number. A macro expecting a hierarchical format parameter should not be executed with a nonhierarchical format parameter.

NPC 01101 would be represented in a macro command with variables #01, #02, and #03 as follows.

UTL::QRY,CMAP #01#02#03!



**WARNING:**

*Any command prompting "Are You Sure?" which is accepted as a macro command will always have the "No" answer to the question.*

The system responds with "OK" when the ED::MAP command is entered.

The system responds with LINE and SAVE messages, as shown below, when the ED-MACRO command is entered.

[O.19071]  
... **LINE** <line pointer> **TOTAL** <line total> **COMPL**

[O.19081]

... SAVE <macro name> SPACE sss USED uuu COMPL

A macro session is the period between entering the command to create a macro and entering the command to exit the macro. A line pointer is maintained by the system during the session to mark the position of the current line within the macro. As a line is added to the macro the line pointer moves down a line; tracking the position of the current line. The LINE command is used to determine the current line pointer value and the total number of lines currently in the macro.

The SAVE command is used during a macro session to save the current set of macro commands in the macro represented in the message by "macro name." The macro name is chosen by the user.

The completion messages correspond to the frame response when END or QTEND is entered after completion of editing or creating a macro. The END command saves all the changes before ending (exiting) a macro session. The QTEND command ends the macro session without saving the changes.

Output from this command is sent only to the link on which the command was input.

### **Command**

---

[I.19001]

ED:FRM xy,SEQ ww:{MACRO <macro name>|MAP <map name>}!

### **Completion Message**

---

[O.19001]

M hh:mm:ss xy,ww n[vv] ED {MACRO <macro name>|MAP <map name>}\  
[ COND cc] COMPL

[O.19002]

M hh:mm:ss xy,ww n[vv] ED {MACRO <macro name>|MAP <map name>} \  
QTEND[ COND cc] COMPL

### **Denial Message**

---

[O.19001.01]

M hh:mm:ss xy,ww n[vv] ED {MACRO <macro name>|MAP <map name>} \  
COND cc DNY

## **Autonomous Message**

---

[O.19002]

**I** hh:mm:ss xy,ww n[vv] **ED** {**MACRO** <macro name>|**MAP** <map name>} \  
**QTEND**[ **COND** cc] **COMPL**

## **Explanation Of Parameters**

---

**MACRO** - Macro

### **macro name**

- Macro name (seven characters maximum length)

The name of a collection of DACS II commands executed as a group.

A macro name is a string of capitalized alphanumeric characters. There are two type of macros; public and private. A private macros is created by a user in space allocated to the user by the system administrator. Only the user that created it can execute or read (LIST) a private macro. A public macro is created by the system administrator and is executable and readable by all users. A public macro name must start with the letter "P". A private macro name must not start with the letter "P".

**MAP** - Map

### **map name**

- Map name (seven characters maximum length)

The name of a collection of DACS II cross-connect commands that can be activated as a group to produce a new set of cross-connections (a new cross-connect map).

A map name is a string of capitalized alphanumeric characters.

**QTEND** - Quit end

Quit to end a macro or map session without saving any changes to the macro or map.

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b>                                         |
|-----------|------------------------------------------------------------|
| 00        | No conditions                                              |
| 00        | No conditions                                              |
| 60        | User macro/map space is full                               |
| 60        | User macro/map space is full                               |
| 61        | System macro/map space is full                             |
| 62        | File is being accessed                                     |
| 65        | Command invalid while backup in progress                   |
| 65        | Command invalid while backup in progress                   |
| 66        | Map/macro file write deferred until backup is completed    |
| 67        | User logged off during session                             |
| 68        | Incorrect language/addressing mode                         |
| 6F        | The session is terminated due to maintenance operation     |
| 6F        | The session is terminated due to maintenance operation     |
| 7C        | Logical conflicts found in the map                         |
| 7D        | Can't start new session - previous session still verifying |
| D0        | Command is Frame administrator (DAX) only.                 |
| D5        | No user is logged in on the link/vc                        |
| 6E        | No edit session active                                     |
| 6C        | File is empty                                              |
| 6C        | File is empty                                              |

## **EMTC,STARTUP,STF,ATP**

### **EXPANDED MAINTENANCE STARTUP**

#### **Explanation Of Command**

This message reports that the expanded maintenance circuit has initialized itself and has performed self-diagnostics. The results of these diagnostics are reported. For all tests passed, no action is required.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01282]

**EMTC STARTUP {STF|ATP}**



### **Explanation Of Parameters**

---

**EMTC** - Expanded maintenance circuit

**STF** - Some tests failed

**ATP** - All tests passed

## **ERR,CMD,ABT,TN,STOPPED**

### **INPUT DENIAL**

#### **Explanation Of Command**

This message is output by DACS II when a task indicated by the transaction number has been autonomously aborted.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01121]

A hh:mm:ss xy,ww    ERR CMD ABT [TN abcd]    e LN MSG:  
First 70 characters of input message.  
Remaining text of input message STOPPED

### **Explanation Of Parameters**

---

**ERR**    - Error recovery

**CMD**    - Command

**ABT**    - Abort

**TN**     - Transaction

**abcd**   - Transaction number

**e**      - Number of lines in the message

## **ERR,ESR,ANALYSIS,REPORT,EVENT**

### **ERROR RECOVERY ESR ANALYSIS REPORT**

#### **Explanation Of Command**

This message outputs a list of circuit packs associated with a series of alarm messages identified by the EVENT number. One of the circuit packs listed may be at fault. The most likely faulty pack is at the top of the list. Only the first circuit pack on the list will be removed. This message will not be output if a single circuit pack is implicated.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01391]

```
I hh:mm:ss xy,ww ERR ESR ANALYSIS REPORT EVENT eeee 4 LN MSG:
<action> <circuit identifier>
<action> <circuit identifier>
<action> <circuit identifier> COMPL
```

### **Explanation Of Parameters**

---

**ERR** - Error recovery

**ESR** - Error source register

#### **ANALYSIS**

- Analysis

**REPORT** - Report

**EVENT** - Event

**eeee** - Event number

The event number can be specified in UTL::QRY, ERR to retrieve the contents of the DACS II error recovery log file which contains the data for this error recovery event.

**action** - Identifies autonomous action attempted on the circuit pack. Available actions are

*action Explanation*

RMV Request was made to remove circuit pack from service and run a diagnostic

--- Pack is listed for information only

**circuit identifier**

- Circuit pack type and identification.

The available circuit identifiers are listed below:

circuit identifier

SYNC s  
SYNC s TLI m  
CCNI s  
CCB sf  
TSI sft  
CCI s  
ETSI sqq  
BTS s  
UC [q]q  
UNIT [q]q UBX  
UNIT [q]q FC sb  
UNIT [q]q FTMI b  
UNIT [q]q DSPI  
UNIT [q]q MXR n DEV devc  
UNIT [q]q MIU I  
UNIT [q]q FLI d  
UNIT [q]q FMT k  
UNIT [q]q MMFG y  
NPC [s]abc[-[t]def][SIDE s]  
NPC uvmnp[-wxkqr][SIDE s]

## **ERR,ESR,CCB,TN,EVENT,COND**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This message indicates that error recovery was called to handle an error occurring in the cross-connect buffer.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01351]

```
I hh:mm:ss xy,ww ERR [ESR] CCB sf TN dddd EVENT eeee \
2 LN MSG:
<error analysis data bytes> COND cc COMPL
```

## Explanation Of Parameters

---

- ERR** - Error recovery
- ESR** - Error Source Register  
The ESR keyword is not output if the register contents cannot be read.
- CCB** - Cross-connect Buffer
- s** - Cross-connect side (0 or 1)
- f** - Unit (1 through 6)
- TN** - Transaction
- dddd** - Transaction number
- EVENT** - Event
- eeee** - Event number

## error analysis data bytes

- Data used to analyze the cause of an error.  
Eight bytes are output. These bytes are labeled "byte 0", "byte 1",  
etc, below.

- byte 0** - ESR0 (Error Source Register 0) in the CCB  
**byte 1** - ESR1 (Error Source Register 1) in the CCB  
**byte 2** - ESR2 (Error Source Register 2) in the CCB  
**byte 3** - CCNI ESR0  
**byte 4** - CCNI ESR1  
**byte 5** - CCNI ESR2  
**byte 6** - CCNI ESR3  
**byte 7** - CCNI ESR4

- cc** - Hexadecimal condition code

### **cc**    *Explanation*

- A0**    CCB packid error, wrong pack, can't read pack  
**A1**    CCB sync pulse error  
**A2**    CCB clock error  
**A3**    CCB input port alarm error  
**A4**    CCB zero bit is stuck at 1  
**A5**    Corresponding CCNI bit is stuck



## **ERR,ESR,CCI,TN,EVENT,COND**

### **ERROR RECOVERY CCI**

#### **Explanation Of Command**

This message indicates that DACS II detected an alarm occurring in the clock and control interface.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01354]

```
I hh:mm:ss xy,ww ERR[ESR] CCI s \
TN dddd EVENT eeee 2 LN MSG
wd01 wd02 wd03 wd04 wd05 wd06 wd07 wd08 wd09 wd10 wd11 \
wd12 COND cc COMPL
```

### **Explanation Of Parameters**

---

**I** Information

**ERR** - Error recovery

**ESR** - Error source register

The ESR keyword is not output if the register contents cannot be read.

**CCI** - Clock control interface

**s** - Cross-connect side number (0 or 1)

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified in UTL::QRY,ERR to retrieve the content of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**EVENT** - Event

**eeee** - Event number

The event number can be specified in UTL::QRY, ERR to retrieve the content of the DACS II error recovery log file which contains the data of this error recovery event.

**wd01,**  
**wd02,**

...,

**wd12** - Word 1 through 12

0 to 12 words of hexadecimal raw error data for internal use. Each word is four hexadecimal digits.

*wdx*    *Explanation*

|      |                                                         |
|------|---------------------------------------------------------|
| wd01 | System Status Register                                  |
| wd02 | Clock Control Interface (CCI) Status Register           |
| wd03 | CCI Extended Time Slot Interchange (ETSI) ESR0 Register |
| wd04 | CCI ETSI ESR1 Register                                  |
| wd05 | CCI ETSI ESR2 Register                                  |
| wd06 | CCI ETSI ESR3 Register                                  |
| wd07 | CCI Status Bus Register                                 |
| wd08 | CCI Exercise Register                                   |
| wd09 | CCI System Mask Register                                |
| wd10 | CCI Mask Register                                       |
| wd11 | CCI ETSI Mask Register                                  |
| wd12 | Not used (= 0000)                                       |

**COND** - Condition

**cc** - Hexadecimal condition code

**cc**    *Explanation*

|           |                                                         |
|-----------|---------------------------------------------------------|
| <b>01</b> | CCI pack is not present                                 |
| <b>02</b> | Can't communicate to CCI pack(incorrect version number) |
| <b>03</b> | CCI pack's summary is set but has no errors             |
| <b>04</b> | CCIERR bit is stuck in system status reg                |
| <b>05</b> | TSIERR bit is stuck in system status reg                |
| <b>06</b> | PUERR bit is stuck in system status reg                 |
| <b>07</b> | Bus Terminator pack is not present                      |
| <b>08</b> | The 32 MHz clock is out of lock                         |
| <b>09</b> | CCI 240 sync is misaligned with frame sync              |
| <b>0A</b> | CCI loss of 240 Frame Sync                              |
| <b>0B</b> | CCI loss of 8 KHz Frame Sync                            |
| <b>0C</b> | CCI detected Address Parity error                       |
| <b>0D</b> | CCI detected low byte data parity error                 |
| <b>0E</b> | CCI detected high byte data parity error                |
| <b>0F</b> | CCI -5.2 power supply has failed                        |
| <b>10</b> | CCI detected Bus Status Parity error                    |
| <b>11</b> | CCI Peripheral Unit Alarm                               |
| <b>12</b> | SYNC summary is set on CCI circuit pack                 |

## **ERR,ESR,CCNI,TN,EVENT,COND**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This message indicates that DACS II detected an alarm occurring in the cross-connect network interface).

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01352]

```
I hh:mm:ss xy,ww ERR [ESR] CCNI s \
TN dddd EVENT eeee 2 LN MSG:
<reg0> <reg1> <reg2> <reg3> <reg4> \
<emr0> <emr1> <emr2> <emr3> <emr4> COND cc COMPL
```

## Explanation Of Parameters

I Information

**ERR** - Error recovery

**ESR** - Error Status Register.

The ESR keyword is not output if the register contents cannot be read.

**CCNI** - Cross-connect network interface

**s** - Cross-connect side (0 or 1)

**TN** - Transaction

**dddd** - Transaction number

**EVENT** - Event

**eeee** - Event number

**regn** - Device register n (n = 0 through 4)

A bit set to "1" in these registers indicates the alarming circuit pack or a parity error.

### CCNI s Error Source Register Bit Definitions

**reg0** - Error Source Register 0

| Bit | Condition                                  |
|-----|--------------------------------------------|
| 15  | Time Slot Interchange (TSI) 43 is alarming |
| 14  | TSI 33 is alarming                         |
| 13  | TSI 23 is alarming                         |
| 12  | TSI 13 is alarming                         |
| 11  | TSI 62 is alarming                         |
| 10  | TSI 52 is alarming                         |
| 09  | TSI 42 is alarming                         |
| 08  | TSI 32 is alarming                         |
| 07  | TSI 22 is alarming                         |
| 06  | TSI 12 is alarming                         |
| 05  | TSI 61 is alarming                         |
| 04  | TSI 51 is alarming                         |
| 03  | TSI 41 is alarming                         |
| 02  | TSI 31 is alarming                         |
| 01  | TSI 21 is alarming                         |
| 00  | TSI 11 is alarming                         |

**reg1** - Error Source Register 1

| Bit | Condition          |
|-----|--------------------|
| 15  | TSI 26 is alarming |
| 14  | TSI 16 is alarming |
| 13  | TSI 65 is alarming |
| 12  | TSI 55 is alarming |
| 11  | TSI 45 is alarming |
| 10  | TSI 35 is alarming |
| 09  | TSI 25 is alarming |
| 08  | TSI 15 is alarming |
| 07  | TSI 64 is alarming |
| 06  | TSI 54 is alarming |
| 05  | TSI 44 is alarming |
| 04  | TSI 34 is alarming |
| 03  | TSI 24 is alarming |
| 02  | TSI 14 is alarming |
| 01  | TSI 63 is alarming |
| 00  | TSI 53 is alarming |

**reg2** - Error Source Register 2

| Bit | Condition                                                 |
|-----|-----------------------------------------------------------|
| 15  | Facility Terminating Module (FTM) 4 of Unit 3 is alarming |
| 14  | FTM 3 of Unit 3 is alarming                               |
| 13  | FTM 2 of Unit 3 is alarming                               |
| 12  | FTM 1 of Unit 3 is alarming                               |
| 11  | FTM 4 of Unit 2 is alarming                               |
| 10  | FTM 3 of Unit 2 is alarming                               |
| 09  | FTM 2 of Unit 2 is alarming                               |
| 08  | FTM 1 of Unit 2 is alarming                               |
| 07  | FTM 4 of Unit 1 is alarming                               |
| 06  | FTM 3 of Unit 1 is alarming                               |
| 05  | FTM 2 of Unit 1 is alarming                               |
| 04  | FTM 1 of Unit 1 is alarming                               |
| 03  | TSI 66 is alarming                                        |
| 02  | TSI 56 is alarming                                        |
| 01  | TSI 46 is alarming                                        |
| 00  | TSI 36 is alarming                                        |

**reg3** - Error Source Register 3

| Bit | Condition                                |
|-----|------------------------------------------|
| 15  | Cross-Connect Buffer (CCB) 4 is alarming |
| 14  | CCB 3 is alarming                        |
| 13  | CCB 2 is alarming                        |
| 12  | CCB 1 is alarming                        |
| 11  | FTM 4 of Unit 6 is alarming              |
| 10  | FTM 3 of Unit 6 is alarming              |
| 09  | FTM 2 of Unit 6 is alarming              |
| 08  | FTM 1 of Unit 6 is alarming              |
| 07  | FTM 4 of Unit 5 is alarming              |
| 06  | FTM 3 of Unit 5 is alarming              |
| 05  | FTM 2 of Unit 5 is alarming              |
| 04  | FTM 1 of Unit 5 is alarming              |
| 03  | FTM 4 of Unit 4 is alarming              |
| 02  | FTM 3 of Unit 4 is alarming              |
| 01  | FTM 2 of Unit 4 is alarming              |
| 00  | FTM 1 of Unit 4 is alarming              |

**reg4** - Error Source Register 4

| Bit   | Condition                                                             |
|-------|-----------------------------------------------------------------------|
| 15-08 | Not used                                                              |
| 07    | Cross-Connect Network Interface (CCNI) autonomous switch enable error |
| 06    | CCNI high byte data parity error                                      |
| 05    | CCNI low byte data parity error                                       |
| 04    | CCNI address bus parity error                                         |
| 03    | Synchronizer (SYNC) is alarming                                       |
| 02    | Cross-Connect Buffer (CCB) 6 is alarming                              |
| 01    | CCB 5 is alarming                                                     |

**emrn** - Error Mask Register n

A bit set to "1" in these registers indicates the alarming circuit pack or a parity error.

# CCNI s Error Mask Register Bit Definitions

## **emr0** - Error Mask Register 0

| Bit | Condition                                             |
|-----|-------------------------------------------------------|
| 15  | Errors from Time Slot Interchange (TSI) 43 are masked |
| 14  | Errors from TSI 33 are masked                         |
| 13  | Errors from TSI 23 are masked                         |
| 12  | Errors from TSI 13 are masked                         |
| 11  | Errors from TSI 62 are masked                         |
| 10  | Errors from TSI 52 are masked                         |
| 09  | Errors from TSI 42 are masked                         |
| 08  | Errors from TSI 32 are masked                         |
| 07  | Errors from TSI 22 are masked                         |
| 06  | Errors from TSI 12 are masked                         |
| 05  | Errors from TSI 61 are masked                         |
| 04  | Errors from TSI 51 are masked                         |
| 03  | Errors from TSI 41 are masked                         |
| 02  | Errors from TSI 31 are masked                         |
| 01  | Errors from TSI 21 are masked                         |
| 00  | Errors from TSI 11 are masked                         |

## **emr1** - Error Mask Register 1

| Bit | Condition                     |
|-----|-------------------------------|
| 15  | Errors from TSI 26 are masked |
| 14  | Errors from TSI 16 are masked |
| 13  | Errors from TSI 65 are masked |
| 12  | Errors from TSI 55 are masked |
| 11  | Errors from TSI 45 are masked |
| 10  | Errors from TSI 35 are masked |
| 09  | Errors from TSI 25 are masked |
| 08  | Errors from TSI 15 are masked |
| 07  | Errors from TSI 64 are masked |
| 06  | Errors from TSI 54 are masked |
| 05  | Errors from TSI 44 are masked |
| 04  | Errors from TSI 34 are masked |
| 03  | Errors from TSI 24 are masked |
| 02  | Errors from TSI 14 are masked |
| 01  | Errors from TSI 63 are masked |
| 00  | Errors from TSI 53 are masked |



**emr2** - Error Mask Register 2

| Bit | Condition                                                            |
|-----|----------------------------------------------------------------------|
| 15  | Errors from Facility Terminating Module (FTM) 4 of Unit 3 are masked |
| 14  | Errors from FTM 3 of Unit 3 are masked                               |
| 13  | Errors from FTM 2 of Unit 3 are masked                               |
| 12  | Errors from FTM 1 of Unit 3 are masked                               |
| 11  | Errors from FTM 4 of Unit 2 are masked                               |
| 10  | Errors from FTM 3 of Unit 2 are masked                               |
| 09  | Errors from FTM 2 of Unit 2 are masked                               |
| 08  | Errors from FTM 1 of Unit 2 are masked                               |
| 07  | Errors from FTM 4 of Unit 1 are masked                               |
| 06  | Errors from FTM 3 of Unit 1 are masked                               |
| 05  | Errors from FTM 2 of Unit 1 are masked                               |
| 04  | Errors from FTM 1 of Unit 1 are masked                               |
| 03  | Errors from TSI 66 are masked                                        |
| 02  | Errors from TSI 56 are masked                                        |
| 01  | Errors from TSI 46 are masked                                        |
| 00  | Errors from TSI 36 are masked                                        |

**emr3** - Error Mask Register 3

| Bit | Condition                                            |
|-----|------------------------------------------------------|
| 15  | Errors from Cross-Connect Buffer (CCB) 04 are masked |
| 14  | Errors from CCB 03 are masked                        |
| 13  | Errors from CCB 02 are masked                        |
| 12  | Errors from CCB 01 are masked                        |
| 11  | Errors from FTM 4 of Unit 6 are masked               |
| 10  | Errors from FTM 3 of Unit 6 are masked               |
| 09  | Errors from FTM 2 of Unit 6 are masked               |
| 08  | Errors from FTM 1 of Unit 6 are masked               |
| 07  | Errors from FTM 4 of Unit 5 are masked               |
| 06  | Errors from FTM 3 of Unit 5 are masked               |
| 05  | Errors from FTM 2 of Unit 5 are masked               |
| 04  | Errors from FTM 1 of Unit 5 are masked               |
| 03  | Errors from FTM 4 of Unit 4 are masked               |
| 02  | Errors from FTM 3 of Unit 4 are masked               |
| 01  | Errors from FTM 2 of Unit 4 are masked               |
| 00  | Errors from FTM 1 of Unit 4 are masked               |

**emr4** - Error Mask Register 4

| Bit   | Condition                                           |
|-------|-----------------------------------------------------|
| 15-08 | Not used                                            |
| 07    | Address parity errors are masked (ASEM)             |
| 06    | Parity error in the BSR register is masked          |
| 05    | High data byte parity error is masked               |
| 04    | Low data byte parity error is masked                |
| 03    | Address parity error (ADEM) is masked               |
| 02    | Synchronizer error summary bit is masked            |
| 01    | Errors from Cross-Connect Buffer (CCB) 6 are masked |
| 00    | Errors from CCB 5 are masked                        |

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>                                    |
|-----------|-------------------------------------------------------|
| <b>90</b> | CCNI access error (cannot access pack)                |
| <b>91</b> | High data byte bus parity error                       |
| <b>92</b> | Low data byte bus parity error                        |
| <b>93</b> | Address bus parity error                              |
| <b>94</b> | Autonomous switch enable error                        |
| <b>95</b> | Bus status register parity error                      |
| <b>96</b> | CCNI stuck register bit, summary set, no other alarms |

## **ERR,ESR,ETSI,TN,EVENT,COND**

### **ERROR RECOVERY ETSI**

#### **Explanation Of Command**

This message reports an alarm on a extended time slot interchanger.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01355]

```
I hh:mm:ss xy,ww ERR[ESR] ETSI sqq \
TN dddd EVENT eeee 2 LN MSG:
wd01 wd02 wd03 wd04 wd05 wd06 wd07 wd08 wd09 wd10 wd11 \
wd12 COND cc COMPL
```

## Explanation Of Parameters

**I** Information

**ERR** - Error recovery

**ESR** - Error source register

The ESR keyword is not output if the register contents cannot be read.

**ETSI** - Expanded time slot interchanger (ETSI)

**sqq** - ETSI identification

**s** - Cross-connect side (0 or 1)

**qq** - Unit number (01 through 16)

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified in UTL::QRY,ERR to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**EVENT** - Event

**eeee** - Event number

The event number can be specified in UTL::QRY, ERR to retrieve the contents of the DACS II error recovery log file which contains the data for this error recovery event.

**wd01,**

**wd02,**

...,

**wd12** - Word 1 through 12

0 to 12 words of four-digit hexadecimal raw error data for internal use.

**wd01** - Circuit Pack Summary Register

**wd02** - Receive MDX Status Register

**wd03** - Transmit MDX Status Register

**wd04** - Control RAM Status Register

**wd05** - Control RAM Port Alarm Register

**wd06** - Control RAM Data RAM Alarm Register

**wd07** - Receive MDX Mask Register

**wd08** - Transmit MDX Mask Register

**wd09** - CCI ETSI Error Source Register 0

**wd10** - CCI ETSI Error Source Register 1

**wd11** - CCI ETSI Error Source Register 2

**wd12** - CCI ETSI Error Source Register 3

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 20** ETSI pack is not present
- 21** Can't communicate to ETSI pack (incorrect version number)
- 22** ETSI pack's summary is set on CCI but has no errors
- 23** ETSI loss of 32.768 MHz clock
- 24** ETSI loss of 240 frame sync
- 25** ETSI Rcv MDX summary stuck bit
- 26** ETSI control RAM summary stuck bit
- 27** ETSI TX MDX summary stuck bit
- 28** ETSI loss of Vdd (3.3v) power
- 29** Peripheral unit port alarm (RCV MDX)
- 2A** Receive MDX data source time slot parity error
- 2B** Receive MDX sync error
- 2C** Receive MDX address parity error
- 2D** Receive MDX write data parity error
- 2F** Receive MDX can't be accessed (incorrect chip Id)
- 30** Transmit MDX data parity error
- 31** Transmit MDX data source time slot parity error
- 32** Transmit MDX sync error
- 33** Transmit MDX address parity error
- 34** Transmit MDX write data parity error
- 35** Transmit MDX can't be accessed (incorrect chip Id)
- 37** Control RAM parity error
- 38** Control RAM sync alarm
- 39** Control RAM port alarm
- 3A** Control RAM BIST flag is set
- 3B** Data RAM BIST flag is set
- 3C** Control RAM address parity error
- 3D** Control RAM write data parity error
- 3E** Control RAM device can't be accessed (incorrect chip Id)
- 3F** Control RAM circuit pack parity
- 40** Control RAM device is in reset state
- 41** Control RAM port alarm summary is stuck
- 42** ETSI TRD3ST exercise bit is set
- 43** ETSI ready high error on CCI
- 44** ETSI ready time-out error on CCI(ETSI can't be accessed)
- 45** Control RAM stuck bit error

## **ERR,ESR,MC,MP,CI,TN**

### **ERROR RECOVERY ERROR SOURCE REGISTER MAIN CONTROLLER**

#### **Explanation Of Command**

This message is a main controller error recovery output message. In addition to providing information for main controller error recovery, this message may also provide information for the following:

Main Processor  
Communications Interface

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01312]

I hh:mm:ss xy,ww ERR [ESR] MC [, {MP|CI}] TN dddd COMPL

### **Explanation Of Parameters**

---

|             |                                                                                          |
|-------------|------------------------------------------------------------------------------------------|
| <b>MC</b>   | - Main controller                                                                        |
| <b>MP</b>   | - Main processor                                                                         |
| <b>CI</b>   | - Communications interface                                                               |
| <b>ESR</b>  | - Error source register<br>The ESR is not output if the register content cannot be read. |
| <b>ERR</b>  | - Error recovery                                                                         |
| <b>TN</b>   | - Transaction                                                                            |
| <b>dddd</b> | - Transaction number                                                                     |

---

## **ERR,ESR,MC,MP,TN,EVENT,COND,CI,BX,EBX**

### **ERROR RECOVERY MC**

#### **Explanation Of Command**

This message is a main controller error recovery output message reporting circuit pack alarms. It also provides information for the:

- Main Processor
- Communications Interface
- Extended Communications Interface
- Secondary Storage Controller
- Bus Extender or Expanded Bus Extender Pack for MP
- Maintenance Pack or Expanded Maintenance Pack

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01311]

```
I hh:mm:ss xy,ww ERR[ESR] MC[MP] TN dddd EVENT eeee \
2 LN MSG:
abab bbbb cccc dddd eeee ffff COND cc COMPL
```



[O.01311]

**I** hh:mm:ss xy,ww **ERR**[ **ESR**] **MC**[ **CI**] **TN** dddd **EVENT** eeee \

**2 LN MSG:**

**COND** cc **COMPL**

[O.01311]

**I** hh:mm:ss xy,ww **ERR**[ **ESR**] **MC**[ {**BX**|**EBX**}] **TN** dddd **EVENT** eeee \

**2 LN MSG:**

abab bbbb cccc dddd eeee ffff **COND** cc **COMPL**

[O.01311]

**I** hh:mm:ss xy,ww **ERR**[ **ESR**] **MC**[ {**MTC**|**EMTC**}] **TN** dddd \

**EVENT** eeee **2 LN MSG:**

abab bbbb cccc dddd eeee ffff gggg hhhh iiii jjjj **COND** cc \

**COMPL**

### Explanation Of Parameters

**MC** - Main controller

**MP** - Main processor

**CI** - Communications interface

**BX** - Bus extender pack for MP

**MTC** - Maintenance pack

**EBX** - Expanded bus extender pack for MP

**EMTC** - Expanded maintenance pack

**ESR** - Error source register

This keyword is not output if the register content cannot be read.

**ERR** - Error recovery

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified in UTL::QRY,ERR to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**EVENT** - Event

**eeee** - Event number

The event number can be specified in UTL::QRY, ERR to retrieve the contents of the DACS II error recovery log file which contains the data for this error recovery event.

**abab, bbbb, ..., jjjj**

- Raw data

0 to 10 words of hexadecimal raw error data for internal use. The number of words output is dependent upon the error event. Each word consists of four hexadecimal digits.

**ERR ESR MC MP data words:**

abab bbbb cccc dddd eeee ffff

|             |                                           |
|-------------|-------------------------------------------|
| <b>abab</b> | - CPU Interrupt Holding Register contents |
| <b>bbbb</b> | - CPU Interrupt Mask Register contents    |
| <b>cccc</b> | - Version                                 |
| <b>dddd</b> | - Type                                    |
| <b>eeee</b> | - CPU RAM checksum word 1                 |
| <b>ffff</b> | - CPU RAM checksum word 2                 |

**ERR ESR MC {BX|EBX} data words:**

abab bbbb cccc dddd eeee ffff

|             |                                              |
|-------------|----------------------------------------------|
| <b>abab</b> | - CPU Interrupt Holding Register contents    |
| <b>bbbb</b> | - CPU Interrupt Mask Register contents       |
| <b>cccc</b> | - BX/EBX Interrupt Holding Register contents |
| <b>dddd</b> | - BX/EBX Interrupt Mask Register contents    |
| <b>eeee</b> | - BX/EBX type                                |
| <b>ffff</b> | - BX/EBX version                             |

**ERR ESR MC {MTC|EMTC} data words:**

abab bbbb cccc dddd eeee ffff gggg hhhh iiii jjjj

|             |                                                       |
|-------------|-------------------------------------------------------|
| <b>abab</b> | - CPU Interrupt Holding Register contents             |
| <b>bbbb</b> | - MTC/EMTC Error Source Register 0 contents           |
| <b>cccc</b> | - MTC/EMTC Error Source Register 1 contents           |
| <b>dddd</b> | - MTC/EMTC Error Source Register 2 contents           |
| <b>eeee</b> | - MTC/EMTC Error Source Register 3 contents           |
| <b>ffff</b> | - MTC/EMTC Error Mask Register 0 contents             |
| <b>gggg</b> | - MTC/EMTC Error Mask Register 1 contents             |
| <b>hhhh</b> | - MTC/EMTC Error Mask Register 2 contents             |
| <b>iiii</b> | - MTC/EMTC Error Mask Register 3 contents             |
| <b>jjjj</b> | - MTC/EMTC Interrupt Control/Sanity Register contents |

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                 |
|-----------|---------------------------------|
| <b>20</b> | BX Access Error                 |
| <b>21</b> | BX Ram Parity Over Low Byte     |
| <b>22</b> | BX Ram Parity Over High Byte    |
| <b>23</b> | Fan Bank Zero Error Flag        |
| <b>24</b> | D5 Spare Bit Error              |
| <b>25</b> | Fan Bank One Error Flag         |
| <b>26</b> | D7 Spare Bit Error              |
| <b>27</b> | BX stuck summary bit            |
| <b>28</b> | Unknown interrupt from BX       |
| <b>29</b> | Error from side 0 bus extension |
| <b>2A</b> | Error from side 1 bus extension |
| <b>2B</b> | Unknown interrupt from MTC      |
| <b>2C</b> | MTC stuck summary bit           |
| <b>2D</b> | Unused bits on MTC pack         |
| <b>2E</b> | Error due to unused bit         |
| <b>2F</b> | Error due unknown reasons       |
| <b>30</b> | Power Failure                   |
| <b>31</b> | Sanity Time-out                 |
| <b>32</b> | BX stuck CCNI summary bit       |
| <b>D0</b> | CPU RAM Parity error            |

## **ERR,ESR,NPC,SIDE,TN,EVENT,COND**

### **ERROR RECOVERY DSPU NPC**

#### **Explanation Of Command**

This message indicates an alarm was detected in a digital signal processing circuit; for example, the digital multipoint bridge.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

#### **Nonhierarchical**

[O.01371]

I hh:mm:ss xy,ww ERR[ ESR] NPC [s]abc-[[t]def] SIDE s \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data bytes>[ COND cc] COMPL

## Hierarchical

[O.01371]

**I** hh:mm:ss xy,ww **ERR**[ **ESR**] **NPC** uvmnp[-uvmqr] **SIDE** s \  
**TN** dddd **EVENT** eeee **2 LN MSG:**  
<error analysis data bytes>[ **COND** cc] **COMPL**

## Explanation Of Parameters

**I** Information

**ERR** - Error recovery

**ESR** - Error source register

The ESR keyword is not output if the register content can not be read.

**NPC** - Network Processing Circuit

[**s**]abc - The 3- or 4-digit nonhierarchical odd DSPU NPC number

[**t**]def - The 3- or 4-digit nonhierarchical even DMB NPC number ([t]def =  
[s]abc + 1)

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |

| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

**uvmnp** - Hierarchical odd DSPU NPC numbers

**uvmqr** - Hierarchical even DMB NPC numbers

**uv** - Unit number

**m** - Module number

**np, qr** - NPC number within the module  
(qr = np + 1)

The values are listed below:

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

**SIDE** - Side

**s** - Side number (0 or 1)

**TN** - Transaction

**dddd** - Transaction number

The transaction number can be specified in the UTL::QRY,ERR message (I.55011) to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**EVENT** - Event

**eeee** - Event number

**error analysis data bytes**

- Troubleshooting data (four-digit hexadecimal)

There can be from 0 through 10 data bytes output depending upon the circuit pack and error condition. The fields are labeled aaaa, bbbb, cccc, dddd, eeee, ffff, gggg, hhhh, iiii, and jjjj below for explanation purposes.

For the Digital Multipoint Bridge (DMB),  
C-Bit Processor (CPR),  
Multipoint Junction Unit (MJU), and  
Subrate Multiplexer (SRM)

aaaa DMB Interrupt Register content  
bbbb DMB Interrupt Mask Register content

For the DMB only

cccc cme 0 reply - word 2  
dddd cme 0 reply - word 1  
eeee cme 1 reply - word 2  
ffff cme 1 reply - word 1  
gggg conf 0 reply - word 2  
hhhh conf 0 reply - word 1  
iiii conf 1 reply - word 2  
jjjj conf 1 reply - word 1

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

**70** DMB access error (e.g. pack not there )  
**71** DMB serial access error (pack not there)  
**72** DMB parallel access error  
**73** DMB bits stuck in exercise register  
**74** DMB data processing error  
**75** Multiple data parity error, CCB problem  
**76** DMB clock error  
**77** Multiple clock errors, CCB/SYNC problem  
**78** DMB FIFO error  
**79** Possible power failure on side  
**7A** DMB control memory error 0 (used for trans)  
**7B** DMB control memory error 1 (used for trans)  
**7C** Control Memory 0 control ram parity error  
**7D** Control Memory 1 control ram parity error  
**7E** Control Memory 0 control interface error  
**7F** Control Memory 1 control interface error  
**80** Control Memory 0 loss of sync error



**cc**    *Explanation*

- 81**    Control Memory 1 loss of sync error
- 82**    Control Memory 0 DMB input data parity error
- 83**    Control Memory 1 DMB input data parity error
- 84**    DMB conference error 0 ( used for trans)
- 85**    DMB conference error 1 ( used for trans)
- 86**    Conference 0 control interface error
- 87**    Conference 1 control interface error
- 88**    Conference 0 control ram parity error
- 89**    Conference 1 control ram parity error
- 8A**    Conference 0 DMB input data parity error
- 8B**    Conference 1 DMB input data parity error
- 8C**    Conference 0 DMB device (chip) error
- 8D**    Conference 1 DMB device (chip) error
- 8E**    Bad Ram Data in DMB device (bits alarms)
- 8F**    Bad Ram Data in DMB device (bits alarms)
- 98**    CPR serial access error
- 99**    CPR clock error
- 9A**    CPR processor interface failure
- 9B**    CPR input data interface error
- 9C**    CPR D-Bit interface parity error
- 9D**    CPR control memory failure
- 9E**    CPR control memory or state machine failure
- 9F**    CPR FIFO FRDY/FFULL stuck bit
- D5**    Illegal/unknown condition code
- 6D**    Invalid FPA state

---

## **ERR,ESR,NPC,TN,EVENT,COND**

### **ERROR RECOVERY FTU NPC**

#### **Explanation Of Command**

This message indicates that an alarm was detected in a facility terminating unit Network Processing Circuit. The specific alarm type is identified by the error condition code.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

#### **Nonhierarchical**

[O.01372]

I hh:mm:ss xy,ww ERR[ ESR] NPC [s]abc-[t]def TN dddd \  
EVENT eeee 2 LN MSG:  
<error analysis data bytes>[ COND cc] COMPL

## Hierarchical

[O.01372]

**I** hh:mm:ss xy,ww ERR[ ESR] NPC uvmnp-wxkqr TN dddd \  
**2** LN MSG:  
EVENT eeee <error analysis data bytes>[ COND cc] COMPL

## Explanation Of Parameters

**ERR** - Error recovery

**ESR** - Error source register

The ESR keyword is not output if the register content cannot be read.

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number denoting beginning of range specification

**[t]def** - The 3- or 4-digit nonhierarchical NPC number denoting end of range specification

If NPC numbers are expressed in three digits, the valid values are:

PB and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PB and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number for beginning of range

**wxkqr** - Hierarchical NPC number for end of range

PB and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified in message I.55011 (in PDS, UTL::QRY,ERR or in MML, RTRV-LOG::ERR) to retrieve the content of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**EVENT** - Event

**eeee** - Event number

The EVENT number can be specified in message I.55011 (in PDS, UTL::QRY, ERR or in MML, RTRV-LOG::ERR) to retrieve the content of the DACS II error recovery log file which contains the data of this error recovery event.

**error analysis data bytes**

- Troubleshooting data

Six bytes of 4-digit hexadecimal troubleshooting data, labeled for explanatory purposes below, as aaaa, bbbb, cccc, dddd, eeee, and ffff.

**aaaa** - Dual digroup card (DDC) ESR0 and ESR1

The first two digits (left to right) report ESR0 and the second two digits report ESR1

**bbbb** - Unused

**cccc** - DDC hardware and channel controller

**dddd** - DDC transceiver A Tferr & Rserr register

**eeee** - DDC transceiver B Tferr & Rserr register

**ffff** - DDC Transceiver transmit slip

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                     |
|-----------|-------------------------------------|
| <b>3D</b> | DPC ROM error                       |
| <b>3E</b> | DPC loss of timing                  |
| <b>3F</b> | OOS RAM test ran while IS           |
| <b>53</b> | NPC bus error                       |
| <b>54</b> | NPC can not be accessed             |
| <b>55</b> | NPC is alarming on FC               |
| <b>56</b> | Facility Processor Sanity Error     |
| <b>57</b> | SYNC Error                          |
| <b>58</b> | Channel controller loss of clock    |
| <b>59</b> | Channel controller frame sync error |
| <b>5A</b> | CC configuration register error     |
| <b>5B</b> | CC instruction ram error            |
| <b>5C</b> | CC parity error                     |
| <b>5D</b> | CC transmit data error              |
| <b>5E</b> | CC receiver data error              |
| <b>5F</b> | CC exercise error                   |
| <b>60</b> | CC summary bit error                |
| <b>61</b> | Hard RAM error                      |
| <b>62</b> | Hard ROM check error                |
| <b>63</b> | Hard Error stuck bit                |

**cc**    *Explanation*

- 64**    Transceiver A stuck bit
- 65**    Transceiver A transmit slip
- 66**    Transceiver A Error
- 67**    Transceiver B stuck bit
- 68**    Transceiver B transmit slip
- 69**    Transceiver B Error
- 6A**    Circuit ID Error
- 6B**    Facility errors
- 6C**    NPC address parity error
- D5**    Illegal/unknown condition code

## **ERR,ESR,SYNC,TLI,SSP,TN,EVENT,NPC,COND**

### **ERROR RECOVERY SYNC TLI SSP**

#### **Explanation Of Command**

This message indicates that error recovery was called to handle an error that occurred in the synchronizer timing link interface sync port. The message also indicates the nature of the error.

If the port on which the error has occurred receives clock information from a dual primary card, then a network processing circuit has been added.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

#### **Nonhierarchical**

[O.01341]

I hh:mm:ss xy,ww ERR[ ESR] SYNC a TLI m SSP b \  
TN dddd EVENT eeee 2 LN MSG:  
<synchronizer status data bytes>[ NPC [s]abc][ COND cccc] COMPL

## **Hierarchical**

---

[O.01341]

**I** hh:mm:ss xy,ww    **ERR**[ **ESR**] **SYNC** a **TLI** m **SSP** b \\  
**TN** dddd **EVENT** eeee    2 **LN MSG**:  
<synchronizer status data bytes>[ **NPC** uvmp][ **COND** cccc] **COMPL**

## **Explanation Of Parameters**

---

I            Information

**ERR**    - Error recovery

**ESR**    - Error source register

The ESR keyword is not output if the register contents cannot be read.

**SYNC**   - Synchronizer

**a**       - SYNC number (0 or 1)

**TLI**    - Timing link interface

**m**       - TLI number (1 through 4)

**SSP**    - Synchronizer sync port

**b**       - SSP number (0 or 1)

**NPC**    - Network processing circuit

[s]abc       - The 3- or 4-digit nonhierarchical NPC number



If NPC numbers are expressed in three digits, the valid values are:

**PB and PC type NPC numbers listed by unit number**

**Unit Type FT (FTU)**

**Units**

| <b>1</b>   | <b>2</b>   |
|------------|------------|
| <b>NPC</b> | <b>NPC</b> |
| <b>030</b> | <b>190</b> |
| <b>032</b> | <b>192</b> |
| <b>070</b> | <b>230</b> |
| <b>072</b> | <b>232</b> |

If NPC numbers are expressed in four digits, the valid values are:

**Units**

| <b>1</b>    | <b>2</b>    |
|-------------|-------------|
| <b>0030</b> | <b>0190</b> |
| <b>0032</b> | <b>0192</b> |
| <b>0070</b> | <b>0230</b> |
| <b>0072</b> | <b>0232</b> |

**uvmnp** - Hierarchical NPC number

**PB and PC type numbers listed by unit, module,  
and NPC No.**

**Unit Type FT (FTU)**

| <b>Unit</b>  | <b>Module</b> | <b>NPC No. (np)</b> |
|--------------|---------------|---------------------|
| <b>01-02</b> | <b>1-2</b>    | <b>30, 32</b>       |

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified in UTL::QRY,ERR to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**EVENT** - Event

**eeee** - Event number

The EVENT number can be specified in UTL::QRY, ERR to retrieve the contents of the DACS II error recovery log file which contains the data of this error recovery event.

### **synchronizer status data bytes**

- Synchronizer status data in binary form

From 0 to 5 bytes may be output, depending upon the synchronizer error condition. In the explanations below the bytes are named "byte 1", "byte 2, and so on. The eight bits of each byte are labeled abcdefgh and are explained below. These bytes appear in the message in numeric order from left to right with "byte 1" first.

Note that if communications between the MP and the SYNC have failed, Error Recovery may not get the correct status data from the SYNC. All bits in "synchronizer status data bytes" will then be set to 1 by default.

#### **byte 1 - Timing link status**

| <i>bit</i> | <i>Explanation</i>                      |
|------------|-----------------------------------------|
| a          | Timing link equipped by MC              |
| b          | Timing link declared out-of-service     |
| c          | Timing link out-of-service due to error |
| d          | Associated Timing Extractor TLI error   |
| efgh       | Not used                                |

#### **byte 2 - Priority weighting of link, a number from 1 to 8**

#### **byte 3 - Framing format, line format, and frequency**

| <i>bits</i> | <i>Explanation</i>                                |
|-------------|---------------------------------------------------|
| abc         | Framing format (valid only for TXB1 or TXB2 TLIs) |
| TXB1        |                                                   |
| 000         | D4                                                |
| 001         | ESF                                               |
| 010         | DDS                                               |
| TXB2        |                                                   |
| 000         | CCS                                               |
| 001         | ERSM                                              |
| 010         | CAS0                                              |
| 011         | CAS1                                              |

de Line format (valid only for TXB1 or TXB2 TLIs)

TXB1

00 Bipolar  
01 B8ZS

TXB2

10 AMI  
11 HDB3

fgh Frequency (TXUC TLI)

000 512 kHz  
001 1.000 MHz  
010 1.544 MHz  
011 2.048 MHz  
100 5.000 MHz

**byte 4 - Mixed status**

*bit Explanation*

a Carrier failure alarm/loss of signal (TXB1, TXB2, and TXCC)  
b Timing signal loss of energy  
c Autobaud failure  
d Frequency offset flag  
e Excessive jitter  
f Phase step  
gh Not used

**byte 5 - Framing status**

*bit Explanation*

a Out of frame  
b Major framing error rate  
c Minor framing error rate  
defgh Not used

**COND** - Condition

**cccc** - Error recovery condition code

**cccc** - Hexadecimal condition code

**cccc**    *Explanation*

**E600**    TL error reported, unknown  
**E602**    Timing Extractor type TLI has hardware problem  
**E603**    Timing Extractor type TLI has autobaud failure  
**E806**    TLI error cleared

## **ERR,ESR,SYNC,TLI,TN,EVENT,COND**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This message indicates that error recovery was called to handle an error that occurred in a synchronizer timing link interface, and also the nature of the error.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01342]

I hh:mm:ss xy,ww ERR [ESR] SYNC a TLI m \  
TN dddd EVENT eeee 2 LN MSG:  
<synchronizer status data bytes> COND cccc COMPL

## **Explanation Of Parameters**

---

**I** Information

**ERR** - Error recovery

**ESR** - Error source register

The ESR keyword is not output if the register contents cannot be read.

**SYNC** - Synchronizer

**a** - Synchronizer number (0 or 1)

**TLI** - Timing link interface

**m** - TLI number (1 through 4)

**TN** - Transaction

**dddd** - Transaction number

**EVENT** - Event

**eeee** - Event number

synchronizer status data bytes

- Synchronizer status data in binary form

Three bytes of synchronizer status data are output. These bytes are named "byte1", "byte2", and "byte3" in the explanations below. They would appear on output as "byte1 byte2 byte3" in place of "synchronizer status data bytes". The eight bits in each byte are labeled abcdefgh in left to right order. These bits are set to "1" for the listed conditions:

**byte1** - Overall status and configuration

|             |                                                           |
|-------------|-----------------------------------------------------------|
| bit         | Condition                                                 |
| abcd        | TLI type                                                  |
| 0000        | TXB1, 1.544 Mb/s DS1 <b>Extractor</b>                     |
| 0001        | TXB2, 2.048 Mb/s Primary Block <b>(120 OHM) Extractor</b> |
| 0010        | TXCC, Composite Clock <b>Extractor</b>                    |
| 0011        | TXUC, High Level Unipolar Clock <b>Extractor</b>          |
| 0100        | TXRF, Basic System Reference Frequency                    |
| 0101        | TDCC, 64 kb/s Composite Clock Distributor                 |
| 0110        | TDS2, 2.048 MHz Sine Distributor                          |
| <b>0111</b> | <b>TXCP, CEPT 2.048 MHz Sine (120 Ohm) Extractor</b>      |
| e           | TLI is grown                                              |
| f           | TLI out-of-service                                        |
| g           | TLI hardware error                                        |
| h           | Unused bit                                                |

**byte2** - Hardware status and diagnostic results

|      |                                                                                                               |
|------|---------------------------------------------------------------------------------------------------------------|
| bit  | Condition                                                                                                     |
| a    | Hardware energy detector on the time base strobe signal has failed                                            |
| b    | Loss of time base strobe signal coming from the DPLL                                                          |
| c    | Hardware energy detector on the CRO signal has failed                                                         |
| d    | Loss of reference clock signal coming from the CRO                                                            |
|      | <b>Note:</b> These bits have meaning only for TDCC and TDS2 TLIs and when the SYNC is a master timing source. |
| e    | Side 0                                                                                                        |
| f    | Side 1                                                                                                        |
|      | <b>Note:</b> These bits have meaning only for TE TLIs.                                                        |
|      | For TXB1 or TXB2 TLIs:<br>Framer chip on side 0 (e) and/or side 1 (f) has failed.                             |
|      | For TXCC TLIs:<br>Out-of-lock detector on side 0 (e) and/or side 1 (f) has failed.                            |
| g, h | Unused bits                                                                                                   |

**byte3** - Hardware status and diagnostic results for timing distributor type TLI only

| <i>bit</i> | <i>Condition</i>                                                                                              |
|------------|---------------------------------------------------------------------------------------------------------------|
| a          | Clock alignment detector failed diagnostic                                                                    |
| b          | Clock generator energy detector failed diagnostic                                                             |
| c          | 30 ms sync pulse energy detector failed diagnostic                                                            |
| d          | Signal generating prom parity error detector failed diagnostic                                                |
| e          | Output clock alignment error                                                                                  |
| f          | Loss of energy on the output clock generator ripple carry, indicating the distributed clock signals have died |
| g          | Loss of energy on the 30 ms sync pulse coming from the DPLL board                                             |
| h          | Signal generating prom parity error detected                                                                  |

**COND** - Condition

**cccc** - Hexadecimal condition code

| <b>cccc</b> | <i>Explanation</i>                           |
|-------------|----------------------------------------------|
| <b>E500</b> | TLI error, link went down before status read |
| <b>E501</b> | TLI hardware error                           |
| <b>E700</b> | CRO error, unknown due to link, SYNC error   |
| <b>E701</b> | CRO loss of energy detected SYNC error       |
| <b>E702</b> | CRO loss of energy CRO error                 |
| <b>E703</b> | CRO frequency offset                         |
| <b>E704</b> | CRO declared OOS                             |



## **ERR,ESR,SYNC,TN,EVENT,COND**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This message indicates that error recovery was called to handle an error that occurred in the specified synchronizer. The message also indicates the nature of the error.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01331]

I hh:mm:ss xy,ww ERR [ESR] SYNC a \  
TN dddd EVENT eeee 2 LN MSG:  
<byte1> <byte2> <byte3> <byte4> <byte5> COND cccc COMPL

## Explanation Of Parameters

**I** Information

**ERR** - Error recovery

**ESR** - Error source register

The ESR keyword is not output if the register contents cannot be read.

**SYNC** - Synchronizer

**a** - Synchronizer number (0 or 1)

**TN** - Transaction

**dddd** - Transaction number

**EVENT** - Event

**eeee** - Event number

**byte1,**  
**byte2,**

...,

**byte5** - Synchronizer status data bytes

Synchronizer status data in binary form. The number of data bytes ranges from 1 to 5, depending upon the synchronizer error type. Each byte has eight bits labeled abcdefgh in left to right order.

If main processor to synchronizer communication has failed, Error Recovery may not get the correct status data from the Synchronizer. All bits in "synchronizer status data bytes" will then be set to 1 by default.

**byte1** - Synchronizer status data

| bit  | Explanation                  |
|------|------------------------------|
| a    | MC is down flag              |
| b    | SYNC is down flag            |
| c    | Mate SYNC is OOS             |
| d    | Time Base is down            |
| efgh | Timing link inservice status |

**byte2** - Timing link (SSP) inservice status

**byte3** - Synchronizer status data

| bit | Explanation                                                      |
|-----|------------------------------------------------------------------|
| a   | SYNC restart flag                                                |
| b   | Hardware summary, error on DPLL                                  |
| c   | PLL summary, any major cross-couple error                        |
| d   | Cross-couple summary, any major cross-couple error               |
| e   | Clock Reference Oscillator summary error,<br>any major CRO error |
| fgh | unused                                                           |

**byte4** - Synchronizer status data

| bit | Explanation                          |
|-----|--------------------------------------|
| ab  | Synchronizer architecture            |
| ab  | Explanation                          |
| 00  | Slave in master-slave configuration  |
| 01  | Master in master-slave configuration |
| cde | Operational stratum field            |
| cde | Explanation                          |
| 000 | Domestic stratum 3                   |
| 001 | CEPT local                           |
| 010 | CEPT toll                            |
| 011 | Domestic stratum 2                   |
| fg  | PLL locking mode field               |
| fg  | Explanation                          |
| 00  | Normal                               |
| 01  | Fast                                 |
| 10  | Holdover                             |
| h   | Hit timing holdover field            |

**byte5** - Synchronizer status data

bit Explanation

ab Active timing link source field

ab Explanation

00 Holdover

01 Timing link

10 Cross-couple

11 CRO

cde Active link field

cde Explanation

000 TLI(Timing link interface) 1, SSP0(Synchronizer sync port 0)

001 TLI 1, SSP1

010 TLI 2, SSP0

011 TLI 2, SSP1

100 TLI 3, SSP0

101 TLI 3, SSP1

110 TLI 4, SSP0

111 TLI 4, SSP1

fgh unused

**cccc** - Error recovery condition code

**cccc** - Hexadecimal condition code

**cccc** *Explanation*

**E000** CCNI summary bit set; no more info

**E001** Sync says its down

**E002** Sync says its time base is down

**E003** SYNC autonomously restarted itself

**E004** MP-SYNC communications failure

**E100** Unknown DPLL error

**E101** ROM checksum error

**E102** RAM data error, RAM address line stuck

**E103** Phase/frequency output latch error

**E104** Loss of energy on output of frequency synth.

**E105** Loss of energy on output of phase shifter

**E106** Loss of energy on generated SYNC pulse

**E107** Loss of energy on time base strobe signal

**E108** Interrupt controller error

**E109** Interrupt holding register error

**E10A** Uart error

**E10B** Control data readable output latch error

**cccc**    *Explanation*

**E200**    Unknown time base error  
**E201**    Time base loss of energy detector  
**E202**    TB i/o err. cant read TB packid or oven monitor  
**E203**    Time base frequency drift  
**E204**    Both syncs time base oven is cold  
**E205**    Time base oven is cold  
**E300**    Unknown PLL error,link went down before reading status  
**E301**    PLL end of range  
**E302**    PLL excessive phase error (125 uSec out of phase)  
**E303**    PLL real time violations  
**E304**    PLL fast start time out  
**E305**    PLL end of range implicating TL  
**E400**    Unknown mate error, link went down before read status  
**E401**    Mate out of service  
**E402**    Mate sync hardware error  
**E403**    Cross couple loss of energy  
**E404**    Cross couple loss of energy  
**E405**    Mate link down  
**E406**    Cross couple real time violation  
**E407**    Cross couple fast lock range  
**E408**    Cross couple frequency offset error  
**E409**    Cross couple out of lock

## **ERR,ESR,TSI,TN,EVENT,COND**

### **ERROR RECOVERY TIME SLOT INTERCHANGE**

#### **Explanation Of Command**

This error recovery message indicates that an error is occurring in the time slot interchange. This message reports an alarm on a time slot interchange circuit pack. The error type is contained in the error condition code.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01353]

I hh:mm:ss xy,ww ERR [ESR] TSI sft \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data> COND cc COMPL

## Explanation Of Parameters

|              | Information                                                                                        |
|--------------|----------------------------------------------------------------------------------------------------|
| <b>ERR</b>   | - Error recovery                                                                                   |
| <b>ESR</b>   | - Error source register<br>The ESR keyword is not output if the register contents can not be read. |
| <b>TSI</b>   | - Time slot interchanger                                                                           |
| <b>sft</b>   | - TSI identifier                                                                                   |
| <b>s</b>     | - Cross-connect side (0 or 1)                                                                      |
| <b>f</b>     | - FROM unit (1 through 6)                                                                          |
| <b>t</b>     | - TO unit (1 through 6)                                                                            |
| <b>TN</b>    | - Transaction                                                                                      |
| <b>dddd</b>  | - Transaction number                                                                               |
| <b>EVENT</b> | - Event                                                                                            |
| <b>eeee</b>  | - Event number                                                                                     |

### error analysis data

- The error analysis data consists of from 2 to 10 four-digit hexadecimal fields labeled regn below. The number of fields reported depends upon the error condition. The data is used for internal troubleshooting purposes only.

For pack id errors and TSI stuck bit errors the data include the pack id and the TSI number.

**regn** - Device register n (n ranges from 2 through 10)

For the TSI identified by sft:

There are 16 TSI devices in a TSI circuit pack.

Each bit set in the summary status register indicates an alarming device on TSI sft.

For each alarming TSI device, the device status register is dumped in device fields <reg1> through <reg2>, one device per register. Up to four devices can dump their status register, per message. If less than four devices are alarming, the fields will have a 0000 value.

# Register Bit Definitions

**reg1** - TSI summary status register

| bit | Definition                 |
|-----|----------------------------|
| 15  | Error on TSI sft device 15 |
| 14  | Error on TSI sft device 14 |
| 13  | Error on TSI sft device 13 |
| 12  | Error on TSI sft device 12 |
| 11  | Error on TSI sft device 11 |
| 10  | Error on TSI sft device 10 |
| 09  | Error on TSI sft device 09 |
| 08  | Error on TSI sft device 08 |
| 07  | Error on TSI sft device 07 |
| 06  | Error on TSI sft device 06 |
| 05  | Error on TSI sft device 05 |
| 04  | Error on TSI sft device 04 |
| 03  | Error on TSI sft device 03 |
| 02  | Error on TSI sft device 02 |
| 01  | Error on TSI sft device 01 |
| 00  | Error on TSI sft device 00 |

reg2,  
reg3,  
reg4,

**reg5** - TSI device summary status registers 2 through 5

For up to four TSI devices indicated by reg2 through reg5,  
each device will be represented by a summary status register  
indicating the following information:

| bit(s) | Definition                              |
|--------|-----------------------------------------|
| 15     | Not used                                |
| 14     | Not used                                |
| 13     | Odd parity over data bits 12 through 00 |
| 12     | TSI memory diagnostic in progress       |
| 11-08  | 4-bit TSI ID                            |
| 07     | Exercise in progress                    |
| 06     | Not used                                |
| 05     | Memory error overflow                   |
| 04     | Failure of memory diagnostic            |
| 03     | Loss of 8 MHz clock                     |
| 02     | Output data error                       |
| 01     | Control RAM parity error                |
| 00     | Microprocessor bus error                |

**COND** - Condition



**cc** - Hexadecimal condition code

**cc** *Explanation*

- B0** Pack id error, can't read pack
- B1** TSI stuck bit, summary bit set, no devices alarming
- B2** TSI device error
- B3** TSI device id error, cannot read device
- B4** Illegal exercise bits set
- B5** Bus address error
- B6** Device clock error
- B7** Device control ram parity error
- B8** Output data parity error (from an FTM)
- B9** Corresponding CCNI bit is stuck

## **ERR,ESR,UNIT,DSPI,TN,EVENT,COND**

### **ERROR RECOVERY UNIT DSPI**

#### **Explanation Of Command**

This autonomous message reports that DACS II detected an alarm on the specified unit's digital signal processing interface.

#### **Command**

Not applicable.

#### **Completion Message**

[O.01365]

I hh:mm:ss xy,ww ERR[ ESR] UNIT [q]q DSPI TN dddd \  
EVENT eeee 2 LN MSG:  
<error analysis data> COND cc COMPL

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

**I** Information

**ERR** - Error recovery

**ESR** - Error source register

The ESR keyword is not output if the register content cannot be read.

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**DSPI** - Digital signal processing interface

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified in UTL::QRY,ERR to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**EVENT** - Event

**eeee** - Event number

The event number can be specified in UTL::QRY, ERR to retrieve the contents of the DACS II error recovery log file which contains the data for this error recovery event.

## error analysis data

- Troubleshooting data (four-digit hexadecimal)

Six words of troubleshooting data. For purposes of explanation they are here labeled and appear in the the following manner:

aaaa bbbb cccc dddd eeee ffff

| Name | Explanation                                  |
|------|----------------------------------------------|
| aaaa | CPU Interrupt Holding Register contents      |
| bbbb | CPU Interrupt Mask Register contents         |
| cccc | DSPI Interrupt Capturing Register 0 contents |
| dddd | DSPI Interrupt Capturing Register 0 contents |
| eeee | DSPI Interrupt Capturing Register 1 contents |
| ffff | DSPI Interrupt Capturing Register 1 contents |

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

**6D** DSPI access error (e.g. pack not there)  
**6E** DSPI bus data parity error  
**6F** DSPI bus address parity error  
**D1** Source of error is unknown  
**D2** Source of error was not found  
**D3** Stuck bit in register  
**D5** Illegal/unknown condition code

## **ERR,ESR,UNIT,FC,TN,EVENT,COND**

### **ERROR RECOVERY UNIT FC**

#### **Explanation Of Command**

This autonomous message reports that DACS II has detected an alarm on a given facility terminating unit's format converter.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01364]

I hh:mm:ss xy,ww ERR[ ESR] UNIT [q]q FC sb \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data> COND cc COMPL

### Explanation Of Parameters

---

**I** Information

**ERR** - Error recovery

**ESR** - Error source register

The ESR keyword is not output if the register contents cannot be read.

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FC** - Format converter

**sb** - FC identifier

**s** - FC side (0 or 1)

**b** - FC No. (1 through 4)

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified in UTL::QRY,ERR to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**EVENT** - Event

**eeee** - Event number

The event number can be specified in UTL::QRY, ERR to retrieve the contents of the DACS II error recovery log file which contains the data for this error recovery event.

## error analysis data

- troubleshooting data (four-digit hexadecimal)

Six words of troubleshooting data. For purposes of explanation they are here labeled and appear in the the following manner:

aaaa bbbb cccc dddd eeee ffff

| <i>Name</i> | <i>Explanation</i>                            |
|-------------|-----------------------------------------------|
| aaaa        | Board Level ESR0 & ESR1 content               |
| bbbb        | Board Level EMR0 & EMR1 content               |
| cccc        | RF Device ESR0 & EMR0 content                 |
| dddd        | RF Device ESR1 & EMR1 content                 |
| eeee        | RF Device ESR2 & EMR2 content                 |
| ffff        | RF Device & TF Device Status Register content |

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>             |
|-----------|--------------------------------|
| <b>4C</b> | FC can't be accessed           |
| <b>4D</b> | Timer Error                    |
| <b>4E</b> | Circuit ID Error               |
| <b>4F</b> | Transmit Formatter Error       |
| <b>50</b> | Receiver Formatter Error       |
| <b>51</b> | Sanity Timer Interrupt         |
| <b>52</b> | RF bus error                   |
| <b>D5</b> | Illegal/unknown condition code |

## **ERR,ESR,UNIT,FTMI,TN,EVENT,COND**

### **ERROR RECOVERY UNIT FTMI**

#### **Explanation Of Command**

This autonomous message indicates that DACS II has detected an alarm on the unit's facility terminating module interface. The error type is indicated by the error condition code.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01363]

I hh:mm:ss xy,ww ERR[ ESR] UNIT [q]q FTMI b \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data> COND cc COMPL



## Explanation Of Parameters

|                            | Information                                                                                                                                                                                                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UNIT</b>                | - Unit                                                                                                                                                                                                     |
| <b>[q]q</b>                | - Unit number (1 through 16)                                                                                                                                                                               |
| <b>FTMI</b>                | - Facility Terminating Module Interface                                                                                                                                                                    |
| <b>b</b>                   | - FTMI No. (1 through 4)                                                                                                                                                                                   |
| <b>TN</b>                  | - Transaction                                                                                                                                                                                              |
| <b>dddd</b>                | - Transaction number                                                                                                                                                                                       |
|                            | The TN number can be specified in UTL::QRY,ERR to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report. |
| <b>EVENT</b>               | - Event                                                                                                                                                                                                    |
| <b>eeee</b>                | - Event number                                                                                                                                                                                             |
|                            | The event number can be specified in UTL::QRY, ERR to retrieve the contents of the DACS II error recovery log file which contains the data for this error recovery event.                                  |
| <b>ESR</b>                 | - Error source register                                                                                                                                                                                    |
|                            | The ESR keyword is not output if the register contents cannot be read.                                                                                                                                     |
| <b>ERR</b>                 | - Error recovery                                                                                                                                                                                           |
| <b>error analysis data</b> | - Seven words of 4-digit hexadecimal data.                                                                                                                                                                 |
|                            | The words are labeled as follows:                                                                                                                                                                          |
|                            | aaaa bbbb cccc dddd eeee ffff gggg                                                                                                                                                                         |
| <b>aaaa</b>                | - Board level register contents                                                                                                                                                                            |
| <b>bbbb</b>                | - CIA device ESR contents                                                                                                                                                                                  |
| <b>cccc</b>                | - CIB device ESR contents                                                                                                                                                                                  |
| <b>dddd</b>                | - CIC device ESR contents                                                                                                                                                                                  |
| <b>eeee</b>                | - CIA device EMR contents                                                                                                                                                                                  |
| <b>ffff</b>                | - CIB device EMR contents                                                                                                                                                                                  |
| <b>gggg</b>                | - CIC device EMR contents                                                                                                                                                                                  |
| <b>COND</b>                | - Condition                                                                                                                                                                                                |

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                |
|-----------|--------------------------------|
| <b>40</b> | Bus Error Alarm                |
| <b>41</b> | CIA Device Error               |
| <b>42</b> | CIB Device Error               |
| <b>43</b> | CIC Device Error               |
| <b>44</b> | Pack can't be accessed         |
| <b>45</b> | Loss of timing alarm           |
| <b>46</b> | Chip ID Comparison             |
| <b>47</b> | Data Strobe Signal             |
| <b>48</b> | Address Parity Error           |
| <b>49</b> | FC Stuck Bit on FTMI           |
| <b>4A</b> | DDC Stuck Bit on FTMI          |
| <b>4B</b> | FTMI lost clock                |
| <b>D5</b> | Illegal/unknown condition code |

## **ERR,ESR,UNIT,UC,UBX,TN,EVENT,COND**

### **ERROR RECOVERY UNIT**

#### **Explanation Of Command**

This message reports that DACS II detected an alarm on a given units' unit controller or unit bus extender.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01361]

I hh:mm:ss xy,ww ERR[ ESR] UNIT [q]q {UC|UBX} \  
TN dddd EVENT eeee 2 LN MSG:  
<error analysis data> COND cc COMPL

## Explanation Of Parameters

|              | Information                                                                                                                                                                                                                        |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ERR</b>   | - Error recovery                                                                                                                                                                                                                   |
| <b>ESR</b>   | - Error source register<br>The ESR keyword is not output if the register contents cannot be read.                                                                                                                                  |
| <b>UNIT</b>  | - Unit                                                                                                                                                                                                                             |
| <b>[q]q</b>  | - Unit number (1 through 16)                                                                                                                                                                                                       |
| <b>UC</b>    | - Unit controller                                                                                                                                                                                                                  |
| <b>UBX</b>   | - Unit bus extender                                                                                                                                                                                                                |
| <b>TN</b>    | - Transaction                                                                                                                                                                                                                      |
| <b>dddd</b>  | - Transaction number<br>The TN number can be specified in UTL::QRY,ERR to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report. |
| <b>EVENT</b> | - Event                                                                                                                                                                                                                            |
| <b>eeee</b>  | - Event number<br>The event number can be specified in UTL::QRY, ERR to retrieve the contents of the DACS II error recovery log file which contains the data for this error recovery event.                                        |

## error analysis data

- 2 to 8 words, depending on the unit type, of four hexadecimal digits each containing troubleshooting data.

For a DS3U the words are labeled as follows:

ire0, ire1, ire2, cies, irm0, irm1, irm2, cima

|             |                                                  |
|-------------|--------------------------------------------------|
| <b>ire0</b> | - Error source register 0                        |
| <b>ire1</b> | - Error source register 1                        |
| <b>ire2</b> | - Error source register 2                        |
| <b>cies</b> | - Communications interface error source register |
| <b>irm0</b> | - MASK register 0                                |
| <b>irm1</b> | - MASK register 1                                |
| <b>irm2</b> | - MASK register 2                                |
| <b>cima</b> | - Communications interface MASK register         |

For an FTU the words are labeled as follows:

aabb eeff

|           |                                           |
|-----------|-------------------------------------------|
| <b>aa</b> | - CPU interrupt mask register contents    |
| <b>bb</b> | - CPU interrupt holding register contents |
| <b>ee</b> | - UBX interrupt mask register contents    |
| <b>ff</b> | - UBX interrupt holding register contents |

For a DSPU the words are labeled as follows:

aaaa bbbb cccc dddd eeee ffff

|             |                                                |
|-------------|------------------------------------------------|
| <b>aaaa</b> | - CPU interrupt holding register contents      |
| <b>bbbb</b> | - CPU interrupt mask register contents         |
| <b>cccc</b> | - DSPI interrupt capturing register 0 contents |
| <b>dddd</b> | - DSPI interrupt mask register 0 contents      |
| <b>eeee</b> | - DSPI interrupt capturing register 1 contents |
| <b>ffff</b> | - DSPI interrupt mask register 1 contents      |

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                |
|-----------|--------------------------------|
| <b>00</b> | No conditions                  |
| <b>0F</b> | CPU internal bus error         |
| <b>10</b> | CPU parallel bus parity error  |
| <b>11</b> | CPU serial bus parity error    |
| <b>31</b> | Sanity Time-out                |
| <b>D0</b> | CPU RAM Parity error           |
| <b>D1</b> | Source of error is unknown     |
| <b>D2</b> | Source of error was not found  |
| <b>D3</b> | Stuck bit in register          |
| <b>D4</b> | Bad UBX pack                   |
| <b>D5</b> | Illegal/unknown condition code |

## **ERR,HARDWARE,TN,COND,EVENT,ACTION**

### **ERROR RECOVERY HARDWARE**

#### **Explanation Of Command**

This message is printed out when applications software attempted some operation on a circuit, but that operation failed. The type of failure is indicated in the condition code. The applications software may have requested some autonomous action on the circuit and that action will be reflected with an autonomous request for removal and/or diagnostics. Additional information can be gathered by querying the error recovery log file, but this will require technical assistance for interpretation.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01392]

```
I hh:mm:ss xy,ww ERR HARDWARE <entity> 4 LN MSG:
 TN=dddd COND=cc EVENT=xxxx ACTION=<action>
 SOURCE=<source> DP=<dp> PROC=<proc> <load>
 TSARGS=cn [<tsargs>] COMPL
```

## **Explanation Of Parameters**

---

**ERR** - Error recovery

**HARDWARE**

- Hardware

**TN** - Transaction

**dddd** - Transaction number (hexadecimal)

The TN number can be specified in UTL::QRY,ERR to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**COND** - Condition

**EVENT** - Event

**xxxx** - Event number

**SOURCE** - Source

**source** - Source filename

DACS II internal software filename (up to 12 characters)

**DP** - Decision point

**dp** - Decision point value

Number associated with a particular location in the software file specified in the "source" field. Value is 0- to 8-digit positive decimal number.

**ACTION** - Action

**action** - Action to be taken

| <i>(CBaction</i> | <i>Explanation</i>            |
|------------------|-------------------------------|
| REPORT           | Report only, no action        |
| REMOVE           | Remove processor from service |

**PROC** - Process

**proc** - Process value

**TSARGS** - Trouble shooting arguments

**cn** - The number of trouble shooting arguments that follow (00 through 10)

**tsargs** - List of "count" trouble shooting arguments

**load** - Load number

The load number is a ten digit number of the following form:

abcdefghij

|    |                             |
|----|-----------------------------|
| ab | software generic number     |
| cd | software point issue number |
| ef | software release number     |
| gh | year                        |
| ij | load number                 |

**entity** - DACS II entity involved

**entity**

BTS s  
CCB sf  
CCI s  
CCNI s s  
ETSI sqq  
LINK n  
NPC [s]abc[-[t]def][SIDE s]  
NPC uvmp[-wxkqr][SIDE s]  
SYNC s  
SYNC s TLI m  
TSI sft  
UC [q]q  
UNIT [q]q DSPI  
UNIT [q]q FC sb  
UNIT [q]q FTMI b  
UNIT [q]q MXR n DEV devc  
UNIT [q]q UBX  
UNIT [q]q MIU I  
UNIT [q]q FLI d  
UNIT [q]q FMT k  
UNIT [q]q MMFG y

**cc** - Hexadecimal condition code

**cc**    *Explanation*

|           |                                           |
|-----------|-------------------------------------------|
| <b>E0</b> | Hardware database mismatch                |
| <b>E1</b> | Hardware Failure                          |
| <b>E2</b> | Hardware Boot Failed                      |
| <b>E3</b> | Can't access link                         |
| <b>E4</b> | Transmit Time-out                         |
| <b>E5</b> | Receiver Time-out                         |
| <b>E6</b> | softerr failure which forces link removal |
| <b>E7</b> | Unit could not be reset                   |



**cc**    *Explanation*

- E8**    Unit failed sanity check
- E9**    failure to insert TCC
- EA**    failure to remove TCC
- EB**    failed to switch CCN sides
- EC**    NPC's facility queue overflow condition
- ED**    Duplex entity failed diagnostics
- EE**    Lost Clear-To-Send signal on X.25 links
- EF**    Frame Audit reboot DDC failure
- F5**    Packet layer parameters are mismatched between DACS II and the network
- F6**    Failed to write XPC register
- F7**    Transmit time-out because Clear To Send lost
- F8**    R20 counter reaches limit
- F9**    T3 timer expires
- FA**    Too many interrupts or illegal interrupt from XPC

## **ERR, LINK, TN, STATUS**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This message reports that error recovery was called to handle an error occurring in an administrative link.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01321]

I hh:mm:ss xy,ww    ERR LINK a TN dddd STATUS a0 a1 a2 COMPL

## Explanation Of Parameters

**ERR** - Error recovery

**LINK** - Link

**a** - Link number (1 through 6)

**TN** - Transaction

**dddd** - Transaction number

**STATUS** - Status

**a0,**

**a1,**

**a2** - Status data

The following status data is for asynchronous links.

**a0** - Message code

| <i>a0</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |                                   |
|----|-----------------------------------|
| 00 | Link has gone protocol in-service |
|----|-----------------------------------|

|    |                                       |
|----|---------------------------------------|
| 01 | Link has gone protocol out-of-service |
|----|---------------------------------------|

**a1** - Link mode status

| <i>a1</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |      |
|----|------|
| 00 | Idle |
|----|------|

|    |                           |
|----|---------------------------|
| 01 | Input message in progress |
|----|---------------------------|

|    |                            |
|----|----------------------------|
| 02 | Output message in progress |
|----|----------------------------|

**a2** - Link interrupt register (hexadecimal)

Bit numbering 76543210

| <i>Bit</i> | <i>Explanation</i> |
|------------|--------------------|
|------------|--------------------|

|   |                |
|---|----------------|
| 7 | Received break |
|---|----------------|

|   |              |
|---|--------------|
| 6 | Parity error |
|---|--------------|

|   |               |
|---|---------------|
| 5 | Framing error |
|---|---------------|

|   |               |
|---|---------------|
| 4 | Overrun error |
|---|---------------|

|   |                   |
|---|-------------------|
| 3 | Transmitter empty |
|---|-------------------|

|   |                   |
|---|-------------------|
| 2 | Transmitter ready |
|---|-------------------|

|   |               |
|---|---------------|
| 1 | Receiver full |
|---|---------------|

|   |                |
|---|----------------|
| 0 | Receiver Ready |
|---|----------------|

If bits 4, 5, and 6 are all set (equal to 1) simultaneously it indicates a transmission error.

The following status data is for synchronous links.

| <i>a0</i> | <i>Explanation</i>                     |
|-----------|----------------------------------------|
| 00        | Session established on virtual circuit |
| 01        | Session closed on virtual circuit      |

| <i>a1</i> | <i>Explanation</i> |
|-----------|--------------------|
| 00        | always set to 00   |

**a2** - Virtual circuit number (hexadecimal)

| <i>a2</i> | <i>Virtual circuit number</i> |
|-----------|-------------------------------|
| 01        | 1                             |
| 02        | 2                             |
| 03        | 3                             |
| 04        | 4                             |
| 05        | 5                             |
| 06        | 6                             |
| 07        | 7                             |
| 08        | 8                             |
| 09        | 9                             |
| 0A        | 10                            |
| 0B        | 11                            |
| 0C        | 12                            |
| 0D        | 13                            |
| 0E        | 14                            |
| 0F        | 15                            |
| 10        | 16                            |

## **ERR,MSG,TO,LOG,DISCARDED**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This autonomous message reports that due to large numbers of error reports being passed through the system, not all transient error events were transferred to the disk. Logging will resume automatically when activity decreases to a manageable level.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01337]

I hh:mm:ss xy,ww ERR MSGS TO LOG DISCARDED COMPL

### **Explanation Of Parameters**

---

**ERR** - Error recovery

**MSGs** - Messages

**TO** - To

**LOG** - Log

**DISCARDED**  
- Discarded

## **ERR,PMEM,SMEM,TN,EVENT,COND**

### **REPORT MEMORY CARD ERROR**

#### **Explanation Of Command**

This autonomous message reports that a hardware error has been detected on the Primary Memory Card (PMEM) or the Secondary Memory Card (SMEM). The message identifies the source of the error by displaying error and status registers. Each bit in a register corresponds to a particular type of error. A specific error exists when its corresponding bit is set to one.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01315]

I hh:mm:ss xy,ww ERR {PMEM|SMEM} TN dddd EVENT eeee COND cc COMPL

### **Explanation Of Parameters**

---

**ERR** - Error

**PMEM** - Primary memory card.

**SMEM** - Secondary memory card.

**TN** - Transaction Number

**dddd** - Four digit (hexadecimal) transaction number

The transaction number is a unique tag used to identify a specific event that is recorded in the error recovery log. Specific events may be retrieved from the error log using message I.55011 if the user knows their transaction numbers.

**EVENT** - Event

**eeee** - Four digit (hexadecimal) event number

The event number is a unique tag used to identify a specific event that is recorded in the error recovery log. Specific events may be retrieved from the error log using message I.55011 if the user knows their event numbers.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**80** Memory card cannot be accessed



## **ERR,PWR,PMC,PMA,DMA,MI,TN**

### **ERROR RECOVERY POWER**

#### **Explanation Of Command**

This message indicates that error recovery was called by DACS II because of a power failure on the frame.

This message also indicates which power supply failed. The 4-digit hexadecimal "fields" of the error status register indicate the failed power source(s). These hexadecimal values must be decoded into their individual bits. A bit set to 1 indicates an errored power source.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01301]

pa <il> hh:mm:ss xy,ww ERR PWR {PMC|PMA|DMA|MI}  
aaaa bbbb cccc dddd TN dddd COMPL

## Explanation Of Parameters

**pa** - Priority of action field.

*pa Explanation*

|           |                |
|-----------|----------------|
| <b>I</b>  | Information    |
| <b>*</b>  | Minor alarm    |
| <b>**</b> | Major alarm    |
| <b>*C</b> | Critical alarm |

**il** - Intervention level.

|            |                              |
|------------|------------------------------|
| <b>il</b>  | Explanation                  |
| <b>AMI</b> | Immediate maintenance action |
| <b>AMD</b> | Deferred maintenance action  |
| <b>SI</b>  | No intervention              |

|            |                                    |
|------------|------------------------------------|
| <b>PMC</b> | Prompt Maintenance Action Critical |
| <b>PMA</b> | Prompt Maintenance Action Major    |
| <b>DMA</b> | Deferred Maintenance Action Minor  |
| <b>MI</b>  | Maintenance Information            |

**PWR** - Power

**ERR** - Error recovery

**aaaa** - EMTC ESR0

aaaa is a four-digit hexadecimal number representing the sixteen bits of ESR0. Each bit of this register contains the status of an individual power source. A power source has failed if the bit corresponding to it is set to 1.

*bit # Explanation*

|              |                                              |
|--------------|----------------------------------------------|
| <b>15-12</b> | Unused                                       |
| <b>11</b>    | CCN/ECCN 1 PWR failure                       |
| <b>10</b>    | CCN/ECCN 0 PWR failure                       |
| <b>9</b>     | SYNC 1 PWR failure                           |
| <b>8</b>     | SYNC 0 PWR failure                           |
| <b>7</b>     | Unit 7 PWR failure                           |
|              | Unused if non-Capacity Expansion Frame (CEF) |
| <b>6</b>     | Unused                                       |
| <b>5</b>     | Unit 6 PWR failure                           |
| <b>4</b>     | Unit 5 PWR failure                           |
| <b>3</b>     | Unit 4 PWR failure                           |
| <b>2</b>     | Unit 3 PWR failure                           |
| <b>1</b>     | Unit 2 PWR failure                           |
| <b>0</b>     | Unit 1 PWR failure                           |

**bbbb** - EMTC ESR1

bbbb is similar to aaaa above but represents the sixteen bits of ESR1.

| bit # | Explanation                                                                                               |
|-------|-----------------------------------------------------------------------------------------------------------|
| 15-14 | Unused                                                                                                    |
| 13    | The +12 V disk and tape power unit has failed<br>(484GA, 484GB, or 484GC)                                 |
| 12    | The +5 V main controller power unit has failed<br>(411AA, 411AB, or 411AC)                                |
|       | OR                                                                                                        |
|       | the +/-12 V main controller power unit for communication<br>links has failed<br>(SM565, SM624, or SM565B) |
| 11-00 | Unused                                                                                                    |

**cccc** - EMTC ESR2 (Reserved for future use)

**dddd** - EMTC ESR3 (Unused if non-CEF)

dddd is similar to aaaa above but represents the sixteen bits of ESR3.

| <i>bit #</i> | <i>Explanation</i>  |
|--------------|---------------------|
| <b>15-9</b>  | Unused              |
| <b>8</b>     | Unit 16 PWR failure |
| <b>7</b>     | Unit 15 PWR failure |
| <b>6</b>     | Unit 14 PWR failure |
| <b>5</b>     | Unit 13 PWR failure |
| <b>4</b>     | Unit 12 PWR failure |
| <b>3</b>     | Unit 11 PWR failure |
| <b>2</b>     | Unit 10 PWR failure |
| <b>1</b>     | Unit 9 PWR failure  |
| <b>0</b>     | Unit 8 PWR failure  |

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified by the UTL::QRY,ERR message to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

## **ERR,SOFTWARE,MC,ERROR,MID,TN,RC,ACTION**

### **ERROR RECOVERY SOFTWARE**

#### **Explanation Of Command**

This output message reports that an error was detected by the software in the indicated processor. The report also gives the error type, the source of the error, and the action taken.

The action taken should be sufficient to recover from the problem, in which case no craft action is necessary. Or the action taken was to isolate the problem and prevent system inconsistencies. In this case, manual action will be required to restore the appropriate entities.

#### **⇒ NOTE:**

All new or unknown occurrences of this error should be reported to the development organizations immediately.

The word "SOFTWARE", in the message text, is replaced by "MC" when the error type is "DISK" or "TAPE".

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

[O.01362]

```
I hh:mm:ss xy,ww ERR {SOFTWARE|MC} <error type> ERROR 4 LN MSG:
MID=<mid> TN=dddd RC=<rc> ACTION=<action> ENTITY=<entity>
SOURCE=<source> DP=<dp> PROC=<proc>
TSARGS=<tsargs> COMPL
```

## Explanation Of Parameters

[illegible]

## SOFTWARE

- Software

**MC** - Main controller

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified in UTL::QRY,ERR to retrieve the content of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

**error type**

- Type of error

| <i>error type</i> | <i>Explanation</i>                                                   |
|-------------------|----------------------------------------------------------------------|
| CHECKSUM          | Text or data checksum error                                          |
| COMMUNICATION     | Difficulty talking to remove<br>processes of processors              |
| CPUDGN            | CPU diagnostic failed                                                |
| DATA BASE         | Error in data base access                                            |
| DBCHECKSUM        | Data base checksum error                                             |
| DISK              | Trouble accessing disk                                               |
| EXCESSIVE INT     | Too many error recovery calls                                        |
| HARDWARE          | External hardware failure                                            |
| JOURNAL           | Trouble sending journal to disk                                      |
| PROGRAM           | Program error, bad internal data passed                              |
| RAMTEST           | Internal RAM test failed                                             |
| RECOVERY          | Internal recovery error                                              |
| REMOTE PROGRAM    | Program error encountered on other<br>processor local process report |
| TAPE              | Trouble accessing tape                                               |
| VMACHINE          | Operating system or interface problem                                |

**ERROR** - Error

**SOURCE** - Source

**source** - Internal DACS II software filename (12 characters)

**DP** - Decision point

**dp** - Decision point value (0- to 8-digit positive decimal number)  
Number associated with a specific point in the file specified in  
the source field.

**RC** - Return code

**rc** - Return code value (0- to 8-digit positive or negative number)  
Number returned by an internal function.

**ACTION** - Action

**action** - Action to be taken

| <i>action</i> | <i>Explanation</i>                                        |
|---------------|-----------------------------------------------------------|
| RSCOLDBT      | Super Cold Boot                                           |
| REPORT        | Report only, no action                                    |
| HWBOOT        | Hardware boot (boot of processor with existing data base) |
| WMBOOT        | Warm boot (boot of processor with disk data base)         |
| CDBOOT        | Cold boot (boot of processor programs and data base)      |
| REMOVE        | Remove processor from service                             |
| MCOND         | Put frame into MCOND                                      |
| PARK          | Stop processor immediately                                |

**ENTITY** - Entity

**entity** - Entity identifier

| <i>entity</i> | <i>Explanation</i>                     |
|---------------|----------------------------------------|
| MP            | Action on Main Processor               |
| CI            | Action on Communication Interface      |
| MC            | Action on MC                           |
| UNIT [q]q     | Action on specific unit (1 through 16) |
| FRAME         | Frame wide action                      |

**MID** - Mailbox identifier

**mid** - Identifier

**PROC** - Process

**proc** - Process value

**TSARGS** - Trouble shooting arguments

**tsargs** - Trouble shooting arguments value

## **ERR,SYNC,MODE,FAST,HOLDOVER,NORMAL**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This message reports that the active sync has switched to a new operating mode. Additional autonomous actions may be reported (that is, side switch) based on the state of the mate synchronizer.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01366]

```
I hh:mm:ss xy,ww ERR SYNC a MODE {FAST|HOLDOVER|NORMAL}\
{MATE|CRO|TLI m SSP c} TN dddd 2 LN MSG:
<synchronizer status data bytes> COND cccc COMPL
```



## Explanation Of Parameters

|                 |                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>I</b>        | Information                                                                                                                 |
| <b>ERR</b>      | - Error recovery                                                                                                            |
| <b>SYNC</b>     | - Synchronizer                                                                                                              |
| <b>a</b>        | - Synchronizer number (0 or 1)                                                                                              |
| <b>MODE</b>     | - Mode<br>New synchronizer operating mode                                                                                   |
| <b>FAST</b>     | - Fast<br>Synchronizer is in fast phase locked loop mode                                                                    |
| <b>HOLDOVER</b> | - Holdover<br>Synchronizer is in holdover mode, or has a timing source but has not locked to it                             |
| <b>NORMAL</b>   | - Normal<br>Synchronizer is normal (locked to indicated reference)                                                          |
| <b>MATE</b>     | - Mate<br>Synchronizer is receiving timing from the mate synchronizer (that is, the synchronizer is locked to cross couple) |
| <b>CRO</b>      | - Clock reference oscillator<br>CRO synchronizer is receiving timing from a CRO                                             |
| <b>TLI</b>      | - Timing link interface                                                                                                     |
| <b>m</b>        | - TLI number (1 through 4)                                                                                                  |
| <b>SSP</b>      | - Synchronizer sync port                                                                                                    |
| <b>c</b>        | - SSP on TLI (0 or 1)                                                                                                       |
| <b>TN</b>       | - Transaction                                                                                                               |
| <b>dddd</b>     | - Transaction number                                                                                                        |
| <b>cccc</b>     | - Error recovery condition code                                                                                             |

### **synchronizer status data bytes**

- Synchronizer status information (hexadecimal)

Up to five bytes of synchronizer status data. The actual number of bytes output depends upon cccc. The bits of each byte are labeled abcdefgh in that order. The output will appear in the following order:

byte 1, byte 2, byte 3, byte 4, and byte 5.

#### **byte 1**

| <i>bit</i> | <i>Explanation</i>          |
|------------|-----------------------------|
| a          | MC is down flag             |
| b          | SYNC is down flag           |
| c          | Mate SYNC is out-of-service |
| d          | Time Base is down           |

Timing link service status. A bit set to 1 indicates in-service.

| <i>bit</i> | <i>Explanation</i> |
|------------|--------------------|
| e          | TLI1               |
| f          | TLI2               |
| g          | TLI3               |
| h          | TLI4               |

byte 2 - Timing link (SSP) in-service status

A bit set to 1 indicates the indicated entity is in-service

| <i>bit</i> | <i>Explanation</i> |
|------------|--------------------|
| a          | SSP 0 on TLI 1     |
| b          | SSP 1 on TLI 1     |
| c          | SSP 0 on TLI 2     |
| d          | SSP 1 on TLI 2     |
| e          | SSP 0 on TLI 3     |
| f          | SSP 1 on TLI 3     |
| g          | SSP 0 on TLI 4     |
| h          | SSP 1 on TLI 4     |

### byte 3

| <i>bit</i> | <i>Explanation</i>                                 |
|------------|----------------------------------------------------|
| a          | SYNC restart flag                                  |
| b          | Hardware summary, error on DPLL                    |
| c          | PLL summary, any major cross-couple error          |
| d          | Cross-couple summary, any major cross-couple error |
| e          | CRO summary error, any major CRO error             |
| fgh        | Not used                                           |

### byte 4

| <i>bit</i> | <i>Explanation</i>                   |
|------------|--------------------------------------|
| ab         | Synchronizer architecture            |
| 00         | Slave in master slave configuration  |
| 01         | Master in master slave configuration |
| 10         | Mutual synchronization system        |
| cde        | Operational stratum field            |
| 000        | Domestic stratum 3                   |
| 011        | Domestic stratum 2                   |
| 001        | CEPT Local Exchange                  |
| 010        | CEPT Toll Exchange                   |
| fg         | PLL locking mode field               |
| 00         | Normal                               |
| 01         | Fast                                 |
| 10         | Holdover                             |
| h          | Hit timing holdover field            |

**byte 5**

*bit      Explanation*

ab      Active timing link source field

00      Holdover

01      Timing Link

10      Cross couple

11      CRO

cde      Active link field

000      TLI 1, SSP 0

001      TLI 1, SSP 1

010      TLI 2, SSP 0

011      TLI 2, SSP 1

100      TLI 3, SSP 0

101      TLI 3, SSP 1

110      TLI 4, SSP 0

111      TLI 4, SSP 1

fgh      Not used

**COND**   - Condition

**cccc**   - Hexadecimal condition code

**cccc**   *Explanation*

**EF00**   Unknown what sync switched to

**EF01**   SYNC switched to NORMAL mode

**EF02**   SYNC switched to HOLDOVER

**EF03**   SYNC switched to FAST mode

**EF04**   SYNC switched TLIs/SSPs

**EF05**   SYNC switched to cross couple

## **ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This message reports the results of the error recovery process on the synchronizer with the alarms set.

The errors can be of the following types:

- Loss of signal
- Loss of energy
- Excessive jitter
- Phase step
- Out of frame
- Major framing error rate
- Minor framing error rate

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

---

## Autonomous Message

---

### Nonhierarchical

---

[O.01333]

pa <il> hh:mm:ss xy,ww    ERR SYNC a TLI m SSP b [NPC abc] \  
TN dddd    3 LN MSG:  
ALM[ LOS][ LEN][ EXJ][ PHS][ OOF][ MAJ][ MIN] {PMC|PMA|DMA|MI} SET  
<byte 1> <byte 2> <byte 3> <byte 4> <byte 5> COND cccc COMPL

### Hierarchical

---

[O.01333]

pa <il> hh:mm:ss xy,ww    ERR SYNC a TLI m SSP b [NPC uvmp] \  
TN dddd    3 LN MSG:  
ALM[ LOS][ LEN][ EXJ][ PHS][ OOF][ MAJ][ MIN] {PMC|PMA|DMA|MI} SET  
<byte 1> <byte 2> <byte 3> <byte 4> <byte 5> COND cccc COMPL

---

## Explanation Of Parameters

---

pa    - Priority of action field.

|    |                |
|----|----------------|
| pa | Explanation    |
| I  | Information    |
| *  | Minor alarm    |
| ** | Major alarm    |
| *C | Critical alarm |

il    Intervention Level

|     |                              |
|-----|------------------------------|
| il  | Explanation                  |
| AMI | Immediate maintenance action |
| AMD | Deferred maintenance action  |
| SI  | No intervention              |

|     |                                    |
|-----|------------------------------------|
| PMC | Prompt Maintenance Action Critical |
| PMA | Prompt Maintenance Action Major    |
| DMA | Deferred Maintenance Action Minor  |
| MI  | Maintenance Information            |

**ERR**    - Error recovery

**SYNC**    - Synchronizer

**a**        - SYNC number (0 or 1)

**TLI** - Timing link interface  
**m** - TLI number (1 through 4)

**SSP** - Synchronizer sync port  
**b** - SSP number (0 or 1)

**NPC** - Network processing circuit  
**abc** - Nonhierarchical NPC number  
**uvmnp** - Hierarchical NPC number  
    **uv** - Unit number  
    **m** - Module number  
    **np** - NPC number within the module

**TN** - Transaction  
**dddd** - Transaction number

**ALM** - Alarm

**LOS** - Loss of signal

**LEN** - Loss of energy

**EXJ** - Excessive jitter

**PHS** - Phase step

**00F** - Out of frame

**MAJ** - Major  
Major framing error rate

**MIN** - Minor  
Minor framing error rate

**SET** - Set

**COND** - Condition  
**cccc** - Error recovery condition code

**byte 1,**  
**byte 2,**

...,

**byte 5** - Synchronizer status data bytes

The letters a through h used below are the names given to the individual bits in a synchronizer status data byte. The eight bits in each byte are labeled abcdefgh in left to right order.

**byte 1**

| bit  | Explanation                             |
|------|-----------------------------------------|
| a    | Timing link equipped by MC              |
| b    | Timing link declared out-of-service     |
| c    | Timing link out-of-service due to error |
| d    | Associated Timing Extractor TLI error   |
| efgh | Not used                                |

**byte 2** - Priority weighting of link, a number from 1 through 8

**byte 3** - Framing format, line format, and frequency

| bit | Explanation                                       |
|-----|---------------------------------------------------|
| abc | Framing format (valid only for TXB1 or TXB2 TLIs) |
| 000 | D4 (TXB1)                                         |
| 001 | ESF (TXB1)                                        |
| 010 | DDS (TXB1)                                        |
| 000 | CCS (TXB2)                                        |
| 001 | ERSM (TXB2)                                       |
| 010 | CAS0 (TXB2)                                       |
| 011 | CAS1 (TXB2)                                       |
| de  | Line format (valid only for TXB1 or TXB2 TLIs)    |
| 00  | Bipolar (TXB1)                                    |
| 01  | B8ZS (TXB1)                                       |
| 10  | AMI (TXB2)                                        |
| AA  | HDB3 (TXB2)                                       |
| fgh | Frequency (TXUC TLI)                              |
| 000 | 512 kHz                                           |
| 001 | 1.000 MHz                                         |
| 010 | 1.544 MHz                                         |
| 011 | 2.048 MHz                                         |
| 100 | 5.000 MHz                                         |



**byte 4** - Mixed status

bit Explanation

- a Carrier failure alarm/loss of signal (TXB1, TXB2, and TXCC)
- b Timing signal loss of energy
- c Autobaud failure
- d Frequency offset flag
- e Excessive jitter
- f Phase step
- gh Not used

**byte 5** - Framing status

bit Explanation

- a Out of frame
- b Major framing error rate
- c Major framing error rate
- defgh Not used

**cccc** - Hexadecimal condition code

**cccc** *Explanation*

- E601** TL out of service or loss of signal
- E602** Timing Extractor type TLI has hardware problem

## **ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN**

### **ERROR RECOVERY, SYNCHRONIZER**

#### **Explanation Of Command**

This message reports the results of the error recovery process on the synchronizer with the alarms cleared.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

#### **Nonhierarchical**

[O.01335]

I hh:mm:ss xy,ww ERR SYNC a TLI m SSP b [NPC abc] \  
TN dddd 3 LN MSG:  
ALM[ LOS][ LEN][ EXJ][ PHS][ OOF][ MAJ][ MIN] CLR  
<byte 1> <byte 2> <byte 3> <byte 4> <byte 5> COND cccc COMPL

## **Hierarchical**

---

[O.01335]

**I** hh:mm:ss xy,ww    **ERR SYNC a TLI m SSP b [NPC uvmp]** \  
**TN dddd 3 LN MSG:**  
**ALM[ LOS][ LEN][ EXJ][ PHS][ OOF][ MAJ][ MIN] CLR**  
**<byte 1> <byte 2> <byte 3> <byte 4> <byte 5> COND cccc COMPL**

## **Explanation Of Parameters**

---

**ERR**    - Error recovery

**SYNC**   - Synchronizer

**a**        - SYNC number (0 or 1)

**TLI**     - Timing link interface

**m**        - TLI number (1 through 4)

**SSP**     - Synchronizer sync port

**b**        - SSP number (0 or 1)

**NPC**     - Network processing circuit

**abc**     - Nonhierarchical NPC number

**uvmp**   - Hierarchical NPC number

**uv**     - Unit number

**m**       - Module number

**np**     - NPC number within the module

**TN**       - Transaction

**dddd**   - Transaction number

**ALM**     - Alarm

**LOS**     - Loss of signal

**LEN**     - Loss of energy

**EXJ**     - Excessive jitter

**PHS**     - Phase step

**00F** - Out of frame

**MAJ** - Major framing error rate

**MIN** - Minor framing error rate

**CLR** - Clear

**byte 1,**

**byte 2,**

...,

**byte 5** - Synchronizer status bytes

Synchronizer status data in binary form. The number of data bytes ranges from 1 to 5, depending upon the synchronizer error type. These bytes are a coded form of the information shown in "explanation of error condition code". Each byte has eight bits labeled abcdefgh.

If Main Processor to Synchronizer communication has failed, Error Recovery may not get the correct status data from the Synchronizer. All bits in "synchronizer status data bytes" will then be set to 1 by default.

byte 1

| bit  | Explanation                             |
|------|-----------------------------------------|
| a    | Timing link equipped by MC              |
| b    | Timing link declared out-of-service     |
| c    | Timing link out-of-service due to error |
| d    | Associated Timing Extractor TLI error   |
| efgh | Not used                                |

**byte 2** - Priority weighting of link, a number from 1 through 8

**byte 3** - Framing format, line format, and frequency

bit Explanation

abc Framing format (valid only for TXB1 or TXB2 TLIs)

TXB1

000 D4

001 ESF

010 DDS

TXB2

000 CCS

001 ERSM

010 CAS0

011 CAS1

de Line format (valid only for TXB1 or TXB2 TLIs)

TXB1

00 Bipolar

01 B8ZS

TXB2

10 AMI

AA HDB3

fgh Frequency (TXUC TLI)

000 512 kHz

001 1.000 MHz

010 1.544 MHz

011 2.048 MHz

100 5.000 MHz

**byte 4** - Mixed status

bit Explanation

a Carrier failure alarm/loss of signal (TXB1, TXB2, and TXCC)

b Timing signal loss of energy

c Autobaud failure

d Frequency offset flag

e Excessive jitter

f Phase step

gh Not used

**byte 5** - Framing status

bit Explanation

a Out of frame

b Major framing error rate

c Major framing error rate

defgh Not used

**COND** - Condition

**cccc** - Error recovery condition code

**cccc** - Hexadecimal condition code

**cccc** *Explanation*

**E805** TL error cleared

---

## **EXC,MACRO**

---

### **EXECUTE MACRO**

#### **Explanation Of Command**

---

This message requests the execution of macro **<name>**. The optional fields **p1**, **p2**, etc., specify parameters used in the macro.

To list the contents of a macro, use the **UTL QRY,LIST,MACRO** command, Message I.54131.

The **NULL** keyword may be used as a parameter.

#### **Command**

---

[I.39301]

**EXC:FRM xy,SEQ ww:MACRO <macro name>[,(<p1>[,<p2>[,<p3>\**  
**[, ...[,<p10>]]]])]!**

#### **Completion Message**

---

[O.39301]

**M hh:mm:ss xy,ww n[vv] EXC MACRO <macro name>\**  
**[ (<p1>[,<p2>[,<p3>[, ...[,<p10>]]]])] COMPL**

[O.39302]

**M hh:mm:ss xy,ww n[vv] EXC MACRO <macro name> STOP \**  
**COMPL**

[O.39303]

**M hh:mm:ss xy,ww n[vv] EXC MACRO IN PROGRESS**

## **Denial Message**

---

[O.39301.01]

**M** hh:mm:ss xy,ww n[vv] **EXC MACRO** <macro name> **COND** cc \ **DNY**

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**p1,**  
**p2,**  
**p3,**

...,

**p10** - Macro parameter values (1 to 7 uppercase alphanumeric characters)

Within a macro a parameter is referred to by #nn. The # sign indicates a parameter reference follows and the nn indicates the position in the command line from which the parameter value will be taken. That is, if the parameter reference #03 is contained in a line within a macro then the third parameter on the EXC::MACRO command line will be substituted for each appearance of the parameter reference #03.

A maximum of 10 parameters can be specified.

**MACRO** - Macro

**macro name**

- Macro name (seven characters maximum length)

The name of a collection of DACS II commands executed as a group.

A macro name is a string of capitalized alphanumeric characters. There are two type of macros; public and private. A private macros is created by a user in space allocated to the user by the system administrator. Only the user that created it can execute or read (LIST) a private macro. A public macro is created by the system administrator and is executable and readable by all users. A public macro name must start with the letter "P". A private macro name must not start with the letter "P".

**STOP** - Indicates that macro execution is stopped



**cc** - Hexadecimal condition code

**cc** *Explanation*

- 62** File is being accessed
- 64** File doesn't exist/can't be accessed
- 68** Incorrect language/addressing mode
- 69** Incorrect number of parameters
- D5** No user is logged in on the link/vc



---

**Contents**

|                             |        |
|-----------------------------|--------|
| <b>FRADTS,BMCMP</b>         | 12-2   |
| ■ Explanation Of Command    | 12-2   |
| ■ Command                   | 12-2   |
| ■ Completion Message        | 12-2   |
| ■ Denial Message            | 12-2   |
| ■ Autonomous Message        | 12-2   |
| ■ Explanation Of Parameters | 12-3   |
| <b>FRADTS,DGN</b>           | 12-4   |
| ■ Explanation Of Command    | 12-4   |
| ■ Command                   | 12-4   |
| ■ Completion Message        | 12-4   |
| ■ Denial Message            | 12-4   |
| ■ Autonomous Message        | 12-4   |
| ■ Explanation Of Parameters | 12-5   |
| <b>FRADTS,FRCMP</b>         | 12-7   |
| ■ Explanation Of Command    | 12-7   |
| ■ Command                   | 12-7   |
| ■ Completion Message        | 12-7   |
| ■ Denial Message            | 12-7   |
| ■ Autonomous Message        | 12-7   |
| ■ Explanation Of Parameters | 12-8   |
| <b>FRADTS,MC,DGN</b>        | 12-107 |
| ■ Explanation Of Command    | 12-107 |
| ■ Command                   | 12-107 |
| ■ Completion Message        | 12-107 |
| ■ Denial Message            | 12-107 |

---

## Contents

|                             |        |
|-----------------------------|--------|
| ■ Autonomous Message        | 12-107 |
| ■ Explanation Of Parameters | 12-108 |
| <b>GRTH,FRAME,CHAR,UID</b>  | 12-109 |
| ■ Explanation Of Command    | 12-109 |
| ■ Command                   | 12-109 |
| ■ Completion Message        | 12-110 |
| ■ Denial Message            | 12-110 |
| ■ Autonomous Message        | 12-110 |
| ■ Explanation Of Parameters | 12-110 |
| <b>GRTH,NPC,NPCTG</b>       | 12-112 |
| ■ Explanation Of Command    | 12-112 |
| ■ Command                   | 12-112 |
| ■ Nonhierarchical           | 12-112 |
| ■ Hierarchical              | 12-112 |
| ■ Completion Message        | 12-112 |
| ■ Nonhierarchical           | 12-112 |
| ■ Hierarchical              | 12-113 |
| ■ Denial Message            | 12-113 |
| ■ Nonhierarchical           | 12-113 |
| ■ Hierarchical              | 12-113 |
| ■ Autonomous Message        | 12-113 |
| ■ Explanation Of Parameters | 12-113 |
| <b>GRTH,NPC,NPCTP</b>       | 12-116 |
| ■ Explanation Of Command    | 12-116 |
| ■ Command                   | 12-116 |
| ■ Nonhierarchical           | 12-116 |
| ■ Hierarchical              | 12-116 |
| ■ Completion Message        | 12-116 |
| ■ Nonhierarchical           | 12-116 |
| ■ Hierarchical              | 12-117 |
| ■ Denial Message            | 12-117 |
| ■ Nonhierarchical           | 12-117 |
| ■ Hierarchical              | 12-117 |
| ■ Autonomous Message        | 12-117 |
| ■ Explanation Of Parameters | 12-117 |
| <b>GRTH,NPC,TYPE</b>        | 12-120 |
| ■ Explanation Of Command    | 12-120 |

---

## Contents

|                                               |        |
|-----------------------------------------------|--------|
| ■ Command                                     | 12-121 |
| ■ Nonhierarchical                             | 12-121 |
| ■ Hierarchical                                | 12-121 |
| ■ Completion Message                          | 12-121 |
| ■ Nonhierarchical                             | 12-121 |
| ■ Hierarchical                                | 12-121 |
| ■ Denial Message                              | 12-121 |
| ■ Nonhierarchical                             | 12-121 |
| ■ Hierarchical                                | 12-122 |
| ■ Autonomous Message                          | 12-122 |
| ■ Explanation Of Parameters                   | 12-122 |
| <b>GRTH,NPC,TYPE,CBTIMER</b>                  | 12-127 |
| ■ Explanation Of Command                      | 12-127 |
| ■ Command                                     | 12-127 |
| ■ Nonhierarchical                             | 12-127 |
| ■ Hierarchical                                | 12-127 |
| ■ Completion Message                          | 12-128 |
| ■ Nonhierarchical                             | 12-128 |
| ■ Hierarchical                                | 12-128 |
| ■ Denial Message                              | 12-128 |
| ■ Nonhierarchical                             | 12-128 |
| ■ Hierarchical                                | 12-128 |
| ■ Autonomous Message                          | 12-128 |
| ■ Explanation Of Parameters                   | 12-129 |
| <b>GRTH,NPC,TYPE,OPTS,IW,X,AIS,ML,PMA,DMA</b> | 12-132 |
| ■ Explanation Of Command                      | 12-132 |
| ■ Command                                     | 12-133 |
| ■ Nonhierarchical                             | 12-133 |
| ■ Hierarchical                                | 12-133 |
| ■ Completion Message                          | 12-133 |
| ■ Nonhierarchical                             | 12-133 |
| ■ Hierarchical                                | 12-134 |
| ■ Denial Message                              | 12-134 |
| ■ Nonhierarchical                             | 12-134 |
| ■ Hierarchical                                | 12-135 |
| ■ Autonomous Message                          | 12-135 |
| ■ Explanation Of Parameters                   | 12-135 |
| <b>GRTH,NPC,TYPE,OPTS,IW,X,AIS,ML,PMA,PMC</b> | 12-157 |

---

## Contents

|                                       |        |
|---------------------------------------|--------|
| ■ Explanation Of Command              | 12-157 |
| ■ Command                             | 12-158 |
| ■ Nonhierarchical                     | 12-158 |
| ■ Hierarchical                        | 12-158 |
| ■ Completion Message                  | 12-159 |
| ■ Nonhierarchical                     | 12-159 |
| ■ Hierarchical                        | 12-160 |
| ■ Denial Message                      | 12-160 |
| ■ Nonhierarchical                     | 12-160 |
| ■ Hierarchical                        | 12-161 |
| ■ Autonomous Message                  | 12-161 |
| ■ Explanation Of Parameters           | 12-161 |
| <b>GRTH,SYNC,TB,TYPE</b>              | 12-177 |
| ■ Explanation Of Command              | 12-177 |
| ■ Command                             | 12-177 |
| ■ Completion Message                  | 12-177 |
| ■ Denial Message                      | 12-177 |
| ■ Autonomous Message                  | 12-177 |
| ■ Explanation Of Parameters           | 12-178 |
| <b>GRTH,SYNC,TLI,TYPE</b>             | 12-179 |
| ■ Explanation Of Command              | 12-179 |
| ■ Command                             | 12-179 |
| ■ Completion Message                  | 12-179 |
| ■ Denial Message                      | 12-179 |
| ■ Autonomous Message                  | 12-179 |
| ■ Explanation Of Parameters           | 12-180 |
| <b>GRTH,SYNC,TLI,TYPE,SSP,SRC,NPC</b> | 12-181 |
| ■ Explanation Of Command              | 12-181 |
| ■ Command                             | 12-181 |
| ■ Nonhierarchical                     | 12-181 |
| ■ Hierarchical                        | 12-181 |
| ■ Completion Message                  | 12-182 |
| ■ Nonhierarchical                     | 12-182 |
| ■ Hierarchical                        | 12-182 |
| ■ Denial Message                      | 12-182 |
| ■ Nonhierarchical                     | 12-182 |
| ■ Hierarchical                        | 12-182 |
| ■ Autonomous Message                  | 12-182 |

---

## Contents

|                                         |        |
|-----------------------------------------|--------|
| ■ Explanation Of Parameters             | 12-183 |
| <b>GRTH,TG,NPCTG</b>                    | 12-187 |
| ■ Explanation Of Command                | 12-187 |
| ■ Command                               | 12-187 |
| ■ Completion Message                    | 12-187 |
| ■ Denial Message                        | 12-187 |
| ■ Autonomous Message                    | 12-188 |
| ■ Explanation Of Parameters             | 12-188 |
| <b>GRTH,TP</b>                          | 12-190 |
| ■ Explanation Of Command                | 12-190 |
| ■ Command                               | 12-190 |
| ■ Completion Message                    | 12-190 |
| ■ Denial Message                        | 12-191 |
| ■ Autonomous Message                    | 12-191 |
| ■ Explanation Of Parameters             | 12-191 |
| <b>GRTH,UNIT,FTMI,IMP</b>               | 12-194 |
| ■ Explanation Of Command                | 12-194 |
| ■ Command                               | 12-194 |
| ■ Completion Message                    | 12-194 |
| ■ Denial Message                        | 12-194 |
| ■ Autonomous Message                    | 12-194 |
| ■ Explanation Of Parameters             | 12-195 |
| <b>GRTH,UNIT,MXR,TYPE,BERM,BERT,LBO</b> | 12-196 |
| ■ Explanation Of Command                | 12-196 |
| ■ Command                               | 12-196 |
| ■ Completion Message                    | 12-196 |
| ■ Denial Message                        | 12-197 |
| ■ Autonomous Message                    | 12-197 |
| ■ Explanation Of Parameters             | 12-197 |
| <b>GRTH,UNIT,TYPE,CONN</b>              | 12-199 |
| ■ Explanation Of Command                | 12-199 |
| ■ Command                               | 12-200 |
| ■ Completion Message                    | 12-200 |
| ■ Denial Message                        | 12-201 |
| ■ Autonomous Message                    | 12-201 |
| ■ Explanation Of Parameters             | 12-201 |

---

## Contents

|                                      |        |
|--------------------------------------|--------|
| <b>IN,PROGRESS</b>                   | 12-204 |
| ■ Explanation Of Command             | 12-204 |
| ■ Command                            | 12-204 |
| ■ Completion Message                 | 12-204 |
| ■ Denial Message                     | 12-204 |
| ■ Autonomous Message                 | 12-204 |
| ■ Explanation Of Parameters          | 12-205 |
| <b>INHSW,UNIT,MMFG,TOPRTN,TOSRVC</b> | 12-206 |
| ■ Explanation Of Command             | 12-206 |
| ■ Command                            | 12-206 |
| ■ Completion Message                 | 12-206 |
| ■ Denial Message                     | 12-207 |
| ■ Autonomous Message                 | 12-207 |
| ■ Explanation Of Parameters          | 12-207 |
| <b>INSTALL</b>                       | 12-208 |
| ■ Explanation Of Command             | 12-208 |
| ■ Command                            | 12-214 |
| ■ Completion Message                 | 12-215 |
| ■ Denial Message                     | 12-215 |
| ■ Autonomous Message                 | 12-215 |
| ■ Explanation Of Parameters          | 12-215 |
| <b>INVALID,SFW,ID,BLOCK,COND</b>     | 12-216 |
| ■ Explanation Of Command             | 12-216 |
| ■ Command                            | 12-216 |
| ■ Completion Message                 | 12-216 |
| ■ Denial Message                     | 12-216 |
| ■ Autonomous Message                 | 12-216 |
| ■ Explanation Of Parameters          | 12-217 |
| <b>LINE</b>                          | 12-218 |
| ■ Explanation Of Command             | 12-218 |
| ■ Command                            | 12-218 |
| ■ Completion Message                 | 12-218 |
| ■ Denial Message                     | 12-218 |
| ■ Autonomous Message                 | 12-218 |
| ■ Explanation Of Parameters          | 12-219 |
| <b>LIST,END</b>                      | 12-220 |



---

## Contents

|                              |        |
|------------------------------|--------|
| ■ Explanation Of Command     | 12-220 |
| ■ Command                    | 12-220 |
| ■ Completion Message         | 12-220 |
| ■ Denial Message             | 12-221 |
| ■ Autonomous Message         | 12-222 |
| ■ Explanation Of Parameters  | 12-222 |
| <b>LOGIN,USER,PASSWD</b>     | 12-223 |
| ■ Explanation Of Command     | 12-223 |
| ■ Command                    | 12-224 |
| ■ Completion Message         | 12-224 |
| ■ Denial Message             | 12-224 |
| ■ Autonomous Message         | 12-224 |
| ■ Explanation Of Parameters  | 12-225 |
| <b>LOGOFF,USER,LINK,INCL</b> | 12-226 |
| ■ Explanation Of Command     | 12-226 |
| ■ Command                    | 12-226 |
| ■ Completion Message         | 12-226 |
| ■ Denial Message             | 12-227 |
| ■ Autonomous Message         | 12-227 |
| ■ Explanation Of Parameters  | 12-227 |



---

## **FRADTS — LOGOFF**

---

## **FRADTS — LOGOFF**

---

This section documents the commands **FRADTS** through **LOGOFF**.

## **FRADTS,BMCMP**

### **FRAME AUDITS**

#### **Explanation Of Command**

This completed, autonomously-generated action message from frame audits indicates that the data in Main Controller (MC) Random Access Memory (RAM) did not match the data on the PMEM PCMCIA card. A similar message may be used for mismatches between the Main Controller and individual Unit Controllers (UC) or between Main Controller and the Communications Interface (CI).

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.82003]

**I hh:mm:ss xy,ww FRADTS BMCMP <ttt> d8 d7 d6 d5 d4 d3 d2 d1 COMPL**

### **Explanation Of Parameters**

---

**ttt** - Entity name

*ttt*      *Explanation*

MP      Main processor

CI      Communications interface

U1-U16 Unit controller (1 through 16)

**d8** - Data base file number on PMEM card

**d7** - Invalid page number divided by 100 ( $d7 / 100$ )

**d6** - Invalid page number modulo by 100 ( $d6 \% 100$ )

If RAM page checksum is invalid,  $d5 = d4 = d3 = d2 = d1 = FF$ .

If DACS II cannot get the data base file on the PMEM card,  $d7 = d5 = FF$ .

## **FRADTS,DGN**

---

### **FRAME AUDITS DIAGNOSTICS**

#### **Explanation Of Command**

---

This autonomously-generated action message from frame audits indicates that an in-service diagnostic was run on the entity **ttt** for the element **eee** and the diagnostic test is complete.

#### **Command**

---

Not applicable.

#### **Completion Message**

---

Not applicable.

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

[O.82001]

I hh:mm:ss xy,ww FRADTS DGN <ttt> <eee> d0 COMPL

## Explanation Of Parameters

**ttt** - Diagnosed entity name

**eee** - Element of diagnosed entity

| <i>ttt</i> | <i>eee</i> | <i>Explanation</i>                                                                                           |
|------------|------------|--------------------------------------------------------------------------------------------------------------|
| CRO        |            | Clock reference oscillator                                                                                   |
|            | 0smc       | s - Side number (0 or 1)<br>m - TLI number (1 through 4)<br>c - TLR number (1 or 2)                          |
| DSPI       |            | Digital signal processor interface                                                                           |
|            | 0qqr       | qq - Unit number (01 through 16)<br>r - DSPI number (3 through 6)                                            |
| FTMI       |            | Facility terminating module interface                                                                        |
|            | 0qqb       | qq - Unit number (01 through 16)<br>b - FTMI in the FTU (1 through 4)                                        |
| NPC        |            | Network processing circuit                                                                                   |
|            | nnnn       | NPC number (0001 through 2560)<br>(Does not include NPCs equipped in DS3 or HDS3 Units)                      |
| SYNC       |            | Synchronizer                                                                                                 |
|            | 000s       | s - Side number (0 or 1)                                                                                     |
| TLI        |            | Timing link interface                                                                                        |
|            | 00sm       | s - Side number (0 or 1)<br>m - TLI number (1 through 4)                                                     |
| TSI        |            | Time slot interchanger                                                                                       |
|            | 0sft       | s - Side number (0 or 1)<br>f - CCB number (1 through 6). FROM Unit<br>t - TSI number (1 through 6). TO Unit |

---

|           |                                                                               |
|-----------|-------------------------------------------------------------------------------|
| ETSI      | Expanded time slot interchanger                                               |
| 0sqq      | s - Side number (0 or 1)<br>qq - Unit number (01 through 16)                  |
| UFC       | Format Converter                                                              |
| 0qqb      | qq - Unit number (01 through 16)<br>b - Format Converter number (1 through 4) |
| UNIT      | Unit                                                                          |
| 00qq      | qq - Unit number (01 through 16)                                              |
| FMT       | Formatter or Hybrid Formatter                                                 |
| 0qq s     | qq - Unit number (01 through 16)<br>s - Side number (0 or 1)                  |
| FLI       | Facility line interface                                                       |
| 0qqk      | qq - Unit number (01 through 16)<br>k - Identifier (k = S or P)               |
| CCI       | Clock and control interface                                                   |
| 000s      | s - Side number (0 or 1)                                                      |
| <b>d0</b> | - Return code from the diagnostic:                                            |
| <i>d0</i> | <i>Explanation</i>                                                            |
| FC        | Failed diagnostic                                                             |



---

## **FRADTS,FRCMP**

---

### **FRAME AUDITS**

#### **Explanation Of Command**

---

This autonomously-generated message indicates that test number **ttt** was run and that this frame audit found data in the incorrect state. The message also indicates that this frame audit has completed.

#### **Command**

---

Not applicable.

#### **Completion Message**

---

Not applicable.

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

[O.82002]

**I** hh:mm:ss xy,ww    **FRADTS FRCMP** ttt[ d9 d8 d7 d6] \  
d5 d4 d3 d2 d1 d0 **COMPL**

## Explanation Of Parameters

---

**ttt** - Test Number

**d9 - d0** - Hexadecimal values of errored data bytes  
Data bytes d9 through d6 are used by some but not all tests.

*ttt Explanation*

002 FTU FTMI status flags are inconsistent

The FTMI equipage flag in the MP data base does not match the equipage flag in the UC data base.

d0 FTMI flag from MP data base  
d1 FTMI flag from UC data base  
d2 Not used  
d3 Not used  
d4 FTMI number  
d5 UNIT number

003 FTU FC status flags are inconsistent

The FC equipage flag in the MP data base does not match the equipage flag in the UC data base.

d0 FC flag from MP data base  
d1 FC flag from UC data base  
d2 Not used  
d3 FC side  
d4 FTMI number  
d5 UNIT number

004 FTU FTMI left side equalization values are inconsistent

The FTMI left side equalization values in the MP data base do not match those in the UC data base.

d0 Second byte of the equalization value from MP data base  
d1 First byte of the equalization value from MP data base  
d2 Second byte of the equalization value from UC data base  
d3 First byte of the equalization value from UC data base  
d4 FTMI number  
d5 UNIT number

005 FTU FTMI right side equalization values are inconsistent

The FTMI right side equalization values in the MP data base do not match those in the UC data base.

- d0 Second byte of the equalization value from MP data base
- d1 First byte of the equalization value from MP data base
- d2 Second byte of the equalization value from UC data base
- d3 First byte of the equalization value from UC data base
- d4 FTMI number
- d5 UNIT number

006 FTU FTMI mode flags are inconsistent

The mode of the FTMI in the MP data base does not match the mode of the FTMI in the UC data base.

- d0 FTMI mode from MP data base
- d1 FTMI mode from UC data base
- d2 Not used
- d3 Not used
- d4 FTMI number
- d5 UNIT number

007 Unit flags are inconsistent

The UNIT equipage flag in the MP data base does not match the UNIT equipage flag in the unit data base.

- d0 UNIT flag from MP data base
- d1 UNIT flag from UC data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 UNIT number

008 Unit Cross-Connect side status flag is inconsistent

The Cross-Connect side status flag in the MP data base does not match the CCN/ECCN side status flag in the unit data base.

- d0 Cross-Connect side flag from MP data base
- d1 Cross-Connect side flag from UNIT data base
- d2 Not used
- d3 Not used
- d4 Cross-Connect side
- d5 UNIT number

009 DS3 FMT/HFMT equipage inconsistent

FMT/HFMT equipage in the MP data base is not consistent with that of the unit data base

d0 MP equipage flag  
d1 UA equipage flag  
d2 Not used  
d3 Not used  
d4 FMT/HFMT Number  
d5 Unit Number

00A DS3 MXR/HMXR equipage inconsistent

MXR/HMXR equipage in the MP data base is not consistent with that of the unit data base

d0 MP data base equipage flag  
d1 UA data base equipage flag  
d2 Not used  
d3 Not used  
d4 MXR/HMXR Number  
d5 Unit Number

00B DS3 MIU equipage inconsistent

MIU equipage in the MP data base is not consistent with that of the Unit data base

d0 MP data base equipage flag  
d1 UA data base equipage flag  
d2 Not used  
d3 Not used  
d4 MIU Number  
d5 Unit Number

00C DS3 FLI equipage inconsistent

FLI equipage in the MP data base is not consistent with that of the Unit data base

d0 MP equipage flag  
d1 UA equipage flag  
d2 Not used  
d3 Not used  
d4 FLI Number  
d5 Unit Number

00D NPC Transmit Pseudo Framing Word is out of range

The Transmit Pseudo Framing Word is out of range in the MP data base

d0 The Transmit Pseudo Framing Word of NPC from MP data base  
d1 Not used  
d2 Not used  
d3 Not used  
d4 NPC number  
d5 UNIT number

00E NPC Receive Pseudo Framing Word is out of range

The Receive Pseudo Framing Word is out of range in the MP data base

d0 The Receive Pseudo Framing Word of NPC from MP data base  
d1 Not used  
d2 Not used  
d3 Not used  
d4 NPC number  
d5 UNIT number

00F NPC AIS Alarm data are inconsistent

The AIS Alarm data of the NPC in the MP data base does not match that in the unit data base

d0 The AIS Alarm data of NPC from MP data base  
d1 The AIS Alarm data of NPC from unit data base  
d2 Not used  
d3 Not used  
d4 NPC number  
d5 UNIT number

011 FTU NPC flags are inconsistent

The FTU (or DSPU) NPC equipage flag in the MP data base does not match the FTU (or DSPU) NPC equipage flag in the Unit data base.

d0 NPC flag from MP data base  
d1 NPC flag from UC data base  
d2 Not used  
d3 Not used  
d4 NPC number  
d5 UNIT number

012 FTU NPC insertion words are inconsistent

The FTU NPC insertion word in the MP data base does not match the FTU NPC insertion word in the UC data base.

- d0 NPC insertion word from MP data base
- d1 NPC insertion word from UC data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

013 FTU NPC types are inconsistent

The type of the FTU NPC in the MP data base does not match the type of the FTU NPC in the UC data base.

- d0 NPC type from MP data base
- d1 NPC type from UC data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

014 FTU NPC X option values are inconsistent

The X option of the FTU NPC in the MP data base does not match that in the UC data base.

- d0 Second byte of the X option of NPC from MP data base
- d1 First byte of the X option of NPC from MP data base
- d2 Second byte of the X option of NPC from UC data base
- d3 First byte of the X option of NPC from UC data base
- d4 NPC number
- d5 UNIT number

015 FTU NPC Y option values are inconsistent

The Y option of the FTU NPC in the MP data base does not match that in the UC data base.

- d0 Second byte of the Y option of NPC from MP data base
- d1 First byte of the Y option of NPC from MP data base
- d2 Second byte of the Y option of NPC from UC data base
- d3 First byte of the Y option of NPC from UC data base
- d4 NPC number
- d5 UNIT number

016 FTU NPC Z option values are inconsistent

The Z option of the FTU NPC in the MP data base does not match that in the UC data base.

- d0 Second byte of the Z option of NPC from MP data base
- d1 First byte of the Z option of NPC from MP data base
- d2 Second byte of the Z option of NPC from UC data base
- d3 First byte of the Z option of NPC from UC data base
- d4 NPC number
- d5 UNIT number

017 FTU NPC threshold values are inconsistent

The threshold value of the FTU NPC in the MP data base does not match that in the UC data base.

- d0 Second byte of the threshold value of NPC from MP data base
- d1 First byte of the threshold value of NPC from MP data base
- d2 Second byte of the threshold value of NPC from UC data base
- d3 First byte of the threshold value of NPC from UC data base
- d4 NPC number
- d5 UNIT number

018 FTU NPC Signaling field is inconsistent

The FTU NPC SIG field in the MP data base does not match the FTU NPC SIG field in the UC data base.

- d0 NPC SIG field from MP data base
- d1 NPC SIG field from UC data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

019 FTU NPC TS0 bit value is inconsistent

The FTU NPC TS0 bits in the MP data base do not match the FTU NPC TS0 bits in the UC data base.

- d0 NPC TS0 bits from MP data base
- d1 NPC TS0 bits from UC data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

01A FTU NPC loopback field is inconsistent

The FTU NPC LPBK field in the MP data base does not match the FTU NPC LPBK field in the UC data base.

- d0 NPC LPBK field from MP data base
- d1 NPC LPBK field from UC data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

01B FTU NPC TS0M bit value is inconsistent

The FTU NPC TS0M bits in the MP data base do not match the FTU NPC TS0M bits in the UC data base.

- d0 NPC TS0M bits from MP data base
- d1 NPC TS0M bits from UC data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

01C FTU syncmode value is inconsistent

The FTU syncmode in the MP data base does not match the FTU syncmode in the UC data base.

- d0 syncmode from MP data base
- d1 syncmode from UC data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 UNIT number

01D CPR channel modify activated information is inconsistent

The CPR channel modify activated information stored in UC data base does not match that stored in the MP data base.

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Not used
- d4 FTU NPC number
- d5 UNIT number



01E NPC Insertion AIS values are inconsistent

The Insertion AIS of the NPC in the MP data base does not match that in the unit data base

- d0 The AIS Insertion of NPC from MP data base
- d1 The AIS Insertion of NPC from MP data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

01F NPC alarm disable flag values are inconsistent

The alarm disable flag of the NPC in the MP data base does not match that in the unit data base

- d0 Second byte of the alarm disable flag of NPC from MP data base
- d1 First byte of the alarm disable flag of NPC from MP data base
- d2 Second byte of the alarm disable flag of NPC from unit data base
- d3 First byte of the alarm disable flag of NPC from unit data base
- d4 NPC number
- d5 UNIT number

021 CCN side entity flags are inconsistent

The equipage flag of the CCN side entity in the MP data base does not match that in the CCN data base.

- d0 CCN side flag from MP data base
- d1 CCN side flag from CCN data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 CCN side

022 CCN CCNI entity flags are inconsistent

The equipage flag of the CCN CCNI entity in the MP data base does not match that in the CCN data base.

- d0 CCNI flag from MP data base
- d1 CCNI flag from CCN data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 CCN side

023     CCN CCB entity flags are inconsistent

The equipage flag of the CCN CCB entity in the MP data base does not match that in the CCN data base.

- d0     CCB flag from MP data base
- d1     CCB flag from CCN data base
- d2     Not used
- d3     Not used
- d4     CCB number
- d5     CCN side

024     CCN TSI entity flags are inconsistent

The equipage flag of the CCN TSI entity in the MP data base does not match that in the CCN data base.

- d0     CCN TSI flag from MP data base
- d1     CCN TSI flag from CCN data base
- d2     Not used
- d3     CCB number - TO side
- d4     CCB number - FROM side
- d5     CCN side

025     CCN active side flags are inconsistent

The CCN active side reported by the MP data base does not match the CCN active side reported by the CCN data base.

- d0     CCN active side flag MP data base
- d1     CCN active side from CCN data base
- d2     Not used
- d3     Not used
- d4     Not used
- d5     Not used

026     ECCN side entity flags are inconsistent

The equipage flag of the ECCN side entity in the MP data base does not match that in the ECCN data base.

- d0     ECCN side flag from MP data base
- d1     ECCN side flag from ECCN data base
- d2     Not used
- d3     Not used
- d4     Not used
- d5     ECCN side

027 ECCN CCI entity flags are inconsistent

The equipage flag of the ECCN CCI entity in the MP data base does not match that in the ECCN data base.

- d0 CCI flag from MP data base
- d1 CCI flag from ECCN data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 ECCN side

028 ECCN ETSI entity flags are inconsistent

The equipage flag of the ECCN ETSI entity in the MP data base does not match that in the ECCN data base.

- d0 ECCN ETSI flag from MP data base
- d1 ECCN ETSI flag from ECCN data base
- d2 Not used
- d3 Not used
- d4 ETSI number
- d5 ECCN side

029 ECCN active side flags are inconsistent

The ECCN active side reported by the MP data base does not match the ECCN active side reported by the ECCN data base.

- d0 ECCN active side flag MP data base
- d1 ECCN active side from ECCN data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Not used

02A NPC Transmit Pseudo Framing Words are inconsistent

The Transmit Pseudo Framing Word of the NPC in the MP data base does not match that in the unit data base

- d0 The Transmit Pseudo Framing word of NPC from MP data base
- d1 The Transmit Pseudo Framing word of NPC from unit data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

02B NPC Receive Pseudo Framing Word values are inconsistent

The Receive Pseudo Framing Word of the NPC in the MP data base does not match that in the unit data base

- d0 The Receive Pseudo Framing Word of NPC from MP data base
- d1 The Receive Pseudo Framing Word of NPC from unit data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

02C NPC Non Frame Word Setting values are inconsistent

The Non Frame Word Setting of the NPC in the MP data base does not match that in the unit data base

- d0 Fourth byte of the Non Frame Word Setting of NPC from MP data base
- d1 Third byte of the Non Frame Word Setting of NPC from MP data base
- d2 Fourth byte of the Non Frame Word Setting of NPC from unit data base
- d3 Third byte of the Non Frame Word Setting of NPC from unit data base
- d4 NPC number
- d5 UNIT number

02D NPC Transmit and Receive Pseudo Framing word values are inconsistent

The Transmit Pseudo Framing Word of a NPC does not match the Receive Pseudo Framing Word in the MP data base when one of them is set to the Non-Framing Word

- d0 The Transmit Pseudo Framing Word of NPC from MP data base
- d1 The Receive Pseudo Framing Word of NPC from MP data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

02E CCN and Sync are running on opposite sides

The CCN active side reported by the MP data base does not match the Sync active side reported by the frame data base.

- d0 CCN active side from MP data base
- d1 Sync active side from frame data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Not used

02F ECCN and Sync are running on opposite sides

The ECCN active side reported by the MP data base does not match the Sync active side reported by the frame data base.

- d0 ECCN active side from MP data base
- d1 Sync active side from frame data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Not used

032 DSPI entity flags are inconsistent

The equipage flag of the DSPI entity in the MP data base does not match that in the DSPU data base.

- d0 DSPI flag from MP data base
- d1 DSPI flag from UD data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Unit number

033 HUB-ID value in data bases is inconsistent

The HUB-ID is inconsistent between the MP data base and the UD data base.

- d0 HUB-ID value from MP data base
- d1 HUB-ID value from UD data base
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Unit number

034 NPC connected to a time slot is inconsistent

The NPC connected to a time slot in the MP data base does not match with the UD data base.

- d0 The connected NPC number from MP data base
- d1 The connected NPC number from UD data base
- d2 Not used
- d3 The time slot number
- d4 The NPC number
- d5 Unit number

035 Function block for a time slot is inconsistent

The function block connected to a time slot in the MP data base does not match with the UD data base.

- d0 The connected function block number from MP data base
- d1 The connected function block number from UD data base
- d2 Not used
- d3 The time slot number
- d4 The NPC number
- d5 Unit number

036 SRM customer number or MJU branch number is inconsistent

The SRM customer number or MJU branch number in the MP data base does not match with the UD data base.

- d0 The SRM customer number or MJU branch number from MP data base
- d1 The SRM customer number or MJU branch number from UD data base
- d2 Not used
- d3 The SRM number or the MJU number
- d4 The NPC number
- d5 Unit number

037 Time slot rate is inconsistent

The time slot rate in the MP data base does not match with that of the UD data base.

- d0 The time slot rate from MP data base
- d1 The time slot rate from UD data base
- d2 Not used
- d3 The time slot number
- d4 The NPC number
- d5 Unit number

038 Time slot functional usage is inconsistent

The functional usage in the MP data base does not match with that of the UD data base.

- d0 the functional usage from MP data base
- d1 the functional usage from UD data base
- d2 Not used
- d3 The time slot number
- d4 The NPC number
- d5 Unit number

039 SRDC unexpected errors

An unexpected error was encountered during Subrate Circuit audits.

- d0 The Unit where the error is found
- d1 Not used
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Not used

03B DS3 FLI LBO data base inconsistent

FLI/Line Build Out in the MP data base is not consistent with that of the Unit data base

- d0 MP lbo
- d1 UA lbo
- d2 Not used
- d3 Not used
- d4 MXR/HMXR Number
- d5 Unit Number

03C DS3 MXR/HMXR data base flag inconsistent

MXR/HMXR data base flag in the MP data base is not consistent with that of the Unit data base

- d0 MP data base flag
- d1 UA data base flag
- d2 Not used
- d3 Not used
- d4 MXR/HMXR Number
- d5 Unit Number

03D DS3 MXR/HMXR data base type inconsistent

MXR/HMXR type in the MP data base is not consistent with that of the Unit data base

- d0 MP data base type
- d1 UA data base type
- d2 Not used
- d3 Not used
- d4 MXR/HMXR Number
- d5 Unit Number

03E DS3 MXR/HMXR data base xoption inconsistent

MXR/HMXR 'x' option in the MP data base is not consistent with that of the Unit data base

d0 MP data base xoption  
d1 UA data base xoption  
d2 Not used  
d3 Not used  
d4 MXR/HMXR Number  
d5 Unit Number

03F DS3 MXR/HMXR data base yoption inconsistent

MXR/HMXR 'y' option in the MP data base is not consistent with that of the Unit data base

d0 MP data base yoption  
d1 UA data base yoption  
d2 Not used  
d3 Not used  
d4 MXR/HMXR Number  
d5 Unit Number

040 DS3 MXR/HMXR data base zoption inconsistent

MXR/HMXR 'z' option in the MP data base is not consistent with that of the Unit data base

d0 MP data base zoption  
d1 UA data base zoption  
d2 Not used  
d3 Not used  
d4 MXR/HMXR Number  
d5 Unit Number

041 DS3 MXR/HMXR data base BER threshold inconsistent

MXR/HMXR 'BER' threshold in the MP data base is not consistent with that of the Unit data base

d0 MP data base ber threshold  
d1 UA data base ber threshold  
d2 Not used  
d3 Not used  
d4 Unit Number  
d5 MXR/HMXR Number



042 DS3 MXR/HMXR data base BER type inconsistent

MXR/HMXR 'BER' type in the MP data base is not consistent with that of the Unit data base

- d0 MP data base ber type
- d1 UA data base ber type
- d2 Not used
- d3 Not used
- d4 Unit Number
- d5 MXR/HMXR Number

043 DS3 MIU data base flag inconsistent

MIU data base flag in the MP data base is not consistent with that of the Unit data base

- d0 MP data base flag
- d1 UA data base flag
- d2 Not used
- d3 Not used
- d4 MIU Number
- d5 Unit Number

044 DS3 MIU data base type inconsistent

MIU data base type in the MP data base is not consistent with that of the Unit data base

- d0 MP data base type
- d1 UA data base type
- d2 Not used
- d3 Not used
- d4 MIU Number
- d5 Unit Number

045 DS3 MIU data base xoption inconsistent

MIU 'x' option in the MP data base is not consistent with that of the Unit data base

- d0 MP data base xoption
- d1 UA data base xoption
- d2 Not used
- d3 Not used
- d4 MIU Number
- d5 Unit Number

046 DS3 MIU data base yoption inconsistent

MIU 'y' option in the MP data base is not consistent with that of the Unit data base

- d0 MP data base yoption
- d1 UA data base yoption
- d2 Not used
- d3 Not used
- d4 MIU Number
- d5 Unit Number

047 DS3 MIU data base zoption inconsistent

MIU 'z' option in the MP data base is not consistent with that of the Unit data base

- d0 MP data base zoption
- d1 UA data base zoption
- d2 Not used
- d3 Not used
- d4 MIU Number
- d5 Unit Number

048 MMFG data base inhibit flag inconsistent

MMFG inhibit status in the MP data base is not consistent with that of the Unit data base

- d0 Protection switch data base flag
- d1 UA data base flag
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Unit Number

049 MMFG data base protection status inconsistent

MMFG protected status in the MP data base is not consistent with that of the Unit data base

- d0 Protection switch data base status
- d1 UA data base status
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Unit Number

04A MMFG data base protection index inconsistent

MMFG protected index in the MP data base is not consistent with that of the Unit data base

- d0 Protection switch data base index
- d1 UA data base index
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Unit Number

04B MMFG data base protection mode inconsistent

MMFG protected mode in the MP data base is not consistent with that of the Unit data base

- d0 Protection switch data base mode
- d1 UA data base mode
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Unit Number

04C MMFG data base service status of MXR P/HMXR P inconsistent

MXR-P/HMXR-P service status in the MP data base is not consistent with that of the Unit data base

- d0 Protection switch data base status
- d1 UA data base status
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Unit Number

04D MMFG data base service status of MIU P inconsistent

MIU-P service status in the MP data base is not consistent with that of the Unit data base

- d0 Protection switch data base status
- d1 UA data base status
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Unit Number

050 Time slot partner is inconsistent

The time slot's partner time slot in the MP data base does not match with that of the UC data base.

- d0 The partner time slot from MP data base
- d1 The partner time slot from UC data base
- d2 Not used
- d3 The time slot number
- d4 The NPC number
- d5 Unit number

052 Time slot TLA state is inconsistent

The time slot's TLA state in the MP data base does not match with that of the UC data base.

- d0 The TLA state from MP data base
- d1 The TLA state from UC data base
- d2 Not used
- d3 The time slot number
- d4 The NPC number
- d5 Unit number

055 RTs external number is inconsistent

An RTs external number in the MP data base does not match with that of the UC data base.

- d0 Left byte of the RT external number in MP data base
- d1 Right byte of the RT external number in MP data base
- d2 Left byte of the RT external number in UC data base
- d3 Right byte of the RT external number in UC data base
- d4 Not used
- d5 The Unit of the RT

056 RTs digroup NPC number is inconsistent

An RTs digroup NPC number in the MP data base does not match with that of the UC data base (d3=2); An RTs digroup NPC number does not match with the associated DCLUs both in the MP data base (d3=1)

- d0 The RT digroup NPC number in MP data base
- d1 The RT digroup NPC number in UC data base
- d2 Index of the digroup (1,2,3,4,5 for DGA,DGB,DGC,DGD,DGP respectively)
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

057 RTs index of protected digroup is inconsistent

An RTs index of protected digroup in the MP data base does not match with that of the UC data base

- d0 The RT index of protected digroup in MP data base
- d1 The RT index of protected digroup in UC data base
- d2 Not used
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

058 RTs Zoption is inconsistent

An RTs Zoption in the MP data base does not match with that of the UC data base

- d0 The RT Zoption in MP data base
- d1 The RT Zoption in UC data base
- d2 Not used
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

059 RTs inhibit state is inconsistent

An RTs inhibit state in the MP data base does not match with that of the UC data base

- d0 The RT inhibit state in MP data base
- d1 The RT inhibit state in UC data base
- d2 Index of the digroup
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

05A SLC® carrier unexpected errors

An unexpected error is encountered during SLC carrier RT audits.

- d0 The Unit where the error is found
- d1 Not used
- d2 Not used
- d3 Not used
- d4 Not used
- d5 Not used

05B This entity is expected to be inservice and equipped

This entity (indicated in d0) is expected to be inservice and equipped.

d0 1-frame; 2-Unit; 3-channel; 4-time slot;  
d1 The time slot number if applicable  
d2 the channel number if applicable  
d3 The NPC number if applicable  
d4 Unit number if applicable  
d5 Not used

05C Data base is inconsistent with the configuration file

Data in the MP data base do not agree with those in the configuration file.

d0 Not used  
d1 Not used  
d2 Not used  
d3 Not used  
d4 Not used  
d5 Not used

060 RTs loopback state is inconsistent

An RTs loopback state in the MP data base does not match with that of the UC data base

d0 The RT loopback state in MP data base  
d1 The RT loopback state in UC data base  
d2 Index of the digroup  
d3 Not used  
d4 The RT internal number  
d5 The Unit of the RT

061 RTs protection status is inconsistent

An RTs protection status in the MP data base does not match with that of the UC data base

d0 The RT protection status in MP data base  
d1 The RT protection status in UC data base  
d2 Not used  
d3 Not used  
d4 The RT internal number  
d5 The Unit of the RT

062 RTs data link status is inconsistent

An RTs data link status in the MP data base does not match with that of the UC data base

- d0 The RT data link in MP data base
- d1 The RT data link in UC data base
- d2 Not used
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

063 RTs alarm class is inconsistent

An RTs alarm class in the MP data base does not match with that of the UC data base

- d0 The RT alarm class in MP data base
- d1 The RT alarm class in UC data base
- d2 Not used
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

064 RTs SLC carrier mode is inconsistent

An RTs SLC carrier mode in the MP data base does not match with that of the UC data base

- d0 The RT SLC carrier mode in MP data base
- d1 The RT SLC carrier mode in UC data base
- d2 Not used
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

065 Can not find an RT internal number for the associate DCLU of an RT.

Given an RT with SLC 96 carrier mode I or SLC series 5 carrier feature package B, it may have a DCLU with the external number being 10000 greater. But that external number cannot be retrieved from the MP data base.

- d0 Right byte of the DCLUs external number in MP data base
- d1 Left byte of the DCLUs external number in MP data base
- d2 Right byte of the RTs external number in MP data base
- d3 Left byte of the RTs external number in MP data base
- d4 The RT internal number
- d5 The Unit of the RT

066 Cannot find the associate DCLU of an RT.

Given an RT with SLC 96 carrier mode I or SLC series 5 carrier feature package B, it may have a DCLU with the external number being 10000 greater. But such DCLU is not found from the RT list in the MP data base.

d0 Right byte of the DCLUs external number  
d1 Left byte of the DCLUs external number  
d2 Not used  
d3 Not used  
d4 The DCLU internal number  
d5 The Unit of the RT

069 Invalid internal MJU number or internal NPC number

An NPC indicates there is an MJU allocated to it, after the MJU query returns a different internal MJU number or that MJU is marked to allocate to another NPC.

d0 the MJU number  
d1 The NPC number  
d2 the UNIT number  
d3 the MJU internal number from the query  
d4 the internal NPC number from the query  
d5 Not used

070 Inconsistent mapping between a facility channel and a time slot.

A channel is connected to a time slot but the time slot does not connect the channel in the MP data base.

d0 the channel number  
d1 The NPC number  
d2 the UNIT number  
d3 The time slot  
d4 The time slot NPC  
d5 The time slot Unit

071 Inconsistent time slot mapping between a facility channel and a MVEC.

An MVEC is expected to connect to a facility channel but the MP data base shows the channel does not connect to the MVEC.

d0 the channel number  
d1 The NPC number  
d2 the UNIT number  
d3 the MVEC time slot  
d4 the MVEC NPC  
d5 MVEC Unit



072 Inconsistent time slot mapping a channel to a PCHEC.

A PCHEC is expected to connect to a facility channel but the MP data base shows the channel does not connect to the PCHEC.

d0 the channel number  
d1 The NPC number  
d2 the UNIT number  
d3 the PCHEC time slot  
d4 the PCHEC NPC  
d5 the PCHEC Unit

073 Inconsistent time slot mapping a channel to a PCHECs parity leg.

A PCHEC parity leg is expected to connect to a facility channel but the MP data base shows the channel does not connect to the leg.

d0 the channel number  
d1 The NPC number  
d2 the UNIT number  
d3 the PCHEC time slot  
d4 the PCHEC NPC  
d5 the PCHEC Unit

074 Inconsistent time slot mapping a channel to a PCHECs data leg

A PCHEC data leg is expected to connect to a facility channel but the MP data base shows the channel does not connect to the leg.

d0 the channel number  
d1 The NPC number  
d2 the UNIT number  
d3 the PCHEC time slot  
d4 the PCHEC NPC  
d5 the PCHEC Unit

076 Invalid time slot assignment to an MJU's master leg.

An MJU's master leg is expected to connect a time slot but the MP data base shows that the time slot does not connect to the master leg.

d0 the MJU number  
d1 The NPC number  
d2 the UNIT number  
d3 the MJU master leg index  
d4 Not used  
d5 Not used

077 Invalid time slot assignment to an MJU's branch leg.

An MJU's branch leg is expected to connect a time slot but the MP data base shows that the time slot does not connect to the branch leg.

d0 the MJU number  
d1 The NPC number  
d2 the UNIT number  
d3 the MJU branch leg  
d4 Not used  
d5 Not used

078 Inconsistent time slot mapping a channel to a PCHECs customer leg.

A PCHEC customer leg is expected to connect to a facility channel but the MP data base shows the channel does not connect to the leg.

d0 the channel number  
d1 The NPC number  
d2 the UNIT number  
d3 the PCHEC time slot  
d4 the PCHEC NPC  
d5 the PCHEC Unit

079 Cascaded MJUs do not have same rate.

An MJU is cascaded with MJU b, their rate must be the same.

d0 the MJU b number  
d1 The NPC number of MJU b  
d2 the UNIT number of MJU b  
d3 the MJU a number  
d4 The NPC number of MJU a  
d5 the UNIT number of MJU a

080 SRM rate is invalid

An SRM rate is invalid.

d0 The SRM number  
d1 The NPC number of SRM  
d2 the UNIT number of SRM  
d3 Not used  
d4 Not used  
d5 Not used

081 Invalid time slot assignment to an SRMs leg.

An SRMs branch leg is expected to connect a time slot but the MP data base shows that the time slot does not connect to the branch leg.

- d0 The SRM number
- d1 The NPC number
- d2 the UNIT number
- d3 Index of SRM leg
- d4 Not used
- d5 Not used

084 A DS0A channel does not connect to an EC.

A DS0A channel is expected to connect to an error corrector through a time slot but the MP data base shows that the time slot does not connect to an error corrector.

- d0 the DS0A channel number
- d1 The NPC number of the channel
- d2 the UNIT number of the channel
- d3 The ECs time slot
- d4 The ECs NPC number
- d5 The ECs Unit number

086 RTs external number is inconsistent with DCLU

An RTs external number in the MP data base does not match with that of the DCLU in the MP data base.

- d0 Left byte of the RT external number in MP data base
- d1 Right byte of the RT external number in MP data base
- d2 Left byte of the DCLU external number in MP data base
- d3 Right byte of the DCLU external number in MP data base
- d4 Not used
- d5 The Unit of the RT

089 RTs Zoption is inconsistent with DCLU Zoption

An RTs Zoption in the MP data base does not match with that of the DCLU in the MP data base

- d0 The RT Zoption in MP data base
- d1 The DCLU Zoption in MP data base
- d2 Not used
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

090 RTs inhibit state is inconsistent with DCLU

An RTs inhibit state in the MP data base does not match with that of the DCLU in the MP data base

- d0 The RT inhibit state in MP data base
- d1 The DCLU inhibit state in MP data base
- d2 Index of the digroup
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

091 RTs loopback state is inconsistent with DCLU

An RTs loopback state in the MP data base does not match with that of the DCLU in the MP data base

- d0 The RT loopback state in MP data base
- d1 The DCLU loopback state in MP data base
- d2 Index of the digroup
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

093 RTs data link status is inconsistent with DCLU

An RTs data link status in the MP data base does not match with that of the DCLU in the MP data base

- d0 The RT data link in MP data base
- d1 The DCLU data link in MP data base
- d2 Not used
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

095 RTs SLC carrier mode is inconsistent with DCLU

An RTs SLC carrier mode in the MP data base does not match with that of the DCLU in the MP data base

- d0 The RT SLC carrier mode in MP data base
- d1 The DCLU SLC carrier mode in MP data base
- d2 Not used
- d3 Not used
- d4 The RT internal number
- d5 The Unit of the RT

102 MP two-way two-point connection types are inconsistent

The two-way two-point connection types in the MP data base do not match between two sides.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

103 MP two-way two-point connection data are inconsistent

The two-way two-point connection data in the MP data base do not match between two sides.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

104 UC two-way two-point connection data are inconsistent

The two-way two-point connection channel data in the UC data base do not match that from MP data base.

- d0 TCC audit result - equal 1 if inconsistency detected
- d1 Flag audit result - equal 1 if inconsistency detected
- d2 Connected NPC audit result - equal 1 if inconsistency detected
- d3 Channel number
- d4 NPC number
- d5 UNIT number

105 CCN two-way two-point connection map error detected

The two-way two-point connection TSI map in the CCN does not match between two sides.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

106 ECCN two-way two-point connection map error detected

The two-way two-point connection ETSI map in the ECCN does not match between two sides.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

112 MP one-way two-point connection types are inconsistent

The one-way two-point connection types in the MP data base do not match between two sides.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

113 MP one-way two-point connection data are inconsistent

The one-way two-point connection data in the MP data base does not match between two sides.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

114 UC one-way two-point connection data are inconsistent

The one-way two-point connection channel data in the UC data base do not match that MP data base.

- d0 TCC audit result - equal 1 if inconsistency detected
- d1 Flag audit result - equal 1 if inconsistency detected
- d2 Connected NPC audit result - equal 1 if inconsistency detected
- d3 Channel number
- d4 NPC number
- d5 UNIT number

115 CCN one-way two-point connection map error detected

The one-way two-point connection TSI map in the CCN does not match between two sides.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

116 CCN unmapped connection error detected

The TSI map shows that there is a connection map to an NPC and channel in CCN data base while the NPC and channel are marked as unmapped in MP data base.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 Unit number of the TO side
- d3 Not used
- d4 Not used
- d5 Not used

121 UC virtual conference leg channel alternate message store (AMS) value is inconsistent

The virtual conference leg channel AMS data in the UC data base does not match the TCC value in the MP data base.

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Channel number
- d4 NPC number
- d5 UNIT number

122 UC virtual conference leg channel connected NPC is inconsistent

The connected NPC of the virtual conference leg channel in the UC data base does not match the BBL NPC number from the MP data base.

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Channel number
- d4 NPC number
- d5 UNIT number

123 UC virtual conference leg channel flag is inconsistent

The virtual conference leg channel flag in the UC data base does not match the flag from the MP data base.

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Channel number
- d4 NPC number
- d5 UNIT number

125 CCN virtual conference leg channel connection map error detected

The two-point connection TSI map in the CCN does not match between the BBL channel and the leg channel.

- d0 Channel number of the BRD leg
- d1 NPC number of the BRD leg
- d2 UNIT number of the BRD leg
- d3 Channel number of the BBL leg
- d4 NPC number of the BBL leg
- d5 UNIT number of the BBL leg

126 ECCN virtual conference leg channel connection map error detected

The two-point connection ETSI map in the ECCN does not match between the BBL channel and the leg channel.

- d0 Channel number of the BRD leg
- d1 NPC number of the BRD leg
- d2 UNIT number of the BRD leg
- d3 Channel number of the BBL leg
- d4 NPC number of the BBL leg
- d5 UNIT number of the BBL leg

127 ECCN one-way two-point connection map error detected

The one-way two-point connection ETSI map in the ECCN does not match between two sides.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side



128 ECCN unmapped connection error detected

The ETSI map shows that there is a connection map to an NPC and channel in ECCN data base while they are marked as unmapped in MP data base.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 Unit number of the TO side
- d3 Not used
- d4 Not used
- d5 Not used

131 UC BCON leg channel alternate message store (AMS) value is inconsistent

The BCON leg channel AMS data in the UC data base does not match the TCC value from the MP data base.

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Channel number
- d4 NPC number
- d5 UNIT number

132 UC BCON leg channel connected NPC is inconsistent

The connected NPC of the BCON leg channel in the UC data base does not match the BBL NPC number from the MP data base.

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Channel number
- d4 NPC number
- d5 UNIT number

133 UC BCON leg channel flag is inconsistent

The BCON leg channel flag in the UC data base does not match the flag from the MP data base.

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Channel number
- d4 NPC number
- d5 UNIT number

135 CCN BCON leg channel connection map error detected

The two-point connection TSI map in the CCN does not match between the BBL channel and the leg channel.

- d0 Channel number of the BRD leg
- d1 NPC number of the BRD leg
- d2 UNIT number of the BRD leg
- d3 Channel number of the BBL leg
- d4 NPC number of the BBL leg
- d5 UNIT number of the BBL leg

136 ECCN BCON leg channel connection map error detected

The two-point connection ETSI map in the ECCN does not match between the BBL channel and the leg channel.

- d0 Channel number of the BRD leg
- d1 NPC number of the BRD leg
- d2 UNIT number of the BRD leg
- d3 Channel number of the BBL leg
- d4 NPC number of the BBL leg
- d5 UNIT number of the BBL leg

150 UC DMB conference leg channel connected NPC is inconsistent

The connected NPC of the DMB conference leg channel in the UC data base does not match that from MP data base.

- d0 Channel flag in the UC data base
- d1 Connected NPC number
- d2 Connected Unit number
- d3 Channel number
- d4 NPC number
- d5 UNIT number

151 UC DMB conference leg channel alternate message store (AMS) value is inconsistent

The DMB conference leg channel AMS data in the UC data base does not match the TCC value from the MP data base.

- d0 Channel flag in the UC data base
- d1 Connected NPC number
- d2 Connected Unit number
- d3 Channel number
- d4 NPC number
- d5 UNIT number

152 UC DMB conference leg channel flag is inconsistent

The DMB conference leg channel flag in the UC data base does not match the flag from the MP data base.

- d0 Channel flag in the UC data base
- d1 Connected NPC number
- d2 Connected Unit number
- d3 Channel number
- d4 NPC number
- d5 UNIT number

154 CCN one-way DMB conference connection map error detected

The one-way DMB conference connection TSI map in the CCN does not match between two legs.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

155 CCN two-way DMB conference connection map error detected

The two-way DMB conference connection TSI map in the CCN does not match between two legs.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

156 ECCN one-way DMB conference connection map error detected

The one-way DMB conference connection ETSI map in the ECCN does not match between two legs.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

157 ECCN two-way DMB conference connection map error detected

The two-way DMB conference connection ETSI map in the ECCN does not match between two legs.

- d0 Channel number of the TO side
- d1 NPC number of the TO side
- d2 UNIT number of the TO side
- d3 Channel number of the FROM side
- d4 NPC number of the FROM side
- d5 UNIT number of the FROM side

160 UD DMB conference leg is inconsistent

The DMB conference number of the leg channel in the UD data base does not match the number from the MP data base.

- d0 Connected NPC number of the leg
- d1 Connected UC Unit number of the leg
- d2 Conference number of the leg stored in the UD data base
- d3 Channel number of the leg
- d4 DMB NPC number of the leg
- d5 UNIT number

161 UD DMB conference leg channel connected NPC is inconsistent

The connected NPC of the DMB conference leg channel in the UD data base does not match the NPC number from the MP data base.

- d0 Connected NPC number of the leg
- d1 Connected UC Unit number of the leg
- d2 Conference number of the leg
- d3 Channel number of the leg
- d4 DMB NPC number of the leg
- d5 UNIT number

162 UD DMB conference leg connected conference is inconsistent

The connected conference number of the DMB conference leg channel in the UD data base does not match the number from the MP data base.

- d0 Connected NPC number of the leg from UD data base
- d1 Connected UC Unit number of the leg
- d2 Conference number of the leg
- d3 Channel number of the leg
- d4 DMB NPC number of the leg
- d5 UNIT number

163 UD DMB conference leg type is inconsistent

The type of the DMB conference leg channel in the UD data base does not match the type from the MP data base.

- d0 Connected NPC number of the leg
- d1 Connected UC Unit number of the leg
- d2 Conference number of the leg
- d3 Channel number of the leg
- d4 DMB NPC number of the leg
- d5 UNIT number

164 UD DMB channel tlpin value is inconsistent

The value of transmit level into bridge of the DMB conference leg channel from UD data base does not match that from the MP data base.

- d0 Connected NPC number of the leg
- d1 Connected UC Unit number of the leg
- d2 Conference number of the leg
- d3 Channel number of the leg
- d4 DMB NPC number of the leg
- d5 UNIT number

165 UD DMB channel tlpout value is inconsistent

The value of transmit level out of bridge of the DMB conference leg channel from UD data base does not match that from the MP data base.

- d0 Connected NPC number of the leg
- d1 Connected UC Unit number of the leg
- d2 Conference number of the leg
- d3 Channel number of the leg
- d4 DMB NPC number of the leg
- d5 UNIT number

166 UD DMB channel noise guard value is inconsistent

The value of noise guard of the DMB conference leg channel from UD data base does not match that from the MP data base.

- d0 Connected NPC number of the leg
- d1 Connected UC Unit number of the leg
- d2 Conference number of the leg
- d3 Channel number of the leg
- d4 DMB NPC number of the leg
- d5 UNIT number

167 UD DMB channel echo suppression value is inconsistent

The value of echo suppression of the DMB conference leg channel from UD data base does not match that from the MP data base.

- d0 Connected NPC number of the leg
- d1 Connected UC Unit number of the leg
- d2 Conference number of the leg
- d3 Channel number of the leg
- d4 DMB NPC number of the leg
- d5 UNIT number

168 UD DMB channel NTR state is inconsistent

The current NTR state of the DMB conference leg from UD data base does not match that from the MP data base.

- d0 Connected NPC number of the leg
- d1 Connected UC Unit number of the leg
- d2 Conference number of the leg
- d3 Channel number of the leg
- d4 DMB NPC number of the leg
- d5 UNIT number

171 DSPU CPR channel modify activated/monitor enabled information is inconsistent

The CPR channel modify activated/monitor enabled information stored in UD data base does not match that stored in the MP data base.

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Channel number
- d4 CPR NPC number
- d5 UNIT number

172 DSPU CPR channel modify activated/monitor enabled information is inconsistent

The CPR channel modify activated/monitor enabled information stored in UD data base does not match that stored in the CPR hardware.

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Channel number
- d4 CPR NPC number
- d5 UNIT number

173 DSPU CPR liaison C-Bit modify pattern information is inconsistent

The CPR liaison C-Bit modify pattern information stored in UD data base does not match that stored in the CPR hardware.

|    |                |
|----|----------------|
| d0 | Not used       |
| d1 | Not used       |
| d2 | Not used       |
| d3 | Channel number |
| d4 | CPR NPC number |
| d5 | UNIT number    |

174 DSPU CPR pack type is inconsistent

The CPR pack type stored in UD data base does not match with the CPR pack.

|    |                |
|----|----------------|
| d0 | Type on Uddb   |
| d1 | CPR pack type  |
| d2 | Not used       |
| d3 | Channel number |
| d4 | CPR NPC number |
| d5 | UNIT number    |

205 FTU FTMI hardware not in service

The FTU FTMI hardware status is not in service but the equipage flag in the UC data base is in service.

|    |             |
|----|-------------|
| d0 | Not used    |
| d1 | Not used    |
| d2 | Not used    |
| d3 | Not used    |
| d4 | FTMI number |
| d5 | UNIT number |

207 FTU FC hardware not in service

The FTU FC hardware status is not in service but the equipage flag in the UC data base is in service.

|    |             |
|----|-------------|
| d0 | Not used    |
| d1 | Not used    |
| d2 | Not used    |
| d3 | FC side     |
| d4 | FTMI number |
| d5 | UNIT number |

208 NPC hardware not in service

The Unit NPC hardware status is not in service but the equipage flag in the UC data base is in service.

d0 Not used  
d1 Not used  
d2 Not used  
d3 Not used  
d4 NPC number  
d5 UNIT number

209 UC NPC type not match with hardware

The Unit NPC type in the UC data base does not match with that indicated in the hardware.

d0 NPC type in hardware  
d1 NPC type in data base  
d2 Not used  
d3 Not used  
d4 NPC number  
d5 UNIT number

210 FTU FC hardware mode is inconsistent

The FTU FC hardware mode status does not match the FC mode stored in the UC data base.

d0 Not used  
d1 FC hardware mode  
d2 FC mode in the UC data base  
d3 FC side  
d4 FTMI number  
d5 UNIT number

211 FTU or DS3U/HDS3U NPC channel alternate message store (AMS) value is inconsistent

The FTU or DS3U/HDS3U NPC channel AMS value stored in the unit data base does not match the AMS value from the DDC hardware.

d0 Not used  
d1 Not used  
d2 Side  
d3 Channel number  
d4 NPC number  
d5 UNIT number



215 DPC NPC TS0M value is inconsistent

The TS0M value stored in UC data base does not match that stored in the DPC hardware.

- d0 NPC TS0M bits from DPC hardware
- d1 NPC TS0M bits from UC data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

216 DPC NPC loopback value is inconsistent

The LPBK value stored in UC data base does not match that stored in the DPC hardware.

- d0 NPC LPBK bits from DPC hardware
- d1 NPC LPBK bits from UC data base
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 UNIT number

217 FTU and DS3U/HDS3U NPC pgfbits in the channel are inconsistent

The pgfbits in the data base do not match the pgfbits stored in the transceiver loopback parity channel hardware. The F and G bits determine the signaling type (16-state, 4-state or transparent). This comparison is only done on domestic NPCs on the RECEIVE side.

- d0 Data base F and G bits
- d1 Transceiver Hardware F and G bits
- d2 CHANNEL side : (Receive side)
- d3 CHANNEL number
- d4 NPC number
- d5 UNIT number

218 FTU NPC Channel AIS flag is inconsistent.

The AIS flag set in the DDC Digital Signal Interface (DSI) hardware register does not match with the associated flag saved in the UC data base.

- d0 AIS flag in the DSI register
- d1 AIS flag in the UC data base
- d2 Not used
- d3 Channel side
- d4 NPC number
- d5 Unit number

220 FTU and DS3U/HDS3U NPC COFAMAJ threshold value is inconsistent

The Change Of Frame Alignment Major value of the FTU NPC threshold value stored in the FTU Unit data base does not match that stored in the DDC hardware.

- d0 Second byte of the cofamaj value from DDC hardware
- d1 First byte of the cofamaj value from DDC hardware
- d2 Second byte of the cofamaj value from UC data base
- d3 First byte of the cofamaj value from UC data base
- d4 NPC number
- d5 UNIT number

221 FTU and DS3U/HDS3U NPC COFAMIN threshold value is inconsistent

The Change Of Frame Alignment Minor value of the FTU NPC NPC threshold value stored in the FTU data base does not match that stored in the DDC hardware.

- d0 Second byte of the cofamin value from DDC hardware
- d1 First byte of the cofamin value from DDC hardware
- d2 Second byte of the cofamin value from UC data base
- d3 First byte of the cofamin value from UC data base
- d4 NPC number
- d5 UNIT number

222 FTU NPC SLIPMAJ threshold value is inconsistent

The Slip Major value stored in the UC data base does not match that stored in the DDC hardware

- d0 Second byte of the slipmaj value from DDC hardware
- d1 First byte of the slipmaj value from DDC hardware
- d2 Second byte of the slipmaj value from UC data base
- d3 First byte of the slipmaj value from UC data base
- d4 NPC number
- d5 UNIT number

223 FTU and DS3U/HDS3U NPC SLIPMIN threshold value is inconsistent

The Slip Minor threshold value stored in the UC data base does not match that stored in the DDC hardware

- d0 Second byte of the slipmin value from DDC hardware
- d1 First byte of the slipmin value from DDC hardware
- d2 Second byte of the slipmin value from UC data base
- d3 First byte of the slipmin value from UC data base
- d4 NPC number
- d5 UNIT number

224 FTU and DS3U/HDS3U NPC SES threshold value is inconsistent

The Severe Errored Seconds value stored in the UC data base does not match that stored in the DDC hardware.

- d0 Second byte of the ses value from DDC hardware
- d1 First byte of the ses value from DDC hardware
- d2 Second byte of the ses value from UC data base
- d3 First byte of the ses value from UC data base
- d4 NPC number
- d5 UNIT number

225 FTU and DS3U/HDS3U NPC ES threshold value is inconsistent

The Errored Seconds value stored in the UC data base does not match that stored in the DDC hardware.

- d0 Second byte of the es value from DDC hardware
- d1 First byte of the es value from DDC hardware
- d2 Second byte of the es value from UC data base
- d3 First byte of the es value from UC data base
- d4 NPC number
- d5 UNIT number

226 FTU and DS3U/HDS3U NPC BERMAJ threshold value is inconsistent

The Bit Error Rate Major value stored in the UC data base does not match that stored in the DDC hardware.

- d0 Second byte of the bermaj value from DDC hardware
- d1 First byte of the bermaj value from DDC hardware
- d2 Second byte of the bermaj value from UC data base
- d3 First byte of the bermaj value from UC data base
- d4 NPC number
- d5 UNIT number

227 FTU and DS3U/HDS3U NPC BERMIN threshold value is inconsistent

The Bit Error Rate Minor value stored in the UC data base does not match that stored in the DDC hardware.

- d0 Second byte of the bermin value from DDC hardware
- d1 First byte of the bermin value from DDC hardware
- d2 Second byte of the bermin value from UC data base
- d3 First byte of the bermin value from UC data base
- d4 NPC number
- d5 UNIT number

228 NPC (DIU/DPC) Error Seconds 15 min. threshold value is inconsistent

The Error Seconds 15 min. (ERS15) threshold value stored in UC data base does not match that stored in the NPC hardware.

- d0 Second byte of the ERS15 value of the NPC from hardware
- d1 First byte of the ERS15 value of the NPC from hardware
- d2 Second byte of the ERS15 value of the NPC from UC data base
- d3 First byte of the ERS15 value of the NPC from UC data base
- d4 NPC number
- d5 Unit number

229 DIU NPC Bursty Error Seconds 15 Min threshold value is inconsistent

The Bursty Error Seconds 15 min. threshold value of a DIU NPC stored in the UC data base does not match with that in the hardware.

- d0 Second byte of the BERS15 value of the NPC from hardware
- d1 First byte of the BERS15 value of the NPC from hardware
- d2 Second byte of the BERS15 value of the NPC from UC data base
- d3 First byte of the BERS15 value of the NPC from UC data base
- d4 DIU NPC number
- d5 Unit number

230 NPC (DIU/DPC) Severely Error Seconds 15 min. threshold value is inconsistent

The Severely Error Seconds 15 min. (SERS15) threshold value stored in the UC data base does not match with that in the hardware.

- d0 Second byte of the SERS15 value of the NPC from hardware
- d1 First byte of the SERS15 value of the NPC from hardware
- d2 Second byte of the SERS15 value of the NPC from UC data base
- d3 First byte of the SERS15 value of the NPC from UC data base
- d4 NPC number
- d5 Unit number

231 NPC (DIU/DPC) Unavailable Seconds 15 min. threshold value is inconsistent

The Unavailable Seconds 15 min. (US15) threshold value of an NPC stored in the UC data base does not match with that in the hardware.

- d0 Second byte of the US15 value of the NPC from hardware
- d1 First byte of the US15 value of the NPC from hardware
- d2 Second byte of the US15 value of the NPC from UC data base
- d3 First byte of the US15 value of the NPC from UC data base
- d4 NPC number
- d5 Unit number

232 NPC (DIU/DPC) Slips 15 min. threshold value is inconsistent

The Slips Error Seconds 15 min. (SLP15) threshold value stored in the UC data base does not match with that in the hardware.

- d0 Second byte of the SLP15 value of the NPC from hardware
- d1 First byte of the SLP15 value of the NPC from hardware
- d2 Second byte of the SLP15 value of the NPC from UC data base
- d3 First byte of the SLP15 value of the NPC from UC data base
- d4 NPC number
- d5 Unit number

233 NPC (DIU/DPC) Error Seconds 24 hr. threshold value is inconsistent

The Error Seconds 24 hr. (ESR24) threshold value stored in UC data base does not match that stored in the hardware.

- d0 Second byte of the ESR24 value of the NPC from hardware
- d1 First byte of the ESR24 value of the NPC from hardware
- d2 Second byte of the ESR24 value of the NPC from UC data base
- d3 First byte of the ESR24 value of the NPC from UC data base
- d4 NPC number
- d5 Unit number

234 DIU NPC Bursty Error Seconds 24 Min threshold value is inconsistent

The Bursty Error Seconds 24 min. threshold value of a DIU NPC stored in the UC data base does not match with that in the hardware.

- d0 Second byte of the BERS24 value of the NPC from hardware
- d1 First byte of the BERS24 value of the NPC from hardware
- d2 Second byte of the BERS24 value of the NPC from UC data base
- d3 First byte of the BERS24 value of the NPC from UC data base
- d4 DIU NPC number
- d5 Unit number

235 NPC (DIU/DPC) Severely Error Seconds 24 hr. threshold value is inconsistent

The Severely Error Seconds 24 hr. (SERS24) threshold value stored in the UC data base does not match with that in the hardware.

- d0 Second byte of the SERS24 value of the NPC from hardware
- d1 First byte of the SERS24 value of the NPC from hardware
- d2 Second byte of the SERS24 value of the NPC from UC data base
- d3 First byte of the SERS24 value of the NPC from UC data base
- d4 NPC number
- d5 Unit number

- 236 NPC (DIU/DPC) Unavailable Seconds 24 hr. threshold value is inconsistent

The Unavailable Seconds 24 hr. (US24) threshold value stored in the UC data base does not match with that in the hardware.

- d0 Second byte of the US24 value of the NPC from hardware
- d1 First byte of the US24 value of the NPC from hardware
- d2 Second byte of the US24 value of the NPC from UC data base
- d3 First byte of the US24 value of the NPC from UC data base
- d4 NPC number
- d5 Unit number

- 237 NPC (DIU/DPC) Slips Error Seconds 24 hr. threshold value is inconsistent

The Slips Error Seconds 24 hr. (SLP24) threshold value stored in the UC data base does not match with that in the hardware.

- d0 Second byte of the SLP24 value of the NPC from hardware
- d1 First byte of the SLP24 value of the NPC from hardware
- d2 Second byte of the SLP24 value of the NPC from UC data base
- d3 First byte of the SLP24 value of the NPC from UC data base
- d4 NPC number
- d5 Unit number

- 238 DPC NPC Degraded Minute 1 hr (DM) threshold value is inconsistent

The Degraded Minute 1 hr. threshold value stored in UC data base does not match that stored in the DPC hardware.

- d0 Second byte of the DM value from DPC hardware
- d1 First byte of the DM value from DPC hardware
- d2 Second byte of the DM value from UC data base
- d3 First byte of the DM value from UC data base
- d4 NPC number
- d5 UNIT number

- 239 DPC NPC Degraded Minute 24 hr (DM24) threshold value is inconsistent

The Degraded Minute 24 hr. threshold value stored in UC data base does not match that stored in the DPC hardware.

- d0 Second byte of the DM24 value from DPC hardware
- d1 First byte of the DM24 value from DPC hardware
- d2 Second byte of the DM24 value from UC data base
- d3 First byte of the DM24 value from UC data base
- d4 NPC number
- d5 UNIT number

240 SLC carrier NPC SANE threshold value is inconsistent

The SLC carrier NPC SANE threshold value stored in the UC data base does not match with that stored in the DDC hardware

- d0 Second byte of the sane threshold value from DDC hardware
- d1 First byte of the sane threshold value from DDC hardware
- d2 Second byte of the sane threshold value from UC data base
- d3 First byte of the sane threshold value from UC data base
- d4 NPC number
- d5 UNIT number

241 SLC carrier NPC SAFE threshold value is inconsistent

The SLC carrier NPC SAFE threshold value stored in the UC data base does not match with that stored in the DDC hardware

- d0 Second byte of the SAFE threshold value from DDC hardware
- d1 First byte of the SAFE threshold value from DDC hardware
- d2 Second byte of the SAFE threshold value from UC data base
- d3 First byte of the SAFE threshold value from UC data base
- d4 NPC number
- d5 UNIT number

242 SLC carrier NPC SELF alarm threshold value is inconsistent

The SLC carrier NPC SELF alarm threshold value stored in the UC data base does not match with that stored in the DDC hardware

- d0 Second byte of the SELF alarm threshold value from DDC hardware
- d1 First byte of the SELF alarm threshold value from DDC hardware
- d2 Second byte of the SELF alarm threshold value from UC data base
- d3 First byte of the SELF alarm threshold value from UC data base
- d4 NPC number
- d5 UNIT number

250 HUB-ID value in hardware is inconsistent

The HUB-ID is inconsistent between the MP data base and the hardware.

- d0 HUB-ID value from MP data base
- d1 HUB-ID value from the hardware
- d2 Not used
- d3 Not used
- d4 NPC number
- d5 Unit number

251 The time slot hardware image or control memory is inconsistent

The EC Hardware Image/Control Memory is inconsistent between MP data base and the hardware.

d0 The EC image value from MP data base  
d1 The EC image value from the hardware  
d2 SRM hardware data  
d3 The time slot number  
d4 The NPC number of the time slot  
d5 The Unit number of the time slot

252 E1/T1 hardware selection flag inconsistent

d0 UH hardware flag  
d1 UH database flag  
d2 Not used  
d3 DS2 Number (1 through 7)  
d4 HMXR Number  
d5 Unit Number

253 DS3 FLI LOG hardware inconsistent

d0 UA hardware  
d1 UA lbo  
d2 Not used  
d3 Not used  
d4 MXR/HMXR Number  
d5 Unit Number

254 DS3 MXR/HMXR hardware flag inconsistent

d0 UA hardware flag  
d1 UA data base flag  
d2 Not used  
d3 Not used  
d4 MXR/HMXR Number  
d5 Unit Number

255 DS3 MXR/HMXR hardware type inconsistent

d0 UA hardware type  
d1 UA data base type  
d2 Not used  
d3 Not used  
d4 MXR/HMXR Number  
d5 Unit Number



- 256 DS3 MXR/HMXR hardware xoption inconsistent
- d0 UA hardware xoption
  - d1 UA data base xoption
  - d2 Not used
  - d3 Not used
  - d4 MXR/HMXR Number
  - d5 Unit Number
- 257 DS3 MXR/HMXR hardware yoption inconsistent
- d0 UA hardware yoption
  - d1 UA data base yoption
  - d2 Not used
  - d3 Not used
  - d4 MXR/HMXR Number
  - d5 Unit Number
- 258 DS3 MXR/HMXR hardware zoption inconsistent
- d0 UA hardware zoption
  - d1 UA data base zoption
  - d2 Not used
  - d3 Not used
  - d4 MXR/HMXR Number
  - d5 Unit Number
- 259 DS3 MXR/HMXR hardware BER threshold inconsistent
- d0 UA hardware BER threshold
  - d1 UA data base BER threshold
  - d2 Not used
  - d3 Not used
  - d4 MXR/HMXR Number
  - d5 Unit Number
- 25A DS3 MXR/HMXR hardware BER type inconsistent
- d0 UA hardware BER type
  - d1 UA data base BER type
  - d2 Not used
  - d3 Not used
  - d4 MXR/HMXR Number
  - d5 Unit Number

|     |                                       |
|-----|---------------------------------------|
| 25B | DS3 MIU hardware flag inconsistent    |
| d0  | UA hardware flag                      |
| d1  | UA data base flag                     |
| d2  | Not used                              |
| d3  | Not used                              |
| d4  | MIU Number                            |
| d5  | Unit Number                           |
| 25C | DS3 MIU hardware type inconsistent    |
| d0  | UA hardware type                      |
| d1  | UA data base type                     |
| d2  | Not used                              |
| d3  | Not used                              |
| d4  | MIU Number                            |
| d5  | Unit Number                           |
| 25D | DS3 MIU hardware xoption inconsistent |
| d0  | UA hardware xoption                   |
| d1  | UA data base xoption                  |
| d2  | Not used                              |
| d3  | Not used                              |
| d4  | MIU Number                            |
| d5  | Unit Number                           |
| 25E | DS3 MIU hardware yoption inconsistent |
| d0  | UA hardware yoption                   |
| d1  | UA data base yoption                  |
| d2  | Not used                              |
| d3  | Not used                              |
| d4  | MIU Number                            |
| d5  | Unit Number                           |
| 25F | DS3 MIU hardware zoption inconsistent |
| d0  | UA hardware zoption                   |
| d1  | UA data base zoption                  |
| d2  | Not used                              |
| d3  | Not used                              |
| d4  | MIU Number                            |
| d5  | Unit Number                           |

- 260 MMFG data base inhibit flag inconsistent
  - d0 UA hardware flag
  - d1 UA data base flag
  - d2 Not used
  - d3 Not used
  - d4 Not used
  - d5 Unit Number
  
- 261 MMFG data base protection status inconsistent
  - d0 UA hardware status
  - d1 UA data base status
  - d2 Not used
  - d3 Not used
  - d4 Not used
  - d5 Unit Number
  
- 262 MMFG data base protection index inconsistent
  - d0 UA hardware index
  - d1 UA data base index
  - d2 Not used
  - d3 Not used
  - d4 Not used
  - d5 Unit Number
  
- 263 MMFG data base protection mode inconsistent
  - d0 UA hardware mode
  - d1 UA data base mode
  - d2 Not used
  - d3 Not used
  - d4 Not used
  - d5 Unit Number
  
- 264 MMFG data base service status of MXR P/HMXR P inconsistent
  - d0 UA hardware status
  - d1 UA data base status
  - d2 Not used
  - d3 Not used
  - d4 Not used
  - d5 Unit Number

- 265     MMFG data base service status of MIU P inconsistent
- d0     UA hardware status
  - d1     UA data base status
  - d2     Not used
  - d3     Not used
  - d4     Not used
  - d5     Unit Number
- 266     Invalid value of Receive Framer Mode A register
- d0     Not used
  - d1     Not used
  - d2     Expected value
  - d3     Actual value read back from the hardware
  - d4     NPC number
  - d5     Unit Number
- 267     Invalid value of Receive Framer Mode B register
- d0     Not used
  - d1     Not used
  - d2     Expected value
  - d3     Actual value read back from the hardware
  - d4     NPC number
  - d5     Unit Number
- 268     Invalid value of Receive Framer Exercise register
- d0     Not used
  - d1     Not used
  - d2     Expected value
  - d3     Actual value read back from the hardware
  - d4     NPC number
  - d5     Unit Number
- 269     Invalid value of Receive Synchronizer Mode A register
- d0     Not used
  - d1     Not used
  - d2     Expected value
  - d3     Actual value read back from the hardware
  - d4     NPC number
  - d5     Unit Number

- 26A Invalid value of Receive Synchronizer Mode B register
- d0 Not used
  - d1 Not used
  - d2 Expected value
  - d3 Actual value read back from the hardware
  - d4 NPC number
  - d5 Unit Number
- 26B Invalid value of Receive Exercise Mode register
- d0 Not used
  - d1 Not used
  - d2 Expected value
  - d3 Actual value read back from the hardware
  - d4 NPC number
  - d5 Unit Number
- 26C Invalid value of Transmit Exercise Mode register
- d0 Not used
  - d1 Not used
  - d2 Expected value
  - d3 Actual value read back from the hardware
  - d4 NPC number
  - d5 Unit Number
- 26D Invalid value of Transmit Framing Mode register
- d0 Not used
  - d1 Not used
  - d2 Expected value
  - d3 Actual value read back from the hardware
  - d4 NPC number
  - d5 Unit Number
- 26E Invalid value of Transmit Signaling Mode register
- d0 Not used
  - d1 Not used
  - d2 Expected value
  - d3 Actual value read back from the hardware
  - d4 NPC number
  - d5 Unit Number

26F Invalid value of Transmit System Mode register

d0 Not used  
d1 Not used  
d2 Expected value  
d3 Actual value read back from the hardware  
d4 NPC number  
d5 Unit Number

270 NPC Daily Near-end Path Coding Violations threshold values are inconsistent

The Daily Near-end Path Coding Violations of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long ANSI threshold value in the hardware  
d1 Long ANSI threshold value in the hardware  
d2 Long ANSI threshold value in the hardware  
d3 Long ANSI threshold value in the hardware  
d4 Long ANSI threshold value in the data base  
d5 Long ANSI threshold value in the data base  
d6 Long ANSI threshold value in the data base  
d7 Long ANSI threshold value in the data base  
d8 NPC number  
d9 UNIT number

271 NPC Daily Near-end Path Errored Seconds threshold values are inconsistent

The Daily Near-end Path Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long ANSI threshold value in the hardware  
d1 Long ANSI threshold value in the hardware  
d2 Long ANSI threshold value in the hardware  
d3 Long ANSI threshold value in the hardware  
d4 Long ANSI threshold value in the data base  
d5 Long ANSI threshold value in the data base  
d6 Long ANSI threshold value in the data base  
d7 Long ANSI threshold value in the data base  
d8 NPC number  
d9 UNIT number

272     NPC Daily Near-end Path Severely Errored Seconds threshold values are inconsistent

The Daily Near-end Path Severely Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number

273     NPC Daily Near-end Severely Errored Framing Seconds threshold values are inconsistent

The Daily Near-end Severely Errored Framing Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number

- 274     NPC Daily Near-end Controlled Slip Seconds threshold values are inconsistent

The Daily Near-end Controlled Slip Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0     Long ANSI threshold value in the hardware
- d1     Long ANSI threshold value in the hardware
- d2     Long ANSI threshold value in the hardware
- d3     Long ANSI threshold value in the hardware
- d4     Long ANSI threshold value in the data base
- d5     Long ANSI threshold value in the data base
- d6     Long ANSI threshold value in the data base
- d7     Long ANSI threshold value in the data base
- d8     NPC number
- d9     UNIT number

- 275     NPC Daily Near-end Unavailable Seconds threshold values are inconsistent

The Daily Near-end Unavailable Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0     Long ANSI threshold value in the hardware
- d1     Long ANSI threshold value in the hardware
- d2     Long ANSI threshold value in the hardware
- d3     Long ANSI threshold value in the hardware
- d4     Long ANSI threshold value in the data base
- d5     Long ANSI threshold value in the data base
- d6     Long ANSI threshold value in the data base
- d7     Long ANSI threshold value in the data base
- d8     NPC number
- d9     UNIT number



- 276      NPC Daily Near-end Line Coding Violations threshold values are inconsistent

The Daily Near-end Line Coding Violations of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0      Long ANSI threshold value in the hardware
- d1      Long ANSI threshold value in the hardware
- d2      Long ANSI threshold value in the hardware
- d3      Long ANSI threshold value in the hardware
- d4      Long ANSI threshold value in the data base
- d5      Long ANSI threshold value in the data base
- d6      Long ANSI threshold value in the data base
- d7      Long ANSI threshold value in the data base
- d8      NPC number
- d9      UNIT number

- 277      NPC Daily Near-end Line Errored Seconds threshold values are inconsistent

The Daily Near-end Line Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0      Long ANSI threshold value in the hardware
- d1      Long ANSI threshold value in the hardware
- d2      Long ANSI threshold value in the hardware
- d3      Long ANSI threshold value in the hardware
- d4      Long ANSI threshold value in the data base
- d5      Long ANSI threshold value in the data base
- d6      Long ANSI threshold value in the data base
- d7      Long ANSI threshold value in the data base
- d8      NPC number
- d9      UNIT number

- 278     NPC Daily Near-end Line Severely Errored Seconds threshold  
         are inconsistent

The Daily Near-end Line Severely Errored Seconds of the ANSI NPC  
threshold value stored in the unit data base does not match that  
stored in the hardware

- d0     Long ANSI threshold value in the hardware
- d1     Long ANSI threshold value in the hardware
- d2     Long ANSI threshold value in the hardware
- d3     Long ANSI threshold value in the hardware
- d4     Long ANSI threshold value in the data base
- d5     Long ANSI threshold value in the data base
- d6     Long ANSI threshold value in the data base
- d7     Long ANSI threshold value in the data base
- d8     NPC number
- d9     UNIT number

- 279     NPC Daily Far-end Path Coding Violations threshold values are  
         inconsistent

The Daily Far-end Path Coding Violations of the ANSI NPC threshold  
value stored in the unit data base does not match that stored in the  
hardware

- d0     Long ANSI threshold value in the hardware
- d1     Long ANSI threshold value in the hardware
- d2     Long ANSI threshold value in the hardware
- d3     Long ANSI threshold value in the hardware
- d4     Long ANSI threshold value in the data base
- d5     Long ANSI threshold value in the data base
- d6     Long ANSI threshold value in the data base
- d7     Long ANSI threshold value in the data base
- d8     NPC number
- d9     UNIT number

27A NPC Daily Far-end Path Errored Seconds threshold values are inconsistent

The Daily Far-end Path Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

|    |                                            |
|----|--------------------------------------------|
| d0 | Long ANSI threshold value in the hardware  |
| d1 | Long ANSI threshold value in the hardware  |
| d2 | Long ANSI threshold value in the hardware  |
| d3 | Long ANSI threshold value in the hardware  |
| d4 | Long ANSI threshold value in the data base |
| d5 | Long ANSI threshold value in the data base |
| d6 | Long ANSI threshold value in the data base |
| d7 | Long ANSI threshold value in the data base |
| d8 | NPC number                                 |
| d9 | UNIT number                                |

27B NPC Daily Far-end Path Severely Errored Seconds threshold values are inconsistent

The Daily Far-end Path Severely Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

|    |                                            |
|----|--------------------------------------------|
| d0 | Long ANSI threshold value in the hardware  |
| d1 | Long ANSI threshold value in the hardware  |
| d2 | Long ANSI threshold value in the hardware  |
| d3 | Long ANSI threshold value in the hardware  |
| d4 | Long ANSI threshold value in the data base |
| d5 | Long ANSI threshold value in the data base |
| d6 | Long ANSI threshold value in the data base |
| d7 | Long ANSI threshold value in the data base |
| d8 | NPC number                                 |
| d9 | UNIT number                                |

27C    NPC Daily Far-end Severely Errored Framing Seconds threshold values are inconsistent

The Daily Far-end Severely Errored Framing Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0    Long ANSI threshold value in the hardware  
d1    Long ANSI threshold value in the hardware  
d2    Long ANSI threshold value in the hardware  
d3    Long ANSI threshold value in the hardware  
d4    Long ANSI threshold value in the data base  
d5    Long ANSI threshold value in the data base  
d6    Long ANSI threshold value in the data base  
d7    Long ANSI threshold value in the data base  
d8    NPC number  
d9    UNIT number

27D    NPC Daily Far-end Controlled Slip Seconds threshold values are inconsistent

The Daily Far-end Controlled Slip Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0    Long ANSI threshold value in the hardware  
d1    Long ANSI threshold value in the hardware  
d2    Long ANSI threshold value in the hardware  
d3    Long ANSI threshold value in the hardware  
d4    Long ANSI threshold value in the data base  
d5    Long ANSI threshold value in the data base  
d6    Long ANSI threshold value in the data base  
d7    Long ANSI threshold value in the data base  
d8    NPC number  
d9    UNIT number

27E NPC Daily Far-end Unavailable Seconds threshold values are inconsistent

The Daily Far-end Unavailable Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long ANSI threshold value in the hardware  
d1 Long ANSI threshold value in the hardware  
d2 Long ANSI threshold value in the hardware  
d3 Long ANSI threshold value in the hardware  
d4 Long ANSI threshold value in the data base  
d5 Long ANSI threshold value in the data base  
d6 Long ANSI threshold value in the data base  
d7 Long ANSI threshold value in the data base  
d8 NPC number  
d9 UNIT number

27F NPC Daily Far-end Line Errored Seconds threshold values are inconsistent

The Daily Far-end Line Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long ANSI threshold value in the hardware  
d1 Long ANSI threshold value in the hardware  
d2 Long ANSI threshold value in the hardware  
d3 Long ANSI threshold value in the hardware  
d4 Long ANSI threshold value in the data base  
d5 Long ANSI threshold value in the data base  
d6 Long ANSI threshold value in the data base  
d7 Long ANSI threshold value in the data base  
d8 NPC number  
d9 UNIT number

280     NPC 15-Minute Near-end Path Coding Violations threshold values  
         are inconsistent

The 15-Minute Near-end Path Coding Violations of the ANSI NPC  
threshold value stored in the unit data base does not match that  
stored in the hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number

281     NPC 15-Minute Near-end Path Errored Seconds threshold values  
         are inconsistent

The 15-Minute Near-end Path Errored Seconds of the ANSI NPC threshold  
value stored in the unit data base does not match that stored in the  
hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number

282      NPC 15-Minute Near-end Path Severely Errored Seconds threshold values are inconsistent

The 15-Minute Near-end Path Severely Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

|    |                                            |
|----|--------------------------------------------|
| d0 | Long ANSI threshold value in the hardware  |
| d1 | Long ANSI threshold value in the hardware  |
| d2 | Long ANSI threshold value in the hardware  |
| d3 | Long ANSI threshold value in the hardware  |
| d4 | Long ANSI threshold value in the data base |
| d5 | Long ANSI threshold value in the data base |
| d6 | Long ANSI threshold value in the data base |
| d7 | Long ANSI threshold value in the data base |
| d8 | NPC number                                 |
| d9 | UNIT number                                |

283      NPC 15-Minute Near-end Severely Errored Framing Seconds threshold values are inconsistent

The 15-Minute Near-end Severely Errored Framing Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

|    |                                            |
|----|--------------------------------------------|
| d0 | Long ANSI threshold value in the hardware  |
| d1 | Long ANSI threshold value in the hardware  |
| d2 | Long ANSI threshold value in the hardware  |
| d3 | Long ANSI threshold value in the hardware  |
| d4 | Long ANSI threshold value in the data base |
| d5 | Long ANSI threshold value in the data base |
| d6 | Long ANSI threshold value in the data base |
| d7 | Long ANSI threshold value in the data base |
| d8 | NPC number                                 |
| d9 | UNIT number                                |

284     NPC 15-Minute Near-end Controlled Slip Seconds threshold values  
         are inconsistent

The 15-Minute Near-end Controlled Slip Seconds of the ANSI NPC  
threshold value stored in the unit data base does not match that  
stored in the hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number

285     NPC 15-Minute Near-end Unavailable Seconds threshold values are  
         inconsistent

The 15-Minute Near-end Unavailable Seconds of the ANSI NPC threshold  
value stored in the unit data base does not match that stored in the  
hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number



286      NPC 15-Minute Near-end Line Coding Violations threshold values  
         are inconsistent

The 15-Minute Near-end Line Coding Violations of the ANSI NPC  
threshold value stored in the unit data base does not match that  
stored in the hardware

d0      Long ANSI threshold value in the hardware  
d1      Long ANSI threshold value in the hardware  
d2      Long ANSI threshold value in the hardware  
d3      Long ANSI threshold value in the hardware  
d4      Long ANSI threshold value in the data base  
d5      Long ANSI threshold value in the data base  
d6      Long ANSI threshold value in the data base  
d7      Long ANSI threshold value in the data base  
d8      NPC number  
d9      UNIT number

287      NPC 15-Minute Near-end Line Errored Seconds threshold values  
         are inconsistent

The 15-Minute Near-end Line Errored Seconds of the ANSI NPC threshold  
value stored in the unit data base does not match that stored in the  
hardware

d0      Long ANSI threshold value in the hardware  
d1      Long ANSI threshold value in the hardware  
d2      Long ANSI threshold value in the hardware  
d3      Long ANSI threshold value in the hardware  
d4      Long ANSI threshold value in the data base  
d5      Long ANSI threshold value in the data base  
d6      Long ANSI threshold value in the data base  
d7      Long ANSI threshold value in the data base  
d8      NPC number  
d9      UNIT number

288     NPC 15-Minute Near-end Line Severely Errored Seconds threshold values are inconsistent

The 15-Minute Near-end Line Severely Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number

289     NPC 15-Minute Far-end Path Coding Violations threshold values are inconsistent

The 15-Minute Far-end Path Coding Violations of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number

28A NPC 15-Minute Far-end Path Errored Seconds threshold values are inconsistent

The 15-Minute Far-end Path Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long ANSI threshold value in the hardware  
d1 Long ANSI threshold value in the hardware  
d2 Long ANSI threshold value in the hardware  
d3 Long ANSI threshold value in the hardware  
d4 Long ANSI threshold value in the data base  
d5 Long ANSI threshold value in the data base  
d6 Long ANSI threshold value in the data base  
d7 Long ANSI threshold value in the data base  
d8 NPC number  
d9 UNIT number

28B NPC 15-Minute Far-end Path Severely Errored Seconds threshold values are inconsistent

The 15-Minute Far-end Path Severely Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long ANSI threshold value in the hardware  
d1 Long ANSI threshold value in the hardware  
d2 Long ANSI threshold value in the hardware  
d3 Long ANSI threshold value in the hardware  
d4 Long ANSI threshold value in the data base  
d5 Long ANSI threshold value in the data base  
d6 Long ANSI threshold value in the data base  
d7 Long ANSI threshold value in the data base  
d8 NPC number  
d9 UNIT number

28C     NPC 15-Minute Far-end Severely Errored Framing Seconds threshold values are inconsistent

The 15-Minute Far-end Severely Errored Framing Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number

28D     NPC 15-Minute Far-end Controlled Slip Seconds threshold values are inconsistent

The 15-Minute Far-end Controlled Slip Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

d0     Long ANSI threshold value in the hardware  
d1     Long ANSI threshold value in the hardware  
d2     Long ANSI threshold value in the hardware  
d3     Long ANSI threshold value in the hardware  
d4     Long ANSI threshold value in the data base  
d5     Long ANSI threshold value in the data base  
d6     Long ANSI threshold value in the data base  
d7     Long ANSI threshold value in the data base  
d8     NPC number  
d9     UNIT number

28E NPC 15-Minute Far-end Unavailable Seconds threshold values are inconsistent

The 15-Minute Far-end Unavailable Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

|    |                                            |
|----|--------------------------------------------|
| d0 | Long ANSI threshold value in the hardware  |
| d1 | Long ANSI threshold value in the hardware  |
| d2 | Long ANSI threshold value in the hardware  |
| d3 | Long ANSI threshold value in the hardware  |
| d4 | Long ANSI threshold value in the data base |
| d5 | Long ANSI threshold value in the data base |
| d6 | Long ANSI threshold value in the data base |
| d7 | Long ANSI threshold value in the data base |
| d8 | NPC number                                 |
| d9 | UNIT number                                |

28F NPC 15-Minute Far-end Line Errored Seconds threshold values are inconsistent

The 15-Minute Far-end Line Errored Seconds of the ANSI NPC threshold value stored in the unit data base does not match that stored in the hardware

|    |                                            |
|----|--------------------------------------------|
| d0 | Long ANSI threshold value in the hardware  |
| d1 | Long ANSI threshold value in the hardware  |
| d2 | Long ANSI threshold value in the hardware  |
| d3 | Long ANSI threshold value in the hardware  |
| d4 | Long ANSI threshold value in the data base |
| d5 | Long ANSI threshold value in the data base |
| d6 | Long ANSI threshold value in the data base |
| d7 | Long ANSI threshold value in the data base |
| d8 | NPC number                                 |
| d9 | UNIT number                                |

290     NPC Daily CRC Block Error Count threshold values are  
         inconsistent

The Daily CRC Block Error Count of the enhanced-30-channel NPC  
threshold value stored in the unit data base does not match that  
stored in the hardware

d0     Long enhanced-30-channel threshold value in the hardware  
d1     Long enhanced-30-channel threshold value in the hardware  
d2     Long enhanced-30-channel threshold value in the hardware  
d3     Long enhanced-30-channel threshold value in the hardware  
d4     Long enhanced-30-channel threshold value in the data base  
d5     Long enhanced-30-channel threshold value in the data base  
d6     Long enhanced-30-channel threshold value in the data base  
d7     Long enhanced-30-channel threshold value in the data base  
d8     NPC number  
d9     UNIT number

291     NPC Daily Framing Error Count threshold values are inconsistent

The Daily Framing Error Count of the enhanced-30-channel NPC threshold  
value stored in the unit data base does not match that stored in the  
hardware

d0     Long enhanced-30-channel threshold value in the hardware  
d1     Long enhanced-30-channel threshold value in the hardware  
d2     Long enhanced-30-channel threshold value in the hardware  
d3     Long enhanced-30-channel threshold value in the hardware  
d4     Long enhanced-30-channel threshold value in the data base  
d5     Long enhanced-30-channel threshold value in the data base  
d6     Long enhanced-30-channel threshold value in the data base  
d7     Long enhanced-30-channel threshold value in the data base  
d8     NPC number  
d9     UNIT number

292 NPC Daily Out of Frame Seconds threshold values are inconsistent

The Daily Out of Frame Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0 Long enhanced-30-channel threshold value in the hardware
- d1 Long enhanced-30-channel threshold value in the hardware
- d2 Long enhanced-30-channel threshold value in the hardware
- d3 Long enhanced-30-channel threshold value in the hardware
- d4 Long enhanced-30-channel threshold value in the data base
- d5 Long enhanced-30-channel threshold value in the data base
- d6 Long enhanced-30-channel threshold value in the data base
- d7 Long enhanced-30-channel threshold value in the data base
- d8 NPC number
- d9 UNIT number

293 NPC Errored Seconds threshold values are inconsistent

The Errored Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0 Long enhanced-30-channel threshold value in the hardware
- d1 Long enhanced-30-channel threshold value in the hardware
- d2 Long enhanced-30-channel threshold value in the hardware
- d3 Long enhanced-30-channel threshold value in the hardware
- d4 Long enhanced-30-channel threshold value in the data base
- d5 Long enhanced-30-channel threshold value in the data base
- d6 Long enhanced-30-channel threshold value in the data base
- d7 Long enhanced-30-channel threshold value in the data base
- d8 NPC number
- d9 UNIT number

- 294     NPC Daily Severely Errored Seconds threshold values are inconsistent

The Daily Severely Errored Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0     Long enhanced-30-channel threshold value in the hardware
- d1     Long enhanced-30-channel threshold value in the hardware
- d2     Long enhanced-30-channel threshold value in the hardware
- d3     Long enhanced-30-channel threshold value in the hardware
- d4     Long enhanced-30-channel threshold value in the data base
- d5     Long enhanced-30-channel threshold value in the data base
- d6     Long enhanced-30-channel threshold value in the data base
- d7     Long enhanced-30-channel threshold value in the data base
- d8     NPC number
- d9     UNIT number

- 295     NPC Daily Controlled Slip Seconds threshold values are inconsistent

The Daily Controlled Slip Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0     Long enhanced-30-channel threshold value in the hardware
- d1     Long enhanced-30-channel threshold value in the hardware
- d2     Long enhanced-30-channel threshold value in the hardware
- d3     Long enhanced-30-channel threshold value in the hardware
- d4     Long enhanced-30-channel threshold value in the data base
- d5     Long enhanced-30-channel threshold value in the data base
- d6     Long enhanced-30-channel threshold value in the data base
- d7     Long enhanced-30-channel threshold value in the data base
- d8     NPC number
- d9     UNIT number



296 NPC Daily Code Violation Count threshold values are inconsistent

The Daily Code Violation Count of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0 Long enhanced-30-channel threshold value in the hardware
- d1 Long enhanced-30-channel threshold value in the hardware
- d2 Long enhanced-30-channel threshold value in the hardware
- d3 Long enhanced-30-channel threshold value in the hardware
- d4 Long enhanced-30-channel threshold value in the data base
- d5 Long enhanced-30-channel threshold value in the data base
- d6 Long enhanced-30-channel threshold value in the data base
- d7 Long enhanced-30-channel threshold value in the data base
- d8 NPC number
- d9 UNIT number

297 NPC Daily Unavailable Seconds threshold values are inconsistent

The Daily Unavailable Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0 Long enhanced-30-channel threshold value in the hardware
- d1 Long enhanced-30-channel threshold value in the hardware
- d2 Long enhanced-30-channel threshold value in the hardware
- d3 Long enhanced-30-channel threshold value in the hardware
- d4 Long enhanced-30-channel threshold value in the data base
- d5 Long enhanced-30-channel threshold value in the data base
- d6 Long enhanced-30-channel threshold value in the data base
- d7 Long enhanced-30-channel threshold value in the data base
- d8 NPC number
- d9 UNIT number

- 298     NPC Daily Unavailable Time Count threshold values are inconsistent

The Daily Unavailable Time Count of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0     Long enhanced-30-channel threshold value in the hardware
- d1     Long enhanced-30-channel threshold value in the hardware
- d2     Long enhanced-30-channel threshold value in the hardware
- d3     Long enhanced-30-channel threshold value in the hardware
- d4     Long enhanced-30-channel threshold value in the data base
- d5     Long enhanced-30-channel threshold value in the data base
- d6     Long enhanced-30-channel threshold value in the data base
- d7     Long enhanced-30-channel threshold value in the data base
- d8     NPC number
- d9     UNIT number

- 299     NPC Daily Multiframe Alignment Error Count threshold values are inconsistent

The Daily Multiframe Alignment Error Count of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0     Long enhanced-30-channel threshold value in the hardware
- d1     Long enhanced-30-channel threshold value in the hardware
- d2     Long enhanced-30-channel threshold value in the hardware
- d3     Long enhanced-30-channel threshold value in the hardware
- d4     Long enhanced-30-channel threshold value in the data base
- d5     Long enhanced-30-channel threshold value in the data base
- d6     Long enhanced-30-channel threshold value in the data base
- d7     Long enhanced-30-channel threshold value in the data base
- d8     NPC number
- d9     UNIT number

29A NPC Daily Far End Block Error Count threshold values are inconsistent

The Daily Far End Block Error Count of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long enhanced-30-channel threshold value in the hardware  
d1 Long enhanced-30-channel threshold value in the hardware  
d2 Long enhanced-30-channel threshold value in the hardware  
d3 Long enhanced-30-channel threshold value in the hardware  
d4 Long enhanced-30-channel threshold value in the data base  
d5 Long enhanced-30-channel threshold value in the data base  
d6 Long enhanced-30-channel threshold value in the data base  
d7 Long enhanced-30-channel threshold value in the data base  
d8 NPC number  
d9 UNIT number

29B NPC Daily Far End Errored Seconds threshold values are inconsistent

The Daily Far End Errored Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long enhanced-30-channel threshold value in the hardware  
d1 Long enhanced-30-channel threshold value in the hardware  
d2 Long enhanced-30-channel threshold value in the hardware  
d3 Long enhanced-30-channel threshold value in the hardware  
d4 Long enhanced-30-channel threshold value in the data base  
d5 Long enhanced-30-channel threshold value in the data base  
d6 Long enhanced-30-channel threshold value in the data base  
d7 Long enhanced-30-channel threshold value in the data base  
d8 NPC number  
d9 UNIT number

29C    NPC Daily Far End Severely Errored Seconds threshold values are inconsistent

The Daily Far End Severely Errored Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0    Long enhanced-30-channel threshold value in the hardware
- d1    Long enhanced-30-channel threshold value in the hardware
- d2    Long enhanced-30-channel threshold value in the hardware
- d3    Long enhanced-30-channel threshold value in the hardware
- d4    Long enhanced-30-channel threshold value in the data base
- d5    Long enhanced-30-channel threshold value in the data base
- d6    Long enhanced-30-channel threshold value in the data base
- d7    Long enhanced-30-channel threshold value in the data base
- d8    NPC number
- d9    UNIT number

29D    NPC Daily Far End Unavailable Seconds threshold values are inconsistent

The Daily Far End Unavailable Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0    Long enhanced-30-channel threshold value in the hardware
- d1    Long enhanced-30-channel threshold value in the hardware
- d2    Long enhanced-30-channel threshold value in the hardware
- d3    Long enhanced-30-channel threshold value in the hardware
- d4    Long enhanced-30-channel threshold value in the data base
- d5    Long enhanced-30-channel threshold value in the data base
- d6    Long enhanced-30-channel threshold value in the data base
- d7    Long enhanced-30-channel threshold value in the data base
- d8    NPC number
- d9    UNIT number

29E NPC 15-Minute CRC Block Error Count threshold values are inconsistent

The 15-Minute CRC Block Error Count of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long enhanced-30-channel threshold value in the hardware  
d1 Long enhanced-30-channel threshold value in the hardware  
d2 Long enhanced-30-channel threshold value in the hardware  
d3 Long enhanced-30-channel threshold value in the hardware  
d4 Long enhanced-30-channel threshold value in the data base  
d5 Long enhanced-30-channel threshold value in the data base  
d6 Long enhanced-30-channel threshold value in the data base  
d7 Long enhanced-30-channel threshold value in the data base  
d8 NPC number  
d9 UNIT number

29F NPC 15-Minute Framing Error Count threshold values are inconsistent

The 15-Minute Framing Error Count of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long enhanced-30-channel threshold value in the hardware  
d1 Long enhanced-30-channel threshold value in the hardware  
d2 Long enhanced-30-channel threshold value in the hardware  
d3 Long enhanced-30-channel threshold value in the hardware  
d4 Long enhanced-30-channel threshold value in the data base  
d5 Long enhanced-30-channel threshold value in the data base  
d6 Long enhanced-30-channel threshold value in the data base  
d7 Long enhanced-30-channel threshold value in the data base  
d8 NPC number  
d9 UNIT number

2A0     NPC 15-Minute Out of Frame Seconds threshold values are inconsistent

The 15-Minute Out of Frame Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0     Long enhanced-30-channel threshold value in the hardware  
d1     Long enhanced-30-channel threshold value in the hardware  
d2     Long enhanced-30-channel threshold value in the hardware  
d3     Long enhanced-30-channel threshold value in the hardware  
d4     Long enhanced-30-channel threshold value in the data base  
d5     Long enhanced-30-channel threshold value in the data base  
d6     Long enhanced-30-channel threshold value in the data base  
d7     Long enhanced-30-channel threshold value in the data base  
d8     NPC number  
d9     UNIT number

2A1     NPC 15-Minute Errored Seconds threshold values are inconsistent

The 15-Minute Errored Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0     Long enhanced-30-channel threshold value in the hardware  
d1     Long enhanced-30-channel threshold value in the hardware  
d2     Long enhanced-30-channel threshold value in the hardware  
d3     Long enhanced-30-channel threshold value in the hardware  
d4     Long enhanced-30-channel threshold value in the data base  
d5     Long enhanced-30-channel threshold value in the data base  
d6     Long enhanced-30-channel threshold value in the data base  
d7     Long enhanced-30-channel threshold value in the data base  
d8     NPC number  
d9     UNIT number

2A2 NPC 15-Minute Severely Errored Seconds threshold values are inconsistent

The 15-Minute Severely Errored Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0 Long enhanced-30-channel threshold value in the hardware
- d1 Long enhanced-30-channel threshold value in the hardware
- d2 Long enhanced-30-channel threshold value in the hardware
- d3 Long enhanced-30-channel threshold value in the hardware
- d4 Long enhanced-30-channel threshold value in the data base
- d5 Long enhanced-30-channel threshold value in the data base
- d6 Long enhanced-30-channel threshold value in the data base
- d7 Long enhanced-30-channel threshold value in the data base
- d8 NPC number
- d9 UNIT number

2A3 NPC 15-Minute Controlled Slip Seconds threshold values are inconsistent

The 15-Minute Controlled Slip Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0 Long enhanced-30-channel threshold value in the hardware
- d1 Long enhanced-30-channel threshold value in the hardware
- d2 Long enhanced-30-channel threshold value in the hardware
- d3 Long enhanced-30-channel threshold value in the hardware
- d4 Long enhanced-30-channel threshold value in the data base
- d5 Long enhanced-30-channel threshold value in the data base
- d6 Long enhanced-30-channel threshold value in the data base
- d7 Long enhanced-30-channel threshold value in the data base
- d8 NPC number
- d9 UNIT number

2A4     NPC 15-Minute Code Violation Count threshold values are  
         inconsistent

The 15-Minute Code Violation Count of the enhanced-30-channel NPC  
threshold value stored in the unit data base does not match that  
stored in the hardware

d0     Long enhanced-30-channel threshold value in the hardware  
d1     Long enhanced-30-channel threshold value in the hardware  
d2     Long enhanced-30-channel threshold value in the hardware  
d3     Long enhanced-30-channel threshold value in the hardware  
d4     Long enhanced-30-channel threshold value in the data base  
d5     Long enhanced-30-channel threshold value in the data base  
d6     Long enhanced-30-channel threshold value in the data base  
d7     Long enhanced-30-channel threshold value in the data base  
d8     NPC number  
d9     UNIT number

2A5     NPC 15-Minute Unavailable Seconds threshold values are  
         inconsistent

The 15-Minute Unavailable Seconds of the enhanced-30-channel NPC  
threshold value stored in the unit data base does not match that  
stored in the hardware

d0     Long enhanced-30-channel threshold value in the hardware  
d1     Long enhanced-30-channel threshold value in the hardware  
d2     Long enhanced-30-channel threshold value in the hardware  
d3     Long enhanced-30-channel threshold value in the hardware  
d4     Long enhanced-30-channel threshold value in the data base  
d5     Long enhanced-30-channel threshold value in the data base  
d6     Long enhanced-30-channel threshold value in the data base  
d7     Long enhanced-30-channel threshold value in the data base  
d8     NPC number  
d9     UNIT number



2A6 NPC 15-Minute Unavailable Time Count threshold values are inconsistent

The 15-Minute Unavailable Time Count of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long enhanced-30-channel threshold value in the hardware  
d1 Long enhanced-30-channel threshold value in the hardware  
d2 Long enhanced-30-channel threshold value in the hardware  
d3 Long enhanced-30-channel threshold value in the hardware  
d4 Long enhanced-30-channel threshold value in the data base  
d5 Long enhanced-30-channel threshold value in the data base  
d6 Long enhanced-30-channel threshold value in the data base  
d7 Long enhanced-30-channel threshold value in the data base  
d8 NPC number  
d9 UNIT number

2A7 NPC 15-Minute Multiframe Alignment Error Count threshold values are inconsistent

The 15-Minute Multiframe Alignment Error Count of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long enhanced-30-channel threshold value in the hardware  
d1 Long enhanced-30-channel threshold value in the hardware  
d2 Long enhanced-30-channel threshold value in the hardware  
d3 Long enhanced-30-channel threshold value in the hardware  
d4 Long enhanced-30-channel threshold value in the data base  
d5 Long enhanced-30-channel threshold value in the data base  
d6 Long enhanced-30-channel threshold value in the data base  
d7 Long enhanced-30-channel threshold value in the data base  
d8 NPC number  
d9 UNIT number

2A8 NPC 15-Minute Far End Block Error Count threshold values are inconsistent

The 15-Minute Far End Block Error Count of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long enhanced-30-channel threshold value in the hardware  
d1 Long enhanced-30-channel threshold value in the hardware  
d2 Long enhanced-30-channel threshold value in the hardware  
d3 Long enhanced-30-channel threshold value in the hardware  
d4 Long enhanced-30-channel threshold value in the data base  
d5 Long enhanced-30-channel threshold value in the data base  
d6 Long enhanced-30-channel threshold value in the data base  
d7 Long enhanced-30-channel threshold value in the data base  
d8 NPC number  
d9 UNIT number

2A9 NPC 15-Minute Far End Errored Seconds threshold values are inconsistent

The 15-Minute Far End Errored Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

d0 Long enhanced-30-channel threshold value in the hardware  
d1 Long enhanced-30-channel threshold value in the hardware  
d2 Long enhanced-30-channel threshold value in the hardware  
d3 Long enhanced-30-channel threshold value in the hardware  
d4 Long enhanced-30-channel threshold value in the data base  
d5 Long enhanced-30-channel threshold value in the data base  
d6 Long enhanced-30-channel threshold value in the data base  
d7 Long enhanced-30-channel threshold value in the data base  
d8 NPC number  
d9 UNIT number

2AA NPC 15-Minute Far End Severely Errored Seconds threshold values are inconsistent

The 15-Minute Far End Severely Errored Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0 Long enhanced-30-channel threshold value in the hardware
- d1 Long enhanced-30-channel threshold value in the hardware
- d2 Long enhanced-30-channel threshold value in the hardware
- d3 Long enhanced-30-channel threshold value in the hardware
- d4 Long enhanced-30-channel threshold value in the data base
- d5 Long enhanced-30-channel threshold value in the data base
- d6 Long enhanced-30-channel threshold value in the data base
- d7 Long enhanced-30-channel threshold value in the data base
- d8 NPC number
- d9 UNIT number

2AB NPC 15-Minute Far End Unavailable Seconds threshold values are inconsistent

The 15-Minute Far End Unavailable Seconds of the enhanced-30-channel NPC threshold value stored in the unit data base does not match that stored in the hardware

- d0 Long enhanced-30-channel threshold value in the hardware
- d1 Long enhanced-30-channel threshold value in the hardware
- d2 Long enhanced-30-channel threshold value in the hardware
- d3 Long enhanced-30-channel threshold value in the hardware
- d4 Long enhanced-30-channel threshold value in the data base
- d5 Long enhanced-30-channel threshold value in the data base
- d6 Long enhanced-30-channel threshold value in the data base
- d7 Long enhanced-30-channel threshold value in the data base
- d8 NPC number
- d9 UNIT number

2B1 NPC Transmit or Receive Pseudo Framing Word values are inconsistent

The Transmit or Receive Pseudo Framing Word of the NPC mismatch between unit data base and the hardware

- d0 The Receive Pseudo Framing Word of NPC from hardware
- d1 The Receive Pseudo Framing Word of NPC from unit data base
- d2 The Transmit Pseudo Framing Word of NPC from hardware
- d3 The Transmit Pseudo Framing Word of NPC from unit data base
- d4 NPC number
- d5 UNIT number

2B2 NPC Non Framing Setting values are inconsistent

The Non Framing Setting value the NPC mismatch between unit data base and the hardware

- d0 Fourth byte the Non Framing Setting of NPC from hardware
- d1 Third byte of the Non Framing Setting of NPC from hardware
- d2 Fourth byte of the Non Framing Setting of NPC from unit data base
- d3 Third byte of the Non Framing Setting of NPC from unit data base
- d4 NPC number
- d5 UNIT number

300 E1/T1 Select Registers are inconsistent

The various select registers are not consistently provisioned for either E1 or T1 within a DS2

- d0 NPC type
- d1 Not used
- d2 Not used
- d3 DS2 number
- d4 HMXR number
- d5 UNIT number

301 CCN sides is unpested (INS) in DB but pested in hardware (BXREG).

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Not used
- d4 Not used
- d5 CCN side

302 TSI entity is unpested (INS) in DB but pested in hardware (CCNI EMR).

- d0 Not used
- d1 Not used
- d2 Not used
- d3 To UNIT
- d4 From UNIT
- d5 CCNI side

303 CCB entity is unpested (INS) in DB but pested in hardware (CCNI EMR).

- d0 Not used
- d1 Not used
- d2 Not used
- d3 Not used
- d4 CCB number
- d5 CCN side

- 305 SYNC entity is in-service in DB but cannot communicate with MP.
- d0 Not used
  - d1 Not used
  - d2 Not used
  - d3 Not used
  - d4 Not used
  - d5 SYNC side
- 306 TLI entity is in-service in DB but out-of-service in SYNC data.
- d0 Syncdata.arch
  - d1 TLI data base flags
  - d2 TLI hardware status
  - d3 Number of times data mismatch verified
  - d4 TLI number
  - d5 SYNC side
- 307 TLR entity is in-service in DB but out-of-service in SYNC data.
- d0 Not used
  - d1 Not used
  - d2 Not used
  - d3 TLR number
  - d4 TLI number
  - d5 SYNC side
- 308 CI links is in-service in DB but out of service in CI hardware data
- d0 Not used
  - d1 Not used
  - d2 Not used
  - d3 Not used
  - d4 Not used
  - d5 link number
- 310 TLR entity priority is different b/t DB and SYNC data (TE and TP)
- d0 Not used
  - d1 SYNC hardware TLR priority
  - d2 Data base priority
  - d3 TLR number
  - d4 TLI number
  - d5 SYNC side

- 311 TLR entity x and y value is different b/t DB and SYNC data
- d0 SYNC hardware y value
  - d1 Data base y value
  - d2 SYNC hardware x value
  - d3 Data base x value
  - d4 [AB] A = TLI number; B = TLR number;
  - d5 SYNC side
- 312 SYNC entity architect or stratum value is different b/t DB and SYNC.
- d0 SYNC hardware stratum value
    - 0 - domestic stratum 3
    - 1 - CEPT local exchange
    - 2 - CEPT toll exchange
    - 3 - domestic stratum 2
  - d1 Data base stratum value
    - 0 - no type defined
    - 1 - stratum 2 sync
    - 2 - stratum 3 sync
    - 3 - CEPT local
    - 4 - CEPT toll
  - d2 SYNC hardware architect value
    - 0 - slaved in master-slave system
    - 1 - master in master-slave system
    - 2 - mutual synchronization system
  - d3 Data base architect value
    - 0 - no type defined
    - 1 - master in master-slave system
    - 2 - slaved in master-slave system
    - 3 - mutual synchronization system
  - d4 Not used
  - d5 SYNC side
- 313 SYNC entity mode is different b/t DB and SYNC data
- d0 Not used
  - d1 Not used
  - d2 SYNC hardware mode value
    - 0 - normal
    - 1 - fast
    - 2 - holdover
  - d3 Data base sync mode value
    - 1 - normal
    - 2 - fast
    - 3 - holdover
  - d4 Not used
  - d5 SYNC side

- 314 SYNC timing source or active link is different b/t DB and hardware
- d0 SYNC hardware active link  
This field is only valid when the source is timing link and the architecture field is slave in the master-slave system  
0 - TLI #1, Link #0  
1 - TLI #1, Link #1  
2 - TLI #2, Link #0  
3 - TLI #2, Link #1  
4 - TLI #3, Link #0  
5 - TLI #3, Link #1  
6 - TLI #4, Link #0  
7 - TLI #4, Link #1
- d1 Data base sync active link  
This field is only valid when the source is timing link and the architecture field is slave in the master-slave system  
0 - TLI #1, Link #0  
1 - TLI #1, Link #1  
2 - TLI #2, Link #0  
3 - TLI #2, Link #1  
4 - TLI #3, Link #0  
5 - TLI #3, Link #1  
6 - TLI #4, Link #0  
7 - TLI #4, Link #1
- d2 SYNC hardware timing source  
0 - holdover  
1 - timing link  
2 - cross couples  
3 - CRO
- d3 Data base sync timing source  
1 - holdover  
2 - timing link  
3 - cross couples  
4 - CRO
- d4 Not used
- d5 SYNC side
- 315 SYNC TLI type is different b/t DB and SYNC hardware
- d0 Not used
- d1 Data base TLIs x option if TLI type is TDTYPE
- d2 SYNC hardware type
- d3 Data base TLI type
- d4 TLI number
- d5 SYNC side

316 ECCN sides is unpested (INS) in DB but pested in hardware (BXREG).

d0 Not used  
d1 Not used  
d2 Not used  
d3 Not used  
d4 Not used  
d5 ECCN side

317 ETSI entity is unpested (INS) in DB but pested in hardware(CCI EMR).

d0 Not used  
d1 Not used  
d2 Not used  
d3 Not used  
d4 ETSI number  
d5 ECCN side

320 Receive sync upper address different b/t UA DB and PS DB

d0 Not used  
d1 UA value  
d2 PS value  
d3 Channel  
d4 NPC number  
d5 Unit number

321 Receive sync lower address different b/t UA DB and PS DB

d0 Not used  
d1 UA value  
d2 PS value  
d3 Channel  
d4 NPC number  
d5 Unit number

322 Receive sync data b/t UA DB and PS DB

d0 Not used  
d1 UA value  
d2 PS value  
d3 Channel  
d4 NPC number  
d5 Unit number



- 323     PIF data differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     Not used
  - d4     MXR/HMXR number
  - d5     Unit number
- 324     Receive frame mode A differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     NPC
  - d4     MXR/HMXR number
  - d5     Unit number
- 325     Receive frame mode B differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     NPC
  - d4     MXR/HMXR number
  - d5     Unit number
- 326     Receive sync mode A differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     NPC
  - d4     MXR/HMXR number
  - d5     Unit number
- 327     Receive sync mode B differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     NPC
  - d4     MXR/HMXR number
  - d5     Unit number

- 328 Transmit framing mode differs b/t UA DB and PS DB
- d0 Not used
  - d1 UA value
  - d2 PS value
  - d3 NPC
  - d4 MXR/HMXR number
  - d5 Unit number
- 329 Transmit signaling mode differs b/t UA DB and PS DB
- d0 Not used
  - d1 UA value
  - d2 PS value
  - d3 NPC
  - d4 MXR/HMXR number
  - d5 Unit number
- 32A Transmit system mode differs b/t UA DB and PS DB
- d0 Not used
  - d1 UA value
  - d2 PS value
  - d3 NPC
  - d4 MXR/HMXR number
  - d5 Unit number
- 32B Even NPC receive ams 0 value differs b/t UA DB and PS DB
- d0 Not used
  - d1 UA value
  - d2 PS value
  - d3 Channel
  - d4 NPC number
  - d5 Unit number
- 32C Even NPC receive ams 1 value differs b/t UA DB and PS DB
- d0 Not used
  - d1 UA value
  - d2 PS value
  - d3 Channel
  - d4 NPC number
  - d5 Unit number

32D Even NPC receive ams 2 value differs b/t UA DB and PS DB

d0 Not used  
d1 UA value  
d2 PS value  
d3 Channel  
d4 NPC number  
d5 Unit number

32E Even NPC transmit ams 0 value differs b/t UA DB and PS DB

d0 Not used  
d1 UA value  
d2 PS value  
d3 Channel  
d4 NPC number  
d5 Unit number

32F Even NPC transmit ams 1 value differs b/t UA DB and PS DB

d0 Not used  
d1 UA value  
d2 PS value  
d3 Channel  
d4 NPC number  
d5 Unit number

330 Even NPC transmit ams 2 value differs b/t UA DB and PS DB

d0 Not used  
d1 UA value  
d2 PS value  
d3 Channel  
d4 NPC number  
d5 Unit number

331 Odd NPC receive ams 0 value differs b/t UA DB and PS DB

d0 Not used  
d1 UA value  
d2 PS value  
d3 Channel  
d4 NPC number  
d5 Unit number

- 332     Odd NPC receive ams 1 value differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     Channel
  - d4     NPC number
  - d5     Unit number
- 333     Odd NPC receive ams 2 value differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     Channel
  - d4     NPC number
  - d5     Unit number
- 334     Odd NPC transmit ams 0 value differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     Channel
  - d4     NPC number
  - d5     Unit number
- 335     Odd NPC transmit ams 1 value differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     Channel
  - d4     NPC number
  - d5     Unit number
- 336     Odd NPC transmit ams 2 value differs b/t UA DB and PS DB
- d0     Not used
  - d1     UA value
  - d2     PS value
  - d3     Channel
  - d4     NPC number
  - d5     Unit number

- 351 E1 Channel Controller Data - Special Function A
- d0 Not used
  - d1 HMXR register value
  - d2 PSWDB value
  - d3 NPC number
  - d4 HMXR number
  - d5 Unit number
- 352 E1 Channel Controller Data - Special Function B
- d0 Not used
  - d1 HMXR register value
  - d2 PSWDB value
  - d3 NPC number
  - d4 HMXR number
  - d5 Unit number
- 353 E1 Channel Controller Data - AMS[512] Array Mismatch
- d0 Index to instruction RAM arrays
  - d1 HMXR register value
  - d2 PSWDB value
  - d3 NPC number
  - d4 HMXR number
  - d5 Unit number
- 358 E1 Transceiver Data - Spare Bit Provisioning
- d0 Not used
  - d1 HMXR register value
  - d2 PSWDB value
  - d3 Transceiver number
  - d4 HMXR number
  - d5 Unit number
- 359 E1 Transceiver Data - Link Option 1
- d0 Not used
  - d1 HMXR register value
  - d2 PSWDB value
  - d3 Transceiver number
  - d4 HMXR number
  - d5 Unit number

|     |                                                    |
|-----|----------------------------------------------------|
| 360 | E1 Transceiver Data - Transmit TS16 Spare Bits     |
| d0  | Not used                                           |
| d1  | HMXR register value                                |
| d2  | PSWDB value                                        |
| d3  | Transceiver number                                 |
| d4  | HMXR number                                        |
| d5  | Unit number                                        |
| 361 | E1 Transceiver Data - TS0 Cross-Connect Transmit 0 |
| d0  | Not used                                           |
| d1  | HMXR register value                                |
| d2  | PSWDB value                                        |
| d3  | Transceiver number                                 |
| d4  | HMXR number                                        |
| d5  | Unit number                                        |
| 362 | E1 Transceiver Data - TS0 Cross-Connect Transmit 1 |
| d0  | Not used                                           |
| d1  | HMXR register value                                |
| d2  | PSWDB value                                        |
| d3  | Transceiver number                                 |
| d4  | HMXR number                                        |
| d5  | Unit number                                        |
| 363 | E1 Transceiver Data - TS0 Cross-Connect Transmit 2 |
| d0  | Not used                                           |
| d1  | HMXR register value                                |
| d2  | PSWDB value                                        |
| d3  | Transceiver number                                 |
| d4  | HMXR number                                        |
| d5  | Unit number                                        |
| 364 | E1 Transceiver Data - TS0 Cross-Connect Transmit 3 |
| d0  | Not used                                           |
| d1  | HMXR register value                                |
| d2  | PSWDB value                                        |
| d3  | Transceiver number                                 |
| d4  | HMXR number                                        |
| d5  | Unit number                                        |

365 E1 Transceiver Data - Link Action-FP Control

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Transceiver number  
d4 HMXR number  
d5 Unit number

366 E1 Transceiver Data - Consequent Action Option

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Transceiver number  
d4 HMXR number  
d5 Unit number

367 E1 Transceiver Data - System RCV Data Option

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Transceiver number  
d4 HMXR number  
d5 Unit number

368 E1 Transceiver Data - TS0 Receive 0

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Transceiver number  
d4 HMXR number  
d5 Unit number

369 E1 Transceiver Data - TS0 Receive 1

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Transceiver number  
d4 HMXR number  
d5 Unit number

|     |                                     |
|-----|-------------------------------------|
| 370 | E1 Transceiver Data - TS0 Receive 2 |
| d0  | Not used                            |
| d1  | HMXR register value                 |
| d2  | PSWDB value                         |
| d3  | Transceiver number                  |
| d4  | HMXR number                         |
| d5  | Unit number                         |
| 371 | E1 Transceiver Data - TS0 Receive 3 |
| d0  | Not used                            |
| d1  | HMXR register value                 |
| d2  | PSWDB value                         |
| d3  | Transceiver number                  |
| d4  | HMXR number                         |
| d5  | Unit number                         |
| 372 | E1 Transceiver Data - Link Option 3 |
| d0  | Not used                            |
| d1  | HMXR register value                 |
| d2  | PSWDB value                         |
| d3  | Transceiver number                  |
| d4  | HMXR number                         |
| d5  | Unit number                         |
| 373 | E1 Transceiver Data - Link Option 2 |
| d0  | Not used                            |
| d1  | HMXR register value                 |
| d2  | PSWDB value                         |
| d3  | Transceiver number                  |
| d4  | HMXR number                         |
| d5  | Unit number                         |
| 374 | E1 Transceiver Data - Force Reframe |
| d0  | Not used                            |
| d1  | HMXR register value                 |
| d2  | PSWDB value                         |
| d3  | Transceiver number                  |
| d4  | HMXR number                         |
| d5  | Unit number                         |



375 E1 Transceiver Data - Parity Block Fail Options

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Transceiver number  
d4 HMXR number  
d5 Unit number

376 M13 Data - DS3 Framer Configuration

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Not used  
d4 HMXR number  
d5 Unit number

377 M13 Data - MX23 Configuration

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Not used  
d4 HMXR number  
d5 Unit number

378 M13 Data - Master Loopback Configuration

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Not used  
d4 HMXR number  
d5 Unit number

379 M13 Data - DS2 Framer Configuration

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 DS2 number  
d4 HMXR number  
d5 Unit number

380 M13 Data - DS2 MX12 Configuration and Control

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 DS2 number  
d4 HMXR number  
d5 Unit number

381 M13 Data - DS2 MX12 AIS Insert

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 DS2 number  
d4 HMXR number  
d5 Unit number

382 M13 Data - DS2 MX12 Loopback Activate

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 DS2 number  
d4 HMXR number  
d5 Unit number

383 M13 Data - MX23 Demux AIS Insert

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Not used  
d4 HMXR number  
d5 Unit number

384 M13 Data - DS3 TRAN Configuration

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 Not used  
d4 HMXR number  
d5 Unit number

390 MXR Protection Switch Database does not match Shared RAM

d0 Not used  
d1 HMXR register value  
d2 PSWDB value  
d3 NPC number  
d4 HMXR number  
d5 Unit number

3A7 E1 Opaque Data - E1 Opaque Data Array

d0 Index to opaque data  
d1 HMXR register value  
d2 PSWDB value  
d3 NPC number  
d4 HMXR number  
d5 Unit number

3B0 Fully-connected pseudo-channels not actually cross-connected

Two channels are in a fully-connected pseudo-channel entry,  
but are not actually cross-connected to each other.

d0 Unused  
d1 Unused  
d2 Pseudo-channel number Low Byte  
d3 Pseudo-channel number High Byte  
d4 Channel number on NPC 2  
d5 NPC number 2 Low Byte  
d6 NPC number 2 High Byte  
d7 Channel number on NPC 1  
d8 NPC number 1 Low Byte  
d9 NPC number 1 High Byte

3B1 Duplicate NPC/channel number in pseudo-channel connection.

Two pseudo-channel entries contain the same NPC number and  
channel number.

d0 Unused  
d1 Unused  
d2 Unused  
d3 Pseudo-channel 2 Low Byte  
d4 Pseudo-channel 2 High byte  
d5 Pseudo-channel 1 Low Byte  
d6 Pseudo-channel 1 High byte  
d7 Channel number  
d8 NPC number Low Byte  
d9 NPC number High Byte

### 3B2 Reserved pseudo-channel already involved in a cross-connect

A pseudo-channel entry is in the reserved state and the NPC and channel present are already involved in an actual cross-connect.

- d0 Unused
- d1 Unused
- d2 Pseudo-channel number Low Byte
- d3 Pseudo-channel number High byte
- d4 Channel number cross-connected to
- d5 NPC number cross-connected to Low Byte
- d6 NPC number cross-connected to High Byte
- d7 Channel number in pseudo-channel entry
- d8 NPC number in pseudo-channel entry Low Byte
- d9 NPC number in pseudo-channel entry High Byte

### 3B3 The DSP Platform software version is inconsistent.

The DSP Platform software version stored in the main controller does not match that stored in the hardware.

- d0 Not used
- d1 Data stored in the database
- d2 Data stored in the hardware
- d3 Index - the reason of failure
  - 1 - DSPP software generic is inconsistent
  - 2 - DSPP software issue is inconsistent
  - 3 - DSPP software release is inconsistent
  - 4 - DSPP software year load is inconsistent
  - 5 - CP code version is inconsistent
  - 6 - DSP code version is inconsistent
- d4 NPC number
- d5 UNIT number

### 3B4 The DSP Platform application database does not match that stored in hardware

- d0 Not used
- d2 Not used
- d3 Not used
- d4 NPC number of circuit pack that is running the application
- d5 UNIT number

## **FRADTS,MC,DGN**

### **FRAME AUDITS MAIN CONTROLLER**

#### **Explanation Of Command**

This autonomous output message from frame audits indicates that a diagnostic test was run on the main controller (MC) but failed.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.82004]

I hh:mm:ss xy,ww FRADTS MC DGN <tt> COMPL

### **Explanation Of Parameters**

---

**MC** - Main controller

**DGN** - Diagnose

**tt** - Entity identifier

**tt** *Explanation*

**BX** Bus Extender RAM

**CI** Communications Interface

**EBX** Expanded Bus Extender RAM

**EMTC** Expanded Maintenance Circuit

**MP** Main Processor

**MTC** Maintenance Circuit

**PMEM** Primary Memory Device

**SMEM** Secondary Memory Device

## **GRTH,FRAME,CHAR,UID**

### **GROWTH FRAME**

#### **Explanation Of Command**

This command allows the optional frame identifier and unique frame identifier to be set.

Until this command is used, the frame identifier defaults to 00.

#### **⇒ NOTE:**

**Note:** If the frame identifier is protected (hard wired), it cannot be changed by this command.

The **CHAR** field determines the number of characters in the frame identifier (2 is the default).

For DACS II Capacity Expansion Frames (CEF), this command also results in the provisioning of virtual NPCs [9]961, [9]962, [9]963, [9]964, [9]965, and [9]966 (99101, 99102, 99103, 99104, 99105, and 99106 in the hierarchical NPC numbering format), default type VI100.

For Non-CEF frames, this command also results in the provisioning of virtual NPCs 961 and 962 (99101 and 99102 in the hierarchical NPC numbering format), default type VI100. This NPC type may be changed if necessary by the **CHG: :NPC, TYPE** command (Message 38211).

#### **Command**

[I.30101]

**GRTH:FRM xy,SEQ ww:FRAME fg[,CHAR m][,UID <uid>]!**

### **Completion Message**

---

[O.30101]

M hh:mm:ss fg,ww n[vv] GRTH FRAME fg CHAR m UID [<uid>] COMPL

### **Denial Message**

---

[O.30101.01]

M hh:mm:ss xy,ww n[vv] GRTH FRAME fg CHAR m UID [<uid>] \  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**FRAME** - Frame

**fg** - Frame identifier. (alphanumeric, 01 through ZZ).

The frame identifier is required. If the disk-stored frame identifier is 00, then this command sets the frame identifier to fg. Until the GRTH::FRAME command is used, the frame number defaults to 00.

The frame identifier is used in input and output messages.

**CHAR** - Character

**m** - The number of characters in the frame identifier. (2 or 3).

**UID** - Unique identifier

**uid** - Unique frame identifier. (1 to 20 alphanumeric characters)

If the UID field is entered, the unique frame identifier will be assigned the value of uid.



**cc** - Hexadecimal condition code

**cc** *Explanation*

**81** Frame ID is protected

## **GRTH,NPC,NPCTG**

### **GROWTH TEST-ACCESS GROUP NPC**

#### **Explanation Of Command**

This command is used to designate a network processing circuit (NPC) as a test-access group NPC (NPCTG).

To provision an individual test-access group (TG) use the GRTH::TG,NPCTG command

#### **Command**

##### **Nonhierarchical**

[I.31401]

GRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTG rrr!

##### **Hierarchical**

[I.31401]

GRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTG rrr!

#### **Completion Message**

##### **Nonhierarchical**

[O.31401]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc NPCTG rrr COMPL

### **Hierarchical**

[O.31401]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp NPCTG rrr COMPL

### **Denial Message**

### **Nonhierarchical**

[O.31401.01]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc NPCTG rrr COND cc DNY

### **Hierarchical**

[O.31401.01]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp NPCTG rrr COND cc DNY

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
|                  |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
|                  |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
|                  |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**NPCTG** - NPC (for) test group

**rrr** - Test-access Group NPC number (1 through 400)

NPC used as a test-access group NPC.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**15**    NPC is unequipped

**26**    NPC type error

**83**    Attention: preceding ccode 83 is an anomaly - see problem list

**85**    NPC has been designated as NPCTP

**10**    NPC out of service or failed

**57**    Designated TG or circuit to be tested in process of being rolled

**A1**    NPC has been designated as NPCTG

**A2**    All channels assigned, cannot be grown as NPCTG

## **GRTH,NPC,NPCTP**

### **GROWTH TEST PORT NPC**

#### **Explanation Of Command**

This message requests the designation of a Network Processing Circuit as a test port NPC.

The growth of an individual test port is described in GRTH,TP.

#### **Command**

##### **Nonhierarchical**

[I.31381]

GRTH:FRM xy,SEQ ww:NPC [s]abc,NPCTP n!

##### **Hierarchical**

[I.31381]

GRTH:FRM xy,SEQ ww:NPC uvmnp,NPCTP n!

#### **Completion Message**

##### **Nonhierarchical**

[O.31381]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc NPCTP n TPS kk-mm\  
COMPL

### **Hierarchical**

[O.31381]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp NPCTP n TPS kk-mm\  
COMPL

### **Denial Message**

### **Nonhierarchical**

[O.31381.01]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc NPCTP n COND cc DNY

### **Hierarchical**

[O.31381.01]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp NPCTP n COND cc DNY

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
|                  |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
|                  |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
|                  |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are:



PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**NPCTP** - NPC (for) test ports

**n** - Test Port NPC number (must be in the range from 1 to 8).

**TPS** - Test Ports

**kk, mm** - Test port numbers

|          |           |           |
|----------|-----------|-----------|
| <i>n</i> | <i>kk</i> | <i>mm</i> |
| 1        | 01        | 12        |
| 2        | 13        | 24        |
| 3        | 25        | 36        |
| 4        | 37        | 48        |
| 5        | 49        | 60        |
| 6        | 61        | 72        |
| 7        | 73        | 84        |
| 8        | 85        | 96        |

**Note:** When a CEPT NPC is grown as a test NPC, it must be grown for CAS-type primaries using the Message Number 31362, otherwise a denial message will occur.

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                                |
|-----------|----------------------------------------------------------------|
| <b>00</b> | No conditions                                                  |
| <b>01</b> | Subject entity is equipped                                     |
| <b>15</b> | NPC is unequipped                                              |
| <b>26</b> | NPC type error                                                 |
| <b>2F</b> | Channels assigned, cannot be grown as test port                |
| <b>83</b> | Attention: preceding ccode 83 is an anomaly - see problem list |
| <b>85</b> | NPC has been designated as NPCTP                               |
| <b>19</b> | Test ports must be on CAS                                      |
| <b>FF</b> | Termination is in process of being rolled                      |
| <b>A1</b> | NPC has been designated as NPCTG                               |

## **GRTH,NPC,TYPE**

### **PROVISION DIGITAL SIGNAL PROCESSING PLATFORM NPC**

#### **Explanation Of Command**

This command is used to request the provisioning of a Digital Signal Processing Platform (DSPP) circuit pack. A DSPP circuit pack is used to run one of the following applications:

1. The X.50/X.57 International Subrate application, which has the type field SD111.
2. The Digital Multipoint Bridge (DMB) application, which has the type field SD311 (this application is similar to the DMB feature that may be provisioned in the DSPU).
3. The DDS Subrate and Multipoint Junction Unit application, which has the type field SD411 (this application is similar to the SRM and MJU features that may be provisioned in the DSPU). This application supports 19.2 MJU circuits, which the DSPU MJU does not support.
4. Any future application, which has a type field of the form SDxyz.

The DSPP circuit pack may be provisioned in an FTU, IFTU, or IFTU2. In those units it may be provisioned in a North American module or in an International module. When being provisioned in an International module a full complement of 64 channels are usable, unless the application itself restricts the number of channels. A total number of 16 DSPP circuit packs may be provisioned in an International module. When being provisioned in a North American module a maximum number of 50 channels are available to the application running on the circuit pack. A total of 20 DSPP circuit packs may be provisioned in a North American module. Customers running a North American DACS II installation may want to set one or more FTU (IFTU or IFTU2) modules aside and provision them as International modules for running the DSPP circuit packs with a maximum of 64 channels.

Only odd numbered DSPP NPCs may be provisioned. The next higher even numbered NPC is not available for other NPC types and must be unequipped when an SDxyz NPC is provisioned. When specifying a range of NPCs to be provisioned the beginning and end of the range should be specified as odd numbers.

DSPP applications are separately orderable products and are shipped with their own documentation. See command I.55721 INSTALL on how to install an application.

### **Command**

---

#### **Nonhierarchical**

---

[I.31331]

GRTH:[FRM xy,SEQ ww]:NPC [s]abc[-[t]def],TYPE mnxyz!

#### **Hierarchical**

---

[I.31331]

GRTH:[FRM xy,SEQ ww]:NPC uvmnp[-wxkqr],TYPE mnxyz!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.31331]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc[-[t]def] TYPE mnxyz COMPL

#### **Hierarchical**

---

[O.31331]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp[-wxkqr] TYPE mnxyz COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.31331.01]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc[-[t]def] TYPE mnxyz EQD DNY

[O.31331.02]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc[-[t]def] TYPE mnxyz COND cc DNY

### **Hierarchical**

[O.31331.01]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp[-wxkqr] TYPE mnxyz EQD DNY

[O.31331.02]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp[-wxkqr] TYPE mnxyz COND cc DNY

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**NPC** - Network Processing Circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

**[t]def** - The 3- or 4-digit nonhierarchical NPC number designating the end of a range specification

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-039   | 161-199   | 321-359   | 481-519   | 641-679   | 801-839   |
| 041-079   | 201-239   | 361-399   | 521-559   | 681-719   | 841-879   |
| 081-119   | 241-279   | 401-439   | 561-599   | 721-759   | 881-919   |
| 121-159   | 281-319   | 441-479   | 601-639   | 761-799   | 921-959   |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1 | Unit<br>2  | Unit<br>3  | Unit<br>4  |
|-----------|------------|------------|------------|
| NPC       | NPC        | NPC        | NPC        |
| 0001-0039 | 0161-0199  | 0321-0359  | 0481-0519  |
| 0041-0079 | 0201-0239  | 0361-0399  | 0521-0559  |
| 0081-0119 | 0241-0279  | 0401-0439  | 0561-0599  |
| 0121-0159 | 0281-0319  | 0441-0479  | 0601-0639  |
| Unit<br>5 | Unit<br>6  | Unit<br>7  | Unit<br>8  |
| NPC       | NPC        | NPC        | NPC        |
| 0641-0679 | 0801-0839  | 0961-0999  | 1121-1159  |
| 0681-0719 | 0841-0879  | 1001-1039  | 1161-1199  |
| 0721-0759 | 0881-0919  | 1041-1079  | 1201-1239  |
| 0761-0799 | 0921-0959  | 1081-1119  | 1241-1279  |
| Unit<br>9 | Unit<br>10 | Unit<br>11 | Unit<br>12 |
| NPC       | NPC        | NPC        | NPC        |
| 1281-1319 | 1441-1479  | 1601-1639  | 1761-1799  |
| 1321-1359 | 1481-1519  | 1641-1679  | 1801-1839  |
| 1361-1399 | 1521-1559  | 1681-1719  | 1841-1879  |
| 1401-1439 | 1561-1599  | 1721-1759  | 1881-1919  |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1959  | 2081-2119  | 2241-2279  | 2401-2439  |
| 1961-1999  | 2121-2159  | 2281-2319  | 2441-2479  |
| 2001-2039  | 2161-2199  | 2321-2359  | 2481-2519  |
| 2041-2079  | 2201-2239  | 2361-2399  | 2521-2559  |

**uvmnp** - Hierarchical NPC number

**wxkqr** - Hierarchical NPC number designating the end of a range specification

**uv,wx** - Unit number

**m,k** - Module number

**np,qr** - NPC number within the module

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-39 |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-31 |

**mnxyz** - NPC type

**mnxyz** *Explanation*

**SD111** X.50/X.57 International Subrate application

**SD311** Digital Multipoint Bridge (DMB) application

**SD411** DDS Subrate and MJU application

**SDxyz** Any future DSPP application

**cc** - Hexadecimal condition code

**cc** *Explanation*

**26** NPC type error

**F2** Invalid NPC number specified

**A1** The parameter specified does not match with the NPC type



## **GRTH,NPC,TYPE,CBTIMER**

### **PROVISION DIGITAL SIGNAL PROCESSING UNIT NPC**

#### **Explanation Of Command**

This command requests the provisioning of a digital signal processing unit type (non-FTU) network processing circuit (NPC). This DSPU type NPC can be either type MB (digital multipoint bridge) or type CB (c-bit processor).

The growth command results in the provisioning of all NPCs in the circuit pack on both duplicated sides. For CEPT circuit packs, there is only one NPC per circuit pack.

#### **Command**

##### **Nonhierarchical**

[I.31351]

GRTH:FRM xy,SEQ ww:NPC [s]abc,TYPE mnxyz[,CBTIMER [t]v]!

##### **Hierarchical**

[I.31351]

GRTH:FRM xy,SEQ ww:NPC uvmnp,TYPE mnxyz[,CBTIMER [t]v]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.31351]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc TYPE mnxyz [CBTIMER [t]v]\  
COMPL

#### **Hierarchical**

---

[O.31351]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp TYPE mnxyz [CBTIMER [t]v]\  
COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.31351.01]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc TYPE mnxyz [CBTIMER [t]v] EQD DNY

[O.31351.02]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]abc TYPE mnxyz COND cc [CBTIMER [t]v]\  
DNY

#### **Hierarchical**

---

[O.31351.01]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp TYPE mnxyz [CBTIMER [t]v] EQD DNY

[O.31351.02]

M hh:mm:ss xy,ww n[vv] GRTH NPC uvmnp TYPE mnxyz [CBTIMER [t]v] COND cc DNY

### **Autonomous Message**

---

Not applicable.

### Explanation Of Parameters

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number.

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |
|             |             |             |             |
| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |
|             |             |             |             |
| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid NPC numbers are:

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

**mnxyz** - NPC type

*mnxyz Explanation*

CB10z C-bit processor  
MB100 Digital Multipoint Bridge

Explanation for type CB10z

**z** - Network alarm timeout

*z Timeout range in milliseconds*

|   |              |
|---|--------------|
| 0 | 600 to 750   |
| 1 | 1500 to 1650 |
| 2 | 2400 to 2550 |
| 3 | 4650 to 4800 |

**[t]def** - Nonhierarchical NPC numbers applicable only to MBxyz type NPCs.

**uvmqr** - Hierarchical NPC numbers applicable only to MBxyz type NPCs. The valid NPC numbers are:

CBTIMER

- C-bit timer; can only be used with CB10z NPC types.

**[t]v** - A timer value 1-10

**EQD** - Equipped

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                              |
|-----------|--------------------------------------------------------------|
| <b>10</b> | Unit is not equipped                                         |
| <b>11</b> | UC is out of service                                         |
| <b>12</b> | UC is in service but failed                                  |
| <b>F3</b> | Maximum number of CPRs have already been grown for this unit |

## **GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,DMA**

### **GROWTH NPC for PA and TH TYPES**

#### **Explanation Of Command**

This command is used to request the provisioning of one or more PA type or TH type network processing circuits (NPCs). (See command I.31362 for PB and PC type NPCs.) PA type NPCs are provisioned in a facility terminating unit (FTU, IFTU, or IFTU2). TH type NPCs are provisioned in a Hybrid DS3 Unit (HDS3U). It is also used to enable the minor bit error rate (MBER) and Signaling Freeze Delay Time Features. For the MBER feature, CTS0 NFW bit 4 is used as RBER. CTS0 NFW bit 4 use as REER is not supported.

One output message is printed for each NPC requested and successfully provisioned.

Provisioning commands where the specified NPC range crosses a Unit boundary will be denied.

For TH type NPCs, the NPC numbers which are divisible by four with a remainder of zero are not valid NPCs. However, the range of THxyz type NPC numbers is still supported with the understanding that there may be gaps in the NPC number range.

When a provisioning command addressing a range of NPCs is denied for successive NPCs in the range for the same reason, a summary denial message will be output, giving the range of NPC numbers denied and the reason for the denial.

If the type field is inconsistent with the first FTM specified or the first FTM specified is unequipped, the entire command is denied. Otherwise, the specified type field is applied to the entire NPC range.

When a provisioning command addressing a range of NPCs within a unit crosses a facility terminating module (FTM) boundary, and if that subsequent FTM is unequipped or provisioned inconsistently with respect to the first FTM, then that FTM will be skipped as a whole, with a summary denial message.

The execution of normal completions, or of denials for reasons other than diagnostic failures, then resumes at the next NPC and continues until the end of the range.

## Command

### Nonhierarchical

[I.31363]

GRTH:FRM xy,SEQ ww:NPC [s]abc[-[t]def],TYPE mnxyz[,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|DMA|PMC}][,LEV g]!

### Hierarchical

[I.31363]

GRTH:FRM xy,SEQ ww:NPC uvmnp[-uvkqr],TYPE mnxyz[,OPTS (rr/<m>[,rr/<m>...])]\  
[,IW X'pq[r]][,AIS {MI|PMA|DMA|PMC}][,LEV g]!

## Completion Message

### Nonhierarchical

[O.31363]

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]jkl TYPE mnxyz[ IW pqr] \  
[ AIS {MI|DMA|PMA|PMC}][ LEV g] 4 LN MSG:  
DAILY CRC FRER OFS ES SES CSS CV  
THRESHOLDS aaaaaaaa bbbbbbbbbb ccccc ddddd eeeee fffff gggggggggg  
OPTIONS a b c d e f g EOM

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]jkl TYPE mnxyz[ IW pqr] \  
[ AIS {MI|DMA|PMA|PMC}][ LEV g] 4 LN MSG:  
DAILY UAS UATC MER FEBE FES FSES FUAS  
THRESHOLDS hhhh iiijjj kkkkkkkk llll mmmm nnnn  
OPTIONS h i j k l m n EOM

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]jkl TYPE mnxyz[ IW pqr] \  
[ AIS {MI|DMA|PMA|PMC|PMC}][ LEV g] 4 LN MSG:  
15MIN CRC FRER OFS ES SES CSS CV  
THRESHOLDS aaaaaa bbbbbbbb ccc ddd eee fff gggggggg  
OPTIONS a b c d e f g EOM

M hh:mm:ss xy,ww n[vv] GRTH NPC [s]jkl TYPE mnxyz[ IW pqr] \  
[ AIS {MI|DMA|PMA|PMC}][ LEV g] 4 LN MSG:  
15MIN UAS UATC MER FEBE FES FSES FUAS  
THRESHOLDS hhh ii jjj kkkkkk lll mmm nnn  
OPTIONS h i j k l m n EOM

M hh:mm:ss xy,ww n GRTH NPC [s]jkl TYPE mnxyz TS0 abcdefgh \  
TS0M abcdefgh COMPL

Note that CV, FEBE, FES, FSES and FUAS are not applicable for TH type NPCs.

## Hierarchical

[O.31363]

```
M hh:mm:ss xy,ww n[vv] GRTH NPC uvjkl TYPE mnxyz[IW pqr] \
[AIS {MI|DMA|PMA|PMC}}[LEV g] 4 LN MSG:
DAILY CRC FRER OFS ES SES CSS CV
THRESHOLDS aaaaaaaa bbbbbbbbb ccccc ddddd eeeee fffff gggggggggg
OPTIONS a b c d e f g EOM
```

```
M hh:mm:ss xy,ww n[vv] GRTH NPC uvjkl TYPE mnxyz[IW pqr] \
[AIS {MI|DMA|PMA|PMC}}[LEV g] 4 LN MSG:
DAILY UAS UATC MER FEBE FES FSES FUAS
THRESHOLDS hhhhh iiii jjjjj kkkkkkkk llll mmmm nnnnn
OPTIONS h i j k l m n EOM
```

```
M hh:mm:ss xy,ww n[vv] GRTH NPC uvjkl TYPE mnxyz[IW pqr] \
[AIS {MI|DMA|PMA|PMC}}[LEV g] 4 LN MSG:
15MIN CRC FRER OFS ES SES CSS CV
THRESHOLDS aaaaaa bbbbbbb ccc ddd eee fff ggggggg
OPTIONS a b c d e f g EOM
```

```
M hh:mm:ss xy,ww n[vv] GRTH NPC uvjkl TYPE mnxyz[IW pqr] \
[AIS {MI|DMA|PMA|PMC}}[LEV g] 4 LN MSG:
15MIN UAS UATC MER FEBE FES FSES FUAS
THRESHOLDS hhh ii jjj kkkkkk lll mmm nnn
OPTIONS h i j k l m n EOM
```

```
M hh:mm:ss xy,ww n GRTH NPC uvjkl TYPE mnxyz TS0 abcdefgh \
TS0M abcdefgh COMPL
```

Note that CV, FEBE, FES, FSES and FUAS are not applicable for TH type NPCs.

## Denial Message

### Nonhierarchical

[O.31363.01]

```
M hh:mm:ss xy,ww n GRTH NPC [s]jkl[-[t]mno] TYPE mnxyz\
[ss/n][IW pq[r]][AIS {MI|PMA|PMC|DMA}}[LEV g] COND cc DNY
```

If the output message requires more than 80 characters:

```
M hh:mm:ss xy,ww n GRTH NPC [s]jkl[-[t]mno] TYPE mnxyz 2 LN MSG:
[ss/n][IW pq[r]][AIS {MI|PMA|PMC|DMA}}[LEV g] COND cc DNY
```

[O.31363.02]

```
M hh:mm:ss xy,ww n GRTH NPC [s]jkl[-[t]mno] TYPE mnxyz EQD DNY
```



## Hierarchical

[O.31363.01]

M hh:mm:ss xy,ww n GRTH NPC uvjkl[-uvmno] TYPE mnxyz[ ss/n]\  
[ IW pq[r]][ AIS {MI|PMA|PMC|DMA}][ LEV g] COND cc DNY

If the output message requires more than 80 characters:

M hh:mm:ss xy,ww n GRTH NPC uvjkl[-uvmno] TYPE mnxyz 2 LN MSG:  
[ ss/n][ IW pq[r]][ AIS {MI|PMA|PMC|DMA}][ LEV g] COND cc DNY

[O.31363.02]

M hh:mm:ss xy,ww n GRTH NPC uvjkl[-uvmno] TYPE mnxyz EQD DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number,  
the first NPC of a range specification.

**[t]def** - The 3- or 4-digit nonhierarchical NPC number,  
the last NPC of a range specification.

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number, the first NPC of a range specification.

**uvkqr** - Hierarchical NPC number, the last NPC of a range specification.

**uv** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The allowable values are:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**TYPE** - Type

**mnxyz** - NPC-type identifier

**mn** - NPC Type

|           |                    |
|-----------|--------------------|
| <i>mn</i> | <i>Explanation</i> |
|-----------|--------------------|

|    |                       |
|----|-----------------------|
| PA | 2Mbit/s Interface NPC |
|----|-----------------------|

|    |                   |
|----|-------------------|
| TH | 2Mbit/s HDS3U NPC |
|----|-------------------|

For PA type NPCs the impedance will automatically be set according to the configuration of the FTMI. If the NPC type field is omitted, the NPC type will default to PB100 or PC100 depending on how the FTMI is grown (75- or 120-ohm NPCs) (see command 31362).

The argument xyz is to be interpreted as a 3-digit hexadecimal number. The 3 digits in xyz indicate the selection of provisioning options for the NPC. A detailed discussion of these provisioning options for both the PA and TH type NPCs is given below.

**PA-Type xyz fields**

The provisioning values of  $x$ ,  $y$ , and  $z$  for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding ( $x$ ,  $y$  or  $z$ ) provisioning value):

**Table 12-1. Provisioning values for  $x$** 

| <b>x value</b> | <b>CRC-4 Mode</b> | <b>Automatic CRC-4</b> | <b>Far-End PM</b> | <b>NPC used as Sync Source</b> | <b>TS0 Bit 5 used for SFI</b> |
|----------------|-------------------|------------------------|-------------------|--------------------------------|-------------------------------|
| <b>0</b>       | Y                 |                        |                   |                                |                               |
| <b>1</b>       | Y                 |                        | Y                 |                                | Y                             |
| <b>2</b>       | Y                 |                        |                   |                                | Y                             |
| <b>3</b>       | Y                 |                        | Y                 |                                |                               |
| <b>4</b>       | Y                 |                        |                   | Y                              |                               |
| <b>5</b>       | Y                 |                        | Y                 | Y                              | Y                             |
| <b>6</b>       | Y                 |                        |                   | Y                              | Y                             |
| <b>7</b>       | Y                 |                        | Y                 | Y                              |                               |
| <b>8</b>       |                   | Y                      | Y                 |                                |                               |
| <b>9</b>       |                   | Y                      | Y                 |                                | Y                             |
| <b>A</b>       |                   |                        |                   |                                | Y                             |
| <b>B</b>       |                   |                        |                   |                                |                               |
| <b>C</b>       |                   | Y                      | Y                 | Y                              |                               |
| <b>D</b>       |                   | Y                      | Y                 | Y                              | Y                             |
| <b>E</b>       |                   |                        |                   | Y                              | Y                             |
| <b>F</b>       |                   |                        |                   | Y                              |                               |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

---

\* Automatic CRC-4 is also known as CRC-4 Interworking.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.
4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 12-2. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.

2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the *abcd* bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the *abcd* bits will be transmitted transparently.

If the "AIS in TS16" option is selected ( $y$  value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected ( $y$  values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For  $y$  values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering ( $y=8$ ) or Timeslot Channel Numbering ( $y=9$ ) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface ( $y=C$ ) or as an unframed clear 2Mbit/s interface ( $y=D$ ). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 12-3. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )
3. z values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For z values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For z values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS

in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B.**
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when z = 0, 1, 4, 5, 6, 7, A or B. **However,** for z values 2 and 8 the set time is 144 ms and for z values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for z = 4 and 8) or 480 ms (for z = 5 and 9) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.
8. z values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options (z = 6-7 or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms
- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:
  - z=6 or A** hardware timing
  - z=7 or B** firmware timing (SFDT=2496 ms, CACT=624 ms)
- [iv] BER alarm level = DMA

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.



**Specific Options for z= 6 or 7**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

[ix] To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of xyz for the PA type NPC.

**Table 12-4. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations | Explanation                                                                                                                                                                                                                        |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                              | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                              |                                                                                                                                                                                                                                    |
| CCz                              |                                                                                                                                                                                                                                    |
| DCz                              |                                                                                                                                                                                                                                    |
| 0Dz                              | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                           |
| 1Dz                              |                                                                                                                                                                                                                                    |
| 2Dz                              |                                                                                                                                                                                                                                    |
| 3Dz                              |                                                                                                                                                                                                                                    |
| 4Dz                              |                                                                                                                                                                                                                                    |
| 5Dz                              |                                                                                                                                                                                                                                    |
| 6Dz                              |                                                                                                                                                                                                                                    |
| 7Dz                              |                                                                                                                                                                                                                                    |
| 8Dz                              |                                                                                                                                                                                                                                    |
| 9Dz                              |                                                                                                                                                                                                                                    |
| ADz                              |                                                                                                                                                                                                                                    |
| CDz                              |                                                                                                                                                                                                                                    |
| DDz                              |                                                                                                                                                                                                                                    |
| EDz                              |                                                                                                                                                                                                                                    |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 12-5. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TSO framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z*= value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 12-6. Combinations of  $x$  and  $z$  Values**

| Invalid<br>xyz<br>Combinations                       | Explanation                                                                                                                                                                                                                                             |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC<br>5yC<br>6yC<br>7yC<br>CyC<br>DyC<br>EyC<br>FyC | Use of NPC as Sync Source ( $x$ 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( $z$ value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |

Additionally:

- If the NPC is not located in a sync NPC location, the value of "x" must be in the range 0 - 3 or 8 - B. Otherwise the command will be denied.
- For telephone channel numbering, channels 16 to 30 occupy time slots 17 to 31.
- For time slot channel numbering, channels 16 to 30 occupy time slots 16 to 30.
- If the value of "y" is 0, 2, 4 or 6 (i.e., a CAS NPC) and the value of "z" is C (i.e. Transmic 1G), the command will be denied.

**OPTS** - Options

**rr** - Facility performance parameter number

Variable rr specifies the parameter whose alarm threshold is being selected.

<m> - Facility performance parameter threshold index (0 through X'10' )

Variable <m> is used to select the threshold value and alarm type previously programmed for parameter rr. There are four possible alarm thresholds and 4 different alarm levels. A given value of <m> selects one combination of threshold value and alarm level. The combinations of these two result in 16 possible values of <m>. There is a 17th <m> value which is used to disable the alarm threshold and the alarm. The values of <m> that produce the default values of the thresholds and alarms are shown in the table below under the column heading "Threshold Value". Threshold and alarm combinations selected by m = 3 through b or d-X'10 must exist, that is, must have been programmed, prior to being selected. The thresholds are programmed by using the ED-OPT-T1 command. Thresholds of all unspecified parameters will be set to the default value associated with m=0. Setting m = c disables thresholding for a given parameter.

For PA type NPCs:

**Table 12-7. Parameter Register Threshold Range and Default Values**

| rr | Parameter                        | Interval | Threshold Value Range | Default Threshold Value |
|----|----------------------------------|----------|-----------------------|-------------------------|
| 11 | CRC Block Errors                 | DAILY    | 1 - 79056000          | 176947                  |
| 12 | Framing Errors                   | DAILY    | 1 - 345600000         | 176947                  |
| 13 | Out of Frame Seconds             | DAILY    | 1 - 86400             | 4                       |
| 14 | Errored Seconds                  | DAILY    | 1 - 86400             | 4320                    |
| 15 | Severely Errored Seconds         | DAILY    | 1 - 86400             | 90                      |
| 16 | Controlled Slip Seconds          | DAILY    | 1 - 86400             | 4                       |
| 17 | Coding Violations                | DAILY    | 1 - 176947200         | 176947                  |
| 18 | Unavailable Seconds              | DAILY    | 1 - 86400             | 90                      |
| 19 | Unavailable Time Count           | DAILY    | 1 - 4320              | 9                       |
| 20 | Multiframe Errors                | DAILY    | 1 - 86400             | 4095                    |
| 21 | Far End Block Errors             | DAILY    | 1 - 79056000          | 176947                  |
| 22 | Far End Errored Seconds          | DAILY    | 1 - 86400             | 4320                    |
| 23 | Far End Severely Errored Seconds | DAILY    | 1 - 86400             | 90                      |
| 24 | Far End Unavailable Seconds      | DAILY    | 1 - 86400             | 90                      |
| 81 | CRC Block Errors                 | 15MIN    | 1 - 823500            | 18432                   |
| 82 | Framing Errors                   | 15MIN    | 1 - 3600000           | 18432                   |
| 83 | Out of Frame Seconds             | 15MIN    | 1 - 900               | 4                       |
| 84 | Errored Seconds                  | 15MIN    | 1 - 900               | 300                     |
| 85 | Severely Errored Seconds         | 15MIN    | 1 - 900               | 30                      |
| 86 | Controlled Slip Seconds          | 15MIN    | 1 - 900               | 1                       |
| 87 | Coding Violations                | 15MIN    | 1 - 1843200           | 18432                   |
| 88 | Unavailable Seconds              | 15MIN    | 1 - 900               | 30                      |
| 89 | Unavailable Time Count           | 15MIN    | 1 - 45                | 3                       |
| 90 | Multiframe Errors                | 15MIN    | 1 - 900               | 255                     |
| 91 | Far End Block Errors             | 15MIN    | 1 - 823500            | 18432                   |
| 92 | Far End Errored Seconds          | 15MIN    | 1 - 900               | 300                     |
| 93 | Far End Severely Errored Seconds | 15MIN    | 1 - 900               | 30                      |
| 94 | Far End Unavailable Seconds      | 15MIN    | 1 - 900               | 30                      |

**For PA, PB, and PC type NPCs:**

In the following table these definitions apply:

|              |                                          |
|--------------|------------------------------------------|
| MI           | Maintenance Information                  |
| DMA          | Deferred Maintenance Action Minor Alarm  |
| PMA Major    | Prompt Maintenance Action Major Alarm    |
| PMA Critical | Prompt Maintenance Action Critical Alarm |

| <m>       | Threshold Value    | Alarm Type                             |
|-----------|--------------------|----------------------------------------|
| <b>0</b>  | Default            | MI (Maintenance Information)           |
| <b>1</b>  | Default            | DMA (Deferred Maintenance Minor Alarm) |
| <b>2</b>  | Default            | PMA (Prompt Maintenance Major Alarm)   |
| <b>3</b>  | Set 1              | MI                                     |
| <b>4</b>  | Set 1              | DMA                                    |
| <b>5</b>  | Set 1              | PMA Major                              |
| <b>6</b>  | Set 2              | MI                                     |
| <b>7</b>  | Set 2              | DMA                                    |
| <b>8</b>  | Set 2              | PMA Major                              |
| <b>9</b>  | Set 3              | MI                                     |
| <b>a</b>  | Set 3              | DMA                                    |
| <b>b</b>  | Set 3              | PMA Major                              |
| <b>c</b>  | Threshold disabled | no alarm                               |
| <b>d</b>  | Default            | PMA Critical                           |
| <b>e</b>  | Set 1              | PMA Critical                           |
| <b>f</b>  | Set 2              | PMA Critical                           |
| <b>10</b> | Set 3              | PMA Critical                           |

**Note 1:** m = 0 is the default.

**Note 2:** Threshold values for Set 1, Set 2, and Set 3 must be set (programmed) by using the command mentioned in the explanation of m above before variable m can be used to select threshold levels and alarm types other than the defaults.

IW - Insertion Word

pq[r] - Hexadecimal value of the Growth Insertion Word (GIW)

Used in the transmit direction on unassigned channels for CEPT NPCs.

pq transmitted data information  
r transmitted signaling information

A special code, called the Growth Insertion Word (GIW), is transmitted by this NPC on unassigned channels. This code is specified by the optional keyword **IW** and its argument **pq**.

*This code was previously called the Disconnect Code (DCC), but that name is properly reserved for the TCON Insertion Word, which is transmitted when the "TDIS: :FROM, TO, . . . , DCC" command is used.*

For PA type NPCs, the IW argument is X'pq[r], and the default GIW code is X'D5D (Binary: 11010101 1101). The "pq" hex digits represent the CEPT insertion word for cross-connected time slots and the "r" hex digit represents the CEPT signaling options. The "r" digit is needed to accommodate the cross-connected CEPT time slot and its associated portion of TS16 used for signaling when provisioned for CAS.

Although the "r" digit is accepted on input, for NSA NPCs, it has no significance.

For clear E1 NPCs (y value "C" or "D") the insertion word option is **not** available and the message will be denied if this option is entered. The alarm indication signal (AIS) is transmitted in the disconnected or idle state for clear E1 NPCs.

**AIS** - Alarm indication signal

AIS is not detected by unframed clear (unchannelized) 2Mbit/s PAXDz type NPCs. Therefore, specifying AIS with one of the alarm level types MI, DMA, or PMA, is unnecessary. However, the command will not be denied if AIS is specified with an alarm level for unframed clear PAXDz NPCs. AIS with its alarm level will simply never be reported for unframed clear PAXDz NPCs.

**MI** - Maintenance information

This is the default option.

**PMA** - Prompt maintenance major alarm

**PMC** - Prompt maintenance critical alarm

**DMA** - Deferred maintenance minor alarm

**LEV** -Intervention Level

**g** - Intervention Level Setting (1-6)

Intervention Level is a feature that changes the Alarm Severity of an alarm based on the alarm severity and the Intervention Level setting.

**[s]jkl** - Nonhierarchical NPC number ([s]abc ≤ [s]jkl ≤ [t]def)

**[t]mno** - Nonhierarchical NPC number ([s]jkl ≤ [t]mno ≤ [t]def)



**uvjkl** - Hierarchical NPC number ( $uvmnp \leq uvjkl \leq uvkqr$ )  
**uvmno** - Hierarchical NPC number ( $uvjkl \leq uvmno \leq uvkqr$ )

**Note:** uvjkl and uvkqr are in the **same** unit.

**ss/n** - First improper value of "rr/<m>" for which the message is denied.

For each NPC listed, this message prints out values of the states, counts, thresholds and options of the following facility performance parameters and the spare international and national bits in time slot 0 for CEPT DPCs.

| parameter | explanation                      |
|-----------|----------------------------------|
| CRC       | CRC Block Errors                 |
| FRER      | Framing Errors                   |
| OFS       | Out of Frame Seconds             |
| ES        | Errored Seconds                  |
| SES       | Severely Errored Seconds         |
| CSS       | Controlled Slip Seconds          |
| CV        | Coding Violations                |
| UAS       | Unavailable Seconds              |
| UATC      | Unavailable Time Count           |
| MER       | Multiframe Errors                |
| FEBE      | Far End Block Errors             |
| FES       | Far End Errored Seconds          |
| FSES      | Far End Severely Errored Seconds |
| FUAS      | Far End Unavailable Seconds      |

**Note** that parameters CV, FEBE, FES, FSES and FUAS do not apply to TH type NPCs.

Two sets of thresholds are kept for each parameter: One for DAILY intervals and one for 15 MINUTE intervals.

#### For PA type NPCs:

Depending on which interface functions are enabled by the provisioning values of xyz, some parameters may not be applicable. In this case the threshold value, the parameter count (if present in the message) and the selection value will appear as dashes ("-"). In the table below "N/A" indicates that a parameter is not applicable for the given value of x or y.

Also, if the selection value m=c has been chosen for a parameter, the threshold value and the parameter count (if present in the message) will appear as dashes.

| For PA Type NPCs |                                    |                                            |                             |                                 |
|------------------|------------------------------------|--------------------------------------------|-----------------------------|---------------------------------|
| Parameter        | CRC-4 Mode Disabled<br>(x=A,B,E,F) | Far-End PM Disabled<br>(x=0,2,4,6,A,B,E,F) | CAS Disabled<br>(y=8,9,C,D) | Unframed Clear 2Mbit/s<br>(y=D) |
| CRC              | N/A                                |                                            |                             | N/A                             |
| FRER             |                                    |                                            |                             | N/A                             |
| OFS              |                                    |                                            |                             | N/A                             |
| ES               |                                    |                                            |                             | N/A                             |
| SES              |                                    |                                            |                             | N/A                             |
| CSS              |                                    |                                            |                             |                                 |
| CV               |                                    |                                            |                             |                                 |
| UAS              |                                    |                                            |                             | N/A                             |
| UATC             |                                    |                                            |                             | N/A                             |
| MER              |                                    |                                            | N/A                         | N/A                             |
| FEBE             |                                    | N/A                                        |                             | N/A                             |
| FES              |                                    | N/A                                        |                             | N/A                             |
| FSES             |                                    | N/A                                        |                             | N/A                             |
| FUAS             |                                    | N/A                                        |                             | N/A                             |

**aaaaaaaa**

- Daily CRC block error threshold value.

**a**

- Daily CRC block error threshold selection, (0 through 3)

**bbbbbbbbbb**

- Daily framing error threshold value.

**b**

- Daily framing error threshold selection, (0 through 3)

**cccccc**

- Daily out of frame seconds threshold value.

**c**

- Daily out of frame seconds threshold selection, (0 through 3)

**dddddd**

- Daily errored second threshold value.

**d**

- Daily errored second threshold selection, (0 through 3)

**eeeeee**

- Daily severely errored second threshold value.

**e**

- Daily severely errored second threshold selection, (0 through 3)

**ffffff**

- Daily controlled slip second threshold value.

**f**

- Daily controlled slip second threshold selection, (0 through 3)

ggggggggg - Daily coding violation threshold value.

**g** - Daily coding violation threshold selection, (0 through 3)

hhhhh - Daily unavailable second threshold value.

**h** - Daily unavailable second threshold selection, (0 through 3)

iiii - Daily unavailable time count threshold value.

**i** - Daily unavailable time count threshold selection, (0 through 3)

jjjj - Daily multiframe alignment error threshold value.

**j** - Daily multiframe alignment error threshold selection, (0 through 3)

kkkkkkkk - Daily far-end block error threshold value.

**k** - Daily far-end path block error selection, (0 through 3)

lllll - Daily far-end errored second threshold value.

**l** - Daily far-end path second threshold selection, (0 through 3)

mmmm - Daily far-end severely errored second threshold value.

**m** - Daily far-end severely errored second threshold selection,  
(0 through 3)

nnnnn - Daily far-end unavailable second threshold value.

**n** - Daily far-end unavailable second threshold selection, (0 through 3)

a a a a a - 15-Minute CRC block error threshold value.

**a** - 15-Minute CRC block error threshold selection, (0 through 3)

bbbbbb - 15-Minute framing error threshold value.

**b** - 15-Minute framing error threshold selection, (0 through 3)

ccc - 15-Minute out of frame seconds threshold value.

**c** - 15-Minute out of frame seconds threshold selection, (0 through 3)

ddd - 15-Minute errored second threshold value.

**d** - 15-Minute errored second threshold selection, (0 through 3)

---

|                             |                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------|
| <b>eee</b>                  | - 15-Minute severely errored second threshold value.                              |
| <b>e</b>                    | - 15-Minute severely errored second threshold selection, (0 through 3)            |
| <b>fff</b>                  | - 15-Minute controlled slip second threshold value.                               |
| <b>f</b>                    | - 15-Minute controlled slip second threshold selection, (0 through 3)             |
| <u><b>g g g g g g g</b></u> | - 15-Minute coding violation threshold value.                                     |
| <b>g</b>                    | - 15-Minute coding violation threshold selection, (0 through 3)                   |
| <b>hhh</b>                  | - 15-Minute unavailable second threshold value.                                   |
| <b>h</b>                    | - 15-Minute unavailable second threshold selection, (0 through 3)                 |
| <b>ii</b>                   | - 15-Minute unavailable time count threshold value.                               |
| <b>i</b>                    | - 15-Minute unavailable time count threshold selection, (0 through 3)             |
| <u><b>jjj</b></u>           | - 15-Minute multiframe alignment error threshold value.                           |
| <b>j</b>                    | - 15-Minute multiframe alignment error threshold selection,<br>(0 through 3)      |
| <u><b>k k k k k k k</b></u> | - 15-Minute far-end block error threshold value.                                  |
| <b>k</b>                    | - 15-Minute far-end path block error selection, (0 through 3)                     |
| <b>lll</b>                  | - 15-Minute far-end errored second threshold value.                               |
| <b>l</b>                    | - 15-Minute far-end path second threshold selection, (0 through 3)                |
| <b>mmm</b>                  | - 15-Minute far-end severely errored second threshold value.                      |
| <b>m</b>                    | - 15-Minute far-end severely errored second threshold selection,<br>(0 through 3) |
| <b>nnn</b>                  | - 15-Minute far-end unavailable second threshold value.                           |
| <b>n</b>                    | - 15-Minute far-end unavailable second threshold selection,<br>(0 through 3)      |

The options {a,b,c,d,e,f,g,h,i,j,k,l,m,n} and {a,b,c,d,e,f,g,h,i,j,k,l,m,n} are **m values** as previously shown and specify the threshold sets of the performance parameters listed.

The **TS0 abcdefgh** variables represent international and national bits in time slot'0, as defined by:

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

These variables are set to their default values "11011111" by this command, except for the Transmic'1G option, where the default is "11000000."

The variables may later be changed by setting the abcdefgh parameters in the TS0 field of the ED-PRMTR-EQPT::NPC or CHG::NPC (38321) command. Each of the variables may then be set to "0", "1", "P" or "V." "P" indicates that the incoming bit will be cross-connected unchanged; "V" indicates that the bit received will be inverted.

When TS0 is cross-connected, the TS0 bits will be either passed, inverted or set to "0" or "1" as indicated by the "abcdefgh" variable values. Note that bits which are used for alarms (bit 3 always; bits 4 and 5 if provisioned by the **mnxyz** values) may not be set to "P."

This is also true for NPCs assigned as test port NPCs.

The **TS0M abcdefgh** field allows monitoring of state changes in the received spare international bits, where the "abcdefgh" variables refer to the same TS0 bits as defined above for the TS0 "abcdefgh" variables.

The TS0M variables are specified for monitoring in the command as:

The default values for TS0M variables are **abcdefgh=00000000**, unless the **xyz** parameters set them differently, i.e., for Transmic'1G the abcdefgh=00111111. The TS0M variables may later be provisioned by the CHG::TS0M'abcdefgh (I.38323) command.

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 00** No conditions
- 10** Unit is not equipped
- 11** UC is out of service
- 12** UC is in service but failed
- 13** FTMI is not equipped
- 20** Option rr/m has not been set up on 2nd database
- 24** Unit type error
- 26** NPC type error
- 34** NPC type option xyz is unassigned or invalid for feature package
- 83** NPC type is inconsistent with FTMI type
- 84** Incompatible types of NPCs in a DDC
- 31** NPC not provisioned for NSA
- 32** Bit 3 provisioned for use as RAI3
- 33** Bit 4 provisioned for use as RAIS
- 39** NPC provisioned as a SYNC source cannot be provisioned for RPSFI
- 3A** Bit 4 provisioned for use as RBER
- 3B** Bit 5 provisioned for use as SFI
- 3C** Bits 3 through 8 are provisioned for Transmic 1G
- 3D** Alarm bits cannot be passed through or inverted
- B0** Combination of bit g (b7) and h (b8) is invalid
- BB** Timeslot channel numbering not allowed with CAS
- CD** NPC not designated as sync timing source
- F1** Parameter only valid with PA, PB, or PC type NPCs
- F2** Invalid NPC number specified
- FD** NPC range crosses unit boundary
- 8B** Must provision for SFI if also provisioning for RPSFI
- 8C** Must provision for CAS if also provisioning for RPSFI
- A3** Transmic 1G NPC designated as SYNC source invalid
- A4** Firmware timing invalid for Transmic 1G NPC
- A5** AIS keyword incompatible with NPC type
- AB** LEV keyword incompatible with NPC type
- AC** LEV keyword not allowed with Intervention Level Feature OFF
- 04** This NPC type does not allow Payload
- 7E** Framed/Unframed clear 2Mbit/s NPC invalid for Automatic CRC-4
- 7F** Unframed clear 2Mbit/s NPC invalid for TS0 processing
- 80** Framed/Unframed clear 2Mbit/s NPC invalid for Transmic 1G, 2G
- 81** Framed/Unframed clear 2Mbit/s NPC invalid for Firmware Timing
- 82** Unframed clear 2Mbit/s NPC invalid for Bit 4 used as RA IS/RBER
- 85** IW not allowed to be specified in Clear 2Mbit/s
- 91** Option not programmable for this NPC type

## **GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,PMC**

### **GROWTH NPC for PB and PC TYPES**

#### **Explanation Of Command**

This message requests the equipage of one or more primary block or primary block coaxial network processing circuits in a facility terminating unit within a CEPT or Gateway frame. The system uses type PB with 120-ohm and type PC with 75-ohm facility terminating module interfaces.

This message is also used to enable the minor bit error rate (MBER) and signaling freeze delay time features.

When a range of NPCs is being equipped, the execution of this command may be aborted by entering the ABT command.

Although the NPC type field is optional for PB and PC types, it is required if the options field is specified.

One output message is printed for each NPC requested and successfully provisioned.

Provisioning commands where the specified NPC range crosses a Unit boundary will be denied.

When a provisioning command addressing a range of NPCs is denied for successive NPCs in the range for the same reason, a summary denial message will be output, giving the range of NPC numbers denied and the reason for the denial.

When a provisioning command addressing a range of NPCs within a unit crosses a facility terminating module (FTM) boundary, if the FTM is unequipped or provisioned as a CEPT module, then the FTM will be skipped as a whole, with a summary denial message, as noted below.

- If the type field is specified, and it is inconsistent with the first FTM specified or the first FTM specified is unequipped, the entire command is denied. Otherwise, the specified type field is applied to the entire NPC range.
- If the type field is omitted, the NPC type will default to the type of the first FTM, either domestic or CEPT.

Whether or not the type field is specified, if an FTM, beyond the first one addressed, is of a different type, that entire FTM will be denied.

The execution of the normal completions, or of denials for a reason other than diagnostic failures, then resumes at the next NPC and continues until the end of the range.

A summary denial message will not be issued for denial of range NPC RESTORE commands if the reason is an NPC diagnostic failure. In this case, there is one output message for each NPC in the range.

### **Command**

---

#### **Nonhierarchical**

---

[I.31362]

```
GRTH:FRM xy,SEQ ww:NPC [s]abc[-[t]def]\
[,TYPE mnxyz][,OPTS (rr/<m>[,rr/<m>...])]\
[,IW X'pq[r]][,AIS {MI|PMA|PMC|DMA}][,LEV g]!
```

#### **Hierarchical**

---

[I.31362]

```
GRTH:FRM xy,SEQ ww:NPC uvmnp[-uvkqr]\
[,TYPE mnxyz][,OPTS (rr/<m>[,rr/<m>...])]\
[,IW X'pq[r]][,AIS {MI|PMA|PMC|DMA}][,LEV g]!
```



## Completion Message

### Nonhierarchical

[O.31362]

```
M hh:mm:ss xy,ww n GRTH NPC [s]jkl TYPE mnxyz IW pqr \
[AIS {MI|PMA|PMC|DMA}][,LEV g] 4 LN MSG:
24 HOUR DM SERS ERS US \
SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr \
SSSS
OPTIONS e f g h \
i EOM
```

```
M hh:mm:ss xy,ww n GRTH NPC [s]jkl TYPE mnxyz IW pqr \
[AIS {MI|PMA|PMC|DMA}][,LEV g] 4 LN MSG:
SHORT INTERVAL DM SERS ERS US \
SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr \
SSSS
OPTIONS e f g h \
i EOM
```

```
M hh:mm:ss xy,ww n GRTH NPC [s]jkl TYPE mnxyz TS0 abcdefgh \
TS0M abcdefgh COMPL
```

## Hierarchical

[O.31362]

```
M hh:mm:ss xy,ww n GRTH NPC uvjkl TYPE mnxyz IW pqr \
[AIS {MI|PMA|PMC|DMA}}[LEV g] 4 LN MSG:
24 HOUR DM SERS ERS US \
SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr \
SSSSS
OPTIONS e f g h \
i EOM
```

```
M hh:mm:ss xy,ww n GRTH NPC uvjkl TYPE mnxyz IW pqr \
[AIS {MI|PMA|PMC|DMA}}[LEV g] 4 LN MSG:
SHORT INTERVAL DM SERS ERS US \
SLIP
THRESHOLDS nnnnn ppppp qqqqq rrrrr \
SSSSS
OPTIONS e f g h \
i EOM
```

```
M hh:mm:ss xy,ww n GRTH NPC uvjkl TYPE mnxyz TS0 abcdefgh \
TS0M abcdefgh COMPL
```

## Denial Message

### Nonhierarchical

[O.31362.01]

```
M hh:mm:ss xy,ww n GRTH NPC [s]jkl[-[t]mno] TYPE mnxyz\
[ss/n][IW pq[r]][AIS {MI|PMA|PMC|DMA}}[LEV g] COND cc DNY
```

If the output message requires more than 80 characters:

```
M hh:mm:ss xy,ww n GRTH NPC [s]jkl[-[t]mno] TYPE mnxyz 2 LN MSG:
[ss/n][IW pq[r]][AIS {MI|PMA|PMC|DMA}}[LEV g] COND cc DNY
```

[O.31362.02]

```
M hh:mm:ss xy,ww n GRTH NPC [s]jkl[-[t]mno] TYPE mnxyz EQD \
DNY
```

## Hierarchical

[O.31362.01]

M hh:mm:ss xy,ww n GRTH NPC uvjkl[-uvmno] TYPE mnxyz\  
[ ss/n][ IW pq[r]][ AIS {MI|PMA|PMC|DMA}][ LEV g] COND cc DNY

If the output message requires more than 80 characters:

M hh:mm:ss xy,ww n GRTH NPC uvjkl[-uvmno] TYPE mnxyz 2 LN MSG:  
[ ss/n][ IW pq[r]][ AIS {MI|PMA|PMC|DMA}][ LEV g] COND cc DNY

[O.31362.02]

M hh:mm:ss xy,ww n GRTH NPC uvjkl[-uvmno] TYPE mnxyz EQD DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, the first NPC of a range specification.

**[t]def** - The 3- or 4-digit nonhierarchical NPC number, the last NPC of a range specification.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
|                  |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
|                  |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
|                  |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number, the first NPC of a range specification.

**uvkqr** - Hierarchical NPC number, the last NPC of a range specification.

**uv** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The allowable values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**TYPE** - Type

**mnxyz** - NPC-type identifier

**mn** - NPC Type

*mn* Explanation

PB CEPT NPC (120-Ohm twisted pair)

PC CEPT NPC (75-Ohm coaxial)

If the NPC TYPE field is omitted, the NPC type will default to PB100 or PC100 depending on how the FTMI is provisioned (75- or 120-ohm NPCs).

The argument xyz is to be interpreted as a 3-digit hexadecimal number. The 12 bits in xyz, represented as abcd efgh jklm, indicate the selection of provisioning options for the NPC.

**PB- and PC-type xyz fields**

**Table 12-8. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent Actions <sup>[c]</sup>                  |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                         |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                           |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                   |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                    |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8,in time 144ms (TRANSMIC 1G)                                                                                               |
|              |            | 111          | Unassigned                                                                                                                             |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                          |
|              |            | 1            |                                                                                                                                        |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
 if  $jkl \neq 011$  and  $jkl \neq 101$   
 in **2496 ms**  
 if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway* **cross-connection** the insertion word always defaults to AIS.

mxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option c=0 is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the jkl options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared.\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when jkl=011 or jkl=101. For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option g has meaning only if the NPC is provisioned for CAS; that is, option d=1, otherwise it is ignored. If option g=0 is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option g=1 is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and h=1, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option h was selected as either 0 or 1, unless it is later set to 0 by setting parameter e=0 in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of xyz the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option h=1.

If both b=1 and h=1 and the NPC (used as synchronization source) receives

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure.** If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

[jkl'] minor bit error rate and signaling freeze delay time features:

jkl=011 or jkl=101

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

*c*=0 hardware timing

*c*=1 firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

jkl=011



[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

Additionally:

- If the NPC is not located in a sync NPC location, bit "b" set to "1" will be denied.
- For telephone channel numbering, channels 16 to 30 occupy time slots 17 to 31.
- For time slot channel numbering, channels 16 to 30 occupy time slots 16 to 30.
- For NSA NPCs (bit d = 0), bits "f" and "g" are don't cares: any values are accepted.
- If bit "d" is set to "1" (that is, a CAS NPC) and "jkl" is "110" (that is, Transmic 1G), the command will be denied.
- If bit "d" is set to "1" (that is, a CAS NPC) and bit "e" is "1" for time slot channel numbering, the command will be denied.

**OPTS** - Options

**rr** - Facility performance parameter number

Variable rr specifies the parameter whose alarm threshold is being selected.

**<m>** - Facility performance parameter threshold index  
(0 through X'10')

Variable <m> is used to select threshold values previously programmed for rr. The default threshold value for each parameter is shown in the table below under the column heading "Default Threshold Value". This is the value selected by m = 0, 1, 2 or d in the table of <m> values following the parameter table. A given value of m selects both the performance monitoring threshold level and the alarm type associated with it as shown in that table. Threshold values selected by values of m other than the default must exist, that is, must have been programmed, prior to being selected. These other thresholds can be set by using the CHG,SETOP, TYPE,ALL,NPCOP command. Thresholds of all unspecified parameters will be set to the default value associated with m=0. Although the NPC type field is optional for PB and PC types, the options field must not be given without the NPC type field.

**For PB and PC type NPCs:**

| rr | Parameter                          | Threshold<br>Value<br>Range | Default<br>Threshold<br>Value |
|----|------------------------------------|-----------------------------|-------------------------------|
| 31 | Degraded Minutes, 1 hour           | 1-60                        | 60                            |
| 32 | Degraded Minutes, 24 hours         | 1-1440                      | 1440                          |
| 33 | Severely Errored Seconds, 15 mins  | 1-900                       | 900                           |
| 34 | Severely Errored Seconds, 24 hours | 1-65535                     | 65535                         |
| 35 | Errored Seconds, 15 minutes        | 1-900                       | 900                           |
| 36 | Errored Seconds, 24 hours          | 1-65535                     | 65535                         |
| 37 | Unavailable Seconds, 15 minutes    | 1-900                       | 900                           |
| 38 | Unavailable Seconds, 24 hours      | 1-65535                     | 65535                         |
| 39 | Slips, 15 minutes                  | 1-900                       | 900                           |
| 40 | Slips, 24 hours                    | 1-65535                     | 65535                         |

**Note 1:** 24-hour thresholds must be greater than their respective 15-minute or 1-hour threshold.

**For PA, PB, and PC type NPCs:**

In the following table these definitions apply:

|              |                                          |
|--------------|------------------------------------------|
| MI           | Maintenance Information                  |
| DMA          | Deferred Maintenance Action Minor Alarm  |
| PMA Major    | Prompt Maintenance Action Major Alarm    |
| PMA Critical | Prompt Maintenance Action Critical Alarm |

| <m> | Threshold Value    | Alarm Type                             |
|-----|--------------------|----------------------------------------|
| 0   | Default            | MI (Maintenance Information)           |
| 1   | Default            | DMA (Deferred Maintenance Minor Alarm) |
| 2   | Default            | PMA (Prompt Maintenance Major Alarm)   |
| 3   | Set 1              | MI                                     |
| 4   | Set 1              | DMA                                    |
| 5   | Set 1              | PMA Major                              |
| 6   | Set 2              | MI                                     |
| 7   | Set 2              | DMA                                    |
| 8   | Set 2              | PMA Major                              |
| 9   | Set 3              | MI                                     |
| a   | Set 3              | DMA                                    |
| b   | Set 3              | PMA Major                              |
| c   | Threshold disabled | no alarm                               |
| d   | Default            | PMA Critical                           |
| e   | Set 1              | PMA Critical                           |
| f   | Set 2              | PMA Critical                           |
| 10  | Set 3              | PMA Critical                           |

**Note 1:** m = 0 is the default.

**Note 2:** Threshold values for Set 1, Set 2, and Set 3 must be set (programmed) by using the command mentioned in the explanation of m above before variable m can be used to select threshold levels and alarm types other than the defaults.

**Note:** If the queried NPC can not be accessed for some reason, for example because the Facility Terminating Module is not equipped or the FTMI or Unit Controller is out of service, then the NPC's parameter count fields are printed as a string of dashes to indicate that the counts are not available. The parameter thresholds and options will still be correctly output.

In addition, certain parameters do not apply. In the cases where specific parameters do not apply to the queried NPC, the respective parameter count fields, threshold values and threshold options are all displayed as a string of dashes.

IW - Insertion Word

pq[r] - Hexadecimal value of the Growth Insertion Word (GIW)

Used in the transmit direction on unassigned channels for CEPT NPCs.

pq transmitted data information  
r transmitted signaling information

A special code, called the Growth Insertion Word (GIW), is transmitted by this NPC on unassigned channels. This code is specified by the optional keyword **IW** and its argument **pq**.

*This code was previously called the Disconnect Code (DCC), but that name is properly reserved for the TCON Insertion Word, which is transmitted when the "TDIS: :FROM, TO, . . . , DCC" command is used.*

For PB and PC type NPCs, the IW argument is X'pq[r]', and the default GIW code is X'D5D (Binary: 11010101 1101). Hexadecimal digits "pq" represent the CEPT insertion word for cross-connected time slots and hexadecimal digit "r" represents the CEPT signaling option. The "r" digit is needed to accommodate the cross-connected CEPT time slot and its associated portion of TS16 used for signaling when provisioned for channel associated signaling (CAS).

Although the "r" digit is accepted on input, for NSA NPCs, it has no significance.

**AIS** - Alarm indication signal

**LEV** - Intervention Level  
g Intervention Level Setting(1-6)

Intervention Level is a feature that changes the Alarm Severity of an alarm based on the alarm severity and the Intervention Level setting.

**MI** - Maintenance information  
This is the default option.

**PMA** - Prompt maintenance major alarm

**DMA** - Deferred maintenance minor alarm

**PMC** -Prompt Maintenance Critical Alarm

**[s]jkl** - Nonhierarchical NPC number ( $[s]abc \leq [s]jkl \leq [t]def$ )  
**[t]mno** - Nonhierarchical NPC number ( $[s]jkl \leq [t]mno \leq [t]def$ )

**uvjkl** - Hierarchical NPC number ( $uvmnp \leq uvjkl \leq uvkqr$ )

**uvmno** - Hierarchical NPC number ( $uvjkl \leq uvmno \leq uvkqr$ )

**Note:** uvjkl and uvkqr are in the **same** unit.

**ss/n** - First improper value of "rr/<m>" for which the message is denied.

For each NPC listed, this message prints out values of the states, counts, thresholds and options of the following facility performance parameters and the spare international and national bits in time slot 0 for CEPT NPCs.

For PB and PC type NPCs:

**DM** - Degraded Minutes

**nnnnn** - 24-hour Degraded Minutes threshold

**nnnnn** - 1-hour DM threshold

**e** - 24-hour Degraded Minutes threshold/alarm selection

**e** - 1-hour DM threshold/alarm selection

**SERS** - Severely Errored Seconds

**ppppp** - 24-hour Severely Errored Seconds threshold

**ppppp** - 15-minute SERS threshold

**f** - 24-hour Severely Errored Seconds threshold/alarm selection

**f** - 15-minute SERS threshold/alarm selection

**ERS** - Errored Seconds

**qqqqq** - 24-hour Errored Seconds threshold

**qqqqq** - 15-minute ERS threshold

**g** - 24-hour Errored Seconds threshold/alarm selection

**g** - 15-minute ES threshold/alarm selection

**US** - Unavailable Seconds

**rrrrr** - 24-hour Unavailable Seconds threshold

**rrrrr** - 15-minute US threshold

**h** - 24-hour Unavailable Seconds threshold/alarm selection

**h** - 15-minute US threshold/alarm selection

**SLIP** - Slip Events

**sssss** - 24-hour Slip Events threshold

**sssss** - 15-minute SLIP threshold

**i** - 24-hour Slip threshold/alarm selection

**i** - 15-minute SLIP threshold/alarm selection

For SHORT INTERVAL, DM is calculated hourly and SERS, ERS, US, and SLIP are calculated at 15 minute intervals.

The **TS0 abcdefgh** variables represent international and national bits in time slot 0, as defined by:

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

These variables are set to their default values "11011111" by this command, except for the Transmic 1G option, where the default is "11000000."

The variables may later be changed by setting the abcdefgh parameters in the TS0 field of the CHG::NPC command.

Each of the variables may then be set to "0", "1", or "P." "P" indicates that the incoming bit will be cross-connected unchanged.

When TS0 is cross-connected, the TS0 bits will be either passed, or set to "0" or "1" as indicated by the "abcdefgh" variable values. Note that bits which are used for alarms (bit 3 always; bits 4 and 5 if provisioned by the **mnxyz** values) may not be set to "P."

This is also true for NPCs assigned as test port NPCs.

The **TS0M abcdefgh** field allows monitoring of state changes in the received spare international bits, where the "abcdefgh" variables refer to the same TS0 bits as defined above for the TS0 "abcdefgh" variables.

The TS0M variables are specified for monitoring in the command as:

The default values for TS0M variables are **abcdefgh=00000000**, unless the **xyz** parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111. The TS0M variables may later be provisioned by the CHG::TS0M abcdefgh or the ED-PRMTR-EQPT TS0M-abcdefgh (38323) command.



**cc** - Hexadecimal condition code

**cc** *Explanation*

- 00** No conditions
- 10** Unit is not equipped
- 11** UC is out of service
- 12** UC is in service but failed
- 13** FTMI is not equipped
- 20** Option rr/<m> has not been set up on 2nd database
- 24** Unit type error
- 26** NPC type error
- 34** NPC type option xyz is unassigned
- 83** NPC type is inconsistent with FTMI type
- 84** Incompatible types of NPCs in a DDC
- 14** 1 hr >= 24 hr for DM opt
- 15** 15 min >= 24 hr for SERS opt
- 16** 15 min >= 24 hr for ERS opt
- 17** 15 min >= 24 hr for US opt
- 18** 15 min >= 24 hr for SLIP opt
- 31** NPC not provisioned for NSA
- 32** Bit 3 provisioned for use as RAI3
- 33** Bit 4 provisioned for use as RAIS
- 3A** Bit 4 provisioned for use as RBER
- 3B** Bit 5 provisioned for use as SFI
- 3C** Bits 3 through 8 are provisioned for Transmic 1G
- 3D** Alarm bits cannot be passed through or inverted
- B0** Combination of bit g (b7) and h (b8) is invalid
- BB** Timeslot channel numbering not allowed with CAS
- CD** NPC not designated as sync timing source
- F1** Parameter only valid with PA, PB, or PC type NPCs
- F2** Invalid NPC number specified
- FD** NPC range crosses unit boundary
- 1A** The facility parameter not programmable for specified x or z parameter

**cc**    *Explanation*

- A3**    Transmic 1G NPC designated as SYNC source invalid
- A4**    Firmware timing invalid for Transmic 1G NPC
- A5**    AIS keyword incompatible with NPC type
- AB**    LEV keyword incompatible with NPC type
- AC**    LEV keyword not allowed with Intervention Level Feature OFF
- 04**    This NPC type does not allow Payload
- 91**    Option not programmable for this NPC type

## **GRTH,SYNC,TB,TYPE**

### **GROW SYNCHRONIZER TIME BASE**

#### **Explanation Of Command**

This message requests equipage of the time base circuit packs of the synchronizer. Both sides of the time base (sides 0 and 1) will be equipped by entering this command.

#### **Command**

[I.31101]

GRTH:FRM xy,SEQ ww:SYNC,TB,TYPE TBpqr !

#### **Completion Message**

[O.31101]

M hh:mm:ss xy,ww n[vv] GRTH SYNC TB TYPE TBpqr COMPL

#### **Denial Message**

[O.31101.01]

M hh:mm:ss xy,ww n[vv] GRTH SYNC TB TYPE TBpqr COND cc DNY

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**TB** - Time base

**p** - Time base identifier

**qr** - Unassigned

q and r can take any value from 0 through 9

**p**      *Time base*

**0**      Stratum 3

**1**      CEPT Local

**2**      CEPT Toll

**3**      Stratum 2

**cc** - Hexadecimal condition code

**cc**      *Explanation*

**AA**      Syncs are equipped

## **GRTH,SYNC,TLI,TYPE**

### **GROWTH CLOCK REFERENCE OSCILLATOR**

#### **Explanation Of Command**

This message requests equipage of the synchronizer time base as a clock reference oscillator (CRO), which is the extra (third) time base on the synchronizer. The CRO is required to provision the synchronizer to the master mode and is located in timing link interface 3 of side 1 of the synchronizer.

#### **Command**

[I.31111]

GRTH:FRM xy,SEQ ww:SYNC,TLI 3,TYPE TBpqr!

#### **Completion Message**

[O.31111]

M hh:mm:ss xy,ww n[vv] GRTH SYNC TLI 3 TYPE TBpqr CRO COMPL

#### **Denial Message**

[O.31111.01]

M hh:mm:ss xy,ww n[vv] GRTH SYNC TLI 3 TYPE TBpqr CRO \  
COND cc DNY

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**TLI** - Timing Link Interface

**TYPE** - Type

**TB** - Time base

**p** - Time base identifier

**qr** - Unassigned

q and r can take any value from 0 through 9

**p**      *Time base*

**0**      Stratum 3

**1**      CEPT Local

**2**      CEPT Toll

**3**      Stratum 2

**CRO** - Clock reference oscillator

**COND** - Condition

**cc** - Hexadecimal condition code

**cc**      *Explanation*

**01**      Subject entity is equipped

**16**      SYNC TB is not equipped

**33**      Wrong TLI type

**A5**      (Timing Distributor) TLI is not equipped

**A7**      Sync 0 is not in-service

**A8**      Sync 1 is not in-service

**A9**      Both syncs are out-of-service

**AA**      Syncs are equipped

**AB**      Bad sync mode

## **GRTH,SYNC,TLI,TYPE,SSP,SRC,NPC**

### **PROVISION SYNCHRONIZER TIMING LINK INTERFACE**

#### **Explanation Of Command**

This message requests provisioning of the synchronizer's timing link interface. The TLI can be configured as a timing extractor or as a timing distributor.

If the timing extractor is selected, you must also select synchronizer sync port (SSP) 0 or 1 and its source for priority.

Timing extractor types must be compatible for both **SSP 0** and **SSP 1**.

#### **Command**

##### **Nonhierarchical**

[I.31121]

```
GRTH:FRM xy,SEQ ww:SYNC,TLI m,\
{TYPE texyz,SSP a,SRC p[,NPC [0]abc]|TYPE TDxyz}!
```

##### **Hierarchical**

[I.31121]

```
GRTH:FRM xy,SEQ ww:SYNC,TLI m,\
{TYPE texyz,SSP a,SRC p[,NPC uvmnp]|TYPE TDxyz}!
```

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.31121]

M hh:mm:ss xy,ww n[vv] GRTH SYNC TLI m 2 LN MSG:  
{TYPE texyz SSP a SRC p[ NPC [0]abc]|TYPE TDxyz} COMPL

#### **Hierarchical**

---

[O.31121]

M hh:mm:ss xy,ww n[vv] GRTH SYNC TLI m 2 LN MSG:  
{TYPE texyz SSP a SRC p[,NPC uvmnp]|TYPE TDxyz} COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.31121.01]

M hh:mm:ss xy,ww n[vv] GRTH SYNC TLI m 2 LN MSG:  
{TYPE texyz SSP a SRC p[ NPC [0]abc]|TYPE TDxyz} COND cc DNY

#### **Hierarchical**

---

[O.31121.01]

M hh:mm:ss xy,ww n[vv] GRTH SYNC TLI m 2 LN MSG:  
{TYPE texyz SSP a SRC p[ NPC uvmnp]|TYPE TDxyz} COND cc DNY

### **Autonomous Message**

---

Not applicable.



## Explanation Of Parameters

**SYNC** - Synchronizer

**TLI** - Timing link interface

**m** - TLI number (1 through 4)

**TYPE** - Type

**texyz** - Timing Extractor type

| <i>te</i> | <i>Explanation</i>                      |
|-----------|-----------------------------------------|
| TC        | Composite Clock Timing Extractor        |
| TE        | DS1 Timing Extractor                    |
| TP        | Primary Block Timing Extractor          |
| TR        | Basic System Reference Frequency (BSRF) |
| TU        | Unipolar Clock Timing Extractor         |

**Note:** For the TC, TU and TR timing extractors the x, y and z parameters can be any value from 0 to 9.

Valid x, y, and z values for the other timing extractors are:

TP-type TLI xyz fields

**x** - Frame format

| <b>x</b>    | <i>Explanation</i>                    |
|-------------|---------------------------------------|
| <b>1, 5</b> | Common Channel Signaling              |
| <b>2, 6</b> | Channel Associated Signaling - Mode 0 |
| <b>3, 7</b> | Channel Associated Signaling - Mode 1 |
| <b>4, 8</b> | European Remote Switching Module      |
| <b>0, 9</b> | Invalid                               |

**y** - Line format

| <b>y</b>    | <i>Explanation</i>                 |
|-------------|------------------------------------|
| <b>0, 2</b> | Alternate Mark Inversion (Bipolar) |
| <b>1, 3</b> | High Density Bipolar (HDB3)        |
| <b>4-9</b>  | Invalid                            |

**z** - Channel format

| <b>z</b>   | <i>Explanation</i> |
|------------|--------------------|
| <b>0-9</b> | Unassigned         |

**SSP** - Synchronizer synchronization port

**a** - SSP number (0 or 1)

Required when texyz is specified.

**Note:** Timing Extractors must have the same "te" type for both SSP 0 and SSP 1.

**SRC** - Source

**p** - Priority (1 through 8)

Required when texyz is specified. 1 = HIGHEST priority, 8 = LOWEST priority

**TDxyz** - Timing Distributor type

The valid values for x, y, and z are:

TD-type TLI xyz fields

**x** - Timing distributor identification

**x**      *Explanation*

**1**      Composite Clock Timing Distribution

**2**      Sinusoidal 2.048 MHz Timing Distribution

**y** - Unassigned

**z** - Unassigned

**NPC** - Network Processing Circuit

The NPC keyword and its associated parameter are only specified in conjunction with the SSP and SRC keywords for TLI type TUxyz.

This keyword indicates that the synchronization signal is terminated in one of the facility terminating locations. Use of this keyword allows the DACS II system to correlate a synchronizing source failure to either an NPC failure or an NPC input signal failure.

**[0]abc** - The 3- or 4-digit nonhierarchical NPC number

Timing source NPC number

The valid NPC numbers are:

If NPC numbers are expressed in three digits, the valid values are:

PB and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit       | Unit       |
|------------|------------|
| 1          | 2          |
| <b>NPC</b> | <b>NPC</b> |
| <b>030</b> | <b>190</b> |
| <b>032</b> | <b>192</b> |
| <b>070</b> | <b>230</b> |
| <b>072</b> | <b>232</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit        | Unit        |
|-------------|-------------|
| 1           | 2           |
| <b>NPC</b>  | <b>NPC</b>  |
| <b>0030</b> | <b>0190</b> |
| <b>0032</b> | <b>0192</b> |
| <b>0070</b> | <b>0230</b> |
| <b>0072</b> | <b>0232</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid NPC numbers are:

PB and PC NPC numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit          | Module      | NPC           |
|---------------|-------------|---------------|
| <b>01, 02</b> | <b>1, 2</b> | <b>30, 32</b> |

**cc** - Hexadecimal condition code

**cc** *Explanation*

**01** Subject entity is equipped  
**16** SYNC TB is not equipped  
**A7** Sync 0 is not in-service  
**A8** Sync 1 is not in-service  
**A9** Both syncs are out-of-service  
**AC** Timing Extractor type TLI (need SSP info)  
**AD** Not Timing Extractor type TLI (not SSP)

**cc**    *Explanation*

- AE**    Wrong TLI type (need CRO grow command)
- AF**    3 Timing Distributor type TLIs are equipped
- B1**    Illegal priority value
- B2**    Illegal SSP type (not same as other SSPs)
- B3**    X option is illegal
- B4**    Y option is illegal
- B5**    Z option is illegal
- BE**    Hardware mismatch or not present
- CB**    NPC parameter only valid with TU type TLI
- CC**    NPC is still provisioned to provide sync timing
- CD**    NPC not designated as sync timing source
- CE**    NPC already allocated as sync timing source
- CF**    NPC already grown as non-synchronization source
- F1**    Parameter only valid with PA, PB, or PC type NPCs
- E4**    NPC already has Equipment Loopback

## **GRTH,TG,NPCTG**

### **GROWTH TEST-ACCESS GROUP**

#### **Explanation Of Command**

This command is used to provision a test-access group (TG) as a network processing circuit for test groups (NPCTG) covering a specific channel range.

The TG consists of two bundles of n consecutive DS0 channels each. The TG's width is determined by the number of channels within the range specified in the command. The east bundle of the TG is located on the first NPCTG and spans the given channel range; the west bundle is located on the second NPCTG and spans the second channel range. Both bundles may be assigned to the same NPCTG, provided the necessary bandwidth is available.

#### **Command**

[I.31421]

**GRTH:FRM xy,SEQ ww:TG mmm,NPCTG (rrr,eee[-fff];sss,www[-xxx])\**  
**[,<tc>]!**

#### **Completion Message**

[O.31421]

**M hh:mm:ss xy,ww n[vv] GRTH TG mmm NPCTG (rrr,eee[-fff];sss,\**  
**www[-xxx]) 2 LN MSG:**  
**[<tc>] COMPL**

#### **Denial Message**

[O.31421.01]

**M hh:mm:ss xy,ww n[vv] GRTH TG mmm[ <tc>] COND cc DNY**

---

**Autonomous Message**

---

Not applicable.

---

**Explanation Of Parameters**

---

|                 |                                                                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TG</b>       | - Test (access) group                                                                                                                                   |
| <b>mmm</b>      | - TG number (1 through 400)                                                                                                                             |
| <b>NPCTG</b>    | - NPC (for) test group                                                                                                                                  |
| <b>rrr</b>      | - NPCTG number supporting the east bundle                                                                                                               |
| <b>sss</b>      | - NPCTG number supporting the west bundle, may be same as rrr                                                                                           |
| <b>eee, fff</b> | - Channel range for east bundle                                                                                                                         |
| <b>www, xxx</b> | - Channel range for west bundle                                                                                                                         |
| 001-030         | Primary NPCs grown as Channel Associated Signaling (CAS)                                                                                                |
| 001-031         | Primary NPCs grown as Non Signaling Associated (NSA)                                                                                                    |
| <b>tc</b>       | - Trunk conditioning<br>For this command trunk conditioning is limited to "TRSP,IW X'pq".<br>Any other trunk conditioning specification will be denied. |
| <b>COND</b>     | - Condition                                                                                                                                             |
| <b>cc</b>       | - Hexadecimal condition code                                                                                                                            |
| <b>cc</b>       | <i>Explanation</i>                                                                                                                                      |
| <b>1E</b>       | Customer control or red circuit exists                                                                                                                  |
| <b>85</b>       | Using the 24th channel of a T1DM NPC                                                                                                                    |
| <b>86</b>       | Using the 24th channel of a DMI NPC                                                                                                                     |
| <b>4A</b>       | channel part of a TP or TG                                                                                                                              |
| <b>4B</b>       | channel already under test                                                                                                                              |
| <b>57</b>       | Designated TG or circuit to be tested in process of being rolled                                                                                        |
| <b>59</b>       | Invalid TC specification                                                                                                                                |
| <b>5D</b>       | Inconsistent Signaling on CEPT NPCTGs                                                                                                                   |
| <b>64</b>       | TG width too large for single NPCTG                                                                                                                     |
| <b>65</b>       | Ending channel is out of range                                                                                                                          |
| <b>66</b>       | TG number previously assigned                                                                                                                           |

**cc**    *Explanation*

- 95**    TG East/West type inconsistent with each other or circuit
- A0**    TS16 specified for CAS TG
- A1**    NPC has been designated as NPCTG
- A3**    Channels assigned, cannot be grown as test group
- A8**    NPCTG not grown

## **GRTH,TP**

---

### **GROW TEST PORT**

#### **Explanation Of Command**

---

This message requests the provisioning of a test port.

If trunk conditioning is omitted from the input command the test port is provisioned as a *dynamic* test port. A dynamic test port's trunk conditioning is set to match the trunk conditioning of the circuit under test at the time the circuit is accessed.

If trunk conditioning is given in the input command the test port is provisioned as a *static* test port. A static test port's trunk conditioning is set at the time the port is provisioned. Its trunk conditioning does not change when a circuit is accessed for testing.

The *static* or *dynamic* designations have meaning only for access to unmapped terminations.

For access to a mapped termination, trunk conditioning is always adopted from the circuit under test.

#### **Command**

---

[I.31411]

**GRTH:FRM xy,SEQ ww:TP kk[,<tc>]!**

#### **Completion Message**

---

[O.31411]

**M hh:mm:ss xy,ww n[vv] GRTH TP kk [<tc>] COMPL**



### **Denial Message**

---

[O.31411.01]

M hh:mm:ss xy,ww n[vv] GRTH TP kk[ <tc>] NPCTP UEQD DNY

[O.31411.02]

M hh:mm:ss xy,ww n[vv] GRTH TP kk[ <tc>] TP NSO DNY

[O.31411.03]

M hh:mm:ss xy,ww n[vv] GRTH TP kk[ <tc>] TERM ASGN DNY

[O.31411.04]

M hh:mm:ss xy,ww n[vv] GRTH TP kk[ <tc>] IMPR TC DNY

[O.31411.08]

M hh:mm:ss xy,ww n[vv] GRTH TP kk[ <tc>] COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

TP            - Test port

kk            - Test port number (01 through 96)

A 2Mbit/s NPC will support 12 test ports numbered as follows:

| TA Port                 | Channel |    |
|-------------------------|---------|----|
|                         | FROM    | TO |
| 01,13,25,37,49,61,73,85 | 5       | 6  |
| 02,14,26,38,50,62,74,86 | 7       | 8  |
| 03,15,27,39,51,63,75,87 | 9       | 10 |
| 04,16,28,40,52,64,76,88 | 11      | 12 |
| 05,17,29,41,53,65,77,89 | 13      | 14 |
| 06,18,30,42,54,66,78,90 | 16      | 17 |
| 07,19,31,43,55,67,79,91 | 18      | 19 |
| 08,20,32,44,56,68,80,92 | 20      | 21 |
| 09,21,33,45,57,69,81,93 | 22      | 23 |
| 10,22,34,46,58,70,82,94 | 24      | 25 |
| 11,23,35,47,59,71,83,95 | 26      | 27 |
| 12,24,36,48,60,72,84,96 | 28      | 29 |

**tc** - Trunk conditioning

Represents the desired signaling and insertion word to be applied when a failure occurs. A trunk conditioning specification consists of a combination of a signaling specification followed by an insertion word specification. For example, TRSP,IW X'pq (input form).

| <i>signaling</i>      | <i>Explanation</i>                                                                                                                                                                             |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TC(ijkl,mnop)         | 2-way, 4-state signaling in binary. For CEPT and ESF type framing format, software will expand 4-state to 16-state by duplicating the bits.                                                    |
| TC(efghijkl,mnopqrst) | 2-way, 16-state in binary.                                                                                                                                                                     |
| TC(X'ab,X'cd)         | 2-way, 16-state in hexadecimal.                                                                                                                                                                |
| TRSP                  | Transparent, no signaling.                                                                                                                                                                     |
| Omitted               | Cross-connections. Default is TC X'FF,X'FF if both terminations are channel associated signaling types. Default will be TRSP if one of the terminations is nonsignaling associated (NSA) type. |

| <i>insertion word</i> | <i>Explanation</i>                                                                                                                       |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq               | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line. |
| Omitted               | Will default to IW X'FF.                                                                                                                 |

For 4-state signaling, the A/B signaling bits of both test port channels are specified by ijkl for the receive time slot interchange (RTSI), and by mnop for the transmit time slot interchange (TTSI).

For 16-state signaling, the A/B/C/D signaling bits of both test port channels are specified by efghijkl (or hexadecimal digits ab) for the RTSI, and by mnopqrst (or hexadecimal digits cd) for the TTSI.

**NPCTP** - NPC for test ports

**UEQD** - Unequipped

**TP NSO** - Test port not in sequence order

**TERM** - Terminated

**ASGN** - Assigned

**IMPR** - Improper

**TC** - Trunk conditioning

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

**1E** Customer control or red circuit exists

**82** Can not use 12-th TP when NPCTP is in the T1DM or DMI mode

**FF** Termination is in process of being rolled

**4B** channel already under test

## **GRTH,UNIT,FTMI,IMP**

### **PROVISION FACILITY TERMINATING MODULE INTERFACE**

#### **Explanation Of Command**

This message requests provisioning of the facility terminating module (FTM) and its interface and format converter in DACS II **UNIT q** with a specified termination impedance (75 or 120 ohms).

#### **Command**

[I.31321]

GRTH:FRM xy,SEQ ww:UNIT [q]q,FTMI d,IMP <imp>!

#### **Completion Message**

[O.31321]

M hh:mm:ss xy,ww n[vv] GRTH UNIT [q]q FTMI d FC 0d 1d IMP\  
(<imp>) CEPT COMPL

#### **Denial Message**

[O.31321.01]

M hh:mm:ss xy,ww n[vv] GRTH UNIT [q]q FTMI d FC 0d 1d IMP\  
(<imp>) CEPT COND cc DNY

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FC** - Format converter

**0** - FC side 0

**1** - FC side 1

**d** - FC number (1 through 4)

**FTMI** - Facility terminating module interface

**d** - FTMI in the DACS II unit (1 through 4)

**IMP** - Impedance

**imp** - Impedance value

CEPT facility terminating module impedance setting

Valid values are listed below:

| <i>imp</i> | <i>Explanation</i> |
|------------|--------------------|
|------------|--------------------|

|    |                            |
|----|----------------------------|
| 75 | 75-ohm coaxial termination |
|----|----------------------------|

|     |                                  |
|-----|----------------------------------|
| 120 | 120-ohm twisted pair termination |
|-----|----------------------------------|

**CEPT** - Conference of European Postal and Telecommunications Administration

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                            |
|-----------|----------------------------|
| <b>01</b> | Subject entity is equipped |
|-----------|----------------------------|

|           |                      |
|-----------|----------------------|
| <b>10</b> | Unit is not equipped |
|-----------|----------------------|

|           |                      |
|-----------|----------------------|
| <b>11</b> | UC is out of service |
|-----------|----------------------|

|           |                             |
|-----------|-----------------------------|
| <b>12</b> | UC is in service but failed |
|-----------|-----------------------------|

|           |                 |
|-----------|-----------------|
| <b>24</b> | Unit type error |
|-----------|-----------------|

## **GRTH,UNIT,MXR,TYPE,BERM,BERT,LBO**

### **GROWTH MULTIPLEXER**

#### **Explanation Of Command**

This message equips one or more regular Multiplexer (MXR) circuit packs and their associated DS3 facility's in the service slots of a DACS II DS3 Unit. It is also used to equip the Hybrid Multiplexer (HMXR) circuit packs and their associated DS3 facility's in the service slots of a DACS II Hybrid DS3 (HDS3) Unit.

The protection MXR or HMXR circuit pack is not grown because no specific DS3 facility is associated with it. The protection MXR or HMXR is provisioned when DS3 or HDS3 unit is grown.

Up to six MXRs or HMXRs and their DS3 facilities can be grown with one command.

There will be one output message (either completion or denial) for each MXR or HMXR that is grown.

#### **Command**

[I.31511]

GRTH:FRM xy,SEQ ww:UNIT [q]q,MXR c[-d]\  
[,TYPE mnxyz][,BERM s][,BERT t][,LBO <b>]!

#### **Completion Message**

[O.31511]

M hh:mm:ss xy,ww n[vv] GRTH UNIT [q]q MXR a \  
TYPE mnxyz BERM s BERT t LBO <b> COMPL

### Denial Message

---

[O.31511.01]

M hh:mm:ss xy,ww n[vv] GRTH UNIT [q]q MXR a[ TYPE mnxyz] \  
[ BERM s][ BERT t][ LBO <b>] EQD DNY

[O.31511.02]

M hh:mm:ss xy,ww n[vv] GRTH UNIT [q]q MXR a 2 LN MSG:  
[TYPE mnxyz ][BERM s ][BERT t ][LBO <b> ]COND cc DNY

### Autonomous Message

---

Not applicable.

### Explanation Of Parameters

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**MXR** - Multiplexer

**c** - MXR number within the unit (1 through 6)

**d** - MXR number within the unit (1 through 6)

Variable d is used to specify a range of MXRs

**a** - MXR number within the range of MXR c and MXR d

**TYPE** - Type

**mnxyz** - The DS3 format processed by the MXR:

**mn** - DS3 type

| mn | Explanation |
|----|-------------|
|----|-------------|

|           |                                                                                              |
|-----------|----------------------------------------------------------------------------------------------|
| <b>MX</b> | The original R4.0 DS3 facility type supported by the Multiplexer (MXR) circuit pack (KCR-1). |
|-----------|----------------------------------------------------------------------------------------------|

|           |                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------|
| <b>EX</b> | The enhanced R6.0 DS3 facility type supported by the Enhanced Multiplexer (EMXR) circuit pack (KCR-5). |
|-----------|--------------------------------------------------------------------------------------------------------|

|           |                                                                                           |
|-----------|-------------------------------------------------------------------------------------------|
| <b>HX</b> | The hybrid facility type supported by the Hybrid Multiplexer (HMXR) circuit pack (KCR-8). |
|-----------|-------------------------------------------------------------------------------------------|

If the unit is a regular DS3U of unit type DT100, then the Default is the MX type for backward compatibility.

If the unit is a Hybrid DS3U of unit type HT100, then the default is HX.

The optional settings available for each MXR are:

**BERM** - Bit error rate calculation method

**s** - The requested BER calculation method

*s* *BER calculation method*

B Bipolar violations (BPV - default)

P DS3 Parity Errors

C Both Bipolar violations (BPV) and DS3 Parity Errors, support by HMXR only

**BERT** - Bit error rate threshold for declaring High BER condition

**t** - Requested BER threshold

*t* *BER threshold*

3 Corresponds to threshold of  $10^{-3}$  (default)

6 Corresponds to threshold of  $10^{-6}$

**LBO** - Line buildout

**b** - LBO specification

*b* *Explanation*

ON Line build out is turned on

OFF Line build out is turned off (default)

LBO is required as shown in the following table.

734A Cabling to DSX-3 KS-19224,L2 Cabling to DSX-3 LBO

|               |              |    |
|---------------|--------------|----|
| 0 to 225 feet | 0 to 75 feet | ON |
|---------------|--------------|----|

|                 |                |     |
|-----------------|----------------|-----|
| 225 to 450 feet | 75 to 150 feet | OFF |
|-----------------|----------------|-----|

**Note:** LBO <b> may be used to change the LBO setting of an in-service, traffic- carrying Multiplexer-Multiplexer Interface Unit (MMFG).

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed



## **GRTH,UNIT,TYPE,CONN**

### **PROVISION A UNIT**

#### **Explanation Of Command**

This command requests the provisioning of a DACS II unit.

For a NonCEF frame this will result in the provisioning of all cross-connect and time slot interchange circuit packs. For a CEF frame this will result in the provisioning of the expanded time slot interchanger. When this request has completed, all circuit packs required by the subject unit to cross-connect to other equipped units have been provisioned.

The unit type is optionally specified in the **TYPE** field.

The unit type can be a facility terminating unit, a DS3 terminating unit, a Hybrid DS3 terminating unit, or a digital signal processing unit.

If the unit is a digital signal processing unit, its associated digital signal processing interface is also provisioned. If the unit is a DS3 or a Hybrid DS3 facility terminating unit, both of its associated service and protection facility line interface packs, both sides of its formatter or hybrid formatter packs (side 0 and 1), and its protection multiplexer or hybrid multiplexer are also provisioned. Only facility line interface packs, Hybrid Formatter packs (HFMT), and Hybrid Multiplexer packs (HMXR) can be equipped in the Hybrid DS3 facility terminating unit. Therefore, FMT and MXR as shown in the command output messages should be interpreted as HFMT and HMXR when the Hybrid DS3 Unit type HT100 is provisioned.

**Note:** DMB, TSI, and FMT/HFMT circuit packs must be inserted into the inactive side of

DACS II. Inserting circuit packs into the active side may result in transmission "hits."

## Command

---

For DACS II Non-CEF frames:

[I.31211]

```
GRTH:FRM xy,SEQ ww:UNIT q[,TYPE utxyz]\
[,CONN(a[,b[,c[,d[,e [,f]]]]]]))!
```

For DACS II CEF frames:

[I.31211]

```
GRTH:FRM xy,SEQ ww:UNIT [q]q[,TYPE utxyz]!
```

## Completion Message

---

For DACS II Non-CEF frames:

[O.31211]

```
M hh:mm:ss xy,ww n[vv] GRTH UNIT q utxyz\
[CONN a b c d e f]\
```

5 LN MSG:

```
CCB 0q 1q TOTAL TSIS tt NEW TSIS nn
```

```
sft sft sft sft sft sft sft sft sft sft sft sft
sft sft sft sft sft sft sft sft sft sft sft sft
sft sft sft sft sft sft sft sft sft sft sft sft EOM
```

```
M hh:mm:ss xy,ww n[vv] GRTH UNIT q utxyz\
[CONN a b c d e f]\
```

5 LN MSG:

```
CCB 0q 1q TOTAL TSIS tt NEW TSIS nn
```

```
sft sft sft sft sft sft sft sft sft sft sft sft
sft sft sft sft sft sft sft sft sft sft sft sft
sft sft sft sft sft sft sft sft sft sft sft sft EOM
```

```
M hh:mm:ss xy,ww n[vv] GRTH UNIT q utxyz\
[CONN a b c d e f]\
```

e LN MSG:

```
CCB 0q 1q TOTAL TSIS tt NEW TSIS nn
```

```
NEW TSIS sft sft ... sft sft
NEW TSIS sft sft ... sft sft [COMPL]
[FMT 0 1 FLI S P MXR P COMPL]
```

For DACS II CEF frames:

[O.31212]

```
M hh:mm:ss xy,ww n[vv] GRTH UNIT qq TYPE utxyz e LN MSG:
ETSI 0qq 1qq TOTAL ETSIS kk
0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr
0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr 0rr 1rr\
[COMPL]
[FMT 0 1 FLI S P MXR P COMPL]
```

**Note:** If the unit type is FT100 or DP100, the output will be a 4-line message. If the unit type is DT100 or HT100, the output will be a 5-line message.

### Denial Message

---

[O.31211.01]

```
M hh:mm:ss xy,ww n[vv] GRTH UNIT [q]q TYPE utxyz\
{EQD uexyz|NSUP} DNY
```

[O.31211.02]

```
M hh:mm:ss xy,ww n[vv] GRTH UNIT [q]q TYPE utxyz COND cc DNY
```

### Autonomous Message

---

Not applicable.

### Explanation Of Parameters

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**utxyz** - Unit type as submitted in the input message

**uexyz** - Type of unit already equipped as

*uexyz Explanation*

FT100 FT = Facility Terminating Unit

DP100 DP = Digital Signal Processing Unit

HT100 HT = Hybrid DS3 Facility Terminating Unit

The unit type is optionally specified in the TYPE utxyz field. The unit type can be an FTxyz (Facility Terminating Unit), , a HTxyz (Hybrid DS3 Terminating Unit) or a DPxyz (Digital Signal Processing Unit) type.

Currently, only FT100, HT100, and DP100 types are supported by DACS II.

The unit type entered must be consistent with the unit type entered for the configuration file.

If the unit is a DPxyz type, its associated DSPI (Digital Signal Processing Interface) is also provisioned.

If the unit is a DTxyz or HTxyz type, both of its associated Service and Protection Facility Line Interface (FLI) packs, both sides of its Formatter (FMT) or Hybrid Formatter (HFMT) packs (side 0 and 1), and its Protection Multiplexer(MXR) or Hybrid Multiplexer (HMXR) pack are also provisioned.

For both Non-CEF and CEF frames, if the unit type is not entered, the unit type will default to FT100.

For Non-CEF frames, the optional CONN field is used if only a partial complement of the unit's TSI circuit packs is to be provisioned. If this field is not used, all TSI circuit packs are provisioned and the unit has full connectivity with other provisioned units.

**CONN** - Connectivity

**a, b, c, d, e, f**

- Time slot interchange numbers

A partial complement of the unit's TSIs have been provisioned. (If this field is absent, all of the unit's TSIs were provisioned.)

**CCB** - Cross-connect buffer

**0q** - CCB number side 0

**1q** - CCB number side 1

0q and 1q identify the cross-connect buffer(s) provisioned. q is the unit number (see UNIT above).

**tt** - Total number of provisioned TSIs in frame (02 through 72)

**NEW** - New

**TSIS** - Time slot interchangers

**nn** - Number of TSIs provisioned by command (02 through 22)

- sft** - TSI equipped status
- s** - Service side number (0 or 1)
- f** - Equipped FROM unit number (1 through 6) if equipped  
- Not equipped
- t** - Equipped TO unit number (1 through 6) if equipped  
- Not equipped
- e** - Number of lines in message
- Equals either 4 or 5 depending on the type of the unit provisioned.
- ETSI** - Expanded time slot interchanger
- 0qq** - ETSI number side 0
- 1qq** - ETSI number side 1
- 0qq and 1qq identify the ETSI packs provisioned by this command.  
qq is the unit number (see UNIT above).
- Three dashes "---" are shown if an ETSI pack is not provisioned.
- kk** - Total number of provisioned ETSIs in frame (02 through 32)
- rr** - Unit number with the same definition as qq.
- MXR** - Multiplexer (MXR) or Hybrid Multiplexer (HMXR)
- P** - Protection multiplexer (MXR) or Hybrid Multiplexer (HMXR)  
(automatically provisioned MXR with DT100 or HMXR with HT100 units)
- EQD** - Equipped
- NSUP** - Not supported
- cc** - Hexadecimal condition code
- cc** *Explanation*
- 27** Illegal connectivity specified
- 28** Connectivity contains unequipped units
- 97** Entity can't be addressed in this configuration
- 99** Unit type (xyz) not supported
- CA** Connectivity can not be specified for CEF unit

## **IN,PROGRESS**

### **GENERIC IN PROGRESS MESSAGE**

#### **Explanation Of Command**

This output message indicates that the requested action (verb) is in progress.

#### **Command**

Not applicable.

#### **Completion Message**

[O.55703]

M hh:mm:ss xy,ww n[vv] <verb> IN PROGRESS

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

**Explanation Of Parameters**

---

Not applicable.

## **INH SW,UNIT,MMFG, TOPRTN,TOSRVC**

### **INHIBIT SWITCH MMFG**

#### **Explanation Of Command**

This message requests the inhibition of automatic protection switching from multiplexer-multiple interface unit functional group (MMFG) c on a DS3 unit (DS3U) or a Hybrid DS3 unit (HDS3U) to MMFG P or the automatic switchback from MMFG P to service MMFG c (when MMFG c becomes in-service). Only automatic switches due to failure will be affected by this message.

If **TOPRTN** is specified and MMFG P is already protecting the MMFG c's facility, the command will be denied.

If **TOSRVC** is specified and MMFG c is not under protection, the command will be denied.

This inhibition will be removed if a switch occurs from the "selected" MMFG.

#### **Command**

[I.35311]

**INH SW:FRM xy,SEQ ww:UNIT [q]q,MMFG c[-d],{TOPRTN|TOSRVC}!**

#### **Completion Message**

[O.35311]

**M hh:mm:ss xy,ww n[vv] INH SW UNIT [q]q MMFG a {TOPRTN|TOSRVC} \**  
**COMPL**



### **Denial Message**

---

[O.35311.01]

M hh:mm:ss xy,ww n[vv] INHSW UNIT [q]q MMFG a {TOPRTN|TOSRVC} \  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**MMFG** - Multiplexer-multiplexer interface unit functional group

**c, d** - The number of the MMFG within the unit (1 - 6)

**TOPRTN** - To protection

**TOSRVC** - To service

When TOSRVC is specified, a range of MMFGs is not acceptable. In this case the command will be denied.

**a** - The number of the service MMFG within the range c and d

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

**4E** The switch is already inhibited

## **INSTALL**

---

### **UTILITY FOR APPLICATION SOFTWARE RELEASE INSTALLATION, REMOVAL, AND UPGRADE**

#### **Explanation Of Command**

---

Software that runs on the Digital Signal Processing Platform (DSPP) circuit pack is called application software because it is treated by DACS II as a separate and distinct application that interacts with the DACS II generic software through an operating system like interface. Applications for the DSPP circuit pack are packaged and shipped as separately orderable software releases on PCMCIA cards. Documentation for an individual application is also separate from regular DACS II documentation and is shipped together with the PCMCIA card containing that application.

This command (**INSTALL**) performs installation services for application releases. These services consist of:

1. Listing application releases currently installed.
2. Installation of a new application release.
3. Upgrading an older release of an application with a newer release of that application.
4. Removal of an application release.

Usage of this command is limited to the Frame Administrator and users with Restricted Maintenance privileges. The following configuration must be present for a successful application installation, removal, or upgrade.

1. The Main Controller (MC) must be in Maintenance Condition (MCOND).
2. The SMEM slot of the MC must contain the following depending on the task:
  - For installing or upgrading an application the SMEM slot must have inserted into it a PCMCIA card purchased from Lucent Technologies that contains the application to be installed or upgraded.
  - For removing an application the SMEM slot should contain the normal DACS II card with the current executables and system database.

This command allows the listing of application version information, but DACS II must be in MCOND for this to work. Command I.51001 UTL::QRY, MEMSTAT should be used for listing application version information while DACS II is in-service.

The customer must perform the following steps to install an application:

1. The Main Controller must be placed in Maintenance Condition (MCOND).
2. The regular memory card in the SMEM slot must be removed logically and physically.
3. The memory card with the application must be inserted into slot SMEM and then must be restored.
4. The customer must invoke the INSTALL command as shown in the input command format section.
5. The INSTALL command appears as shown in Menu Display 1 below. The user is asked to respond with a number between "1" and "3" or with a "Q" to quit. A response of "1" initially generates a response as shown in Menu Display 1, which shows that in the PMEM slot there is a regular DACS II memory card. This card does not have an application program, thus no application line is shown. The memory card in the SMEM slot is identified as an application distribution card (called DSP DISTRIBUTION CARD), and it **does** have an application on it. Note that the type, the version, and the date stamp of when the application was built is given; this is the identity of the application.
6. The actual install happens when the user responds with a "2" to the INSTALL menu. This is shown in Menu Display 4.
7. Then the user can quit out of the install menu as shown in Menu Display 9. After quitting the install menu the user should remove the application card from the SMEM slot both logically and physically and then restore the regular DACS II memory card in the SMEM slot that had previously been removed.
8. Next the user must copy the executables from the regular PMEM card to the regular SMEM card by executing the command:

**UTL : : BMTR, FROM PMEM, TO SMEM, EXCT !**

This copying step is mandatory in order to ensure that the application does also reside on SMEM.

9. The user can now verify that the application resides on both memory cards by invoking the INSTALL menu one more time. A listing of the application will be like the one shown in Menu Display 2.
10. The user is now ready to put the Main Controller (MC) back into service.

Upgrading an application from one version to another is a very similar procedure as given above. The memory card carrying the new version of the application must be in the SMEM slot. Menu Display 3 shows what a listing of the applications looks like. Notice that the

regular DACS II card in PMEM has the application version that is to be replaced, while the application card in the SMEM slot has the application version that is to replace the current version. Menu Display 5 shows how the actual upgrade takes place if no NPCs are actually running the application. Menu Display 6 shows how the actual upgrade takes place if at least one NPC is running the application. The user gets a chance to reconsider the upgrade, which must be responded to with a "Y", before the actual upgrade takes place. Please note that as part of the upgrade the application is downloaded into the appropriate DSPP Circuit Pack(s) if they are in service and each affected DSPP Circuit Pack is then rebooted after the download is complete. This last step happens at the time the MC is placed back into service.

Menu Display 7 shows how to remove an application from the regular DACS II memory card. Again, the user is required to respond to "ARE YOU REALLY SURE" questions to ensure that no inadvertent mistakes are made. Menu Display 8 shows what happens when an attempt is being made to remove an application when at least one NPC is still running that application. The removal attempt is denied.

As previously stated, the execution of the **INSTALL** command generates a menu for the user. These menus are shown in nine displays next:

Menu Display 1:

Listing application releases (No application installed, but application card in SMEM slot):

\*\*\*\*\* DSP PLATFORM - LOAD INSTALLATION UTILITY \*\*\*\*\*

1. List DSPP Load Files
2. Install DSPP Load Files
3. Remove DSPP Load Files

Enter number of command [1-3], or Q to QUIT:1

DSP LOADS ON MEMORY CARDS:

```
===== LOADS ON PMEM: (DACS II CARD) =====
NAME BYTES TYPE VERSION DATE BUILT

```

```
===== LOADS ON SMEM: (DSP DISTRIBUTION CARD) =====
NAME BYTES TYPE VERSION DATE BUILT

```

```
SDxload bbbbbb SDx g.ii.rr yy/mm/dd hh:mm:ss

```

Menu Display 2:

Listing application releases (Both PMEM and SMEM have the same application):

\*\*\*\*\* DSP PLATFORM - LOAD INSTALLATION UTILITY \*\*\*\*\*

1. List DSPP Load Files
2. Install DSPP Load Files
3. Remove DSPP Load Files

Enter number of command [1-3], or Q to QUIT:1

DSP LOADS ON MEMORY CARDS:

```
===== LOADS ON PMEM: (DACS II CARD) =====
NAME BYTES TYPE VERSION DATE BUILT

SDxload bbbbb SDx g.ii.rr yy/mm/dd hh:mm:ss
=====
===== LOADS ON SMEM: (DACS II CARD) =====
NAME BYTES TYPE VERSION DATE BUILT

SDxload bbbbb SDx g.ii.rr yy/mm/dd hh:mm:ss
=====
```

Menu Display 3:

Listing application releases (PMEM and SMEM have different versions of the same application, SMEM has an application card)

\*\*\*\*\* DSP PLATFORM - LOAD INSTALLATION UTILITY \*\*\*\*\*

1. List DSPP Load Files
2. Install DSPP Load Files
3. Remove DSPP Load Files

Enter number of command [1-3], or Q to QUIT:1

DSP LOADS ON MEMORY CARDS:

```
===== LOADS ON PMEM: (DACS II CARD) =====
NAME BYTES TYPE VERSION DATE BUILT

SDxload bbbbb SDx g.ii.rr yy/mm/dd hh:mm:ss
=====
===== LOADS ON SMEM: (DSP DISTRIBUTION CARD) =====
NAME BYTES TYPE VERSION DATE BUILT

SDxload bbbbb SDx g.ii.rr yy/mm/dd hh:mm:ss
=====
```

Menu Display 4:

Installing a new application release:

\*\*\*\*\* DSP PLATFORM - LOAD INSTALLATION UTILITY \*\*\*\*\*

1. List DSPP Load Files
2. Install DSPP Load Files
3. Remove DSPP Load Files

Enter number of command [1-3], or Q to QUIT:2

Installing DSP load file: x.xx/SDxload, bbbbbb bytes from SMEM to PMEM

Installation Complete, Number of files installed from SMEM to PMEM: 1.

Menu Display 5:

Upgrading an older release of an application with a newer release of that application:

\*\*\*\*\* DSP PLATFORM - LOAD INSTALLATION UTILITY \*\*\*\*\*

1. List DSPP Load Files
2. Install DSPP Load Files
3. Remove DSPP Load Files

Enter number of command [1-3], or Q to QUIT:2

WARNING: different SDxload file exists on target: PMEM

OLD (PMEM): SDxxx g.ii.rr yy/mm/dd hh:mm:ss

NEW (SMEM): SDxxx g.ii.rr yy/mm/dd hh:mm:ss

0 NPCs may be affected

Do you wish to continue overwrite of this file? [y/N]:Y

Installing DSP load file: x.xx/SDxload, bbbbbb bytes from SMEM to PMEM

Installation Complete, Number of files installed from SMEM to PMEM: 1.

Menu Display 6:

Upgrading an older release of an application with a newer release  
of that application while at least one NPC is running the application.

\*\*\*\*\* DSP PLATFORM - LOAD INSTALLATION UTILITY \*\*\*\*\*

1. List DSPP Load Files
2. Install DSPP Load Files
3. Remove DSPP Load Files

Enter number of command [1-3], or Q to QUIT:2

WARNING: different SDxload file exists on target: PMEM

OLD (PMEM): SDxxx g.ii.rr yy/mm/dd hh:mm:ss

NEW (SMEM): SDxxx g.ii.rr yy/mm/dd hh:mm:ss

x NPCs may be affected

Do you wish to continue overwrite of this file? [y/N]:Y

Installing DSP load file: x.xx/SDxload, bbbbbb bytes from SMEM to PMEM

Installation Complete, Number of files installed from SMEM to PMEM: 1.

Menu Display 7:

Removing an application release:

\*\*\*\*\* DSP PLATFORM - LOAD INSTALLATION UTILITY \*\*\*\*\*

1. List DSPP Load Files
2. Install DSPP Load Files
3. Remove DSPP Load Files

Enter number of command [1-3], or Q to QUIT:3

WARNING: This function will REMOVE a DSP PLATFORM load  
from the ISX flash card you specify.

Are you REALLY SURE you wish to proceed? [y/N]: Y

Enter Device [A=PMEM, B=SMEM]: A

----- REMOVE FILES: PMEM DEVICE -----

1. Remove SDxload ( bbbbbb bytes)
- Q. QUIT

Enter File number to remove, or "Q" to QUIT: 1

WARNING: This will remove SDxload on PMEM.

Are you REALLY sure? [y/N]: Y

File SDxload removed from PMEM.

Menu Display 8:

Attempting to remove an application release when NPCs are running that application:

\*\*\*\*\* DSP PLATFORM - LOAD INSTALLATION UTILITY \*\*\*\*\*

1. List DSPP Load Files
2. Install DSPP Load Files
3. Remove DSPP Load Files

Enter number of command [1-3], or Q to QUIT:3

WARNING: This function will REMOVE a DSP PLATFORM load  
from the ISX flash card you specify.

Are you REALLY SURE you wish to proceed? [y/N]: Y

Enter Device [A=PMEM, B=SMEM]: A

----- REMOVE FILES: PMEM DEVICE -----

1. Remove SDxload ( bbbbbbb bytes) 1 NPCs using load!
- Q. QUIT

Enter File number to remove, or "Q" to QUIT: 1

Can't remove file SDxload, there are 1 NPCs using this load

Menu Display 9:

Quitting the INSTALL menu:

\*\*\*\*\* DSP PLATFORM - LOAD INSTALLATION UTILITY \*\*\*\*\*

1. List DSPP Load Files
2. Install DSPP Load Files
3. Remove DSPP Load Files

Enter number of command [1-3], or Q to QUIT:Q

INSTALL QUIT

## Command

---

[I.55721]

INSTALL;



### **Completion Message**

---

[O.55721]

<install menu> and <user responses>  
INSTALL QUIT

### **Denial Message**

---

M hh:mm:ss xy,ww n[vv] INSTALL 2 LN MSG:  
[MUST BE USER DAX OR HAVE RMON PRIVILEGE TO USE INSTALL DNY]  
[FRAME MUST BE IN MCOND TO USE INSTALL DNY]

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

#### **INSTALL**

- Invoke the install menu to list, install, upgrade, or remove application files.

**g.ii.rr** - Generic.issue.release string that identifies the version of the application

**SDx** - The "x" in the type field SDx identifies the application

**SD1** X.50/X.57 Subrate application

**SD3** Digital Multipoint Bridge application

**SD4** DDS Subrate and Multipoint Junction Unit application

**SDx** Any future application with identity "x"

**bbbbbb** - Number of bytes in this version of the application

## **INVALID,SFW,ID,BLOCK,COND**

### **INVALID SOFTWARE IDENTIFICATION BLOCK**

#### **Explanation Of Command**

This message indicates that either a software identification block check failed or that a mismatch exists in the generic number, point issue, or release number.

#### **Command**

Not applicable.

#### **Completion Message**

[O.01291]

**I hh:mm:ss xy,ww INVALID SFW ID BLOCK COND cc COMPL**

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**SFW** - Software

**ID** - Identification

**BLOCK** - Block

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                                      |
|-----------|------------------------------------------------------|
| <b>20</b> | <b>Software Identification Block is not readable</b> |
|-----------|------------------------------------------------------|

|           |                                                            |
|-----------|------------------------------------------------------------|
| <b>21</b> | <b>Software Identification Block failed<br/>comparison</b> |
|-----------|------------------------------------------------------------|

|           |                                |
|-----------|--------------------------------|
| <b>22</b> | <b>Release number mismatch</b> |
|-----------|--------------------------------|

|           |                              |
|-----------|------------------------------|
| <b>23</b> | <b>Point number mismatch</b> |
|-----------|------------------------------|

|           |                                    |
|-----------|------------------------------------|
| <b>24</b> | <b>PDI Version number mismatch</b> |
|-----------|------------------------------------|

|           |                                               |
|-----------|-----------------------------------------------|
| <b>A5</b> | <b>FPI on SMEM does not match one on PMEM</b> |
|-----------|-----------------------------------------------|

## **LINE**

---

### **QUERY LINE NUMBER**

#### **Explanation Of Command**

---

This command retrieves the current line number and the total number of lines within the macro while in a macro session.

#### **Command**

---

[I.19071]

**LINE[:FRM xy,SEQ ww:]!**

#### **Completion Message**

---

[O.19071]

**M hh:mm:ss xy,ww n[vv] LINE <line pointer> TOTAL \  
<line total> COMPL**

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**LINE** - Line

**line pointer**

- Current line number

**TOTAL** - Total

**line total**

- Total number of lines within the macro

## **LIST,END**

### **LIST MACRO CONTENTS**

#### **Explanation Of Command**

This command is used to list the contents of a macro. If neither a range of line numbers nor END is specified then the line pointed to by the line pointer (the current line) is listed.

#### **Command**

[I.19061]

```
LIST[:FRM xy,SEQ ww:{<starting line>|END}[-{<ending line>|\
END}]]!
```

#### **Completion Message**

If the macro contains no component command,

[O.19061]

```
M hh:mm:ss xy,ww n[vv] LIST[{<starting line>|\
END}[-{<ending line>|END}]] NONE COMPL
```

If the macro contains one or more component commands,

[O.19062]

```
M hh:mm:ss xy,ww n[vv] LIST[{<starting line>|\
END}[-{<ending line>|END}]] e LN MSG:
00001 <first 65 characters of 1st component command text>
 <remaining characters of 1st component command text>
 .
 .
 .
mmmmm <first 65 characters of mth component command text>
 <remaining characters of mth component command text> \
{EOM|COMPL}

M hh:mm:ss xy,ww n[vv] LIST[<starting line>\
[-<ending line>]] e LN MSG:
nnnnn <first 65 characters of nth component command text>
 <remaining characters of nth component command text>
 .
 .
 .
ppppp <first 65 characters of pth component command text>
 <remaining characters of pth component command text> \
{EOM|COMPL}

M hh:mm:ss xy,ww n[vv] LIST[<starting line>\
[-<ending line>]] e LN MSG:
qqqqq <first 65 characters of qth component command text>
 <remaining characters of qth component command text>
 .
 .
 .
zzzzz <first 65 characters of zth component command text>
 <remaining characters of zth component command text> \
COMPL
```

### Denial Message

[O.19061.01]

```
M hh:mm:ss xy,ww n[vv] LIST[{<starting line>|\
END}[-{<ending line>|END}]] COND cc DNY
```

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

### **starting line**

- Beginning line number of a line range (1, 2, ..., n)

Starting line indicates the line number of the first line of a range of lines within a macro that are to be listed.

### **ending line**

- Ending line number of a line range (2, 3, ..., n+1)

Ending line indicates the line number of the last line of a range of lines within a macro that are to be deleted.

**END** - End

Line number of the line at the end of the macro.

**00001,**

**mmmmm,**

**nnnnn,**

**ppppp,**

**qqqqq,**

**zzzzz** - Component command line numbers (00001 through 99999)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**6B** Invalid line number

**6E** No edit session active



## **LOGIN,USER,PASSWD**

### **LOG ON TO DACS II**

#### **Explanation Of Command**

**Note:** Before logging on to DACS II for the first time, it is suggested that the user thoroughly read the documentation for this message.

This command allows a user or frame administrator to identify himself/herself to DACS II by an identification code, the **user id**, on any link.

DACS II checks the user id and password against entries previously stored in the data base. If the user is not authorized, DACS II will deny the input command.

A user can log on to DACS II from more than one link.

*If on a Snider administrative link, the command must be entered as follows:*

**LOGIN:FRM xy,SEQ ww:USER <user id>!**

The DACS II system will respond with the following dialogue:

PASSWD: The user enters a password. Note that the password is not echoed by DACS II.

*If on an X.25 administrative link, the command must be entered as follows:*

**LOGIN:FRM xy,SEQ ww:USER <user id>,PASSWD <user password>!**

Output from this command is sent only to the link on which the command was input.

### **Command**

---

[I.39001]

**LOGIN:FRM xy,SEQ ww:USER <user id>[,PASSWD <user password>]!**

If the user is on a Snider protocol administrative link, the message is entered as follows:

[I.39001]

**LOGIN:FRM xy,SEQ ww:USER <user id>!**

Then DACS II will prompt the following:

**PASSWD: <user enters the user password>**

### **Completion Message**

---

[O.39001]

**M hh:mm:ss xy,ww n[vv] LOGIN USER <user id> COMPL**

#### **WARNING MESSAGE**

**THIS SYSTEM IS RESTRICTED TO [Lucent Technologies ]AUTHORIZED USERS FOR BUSINESS PURPOSES. UNAUTHORIZED ACCESS IS A VIOLATION OF THE LAW. THIS SERVICE MAY BE MONITORED FOR ADMINISTRATIVE AND SECURITY REASONS. BY PROCEEDING, YOU CONSENT TO THIS MONITORING.**

### **Denial Message**

---

[O.39001.01]

**M hh:mm:ss xy,ww n[vv] LOGIN USER <user id> COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**USER** - User

**user id**

- User identifier

The user login identification (two to eight alphabetic characters)

**PASSWD** - Password

**user password**

- User password (at least six alphanumeric characters)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**D3** User does not exist

**D4** A user is already logged in on the link/vc

**D6** Incorrect or missing password

## **LOGOFF,USER,LINK,INCL**

### **LOG OFF USER OR LINK**

#### **Explanation Of Command**

This command requests DACS II to log off a user or a link. A user is specified by his or her **<user id>**; a link, by its physical link number. The virtual circuit number is optional. The INCL keyword is also optional. The virtual circuit number and INCL are mutually exclusive. The INCL keyword must be specified to log off all virtual circuits of an X.25 link (5 or 6).

The DACS II frame administrator can use the **<user id>** option from any link to log off any user on another link. If the user is logged in on more than one link and is not the frame administrator, DACS II will log the user off every link. An autonomous message will appear on the user's link if the frame administrator logs a user out.

Output from this command is sent only to the link on which the command was input.

#### **Command**

[I.39101]

**LOGOFF:FRM xy,SEQ ww:{USER <user id>|LINK j[mm][,INCL]}!**

#### **Completion Message**

[O.39101]

**M hh:mm:ss xy,ww n[vv] LOGOFF {USER <user id>|LINK j[mm][,INCL]} \**  
**COMPL**

### **Denial Message**

---

[O.39101.01]

**M** hh:mm:ss xy,ww n[vv] LOGOFF {USER <user id>|LINK j[mm][,INCL]} \\  
**COND** cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**USER** - User

**user id**

- User identifier (two to eight alphabetic characters)

User login identification

**TERM** - Terminal (link)

**LINK** - Link

**j [mm]** - Administrative link number

**j** - Physical link number (1 through 6)

**mm** - Virtual circuit number (01 through 16)

The virtual circuit number must be entered when logging off a single virtual circuit of an X.25 link.

**INCL** - Inclusive

Include virtual circuits of links 5 and 6. The INCL keyword can only be entered with X.25 links 5 and 6, and no virtual circuit number is allowed when this keyword is used. That is, "mm" and "INCL" are mutually exclusive. In addition, the INCL keyword is also mutually exclusive with the "<user id>". When the INCL keyword is entered, it means that the logoff applies to all the virtual circuits of X.25 link (5 or 6).

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

- D3** User does not exist
- D5** No user is logged in on the link/vc
- D7** Cannot execute privileged command
- DA** User is not logged in
- E1** Virtual circuit is not specified for X.25 link
- E2** Invalid link number specified
- E3** Invalid keyword(s) combination specified

---

**Contents**

|                                         |       |
|-----------------------------------------|-------|
| <b>MC,MCOND</b>                         | 13-2  |
| ■ Explanation Of Command                | 13-2  |
| ■ Command                               | 13-2  |
| ■ Completion Message                    | 13-2  |
| ■ Denial Message                        | 13-2  |
| ■ Autonomous Message                    | 13-2  |
| ■ Explanation Of Parameters             | 13-3  |
| <b>MC,RESET,RELEASE,ISSUE,FPKG,COND</b> | 13-4  |
| ■ Explanation Of Command                | 13-4  |
| ■ Command                               | 13-4  |
| ■ Completion Message                    | 13-4  |
| ■ Denial Message                        | 13-4  |
| ■ Autonomous Message                    | 13-4  |
| ■ Explanation Of Parameters             | 13-5  |
| <b>MOVE,FROM,END,TO</b>                 | 13-8  |
| ■ Explanation Of Command                | 13-8  |
| ■ Command                               | 13-8  |
| ■ Completion Message                    | 13-8  |
| ■ Denial Message                        | 13-8  |
| ■ Autonomous Message                    | 13-9  |
| ■ Explanation Of Parameters             | 13-9  |
| <b>MP,STARTUP,STF,ATP</b>               | 13-10 |
| ■ Explanation Of Command                | 13-10 |
| ■ Command                               | 13-10 |
| ■ Completion Message                    | 13-10 |
| ■ Denial Message                        | 13-10 |

---

## Contents

|                             |       |
|-----------------------------|-------|
| ■ Autonomous Message        | 13-10 |
| ■ Explanation Of Parameters | 13-11 |
| <b>MTC,STF,ATP</b>          | 13-12 |
| ■ Explanation Of Command    | 13-12 |
| ■ Command                   | 13-12 |
| ■ Completion Message        | 13-12 |
| ■ Denial Message            | 13-12 |
| ■ Autonomous Message        | 13-12 |
| ■ Explanation Of Parameters | 13-13 |



---

## **MC — MTC**

---

## **MC — MTC**

---

This section documents the commands **MC** through **MTC**.

## **MC,MCOND**

---

### **UTILITIES**

#### **Explanation Of Command**

---

This autonomous message reports that the Main Controller is in maintenance condition during the boot process.

#### **Command**

---

Not applicable.

#### **Completion Message**

---

Not applicable.

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

[O.58011]

I hh:mm:ss xy,ww MC MCOND

### **Explanation Of Parameters**

---

**MC** - Main controller

**MCOND** - Maintenance condition

## **MC,RESET,RELEASE,ISSUE,FPKG,COND**

### **MAIN CONTROLLER RESET RELEASE DACS II ISSUE**

#### **Explanation Of Command**

This message is used to report that the reset procedure has successfully completed.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01261]

I hh:mm:ss xy,ww n[vv] MC RESET RELEASE DACSIgg.pp ISSUE r \\  
2 LN MSG:  
FPKG kkttuuvv [COND cc] COMPL

## Explanation Of Parameters

---

**MC** - Main controller

**RESET** - Reset

**RELEASE**  
- Release

**ISSUE** - Issue

**gg.pp** - DACS II software release number

**r** - Software issue number of the release

**FPKG** - Feature package

**kkttuuvv**  
- Feature package identification (Hex)

|          |                                               |
|----------|-----------------------------------------------|
| 00000001 | DS1                                           |
| 00000002 | CEPT                                          |
| 00000004 | Subrate                                       |
| 00000008 | Direct SLC® 96 and Series 5 Carrier Interface |
| 00000010 | DS3 Terminations                              |
| 00000020 | Enhanced CEPT                                 |
|          | C-bit                                         |
|          | C-bit filtering                               |
|          | RPSFI                                         |
| 00000040 | Switched Teleconferencing                     |
| 00000080 | CEF                                           |
| 00000100 | Enhanced DS1 Performance Monitoring           |
| 00000200 | DS0/DS1 Roll                                  |
| 00000400 | Security Warning Message                      |
| 00000800 | Nx64kbit Test Access                          |
| 00001000 | Clear 2MB/s Interface                         |
| 00002000 | TS0 to Non-TS0 Cross-connection               |
| 00004000 | 2MB/S Roll                                    |
| 00008000 | SPARE                                         |
| 00010000 | TRT/FT Features                               |
|          | Intervention Level                            |
| 00020000 | DS3 Hybrid                                    |

In general a feature package identification code is a combination of several individual feature package numbers. To determine the individual features that make up a feature package it is necessary to decode the feature package identification code. This code is an eight digit hexadecimal number. Each hexadecimal number represents a four-bit binary number. Within this binary number each feature is associated with one particular bit. Consequently to determine the feature list from a feature package identification code it is necessary to convert each hexadecimal digit to its binary equivalent and look up the features in the list above. For example the feature package identification code 0000000F can be converted to the following binary number working from left to right one hex digit at a time.

0000 0000 0000 0000 0000 0000 0000 1111

This number contains eight binary numbers each representing one of the hexadecimal numbers in the feature package identification code 0000000F. The rightmost number of the code contains four features since there are four bits set to one. This would be decoded as follows using the table of features above.

|       | binary | hex | Feature                      |
|-------|--------|-----|------------------------------|
|       | 0001   | 1   | DS1                          |
|       | 0010   | 2   | CEPT                         |
|       | 0100   | 4   | Subrate                      |
|       | 1000   | 8   | Direct SLC                   |
| Total | 1111   | F   | (DS1 + CEPT + Subrate + SLC) |

**COND** - Condition

**DACSII** - Digital access and crossconnect system II

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 46** Failed to boot CONF file
- 47** Failed to boot DB
- 48** Failed to boot journal--recurrence indicates database corruption
- 49** Failed to boot unit
- 4A** SMEM error, boot from PMEM
- 4B** PMEM error, boot from SMEM
- 4C** Failed to boot CI
- 51** General boot failure (vanilla flavor)
- 18** DSPI not equipped, not in service, or failed
- 20** Software Identification Block is not readable
- 21** Software Identification Block failed comparison
- 22** Release number mismatch
- 23** Point number mismatch

**cc**    *Explanation*

- 24**    PDI Version number mismatch
- 4D**    MP database not consistent with Configuration file
- 52**    Database is empty
- 3F**    G4 to G4.1 retrofit failed
- 91**    Can't mount or unmount SMEM
- 92**    Can't mount or unmount PMEM

## **MOVE, FROM, END, TO**

### **MOVE MACRO LINES**

#### **Explanation Of Command**

This command is used to move one or more lines and place them after a specified line in the macro while in a macro session.

If only one line is specified, the **starting line** or **END**, then only that line is moved to **destination line**.

#### **Command**

[I.19091]

```
MOVE:FRM xy,SEQ ww:FROM {<starting line>|END}\
[-{<ending line>|END}],TO {<destination line>|END}!
```

#### **Completion Message**

[O.19091]

```
M hh:mm:ss xy,ww n[vv] MOVE FROM {<starting line>|END}\
[-{<ending line>|END}] TO {<destination line>|END} COMPL
```

#### **Denial Message**

[O.19091.01]

```
M hh:mm:ss xy,ww n[vv] MOVE FROM {<starting line>|END}\
[-{<ending line>|END}] TO {<destination line>|END} COND cc \
DNY
```



### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**FROM** - From

#### **starting line**

- Beginning line number of a line number range (1, 2, ..., n)

Starting line indicates the first line of the group of lines to be moved.

#### **ending line**

- Ending line number of a line number range (2, 3, ..., n+1)

Ending line indicates the end line of the group of lines to be moved.

**END** - End

END is a special line number that marks the position of the last line in the macro. If END is specified in place of ending line then the lines from starting line through END will be moved to destination line.

If END is specified as destination line then the line range specified in the command will be moved, as a unit, to the line following END.

The line number associated with END will change to the new line number of the last line moved.

**TO** - To

#### **destination line**

- Destination line number for the move (0, 1, 2, ..., n)

The first line of the lines to be moved will be placed on the line following destination line.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**6B**    Invalid line number

## **MP,STARTUP,STF,ATP**

### **STARTUP**

#### **Explanation Of Command**

This message indicates that The main processor has initialized itself, established local area network communications between itself and the communications interface or the enhanced communications interface and has performed self-diagnostics. The results of these diagnostics are reported as some tests failed or all tests passed.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01221]

**MP STARTUP {STF|ATP}**

### **Explanation Of Parameters**

---

**MP** - Main processor

**STARTUP**

- Startup

Indicates initialization

**STF** - Some tests failed

**ATP** - All tests passed

## **MTC,STF,ATP**

### **MAINTENANCE**

#### **Explanation Of Command**

This message indicates that the maintenance controller has initialized itself and has performed self-diagnostics. The results of these diagnostics are reported as some tests failed or as all tests passed passed.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01281]

**MTC {STF|ATP}**

**Explanation Of Parameters**

---

**MTC** - Maintenance circuit

**STF** - Some tests failed

**ATP** - All tests passed



---

**Contents**

|                                             |              |
|---------------------------------------------|--------------|
| <b>OCNT,FROM,TO,MPM,NAM,CUS,INCL,RDC</b>    | <b>14-2</b>  |
| ■ Explanation Of Command                    | 14-2         |
| ■ Command                                   | 14-2         |
| ■ Nonhierarchical                           | 14-2         |
| ■ Hierarchical                              | 14-2         |
| ■ Completion Message                        | 14-3         |
| ■ Nonhierarchical                           | 14-3         |
| ■ Hierarchical                              | 14-3         |
| ■ Denial Message                            | 14-3         |
| ■ Nonhierarchical                           | 14-3         |
| ■ Hierarchical                              | 14-3         |
| ■ Autonomous Message                        | 14-4         |
| ■ Explanation Of Parameters                 | 14-4         |
| <b>OCNT,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT</b> | <b>14-11</b> |
| ■ Explanation Of Command                    | 14-11        |
| ■ Command                                   | 14-11        |
| ■ Nonhierarchical                           | 14-11        |
| ■ Hierarchical                              | 14-11        |
| ■ Completion Message                        | 14-12        |
| ■ Nonhierarchical                           | 14-12        |
| ■ Hierarchical                              | 14-12        |
| ■ Denial Message                            | 14-12        |
| ■ Nonhierarchical                           | 14-12        |
| ■ Hierarchical                              | 14-13        |
| ■ Autonomous Message                        | 14-13        |
| ■ Explanation Of Parameters                 | 14-13        |

---

## Contents

|                                             |       |
|---------------------------------------------|-------|
| <b>OCNT,FROM,TO,RDC,CUS,INCL,PRIOUT</b>     | 14-21 |
| ■ Explanation Of Command                    | 14-21 |
| ■ Command                                   | 14-21 |
| ■ Nonhierarchical                           | 14-21 |
| ■ Hierarchical                              | 14-21 |
| ■ Completion Message                        | 14-22 |
| ■ Nonhierarchical                           | 14-22 |
| ■ Hierarchical                              | 14-22 |
| ■ Denial Message                            | 14-22 |
| ■ Nonhierarchical                           | 14-22 |
| ■ Hierarchical                              | 14-22 |
| ■ Autonomous Message                        | 14-22 |
| ■ Explanation Of Parameters                 | 14-23 |
| <b>OCON,FROM,TO,MPM,CUS,INCL,RDC,NAM</b>    | 14-26 |
| ■ Explanation Of Command                    | 14-26 |
| ■ Command                                   | 14-26 |
| ■ Nonhierarchical                           | 14-26 |
| ■ Hierarchical                              | 14-26 |
| ■ Completion Message                        | 14-27 |
| ■ Nonhierarchical                           | 14-27 |
| ■ Hierarchical                              | 14-27 |
| ■ Denial Message                            | 14-27 |
| ■ Nonhierarchical                           | 14-27 |
| ■ Hierarchical                              | 14-27 |
| ■ Autonomous Message                        | 14-28 |
| ■ Explanation Of Parameters                 | 14-28 |
| <b>OCON,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT</b> | 14-35 |
| ■ Explanation Of Command                    | 14-35 |
| ■ Command                                   | 14-35 |
| ■ Nonhierarchical                           | 14-35 |
| ■ Hierarchical                              | 14-35 |
| ■ Completion Message                        | 14-36 |
| ■ Nonhierarchical                           | 14-36 |
| ■ Hierarchical                              | 14-36 |
| ■ Denial Message                            | 14-36 |
| ■ Nonhierarchical                           | 14-36 |
| ■ Hierarchical                              | 14-36 |
| ■ Autonomous Message                        | 14-37 |



---

## Contents

|                                         |       |
|-----------------------------------------|-------|
| ■ Explanation Of Parameters             | 14-37 |
| <b>OCN,FROM,TO,RDC,CUS,INCL,PRIOUT</b>  | 14-45 |
| ■ Explanation Of Command                | 14-45 |
| ■ Command                               | 14-45 |
| ■ Nonhierarchical                       | 14-45 |
| ■ Hierarchical                          | 14-45 |
| ■ Completion Message                    | 14-46 |
| ■ Nonhierarchical                       | 14-46 |
| ■ Hierarchical                          | 14-46 |
| ■ Denial Message                        | 14-46 |
| ■ Nonhierarchical                       | 14-46 |
| ■ Hierarchical                          | 14-46 |
| ■ Autonomous Message                    | 14-46 |
| ■ Explanation Of Parameters             | 14-47 |
| <b>ODIS,FROM,TO,INCL,OOS,DCC</b>        | 14-50 |
| ■ Explanation Of Command                | 14-50 |
| ■ Command                               | 14-50 |
| ■ Nonhierarchical                       | 14-50 |
| ■ Hierarchical                          | 14-50 |
| ■ Completion Message                    | 14-50 |
| ■ Nonhierarchical                       | 14-50 |
| ■ Hierarchical                          | 14-51 |
| ■ Denial Message                        | 14-51 |
| ■ Nonhierarchical                       | 14-51 |
| ■ Hierarchical                          | 14-51 |
| ■ Autonomous Message                    | 14-51 |
| ■ Explanation Of Parameters             | 14-52 |
| <b>ODIS,FROM,TO,INCL,OOS,DCC,PRIOUT</b> | 14-57 |
| ■ Explanation Of Command                | 14-57 |
| ■ Command                               | 14-57 |
| ■ Nonhierarchical                       | 14-57 |
| ■ Hierarchical                          | 14-57 |
| ■ Completion Message                    | 14-57 |
| ■ Nonhierarchical                       | 14-57 |
| ■ Hierarchical                          | 14-58 |
| ■ Denial Message                        | 14-58 |
| ■ Nonhierarchical                       | 14-58 |
| ■ Hierarchical                          | 14-58 |

---

## Contents

|                                            |       |
|--------------------------------------------|-------|
| ■ Autonomous Message                       | 14-58 |
| ■ Explanation Of Parameters                | 14-59 |
| <b>ODIS,FROM,TO,OOS,INCL,PRIOUT</b>        | 14-63 |
| ■ Explanation Of Command                   | 14-63 |
| ■ Command                                  | 14-63 |
| ■ Nonhierarchical                          | 14-63 |
| ■ Hierarchical                             | 14-63 |
| ■ Completion Message                       | 14-63 |
| ■ Nonhierarchical                          | 14-63 |
| ■ Hierarchical                             | 14-64 |
| ■ Denial Message                           | 14-64 |
| ■ Nonhierarchical                          | 14-64 |
| ■ Hierarchical                             | 14-64 |
| ■ Autonomous Message                       | 14-64 |
| ■ Explanation Of Parameters                | 14-65 |
| <b>OVERLOAD,MP,CI,UNIT,UC,TN,PROCESSOR</b> | 14-68 |
| ■ Explanation Of Command                   | 14-68 |
| ■ Command                                  | 14-68 |
| ■ Completion Message                       | 14-68 |
| ■ Denial Message                           | 14-68 |
| ■ Autonomous Message                       | 14-69 |
| ■ Explanation Of Parameters                | 14-70 |

---

## **OCNT — OVERLOAD**

---

### **OCNT — OVERLOAD**

This section documents the commands **OCNT** through **OVERLOAD**.

## **OCNT, FROM, TO, MPM, NAM, CUS, INCL, RDC**

### **ONE-WAY CROSS-CONNECT TERMINATED MULTIPOINT CIRCUIT**

#### **Explanation Of Command**

This message requests a leg to be one-way terminated and cross-connected to a multipoint circuit. The terminated cross-connection means that the circuit will be set up in the terminated state with the disconnect channel code inserted in both directions of transmission.

The backbone and broadcast terminations are on the virtual NPCs.

For both NSA and CAS primaries, the channel numbering range, ddd and eee, is 001 to 030 and jjj is from 001 to 999. Only TRSP channels are allowed for CAS primaries. For CAS primaries, the spare bits of the signaling channel (timeslot 16) are cross-connected by using the value of 031 for both directions.

#### **Command**

##### **Nonhierarchical**

[|.12121]

OCNT:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,{CUS|INCL}][,RDC]!

##### **Hierarchical**

[|.12121]

OCNT:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\  
MPM(fmd,tmd)[,<tc>][,NAM][,{INCL|CUS}][,RDC]!

## **Completion Message**

---

### **Nonhierarchical**

---

[O.12121]

M hh:mm:ss xy,ww n[vv] OCNT [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
2 LN MSG:  
fmd,tmd[ <tc>][ NOBBL {F|T}][ CUS][ RDC][ NAM] COMPL

### **Hierarchical**

---

[O.12121]

M hh:mm:ss xy,ww n[vv] OCNT uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
2 LN MSG:  
fmd,tmd[ <tc>][ NOBBL {F|T}][ CUS][ RDC][ NAM] COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.12121.01]

M hh:mm:ss xy,ww n[vv] OCNT [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,nnn] cc <st> DNY

[O.12121.02]

M hh:mm:ss xy,ww n[vv] OCNT [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,nnn] d <st> DNY

### **Hierarchical**

---

[O.12121.01]

M hh:mm:ss xy,ww n[vv] OCNT uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
[ mmm,nnn] cc <st> DNY

[O.12121.02]

M hh:mm:ss xy,ww n[vv] OCNT uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
[ mmm,nnn] d <st> DNY

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**FROM** - From

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**TO** - To

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical FROM NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

|           |          |                                       |
|-----------|----------|---------------------------------------|
| Unit      | Module   | NPC                                   |
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

**ddd,**  
**jjj** - FROM channel numbers  
**eee,**  
**kkk** - TO channel numbers denoting end of range specification

Channel numbers

000-030 CEPT type NPCs grown as CAS  
000-031 CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Conference numbers

001-500 (Virtual NPC)

**MPM** - Multipoint mode

**fmd** - FROM mode

**tmd** - TO mode

Modes fmd and tmd set the modes of the FROM and TO ends of the circuit. There are three possible values of fmd and tmd:

**fmd**

**tmd** *Explanation*

|     |                                                                                         |
|-----|-----------------------------------------------------------------------------------------|
| LEG | Nonvirtual circuit end of the cross-connections. Must be an FTU, DS3U or HDS3U channel. |
| BRD | Nonbackbone leg of a virtual conference. Must be a virtual NPC channel.                 |
| BBL | Backbone leg of a virtual conference. Must be a virtual NPC channel.                    |



For OCNT multipoint circuits, there are two valid combinations for fmd and tmd:

**fmd, tmd**

(LEG,BBL) - for the backbone leg of a broadcast multipoint circuit  
(BRD,LEG) - for the broadcast legs of the multipoint circuit.

**Note:** Default values for noise guard (NG) and echo suppression (ES) are applied to symmetrical bridges (multipoint mode SYM) and polling circuits (multipoint mode BBL,BRD). These default values are:

|                     |             |             |
|---------------------|-------------|-------------|
| Symmetrical bridges | NG = -18 db | ES = -18 db |
| Polling circuits    | NG = 0 db   | ES = 0 db   |

**NOBBL** - No Backbone Leg

**F** - From

**T** - To

**tc** - Trunk conditioning

Represents the desired cross-connected signaling and insertion word applied when a failure occurs. The tc options allowed are as follows:

| <i>tc</i>    | <i>Explanation</i>                         |
|--------------|--------------------------------------------|
| TRSP,IW X'pq | no signaling, insertion word pattern of pq |
| TRSP         | no signaling                               |

All leg connections to multipoint circuits using a virtual NPC must use TRSP signaling (no signaling). The insertion word (IW) portion is user specified and may be varied from leg to leg.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Multi-Point:*

**E1 to E1** Multi-point cross-connects have A-law to  $\mu$ -law and  $\mu$ -law to A-law set as a default. This conversion is performed on pure E1 multi-point connections in case a DS1 leg is ever added to the broadcast connection. The **NAM** keyword is used to disable the conversions. It may be desirable to disable conversions in a pure E1 multi-point cross-connect since such a connection has more quantization noise than a pure E1 two-point cross-connect. This is due to the back to back A-law to  $\mu$ -law and  $\mu$ -law to A-law conversions which are taking place.

**E1 to DS1 or DS1 to E1** Same explanation as E1 to E1.

**DS1 to DS1** Not applicable.

**CUS** - Customer

The optional CUS keyword indicates a Customer Controlled Circuit. All legs on a multipoint Customer-Controlled circuit must be designated as CUS.

A disconnected termination previously marked CUS remains as a Customer Controlled termination.

**INCL** - Inclusive

The INCL keyword must be used to reconnect this termination to other terminations. However, if they are reconnected without the CUS keyword, they lose their Customer Controlled status.

**RDC** - Red circuit

If the optional RDC field is present, the circuit will be flagged as a Red Circuit. All legs on a multipoint Red Circuit must be designated RDC.

**mmm** - FROM channel number involved in the denial (ddd through eee)

**nnn** - TO channel number involved in the denial (jjj through kkk)

**d** - Direction

|   |             |
|---|-------------|
| d | Explanation |
| F | FROM        |
| T | TO          |
| B | Both        |

**st** - Status

**cc** - Hexadecimal condition code

| cc | st      | Explanation                                                           |
|----|---------|-----------------------------------------------------------------------|
| 06 | INERR   | Invalid range for specified FROM NPC type                             |
| 07 | INERR   | Invalid range for specified TO NPC type                               |
| 08 | INERR   | Invalid FROM NPC type for AIS insertion                               |
| 09 | INERR   | Invalid TO NPC type for AIS insertion                                 |
| 12 | MCOND   | Active CCN side not IS or failed or pested or hardware OOS            |
| 13 | MCOND   | UNIT not equipped, not in service, or failed                          |
| 14 | MCOND   | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| 15 | MCOND   | FTMI not equipped, not in service, or failed                          |
| 16 | MCOND   | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| 17 | MCOND   | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| 18 | MCOND   | DSPI not equipped, not in service, or failed                          |
| 20 | MCOND   | Line format types are incompatible                                    |
| 21 | MCOND   | Trunk conditioning is invalid                                         |
| 22 | MCOND   | FMC cannot be cross-connected in this format                          |
| 50 | INERR   | Trunk conditioning doesn't match that of conference                   |
| 51 | INERR   | CUS flag doesn't match that of conference                             |
| 52 | INERR   | RDC flag doesn't match that of conference                             |
| 70 | CONFERR | Try to add a BBL to VC, but the VC already has backbone               |
| 79 | CONFERR | Try to operate a TWO-WAY conference with an ONE-WAY input command     |
| 80 | CONFERR | Database conference width does not match the range in input command   |
| 83 | INERR   | Invalid input BBL in terminated TWOWAY/ONEWAY command                 |
| 84 | CONFERR | Trying to add or delete a leg when a conference is under test         |
| 85 | CONFERR | Input BRD (BBL) has same NPC and channel as BBL (BRD)                 |
| B0 | INERR   | Bad use of INCL, cannot override the current state of the conference  |
| D6 | INERR   | Invalid FROM channel number                                           |
| D7 | INERR   | Invalid TO channel number                                             |
| D9 | INERR   | Invalid FROM channel number range                                     |
| DA | INERR   | Invalid TO channel number range                                       |
| DC | INERR   | A loopback is active on the FROM termination                          |

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                |
|-----------|--------------|---------------------------------------------------|
| <b>DD</b> | <b>INERR</b> | A loopback is active on the TO termination        |
| <b>E8</b> | <b>INERR</b> | SC invalid for cross-connection specified         |
| <b>E9</b> | <b>INERR</b> | MUX or TRB invalid for cross-connection specified |
| <b>EA</b> | <b>INERR</b> | AIS invalid for cross-connection specified        |
| <b>EB</b> | <b>INERR</b> | NAM invalid for cross-connection specified        |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified    |
| <b>ED</b> | <b>INERR</b> | Invalid channel 031 cross-connection specified    |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled         |

| <b>st</b>   | <b>d</b>       | <i>Explanation</i>          |
|-------------|----------------|-----------------------------|
| <b>ASGN</b> | <b>{F T B}</b> | Termination assigned        |
| <b>CUS</b>  | <b>{F T B}</b> | Customer-controlled Circuit |
| <b>FAIL</b> | <b>{F T B}</b> | Failed                      |
| <b>OOS</b>  | <b>{F T B}</b> | Out-of-service              |
| <b>RDC</b>  | <b>{F T B}</b> | Red Circuit                 |
| <b>TG</b>   | <b>{F T B}</b> |                             |
| <b>TP</b>   | <b>{F T B}</b> | NPC is used for test access |
| <b>UEQD</b> | <b>{F T B}</b> | Unequipped                  |
| <b>UTST</b> | <b>{F T B}</b> | Under Test                  |

## **OCNT, FROM, TO, NAM, RDC, CUS, INCL, PRIOUT**

### **ONE-WAY CROSS-CONNECTION TERMINATE**

#### **Explanation Of Command**

For a CAS primary, the channel numbering range, ddd, eee, jjj and kkk is 000 to 030 and for NSA primaries, the channel numbering range is 000 to 031. If the 000 (timeslot 0) value is used, it must be used in both the FROM and TO sides of the cross-connect and only the bits reserved for national and international use will be cross-connected. If 031 is used in the TO side of the CAS primary, the FROM side must also be a CAS primary and only the spare bits will be cross-connected. If 031 is used in the TO side of an NSA, then any value except 000 can be used in the FROM side and all bits will be cross-connected.

#### **Command**

##### **Nonhierarchical**

[I.12101]

```
OCNT:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk]\
[,<tc>][,<sc>][,NAM][,RDC][,{CUS|INCL}][,PRIOUT]!
```

##### **Hierarchical**

[I.12101]

```
OCNT:FRM xy,SEQ ww:FROM uvmpddd[-eee],TO wxkqrjjj[-kkk]\
[,<tc>][,<sc>][,NAM][,RDC][,{CUS|INCL}][,PRIOUT]!
```

## **Completion Message**

---

### **Nonhierarchical**

---

[O.12101]

M hh:mm:ss xy,ww n[vv] OCNT [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ <tc>][ <sc>][ NAM][ RDC][ CUS][ PRIOUT] COMPL

[O.12102]

M hh:mm:ss xy,ww n[vv] OCNT [s]abcddd[-eee],[t]ghijjj[-kkk] \  
2 LN MSG:  
[<tc> ][<sc> ][NAM ][RDC ][CUS ][PRIOUT ]COMPL

### **Hierarchical**

---

[O.12101]

M hh:mm:ss xy,ww n[vv] OCNT uvmnp[-eee],wxkqrjjj[-kkk]\  
[ <tc>][ <sc>][ NAM][ RDC][ CUS][ PRIOUT] COMPL

[O.12102]

M hh:mm:ss xy,ww n[vv] OCNT uvmnpddd[-eee],wxkqrjjj[-kkk] \  
2 LN MSG:  
[<tc> ][<sc> ][NAM ][RDC ][CUS ][PRIOUT ]COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.12101.01]

M hh:mm:ss xy,ww n[vv] OCNT [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.12101.02]

M hh:mm:ss xy,ww n[vv] OCNT [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] d <st> DNY

## Hierarchical

[O.12101.01]

**M** hh:mm:ss xy,ww n[vv] OCNT uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.12101.02]

**M** hh:mm:ss xy,ww n[vv] OCNT uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] d <st> DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**FROM** - From

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**TO** -To

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number

**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The values are listed below:



PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

ddd,  
jjj  
eee,  
kkk

- Channel numbers, denoting the beginning of a range  
- Channel numbers, denoting the end of a range

|         |                             |
|---------|-----------------------------|
| 000-030 | CEPT type NPCs grown as CAS |
| 000-031 | CEPT type NPCs grown as NSA |

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Channel 000 is not allowed in a range of channels and CAS channel 031 (that is, TS16 of a CEPT type NPC) is also not allowed in a range of channel numbers.

**tc** - Trunk conditioning specification

This specifies the signaling and insertion word to be applied to the cross-connection when a failure occurs. In the input command the signaling and insertion word specifications are entered separately, with a comma as the delimiter. An example of tc is "TC(----,mnop),TRB". The following signaling options are allowed:

| signaling          | Explanation                                                                                                                                                                           |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TC(----,mnop)      | One-way, 4-state signaling in binary. For CEPT type framing format, software will expand 4-state to 16-state by duplicating the format on the remaining frames on a superframe.       |
| TC(-----,mnopqrst) | One-way, 16-state signaling in binary. Only valid for CEPT framing formats.                                                                                                           |
| TC(X'--,X'cd)      | One-way, 16-state signaling in hexadecimal                                                                                                                                            |
| TRSP               | Transparent, no signaling                                                                                                                                                             |
| Omitted            | Defaults to TC(X'--,X'FF) if both terminations are channel associated signaling (CAS) type. It will default to TRSP if one of the terminations is nonsignaling associated (NSA) type. |

The following insertion word options are allowed:

| <i>insertion word</i> | <i>Explanation</i>                                                                                                                      |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq               | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line |
| Omitted               | Will default to IW X'FF.                                                                                                                |

Additional rules apply for CEPT cross-connection. (See Tables A and B.)

#### **TC** - Trunk conditioning

When the DCC option is provided in GRTH::NPC, a 4-bit pattern is inserted into the associated portion of time slot 16 for CAS circuits when the circuit is disconnected.

#### **CAS** - Channel associated signaling in time slot 16

#### **TRSP** - No signaling sent out in the associated portion of time slot 16 for CAS primaries. TRSP is the only option for NSA primaries.

**Table 14-1. Allowable Signaling Type and Signaling Consequent Action**

| Primary Type in Cross-connect | Allowable <tc> Signaling Specification | Resulting Signaling Code<br><br>FROM, TO    | Resulting Signaling Consequent Action (Hardware)<br>FROM, TO | Resulting Signaling Consequent Action (Firmware)<br>FROM, TO | Resulting Disconnect (When DCC used in disconnect command) |
|-------------------------------|----------------------------------------|---------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|
| CAS ↔ CAS                     | <b>TRSP</b>                            | Fixed at <b>X'D</b>                         | Fixed at <b>X'D</b>                                          | Fixed at <b>X'D</b>                                          | <b>X'D</b>                                                 |
|                               | <b>TC-X'uv, X'yz*</b>                  | CAS (Passed Through)                        | <b>X'F</b>                                                   | <b>X'uv, X'yz</b>                                            | <b>X'v, X'z</b>                                            |
|                               | Omitted                                | CAS (Passed Through)                        | <b>X'F</b>                                                   | <b>X'F</b>                                                   | <b>X'F</b>                                                 |
| NSA ↔ CAS                     | <b>TRSP/Omitted</b>                    | None (Fixed at <b>X'D</b> in CAS direction) | Fixed at <b>X'D</b> in CAS direction                         | Fixed at <b>X'D</b> in CAS direction                         | <b>X'D</b> in CAS direction                                |
| NSA ↔ NSA                     | <b>TRSP/Omitted</b>                    | Not appl.                                   | Not appl.                                                    | Not appl.                                                    | Not appl.                                                  |

\* For TCON and TCNT TC is X'uv, X'yz.  
For OCON, OCNT and BCON TC is --, X'yz.

**Table 14-2. Allowable Cross-Connected Time slot Consequent Action**

| Allowable <tc> Time slot X-connect keyword | Resulting Cross-Connected Time slot Consequent Action TO | Resulting Disconnect Code (when DCC used in disconnect command) |
|--------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------|
| Omitted                                    | X'FF                                                     | X'FF                                                            |
| IW X'pq*                                   | X'FF                                                     | X'pq                                                            |

\* Only used as a means of providing per time slot DCC codes. If the DCC code is not used when issuing the disconnect command, then the insertion word at the time the NPC was grown is used. This growth insertion word defaults to hex "D5" if not explicitly specified at growth time.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result

of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**sc** - Signaling control

The variable **sc** represents the optional signaling bit control specification and is used only in the Channel Associated Signaling (CAS) to CAS application with CAS signaling.

If this option is not used, all four cross-connected time slot 16 (**abcd**) signaling bits in each direction will be cross-connected unchanged.

Signaling control is specified as follows:

**SC(----,efgh)**

efgh - To direction

Where **efgh** represents the four time slot 16 signaling bits to be controlled. All 4 bits can be controlled independently. Control is applied by replacing each character in the variable **efgh** with the appropriate control character.

The allowable control characters are:

*Bit*

*Setting Explanation*

|          |                        |
|----------|------------------------|
| <b>P</b> | Pass through unchanged |
| <b>V</b> | Pass through inverted  |
| <b>0</b> | Set output to 0        |
| <b>1</b> | Set output to 1        |

The effect of the **V** control character depends upon whether the connection is international or gateway.

International: Inversion takes place on both the From and To directions. The net effect is to cancel out the inversion. Hence it will appear that no inversion took place.

Gateway: Inversion takes place only on the international side of the connection. The effect is an inversion.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Two-Point:*

E1 to DS1 Gateway cross-connects have A-law to  $\mu$ -law and  $\mu$ -law to A-law conversion set as a default. The **NAM** keyword is used to disable the conversions.

E1 to E1 Default, the **NAM** keyword may be used but there is no need to specify **NAM** explicitly since A-law to  $\mu$ -law and  $\mu$ -law to A-law conversion is not needed, and therefore not performed, for a pure E1 cross-connect.

DS1 to DS1 Not applicable.

**CUS** - Customer

The circuit will be flagged as a customer controlled circuit.

**RDC** - Red circuit

**INCL** - Inclusive

A termination designated as CUS or RDC cannot be disconnected or modified without using the INCL keyword in the message. Also, an NPC which supports these circuits cannot be manually removed unless the INCL keyword is given in the remove message.

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**mmm** - FROM channel number involved in the denial (ddd through eee)

**nnn** - TO channel number involved in the denial (jjj through kkk)

**d** - Direction

d Explanation

F From

T To

B Both

**st** - Status

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>06</b> | <b>INERR</b> | Invalid range for specified FROM NPC type                             |
| <b>07</b> | <b>INERR</b> | Invalid range for specified TO NPC type                               |
| <b>08</b> | <b>INERR</b> | Invalid FROM NPC type for AIS insertion                               |
| <b>09</b> | <b>INERR</b> | Invalid TO NPC type for AIS insertion                                 |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>20</b> | <b>MCOND</b> | Line format types are incompatible                                    |
| <b>21</b> | <b>MCOND</b> | Trunk conditioning is invalid                                         |
| <b>22</b> | <b>MCOND</b> | FMC cannot be cross-connected in this format                          |
| <b>D6</b> | <b>INERR</b> | Invalid FROM channel number                                           |
| <b>D7</b> | <b>INERR</b> | Invalid TO channel number                                             |
| <b>D9</b> | <b>INERR</b> | Invalid FROM channel number range                                     |
| <b>DA</b> | <b>INERR</b> | Invalid TO channel number range                                       |
| <b>DC</b> | <b>INERR</b> | A loopback is active on the FROM termination                          |
| <b>DD</b> | <b>INERR</b> | A loopback is active on the TO termination                            |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                               |
| <b>E2</b> | <b>INERR</b> | Attempt to one way cross-connect a locally switched channel           |
| <b>E8</b> | <b>INERR</b> | SC invalid for cross-connection specified                             |
| <b>E9</b> | <b>INERR</b> | MUX or TRB invalid for cross-connection specified                     |
| <b>EA</b> | <b>INERR</b> | AIS invalid for cross-connection specified                            |
| <b>EB</b> | <b>INERR</b> | NAM invalid for cross-connection specified                            |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                        |
| <b>ED</b> | <b>INERR</b> | Invalid channel 031 cross-connection specified                        |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |

| <b>st</b>   | <b>d</b>       | <i>Explanation</i>           |
|-------------|----------------|------------------------------|
| <b>ASGN</b> | <b>{F T B}</b> | Termination assigned         |
| <b>CUS</b>  | <b>{F T B}</b> | Customer-controlled Circuit  |
| <b>FAIL</b> | <b>{F T B}</b> | Failed                       |
| <b>OOS</b>  | <b>{F T B}</b> | Out-of-service               |
| <b>RDC</b>  | <b>{F T B}</b> | Red Circuit                  |
| <b>TG</b>   | <b>{F T B}</b> | NPC is grown as a test group |
| <b>TP</b>   | <b>{F T B}</b> | NPC is used for test access  |
| <b>UEQD</b> | <b>{F T B}</b> | Unequipped                   |
| <b>UTST</b> | <b>{F T B}</b> | Under Test                   |

## **OCNT, FROM, TO, RDC, CUS, INCL, PRIOUT**

### **TERMINATED ONE-WAY CROSS CONNECT**

#### **Explanation Of Command**

This message terminates one-way cross-connections of non-channelized network processing circuits (NPCs). The alarm-indication signal (AIS) is the idle code and does not need to be entered. Trunk condition options for 64 kbit/s cross-connections are not allowed for non-channelized connections. When a failure occurs or during an alarm state, the AIS is transmitted toward the TO NPC.

#### **Command**

##### **Nonhierarchical**

[I.12131]

OCNT:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC]\  
[, {CUS|INCL}][,PRIOUT]!

##### **Hierarchical**

[I.12131]

OCNT:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC]\  
[, {CUS|INCL}][,PRIOUT]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.12131]

M hh:mm:ss xy,ww n[vv] OCNT [s]abc,[t]ghi[ RDC]\  
[ {CUS|INCL}][ PRIOUT] COMPL

#### **Hierarchical**

---

[O.12131]

M hh:mm:ss xy,ww n[vv] OCNT uvmnp,wxkqr[ RDC]\  
[ {CUS|INCL}][ PRIOUT] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.12131.01]

M hh:mm:ss xy,ww n[vv] OCNT [s]abc,[t]ghi cc <st> DNY

[O.12131.02]

M hh:mm:ss xy,ww n[vv] OCNT [s]abc,[t]ghi d <st> DNY

#### **Hierarchical**

---

[O.12131.01]

M hh:mm:ss xy,ww n[vv] OCNT uvmnp,wxkqr cc <st> DNY

[O.12131.02]

M hh:mm:ss xy,ww n[vv] OCNT uvmnp,wxkqr d <st> DNY

### **Autonomous Message**

---

Not applicable.



## Explanation Of Parameters

**FROM** - From

**[s]abc** - The 3- or 4-digit non-hierarchical non-channelized FROM NPC number

**TO** - To

**[t]ghi** - The 3- or 4-digit non-hierarchical non-channelized TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number

**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number

The valid values are listed below:

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**RDC** - Red circuit

**CUS** - Customer

Customer-controller circuit

**INCL** - Inclusive

Inclusive option will remove CUS marking

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**st** - Status of denial

**d** - Direction

**d** *Explanation*

F From

T To

B Both

**cc** - Hexadecimal condition code

**cc** **st** *Explanation*

**04** **INERR** No NPC's out of service and OOS keyword used

**12** **MCOND** Active CCN side not IS or failed or pested or hardware OOS

**13** **MCOND** UNIT not equipped, not in service, or failed

**14** **MCOND** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15** **MCOND** FTMI not equipped, not in service, or failed

**16** **MCOND** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17** **MCOND** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**FF** **ROLL** Termination is in process of being rolled

**st** **d** *Explanation*

**ASGN** {F|T|B} Termination assigned

**CUS** {F|T|B} Customer-controlled Circuit

**FAIL** {F|T|B} Failed

**INVLD** {F|T|B} Invalid NPC type

**NPCTA** {F|T|B} NPC used for Test Access

**OOS** {F|T|B} Out-of-service

**RDC** {F|T|B} Red Circuit

**UEQD** {F|T|B} Unequipped

**UTST** {F|T|B} Under Test

## **OCON, FROM, TO, MPM, CUS, INCL, RDC, NAM**

### **ONE WAY CROSS-CONNECTIONS**

#### **Explanation Of Command**

This command requests a one-way cross-connection from the specified FROM termination(s) and to the TO termination. It is used to construct a one-way multipoint circuit. The backbone and broadcast terminations are on the virtual NPCs.

If the user wants to cross-connect Nx64 kbits/s circuits, then the range feature of this command should be used.

#### **Command**

##### **Nonhierarchical**

[|.11121]

```
OCON:FRM xy,SEQ ww:FROM [s]abcd[ddd[-eee]],TO [t]ghij[[-kkk]],\
MPM(fmd,tmd),<tc>[, {CUS|INCL}][,RDC]!
```

##### **Hierarchical**

[|.11121]

```
OCON:FRM xy,SEQ ww:FROM uvmnp[ddd[-eee]],TO wxkqrj[[-kkk]],\
MPM(fmd,tmd)[,<tc>][,NAM][,{INCL|CUS}][,RDC]!
```

## **Completion Message**

---

### **Nonhierarchical**

---

[O.11121]

M hh:mm:ss xy,ww n[vv] OCON [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
2 LN MSG:  
fmd,tmd[ <tc>][ NOBBL {F|T}][ CUS][ RDC][ NAM] COMPL

### **Hierarchical**

---

[O.11121]

M hh:mm:ss xy,ww n[vv] OCON uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
2 LN MSG:  
fmd,tmd[ <tc>][ NOBBL {F|T}][ CUS][ RDC][ NAM] COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.11121.01]

M hh:mm:ss xy,ww n[vv] OCON [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,jjj] cc <st> DNY

[O.11121.02]

M hh:mm:ss xy,ww n[vv] OCON [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,jjj] d <st> DNY

### **Hierarchical**

---

[O.11121.01]

M hh:mm:ss xy,ww n[vv] OCON uvmnpddd[-eee], \\  
wxkqrjjj[-kkk][ mmm,jjj] cc <st> DNY

[O.11121.02]

M hh:mm:ss xy,ww n[vv] OCON uvmnpddd[-eee], \\  
wxkqrjjj[-kkk][ mmm,jjj] d <st> DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

| Unit      | Module   | NPC                                   |
|-----------|----------|---------------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

**ddd,**  
**jjj** - Channel numbers  
**eee,**  
**kkk** - Channel numbers denoting the end of a range specification

000-030      CEPT type NPCs grown as CAS  
000-031      CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

001-500      (Virtual NPC)

**Note:** Range values -eee, -kkk apply only to the FTU/DS3U/HDS3U end of an FTU/DS3U/HDS3U Virtual NPC circuit, that is, they cannot apply to the Virtual NPC end of the circuit.

**MPM**      - Multipoint mode

**fmd**      - FROM mode

**tmd**      - TO mode

Multipoint modes of the FROM and TO ends of the circuit

*fmd*

tmd      Explanation

LEG      Non-VI circuit end of the cross connections. Must be an FTU/DS3U/HDS3U channel.

BRD      Nonbackbone leg of a virtual conference. Must be a virtual NPC channel.

BBL      Backbone leg of a virtual conference. Must be a Virtual NPC channel.

For OCN multipoint circuits, there are two valid combinations for fmd and tmd:

|         |                                                        |
|---------|--------------------------------------------------------|
| fmd,tmd | Explanation                                            |
| LEG,BBL | For the backbone leg of a broadcast multipoint circuit |
| BRD,LEG | For the broadcast legs of the multipoint circuit.      |

**Note:** Default values for noise guard (NG) and echo suppression (ES) are applied to symmetrical bridges (multipoint mode SYM) and polling circuits (multipoint mode BBL,BRD). These default values are:

|                     |            |            |
|---------------------|------------|------------|
| Symmetrical bridges | NG = -18db | ES = -18db |
| Polling circuits    | NG = 0db   | ES = 0db   |



**tc** - Trunk conditioning, which has the input form

**TRSP, {IW X'pq|TRB|MUX}**

Represents the desired cross-connected signaling and insertion word applied when a failure occurs. A trunk conditioning specification consists of a combination of a signaling specification followed by an insertion word specification. The TRSP (transparent) signaling specification is the only one allowed.

The following signaling option is allowed:

| <i>tc</i> | <i>Explanation</i>         |
|-----------|----------------------------|
| TRSP      | Transparent, no signaling. |

The following insertion word options are allowed:

| <i>IW</i> | <i>Explanation</i>                                                                                                                       |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq   | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line. |
| TRB       | Standard trouble code, equal to IW X'E4, not valid for CEPT.                                                                             |
| MUX       | MUX out of sync code, equal to IW X'1A, not valid for CEPT.                                                                              |
| Omitted   | Only valid for CEPT, will default to IW-X-FF.                                                                                            |

**NOBBL** - No backbone leg

**F** - From

**T** - To

In addition, for CEPT and gateway connections, the terms CAS, TRSP, and IW defined below are used in Tables A and B. Hex notation is shown for brevity, but binary is allowed.

**CAS** - Channel associated signaling

Indicates that channel associated signaling has been applied in time slot 16.

**TRSP** - Transparent

No signaling sent out in the associated portion of time slot 16 for CAS primaries.

**IW** - Insertion word

The insertion word is provided with the DCC option, an 8-bit pattern that is inserted in the specified time slot when the circuit is disconnected.

During the alarm state, AIS (all ones) is sent out in the specified time slot.

All leg connections to multipoint circuits using a Virtual NPC must use TRSP signaling (no signaling). The insertion word portion is user specified as noted above and may be varied from leg to leg.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Multi-Point:*

**E1 to E1** Multi-point cross-connects have A-law to  $\mu$ -law and  $\mu$ -law to A-law set as a default. This conversion is performed on pure E1 multi-point connections in case a DS1 leg is ever added to the broadcast connection. The **NAM** keyword is used to disable the conversions. It may be desirable to disable conversions in a pure E1 multi-point cross-connect since such a connection has more quantization noise than a pure E1 two-point cross-connect. This is due to the back to back A-law to  $\mu$ -law and  $\mu$ -law to A-law conversions which are taking place.

**E1 to DS1 or DS1 to E1** Same explanation as E1 to E1.

**DS1 to DS1** Not applicable.

**CUS** - Customer

Customer-controlled circuit

The optional CUS field indicates a customer controlled circuit. All legs on a multipoint customer-controlled circuit must be designated CUS.

**INCL** - Inclusive

A disconnected termination previously marked CUS remains as a customer controlled termination. The INCL keyword must be used to reconnect this termination to other terminations. However, if they are reconnected without the CUS keyword, they lose their customer controlled status.

**RDC** - Red circuit

All legs on a multipoint red circuit must be designated RDC.

ddd,jjj -Channel numbers

mmm - FROM channel number involved in the denial ( $ddd \leq mmm \leq eee$ )

st - Status

d - Direction (F = From, T = To, B = Both)

cc - Hexadecimal condition code

| cc | st      | Explanation                                                           |
|----|---------|-----------------------------------------------------------------------|
| 06 | INERR   | Invalid range for specified FROM NPC type                             |
| 07 | INERR   | Invalid range for specified TO NPC type                               |
| 08 | INERR   | Invalid FROM NPC type for AIS insertion                               |
| 09 | INERR   | Invalid TO NPC type for AIS insertion                                 |
| 12 | MCOND   | Active CCN side not IS or failed or pested or hardware OOS            |
| 13 | MCOND   | UNIT not equipped, not in service, or failed                          |
| 14 | MCOND   | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| 15 | MCOND   | FTMI not equipped, not in service, or failed                          |
| 16 | MCOND   | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| 17 | MCOND   | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| 18 | MCOND   | DSPI not equipped, not in service, or failed                          |
| 20 | MCOND   | Line format types are incompatible                                    |
| 21 | INERR   | Trunk conditioning is invalid                                         |
| 22 | MCOND   | FMC cannot be cross-connected in this format                          |
| 50 | INERR   | Trunk conditioning doesn't match that of conference                   |
| 51 | INERR   | CUS flag doesn't match that of conference                             |
| 52 | INERR   | RDC flag doesn't match that of conference                             |
| 70 | CONFERR | Try to add a BBL to VC,but the VC already has backbone                |
| 79 | CONFERR | Try to operate a TWO-WAY conference with an ONE-WAY input command     |
| 80 | CONFERR | Database conference width does not match the range in input command   |

| <b>cc</b> | <b>st</b>      | <i>Explanation</i>                                                   |
|-----------|----------------|----------------------------------------------------------------------|
| <b>84</b> | <b>CONFERR</b> | Trying to add or delete a leg when a conference is under test        |
| <b>85</b> | <b>CONFERR</b> | Input BRD (BBL) has same NPC and channel as BBL (BRD)                |
| <b>B0</b> | <b>INERR</b>   | Bad use of INCL, cannot override the current state of the conference |
| <b>D6</b> | <b>INERR</b>   | Invalid FROM channel number                                          |
| <b>D7</b> | <b>INERR</b>   | Invalid TO channel number                                            |
| <b>D9</b> | <b>INERR</b>   | Invalid FROM channel number range                                    |
| <b>DA</b> | <b>INERR</b>   | Invalid TO channel number range                                      |
| <b>DC</b> | <b>INERR</b>   | A loopback is active on the FROM termination                         |
| <b>DD</b> | <b>INERR</b>   | A loopback is active on the TO termination                           |
| <b>E8</b> | <b>INERR</b>   | SC invalid for cross-connection specified                            |
| <b>E9</b> | <b>INERR</b>   | MUX or TRB invalid for cross-connection specified                    |
| <b>EA</b> | <b>INERR</b>   | AIS invalid for cross-connection specified                           |
| <b>EB</b> | <b>INERR</b>   | NAM invalid for cross-connection specified                           |
| <b>EC</b> | <b>INERR</b>   | Invalid channel 000 cross-connection specified                       |
| <b>ED</b> | <b>INERR</b>   | Invalid channel 031 cross-connection specified                       |
| <b>FF</b> | <b>ROLL</b>    | Termination is in process of being rolled                            |

| <b>st</b>   | <b>d</b>       | <i>Explanation</i>          |
|-------------|----------------|-----------------------------|
| <b>ASGN</b> | <b>{F T B}</b> | Termination assigned        |
| <b>CUS</b>  | <b>{F T B}</b> | Customer-controlled Circuit |
| <b>FAIL</b> | <b>{F T B}</b> | Failed                      |
| <b>OOS</b>  | <b>{F T B}</b> | Out-of-service              |
| <b>RDC</b>  | <b>{F T B}</b> | Red Circuit                 |
| <b>TG</b>   | <b>{F T B}</b> |                             |
| <b>TP</b>   | <b>{F T B}</b> | NPC is used for test access |
| <b>UEQD</b> | <b>{F T B}</b> | Unequipped                  |
| <b>UTST</b> | <b>{F T B}</b> | Under Test                  |

## **OCON, FROM, TO, NAM, RDC, CUS, INCL, PRIOUT**

### **ONE WAY CROSS-CONNECTIONS**

#### **Explanation Of Command**

This message requests the connection of a one-way cross-connect circuit or a range of one-way circuits.

If the user wants to cross-connect Nx64 kbits/s circuits, then the range feature of this command should be used.

#### **Command**

##### **Nonhierarchical**

[|.11101]

```
OCON:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\
[,<tc>][,<sc>][,NAM][,RDC][{,CUS|,INCL}][,PRIOUT]!
```

##### **Hierarchical**

[|.11101]

```
OCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\
[,<tc>][,<sc>][,NAM][,RDC][{,CUS|,INCL}][,PRIOUT]!
```

---

## Completion Message

---

### Nonhierarchical

---

[O.11101]

M hh:mm:ss xy,ww n[vv] OCON [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ <tc>][ <sc>][ NAM][ RDC][ {CUS|INCL}][ PRIOUT] COMPL

### Hierarchical

---

[O.11101]

M hh:mm:ss xy,ww n[vv] OCON uvmnp[-eee],wxkqrjjj[-kkk]\  
[ <tc>][ <sc>][ NAM][ RDC][ {CUS|INCL}][ PRIOUT] COMPL

[O.11102]

M hh:mm:ss xy,ww n[vv] OCON uvmnpddd[-eee],wxkqrjjj[-kkk] \  
2 LN MSG:  
[ <tc>][ <sc>][ NAM][ RDC][ {CUS|INCL}][ PRIOUT] COMPL

---

## Denial Message

---

### Nonhierarchical

---

[O.11101.01]

M hh:mm:ss xy,ww n[vv] OCON [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

### Hierarchical

---

[O.11101.01]

M hh:mm:ss xy,ww n[vv] OCON uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.11101.02]

M hh:mm:ss xy,ww n[vv] OCON uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] d <st> DNY

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number

**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd,**

**jjj** - Channel numbers

**eee,**

**kkk** - Channel numbers denoting the end of a range

000-030 CEPT type NPCs grown as CAS

000-031 CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.



Channel 000 and CAS channel 31 (that is, TS16 of a CEPT-type NPC) are not allowed in a range of channel numbers.

**tc** - Trunk conditioning

tc represents the desired cross-connected signaling and insertion word applied when a failure occurs. The signaling and the insertion word specification are entered separately, with a comma as the delimiter, which have the following form:

<tc\_sig>,<tc\_iw>

The following signaling options are allowed:

| <i>tc_sig</i>      | <i>Explanation</i>                                                                                                                                                                                                       |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TC(----,mnop)      | 1-way, 4-state signaling in binary. For CEPT type framing format, software will expand 4-state to 16-state by duplicating the format on the remaining frames on a superframe.                                            |
| TC(-----,mnopqrst) | 1-way, 16-state in binary. Only valid for CEPT framing formats.                                                                                                                                                          |
| TC(X'--,X'cd)      | 1-way, 16-state in hexadecimal.                                                                                                                                                                                          |
| TRSP               | Transparent, no signaling.                                                                                                                                                                                               |
| Omitted            | Only valid for CEPT cross-connections, defaults to TC(X'--,X'FF) if both terminations are channel associated signaling type. It will default to TRSP if one of the terminations is a nonsignaling associated (NSA) type. |

The following insertion word options are allowed:

| <i>tc_iw</i> | <i>Explanation</i>                                                                                                                    |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq      | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted to the downstream direction of a failure on the line. |
| Omitted      | Only valid for CEPT, will default to IW X'FF.                                                                                         |

Besides that, additional rules apply for CEPT cross-connections.

Allowable signaling types and signaling consequent actions are given in Table 1 and allowable cross-connected time slot consequent actions are given in Table 2.

**TC** - Trunk conditioning

When the DCC option is provided in the disconnect command, a 4-bit pattern is inserted into the associated portion of time slot 16 for CAS circuits when the circuit is disconnected.

**CAS** - Channel associated signaling

Channel associated signaling in time slot 16

**TRSP** - Transparent

No signaling sent out in the associated portion of time slot 16 for CAS primaries. TRSP is the only option for NSA primaries.

**Table 14-3. Allowable Signaling Type and Signaling Consequent Action**

| Primary Type<br>in<br>Cross-connect | Allowable<br><tc><br>Signaling<br>Specification | Resulting<br>Signaling<br>Code<br><br>FROM, TO    | Resulting<br>Signaling<br>Consequent<br>Action<br>(Hardware)<br>FROM, TO | Resulting<br>Signaling<br>Consequent<br>Action<br>(Firmware)<br>FROM, TO | Resulting<br>Disconnect<br>(When DCC used<br>in disconnect<br>command) |
|-------------------------------------|-------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------|
| CAS ↔ CAS                           | <b>TRSP</b>                                     | Fixed at <b>X'D</b>                               | Fixed at <b>X'D</b>                                                      | Fixed at <b>X'D</b>                                                      | <b>X'D</b>                                                             |
|                                     | <b>TC-X'uv,X'yz*</b>                            | CAS<br>(Passed Through)                           | <b>X'F</b>                                                               | <b>X'uv,X'yz</b>                                                         | <b>X'v,X'z</b>                                                         |
|                                     | Omitted                                         | CAS<br>(Passed Through)                           | <b>X'F</b>                                                               | <b>X'F</b>                                                               | <b>X'F</b>                                                             |
| NSA ↔ CAS                           | <b>TRSP/Omitted</b>                             | None (Fixed at<br><b>X'D</b> in CAS<br>direction) | Fixed at<br><b>X'D</b> in CAS<br>direction                               | Fixed at<br><b>X'D</b> in CAS<br>direction                               | <b>X'D</b> in CAS<br>direction                                         |
| NSA ↔ NSA                           | <b>TRSP/Omitted</b>                             | Not appl.                                         | Not appl.                                                                | Not appl.                                                                | Not appl.                                                              |

\* For TCON and TCNT TC is X'uv,X'yz.  
For OCON, OCNT and BCON TC is --,X'yz.

**Table 14-4. Allowable Cross-Connected Time slot Consequent Action**

| Allowable <tc><br>Time slot X-connect<br>keyword | Resulting Cross-Connected<br>Time slot Consequent Action<br>TO | Resulting Disconnect<br>Code (when DCC used<br>in disconnect command) |
|--------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------|
| Omitted                                          | X'FF                                                           | X'FF                                                                  |
| IW X'pq*                                         | X'FF                                                           | X'pq                                                                  |

\* Only used as a means of providing per time slot DCC codes. If the DCC code is not used when issuing the disconnect command, then the insertion word at the time the NPC was grown is used. This growth insertion word defaults to hex "D5" if not explicitly specified at growth time.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**sc** - Signaling control

The variable sc represents the optional signaling bit control specification and is used only in the Channel Associated Signaling (CAS) to CAS application with CAS signaling.

If this option is not used, all four cross-connected time slot 16 (**abcd**) signaling bits in each direction will be cross-connected unchanged.

Signaling control is specified as follows:

**SC(----,efgh)**

efgh - To direction

Where **efgh** represents the four time slot 16 signaling bits to be controlled. All 4 bits can be controlled independently. Control is applied by replacing each character in the variable **efgh** with the appropriate control character.

The allowable control characters are:

*Bit*

*Setting Explanation*

|          |                        |
|----------|------------------------|
| <b>P</b> | Pass through unchanged |
| <b>V</b> | Pass through inverted  |
| <b>0</b> | Set output to 0        |
| <b>1</b> | Set output to 1        |

The effect of the **V** control character depends upon whether the connection is international or gateway.

International: Inversion takes place on both the From and To directions. The net effect is to cancel out the inversion. Hence it will appear that no inversion took place.

Gateway: Inversion takes place only on the international side of the connection. The effect is an inversion.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Two-Point:*

|            |                                                                                                                                                                                                                                         |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E1 to DS1  | Gateway cross-connects have A-law to $\mu$ -law and $\mu$ -law to A-law conversion set as a default. The <b>NAM</b> keyword is used to disable the conversions.                                                                         |
| E1 to E1   | Default, the <b>NAM</b> keyword may be used but there is no need to specify <b>NAM</b> explicitly since A-law to $\mu$ -law and $\mu$ -law to A-law conversion is not needed, and therefore not performed, for a pure E1 cross-connect. |
| DS1 to DS1 | Not applicable.                                                                                                                                                                                                                         |

**CUS** - Customer

Used to indicate a customer-controlled circuit

**RDC** - Red circuit

**INCL** - Inclusive

A termination designated as customer controlled or a red circuit cannot be disconnected or modified without using the INCL keyword in the message. Also, an NPC which supports these circuits cannot be manually removed unless the inclusive keyword is given in the remove message.

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**mmm** - FROM channel number involved in the denial (ddd through eee)

**nnn** - TO channel number involved in the denial (jjj through kkk)

**st** - Status of denial

**d** - Direction

*d Explanation*

F From

T To

B Both

**cc** - Hexadecimal condition code

*cc st Explanation*

**06 INERR** Invalid range for specified FROM NPC type

**07 INERR** Invalid range for specified TO NPC type

**08 INERR** Invalid FROM NPC type for AIS insertion

**09 INERR** Invalid TO NPC type for AIS insertion

**12 MCOND** Active CCN side not IS or failed or pested or hardware OOS

**13 MCOND** UNIT not equipped, not in service, or failed

**14 MCOND** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15 MCOND** FTMI not equipped, not in service, or failed

**16 MCOND** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17 MCOND** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**20 MCOND** Line format types are incompatible

**21 MCOND** Trunk conditioning is invalid

**22 MCOND** FMC cannot be cross-connected in this format

**D6 INERR** Invalid FROM channel number

**D7 INERR** Invalid TO channel number

**D9 INERR** Invalid FROM channel number range

**DA INERR** Invalid TO channel number range

**DC INERR** A loopback is active on the FROM termination

**DD INERR** A loopback is active on the TO termination

| cc | st    | Explanation                                                 |
|----|-------|-------------------------------------------------------------|
| DF | INERR | Unmatched channel range                                     |
| E2 | INERR | Attempt to one way cross-connect a locally switched channel |
| E8 | INERR | SC invalid for cross-connection specified                   |
| E9 | INERR | MUX or TRB invalid for cross-connection specified           |
| EA | INERR | AIS invalid for cross-connection specified                  |
| EB | INERR | NAM invalid for cross-connection specified                  |
| EC | INERR | Invalid channel 000 cross-connection specified              |
| ED | INERR | Invalid channel 031 cross-connection specified              |
| FF | ROLL  | Termination is in process of being rolled                   |

| st    | d       | Explanation                  |
|-------|---------|------------------------------|
| ASGN  | {F T B} | Termination assigned         |
| CUS   | {F T B} | Customer-controlled Circuit  |
| FAIL  | {F T B} | Failed                       |
| OOS   | {F T B} | Out-of-service               |
| RDC   | {F T B} | Red Circuit                  |
| TG    | {F T B} | NPC is grown as a test group |
| TP    | {F T B} | NPC is used for test access  |
| UNEQD | {F T B} | Unequipped                   |
| UTST  | {F T B} | Under Test                   |

## **OCON, FROM, TO, RDC, CUS, INCL, PRIOUT**

### **ONE-WAY NON-CANNELIZED DIGITAL SIGNAL CROSS CONNECT**

#### **Explanation Of Command**

This message requests a one-way cross-connection between two non-channelized network processing circuits.

The idle code is the alarm-indication signal (AIS-all ones), and does not need to be specified. The disconnect code for 64 kbit/s disconnection cannot be used for non-channelized network processing circuits.

When a failure occurs or during an alarm state, the AIS is transmitted toward the TO network processing circuits.

#### **Command**

##### **Nonhierarchical**

[I.11131]

OCON:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC][,{CUS|INCL}][,PRIOUT]!

##### **Hierarchical**

[I.11131]

OCON:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}][,PRIOUT]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.11131]

M hh:mm:ss xy,ww n[vv] OCON [s]abc,[t]ghi[ RDC][ CUS][ PRIOUT] COMPL

#### **Hierarchical**

---

[O.11131]

M hh:mm:ss xy,ww n[vv] OCON uvmnp,wxkqr[ RDC][ CUS][ PRIOUT] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.11131.01]

M hh:mm:ss xy,ww n[vv] OCON [s]abc,[t]ghi cc <st> DNY

[O.11131.02]

M hh:mm:ss xy,ww n[vv] OCON [s]abc,[t]ghi d <st> DNY

#### **Hierarchical**

---

[O.11131.01]

M hh:mm:ss xy,ww n[vv] OCON uvmnp,wxkqr cc <st> DNY

[O.11131.02]

M hh:mm:ss xy,ww n[vv] OCON uvmnp,wxkqr d <st> DNY

### **Autonomous Message**

---

Not applicable.



### Explanation Of Parameters

**[s]abc** - The 3- or 4-digit non-hierarchical non-channelized FROM NPC

**[t]ghi** - The 3- or 4-digit non-hierarchical non-channelized TO NPC

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number

**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**RDC** - Red circuit

**CUS** - Customer-controller circuit

**INCL** - Inclusive option will remove CUS marking

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**st** - Status

**d** - Direction

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>21</b> | <b>INERR</b> | Trunk conditioning is invalid                                         |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |

| <b>st</b>    | <b>d</b>       | <i>Explanation</i>          |
|--------------|----------------|-----------------------------|
| <b>ASGN</b>  | <b>{F T B}</b> | Termination assigned        |
| <b>CUS</b>   | <b>{F T B}</b> | Customer-controlled Circuit |
| <b>FAIL</b>  | <b>{F T B}</b> | Failed                      |
| <b>INVLD</b> | <b>{F T B}</b> | Invalid NPC type            |
| <b>NPCTA</b> | <b>{F T B}</b> | NPC used for Test Access    |
| <b>OOS</b>   | <b>{F T B}</b> | Out-of-service              |
| <b>RDC</b>   | <b>{F T B}</b> | Red Circuit                 |
| <b>UEQD</b>  | <b>{F T B}</b> | Unequipped                  |
| <b>UTST</b>  | <b>{F T B}</b> | Under Test                  |

## **ODIS, FROM, TO, INCL, OOS, DCC**

### **ONE-WAY MULTIPOINT DISCONNECTIONS**

#### **Explanation Of Command**

This message requests a one-way disconnection from the specified FROM end termination(s) and to the TO end termination. It is used to disconnect a one-way multipoint circuit.

#### **Command**

##### **Nonhierarchical**

[I.15102]

ODIS:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\  
[,INCL][,OOS][,DCC]!

##### **Hierarchical**

[I.15102]

ODIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,INCL][,OOS][,DCC]!

#### **Completion Message**

##### **Nonhierarchical**

[O.15102]

M hh:mm:ss xy,ww n[vv] ODIS [s]abcddd[-eee],[t]ghijjj[-kkk] \  
2 LN MSG:  
[NOBBL {F|T}][ MPDIS {F|T|B}][ OOS][ CUS][ RDC][ DCC] COMPL

### **Hierarchical**

---

[O.15102]

M hh:mm:ss xy,ww n[vv] ODIS uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
2 LN MSG:  
[NOBBL {F|T}][ MPDIS {F|T|B}][ OOS][ CUS][ RDC][ DCC] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.15101.01]

M hh:mm:ss xy,ww n[vv] ODIS [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,nnn] cc <st> DNY

[O.15101.02]

M hh:mm:ss xy,ww n[vv] ODIS [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,nnn] <d> <st> DNY

### **Hierarchical**

---

[O.15101.01]

M hh:mm:ss xy,ww n[vv] ODIS uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
[ mmm,nnn] cc <st> DNY

[O.15101.02]

M hh:mm:ss xy,ww n[vv] ODIS uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
[ mmm,nnn] <d> <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From terminations  
**TO** - To terminations

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number  
**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

| Unit      | Module   | NPC                                   |
|-----------|----------|---------------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

**ddd, jjj**  
- Channel number  
**eee, kkk**  
- Channel number denoting the end of range.

000-030      CEPT type NPCs grown as CAS  
000-031      CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

The backbone termination is on the Virtual NPC (001 through 500).

**INCL** - Inclusive

To disconnect a channel or range of channels including one or more channels marked as a Red Circuit, use the INCL option.

The message will be denied if any circuits in the range are Red Circuits and the INCL option is not used.

**OOS** - Out of service

At least one end of the circuit must be out-of-service or the OOS disconnect will be denied.

**DCC** - Disconnect code

DACS II will insert the user-defined disconnect code and signaling into the disconnected channels. This disconnect code and signaling are specified by the trunk conditioning field of the TCON command that initially connected the channels.

If the DCC option is not used, the disconnect code specified in the grow NPC command will be used.

**NOBBL** - No backbone leg

The optional NOBBL will appear if the multipoint circuit FROM or TO was in the broadcast mode but has no backbone leg.

**MPDIS** - Multipoint disconnect

**F** - From

**T** - To

Full disconnection of the multipoint circuits is indicated by MPDIS for FROM or TO.



**CUS** - Customer  
Customer-control circuit

**RDC** - Red circuit  
Disconnection was performed on a red circuit.  
If the disconnection was given on more than one circuit, then at least one of them was a red circuit.

**mmm, nnn**  
- Channel number involved in denial.

**st** - Status of denial

**d** - Direction

|          |                    |
|----------|--------------------|
| <b>d</b> | <i>Explanation</i> |
| F        | From               |
| T        | To                 |
| B        | Both               |

**cc** - Hexadecimal condition code

|           |                |                                                                         |
|-----------|----------------|-------------------------------------------------------------------------|
| <b>cc</b> | <b>st</b>      | <i>Explanation</i>                                                      |
| <b>04</b> | <b>INERR</b>   | No NPC's out of service and OOS keyword used                            |
| <b>06</b> | <b>INERR</b>   | Invalid range for specified FROM NPC type                               |
| <b>07</b> | <b>INERR</b>   | Invalid range for specified TO NPC type                                 |
| <b>08</b> | <b>INERR</b>   | Invalid FROM NPC type for AIS insertion                                 |
| <b>09</b> | <b>INERR</b>   | Invalid TO NPC type for AIS insertion                                   |
| <b>12</b> | <b>MCOND</b>   | Active CCN side not IS or failed or pested or hardware OOS              |
| <b>13</b> | <b>MCOND</b>   | UNIT not equipped, not in service, or failed                            |
| <b>14</b> | <b>MCOND</b>   | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS   |
| <b>15</b> | <b>MCOND</b>   | FTMI not equipped, not in service, or failed                            |
| <b>16</b> | <b>MCOND</b>   | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS     |
| <b>17</b> | <b>MCOND</b>   | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS   |
| <b>34</b> | <b>MCOND</b>   | Termination is under customer control (CUS)                             |
| <b>35</b> | <b>MCOND</b>   | Termination is protected (RDC)                                          |
| <b>71</b> | <b>CONFERR</b> | Try to delete a BBL leg from VC; however, VC has no BBL leg             |
| <b>72</b> | <b>CONFERR</b> | The NPC of VC BBL leg doesn't match that in the input command           |
| <b>73</b> | <b>CONFERR</b> | The first channel of VC BBL leg doesn't match that in the input command |
| <b>74</b> | <b>CONFERR</b> | Try to delete a BRD leg from VC; however, VC has no BRD leg             |
| <b>75</b> | <b>CONFERR</b> | The input BRD leg is not in VC                                          |

| <b>cc</b> | <b>st</b>      | <i>Explanation</i>                                                      |
|-----------|----------------|-------------------------------------------------------------------------|
| <b>76</b> | <b>CONFERR</b> | The first channel of VC BRD leg doesn't match that in the input command |
| <b>77</b> | <b>CONFERR</b> | Tried to disconnect a nonexisting VC                                    |
| <b>79</b> | <b>CONFERR</b> | Try to operate a TWO-WAY conference with an ONE-WAY input command       |
| <b>80</b> | <b>CONFERR</b> | Database conference width does not match the range in input command     |
| <b>81</b> | <b>INERR</b>   | Invalid input BBL as fmd in ONE-WAY command                             |
| <b>82</b> | <b>INERR</b>   | Invalid input BRD as tmd in ONE-WAY command                             |
| <b>84</b> | <b>CONFERR</b> | Trying to add or delete a leg when a conference is under test           |
| <b>D3</b> | <b>SCERR</b>   | Corresponding NPC for FROM virtual channel is not provisioned           |
| <b>D4</b> | <b>SCERR</b>   | Corresponding NPC for TO virtual channel is not provisioned             |
| <b>D6</b> | <b>INERR</b>   | Invalid FROM channel number                                             |
| <b>D7</b> | <b>INERR</b>   | Invalid TO channel number                                               |
| <b>D9</b> | <b>INERR</b>   | Invalid FROM channel number range                                       |
| <b>DA</b> | <b>INERR</b>   | Invalid TO channel number range                                         |
| <b>DC</b> | <b>INERR</b>   | A loopback is active on the FROM termination                            |
| <b>DD</b> | <b>INERR</b>   | A loopback is active on the TO termination                              |
| <b>DF</b> | <b>INERR</b>   | Unmatched channel range                                                 |
| <b>EC</b> | <b>INERR</b>   | Invalid channel 000 cross-connection specified                          |
| <b>ED</b> | <b>INERR</b>   | Invalid channel 031 cross-connection specified                          |
| <b>FF</b> | <b>ROLL</b>    | Termination is in process of being rolled                               |

| <b>st</b>      | <b>d</b>       | <i>Explanation</i>                  |
|----------------|----------------|-------------------------------------|
| <b>CUS</b>     | <b>{F T B}</b> | Customer-controlled Circuit         |
| <b>FAIL</b>    | <b>{F T B}</b> | Failed                              |
| <b>NOMTH</b>   | <b>{F T B}</b> | No Match                            |
| <b>OOS</b>     | <b>{F T B}</b> | Out-of-service                      |
| <b>RDC</b>     | <b>{F T B}</b> | Red Circuit                         |
| <b>TP</b>      | <b>{F T B}</b> | NPC is used for test access         |
| <b>UNPASGN</b> | <b>{F T B}</b> | Unassigned or Not Properly Assigned |
| <b>UEQD</b>    | <b>{F T B}</b> | Unequipped                          |
| <b>UTST</b>    | <b>{F T B}</b> | Under Test                          |

## **ODIS, FROM, TO, INCL, OOS, DCC, PRIOUT**

### **ONE-WAY DISCONNECT**

#### **Explanation Of Command**

This message requests the disconnection of a one-way two-point cross-connect circuit or a range of one-way circuits.

#### **Command**

##### **Nonhierarchical**

[I.15101]

ODIS: FRM xy, SEQ ww: FROM [s]abcddd[-eee], TO [t]ghijjj[-kkk]\  
[, INCL][, OOS][, DCC][, PRIOUT]!

##### **Hierarchical**

[I.15101]

ODIS: FRM xy, SEQ ww: FROM uvmnpddd[-eee], TO wxkqrjjj[-kkk]\  
[, INCL][, OOS][, DCC][, PRIOUT]!

#### **Completion Message**

##### **Nonhierarchical**

[O.15101]

M hh:mm:ss xy, ww n[vv] ODIS [s]abcddd[-eee], [t]ghijjj[-kkk]\  
[ OOS][ DCC][ CUS][ RDC][ PRIOUT] COMPL

### **Hierarchical**

---

[O.15101]

M hh:mm:ss xy,ww n[vv] ODIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ OOS][ DCC][ CUS][ RDC][ PRIOUT] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.15101.01]

M hh:mm:ss xy,ww n[vv] ODIS [s]abcdddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.15101.02]

M hh:mm:ss xy,ww n[vv] ODIS [s]abcdddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

### **Hierarchical**

---

[O.15101.01]

M hh:mm:ss xy,ww n[vv] ODIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.15101.02]

M hh:mm:ss xy,ww n[vv] ODIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From  
**TO** - To

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number  
**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number for beginning of NPC range

**wxkqr** - Hierarchical TO NPC number for end of NPC range

The valid values are listed below:

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - FROM channel number

**jjj** - TO channel number

**eee** - FROM channel number denoting the end of a channel range.

**kkk** - TO channel number denoting the end of a channel range.

000-030 CEPT type NPCs grown as CAS

000-031 CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

**INCL** - Inclusive

To disconnect a circuit or range of circuits including one or more circuits marked either RDC or CUS, use the optional INCL keyword. If this keyword is not used, the message will be denied if any circuits in the range are red circuits or customer controlled circuits.

**OOS** - Out-of-service

An Out-Of-Service disconnect may be done by giving the optional OOS keyword. At least one end of the circuit must be out-of-service or the OOS disconnect will be denied.

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**DCC** - Disconnect code

If DCC is specified, DACS II will insert the user-defined disconnect code and signaling into the disconnected channels. This disconnect code and signaling are specified by the <tc> field of the TCON command that initially connected the channels. If the DCC option is not used, the disconnect code specified in the GRTH NPC command will be used.

**RDC** - Red circuit

**CUS** - Customer

Customer-controlled circuit

Terminations cross-connected using the optional CUS keyword retain their CUS status when disconnected. If the terminations are reconnected without the CUS or INCL keyword, the command will be denied. When they are reconnected with the INCL keyword, they lose their customer controlled status.

**mmm, nnn**

- Channel number involved in denial. Otherwise the same as ddd.

**d** - Direction

| <i>d</i> | <i>Explanation</i> |
|----------|--------------------|
| F        | From               |
| T        | To                 |
| B        | Both               |

**st** - Status

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>06</b> | <b>INERR</b> | Invalid range for specified FROM NPC type                             |
| <b>07</b> | <b>INERR</b> | Invalid range for specified TO NPC type                               |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>D6</b> | <b>INERR</b> | Invalid FROM channel number                                           |
| <b>D7</b> | <b>INERR</b> | Invalid TO channel number                                             |
| <b>D9</b> | <b>INERR</b> | Invalid FROM channel number range                                     |
| <b>DA</b> | <b>INERR</b> | Invalid TO channel number range                                       |
| <b>DC</b> | <b>INERR</b> | A loopback is active on the FROM termination                          |
| <b>DD</b> | <b>INERR</b> | A loopback is active on the TO termination                            |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                               |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                        |
| <b>ED</b> | <b>INERR</b> | Invalid channel 031 cross-connection specified                        |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |

| <b>st</b>      | <b>d</b>       | <i>Explanation</i>                  |
|----------------|----------------|-------------------------------------|
| <b>CUS</b>     | <b>{F T B}</b> | Customer-controlled Circuit         |
| <b>FAIL</b>    | <b>{F T B}</b> | Failed                              |
| <b>NOMTH</b>   | <b>{F T B}</b> | No Match                            |
| <b>OOS</b>     | <b>{F T B}</b> | Out-of-service                      |
| <b>RDC</b>     | <b>{F T B}</b> | Red Circuit                         |
| <b>TP</b>      | <b>{F T B}</b> | NPC is used for test access         |
| <b>UNPASGN</b> | <b>{F T B}</b> | Unassigned or Not Properly Assigned |
| <b>UEQD</b>    | <b>{F T B}</b> | Unequipped                          |
| <b>UTST</b>    | <b>{F T B}</b> | Under Test                          |



## **ODIS, FROM, TO, OOS, INCL, PRIOUT**

### **ONE-WAY DISCONNECT**

#### **Explanation Of Command**

This message disconnects a one-way cross-connection between two non-channelized network processing circuits. When the circuit is disconnected, the idle code (AIS) is transmitted.

#### **Command**

##### **Nonhierarchical**

[I.15111]

ODIS:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,OOS][,INCL][,PRIOUT]!

##### **Hierarchical**

[I.15111]

ODIS:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,OOS][,INCL][,PRIOUT]!

#### **Completion Message**

##### **Nonhierarchical**

[O.15111]

M hh:mm:ss xy,ww n[vv] ODIS [s]abc,[t]ghi[ OOS][ RDC][ CUS] \  
[ PRIOUT] COMPL

### **Hierarchical**

---

[O.15111]

M hh:mm:ss xy,ww n[vv] ODIS uvmnp,wxkqr[ OOS][ RDC][ CUS] \  
[ PRIOUT] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.15111.01]

M hh:mm:ss xy,ww n[vv] ODIS [s]abc,[t]ghi cc <st> DNY

[O.15111.02]

M hh:mm:ss xy,ww n[vv] ODIS [s]abc,[t]ghi d <st> DNY

### **Hierarchical**

---

[O.15111.01]

M hh:mm:ss xy,ww n[vv] ODIS uvmnp,wxkqr cc <st> DNY

[O.15111.02]

M hh:mm:ss xy,ww n[vv] ODIS uvmnp,wxkqr d <st> DNY

### **Autonomous Message**

---

Not applicable.

### Explanation Of Parameters

- [s]abc** - The 3- or 4-digit non-hierarchical non-channelized FROM NPC number  
**[t]ghi** - The 3- or 4-digit non-hierarchical non-channelized TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical number of non-channelized FROM NPC

**wxkqr** - Hierarchical number of non-channelized TO NPC

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The values are listed below:

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**INCL** - Inclusive  
Required for a customer-controlled circuit or a red circuit

**OOS** - Out-of-Service  
May be specified if one or both NPCs are out of service

**RDC** - Red circuit  
Disconnection of Red circuit

**RDLD** - Red lined

**CUS** - Customer  
Disconnection of Customer-controlled circuit

**PRIOUT** - Priority Output  
This keyword is used on the command line to prioritize the output response.

**st** - Status of denial

**d** - Direction {F-from | T-to | B-both}

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |

| <b>st</b>      | <b>d</b>       | <i>Explanation</i>                  |
|----------------|----------------|-------------------------------------|
| <b>CUS</b>     | <b>{F T B}</b> | Customer-controlled Circuit         |
| <b>FAIL</b>    | <b>{F T B}</b> | Failed                              |
| <b>INVLD</b>   | <b>{F T B}</b> | Invalid NPC type                    |
| <b>NOMTH</b>   | <b>{F T B}</b> | No Match                            |
| <b>NPCTA</b>   | <b>{F T B}</b> | NPC used for Test Access            |
| <b>OOS</b>     | <b>{F T B}</b> | Out-of-service                      |
| <b>RDC</b>     | <b>{F T B}</b> | Red Circuit                         |
| <b>UNPASGN</b> | <b>{F T B}</b> | Unassigned or Not Properly Assigned |
| <b>UEQD</b>    | <b>{F T B}</b> | Unequipped                          |
| <b>UTST</b>    | <b>{F T B}</b> | Under Test                          |

## **OVERLOAD,MP,CI,UNIT,UC,TN,PROCESSOR**

### **OVERLOAD**

#### **Explanation Of Command**

**This troubleshooting message is used only by the DACS II developers** and occurs when the indicated CPU processor has reported an internal error from which recovery is not possible. The error may be in the CPU hardware or related software. The resulting troubleshooting data can be useful in isolating software problems.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

## Autonomous Message

[O.01381]

```
pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd \
PROCESSOR DATA 5 LN MSG:
<d01> <d02> <d03> <d04> <d05> < d06 > < d07 > < d08 >
<d09> <d10> <d11> <d12> <d13> < d14 > < d15 > < d16 >
<d17> <d18> <d19> <d20> <d21> < d22 > < d23 > < d24 >
<d25> <d26> <d27> <d28> <d29> <d3031> < d3233> < d34353637> \
EOM
```

```
pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd \
PROGRAM TEXT 5 LN MSG:
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16>
<d17> <d18> <d19> <d20> <d21> <d22> <d23> <d24>
<d25> <d26> <d27> <d28> <d29> <d30> <d31> <d32> EOM
```

```
pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd \
MEMORY DATA 5 LN MSG:
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16>
<d17> <d18> <d19> <d20> <d21> <d22> <d23> <d24>
<d25> <d26> <d27> <d28> <d29> <d30> <d31> <d32> EOM
```

```
pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd READY \
QUEUE DATA 3 LN MSG:
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16> EOM
```

```
pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd PAUSE \
QUEUE DATA 3 LN MSG:
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16> EOM
```

```
pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd \
LOCAL STACK DATA 5 LN MSG:
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16>
<d17> <d18> <d19> <d20> <d21> <d22> <d23> <d24>
<d25> <d26> <d27> <d28> <d29> <d30> <d31> <d32> EOM
```

```
pahh:mm:ss xy,ww OVERLOAD {MP|CI|UNIT [q]q UC} TN dddd STACK \
TRACE 5 LN MSG:
<d01> <d02> <d03> <d04> <d05> <d06> <d07> <d08>
<d09> <d10> <d11> <d12> <d13> <d14> <d15> <d16>
<d17> <d18> <d19> <d20> <d21> <d22> <d23> <d24>
<d25> <d26> <d27> <d28> <d29> <d30> <d31> <d32> COMPL
```

## Explanation Of Parameters

---

**pa** - Priority of action field.

**pa**      *Explanation*

**I**      Information  
**\***      Minor alarm  
**\*\***      Major alarm  
**\*C**      Critical alarm

### OVERLOAD

- Overload

**DATA** - Data

**\*\*** - Major Alarm

**MP** - Main processor

**CI** - Communications interface

**UC** - Unit controller

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**MC** - Main controller

**TN** - Transaction

**dddd** - Transaction number

The TN number can be specified in UTL::QRY,ERR to retrieve the contents of the DACS II error recovery log file which contains the past history of all error recovery events related to this output report.

The following interpretations are listed in alphabetical order by the capitalized names

**LOCAL** - Local

LOCAL STACK DATA interpretation

**dx**      *Explanation*

01      user stack pointer (A7)  
02-32      dump of stack data (in reverse order)



**MEMORY** - Memory

MEMORY DATA interpretation

**dx** *Explanation*

- 01 Address of bad memory segment
- 02 Number of attached memory segments
- 03 Memory size
- 04-08 Not used
- 09-32 Memory dump

This displays the memory attached to the process at the time of the OVERLOAD. If the memory address and memory dump section contain zeros, this indicates that there was no memory corruption. Otherwise, if corruption was detected, the address of the bad segment along with a memory dump of that segment will be displayed.

**PAUSE** - Pause

**QUEUE** - Queue

PAUSE QUEUE interpretation

**d01-d16**

- process name (ASCII)

This displays the processes that were in the pause queue at the time of the OVERLOAD.

## PROCESSOR

- Processor

### PROCESSOR DATA interpretation

This displays all relevant data about the processor at the time of the OVERLOAD. Note that pcb stands for process control block.

| <b>dx</b> | <i>Explanation</i>  |
|-----------|---------------------|
| 01        | process name        |
| 02        | stack pc            |
| 03        | pcb address         |
| 04        | pack id             |
| 05        | exception vector    |
| 06        | status register     |
| 07        | special status word |
| 08        | fault address       |
| 09        | usp                 |
| 10        | fp                  |
| 11        | A5                  |
| 12        | A4                  |
| 13        | A3                  |
| 14        | A2                  |
| 15        | A1                  |
| 16        | A0                  |
| 17        | D7                  |
| 18        | D6                  |
| 19        | D5                  |
| 20        | D4                  |
| 21        | D3                  |
| 22        | D2                  |
| 23        | D1                  |
| 24        | D0                  |
| 25        | pcb memory segs     |
| 26        | pcb ssp             |
| 27        | pcb pc              |
| 28        | pcb return addr     |
| 29        | pcb usp             |
| 30        | pcb events          |
| 31        | pcb tslice          |
| 32        | pcb sr              |
| 33        | pcb signals         |
| 34        | pcb prior           |
| 35        | pcb mode            |
| 36        | pcb dflag           |
| 37        | pcb status          |

**PROGRAM**

- Program

**TEXT** - Text

PROGRAM TEXT interpretation

**d01-d32**

- disassembled listing of program text (ASCII)

This displays the disassembled listing of the program text. The display contains up to 254 ASCII characters starting at the value of the program counter (pc) at the time the OVERLOAD occurred.

**READY** - Ready

READY QUEUE interpretation

**d01-d16**

- process name (ASCII)

This displays the processes that were in the ready-to-run queue at the time of the OVERLOAD.

**STACK** - Stack

**TRACE** - Trace

STACK TRACE interpretation

*dxx      Explanation*

01      previous stack 1 (A6)  
02      program counter  
03-08   stack dump

09      previous stack 2 (A6)  
10      program counter  
11-16   stack dump

17      previous stack 3 (A6)  
18      program counter  
19-24   stack dump

25      previous stack 4 (A6)  
26      program counter  
27-32   stack dump

This message dumps the previous four function calls prior to the function where the OVERLOAD occurred.



---

**Contents**

|                                      |      |
|--------------------------------------|------|
| <b>RESET,DATE,TOD,FORMAT,MDY,DMY</b> | 15-2 |
| ■ Explanation Of Command             | 15-2 |
| ■ Command                            | 15-2 |
| ■ Completion Message                 | 15-2 |
| ■ Denial Message                     | 15-2 |
| ■ Autonomous Message                 | 15-2 |
| ■ Explanation Of Parameters          | 15-3 |
| <b>RESET,STOPPED</b>                 | 15-4 |
| ■ Explanation Of Command             | 15-4 |
| ■ Command                            | 15-4 |
| ■ Completion Message                 | 15-4 |
| ■ Denial Message                     | 15-4 |
| ■ Autonomous Message                 | 15-4 |
| <b>RMV,CCB</b>                       | 15-5 |
| ■ Explanation Of Command             | 15-5 |
| ■ Command                            | 15-5 |
| ■ Completion Message                 | 15-5 |
| ■ Denial Message                     | 15-5 |
| ■ Autonomous Message                 | 15-5 |
| ■ Explanation Of Parameters          | 15-6 |
| <b>RMV,CCI</b>                       | 15-7 |
| ■ Explanation Of Command             | 15-7 |
| ■ Command                            | 15-8 |
| ■ Completion Message                 | 15-8 |
| ■ Denial Message                     | 15-8 |
| ■ Autonomous Message                 | 15-8 |

---

## Contents

|                             |       |
|-----------------------------|-------|
| ■ Explanation Of Parameters | 15-8  |
| <b>RMV,CCNI</b>             | 15-10 |
| ■ Explanation Of Command    | 15-10 |
| ■ Command                   | 15-10 |
| ■ Completion Message        | 15-10 |
| ■ Denial Message            | 15-10 |
| ■ Autonomous Message        | 15-10 |
| ■ Explanation Of Parameters | 15-11 |
| <b>RMV,ETSI</b>             | 15-12 |
| ■ Explanation Of Command    | 15-12 |
| ■ Command                   | 15-12 |
| ■ Completion Message        | 15-12 |
| ■ Denial Message            | 15-12 |
| ■ Autonomous Message        | 15-12 |
| ■ Explanation Of Parameters | 15-13 |
| <b>RMV,ETSI,ECN,ALL</b>     | 15-14 |
| ■ Explanation Of Command    | 15-14 |
| ■ Command                   | 15-14 |
| ■ Completion Message        | 15-14 |
| ■ Denial Message            | 15-14 |
| ■ Autonomous Message        | 15-15 |
| ■ Explanation Of Parameters | 15-15 |
| <b>RMV,LINK</b>             | 15-16 |
| ■ Explanation Of Command    | 15-16 |
| ■ Command                   | 15-16 |
| ■ Completion Message        | 15-16 |
| ■ Denial Message            | 15-16 |
| ■ Autonomous Message        | 15-16 |
| ■ Explanation Of Parameters | 15-17 |
| <b>RMV,MC</b>               | 15-18 |
| ■ Explanation Of Command    | 15-18 |
| ■ Command                   | 15-18 |
| ■ Completion Message        | 15-18 |
| ■ Denial Message            | 15-18 |
| ■ Autonomous Message        | 15-18 |
| ■ Explanation Of Parameters | 15-19 |

---

## Contents

|                                         |       |
|-----------------------------------------|-------|
| <b>RMV,NPC,SIDE,INCL</b>                | 15-20 |
| ■ Explanation Of Command                | 15-20 |
| ■ Command                               | 15-21 |
| ■ Nonhierarchical                       | 15-21 |
| ■ Hierarchical                          | 15-21 |
| ■ Completion Message                    | 15-22 |
| ■ Nonhierarchical                       | 15-22 |
| ■ Hierarchical                          | 15-22 |
| ■ Denial Message                        | 15-22 |
| ■ Nonhierarchical                       | 15-22 |
| ■ Hierarchical                          | 15-22 |
| ■ Autonomous Message                    | 15-22 |
| ■ Nonhierarchical                       | 15-22 |
| ■ Hierarchical                          | 15-23 |
| ■ Explanation Of Parameters             | 15-23 |
| <b>RMV,SMEM,PMEM</b>                    | 15-46 |
| ■ Explanation Of Command                | 15-46 |
| ■ Command                               | 15-46 |
| ■ Completion Message                    | 15-46 |
| ■ Denial Message                        | 15-47 |
| ■ Autonomous Message                    | 15-47 |
| ■ Explanation Of Parameters             | 15-47 |
| <b>RMV,SYNC</b>                         | 15-49 |
| ■ Explanation Of Command                | 15-49 |
| ■ Command                               | 15-49 |
| ■ Completion Message                    | 15-49 |
| ■ Denial Message                        | 15-49 |
| ■ Autonomous Message                    | 15-49 |
| ■ Explanation Of Parameters             | 15-50 |
| <b>RMV,SYNC,TLI,CRO</b>                 | 15-51 |
| ■ Explanation Of Command                | 15-51 |
| ■ Command                               | 15-51 |
| ■ Completion Message                    | 15-51 |
| ■ Denial Message                        | 15-51 |
| ■ Autonomous Message                    | 15-51 |
| ■ Explanation Of Parameters             | 15-52 |
| <b>RMV,SYNC,TLI,PMC,PMA,DMA,MI,COND</b> | 15-53 |

---

## Contents

|                               |       |
|-------------------------------|-------|
| ■ Explanation Of Command      | 15-53 |
| ■ Autonomous Message          | 15-53 |
| ■ Explanation Of Parameters   | 15-53 |
| <b>RMV,SYNC,TLI,SSP</b>       | 15-55 |
| ■ Explanation Of Command      | 15-55 |
| ■ Command                     | 15-55 |
| ■ Completion Message          | 15-55 |
| ■ Denial Message              | 15-56 |
| ■ Autonomous Message          | 15-56 |
| ■ Explanation Of Parameters   | 15-56 |
| <b>RMV,TSI</b>                | 15-58 |
| ■ Explanation Of Command      | 15-58 |
| ■ Command                     | 15-58 |
| ■ Completion Message          | 15-58 |
| ■ Denial Message              | 15-58 |
| ■ Autonomous Message          | 15-58 |
| ■ Explanation Of Parameters   | 15-59 |
| <b>RMV,TSIS,CCN,ALL</b>       | 15-60 |
| ■ Explanation Of Command      | 15-60 |
| ■ Command                     | 15-60 |
| ■ Completion Message          | 15-61 |
| ■ Denial Message              | 15-61 |
| ■ Autonomous Message          | 15-61 |
| ■ Explanation Of Parameters   | 15-61 |
| <b>RMV,TSIS,CCN,UNIT,CONN</b> | 15-63 |
| ■ Explanation Of Command      | 15-63 |
| ■ Command                     | 15-63 |
| ■ Completion Message          | 15-63 |
| ■ Denial Message              | 15-64 |
| ■ Autonomous Message          | 15-64 |
| ■ Explanation Of Parameters   | 15-64 |
| <b>RMV,UNIT,FC</b>            | 15-66 |
| ■ Explanation Of Command      | 15-66 |
| ■ Command                     | 15-66 |
| ■ Completion Message          | 15-66 |
| ■ Denial Message              | 15-66 |
| ■ Autonomous Message          | 15-66 |



---

## Contents

|                               |       |
|-------------------------------|-------|
| ■ Explanation Of Parameters   | 15-67 |
| <b>RMV,UNIT,FLI</b>           | 15-69 |
| ■ Explanation Of Command      | 15-69 |
| ■ Command                     | 15-69 |
| ■ Completion Message          | 15-69 |
| ■ Denial Message              | 15-69 |
| ■ Autonomous Message          | 15-70 |
| ■ Explanation Of Parameters   | 15-70 |
| <b>RMV,UNIT,FMT</b>           | 15-71 |
| ■ Explanation Of Command      | 15-71 |
| ■ Command                     | 15-71 |
| ■ Completion Message          | 15-71 |
| ■ Denial Message              | 15-71 |
| ■ Autonomous Message          | 15-72 |
| ■ Explanation Of Parameters   | 15-72 |
| <b>RMV,UNIT,FTMI,DSPI</b>     | 15-73 |
| ■ Explanation Of Command      | 15-73 |
| ■ Command                     | 15-73 |
| ■ Completion Message          | 15-73 |
| ■ Denial Message              | 15-73 |
| ■ Autonomous Message          | 15-73 |
| ■ Explanation Of Parameters   | 15-74 |
| <b>RMV,UNIT,MMFG,FRC,INCL</b> | 15-76 |
| ■ Explanation Of Command      | 15-76 |
| ■ Command                     | 15-76 |
| ■ Completion Message          | 15-77 |
| ■ Denial Message              | 15-77 |
| ■ Autonomous Message          | 15-77 |
| ■ Explanation Of Parameters   | 15-77 |
| <b>RMV,UNIT,UC</b>            | 15-79 |
| ■ Explanation Of Command      | 15-79 |
| ■ Command                     | 15-79 |
| ■ Completion Message          | 15-79 |
| ■ Denial Message              | 15-79 |
| ■ Autonomous Message          | 15-79 |
| ■ Explanation Of Parameters   | 15-80 |



---

## **RESET — RMV**

---

### **RESET — RMV**

This section documents the commands **RESET** through **RMV**.

## **RESET,DATE,TOD,FORMAT,MDY,DMY**

### **ERROR RECOVERY**

#### **Explanation Of Command**

This autonomously generated message is used to inform the craft that the system clock has been recovered automatically by the frame. The field can either be date of the year, time of day, or both.

The date and time will default to 12/31/9999 and 00:00:00, respectively.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01393]

I hh:mm:ss xy,ww RESET {DATE|TOD|TOD DATE} hr:mn:sc \  
{mo/da/yr FORMAT MDY|da/mo/yr FORMAT DMY} COMPL

### **Explanation Of Parameters**

---

**RESET** - Reset

**TOD** - Time of day

**DATE** - Date

**mo/da/yr**

- date DACS II is reset to

**da/mo/yr**

- date DACS II is reset to

**yr** - 4- digit calendar year  
**mo** - month (01 through 12)  
**da** - day (01 through 31)

**hr:mn:sc**

- time DACS II is reset to

**hr** - hour (00 through 23)  
**mn** - minute (00 through 59)  
**sc** - second (00 through 59)

**FORMAT** - Date display format

**MDY** - Month/Day/Year format  
**DMY** - Day/Month/Year format

## **RESET, STOPPED**

### **STARTUP**

#### **Explanation Of Command**

This autonomous message indicates that the reset procedure has not successfully completed.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.01251]

**RESET STOPPED**

## **RMV,CCB**

### **REMOVE CROSS-CONNECT BUFFER**

#### **Explanation Of Command**

This command applies only to the noncapacity expansion frame (NCEF).

It requests the removal of the cross-connect buffer from service.

#### **Command**

[I.33202]

RMV:FRM xy,SEQ ww:CCB sf!

#### **Completion Message**

[O.33202]

M hh:mm:ss xy,ww n[vv] RMV CCB sf COND 00 COMPL

#### **Denial Message**

[O.33202.01]

\*\*hh:mm:ss xy,ww n[vv] RMV CCB sf COND cc DNY

#### **Autonomous Message**

[O.33202]

pa <il> hh:mm:ss xy,ww n[vv] RMV CCB sf {PMC|PMAS|DMA|MI} \  
COND 00 COMPL

[O.33202.01]

pa <il> hh:mm:ss xy,ww n[vv] RMV CCB sf {PMC|PMA|DMA|MI} \  
COND cc DNY

### Explanation Of Parameters

**pa** - Priority of action field.

**pa** *Explanation*

**I** Information

**\*** Minor alarm

**\*\*** Major alarm

**\*C** Critical alarm

**il** - Intervention level.

**il** *Explanation*

**AMI** Immediate maintenance action

**AMD** Deferred maintenance action

**SI** No intervention

**PMC** Prompt Maintenance Action Critical

**PMA** Prompt Maintenance Action Major

**DMA** Deferred Maintenance Action Minor

**MI** Maintenance Information

**CCB** - Cross-connect buffer

**sf** - CCB identification

**s** - Side No. (0 or 1).

**f** - CCB No. (1 through 6).

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped

**04** Subject entity is out of service

**18** CCNI is out of service

**19** Mate CCN side is out of service



---

## RMV,CCI

---

### REMOVE CLOCK CONTROL INTERFACE

#### Explanation Of Command

---

pa - Priority of action field.

#beginlist

| <i>pa</i> | <i>Explanation</i> |
|-----------|--------------------|
| I         | Information        |
| *         | Minor alarm        |
| **        | Major alarm        |
| *C        | Critical alarm     |

#endlist

il - Intervention level.

| il  | Explanation                  |
|-----|------------------------------|
| AMI | Immediate maintenance action |
| AMD | Deferred maintenance action  |
| SI  | No intervention              |

PMC Prompt Maintenance Action Critical  
PMA Prompt Maintenance Action Major  
DMA Deferred Maintenance Action Minor  
MI Maintenance Information

This command is applicable only to the capacity expansion frame (CEF).

It requests that the clock and control interface (CCI) in side s be removed from service.

When a CCI pack is removed from service, its two corresponding bus terminator (BT) packs are also removed.

### **Command**

---

[I.33251]

RMV:FRM xy,SEQ ww:CCI s!

### **Completion Message**

---

[O.33251]

M hh:mm:ss xy,ww n[vv] RMV CCI s COND 00 COMPL

### **Denial Message**

---

[O.33251.01]

M hh:mm:ss xy,ww n[vv] RMV CCI s COND cc DNY

### **Autonomous Message**

---

[O.33251]

pa <il> hh:mm:ss xy,ww n[vv] RMV CCI s {PMC|PMA|DMA|MI} \  
COND 00 COMPL

[O.33251.01]

pa <il> hh:mm:ss xy,ww n[vv] RMV CCI s {PMC|PMA|DMA|MI} \  
COND cc DNY

### **Explanation Of Parameters**

---

**CCI** - Clock and control interface

**s** - Side No. (0 or 1)

**cc** - Completion condition code (hexadecimal)

To interpret values of cc see cc below.

**cc** - Hexadecimal condition code

**cc Explanation**

**04 Subject entity is out of service**

**19 Mate CCN side is out of service**

## **RMV,CCNI**

### **REMOVE CROSS-CONNECT NETWORK INTERFACE**

#### **Explanation Of Command**

This command applies only to the noncapacity expansion frame (NCEF).

It requests the removal of the cross-connect network interface from service.

#### **Command**

[I.33201]

**RMV:FRM xy,SEQ ww:CCNI s!**

#### **Completion Message**

[O.33201]

**M hh:mm:ss xy,ww n[vv] RMV CCNI s COND cc COMPL**

#### **Denial Message**

[O.33201.01]

**M hh:mm:ss xy,ww n[vv] RMV CCNI s COND cc DNY**

#### **Autonomous Message**

[O.33201]

**pa <il> hh:mm:ss xy,ww n[vv] RMV CCNI s {PMC|PMA|DMA|MI} \  
COND cc COMPL**

[O.33201.01]

**pa** <il> hh:mm:ss xy,ww n[vv] RMV CCNI s {PMC|PMA|DMA|MI} \  
**COND cc DNY**

### Explanation Of Parameters

---

**pa** - Priority of action field.

| <b>pa</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|          |             |
|----------|-------------|
| <b>I</b> | Information |
|----------|-------------|

|          |             |
|----------|-------------|
| <b>*</b> | Minor alarm |
|----------|-------------|

|           |             |
|-----------|-------------|
| <b>**</b> | Major alarm |
|-----------|-------------|

|           |                |
|-----------|----------------|
| <b>*C</b> | Critical alarm |
|-----------|----------------|

**il** - Intervention level.

| <b>il</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|            |                              |
|------------|------------------------------|
| <b>AMI</b> | Immediate maintenance action |
|------------|------------------------------|

|            |                             |
|------------|-----------------------------|
| <b>AMD</b> | Deferred maintenance action |
|------------|-----------------------------|

|           |                 |
|-----------|-----------------|
| <b>SI</b> | No intervention |
|-----------|-----------------|

**PMC** Prompt Maintenance Action Critical

**PMA** Prompt Maintenance Action Major

**DMA** Deferred Maintenance Action Minor

**MI** Maintenance Information

**CCNI** - Cross-connect network interface

**s** - CCNI number (0 or 1)

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                  |
|-----------|----------------------------------|
| <b>04</b> | Subject entity is out of service |
|-----------|----------------------------------|

|           |                                 |
|-----------|---------------------------------|
| <b>19</b> | Mate CCN side is out of service |
|-----------|---------------------------------|

## **RMV,ETSI**

### **REMOVE ETSI**

#### **Explanation Of Command**

This command applies only to the capacity expansion frame (CEF).

It requests the removal of an expanded time slot interchanger (ETSI) from service. DACS II will deny this command if the mate expanded cross-connect network (ECCN) side is out-of-service (OOS).

#### **Command**

[I.33261]

RMV:FRM xy,SEQ ww:ETSI sqq!

#### **Completion Message**

[O.33261]

M hh:mm:ss xy,ww n[vv] RMV ETSI sqq COND 00 COMPL

#### **Denial Message**

[O.33261.01]

M hh:mm:ss xy,ww n[vv] RMV ETSI sqq COND cc DNY

#### **Autonomous Message**

[O.33261]

pa <il> hh:mm:ss xy,ww n[vv] RMV ETSI sqq {PMC|PMA|DMA|MI} \  
COND 00 COMPL

[O.33261.01]

**pa** <il> hh:mm:ss xy,ww n[vv] RMV ETSI sqq {PMC|PMA|DMA|MI} \  
**COND** cc DNY

### Explanation Of Parameters

---

**pa** - Priority of action field.

| <b>pa</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|          |             |
|----------|-------------|
| <b>I</b> | Information |
|----------|-------------|

|          |             |
|----------|-------------|
| <b>*</b> | Minor alarm |
|----------|-------------|

|           |             |
|-----------|-------------|
| <b>**</b> | Major alarm |
|-----------|-------------|

|           |                |
|-----------|----------------|
| <b>*C</b> | Critical alarm |
|-----------|----------------|

**il** - Intervention level.

| <b>il</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|     |                              |
|-----|------------------------------|
| AMI | Immediate maintenance action |
|-----|------------------------------|

|     |                             |
|-----|-----------------------------|
| AMD | Deferred maintenance action |
|-----|-----------------------------|

|    |                 |
|----|-----------------|
| SI | No intervention |
|----|-----------------|

PMC Prompt Maintenance Action Critical

PMA Prompt Maintenance Action Major

DMA Deferred Maintenance Action Minor

MI Maintenance Information

**ETSI** - Expanded time slot interchanger

**s** - Side (0 or 1).

**qq** - Unit number (01 through 16)

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                       |
|-----------|---------------------------------------|
| <b>02</b> | <b>Subject entity is not equipped</b> |
|-----------|---------------------------------------|

|           |                                         |
|-----------|-----------------------------------------|
| <b>04</b> | <b>Subject entity is out of service</b> |
|-----------|-----------------------------------------|

|           |                                        |
|-----------|----------------------------------------|
| <b>19</b> | <b>Mate CCN side is out of service</b> |
|-----------|----------------------------------------|

|           |                              |
|-----------|------------------------------|
| <b>CE</b> | <b>CCI is out of service</b> |
|-----------|------------------------------|

---

## **RMV,ETIS,ECCN,ALL**

---

### **REMOVE ETIS ALL**

#### **Explanation Of Command**

---

This command applies only to the capacity expansion frame (CEF).

It requests the removal of all in-service expanded time slot interchangers (ETISs) in side "s" of the expanded cross-connect network (ECCN). This message is denied if ECCN side "s" is the active side and the mate ECCN side is out-of-service (OOS).

#### **Command**

---

[I.33271]

RMV:FRM xy,SEQ ww:ETIS,ECCN s,ALL!

#### **Completion Message**

---

[O.33271]

M hh:mm:ss xy,ww n[vv] RMV ETIS ECCN s ALL 5 LN MSG:

TOTAL ETIS kk

s01 r nn s02 r nn s03 r nn s04 r nn s05 r nn s06 r nn

s07 r nn s08 r nn s09 r nn s10 r nn s11 r nn s12 r nn

s13 r nn s14 r nn s15 r nn s16 r nn \

COND 00 COMPL

#### **Denial Message**

---

[O.33271.01]

M hh:mm:ss xy,ww n[vv] RMV ETIS ECCN s ALL \

COND cc DNY



### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**ETSI** - Expanded time slot interchangers

**ECCN** - Expanded cross-connect network

**s** - Side number (0 or 1)

**kk** - Total number of ETSlS equipped in side s (01 through 16).

**r** - Indication of the completion or denial of the removal for each individual ETSI pack.

*r*      *Explanation*

C      Completed

D      Denied

-      ETSI not equipped

**nn** - Hexadecimal condition code for the particular ETSI.

For r = C

*nn*      *Explanation*

00      No condition

For r = D

*nn*      *Explanation*

04      Subject entity is out of service

"nn" will be shown as "--" if "r" is "-".      **cc**      - Hexadecimal condition code

**cc**      *Explanation*

**02**      Subject entity is not equipped

**04**      Subject entity is out of service

**19**      Mate CCN side is out of service

**CE**      CCI is out of service

## **RMV, LINK**

### **REMOVE LINK**

#### **Explanation Of Command**

This message requests the removal of the administrative link from service.

#### **Command**

[I.33011]

RMV:FRM xy,SEQ ww:LINK j!

#### **Completion Message**

[O.33011]

M hh:mm:ss xy,ww n[vv] RMV LINK j COND cc COMPL

#### **Denial Message**

[O.33011.01]

M hh:mm:ss xy,ww n[vv] RMV LINK j COND cc DNY

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**LINK** - Link

**j** - Administrative link number (1 through 6)

**pa** - Priority of action field.

**pa** *Explanation*

**\*** Minor alarm

**\*\*** Major alarm

**M** Manual Response

**cc** - Hexadecimal condition code

**cc** **Explanation**

**00** No conditions

**04** Subject entity is out of service

**08** Cannot remove own link

**09** Last link in service

**D0** Command is Frame administrator (DAX) only.

**FC** Superuser logged on

**FD** Command not allowed

## **RMV,MC**

---

### **REMOVE MAIN CONTROLLER**

#### **Explanation Of Command**

---

This message removes the main controller from service. The MC must be in service for this command to be accepted. Diagnostic and restore messages can still be run on the MC.

#### **Command**

---

[I.33001]

RMV:FRM xy,SEQ ww:MC!

#### **Completion Message**

---

[O.33001]

M hh:mm:ss xy,ww n[vv] RMV MC COND 00 COMPL

#### **Denial Message**

---

[O.33001.01]

M hh:mm:ss xy,ww n[vv] RMV MC COND cc DNY

#### **Autonomous Message**

---

[O.33001]

pa <il> hh:mm:ss xy,ww RMV MC {PMC|PMA|DMA|MI} COND cc COMPL

---

### Explanation Of Parameters

---

**MC** - Main controller

**pa** - Priority of action field.

**pa** *Explanation*

**I** Information

**\*** Minor alarm

**\*\*** Major alarm

**\*C** Critical alarm

**il** - Intervention level.

**il** *Explanation*

**AMI** Immediate maintenance action

**AMD** Deferred maintenance action

**SI** No intervention

**PMC** Prompt Maintenance Action Critical

**PMA** Prompt Maintenance Action Major

**DMA** Deferred Maintenance Action Minor

**MI** Maintenance Information

**cc** - Hexadecimal condition code

**cc** *Explanation*

**04** Subject entity is out of service

## **RMV,NPC,SIDE,INCL**

### **REMOVE NPCs**

#### **Explanation Of Command**

This command removes a single Network Processing Circuit (NPC) or a range of NPCs within a unit from service.

The NPCs can belong to a Facility Terminating Unit, a DS3 Unit, a HDS3 Unit or a Digital Signal Processing Unit. For TH type NPCs, the NPC numbers which are divisible by four with a remainder of zero are not valid THxyz NPCs. However, the range of THxyz type NPC numbers is still supported with the understanding that there may be gaps in the NPC number range.

Digital Signal Processing Platform (DSPP) NPCs in Facility Terminating Units may also be removed by this command. Please note also that DSPP NPCs are always odd and the next higher even NPC number is not used.

A range of NPCs cannot be specified for Digital Signal Processing Unit NPCs in a DSPU. When a range of NPCs is being removed, execution of this command may be aborted by entering **ABT**.

The **INCL** keyword is required for removal of one or more cross-connected Network Processing Circuits with customer or red circuit marking.

**Note:** **INCL** is also required for subrate Network Processing Circuits with established channels (i.e., channels connected by the **SECH** command). The **INCL** keyword is required for removal of one or more cross-connected Network Processing Circuits with customer or red circuit marking.

**Note:** **INCL** is also required for C-bit processing DSPU packs with C-bit connected channels.

One message segment is output for each Network Processing Circuit requested and successfully removed.

For NPCs with a Digital Signal Processing Unit (DSPU), this command results in the removal of all NPCs in the circuit pack on only one of the duplicated sides.

When an NPC remove command addresses a range of NPCs, the removal of two or more consecutive NPCs in the range or even an entire Facility Terminating Module (FTM) of NPCs can be skipped, with a summary message, for the following conditions: A range command addressing NPCs within a Unit crosses an FTM boundary and the FTM is unequipped; Addressed NPCs are unequipped; Addressed NPCs are out-of-service; Addressed NPCs have other conditions not involving a failure condition determined by diagnostics.

Specifically:

- Remove commands where the address range crosses a Unit boundary shall be denied.
- For remove commands which address a range of NPCs, denials for sets of two or more NPCs shall be output in a summary command. The summary denial shall use a floating window denial:

#### **Floating Window Denial Message**

- When a remove command for a range of NPCs is denied for successive NPCs in the range for the same reason, a summary denial message shall be output, identifying the relevant range of NPCs and the reason. The generation of additional completion or denial responses for reasons other than diagnostic failure resumes at the next NPC and continues to the end of the range.

### **Command**

---

#### **Nonhierarchical**

---

[I.33351]

**RMV:[FRM xy,SEQ ww]:NPC [s]abc[-[t]def][,SIDE s][,INCL]!**

#### **Hierarchical**

---

[I.33351]

**RMV:[FRM xy,SEQ ww]:NPC uvmp[-uvkqr][,SIDE s][,INCL]!**

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.33351]

M hh:mm:ss xy,ww n[vv] RMV NPC [s]ghi[ SIDE s] TYPE mnxyz[ INCL] \  
COND kk COMPL

#### **Hierarchical**

---

[O.33351]

M hh:mm:ss xy,ww n[vv] RMV NPC uvghi[ SIDE s] TYPE mnxyz[ INCL] \  
COND kk COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.33351.01]

M hh:mm:ss xy,ww n[vv] RMV NPC [s]jkl[-[t]mno][ SIDE s] TYPE mnxyz\  
[ INCL] COND cc DNY

#### **Hierarchical**

---

[O.33351.01]

M hh:mm:ss xy,ww n[vv] RMV NPC uvjkl[-uvmno][ SIDE s] TYPE mnxyz\  
[ INCL] COND cc DNY

### **Autonomous Message**

---

#### **Nonhierarchical**

---

[O.33351]

pa <il> hh:mm:ss xy,ww n[vv] RMV NPC [s]ghi[ SIDE s] TYPE mnxyz[ INCL]  
\  
\ {PMC|PMA|DMA|MI} COND kk COMPL



[O.33351.01]

pa <il> hh:mm:ss xy,ww n[vv] RMV NPC [s]jkl[ SIDE s] TYPE mnxyz[ INCL] \  
COND cc DNY

### Hierarchical

[O.33351]

pa <il> hh:mm:ss xy,ww n[vv] RMV NPC uvghi[ SIDE s] TYPE mnxyz[ INCL] \  
{PMC|PMA|DMA|MI} COND kk COMPL

[O.33351.01]

pa <il> hh:mm:ss xy,ww n[vv] RMV NPC uvjkl[ SIDE s] TYPE mnxyz[ INCL] \  
COND cc DNY

### Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number (beginning of the range).

**[t]def** - The 3- or 4-digit nonhierarchical NPC number (end of the range).

The allowable values are presented below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |
| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |
|             |             |             |             |
| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Hierarchical NPC number (beginning of the range).

**uvkqr** - Hierarchical NPC number (end of the range).

**uv** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The allowable values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**SIDE** - Side

**s** - Side of duplicated DSPU circuit to be removed (0 or 1)

**INCL** - Inclusive

This keyword is required for removal of one or more NPCs which have cross-connections marked as customer or red. It is also required for C-bit processing DSPU packs with C-bit connected channels. For CEPT circuit packs, there is only one NPC per circuit pack.

**pa** - Priority of action

**pa**      *Explanation*

**\*C**      Critical

**\*\***      Major

**\***      Minor

**A**      Autonomous

**il** - Intervention level.

*il*      *Explanation*

**AMI**      Immediate maintenance action

**AMD**      Deferred maintenance action

**SI**      No intervention

**PMC** - Prompt Maintenance Action Critical

**PMA** - Prompt Maintenance Action Major

**DMA** - Deferred Maintenance Action Minor

**MI** - Maintenance Information

**[s]ghi** - The 3- or 4-digit nonhierarchical number of a successfully removed NPC.

(**[s]abc** through **[t]def**)

**[s]jkl** - The 3- or 4-digit nonhierarchical number of an NPC whose removal is denied.

If used in a range, it denotes the first NPC of the range.

(**[s]abc** through **[t]def**)

**[t]mno** - The 3- or 4-digit nonhierarchical number of an NPC whose removal is denied.

It denotes the last NPC of a range. (**[s]abc** through **[t]def**)



**uvghi** - Hierarchical number of a successfully removed NPC.

(**uvmnp** through **uvkqr**)

**uvjkl** - Hierarchical number of an NPC whose removal is denied.

If used in a range, it denotes the first NPC of the range.

(**uvmnp** through **uvkqr**)

**uvmno** - Hierarchical number of an NPC whose removal is denied.

It denotes the last NPC of a range. (**uvmnp** through **uvkqr**)

**uv** - Unit number

**m, g, k, j**

- Module number

**np, qr, hi, kl, no**

- NPC number within the module

**TYPE** - Type

**mnxyz** - NPC-type identifier

**mn** Explanation

**SD** Digital Signal Processing Application Circuit Pack

**CB** C-bit processor (CPR) NPC

**PA** CEPT NPC (75- or 120-ohm)

**PB** CEPT NPC (120-ohm twisted pair)

**PC** CEPT NPC (75-ohm coaxial)

**SD-type xyz fields (Digital Signal Processing Platform (DSPP) Applications)**

**SD111** X.50/X.57 International substrate application

**SD311** Digital Multipoint Bridge application

**SD411** North American DDS Substrate and MJU application

**SDxyz** Possible future applications with specific values for xyz

**CB-type xyz fields**

- x** - Fixed at 1  
**y** - Fixed at 0  
**z** - Network timer value  
**z** *Value in milliseconds*  
**0** 600 to 750  
**1** 1500 to 1650  
**2** 2400 to 2550  
**3** 4650 to 4800

**PB- and PC-type xyz fields**

**Table 15-1. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                         |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                           |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                   |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                    |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8,in time 144ms (TRANSMIC 1G)                                                                                               |
|              |            | 111          | Unassigned                                                                                                                             |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                          |
|              |            | 1            |                                                                                                                                        |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:
- in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496 ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway* **cross-connection** the insertion word always defaults to AIS.

mnxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option c=0 is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the **jkl** options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when** *jkl=011* or *jkl=101*. **For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option *g* has meaning only if the NPC is provisioned for CAS; that is, option *d=1*, otherwise it is ignored. If option *g=0* is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option *g=1* is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and *h=1*, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option *h* was selected as either 0 or 1, unless it is later set to 0 by setting parameter *e=0* in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of *xyz* the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option *h=1*.

If both *b=1* and *h=1* and the NPC (used as synchronization source) receives

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure.** If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

**[jkl'] minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

**c=0** hardware timing

**c=1** firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

The option bit "m" is unassigned. Its default value is "0".  
The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

## PA-Type xyz fields

The provisioning values of x, y, and z for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (x, y or z) provisioning value):

**Table 15-2. Provisioning values for  $x$**

| <b>x value</b> | <b>CRC-4 Mode</b> | <b>Automatic CRC-4</b> | <b>Far-End PM</b> | <b>NPC used as Sync Source</b> | <b>TS0 Bit 5 used for SFI</b> |
|----------------|-------------------|------------------------|-------------------|--------------------------------|-------------------------------|
| <b>0</b>       | Y                 |                        |                   |                                |                               |
| <b>1</b>       | Y                 |                        | Y                 |                                | Y                             |
| <b>2</b>       | Y                 |                        |                   |                                | Y                             |
| <b>3</b>       | Y                 |                        | Y                 |                                |                               |
| <b>4</b>       | Y                 |                        |                   | Y                              |                               |
| <b>5</b>       | Y                 |                        | Y                 | Y                              | Y                             |
| <b>6</b>       | Y                 |                        |                   | Y                              | Y                             |
| <b>7</b>       | Y                 |                        | Y                 | Y                              |                               |
| <b>8</b>       |                   | Y                      | Y                 |                                |                               |
| <b>9</b>       |                   | Y                      | Y                 |                                | Y                             |
| <b>A</b>       |                   |                        |                   |                                | Y                             |
| <b>B</b>       |                   |                        |                   |                                |                               |
| <b>C</b>       |                   | Y                      | Y                 | Y                              |                               |
| <b>D</b>       |                   | Y                      | Y                 | Y                              | Y                             |
| <b>E</b>       |                   |                        |                   | Y                              | Y                             |
| <b>F</b>       |                   |                        |                   | Y                              |                               |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.

\* Automatic CRC-4 is also known as CRC-4 Interworking.

4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 15-3. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the  $abcd$  bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the  $abcd$  bits will be transmitted transparently.



If the "AIS in TS16" option is selected (y value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (y values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For y values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (y=8) or Timeslot Channel Numbering (y=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (y=C) or as an unframed clear 2Mbit/s interface (y=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 15-4. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )

3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B**. **However**, for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for **z = 4 and 8**) or 480 ms (for **z = 5 and 9**) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

8.  $z$  values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options ( $z = 6-7$  or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms

- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

**$z=6$  or A** hardware timing

**$z=7$  or B** firmware timing  
(SFDT=2496 ms,  
CACT=624 ms)

- [iv] BER alarm level = DMA

**Specific Options for  $z=6$  or 7**

- [v] RBER alarm level = MI

- [vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

### Specific Options for z= A or B

- [vii] RBER unalarmed
- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of  $xyz$  for the PA type NPC.

**Table 15-5. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations | Explanation                                                                                                                                                                                                                        |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                              | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                              |                                                                                                                                                                                                                                    |
| CCz                              |                                                                                                                                                                                                                                    |
| DCz                              |                                                                                                                                                                                                                                    |
| 0Dz                              | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                           |
| 1Dz                              |                                                                                                                                                                                                                                    |
| 2Dz                              |                                                                                                                                                                                                                                    |
| 3Dz                              |                                                                                                                                                                                                                                    |
| 4Dz                              |                                                                                                                                                                                                                                    |
| 5Dz                              |                                                                                                                                                                                                                                    |
| 6Dz                              |                                                                                                                                                                                                                                    |
| 7Dz                              |                                                                                                                                                                                                                                    |
| 8Dz                              |                                                                                                                                                                                                                                    |
| 9Dz                              |                                                                                                                                                                                                                                    |
| ADz                              |                                                                                                                                                                                                                                    |
| CDz                              |                                                                                                                                                                                                                                    |
| DDz                              |                                                                                                                                                                                                                                    |
| EDz                              |                                                                                                                                                                                                                                    |

### Table Notes:

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 15-6. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z*= value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 15-7. Combinations of *x* and *z* Values**

| Invalid<br>xyz<br>Combinations                       | Explanation                                                                                                                                                                                                                                       |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC<br>5yC<br>6yC<br>7yC<br>CyC<br>DyC<br>EyC<br>FyC | Use of NPC as Sync Source (x 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G (z value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |

**COND** - Condition

**kk** - Hexadecimal completion code  
See cc to interpret values.

**cc** - Hexadecimal condition code

**cc Explanation**

**00** No conditions  
**02** Subject entity is not equipped  
**04** Subject entity is out of service  
**10** Unit is not equipped  
**11** UC is out of service  
**12** UC is in service but failed  
**13** FTMI is not equipped  
**14** FTMI is out of service  
**15** NPC is unequipped  
**19** Mate CCN side is out of service  
**1E** Customer control or red circuit exists  
**1F** FTMI is in service but failed  
**37** DSPI out-of-service  
**3E** DSPI failed

**cc Explanation**

**5C** NPC providing timing to inservice SSP  
**9B** INCL must be specified for SRDC ckts  
**F2** Invalid NPC number specified  
**FD** NPC range crosses unit boundary  
**A0** The selected MXR associated with the NPC is  
Out-Of-Service  
**B7** The associated MXR is In-Service but pested

## **RMV,SMEM,PMEM**

### **REMOVE PMEM OR SMEM**

#### **Explanation Of Command**

This message removes the Primary Memory card (PMEM) or Secondary Memory card (SMEM) from service.

The SMEM card can be alarmed but the PMEM card cannot.

The PMEM card may only be removed when the main controller (MC) is in maintenance condition (MCOND). The SMEM card may be removed when the MC is in service (IS) or MCOND.

If either card fails autonomously, they are removed by software. However, if the PMEM fails autonomously, the MC will first go into MCOND.

If the SMEM is removed manually, it is removed by software also. Removing the SMEM card will not change the state of the MC. When the MC is IS, all writes to the card will be completed before the this command completes.

#### **Command**

[I.33211]

**RMV:FRM xy,SEQ ww:{SMEM|PMEM}!**

#### **Completion Message**

[O.33211]

**M hh:mm:ss xy,ww n[vv] RMV {PMEM|SMEM} COMPL**



---

### Denial Message

[O.33211.01]

M hh:mm:ss xy,ww n[vv] RMV {PMEM|SMEM} COND cc DNY

---

### Autonomous Message

[O.33211]

pa <il> hh:mm:ss xy,ww n[vv] RMV {PMEM|SMEM} {PMC|PMA|DMA|MI} COMPL

---

### Explanation Of Parameters

**PMEM** - Primary memory.

**SMEM** - Secondary memory.

**pa** - Priority of Action  
pa Explanation  
A Autonomous  
I Informational  
\* Minor  
\*\* Major  
\*C Critical

**il** - Intervention level.  
il Explanation  
AMI Immediate maintenance action  
AMD Deferred maintenance action  
SI No intervention

PMC Prompt Maintenance Action Critical  
PMA Prompt Maintenance Action Major  
DMA Deferred Maintenance Action Minor  
MI Maintenance Information

**COND** - Condition

**cc** - Hexadecimal condition code

**cc Explanation**

**03 Subject entity is in service**  
**0B BOOT on subject entity failed**  
**8B PMEM not in service or not ready**  
**F1 PMEM and SMEM synchronization fail**  
**F2 Not a DACS II compatible Flash Card**  
**F3 Flash Card is empty**  
**F4 PMEM and SMEM are different**  
**F5 Flash Card is not present**  
**F6 Flash Card is bad**

## **RMV,SYNC**

### **REMOVE SYNCHRONIZER**

#### **Explanation Of Command**

This command is used to remove the synchronizer from service. This includes the timing extractor circuit, the phase-locked loop, the clock generator circuit, and the service and reply circuit.

If the mate synchronizer is not available for switchover, this message will be denied.

#### **Command**

[I.33101]

**RMV:FRM xy,SEQ ww:SYNC a!**

#### **Completion Message**

[O.33101]

**M hh:mm:ss xy,ww n[vv] RMV SYNC a COND 00 COMPL**

#### **Denial Message**

[O.33101.01]

**M hh:mm:ss xy,ww n[vv] RMV SYNC a COND cc DNY**

#### **Autonomous Message**

**pa <il> hh:mm:ss xy,ww RMV SYNC a {PMC|PMA|DMA|MI} COND 00 COMPL**

## **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**a** - Synchronizer side (0 or 1)

**pa** - Priority of action field.

**pa**     *Explanation*

**I**     Information

**M**     Manual

**\***     Minor alarm

**\*\***     Major alarm

**\*C**     Critical alarm

**il** - Intervention level.

**il**     *Explanation*

**AMI**     Immediate maintenance action

**AMD**     Deferred maintenance action

**SI**     No intervention

**PMC**     Prompt Maintenance Action Critical

**PMA**     Prompt Maintenance Action Major

**DMA**     Deferred Maintenance Action Minor

**MI**     Maintenance Information

**COND** - Condition

**cc** - Hexadecimal condition code

**cc**     **Explanation**

**02**     Subject entity is not equipped

**04**     Subject entity is out of service

**19**     Mate CCN side is out of service

**1A**     Mate SYNC is out of service

**31**     Failed to switch SYNC side

**AB**     Bad sync mode

## **RMV,SYNC,TLI,CRO**

**REMOVE SYNCHRONIZER TIME BASE AS A CLOCK  
REFERENCE OSCILLATOR**

### **Explanation Of Command**

This command requests the removal of the synchronizer time base as a clock reference oscillator.

### **Command**

[I.33111]

**RMV:FRM xy,SEQ ww:SYNC,TLI 3,CRO!**

### **Completion Message**

[O.33111]

**M hh:mm:ss xy,ww n[vv] RMV SYNC TLI 3 CRO COND 00 COMPL**

### **Denial Message**

[O.33111.01]

**M hh:mm:ss xy,ww n[vv] RMV SYNC TLI 3 CRO COND cc DNY**

### **Autonomous Message**

[O.33111]

**pa <il> hh:mm:ss xy,ww RMV SYNC a TLI m[ CRO] \  
{PMC|PMA|DMA|MI} COND 00 COMPL**

[O.33111.01]

**pa** <il> hh:mm:ss xy,ww    RMV SYNC a TLI m[ CRO] \  
{PMC|PMA|DMA|MI} COND cc DNY

### **Explanation Of Parameters**

---

**pa**        - Priority of Action  
          \*C        - Critical  
          \*\*        - Major  
          \*         - Minor  
          A         - Autonomous

**il**        - Intervention level.  
          il        Explanation  
          AMI       Immediate maintenance action  
          AMD       Deferred maintenance action  
          SI        No intervention

PMC       Prompt Maintenance Action Critical  
PMA       Prompt Maintenance Action Major  
DMA       Deferred Maintenance Action Minor  
MI        Maintenance Information

**SYNC**    - Synchronizer

**a**        - Synchronizer number (0 or 1)

**TLI**     - Timing link interface

**m**        - TLI number (1 through 4)

**CRO**     - Clock Reference Oscillator

**COND**    - Condition

**cc**       - Hexadecimal condition code

**cc    Explanation**

02    Subject entity is not equipped  
04    Subject entity is out of service  
33    Wrong TLI type  
A9    Both syncs are out-of-service

## **RMV,SYNC,TLI,PMC,PMA,DMA,MI,COND**

### **REMOVE SYNCHRONIZER'S TLI**

#### **Explanation Of Command**

This message prints when a synchronizer's timing link interface(TLI) extractor is autonomously removed from service. The message 33121 prints to identify the SSPs being removed from service.

#### **Autonomous Message**

[O.33131]

```
pa <il> hh:mm:ss xy,ww RMV SYNC a TLI m \
{PMC|PMA|DMA|MI} COND 00 COMPL
```

#### **Explanation Of Parameters**

**pa** - Priority of action field.

**pa** *Explanation*

**I** Information

**M** Manual

**\*** Minor alarm

**\*\*** Major alarm

**\*C** Critical alarm

**il** - Intervention level.

**il** *Explanation*

**AMI** Immediate maintenance action

**AMD** Deferred maintenance action

**SI** No intervention

**PMC** - Prompt Maintenance Action Critical  
**PMA** - Prompt Maintenance Action Major  
**DMA** - Deferred Maintenance Action Minor  
**MI** - Maintenance Information

**SYNC** - Synchronizer

**a** - SYNC number (0 or 1)

**TLI** - Timing Link Interface

**m** - TLI number (1 through 4)



## **RMV,SYNC,TLI,SSP**

### **REMOVE SYNCHRONIZER'S TLI OR SSP**

#### **Explanation Of Command**

Input Command:

This command requests the removal from service of a synchronizer's timing link interface(TLI) if the TLI is grown as a distributor or the removal from service of a SSP if the TLI was grown as an extractor. If the timing link interface was configured as a timing extractor, synchronizer sync Port 0 or 1 must also be specified.

Autonomous Removal:

The same autonomous removal message will be used to indicate that either a TLI is being removed or that a SSP is being removed. If a SSP is identified in the output, the message is indicating that a SSP is being removed and the alarm level used will be that assigned to TREF in Alarm Severity. If the SSP is not identified in the output, the message is indicating that the TLI is being removed and the alarm level used will that assigned to TLI in Alarm Severity.

#### **Command**

[I.33121]

**RMV:FRM xy,SEQ ww:SYNC a,TLI m[,SSP b]!**

#### **Completion Message**

[O.33121]

**M hh:mm:ss xy,ww n[vv] RMV SYNC a TLI m[ SSP b] COND cc \**  
**COMPL**

### Denial Message

---

[O.33121.01]

M hh:mm:ss xy,ww n[vv] RMV SYNC a TLI m[ SSP b] COND cc DNY

### Autonomous Message

---

[O.33121]

pa <il> hh:mm:ss xy,ww RMV SYNC a TLI m[ SSP b[ c]] \  
{PMC|PMA|DMA|MI} COND 00 COMPL

### Explanation Of Parameters

---

pa - Priority of action field.

pa Explanation

I Information

M Manual

\* Minor alarm

\*\* Major alarm

\*C Critical alarm

il - Intervention level.

il Explanation

AMI Immediate maintenance action

AMD Deferred maintenance action

SI No intervention

PMC Prompt Maintenance Action Critical

PMA Prompt Maintenance Action Major

DMA Deferred Maintenance Action Minor

MI Maintenance Information

SYNC - Synchronizer

a - SYNC number (0 or 1)

TLI - Timing Link Interface

m - TLI number (1 through 4)

**SSP** - Synchronizer Sync Port

**b, c** - SSP number of TLI-m (0 or 1)

Only a single SSP, "b", can be specified in the input command. Two SSPs, "b" and "c", can appear in an autonomous removal message.

**cc** - Hexadecimal condition code

**cc Explanation**

|           |                                         |
|-----------|-----------------------------------------|
| <b>02</b> | <b>Subject entity is not equipped</b>   |
| <b>04</b> | <b>Subject entity is out of service</b> |
| <b>16</b> | <b>SYNC TB is not equipped</b>          |
| <b>17</b> | <b>SYNC is out of service</b>           |
| <b>33</b> | <b>Wrong TLI type</b>                   |
| <b>BE</b> | <b>Hardware mismatch or not present</b> |
| <b>C8</b> | <b>Sync pack denied command</b>         |

## **RMV,TSI**

---

### **REMOVE TIME SLOT INTERCHANGE**

#### **Explanation Of Command**

---

This command applies only to a noncapacity expansion frame (NCEF).

It requests the removal of the time slot interchange (TSI) from service.

If the TSI on the other side has already been removed this command will be denied unless there are no provisioned circuits for this TSI.

#### **Command**

---

[I.33221]

**RMV:FRM xy,SEQ ww:TSI sft!**

#### **Completion Message**

---

[O.33221]

**M hh:mm:ss xy,ww n[vv] RMV TSI sft COND cc COMPL**

#### **Denial Message**

---

[O.33221.01]

**M hh:mm:ss xy,ww n[vv] RMV TSI sft COND cc DNY**

#### **Autonomous Message**

---

Not applicable.

---

### Explanation Of Parameters

---

**pa** - Priority of action field.

| <b>pa</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|          |             |
|----------|-------------|
| <b>I</b> | Information |
|----------|-------------|

|          |             |
|----------|-------------|
| <b>*</b> | Minor alarm |
|----------|-------------|

|           |             |
|-----------|-------------|
| <b>**</b> | Major alarm |
|-----------|-------------|

|           |                |
|-----------|----------------|
| <b>*C</b> | Critical alarm |
|-----------|----------------|

**il** - Intervention level.

| <b>il</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|            |                              |
|------------|------------------------------|
| <b>AMI</b> | Immediate maintenance action |
|------------|------------------------------|

|            |                             |
|------------|-----------------------------|
| <b>AMD</b> | Deferred maintenance action |
|------------|-----------------------------|

|           |                 |
|-----------|-----------------|
| <b>SI</b> | No intervention |
|-----------|-----------------|

**PMC** Prompt Maintenance Action Critical

**PMA** Prompt Maintenance Action Major

**DMA** Deferred Maintenance Action Minor

**MI** Maintenance Information

**TSI** - Time slot interchange

**s** - Side number (0 or 1)

**f** - Cross-connect buffer (CCB) number (1 through 6)

**t** - TSI number (1 through 6)

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                       |
|-----------|---------------------------------------|
| <b>02</b> | <b>Subject entity is not equipped</b> |
|-----------|---------------------------------------|

|           |                                         |
|-----------|-----------------------------------------|
| <b>04</b> | <b>Subject entity is out of service</b> |
|-----------|-----------------------------------------|

|           |                                        |
|-----------|----------------------------------------|
| <b>19</b> | <b>Mate CCN side is out of service</b> |
|-----------|----------------------------------------|

## **RMV,TSIS,CCN,ALL**

### **REMOVE**

#### **Explanation Of Command**

This command is applicable only to a noncapacity expansion frame (NCEF).

It requests the removal of all in-service time slot interchanges in the cross-connect network side.

This message will be denied if the cross-connect network side specified is the active side and any time slot interchange on the inactive side is out of service. The exception to this is if there are no cross-connected circuits in the system.

#### **Command**

[I.33241]

**RMV:FRM xy,SEQ ww:TSIS,CCN s,ALL!**

### **Completion Message**

---

[O.33241]

M hh:mm:ss xy,ww n[vv] RMV TSIS ALL 5 LN MSG:

TOTAL TSIS tt

sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn

sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn

sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn

EOP

M hh:mm:ss xy,ww n[vv] RMV TSIS ALL 5 LN MSG:

TOTAL TSIS tt

sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn

sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn

sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn

COND cc COMPL

### **Denial Message**

---

[O.33241.01]

M hh:mm:ss xy,ww n[vv] RMV TSIS CCN s ALL COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**TSIS** - Time slot interchanges

**CCN** - Cross-connect network

**s** - CCN side (0 or 1)

**ALL** - All

**TOTAL** - Total

**f** - Cross-connect buffer number (1 through 6)

**t** - TSI number (1 through 6)

**tt** - Number of TSIs currently in service (01 through 72)

**r** - Status of the removal request for the particular TSI

*r*      *Explanation*

C      COMPL

D      DNY

**nn** - Hexadecimal condition code for the particular TSI

See cc below to interpret values of nn.

**COND** - Condition

**cc** - Completion condition code

See cc below to interpret values of cc.

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**00**    No conditions

**02**    Subject entity is not equipped

**04**    Subject entity is out of service

**18**    CCNI is out of service

**19**    Mate CCN side is out of service



---

## **RMV,TSIS,CCN,UNIT,CONN**

---

### **REMOVE**

#### **Explanation Of Command**

---

This command is applicable only to a noncapacity expansion frame (NCEF).

This message allows removal of all time slot interchanges (TSI) that connect the specified unit to the indicated units, one of which may be the specified unit in cross-connect network side 0 or 1 through use of the optional field. If the field is omitted, then all TSIs connected to the specified unit are removed.

Note that if the TSI on the other CCN side has already been removed, this command will be executed only if no circuits are cross-connected through the TSI. The reason for allowing removal on both sides is to degrow the UNIT or change its connectivity.

#### **Command**

---

[I.33231]

```
RMV:FRM xy,SEQ ww:TSIS,CCN s,UNIT q\
[,CONN(a[,b[,c[,d[,e[,f]]]]))]]!
```

#### **Completion Message**

---

[O.33231]

```
M hh:mm:ss xy,ww n[vv] RMV TSIS UNIT q\
[CONN (a[b[c[d[e[f]]]]))]
e LN MSG:
sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn
sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn \
COND 00 COMPL
```

### **Denial Message**

---

[O.33231.01]

M hh:mm:ss xy,ww n[vv] RMV TSIS CCN s UNIT q\  
[ CONN (a[ b[ c[ d[ e[ f]]]]))] COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**e** - Number of lines in the message segment

**TSIS** - Time slot interchanges

**CCN** - Cross-connect network

**s** - Side number (0 or 1).

**UNIT** - Unit

**q** - Unit number containing TSIs (1 through 6).

**CONN** - Connect

**a, b, c, d, e, f**

- Unit number to which UNIT q can be connected (1 through 6).

**sft** - TSI identifier

**s** - Side number (0 or 1)

**f** - CCB (Cross-Connect Buffer) number (1 through 6)

**t** - TSI number (1 through 6).

**r** - Status code

*r Explanation*

C COMPL

D DNY

**nn** - Hexadecimal condition code for the particular TSI.

For r = C

| <i>nn</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |              |
|----|--------------|
| 00 | No Condition |
|----|--------------|

For r = D

| <i>nn</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |                                |
|----|--------------------------------|
| 02 | Subject entity is not equipped |
|----|--------------------------------|

|    |                                  |
|----|----------------------------------|
| 04 | Subject entity is out of service |
|----|----------------------------------|

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                  |
|-----------|----------------------------------|
| <b>04</b> | Subject entity is out of service |
|-----------|----------------------------------|

|           |                      |
|-----------|----------------------|
| <b>10</b> | Unit is not equipped |
|-----------|----------------------|

|           |                        |
|-----------|------------------------|
| <b>18</b> | CCNI is out of service |
|-----------|------------------------|

|           |                                 |
|-----------|---------------------------------|
| <b>19</b> | Mate CCN side is out of service |
|-----------|---------------------------------|

|           |                                        |
|-----------|----------------------------------------|
| <b>28</b> | Connectivity contains unequipped units |
|-----------|----------------------------------------|

## **RMV,UNIT,FC**

### **REMOVE UNIT FORMAT CONVERTER**

#### **Explanation Of Command**

This message requests removal of the unit format converter from service.

#### **Command**

[I.33331]

RMV:FRM xy,SEQ ww:UNIT [q]q,FC sb!

#### **Completion Message**

[O.33331]

M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q FC sb COND cc COMPL

#### **Denial Message**

[O.33331.01]

M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q FC sb COND cc DNY

#### **Autonomous Message**

[O.33331]

pa <il> hh:mm:ss xy,ww n[vv] RMV UNIT [q]q FC sb {PMC|PMA|DMA|MI} \  
COND cc COMPL

## Explanation Of Parameters

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FC** - Format converter

**s** - Side number (0 or 1)

**b** - FC number (1 through 4)

**pa** - *Priority of action*

| pa | Explanation |
|----|-------------|
|----|-------------|

|    |       |
|----|-------|
| ** | Major |
|----|-------|

|    |          |
|----|----------|
| *C | Critical |
|----|----------|

|   |       |
|---|-------|
| * | Minor |
|---|-------|

|   |             |
|---|-------------|
| I | Information |
|---|-------------|

**il** - Intervention level.

| il | Explanation |
|----|-------------|
|----|-------------|

|     |                              |
|-----|------------------------------|
| AMI | Immediate maintenance action |
|-----|------------------------------|

|     |                             |
|-----|-----------------------------|
| AMD | Deferred maintenance action |
|-----|-----------------------------|

|    |                 |
|----|-----------------|
| SI | No intervention |
|----|-----------------|

PMC Prompt Maintenance Action Critical

PMA Prompt Maintenance Action Major

DMA Deferred Maintenance Action Minor

MI Maintenance Information

**COND** - Condition

**cc** - Completion condition code

Explanations of these codes are given in the explanation of cc below.

**cc** - Hexadecimal condition code

**cc Explanation**

|           |                                         |
|-----------|-----------------------------------------|
| <b>04</b> | <b>Subject entity is out of service</b> |
| <b>10</b> | <b>Unit is not equipped</b>             |
| <b>11</b> | <b>UC is out of service</b>             |
| <b>12</b> | <b>UC is in service but failed</b>      |
| <b>13</b> | <b>FTMI is not equipped</b>             |
| <b>14</b> | <b>FTMI is out of service</b>           |
| <b>19</b> | <b>Mate CCN side is out of service</b>  |
| <b>1F</b> | <b>FTMI is in service but failed</b>    |

## **RMV,UNIT,FLI**

### **REMOVE FACILITY LINE INTERFACE**

#### **Explanation Of Command**

This command requests and reports the removal of one facility line interface (FLI) in a DS3 unit (DS3U) or a Hybrid DS3 Unit (HDS3U). The removal can be caused by either a manual request or autonomously by error recovery.

A request for removal of a FLI will cause a protection switch. A request to remove an unprotected FLI will be denied unless no service multiplexer (MXR) or hybrid multiplexer (HMXR) or protection MIU is equipped and the protection MMFG is out-of-service in that DS3U or HDS3U.

This message also reports an unsuccessful automatic attempt to remove an unprotected FLI, which will cause a critical alarm.

#### **Command**

[I.33401]

**RMV:FRM xy,SEQ ww:UNIT [q]q,FLI k!**

#### **Completion Message**

[O.33401]

**M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q FLI k COMPL**

#### **Denial Message**

[O.33401.01]

**M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q FLI k COND cc DNY**

### **Autonomous Message**

---

[O.33401]

**\*\*hh:mm:ss xy,ww RMV UNIT [q]q FLI k COMPL**

[O.33401.01]

**\*Chh:mm:ss xy,ww RMV UNIT [q]q FLI k COND cc DNY**

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FLI** - Facility line interface

**k** - FLI identifier

*k Explanation*

S Service FLI

P Protection FLI

**COND** - Condition

**cc** - Hexadecimal condition code

**cc Explanation**

**02** Subject entity is not equipped

**04** Subject entity is out of service

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

**39** An autonomous switch is in progress



## **RMV,UNIT,FMT**

### **REMOVE FORMATTER**

#### **Explanation Of Command**

This command requests and reports the removal of one formatter (FMT) or Hybrid Formatter (HFMT) in a DS3 unit or Hybrid DS3 unit (HDS3U). The removal can be either manually by a command or autonomously by error recovery.

A successful request to remove an FMT or HFMT will automatically cause a switch to the other cross-connect side. A request for removal of an FMT or HFMT will be denied if the switch to the other cross-connect side is not possible. The output of this command also reports an unsuccessful automatic attempt to remove an unprotected FMT or HFMT. The removal of both FMTs/HFMTs will automatically come into effect when the unit is degrown.

#### **Command**

[I.33411]

**RMV:FRM xy,SEQ ww:UNIT [q]q,FMT s!**

#### **Completion Message**

[O.33411]

**M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q FMT s COMPL**

#### **Denial Message**

[O.33411.01]

**M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q FMT s COND cc DNY**

### **Autonomous Message**

---

[O.33411]

**pahh:mm:ss xy,ww RMV UNIT [q]q FMT s COMPL**

[O.33411.01]

**pahh:mm:ss xy,ww RMV UNIT [q]q FMT s COND cc DNY**

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                         |
|-----------|-----------------------------------------|
| <b>02</b> | <b>Subject entity is not equipped</b>   |
| <b>04</b> | <b>Subject entity is out of service</b> |
| <b>10</b> | <b>Unit is not equipped</b>             |
| <b>11</b> | <b>UC is out of service</b>             |
| <b>12</b> | <b>UC is in service but failed</b>      |
| <b>19</b> | <b>Mate CCN side is out of service</b>  |

## **RMV,UNIT,FTMI,DSPI**

### **REMOVE FTMI OR DSPI**

#### **Explanation Of Command**

This message allows removal of a facility terminating module interface or a digital signal processor interface from service.

#### **Command**

[I.33321]

RMV:FRM xy,SEQ ww:UNIT [q]q,{FTMI d|DSPI}!

#### **Completion Message**

[O.33321]

M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q {FTMI d|DSPI} \  
COND cc COMPL

#### **Denial Message**

[O.33321.01]

M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q {FTMI d|DSPI} COND cc \  
DNY

#### **Autonomous Message**

[O.33321]

pa <il> hh:mm:ss xy,ww n[vv] RMV UNIT [q]q {FTMI d|DSPI} {PMC|PMA|DMA|MI}\  
COND cc COMPL

[O.33321.01]

**pa** <il> hh:mm:ss xy,ww n[vv] RMV UNIT [q]q {FTMI d|DSPI} \  
**COND cc DNY**

### Explanation Of Parameters

---

**pa** - Priority of action field.

| <b>pa</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|          |             |
|----------|-------------|
| <b>I</b> | Information |
|----------|-------------|

|          |             |
|----------|-------------|
| <b>*</b> | Minor alarm |
|----------|-------------|

|           |             |
|-----------|-------------|
| <b>**</b> | Major alarm |
|-----------|-------------|

|           |                |
|-----------|----------------|
| <b>*C</b> | Critical alarm |
|-----------|----------------|

**il** - Intervention level.

| <b>il</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|            |                              |
|------------|------------------------------|
| <b>AMI</b> | Immediate maintenance action |
|------------|------------------------------|

|            |                             |
|------------|-----------------------------|
| <b>AMD</b> | Deferred maintenance action |
|------------|-----------------------------|

|           |                 |
|-----------|-----------------|
| <b>SI</b> | No intervention |
|-----------|-----------------|

**PMC** Prompt Maintenance Action Critical

**PMA** Prompt Maintenance Action Major

**DMA** Deferred Maintenance Action Minor

**MI** Maintenance Information

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FTMI** - Facility terminating module interface

**d** - FTMI number (1 through 4)

**DSPI** - Digital signal processor interface

**OOS** - Out-of-service

**cc** - Completion condition code (hexadecimal)

**cc** - Hexadecimal condition code

**cc Explanation**

|           |                                         |
|-----------|-----------------------------------------|
| <b>02</b> | <b>Subject entity is not equipped</b>   |
| <b>04</b> | <b>Subject entity is out of service</b> |
| <b>10</b> | <b>Unit is not equipped</b>             |
| <b>11</b> | <b>UC is out of service</b>             |
| <b>12</b> | <b>UC is in service but failed</b>      |

## **RMV,UNIT,MMFG,FRC,INCL**

### **REMOVE MMFG**

#### **Explanation Of Command**

This command requests and reports the removal of the circuit packs of one or more Multiplexer - Multiplexer Interface Unit Functional Group (MMFG). The removal of an MMFG can be caused either by manual command or autonomous DACS II error recovery action.

An **RMV MMFG** command will remove the Multiplexer (MXR) or Hybrid Multiplexer (HMXR) and the Multiplexer Interface Unit (MIU) if the MIU is in-service. Note that MIU currently is not supported by HDS3U, therefore, MIU does not exist in an MMFG with the HMXR.

A manual removal request of an MMFG will cause protection switching if protection is available. However, the automatic switch to protection (or the automatic switchback from a protection MMFG) can be inhibited by specifying the FRC option, which can result in loss of service. The FRC option must be used to request the unprotected removal of an MMFG. Any resulting loss of service will not cause an alarm. An attempt to remove more than one MMFG without the FRC option will be denied.

The Inclusive (INCL) keyword must be used if at least one of the DS3's tributary NPCs is in service. This option will remove the NPCs together with the MMFG.

This command also reports the unsuccessful automatic attempt to remove an unprotected MMFG, which will cause a critical alarm. An **RMV IN PROGRESS** message will be generated at 20-second intervals while this command is being executed. There will be one completion or denial output message for each circuit pack removed.

#### **Command**

[I.33421]

**RMV:FRM xy,SEQ ww:UNIT [q]q,MMFG c[-d][,FRC[,INCL]]!**

### **Completion Message**

---

[O.33421]

M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q MMFG a[ FRC[ INCL]] \\  
2 LN MSG:  
MXR a TYPE mnxyz[ MIU a TYPE MI100] COMPL

### **Denial Message**

---

[O.33421.01]

M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q MMFG a[ FRC[ INCL]] \\  
COND cc DNY

### **Autonomous Message**

---

[O.33421]

\*\*hh:mm:ss xy,ww RMV UNIT [q]q MMFG a[ FRC[ INCL]] 2 LN MSG:  
MXR a TYPE mnxyz[ MIU a TYPE MI100] COMPL

[O.33421.01]

\*Chh:mm:ss xy,ww RMV UNIT [q]q MMFG a[ FRC[ INCL]] COND cc \\  
DNY

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**MMFG** - Multiplexer-Multiplexer Interface Unit functional group.

**c, d** - The number of the MMFG within the unit (P,1 through 6) (P means the protection MMFG)

**a** - The number of the MMFG that is removed or denied (c or d)

**FRC** - Force

This keyword will force a manual removal (in the case that protection is not available) and will prevent automatic protection switching from accompanying the removal, thus forcing the removal of all the DS1 facilities served by the MMFG.

**INCL** - Inclusive

This keyword will cause all tributary NPCs which are still in service to be removed. A command with the INCL keyword must also contain the FRC keyword or it will be denied by DACS II.

**\*C** - Critical priority of action

**\*\*** - Major priority of action

**M** - Manual priority of action

**MXR** - Multiplexer (MXR) or Hybrid Multiplexer (HMXR)

**a** - MXR or HMXR identifier (P, 1 through 6)

**TYPE** - Type

**mnxyz** - The DS3 format processed by the MXR:

**mn** - DS3 type

**mn** *Explanation*

**MX** The original R4.0 DS3 facility type supported by the Multiplexer (MXR) circuit pack (KCR-1).

**EX** The enhanced R6.0 DS3 facility type supported by the Enhanced Multiplexer (EMXR) circuit pack (KCR-5).

**HX** The hybrid facility type supported by the Hybrid Multiplexer (HMXR) circuit pack (KCR-8).

If the unit is a regular DS3U of unit type DT100, then the default is the MX type for backward compatibility.

If the unit is a Hybrid DS3U of unit type HT100, then the default is HX.

**MIU** - Multiplexer interface unit

**a** - MIU identifier (P, 1 through 6)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

**24** Unit type error

**A9** INCL not specified and at least one NPC In Service

**AA** Range entered without FRC keyword



## **RMV,UNIT,UC**

### **REMOVE UNIT CONTROLLER**

#### **Explanation Of Command**

This message requests removal of the specified unit controller from service. Only the unit controller for the IFTU and DSPU will have a changeable alarm severity and intervention level.

#### **Command**

[I.33311]

RMV:FRM xy,SEQ ww:UNIT [q]q,UC!

#### **Completion Message**

[O.33311]

M hh:mm:ss xy,wz n RMV UNIT [q]q UC COND cc COMPL

#### **Denial Message**

[O.33311.01]

M hh:mm:ss xy,ww n[vv] RMV UNIT [q]q UC COND cc DNY

#### **Autonomous Message**

[O.33311]

pa <il> hh:mm:ss xy,wz n RMV UNIT [q]q UC {PMC|PMA|DMA|MI} \  
COND cc COMPL

[O.33311.01]

**pa** <il> hh:mm:ss xy,ww n[vv] RMV UNIT [q]q UC {PMC|PMA|DMA|MI} \  
**COND** cc DNY

### Explanation Of Parameters

**pa** - Priority of action field.

**pa**      *Explanation*

**I**      Information

**M**      Manual

**\***      Minor alarm

**\*\***      Major alarm

**\*C**      Critical alarm

**il** - Intervention level.

**il**      *Explanation*

**AMI**      Immediate maintenance action

**AMD**      Deferred maintenance action

**SI**      No intervention

**PMC**      Prompt Maintenance Action Critical

**PMA**      Prompt Maintenance Action Major

**DMA**      Deferred Maintenance Action Minor

**MI**      Maintenance Information

**UC** - Unit controller

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**COND** - Condition

**cc** - Completion condition code

**cc** - Hexadecimal condition code

**cc**      **Explanation**

**02**      Subject entity is not equipped

**04**      Subject entity is out of service

---

**Contents**

|                             |      |
|-----------------------------|------|
| <b>RST,CCB</b>              | 16-2 |
| ■ Explanation Of Command    | 16-2 |
| ■ Command                   | 16-2 |
| ■ Completion Message        | 16-2 |
| ■ Denial Message            | 16-2 |
| ■ Autonomous Message        | 16-2 |
| ■ Explanation Of Parameters | 16-3 |
| <b>RST,CCI</b>              | 16-4 |
| ■ Explanation Of Command    | 16-4 |
| ■ Command                   | 16-4 |
| ■ Completion Message        | 16-4 |
| ■ Denial Message            | 16-4 |
| ■ Autonomous Message        | 16-4 |
| ■ Explanation Of Parameters | 16-5 |
| <b>RST,CCNI</b>             | 16-6 |
| ■ Explanation Of Command    | 16-6 |
| ■ Command                   | 16-6 |
| ■ Completion Message        | 16-6 |
| ■ Denial Message            | 16-6 |
| ■ Autonomous Message        | 16-6 |
| ■ Explanation Of Parameters | 16-7 |
| <b>RST,ETSI</b>             | 16-8 |
| ■ Explanation Of Command    | 16-8 |
| ■ Command                   | 16-8 |
| ■ Completion Message        | 16-8 |
| ■ Denial Message            | 16-8 |

---

## Contents

|                                       |       |
|---------------------------------------|-------|
| ■ Autonomous Message                  | 16-8  |
| ■ Explanation Of Parameters           | 16-9  |
| <b>RST,ETISIS,ECCN,ALL</b>            | 16-10 |
| ■ Explanation Of Command              | 16-10 |
| ■ Command                             | 16-10 |
| ■ Completion Message                  | 16-10 |
| ■ Denial Message                      | 16-10 |
| ■ Autonomous Message                  | 16-11 |
| ■ Explanation Of Parameters           | 16-11 |
| <b>RST,LINK</b>                       | 16-13 |
| ■ Explanation Of Command              | 16-13 |
| ■ Command                             | 16-13 |
| ■ Completion Message                  | 16-13 |
| ■ Denial Message                      | 16-13 |
| ■ Autonomous Message                  | 16-13 |
| ■ Explanation Of Parameters           | 16-14 |
| <b>RST,MC,MCOND,NOJRNLFRC,CLR,ALL</b> | 16-15 |
| ■ Explanation Of Command              | 16-15 |
| ■ Command                             | 16-17 |
| ■ Completion Message                  | 16-17 |
| ■ Denial Message                      | 16-17 |
| ■ Autonomous Message                  | 16-18 |
| ■ Explanation Of Parameters           | 16-18 |
| <b>RST,NPC,MON</b>                    | 16-20 |
| ■ Explanation Of Command              | 16-20 |
| ■ Command                             | 16-20 |
| ■ Nonhierarchical                     | 16-20 |
| ■ Hierarchical                        | 16-20 |
| ■ Completion Message                  | 16-21 |
| ■ Nonhierarchical                     | 16-21 |
| ■ Hierarchical                        | 16-21 |
| ■ Denial Message                      | 16-21 |
| ■ Nonhierarchical                     | 16-21 |
| ■ Hierarchical                        | 16-21 |
| ■ Autonomous Message                  | 16-21 |
| ■ Nonhierarchical                     | 16-21 |
| ■ Hierarchical                        | 16-22 |

---

## Contents

|                                     |       |
|-------------------------------------|-------|
| ■ Explanation Of Parameters         | 16-22 |
| <b>RST,NPC,SIDE</b>                 | 16-25 |
| ■ Explanation Of Command            | 16-25 |
| ■ Command                           | 16-25 |
| ■ Nonhierarchical                   | 16-25 |
| ■ Hierarchical                      | 16-26 |
| ■ Completion Message                | 16-26 |
| ■ Nonhierarchical                   | 16-26 |
| ■ Hierarchical                      | 16-26 |
| ■ Denial Message                    | 16-26 |
| ■ Nonhierarchical                   | 16-26 |
| ■ Hierarchical                      | 16-26 |
| ■ Autonomous Message                | 16-26 |
| ■ Explanation Of Parameters         | 16-27 |
| <b>RST,NPC,TS0M</b>                 | 16-49 |
| ■ Explanation Of Command            | 16-49 |
| ■ Command                           | 16-49 |
| ■ Nonhierarchical                   | 16-49 |
| ■ Hierarchical                      | 16-49 |
| ■ Completion Message                | 16-49 |
| ■ Nonhierarchical                   | 16-49 |
| ■ Hierarchical                      | 16-50 |
| ■ Denial Message                    | 16-50 |
| ■ Nonhierarchical                   | 16-50 |
| ■ Hierarchical                      | 16-50 |
| ■ Autonomous Message                | 16-50 |
| ■ Explanation Of Parameters         | 16-50 |
| <b>RST,PMEM,SMEM,CLR,FRC,BKGRND</b> | 16-53 |
| ■ Explanation Of Command            | 16-53 |
| ■ Command                           | 16-53 |
| ■ Completion Message                | 16-54 |
| ■ Denial Message                    | 16-54 |
| ■ Autonomous Message                | 16-54 |
| ■ Explanation Of Parameters         | 16-54 |
| <b>RST,SYNC</b>                     | 16-59 |
| ■ Explanation Of Command            | 16-59 |
| ■ Command                           | 16-59 |

---

## Contents

|                               |       |
|-------------------------------|-------|
| ■ Completion Message          | 16-59 |
| ■ Denial Message              | 16-59 |
| ■ Autonomous Message          | 16-59 |
| ■ Explanation Of Parameters   | 16-60 |
| <b>RST,SYNC,TLI,CRO</b>       | 16-61 |
| ■ Explanation Of Command      | 16-61 |
| ■ Command                     | 16-61 |
| ■ Completion Message          | 16-61 |
| ■ Denial Message              | 16-61 |
| ■ Autonomous Message          | 16-61 |
| ■ Explanation Of Parameters   | 16-62 |
| <b>RST,SYNC,TLI,SSP</b>       | 16-63 |
| ■ Explanation Of Command      | 16-63 |
| ■ Command                     | 16-63 |
| ■ Completion Message          | 16-63 |
| ■ Denial Message              | 16-63 |
| ■ Autonomous Message          | 16-63 |
| ■ Explanation Of Parameters   | 16-64 |
| <b>RST,TSI</b>                | 16-65 |
| ■ Explanation Of Command      | 16-65 |
| ■ Command                     | 16-65 |
| ■ Completion Message          | 16-65 |
| ■ Denial Message              | 16-65 |
| ■ Autonomous Message          | 16-65 |
| ■ Explanation Of Parameters   | 16-66 |
| <b>RST,TSIS,CCN,ALL</b>       | 16-67 |
| ■ Explanation Of Command      | 16-67 |
| ■ Command                     | 16-67 |
| ■ Completion Message          | 16-67 |
| ■ Denial Message              | 16-68 |
| ■ Autonomous Message          | 16-68 |
| ■ Explanation Of Parameters   | 16-68 |
| <b>RST,TSIS,CCN,UNIT,CONN</b> | 16-70 |
| ■ Explanation Of Command      | 16-70 |
| ■ Command                     | 16-70 |
| ■ Completion Message          | 16-70 |
| ■ Denial Message              | 16-70 |

---

## Contents

|                             |       |
|-----------------------------|-------|
| ■ Autonomous Message        | 16-71 |
| ■ Explanation Of Parameters | 16-71 |
| <b>RST,UNIT,FC</b>          | 16-73 |
| ■ Explanation Of Command    | 16-73 |
| ■ Command                   | 16-73 |
| ■ Completion Message        | 16-73 |
| ■ Denial Message            | 16-73 |
| ■ Autonomous Message        | 16-73 |
| ■ Explanation Of Parameters | 16-74 |
| <b>RST,UNIT,FLI</b>         | 16-75 |
| ■ Explanation Of Command    | 16-75 |
| ■ Command                   | 16-75 |
| ■ Completion Message        | 16-75 |
| ■ Denial Message            | 16-75 |
| ■ Autonomous Message        | 16-75 |
| ■ Explanation Of Parameters | 16-76 |
| <b>RST,UNIT,FMT</b>         | 16-77 |
| ■ Explanation Of Command    | 16-77 |
| ■ Command                   | 16-77 |
| ■ Completion Message        | 16-77 |
| ■ Denial Message            | 16-77 |
| ■ Autonomous Message        | 16-77 |
| ■ Explanation Of Parameters | 16-78 |
| <b>RST,UNIT,FTMI,DSPI</b>   | 16-79 |
| ■ Explanation Of Command    | 16-79 |
| ■ Command                   | 16-79 |
| ■ Completion Message        | 16-79 |
| ■ Denial Message            | 16-79 |
| ■ Autonomous Message        | 16-79 |
| ■ Explanation Of Parameters | 16-80 |
| <b>RST,UNIT,UC</b>          | 16-81 |
| ■ Explanation Of Command    | 16-81 |
| ■ Command                   | 16-81 |
| ■ Completion Message        | 16-81 |
| ■ Denial Message            | 16-81 |
| ■ Autonomous Message        | 16-81 |
| ■ Explanation Of Parameters | 16-82 |





---

## **RST**

---

## **RST**

---

This section documents the **RST** command.

## **RST,CCB**

### **RESTORE CROSS-CONNECT BUFFER**

#### **Explanation Of Command**

This command applies only to the noncapacity expansion frame (NCEF).  
It requests the restoration of the specified cross-connect buffer to service.

#### **Command**

[I.34202]

**RST:FRM xy,SEQ ww:CCB sf!**

#### **Completion Message**

[O.34202]

**M hh:mm:ss xy,ww n[vv] RST CCB sf COND cc COMPL**

#### **Denial Message**

[O.34202.01]

**M hh:mm:ss xy,ww n[vv] RST CCB sf COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**CCB** - Cross-connect buffer

**s** - Side number (0 or 1)

**f** - CCB number (1 through 6)

**COND** - Condition

**cc** - Completion condition code (hexadecimal)

To interpret values see cc.

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                       |
|-----------|---------------------------------------|
| <b>02</b> | <b>Subject entity is not equipped</b> |
|-----------|---------------------------------------|

|           |                                     |
|-----------|-------------------------------------|
| <b>03</b> | <b>Subject entity is in service</b> |
|-----------|-------------------------------------|

|           |                                     |
|-----------|-------------------------------------|
| <b>0A</b> | <b>DGN on subject entity failed</b> |
|-----------|-------------------------------------|

|           |                                      |
|-----------|--------------------------------------|
| <b>0B</b> | <b>BOOT on subject entity failed</b> |
|-----------|--------------------------------------|

|           |                                |
|-----------|--------------------------------|
| <b>16</b> | <b>SYNC TB is not equipped</b> |
|-----------|--------------------------------|

|           |                               |
|-----------|-------------------------------|
| <b>17</b> | <b>SYNC is out of service</b> |
|-----------|-------------------------------|

|           |                               |
|-----------|-------------------------------|
| <b>18</b> | <b>CCNI is out of service</b> |
|-----------|-------------------------------|

|           |                                 |
|-----------|---------------------------------|
| <b>1B</b> | <b>CCN side s is in service</b> |
|-----------|---------------------------------|

|           |                                     |
|-----------|-------------------------------------|
| <b>CF</b> | <b>SYNC is inservice but failed</b> |
|-----------|-------------------------------------|

|           |                                     |
|-----------|-------------------------------------|
| <b>D3</b> | <b>CCNI is inservice but failed</b> |
|-----------|-------------------------------------|

## **RST,CCI**

### **RESTORE CONTROL AND CLOCK INTERFACE**

#### **Explanation Of Command**

This command applies only to the capacity expansion frame (CEF).

It requests that the clock and control interface pack of side s be restored to service. The two bus terminator packs of side s are also restored along with the CCI pack.

#### **Command**

[I.34251]

**RST:FRM xy,SEQ ww:CCI s!**

#### **Completion Message**

[O.34251]

**M hh:mm:ss xy,ww n[vv] RST CCI s COND cc COMPL**

#### **Denial Message**

[O.34251.01]

**M hh:mm:ss xy,ww n[vv] RST CCI s COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**CCI** - Clock and control interface

**s** - Side number (0 or 1)

**COND** - Condition

**cc** - Completion condition code (hexadecimal)  
To interpret values see cc below.

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                      |
|-----------|--------------------------------------|
| <b>00</b> | <b>No conditions</b>                 |
| <b>03</b> | <b>Subject entity is in service</b>  |
| <b>0A</b> | <b>DGN on subject entity failed</b>  |
| <b>0B</b> | <b>BOOT on subject entity failed</b> |
| <b>16</b> | <b>SYNC TB is not equipped</b>       |
| <b>17</b> | <b>SYNC is out of service</b>        |
| <b>CF</b> | <b>SYNC is inservice but failed</b>  |

## **RST,CCNI**

### **RESTORE CROSS-CONNECT NETWORK INTERFACE**

#### **Explanation Of Command**

This command is applicable only to the noncapacity expansion frame (NCEF).

It allows restoral of a cross-connect network interface to service.

#### **Command**

[I.34201]

**RST:FRM xy,SEQ ww:CCNI s!**

#### **Completion Message**

[O.34201]

**M hh:mm:ss xy,ww n[vv] RST CCNI s COND cc COMPL**

#### **Denial Message**

[O.34201.01]

**M hh:mm:ss xy,ww n[vv] RST CCNI s COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**CCNI** - Cross-connect network interface.

**s** - Side No. (0 or 1).

**COND** - Condition

**cc** - Completion condition code

To interpret values see cc.

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                      |
|-----------|--------------------------------------|
| <b>03</b> | <b>Subject entity is in service</b>  |
| <b>0A</b> | <b>DGN on subject entity failed</b>  |
| <b>0B</b> | <b>BOOT on subject entity failed</b> |
| <b>16</b> | <b>SYNC TB is not equipped</b>       |
| <b>17</b> | <b>SYNC is out of service</b>        |
| <b>1B</b> | <b>CCN side s is in service</b>      |
| <b>CF</b> | <b>SYNC is inservice but failed</b>  |

## **RST,ETSI**

### **RESTORE EXPANDED TIME SLOT INTERCHANGER**

#### **Explanation Of Command**

This command is applicable only to the capacity expansion frame (CEF).

It requests that an expanded time slot interchanger (ETSI) be restored to service.

#### **Command**

[I.34261]

**RST:FRM xy,SEQ ww:ETSI sqq!**

#### **Completion Message**

[O.34261]

**M hh:mm:ss xy,ww n[vv] RST ETSI sqq COND 00 COMPL**

#### **Denial Message**

[O.34261.01]

**M hh:mm:ss xy,ww n[vv] RST ETSI sqq COND cc DNY**

#### **Autonomous Message**

Not applicable.



---

### Explanation Of Parameters

---

**ETSI** - Expanded time slot interchanger

**s** - Side number (0 or 1)

**qq** - Unit number (01 through 16)

Note that the unit number qq must always be shown with two digits in both the input and output. The leading 0 is required.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped

**03** Subject entity is in service

**0A** DGN on subject entity failed

**0B** BOOT on subject entity failed

**16** SYNC TB is not equipped

**17** SYNC is out of service

**CE** CCI is out of service

**CF** SYNC is inservice but failed

**D1** CCI is not present

**D4** CCI is inservice but failed

## **RST,ETISIS,ECCN,ALL**

### **RESTORE ALL ETISIS**

#### **Explanation Of Command**

This command is applicable only to the capacity expansion frame (CEF).

It requests that all equipped expanded time slot interchangers (ETISIs) in side s of the expanded cross-connect network (ECCN) be restored to service.

#### **Command**

[I.34271]

**RST:FRM xy,SEQ ww:ETISIS,ECCN s,ALL!**

#### **Completion Message**

[O.34271]

**M hh:mm:ss xy,ww n[vv] RST ETISIS ECCN s ALL 5 LN MSG:**

**TOTAL ETISIS kk**

**s01 r nn s02 r nn s03 r nn s04 r nn s05 r nn s06 r nn**

**s07 r nn s08 r nn s09 r nn s10 r nn s11 r nn s12 r nn**

**s13 r nn s14 r nn s15 r nn s16 r nn \**

**COND cc COMPL**

#### **Denial Message**

[O.34271.01]

**M hh:mm:ss xy,ww n[vv] RST ETISIS ECCN s ALL COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**ETSiS** - Expanded time slot interchangers

**ECCN** - Expanded cross-connect network

**s** - Side number (0 or 1)

**kk** - Total number of ETSiSs equipped (01 through 16)

**r** - Restore status

Indication of the completion or denial of the restoration for each individual ETSi pack.

| <i>r</i> | <i>Explanation</i> |
|----------|--------------------|
|----------|--------------------|

|   |           |
|---|-----------|
| C | Completed |
|---|-----------|

|   |        |
|---|--------|
| D | Denied |
|---|--------|

|   |                   |
|---|-------------------|
| - | ETSi not equipped |
|---|-------------------|

**nn** - Hexadecimal condition code for the particular ETSi

To interpret values of nn see cc below.

**cc** - Hexadecimal completion condition code.

To interpret values of cc see cc below.

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                 |
|-----------|---------------------------------|
| <b>00</b> | No conditions                   |
| <b>02</b> | Subject entity is not equipped  |
| <b>03</b> | Subject entity is in service    |
| <b>0A</b> | DGN on subject entity failed    |
| <b>0B</b> | BOOT on subject entity failed   |
| <b>0C</b> | DGN on subject entity denied    |
| <b>16</b> | SYNC TB is not equipped         |
| <b>17</b> | SYNC is out of service          |
| <b>41</b> | Failed to boot subject CCN side |
| <b>CE</b> | CCI is out of service           |
| <b>CF</b> | SYNC is inservice but failed    |
| <b>D1</b> | CCI is not present              |
| <b>D4</b> | CCI is inservice but failed     |

## **RST,LINK**

### **RESTORE ADMINISTRATIVE LINK**

#### **Explanation Of Command**

This message requests the restoration of the administrative **LINK** to service. The autonomous output message will be generated when the administrative link is successfully restored by the auto-restoration option.

#### **Command**

[I.34011]

**RST:FRM xy,SEQ ww:LINK j!**

#### **Completion Message**

[O.34011]

**M hh:mm:ss xy,ww n[vv] RST LINK j COND cc COMPL**

#### **Denial Message**

[O.34011.01]

**M hh:mm:ss xy,ww n[vv] RST LINK j COND cc DNY**

#### **Autonomous Message**

[O.34011]

**A hh:mm:ss xy,ww RST LINK j COND cc COMPL**

### **Explanation Of Parameters**

---

**LINK** - Link

**j** - Administrative link number (1 through 6)

**cc** - Hexadecimal condition code

**cc Explanation**

**00 No conditions**

**03 Subject entity is in service**

**0A DGN on subject entity failed**

## **RST,MC,MCOND,NOJRNL,FRC,CLR,ALL**

### **RESTORE MAIN CONTROLLER**

#### **Explanation Of Command**

The RST::MC command provides different functions when different keywords are entered. DACS II responses to each keyword entered are explained below:

1. **RST:FRM xy,SEQ ww:MC,MCOND!**

The MCOND keyword transfers the DACS II Main Controller (MC) from the normal in-service state to the Maintenance Condition (MCOND) state. MCOND is a state of the MC in which it is not fully OOS but is in a restricted mode to allow certain maintenance operations. Network traffic carried by the system will not be affected by MCOND.

2. **RST:FRM xy,SEQ ww:MC!**

This command restores the MC to the normal in-service state from either the OOS or the MCOND state by using the data base on the PMEM. Therefore, if the primary memory data base contains the state existing prior to entering the OOS or MCOND state, the system will return to the original state without affecting service, that is, no network traffic disruption. Normal in-service or original state imply that only states provisioned by the user are recorded in the data base and will be used for restoral; transient states will not be recorded or used for restoral. This command should be used to restore the system for normal operations.

Any test groups and ports established prior to entering the RST::MC command will be autonomously released by this command. Upon completion of the command a test group release message will be issued for the last test group released as a result of the RST::MC. No messages will be issued for any test ports released during command execution.

3. **RST:FRM xy,SEQ ww:MC,NOJRNL!**

The NOJRNL keyword causes the system to be restored without the data base journals on the PMEM. At the completion of this command the system returns to the state of the last data base backup from RAM to PMEM. The effect of the commands entered after the last data base backup is destroyed. Therefore, if cross-connect commands were executed after the last backup, the resulting cross-connections will be disconnected by this command. This command is useful for system restoration after the system fails to boot due to JOURNAL failure.

4. **RST:FRM xy,SEQ ww:MC,FRC!**

The FRC keyword forces the system to be restored when there is an empty data base in the PMEM. At the completion of the command the MC will be in IS state.

**WARNING:**

The use of the NOJRNL or FRC keywords can also affect existing services. DACS II treats the following commands as restricted commands (See Message 36103 for RMON privilege):

**RST:FRM xy,SEQ ww:MC,NOJRNL!**  
**RST:FRM xy,SEQ ww:MC,FRC!**

That is, these commands are restricted to only the users who have the RMON privilege. In addition, to prevent users from accidentally destroying services, when any of these commands is entered, DACS II will respond with:

**ARE YOU SURE?(YES/NO)**

When the RST::MC,FRC command is entered, DACS II will respond with:

**WARNING:**

**EXECUTION OF THIS COMMAND WILL RESULT IN LOSS OF SERVICE  
AND WILL REQUIRE REPROVISIONING OF THE FRAME.**

**DO YOU STILL WANT THIS COMMAND EXECUTED?(YES/NO)**

Only if the answer is **YES**, will the command be executed. If **NO**, DACS II will display the **COMMAND ABORTED** response.



## **Command**

---

For Normal Operations:  
[I.34001]

**RST:FRM xy,SEQ ww:MC[, {MCOND|NOJRNL|FRC}] !**

For Installation and Product Evaluation Only:  
(Can be used only if the Lucent Technologies security warning feature bit is set)

[I.34001]

**RST:FRM xy,SEQ ww:MC,CLR[, ALL] !**

## **Completion Message**

---

For Normal Operations:  
[O.34001]

**M hh:mm:ss xy,ww n[vv] RST MC[ {MCOND|NOJRNL|FRC}] COND cc COMPL**

For Installation and Product Evaluation Only:  
(Will be available only if the Lucent Technologies security warning feature bit is set)  
[O.34001]

**M hh:mm:ss xy,ww n[vv] RST MC CLR[ ALL] COND cc COMPL**

## **Denial Message**

---

For Normal Operations:  
[O.34001.01]

**M hh:mm:ss xy,ww n[vv] RST MC[ {MCOND|NOJRNL|FRC}] COND cc DNY**

For Installation and Product Evaluation Only:  
(Will be available only if the Lucent Technologies security warning feature bit is set)  
[O.34001.01]

**M hh:mm:ss xy,ww n[vv] RST MC CLR[ ALL] COND cc DNY**

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**MC** - Main controller

**MCOND** - Maintenance condition

**NOJRNL** - No Journal

Boot frame without journals.

**FRC** - Force

Force the frame to boot when there is an empty  
data base in the PMEM.

Note that the FRC option is a restricted command.

**cc** - Hexadecimal condition code

### **cc Explanation**

|           |                                                                             |
|-----------|-----------------------------------------------------------------------------|
| <b>03</b> | <b>Subject entity is in service</b>                                         |
| <b>04</b> | <b>Subject entity is out of service</b>                                     |
| <b>0A</b> | <b>DGN on subject entity failed</b>                                         |
| <b>0B</b> | <b>BOOT on subject entity failed</b>                                        |
| <b>46</b> | <b>Failed to boot CONF file</b>                                             |
| <b>47</b> | <b>Failed to boot DB</b>                                                    |
| <b>48</b> | <b>Failed to boot journal--recurrence indicates<br/>database corruption</b> |
| <b>49</b> | <b>Failed to boot unit</b>                                                  |
| <b>4B</b> | <b>PMEM error, boot from SMEM</b>                                           |
| <b>18</b> | <b>DSPI not equipped, not in service, or failed</b>                         |
| <b>20</b> | <b>Software Identification Block is not readable</b>                        |
| <b>21</b> | <b>Software Identification Block failed<br/>comparison</b>                  |
| <b>22</b> | <b>Release number mismatch</b>                                              |
| <b>23</b> | <b>Point number mismatch</b>                                                |
| <b>24</b> | <b>PDI Version number mismatch</b>                                          |
| <b>52</b> | <b>Database is empty</b>                                                    |
| <b>53</b> | <b>Database is not empty</b>                                                |
| <b>91</b> | <b>Can't mount or unmount SMEM</b>                                          |
| <b>92</b> | <b>Can't mount or unmount PMEM</b>                                          |
| <b>93</b> | <b>SMEM is not present</b>                                                  |
| <b>F9</b> | <b>Cannot clear journals for OOS unit</b>                                   |
| <b>EE</b> | <b>Can't RST MC CLR when a unit is IN Service</b>                           |

**cc Explanation**

- EF SSC circuit pack is still equipped; pull-out/remove SSC**
- F1 PMEM and SMEM synchronization fail**
- F2 Not a DACS II compatible Flash Card**
- F3 Flash Card is empty**
- F4 PMEM and SMEM are different**
- F5 Flash Card is not present**
- F6 Flash Card is bad**

## **RST,NPC,MON**

### **RESTORE NPC MONITOR**

#### **Explanation Of Command**

This message restores the *Monitor* function on the C-bit processing pack after the condition of the buffer overflow has occurred (See Message O.65221). Use this message only for CB-type NPCs in a DSPU.

The autonomous form of this message is not an alarm. The output message reports that all C-bit channels designated for monitoring (via the **CHG: :DD,TO** commands) are enabled.

The completion (**COMPL**) message may take some time (up to seconds) before it is sent. This is due to the incremental enabling of the monitored circuits. The circuit pack will start monitoring the received C-bits as soon as the first group of 256 bits is enabled.

#### **Command**

##### **Nonhierarchical**

[I.34361]

**RST:FRM xy,SEQ ww:NPC [s]abc,MON!**

##### **Hierarchical**

[I.34361]

**RST:FRM xy,SEQ ww:NPC uvmnp,MON!**

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.34361]

M hh:mm:ss xy,ww n[vv] RST NPC [s]abc MON COMPL

#### **Hierarchical**

---

[O.34361]

M hh:mm:ss xy,ww n[vv] RST NPC uvmnp MON COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.34361.01]

M hh:mm:ss xy,ww n[vv] RST NPC [s]abc MON COND cc DNY

#### **Hierarchical**

---

[O.34361.01]

M hh:mm:ss xy,ww n[vv] RST NPC uvmnp MON COND cc DNY

### **Autonomous Message**

---

#### **Nonhierarchical**

---

[O.34361]

I hh:mm:ss xy,ww n[vv] RST NPC [s]abc MON COMPL

[O.34361.01]

A hh:mm:ss xy,ww n[vv] RST NPC [s]abc MON COND cc DNY

## Hierarchical

[O.34361]

**I** hh:mm:ss xy,ww n[vv] RST NPC uvmnp MON COMPL

[O.34361.01]

**A** hh:mm:ss xy,ww n[vv] RST NPC uvmnp MON COND cc DNY

## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number  
The valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |

| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are listed below:

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

**MON** - Restore C-bit monitoring

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b>                      |
|-----------|-----------------------------------------|
| <b>04</b> | <b>Subject entity is out of service</b> |
| <b>0B</b> | <b>BOOT on subject entity failed</b>    |
| <b>10</b> | <b>Unit is not equipped</b>             |
| <b>11</b> | <b>UC is out of service</b>             |
| <b>12</b> | <b>UC is in service but failed</b>      |
| <b>15</b> | <b>NPC is unequipped</b>                |
| <b>24</b> | <b>Unit type error</b>                  |
| <b>26</b> | <b>NPC type error</b>                   |
| <b>36</b> | <b>DSPI not equipped</b>                |
| <b>37</b> | <b>DSPI out-of-service</b>              |
| <b>3E</b> | <b>DSPI failed</b>                      |
| <b>E0</b> | <b>Hardware database mismatch</b>       |
| <b>46</b> | <b>NPC Failed or Out of Service</b>     |
| <b>50</b> | <b>CPR in buffer overflow condition</b> |



## **RST,NPC,SIDE**

### **RESTORE NPCs**

#### **Explanation Of Command**

This command restores Facility Terminating Unit (FTU/IFTU/IFTU2), DS3 Unit (DS3U), Hybrid DS3 Unit (HDS3U), or Digital Signal Processing Unit (DSPU) Network Processing Circuits (NPC) to service. This command also restores applications on Digital Signal Processing Platform (DSPP) NPCs (TG193) which have been grown in Facility Terminating Units. DSPP NPCs are always odd.

A range of FTU (IFTU or IFTU2), DS3U and HDS3U NPCs may be specified, but DSPU NPCs must be individually restored.

One output message, either completion or denial, is printed for each NPC addressed in the restore command.

DSPU NPCs are duplicated and are associated with the DACS II Cross-Connect Network (CCN) sides. DSPU NPCs are addressed with a side number, and are restored one side at a time. A single DSPU NPC restore command restores only the one addressed side of the duplicated DSPU NPC.

Execution of this command may be stopped by entering the **ABT** command.

For a Network Processing Circuit provisioned with the Minor Bit Error Rate (MBER) feature, the command will be denied if the installed hardware of the addressed NPC does not support the MBER Feature.

#### **Command**

##### **Nonhierarchical**

[I.34351]

**RST:[FRM xy,SEQ ww]:NPC [s]abc[-[t]def][,SIDE s]!**

### **Hierarchical**

---

[I.34351]

RST:[FRM xy,SEQ ww]:NPC uvmnp[-uvkqr][,SIDE s]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.34351]

M hh:mm:ss xy,ww n[vv] RST NPC [s]ghi[ SIDE s] TYPE mnxyz COND 00 \  
COMPL

### **Hierarchical**

---

[O.34351]

M hh:mm:ss xy,ww n[vv] RST NPC uvghi[ SIDE s] TYPE mnxyz COND 00 \  
COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.34351.01]

M hh:mm:ss xy,ww n[vv] RST NPC [s]jkl[-[t]mno][ SIDE s] TYPE mnxyz \  
COND cc DNY

### **Hierarchical**

---

[O.34351.01]

M hh:mm:ss xy,ww n[vv] RST NPC uvjkl[-uvmno][ SIDE s] TYPE mnxyz \  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number (beginning of the range).

**[t]def** - The 3- or 4-digit nonhierarchical NPC number (end of the range).

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921       | 2081       | 2241       | 2401       |
| 1941       | 2101       | 2261       | 2421       |
| 1961       | 2121       | 2281       | 2441       |
| 1981       | 2141       | 2301       | 2461       |
| 2001       | 2161       | 2321       | 2481       |
| 2021       | 2181       | 2341       | 2501       |
| 2041       | 2201       | 2361       | 2521       |
| 2061       | 2221       | 2381       | 2541       |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-031   | 161-191   | 321-351   | 481-511   | 641-671   | 801-831   |
| 041-071   | 201-231   | 361-391   | 521-551   | 681-711   | 841-871   |
| 081-111   | 241-271   | 401-431   | 561-591   | 721-751   | 881-911   |
| 121-151   | 281-311   | 441-471   | 601-631   | 761-791   | 921-951   |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0031 | 0161-0191 | 0321-0351 | 0481-0511 |
| 0041-0071 | 0201-0231 | 0361-0391 | 0521-0551 |
| 0081-0111 | 0241-0271 | 0401-0431 | 0561-0591 |
| 0121-0151 | 0281-0311 | 0441-0471 | 0601-0631 |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|
| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0039 | 0161-0199 | 0321-0359 | 0481-0519 |
| 0041-0079 | 0201-0239 | 0361-0399 | 0521-0559 |
| 0081-0119 | 0241-0279 | 0401-0439 | 0561-0599 |
| 0121-0159 | 0281-0319 | 0441-0479 | 0601-0639 |

| Unit<br>5 | Unit<br>6 | Unit<br>7 | Unit<br>8 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0641-0679 | 0801-0839 | 0961-0999 | 1121-1159 |
| 0681-0719 | 0841-0879 | 1001-1039 | 1161-1199 |
| 0721-0759 | 0881-0919 | 1041-1079 | 1201-1239 |
| 0761-0799 | 0921-0959 | 1081-1119 | 1241-1279 |

| Unit<br>9 | Unit<br>10 | Unit<br>11 | Unit<br>12 |
|-----------|------------|------------|------------|
| NPC       | NPC        | NPC        | NPC        |
| 1281-1319 | 1441-1479  | 1601-1639  | 1761-1799  |
| 1321-1359 | 1481-1519  | 1641-1679  | 1801-1839  |
| 1361-1399 | 1521-1559  | 1681-1719  | 1841-1879  |
| 1401-1439 | 1561-1599  | 1721-1759  | 1881-1919  |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1959  | 2081-2119  | 2241-2279  | 2401-2439  |
| 1961-1999  | 2121-2159  | 2281-2319  | 2441-2479  |
| 2001-2039  | 2161-2199  | 2321-2359  | 2481-2519  |
| 2041-2079  | 2201-2239  | 2361-2399  | 2521-2559  |

**uvmnp** - Hierarchical NPC number (beginning of the range).

**uvkqr** - Hierarchical NPC number (end of the range).

**uv** - Unit number

**m** - Module number

**np, qr** - NPC number within the module



PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

|              |            |           |
|--------------|------------|-----------|
| Unit         | Module     | NPC       |
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**SIDE** - Side

**s** - Side of duplicated DSPU circuit to be removed (0 or 1)

**[s]ghi** - The 3- or 4-digit nonhierarchical number of a successfully restored NPC.  
(**[s]abc** through **[t]def**)

**[s]jkl** - The 3- or 4-digit nonhierarchical number of an NPC whose restoral is denied.  
If used in a range, it denotes the first NPC of the range.  
(**[s]abc** through **[t]def**)

**[t]mno** - The 3- or 4-digit nonhierarchical number of an NPC whose restoral is denied.  
It denotes the last NPC of a range. (**[s]abc** through **[t]def**)

**uvghi** - Hierarchical number of a successfully restored NPC.

(**uvmnp** through **uvkqr**)

**uvjkl** - Hierarchical number of an NPC whose restoral is denied.

If used in a range, it denotes the first NPC of the range.

(**uvmnp** through **uvkqr**)

**uvmno** - Hierarchical number of an NPC whose restoral is denied.

It denotes the last NPC of a range. (**uvmnp** through **uvkqr**)

**uv** - Unit number

**m, g, k, j**

- Module number

**np, qr, hi, kl, no**

- NPC number within the module

**TYPE** - Type of NPC

**mnxyz** - NPC-type identifier

*mn*      *Explanation*

CB      C-bit processor (CPR) NPC

PA      CEPT NPC (75- or 120-ohm)

PB      CEPT NPC (120-ohm twisted pair)

PC      CEPT NPC (75-ohm coaxial)

SD      Digital Signal Processing Application Circuit Pack

#### **SD-type xyz fields (Digital Signal Processing Platform (DSPP) Applications)**

**SD111** X.50/X.57 International subrate application

**SD311** Digital Multipoint Bridge application

**SD411** North American DDS Subrate and MJU application

**SDxyz** Possible future applications with specific values for xyz

**CB-type xyz fields**

**x** - Fixed at 1  
**y** - Fixed at 0  
**z** - Network timer value  
**z** *Value in milliseconds*  
**0** 600 to 750  
**1** 1500 to 1650  
**2** 2400 to 2550  
**3** 4650 to 4800

**PB- and PC-type xyz fields**

**Table 16-1. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                         |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                           |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                   |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                    |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8,in time 144ms (TRANSMIC 1G)                                                                                               |
|              |            | 111          | Unassigned                                                                                                                             |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                          |
|              |            | 1            |                                                                                                                                        |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
 if  $jkl \neq 011$  and  $jkl \neq 101$   
 in **2496 ms**  
 if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway cross-connection* the insertion word always defaults to AIS.

mxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option c=0 is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the jkl options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when jkl=011 or jkl=101. For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option g has meaning only if the NPC is provisioned for CAS; that is, option d=1, otherwise it is ignored. If option g=0 is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option g=1 is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and h=1, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option h was selected as either 0 or 1, unless it is later set to 0 by setting parameter e=0 in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of xyz the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option h=1.

If both b=1 and h=1 and the NPC (used as synchronization source) receives

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure.** If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

**[jkl'] minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

**c=0** hardware timing

**c=1** firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

- [vii] RBER unalarmed
- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

- [m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

### PA-Type xyz fields

The provisioning values of x, y, and z for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (x, y or z) provisioning value):

**Table 16-2. Provisioning values for  $x$** 

| $x$<br>value | CRC-4<br>Mode | Automatic<br>CRC-4 | Far-End<br>PM | NPC used as<br>Sync Source | TS0 Bit 5<br>used for SFI |
|--------------|---------------|--------------------|---------------|----------------------------|---------------------------|
| 0            | Y             |                    |               |                            |                           |
| 1            | Y             |                    | Y             |                            | Y                         |
| 2            | Y             |                    |               |                            | Y                         |
| 3            | Y             |                    | Y             |                            |                           |
| 4            | Y             |                    |               | Y                          |                           |
| 5            | Y             |                    | Y             | Y                          | Y                         |
| 6            | Y             |                    |               | Y                          | Y                         |
| 7            | Y             |                    | Y             | Y                          |                           |
| 8            |               | Y                  | Y             |                            |                           |
| 9            |               | Y                  | Y             |                            | Y                         |
| A            |               |                    |               |                            | Y                         |
| B            |               |                    |               |                            |                           |
| C            |               | Y                  | Y             | Y                          |                           |
| D            |               | Y                  | Y             | Y                          | Y                         |
| E            |               |                    |               | Y                          | Y                         |
| F            |               |                    |               | Y                          |                           |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.

---

\* Automatic CRC-4 is also known as CRC-4 Interworking.



4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 16-3. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the  $abcd$  bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the  $abcd$  bits will be transmitted transparently.

If the "AIS in TS16" option is selected (y value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (y values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For y values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (y=8) or Timeslot Channel Numbering (y=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (y=C) or as an unframed clear 2Mbit/s interface (y=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 16-4. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )

3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
- HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
- FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B**. **However**, for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for **z = 4 and 8**) or 480 ms (for **z = 5 and 9**) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

8. z values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options (z = 6-7 or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms

- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

**z=6 or A** hardware timing

**z=7 or B** firmware timing (SFDT=2496 ms, CACT=624 ms)

- [iv] BER alarm level = DMA

**Specific Options for z= 6 or 7**

- [v] RBER alarm level = MI

- [vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

- [vii] RBER unalarmed

- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

9. To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of  $xyz$  for the PA type NPC.

**Table 16-5. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations                                                               | Explanation                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz<br>9Cz<br>CCz<br>DCz                                                                       | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 0Dz<br>1Dz<br>2Dz<br>3Dz<br>4Dz<br>5Dz<br>6Dz<br>7Dz<br>8Dz<br>9Dz<br>ADz<br>CDz<br>DDz<br>EDz | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                           |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 16-6. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z*= value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 16-7. Combinations of *x* and *z* Values**

| Invalid<br>xyz<br>Combinations                       | Explanation                                                                                                                                                                                                                                                       |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC<br>5yC<br>6yC<br>7yC<br>CyC<br>DyC<br>EyC<br>FyC | Use of NPC as Sync Source ( <i>x</i> 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( <i>z</i> value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |

**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped  
**03** Subject entity is in service  
**0A** DGN on subject entity failed  
**0B** BOOT on subject entity failed  
**10** Unit is not equipped  
**11** UC is out of service  
**12** UC is in service but failed  
**13** FTMI is not equipped  
**14** FTMI is out of service  
**16** SYNC TB is not equipped  
**17** SYNC is out of service  
**18** CCNI is out of service  
**1F** FTMI is in service but failed  
**36** DSPI not equipped  
**37** DSPI out-of-service  
**3E** DSPI failed  
**40** FC out of service  
**E0** Hardware database mismatch  
**0D** Unpestering error registers for subj. entity failed  
**7F** NPC is not added  
**84** Mate NPC is not equipped  
**F2** Invalid NPC number specified  
**FD** NPC range crosses unit boundary  
**B7** The associated MXR is In-Service but pestered  
**CD** Subject NPC does not support CEPT BER feature  
**CE** CCI is out of service  
**CF** SYNC is inservice but failed

**cc**    *Explanation*

- D1**    CCI is not present
- D2**    ETSI is not present
- D3**    CCNI is inservice but failed
- D4**    CCI is inservice but failed
- D5**    CCB is not equipped
- D6**    CCB is out of service
- D7**    CCB is inservice but failed
- D8**    ETSI is not equipped
- D9**    ETSI is out of service
- DA**    ETSI is inservice but failed
- DB**    FC is inservice but failed



## **RST,NPC,TS0M**

### **RESTORE NPC TIME SLOT 0 MONITOR**

#### **Explanation Of Command**

This message requests that the current TS0M buffer overflow condition on the specified PA, PB, or PC type NPC be reset.

#### **Command**

##### **Nonhierarchical**

[I.34371]

RST:FRM xy,SEQ ww:NPC [s]abc,TS0M!

##### **Hierarchical**

[I.34371]

RST:FRM xy,SEQ ww:NPC uvmnp,TS0M!

#### **Completion Message**

##### **Nonhierarchical**

[O.34371]

M hh:mm:ss xy,ww <n[vv]> RST NPC [s]abc TS0M COMPL

## Hierarchical

[O.34371]

M hh:mm:ss xy,ww <n[vv]> RST NPC uvmnp TS0M COMPL

## Denial Message

## Nonhierarchical

[O.34371.01]

M hh:mm:ss xy,ww <n[vv]> RST NPC [s]abc TS0M COND cc DNY

## Hierarchical

[O.34371.01]

M hh:mm:ss xy,ww <n[vv]> RST NPC uvmnp TS0M COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

[s]abc - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**TS0M** - Time slot 0 monitor

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                   |
|-----------|---------------------------------------------------|
| <b>04</b> | Subject entity is out of service                  |
| <b>10</b> | Unit is not equipped                              |
| <b>11</b> | UC is out of service                              |
| <b>12</b> | UC is in service but failed                       |
| <b>13</b> | FTMI is not equipped                              |
| <b>14</b> | FTMI is out of service                            |
| <b>15</b> | NPC is unequipped                                 |
| <b>1F</b> | FTMI is in service but failed                     |
| <b>24</b> | Unit type error                                   |
| <b>E0</b> | Hardware database mismatch                        |
| <b>46</b> | NPC Failed or Out of Service                      |
| <b>F1</b> | Parameter only valid with PA, PB, or PC type NPCs |
| <b>F2</b> | Invalid NPC number specified                      |
| <b>9B</b> | The MXR is not grown                              |
| <b>AE</b> | MXR is failed                                     |
| <b>B2</b> | MXR is out of service                             |

## **RST,PMEM,SMEM,CLR,FRC,BKGRND**

### **RESTORE PMEM AND/OR SMEM**

#### **Explanation Of Command**

This message restores the primary memory card (**PMEM**) or secondary memory card (**SMEM**) to service. The **PMEM** card may be restored manually when the main controller (MC) is in maintenance condition (MCOND). The **SMEM** card may be restored manually when the MC is in-service (IS) or in MCOND.

The options **CLR**, **FRC**, and **BKGRND** can only be used with **SMEM**. In addition, the option **CLR** can only be used when the main controller is in MCOND. The options **FRC** and **BKGRND** can only be used when the main controller is IS. The options do the following:

1. The **CLR** option is used when the frame administrator wants to create a blank card. The executables and the database will be erased from the card. The **CLR** option cannot be used together with the **FRC** or **BKGRND** option.
2. The **FRC** option is used when an **SMEM** card is to be synchronized but one or more items on the **SMEM** card are incompatible with the same item on the **PMEM** card. The purpose of the **FRC** option is to allow the frame administrator to force synchronization, even though an incompatibility has been detected.
3. The **FRC** option may be used together with **BKGRND** option. It is incompatible with the **CLR** option.
4. The **BKGRND** option is used when the frame administrator wants to allow the execution of a certain set of commands to proceed while the synchronization of the **SMEM** card is proceeding in the background. The **BKGRND** keyword is incompatible with the **CLR** keyword, but it may be used together with the **FRC** keyword.

#### **Command**

[I.34211]

**RST:FRM xy,SEQ ww:{PMEM|SMEM[{,CLR|[,FRC][,BKGRND]}}]!**

### **Completion Message**

---

[O.34211]

**M hh:mm:ss xy,ww n[vv] RST {PMEM|SMEM[ CLR][ FRC][ BKGRND]} COMPL**

### **Denial Message**

---

[O.34211.01]

**M hh:mm:ss xy,ww n[vv] RST {PMEM|SMEM[ CLR][ FRC][ BKGRND]} COND cc DNY**

### **Autonomous Message**

---

Normal completion message when command is issued during Boot procedure

[O.34211]

**I hh:mm:ss xy,ww n[vv] RST SMEM BKGRND COMPL**

Error message when command issued during Boot procedure terminates abnormally

[O.34211.01]

**A hh:mm:ss xy,ww n[vv] RST SMEM BKGRND COND cc DNY**

### **Explanation Of Parameters**

---

**PMEM** - Primary memory card.

**CLR** - Clear

The CLR option will cause all volumes on the card inserted in the SMEM slot to be initialized. It is not allowed for the PMEM option.

If the **CLR** keyword is entered, DACS II will respond:

**ARE YOU SURE?(YES/NO)**

If **YES**, the command request will be submitted to DACS II. After completion, all of the file volumes on the SMEM card will be initialized and all information stored previously will be cleared.

If **NO**, DACS II will respond as indicated under the Completion or Denial Message.

**SMEM** - Secondary memory card.

If the MC is in MCOND, the SMEM card will be restored without any transfer of databases or executables to the card. It will be restored if it passes hardware diagnostics and is recognized as a DACS II compatible memory card.

If the MC is IS, restoring an SMEM card will result in the following actions:

1. The card will go through hardware diagnostics and a check to ensure it is a DACS II compatible card.
2. The SMEM card will be made bit-for-bit identical to the PMEM card.
3. The system software will ensure that subsequent writes to the PMEM card will also be written to the SMEM card, so that the contents of the PMEM and SMEM cards will always be synchronized.

**FRC** - Force.

If the MC is IS and the SMEM has passed hardware diagnostics and is a compatible card, then the following conditions are checked on the SMEM:

- a) blank or uninitialized card
- b) a frame ID mismatch between the PMEM and SMEM cards
- c) a unique ID mismatch between the PMEM and SMEM cards
- d) a release version mismatch between the PMEM and SMEM cards
- e) the database on the SMEM is corrupted, missing or unrecognizable
- f) the PMEM and SMEM cards do not contain identical DSP Platform applications

If any of the above conditions exist, the frame will generate a warning message listing the condition and deny the command as follows:

**Warning: The SMEM Card being restored has the following problems!**

**<message describing the problem>**

**IF YOU STILL WISH TO PROCEED, USE FRC OPTION**

If the user re-issues the command with the FRC option, then the following message will appear:

**ARE YOU SURE? (YES/NO)**

A response of YES will cause the command to be executed. Any other response, or a 60-second time interval, will cause the command to be aborted.

**BKGRND** - Background

The BKGRND command is used when the main controller is In Service and is only valid when used with SMEM.

The following is a list of commands that are available while the backup procedure is running in the background.

[I.11001] TCON, FROM, TO, RDC, CUS, INCL  
[I.11011] TCON, FROM, TO, RDC, CUS, INCL (clear DS1/clear 2M bps)  
[I.11021] TCON, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL  
[I.11051] TCON, FROM, TO, PFW, NFW(TS0 to non-TS0)  
[I.15001] TDIS, FROM, TO, INCL, OOS, DCC  
[I.15002] TDIS, FROM, TO, INCL, OOS, DCC (multi-point)  
[I.15011] TDIS, FROM, TO, OOS, INCL (clear DS1/clear 2M bps)  
[I.19001] ED, MACRO, MAP  
[I.19101] SECH, TO, DS0A, DS0B, SEC, PCH  
[I.19111] SECH, TO, RATE, DP, PCH  
[I.19151] SDCH, TO, PCH, DCC  
[I.19201] SCON, RATE, TPT, FROM, TO  
[I.19211] SCON, DS0A, RATE, TPT, FROM, TO, DS0B  
[I.19221] SCON, RATE, MPTM, MJU, MA  
[I.19401] SDIS, RATE, TPT, FROM, TO  
[I.19411] SDIS, RATE, TPT, FROM, TO  
[I.19421] SDIS, RATE, MPTM, MJU (MJU branch)  
[I.19431] SDIS, RATE, MPTM, MJU, ALL (MJU master)  
[I.19501] CHG, SECH, OLD, NEW, PCH, DCC  
[I.19581] CHG, SCON, OLD, NEW (change MJU branch)  
[I.19591] CHG, SCON, OLD, NEW, MPTM (change MJU master)  
[I.39001] LOGIN, USER, PASSWD, DACS, II  
[I.39101] LOGOFF, USER, LINK  
[I.51011] UTL, TOD, CFA, MONDAT, FAC, BMTR, PRIM, BKGRND  
[I.51041] UTL, QRY, WHO  
[I.51131] UTL, QRY, SQN  
[I.52011] UTL, QRY, CMAP  
[I.52041] UTL, QRY, TO  
[I.52061] UTL, QRY, TO (clear DS1/clear 2M bps)  
[I.52501] UTL, QRY, SECH, TO  
[I.52511] UTL, QRY, SCON, CH, TO  
[I.52521] UTL, QRY, SCON, TO  
[I.52531] UTL, QRY, SRHDW, TO  
[I.55711] ABT  
[I.56311] UTL, QRY, STATE, NPC (except DA, TA, PA types)  
[I.56314] UTL, QRY, STATE, NPC (DA, TA, PA types only)  
[I.56501] UTL, QRY, SROOF, TO, ALL  
[I.81001] AUD, QRY, CFA, CGA, LFVR, FFER

Additionally, the following test access commands are available for use during a



background backup procedure.

[I.19601] STST, MON, TO, TP  
[I.19621] STST, MON, TO, MJU, TP  
[I.19631] STST, SPL, TO, TP  
[I.19651] STST, SPL, TO, MJU, TP  
[I.19671] STST, TPR, TP  
[I.19681] STST, TPR, ALL, LINKS  
[I.20001] CTST, FAD, FROM, TO, AIS, INCL  
[I.20031] CTST, HUB, FAD, TO, INCL  
[I.20101] CTST, FAD, AIS, INCL  
[I.20111] CTST, FAD, EMODE, FMODE, INCL  
[I.20201] CTST, TNR, FAD, OOS, RDC, CUS, UMPD, EMODE  
[I.20202] CTST, TNR, ALL, OOS  
[I.20301] CTST, LPBKT, FAD, INCL  
[I.21001] TTST, MON, TO, TP  
[I.21021] TTST, MON, TO, TG  
[I.21031] TTST, MON, TG  
[I.23001] TTST, SPL, TP  
[I.23021] TTST, SPL, TG  
[I.24001] TTST, HUB, TO, TP  
[I.24021] TTST, HUB, TO, TG  
[I.26101] TTST, RT, DGA, DGB, DGC, DGD, DGP  
[I.27001] TTST, TPR, TP, OOS  
[I.27002] TTST, TPR, ALL, OOS  
[I.27021] TTST, TGR, TG, OOS  
[I.29001] TTST, LPD, TP  
[I.29021] TTST, LPD, TG  
[I.53061] UTL, QRY, TPS  
[I.53081] UTL, QRY, TGS  
[I.53091] UTL, QRY, NPCTG

cc - Hexadecimal condition code

**cc Explanation**

03 Subject entity is in service  
06 Device failed to format  
07 Device failed to initialize  
0B BOOT on subject entity failed  
91 Can't mount or unmount SMEM  
FB PMEM verification failed  
11 PMEM type no longer supported  
F1 PMEM and SMEM synchronization fail  
F2 Not a DACS II compatible Flash Card  
F3 Flash Card is empty  
F4 PMEM and SMEM are different  
F5 Flash Card is not present  
F6 Flash Card is bad

**cc Explanation**

## **RST,SYNC**

### **RESTORE SYNCHRONIZER**

#### **Explanation Of Command**

This command restores the specified synchronizer to service. This includes all constituent circuit packs; i.e., the timing extractor circuit, the phase-locked loop, the clock generator circuit, and the service and reply circuit.

#### **Command**

[I.34101]

**RST:FRM xy,SEQ ww:SYNC a!**

#### **Completion Message**

[O.34101]

**M hh:mm:ss xy,ww n[vv] RST SYNC a COND cc COMPL**

#### **Denial Message**

[O.34101.01]

**M hh:mm:ss xy,ww n[vv] RST SYNC a COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**a** - Synchronizer side number (0 or 1)

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                          |
|-----------|------------------------------------------|
| <b>00</b> | <b>No conditions</b>                     |
| <b>02</b> | <b>Subject entity is not equipped</b>    |
| <b>03</b> | <b>Subject entity is in service</b>      |
| <b>0A</b> | <b>DGN on subject entity failed</b>      |
| <b>91</b> | <b>Sync is not configured yet</b>        |
| <b>92</b> | <b>Boot TLI failed</b>                   |
| <b>93</b> | <b>TB type in hardware mismatches DB</b> |
| <b>AB</b> | <b>Bad sync mode</b>                     |
| <b>C8</b> | <b>Sync pack denied command</b>          |
| <b>C9</b> | <b>Syncs failed to cross couple</b>      |
| <b>CA</b> | <b>Mate sync pack denied command</b>     |
| <b>CB</b> | <b>Sync not completely reset</b>         |

## **RST,SYNC,TLI,CRO**

### **RESTORE CLOCK REFERENCE OSCILLATOR**

#### **Explanation Of Command**

This command requests the restoration of the synchronizer time base as a clock reference oscillator.

#### **Command**

[I.34111]

**RST:FRM xy,SEQ ww:SYNC,TLI 3,CRO!**

#### **Completion Message**

[O.34111]

**M hh:mm:ss xy,ww n[vv] RST SYNC TLI 3 CRO COND 00 COMPL**

#### **Denial Message**

[O.34111.01]

**M hh:mm:ss xy,ww n[vv] RST SYNC TLI 3 CRO COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**TLI** - Timing link interface

**CRO** - Clock reference oscillator

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                                                  |
|-----------|------------------------------------------------------------------|
| <b>02</b> | <b>Subject entity is not equipped</b>                            |
| <b>03</b> | <b>Subject entity is in service</b>                              |
| <b>0A</b> | <b>DGN on subject entity failed</b>                              |
| <b>0B</b> | <b>BOOT on subject entity failed</b>                             |
| <b>16</b> | <b>SYNC TB is not equipped</b>                                   |
| <b>A0</b> | <b>Not a CRO TLI</b>                                             |
| <b>A9</b> | <b>Both syncs are out-of-service</b>                             |
| <b>36</b> | <b>TD on one(both) sync(s) is not equipped or not in-service</b> |

## **RST,SYNC,TLI,SSP**

### **RESTORE SYNCHRONIZER'S TIMING LINK INTERFACE**

#### **Explanation Of Command**

This command requests the restoration of the synchronizer's timing link interface.

If the timing link interface is configured as a timing extractor, synchronizer sync port 0 or 1 must be specified.

#### **Command**

[I.34121]

**RST:FRM xy,SEQ ww:SYNC a,TLI m[,SSP b]!**

#### **Completion Message**

[O.34121]

**M hh:mm:ss xy,ww n[vv] RST SYNC a TLI m[ SSP b] COND 00 COMPL**

#### **Denial Message**

[O.34121.01]

**M hh:mm:ss xy,ww n[vv] RST SYNC a TLI m[ SSP b] COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**SYNC** - Synchronizer

**a** - SYNC number (0 or 1)

**TLI** - Timing link interface

**m** - TLI number (1 through 4)

**SSP** - Synchronizer synchronization port

**b** - SSP number (0 or 1)

**cc** - Hexadecimal condition code

#### **cc Explanation**

**02** Subject entity is not equipped

**03** Subject entity is in service

**0A** DGN on subject entity failed

**16** SYNC TB is not equipped

**17** SYNC is out of service

**33** Wrong TLI type

**5D** Sync source NPC is not inservice

**5E** Sync source NPC is not equipped

**CF** NPC already grown as non-  
synchronization source



## **RST,TSI**

### **RESTORE TIME SLOT INTERCHANGE**

#### **Explanation Of Command**

This command is applicable only to the noncapacity expansion frame (NCEF).

It requests the restoration of the time slot interchange to service.

#### **Command**

[I.34221]

**RST:FRM xy,SEQ ww:TSI sft!**

#### **Completion Message**

[O.34221]

**M hh:mm:ss xy,ww n[vv] RST TSI sft COND cc COMPL**

#### **Denial Message**

[O.34221.01]

**M hh:mm:ss xy,ww n[vv] RST TSI sft COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**TSI** - Time slot interchange

**s** - Side No. (0 or 1).

**f** - From unit No. (1 through 6).

**t** - To unit No. (1 through 6).

**cc** - Hexadecimal condition code

**cc**    *Explanation*

|           |                                |
|-----------|--------------------------------|
| <b>02</b> | Subject entity is not equipped |
| <b>03</b> | Subject entity is in service   |
| <b>0A</b> | DGN on subject entity failed   |
| <b>0B</b> | BOOT on subject entity failed  |
| <b>16</b> | SYNC TB is not equipped        |
| <b>17</b> | SYNC is out of service         |
| <b>18</b> | CCNI is out of service         |
| <b>1B</b> | CCN side s is in service       |
| <b>CF</b> | SYNC is inservice but failed   |
| <b>D3</b> | CCNI is inservice but failed   |
| <b>D5</b> | CCB is not equipped            |
| <b>D6</b> | CCB is out of service          |
| <b>D7</b> | CCB is inservice but failed    |

---

## **RST,TSIS,CCN,ALL**

---

### **RESTORE TIME SLOT INTERCHANGES**

#### **Explanation Of Command**

---

This command applies only to the noncapacity expansion frame (NCEF).

It requests the restoration of all in-service Time Slot Interchanges in the specified Cross-Connect Network side.

#### **Command**

---

[I.34241]

**RST:FRM xy,SEQ ww:TSIS,CCN s,ALL!**

#### **Completion Message**

---

[O.34241]

**M hh:mm:ss xy,ww n[vv] RST TSIS CCN s ALL 5 LN MSG:**

**TOTAL TSIS tt**

**sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn**

**sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn**

**sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn**

**EOP**

**M hh:mm:ss xy,ww n[vv] RST TSIS CCN s ALL 5 LN MSG:**

**TOTAL TSIS tt**

**sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn**

**sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn**

**sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn \**

**COND    COMPL**

### **Denial Message**

---

[O.34241.01]

M hh:mm:ss xy,ww n[vv] RST TSIS CCN s ALL COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**TSIS** - Time slot interchanges

**ALL** - All

**TOTAL** - Total

**tt** - Number of TSIs currently in service (01 through 36)

**CCN** - Cross-connect network

**s** - Cross-connect network side number (0 or 1)

**f** - From unit number (1 through 6)

**t** - To unit number (1 through 6)

**r** - Status

| <i>r</i> | <i>Explanation</i> |
|----------|--------------------|
|----------|--------------------|

|   |       |
|---|-------|
| C | COMPL |
|---|-------|

|   |     |
|---|-----|
| D | DNY |
|---|-----|

**nn** - Hexadecimal condition code for the particular TSI

for r = C

*nn Explanation*

00 No condition

for r = D

*nn Explanation*

**02** Subject entity is not equipped

**03** Subject entity is in service

**0A** Diagnostic (DGN) on subject entity failed

**0B** Boot on subject entity failed

**COND** - Condition

**cc** - Completion condition code

To interpret values see cc.

**cc** - Hexadecimal condition code

**cc Explanation**

**00** No conditions

**0C** DGN on subject entity denied

**16** SYNC TB is not equipped

**17** SYNC is out of service

**18** CCNI is out of service

**1B** CCN side s is in service

**CF** SYNC is inservice but failed

**D3** CCNI is inservice but failed

**D5** CCB is not equipped

**D6** CCB is out of service

**D7** CCB is inservice but failed

---

## **RST,TSIS,CCN,UNIT,CONN**

---

### **RESTORE**

#### **Explanation Of Command**

---

This command applies only to the noncapacity expansion frame (NCEF). It requests the restoration of time slot interchanges (TSIs) that connect **UNIT q** to other specified units. **CCN s** specifies which cross-connect network side the TSIs are on.

If the optional connectivity field is omitted, then all TSIs connected to **UNIT q** are restored.

#### **Command**

---

[I.34231]

```
RST:FRM xy,SEQ ww:TSIS,CCN s,UNIT q \
[,CONN(a[,b[,c[,d[,e[,f]]]]]])]!
```

#### **Completion Message**

---

[O.34231]

```
M hh:mm:ss xy,ww n[vv] RST TSIS CCN s UNIT q \
[CONN (a[b[c[d[e[f]]]]]]]
e LN MSG:
sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn
sft r nn sft r nn sft r nn sft r nn sft r nn sft r nn
COND cc COMPL
```

#### **Denial Message**

---

[O.34231.01]

```
M hh:mm:ss xy,ww n[vv] RST TSIS CCN s UNIT q \
[CONN (a[b[c[d[e[f]]]]]]] COND cc DNY
```

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**UNIT** - Unit

**q** - Unit number containing TSIs (1 through 6)

**TSIS** - Time Slot Interchanges

**a, b, c, d, e, f**

- Unit numbers to which UNIT q can be connected

**CCN** - Cross-Connect Network

**sft** - CCN identifier

s - Side number (0 or 1)

f - FROM unit number (1 through 6)

t - TO unit number (1 through 6)

**r** - Status

**r** *Explanation*

**C** COMPL

**D** DNY

**nn** - Hexadecimal condition code for the particular TSI

for r = C

**nn** *Explanation*

**00** No condition

for r = D

**nn** *Explanation*

**03** Subject entity is in service

**0A** Diagnostic on subject entity failed

**0B** Boot on subject entity failed

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                |
|-----------|--------------------------------|
| <b>0B</b> | BOOT on subject entity failed  |
| <b>0C</b> | DGN on subject entity denied   |
| <b>10</b> | Unit is not equipped           |
| <b>16</b> | SYNC TB is not equipped        |
| <b>17</b> | SYNC is out of service         |
| <b>18</b> | CCNI is out of service         |
| <b>1B</b> | CCN side s is in service       |
| <b>27</b> | Illegal connectivity specified |
| <b>CF</b> | SYNC is inservice but failed   |
| <b>D3</b> | CCNI is inservice but failed   |
| <b>D5</b> | CCB is not equipped            |
| <b>D6</b> | CCB is out of service          |
| <b>D7</b> | CCB is inservice but failed    |



## **RST,UNIT,FC**

### **RESTORE UNIT**

#### **Explanation Of Command**

This command requests that a format converter of a facility terminating unit be restored to service.

#### **Command**

[I.34331]

**RST:FRM xy,SEQ ww:UNIT [q]q,FC sb!**

#### **Completion Message**

[O.34331]

**M hh:mm:ss xy,ww n[vv] RST UNIT [q]q FC sb COND 00\  
COMPL**

#### **Denial Message**

[O.34331.01]

**M hh:mm:ss xy,ww n[vv] RST UNIT [q]q FC sb COND cc DNY**

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FC** - Format converter

**s** - Side number (0 or 1)

**b** - Format Converter number (1 through 4)

**cc** - Hexadecimal condition code

### **cc** *Explanation*

|           |                                |
|-----------|--------------------------------|
| <b>02</b> | Subject entity is not equipped |
| <b>03</b> | Subject entity is in service   |
| <b>0A</b> | DGN on subject entity failed   |
| <b>0B</b> | BOOT on subject entity failed  |
| <b>10</b> | Unit is not equipped           |
| <b>11</b> | UC is out of service           |
| <b>12</b> | UC is in service but failed    |
| <b>13</b> | FTMI is not equipped           |
| <b>14</b> | FTMI is out of service         |
| <b>16</b> | SYNC TB is not equipped        |
| <b>17</b> | SYNC is out of service         |
| <b>18</b> | CCNI is out of service         |
| <b>1B</b> | CCN side s is in service       |
| <b>1F</b> | FTMI is in service but failed  |
| <b>40</b> | FC out of service              |
| <b>CE</b> | CCI is out of service          |
| <b>CF</b> | SYNC is inservice but failed   |
| <b>D1</b> | CCI is not present             |
| <b>D2</b> | ETSI is not present            |
| <b>D3</b> | CCNI is inservice but failed   |
| <b>D4</b> | CCI is inservice but failed    |
| <b>D5</b> | CCB is not equipped            |
| <b>D6</b> | CCB is out of service          |
| <b>D7</b> | CCB is inservice but failed    |
| <b>D8</b> | ETSI is not equipped           |
| <b>D9</b> | ETSI is out of service         |
| <b>DA</b> | ETSI is inservice but failed   |
| <b>DB</b> | FC is inservice but failed     |

## **RST,UNIT,FLI**

### **RESTORE FACILITY LINE INTERFACE**

#### **Explanation Of Command**

This command requests and reports the restoration of one facility line interface (FLI) in a DS3 unit (DS3U) or a Hybrid DS3 unit (HDS3U).

#### **Command**

[I.34401]

**RST:FRM xy,SEQ ww:UNIT [q]q,FLI k!**

#### **Completion Message**

[O.34401]

**M hh:mm:ss xy,ww n[vv] RST UNIT [q]q FLI k COMPL**

#### **Denial Message**

[O.34401.01]

**M hh:mm:ss xy,ww n[vv] RST UNIT [q]q FLI k COND cc DNY**

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FLI** - Facility line interface

**k** - FLI identifier

**k** *Explanation*

**S** Service side

**P** Protection side

**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped

**03** Subject entity is in service

**0A** DGN on subject entity failed

**0B** BOOT on subject entity failed

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

**16** SYNC TB is not equipped

**17** SYNC is out of service

**18** CCNI is out of service

**CE** CCI is out of service

**CF** SYNC is inservice but failed

**D1** CCI is not present

**D2** ETSI is not present

**D3** CCNI is inservice but failed

**D4** CCI is inservice but failed

**D5** CCB is not equipped

**D6** CCB is out of service

**D7** CCB is inservice but failed

**D8** ETSI is not equipped

**D9** ETSI is out of service

**DA** ETSI is inservice but failed

## **RST,UNIT,FMT**

### **RESTORE FORMATTER**

#### **Explanation Of Command**

This command requests and reports the restoration of one Formatter (FMT) in a DS3 Unit or Hybrid Formatter (HFMT) in a Hybrid DS3 (HDS3) Unit. If the restoration of the FMT or HFMT causes all the packs in the associated side to be in service, the side will be marked In-Service. If an attempt is made to restore an FMT in an HDS3 or an HFMT in a DS3 unit, then a diagnostic failure will result.

#### **Command**

[I.34411]

**RST:FRM xy,SEQ ww:UNIT [q]q,FMT s!**

#### **Completion Message**

[O.34411]

**M hh:mm:ss xy,ww n[vv] RST UNIT [q]q FMT s COMPL**

#### **Denial Message**

[O.34411.01]

**M hh:mm:ss xy,ww n[vv] RST UNIT [q]q FMT s COND cc DNY**

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FMT** - Formatter or Hybrid Formatter

**s** - FMT/HFMT side

**s** *Explanation*

**0** Side 0

**1** Side 1

**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped

**03** Subject entity is in service

**0A** DGN on subject entity failed

**0B** BOOT on subject entity failed

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

**16** SYNC TB is not equipped

**17** SYNC is out of service

**18** CCNI is out of service

**0D** Unpesteing error registers for subj. entity failed

**CE** CCI is out of service

**CF** SYNC is inservice but failed

**D1** CCI is not present

**D2** ETSI is not present

**D3** CCNI is inservice but failed

**D4** CCI is inservice but failed

**D5** CCB is not equipped

**D6** CCB is out of service

**D7** CCB is inservice but failed

**D8** ETSI is not equipped

**D9** ETSI is out of service

**DA** ETSI is inservice but failed

## **RST,UNIT,FTMI,DSPI**

**RESTORE FTMI or DSPI**

### **Explanation Of Command**

This command allows restoral of a facility terminating module interface or a digital signal processor interface to service.

### **Command**

[I.34321]

**RST:FRM xy,SEQ ww:UNIT [q]q,{FTMI d|DSPI}!**

### **Completion Message**

[O.34321]

**M hh:mm:ss xy,ww n[vv] RST UNIT [q]q,{FTMI d|DSPI} COND 00  
COMPL**

### **Denial Message**

[O.34321.01]

**M hh:mm:ss xy,ww n[vv] RST UNIT [q]q {FTMI d|DSPI} COND cc DNY**

### **Autonomous Message**

Not applicable.

## **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FTMI** - Facility terminating module interface

**d** - FTMI number (1 through 4).

**DSPI** - Digital signaling processing interface

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                |
|-----------|--------------------------------|
| <b>02</b> | Subject entity is not equipped |
| <b>03</b> | Subject entity is in service   |
| <b>0A</b> | DGN on subject entity failed   |
| <b>0B</b> | BOOT on subject entity failed  |
| <b>10</b> | Unit is not equipped           |
| <b>11</b> | UC is out of service           |
| <b>12</b> | UC is in service but failed    |
| <b>16</b> | SYNC TB is not equipped        |
| <b>17</b> | SYNC is out of service         |
| <b>18</b> | CCNI is out of service         |
| <b>CE</b> | CCI is out of service          |
| <b>CF</b> | SYNC is inservice but failed   |
| <b>D1</b> | CCI is not present             |
| <b>D2</b> | ETSI is not present            |
| <b>D3</b> | CCNI is inservice but failed   |
| <b>D4</b> | CCI is inservice but failed    |
| <b>D5</b> | CCB is not equipped            |
| <b>D6</b> | CCB is out of service          |
| <b>D7</b> | CCB is inservice but failed    |
| <b>D8</b> | ETSI is not equipped           |
| <b>D9</b> | ETSI is out of service         |
| <b>DA</b> | ETSI is inservice but failed   |



## **RST,UNIT,UC**

### **RESTORE UNIT CONTROLLER**

#### **Explanation Of Command**

This message requests the restoration of the unit controller to service.

#### **Command**

[I.34311]

RST:FRM xy,SEQ ww:UNIT [q]q,UC!

#### **Completion Message**

[O.34311]

M hh:mm:ss xy,ww n[vv] RST UNIT [q]q UC COND cc COMPL

[O.34312]

M hh:mm:ss xy,ww n[vv] RST IN PROGRESS

#### **Denial Message**

[O.34311.01]

M hh:mm:ss xy,ww n[vv] RST UNIT [q]q UC COND cc DNY

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**UC** - Unit controller

**COND** - Condition

**cc** - Completion condition code (hexadecimal)

To interpret values of cc see cc below

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**02**    Subject entity is not equipped

**03**    Subject entity is in service

**0A**    DGN on subject entity failed

**0B**    BOOT on subject entity failed

**42**    RST failed to boot program

**47**    Failed to boot DB

**48**    Failed to boot journal--recurrence indicates database corruption

**49**    Failed to boot unit

**51**    General boot failure (vanilla flavor)

**18**    DSPI not in service or failed

**43**    RST failed to boot DB

**C4**    XMIT continuity test won't be run: no XMIT timeslots available

**C6**    No available timeslots on any of the inservice NPCS associated with  
FC/FMT

---

# Index

The following keys are used in this index to indicate the appropriate volume:

**VL-1** Volume 1

**VL-2** Volume 2

**VL-3** Volume 3

---

## A

ABT, 6-2  
ACO, ACTIVE, 6-5  
ACT, MAP, CLR, INCL, 6-7  
ADD, LINK, K, T1, T3, N2, A, B, 6-14  
ADD, LINK, PTCOL, S, X, T, M, BAUD, ALM, BS, ENQ, 6-16  
ADD, LINK, W, P, T20, T22, T23, T25, T26, R20, 6-21  
ADD, NPC, 6-28  
ADD, USER, LINK, INCL, ALL, LANG, M, P, F, 6-31  
ADD, USER, NEW, PASSWD, 6-38  
ALM, IDLD, AI, NPC, 6-41  
ALM, NPC, 6-45  
ALM, NPC, AI, COUNT, THLEV, 6-49  
ALM, PMC, PMA, DMA, MI, CCN, OOS, 6-53  
ALM, PMC, PMA, DMA, MI, ECCN, OOS, 6-55  
ALM, PMC, PMA, DMA, MI, NPC, RPSFI, IDLD, 6-57  
ALM, PMC, PMA, DMA, MI, SMEM, 6-60  
ALM, RESET, DATE, TOD, FORMAT, MDY, DMY, PMC, 6-62  
ALWSW, UNIT, MMFG, TOPRTN, TOSRVC, 6-64  
APPEND, END, 6-66  
APPL, RESET, IN, PROGRESS, 6-68  
AR01, MISC, ALM, IDLD, PBA, 6-70  
AR01, MISC, ALM, PBA, 6-74  
AUD, PARAMS, 6-79  
AUD, QRY, BER, ALL, NPCS, TOT, 6-81  
AUD, QRY, BER, ALL, NPCS, TOT, EOM, 6-83  
AUD, QRY, CFA, CGA, LOS, 6-89, 6-97, 6-107

---

## B

BADVERB, BAD, SYNTAX, STOPPED, 7-2  
BADVERB, CMD, INERR, STOPPED, 7-4  
BC, R, TO, X, ZO, NA, 7-7  
BCON, FROM, TO, NTR, LPD, CONV, NAM, CUS, INCL, 7-9  
BCON, FROM, TO, RDC, CUS, INCL, NTR, LPD, CONV, 7-20  
BCON, FROM, TOX, 7-26  
BCON, FROM, TOX, NTR, LPD, CONV, NAM, CUS, 7-33  
BCON, FROM, TOX, RDC, CUS, INCL, NTR, LPD, 7-45  
BDIS, FROM, TO, CONV, OOS, DCC, INCL, 7-51  
BDIS, FROM, TO, OOS, INCL, CONV, 7-58  
BDIS, FROM, TOX, CONV, OOS, DCC, INCL, 7-63  
BDIS, FROM, TOX, OOS, INCL, CONV, 7-70  
BOOT, FAILED, BAD, DEVICE, 7-76  
BOOT, FROM, PMEM, FAILED, ATTEMPTING, TO, 7-78  
BOOT, FROM, PMEM, SMEM, 7-80  
BX2, STF, ATP, 7-82

---

## C

CBOFL, SIDE, EOM, 8-2  
CFR, FRAME, 8-9  
CFR, SYNC, FPLL, 8-11  
CFR, SYNC, MASTER, SLAVED, 8-13  
CFR, SYNC, STRATUM, STR2, STR3, TOLL, LOCAL, 8-15  
CFR, XC, INCL, 8-17  
CHG, ALMS, ON, OFF, 8-19  
CHG, BC, X, TO, 8-21  
CHG, BCOFF, TO, 8-26  
CHG, DD, TO, 8-31  
CHG, ERB, TYPE, 8-36  
CHG, FALMS, TYPE, PMACR, PMAMJ, DMAMN, MI, 8-38  
CHG, FROM, TO, NOT, TLA, TLR, F, T, B, A, INCL, 8-54  
CHG, FROM, TO, NOT, TLA, TLR, F, T, B, L, G, A, 8-60  
CHG, FROM, TO, TLP, NG, ES, INCL, 8-68  
CHG, INTV, ON, OFF, 8-75  
CHG, MACRO, MAP, SPACE, 8-77  
CHG, MSGLOG, ON, OFF, 8-79  
CHG, NPC, ALL, TLI, SYNC, CCN, LEV, 8-81  
CHG, NPC, ALMOPT, AIS, MI, PMA, PMC, DMA, 8-86  
CHG, NPC, CBTIMER, 8-92  
CHG, NPC, LPBK, 8-95  
CHG, NPC, NFS, 8-102  
CHG, NPC, OPTS, THMODE, 8-108  
CHG, NPC, TS0, 8-136  
CHG, NPC, TS0M, 8-142  
CHG, NPC, TYPE, IW, X, 8-148

CHG,NPC,TYPE,IW,X,INCL, 8-166  
CHG,PASSWD,OLD,NEW, 8-171  
CHG,SALMS,PMACR,PMAMJ,DMAMN,MI,RESET, 8-174  
CHG,SETOP,TYPE,ALL,NPCOP, 8-176  
CHG,SWCH,TOX,INCL, 8-186, 8-192  
CHG,SYNC,TLI,SSP,TYPE,NPC,SRC, 8-197  
CHG,TYPE,OPTS,THMODE, 8-204  
CHG,TYPE,THMODE, 8-230  
CHG,UNIT,CONN, 8-233  
CHG,USER,LINK,INCL,SCR,GR,MCON,MCOFF, 8-236  
CI,ECI,RESET, 8-240  
CI,ECI,STARTUP,STF,ATP, 8-242  
CMD,MC,OOS,MCOND,INSERVICE,MPDBASE, 8-244  
COPY,NPC,TO, 8-246  
CTST,FAD,AIS,INCL, 8-276  
CTST,FAD,EMODE,FMODE,INCL, 8-284  
CTST,FAD,FROM,TO,AIS,INCL, 8-291  
CTST,HUB,FAD,TO,INCL, 8-299  
CTST,LPBKT,FAD,INCL, 8-304  
CTST,TNR,ALL,OOS, 8-308  
CTST,TNR,FAD,OOS, 8-310

---

## D

DDIS,FROM,TO, 9-2  
DELETE,END, 9-6  
DGN,CCB,CFT,X, 9-8  
DGN,CCI,CFT,X, 9-15  
DGN,CCNI,CFT,X, 9-19  
DGN,CI,CFT,X, 9-25  
DGN,ETSI,CFT,X, 9-29  
DGN,ETSI,ECCN,ALL, 9-33  
DGN,IN,PROGRESS, 9-36  
DGN,LINK,CFT,X, 9-38  
DGN,MC,CFT,X, 9-41  
DGN,MP,CFT,X, 9-45  
DGN,NPC, 9-48  
DGN,NPC,SIDE,CFT,X, 9-54  
DGN,PMEM,SMEM,CFT,X,EXCT,DBASE,VERIFY, 9-74  
DGN,SYNC, 9-79  
DGN,SYNC,TLI,CRO, 9-82  
DGN,SYNC,TLI,SSP, 9-85  
DGN,TSI,CFT,X, 9-88  
DGN,TSIS,CCN,ALL, 9-96  
DGN,TSIS,CCN,UNIT,CONN, 9-99  
DGN,UNIT,DSPI,CFT,X, 9-102  
DGN,UNIT,FC,CFT,X, 9-105  
DGN,UNIT,FTMI,CFT,X, 9-110  
DGN,UNIT,UC,CFT,X, 9-113

DGRTH,NPC, 10-2  
DGRTH,NPC,NPCTG,TGR, 10-14  
DGRTH,NPC,NPCTP,TPR, 10-19  
DGRTH,SYNC,TB, 10-24  
DGRTH,SYNC,TLI,SSP, 10-26  
DGRTH,TG, 10-31  
DGRTH,TP, 10-33  
DGRTH,UNIT, 10-35  
DGRTH,UNIT,FTMI, 10-40  
DGRTH,UNIT,MXR, 10-42  
DLT,FPKG, 10-44  
DLT,MACRO,MAP,USER, 10-48  
DLT,NPC, 10-50  
DLT,USER, 10-54  
DSPC, 10-56

---

## E

EBX,STARTUP,STF,ATP, 11-2  
ED,CRET,MAP,PIC, 11-4  
ED,MACRO,MAP, 11-8  
EMTC,STARTUP,STF,ATP, 11-14  
ERR,CMD,ABT,TN,STOPPED, 11-16  
ERR,ESR,ANALYSIS,REPORT,EVENT, 11-18  
ERR,ESR,CCB,TN,EVENT,COND, 11-21  
ERR,ESR,CCI,TN,EVENT,COND, 11-23  
ERR,ESR,CCNI,TN,EVENT,COND, 11-26  
ERR,ESR,ETSI,TN,EVENT,COND, 11-33  
ERR,ESR,MC,MP,CI,TN, 11-36  
ERR,ESR,MC,MP,TN,EVENT,COND,CI,BX,EBX, 11-38  
ERR,ESR,NPC,SIDE,TN,EVENT,COND, 11-42  
ERR,ESR,NPC,TN,EVENT,COND, 11-48  
ERR,ESR,SYNC,TLI,SSP,TN,EVENT,NPC,COND, 11-53  
ERR,ESR,SYNC,TLI,TN,EVENT,COND, 11-59  
ERR,ESR,SYNC,TN,EVENT,COND, 11-63  
ERR,ESR,TSI,TN,EVENT,COND, 11-68  
ERR,ESR,UNIT,DSPI,TN,EVENT,COND, 11-72  
ERR,ESR,UNIT,FC,TN,EVENT,COND, 11-75  
ERR,ESR,UNIT,FTMI,TN,EVENT,COND, 11-78  
ERR,ESR,UNIT,UC,UBX,TN,EVENT,COND, 11-81  
ERR,HARDWARE,TN,COND,EVENT,ACTION, 11-84  
ERR,LINK,TN,STATUS, 11-88  
ERR,MSG,TO,LOG,DISCARDED, 11-91  
ERR,PMEM,SMEM,TN,EVENT,COND, 11-93  
ERR,PWR,PMC,PMA,DMA,MI,TN, 11-95  
ERR,SOFTWARE,MC,ERROR,MID,TN,RC,ACTION, 11-98  
ERR,SYNC,MODE,FAST,HOLDOVER,NORMAL, 11-102  
ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN, 11-107,  
11-112

EXC,MACRO, 11-117

---

## F

FRADTS,BMCMP, 12-2  
FRADTS,DGN, 12-4  
FRADTS,FRCMP, 12-7  
FRADTS,MC,DGN, 12-107

---

## G

GRTH,FRAME,CHAR,UID, 12-109  
GRTH,NPC,NPCTG, 12-112  
GRTH,NPC,NPCTP, 12-116  
GRTH,NPC,TYPE, 12-120  
GRTH,NPC,TYPE,CBTIMER, 12-127  
GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,DMA, 12-132  
GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,PMC, 12-157  
GRTH,SYNC,TB,TYPE, 12-177  
GRTH,SYNC,TLI,TYPE, 12-179  
GRTH,SYNC,TLI,TYPE,SSP,SRC,NPC, 12-181  
GRTH,TG,NPCTG, 12-187  
GRTH,TP, 12-190  
GRTH,UNIT,FTMI,IMP, 12-194  
GRTH,UNIT,MXR,TYPE,BERM,BERT,LBO, 12-196  
GRTH,UNIT,TYPE,CONN, 12-199

---

## I

IN,PROGRESS, 12-204  
INHSW,UNIT,MMFG,TOPRTN,TOSRVC, 12-206  
INSTALL, 12-208  
INVALID,SFW,ID,BLOCK,COND, 12-216

---

## L

LINE, 12-218  
LIST,END, 12-220  
LOGIN,USER,PASSWD, 12-223  
LOGOFF,USER,LINK,INCL, 12-226

---

---

## M

MC,MCOND, 13-2  
MC,RESET,RELEASE,ISSUE,FPKG,COND, 13-4  
MOVE,FROM,END,TO, 13-8  
MP,STARTUP,STF,ATP, 13-10  
MTC,STF,ATP, 13-12

---

## O

OCNT,FROM,TO,MPM,NAM,CUS,INCL,RDC, 14-2  
OCNT,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT, 14-11  
OCNT,FROM,TO,RDC,CUS,INCL,PRIOUT, 14-21  
OCON,FROM,TO,MPM,CUS,INCL,RDC,NAM, 14-26  
OCON,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT, 14-35  
OCON,FROM,TO,RDC,CUS,INCL,PRIOUT, 14-45  
ODIS,FROM,TO,INCL,OOS,DCC, 14-50  
ODIS,FROM,TO,INCL,OOS,DCC,PRIOUT, 14-57  
ODIS,FROM,TO,OOS,INCL,PRIOUT, 14-63  
OVERLOAD,MP,CI,UNIT,UC,TN,PROCESSOR, 14-68

---

## R

RESET,DATE,TOD,FORMAT,MDY,DMY, 15-2  
RESET,STOPPED, 15-4  
RMV,CCB, 15-5  
RMV,CCI, 15-7  
RMV,CCNI, 15-10  
RMV,ETSI, 15-12  
RMV,ETSI,ECCN,ALL, 15-14  
RMV,LINK, 15-16  
RMV,MC, 15-18  
RMV,NPC,SIDE,INCL, 15-20  
RMV,SMEM,PMEM, 15-46  
RMV,SYNC, 15-49  
RMV,SYNC,TLI,CRO, 15-51  
RMV,SYNC,TLI,PMC,PMA,DMA,MI,COND, 15-53  
RMV,SYNC,TLI,SSP, 15-55  
RMV,TSI, 15-58  
RMV,TSIS,CCN,ALL, 15-60  
RMV,TSIS,CCN,UNIT,CONN, 15-63  
RMV,UNIT,FC, 15-66  
RMV,UNIT,FLI, 15-69  
RMV,UNIT,FMT, 15-71

RMV,UNIT,FTMI,DSPI, 15-73  
RMV,UNIT,MMFG,FRC,INCL, 15-76  
RMV,UNIT,UC, 15-79  
RST,CCB, 16-2  
RST,CCI, 16-4  
RST,CCNI, 16-6  
RST,ETSI, 16-8  
RST,ETSI,ECCN,ALL, 16-10  
RST,LINK, 16-13  
RST,MC,MCOND,NOJRN, FRC,CLR,ALL, 16-15  
RST,NPC,MON, 16-20  
RST,NPC,SIDE, 16-25  
RST,NPC,TS0M, 16-49  
RST,PMEM,SMEM,CLR,FRC,BKGRND, 16-53  
RST,SYNC, 16-59  
RST,SYNC,TLI,CRO, 16-61  
RST,SYNC,TLI,SSP, 16-63  
RST,TSI, 16-65  
RST,TSIS,CCN,ALL, 16-67  
RST,TSIS,CCN,UNIT,CONN, 16-70  
RST,UNIT,FC, 16-73  
RST,UNIT,FLI, 16-75  
RST,UNIT,FMT, 16-77  
RST,UNIT,FTMI,DSPI, 16-79  
RST,UNIT,UC, 16-81

---

## S

SAVE, 17-2  
STOP,MACRO,LINK, 17-4  
SW,BCAST,OLD,NEW,INCL, 17-6, 17-13  
SW,DISC,OOS, 17-21, 17-26  
SW,ROLL,OLD,NEW,INCL,FRC,OOS, 17-33  
SW,ROLL,OLD,NEW,INCL,FRC,OOS,TWAY, 17-39  
SW,UNIT,FLI, TOPRTN, 17-45  
SW,UNIT,FLI, TOSRVC, 17-47  
SW,UNIT,MMFG, TOPRTN, FRC, 17-49  
SW,UNIT,MMFG, TOSRVC, 17-52

---

## T

TCNT, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL, 18-2  
TCNT, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT, 18-13  
TCNT, FROM, TO, PFW, NFW, 18-25  
TCNT, FROM, TO, RDC, CUS, INCL, PRIOUT, 18-32  
TCON, FROM, CB, CUS, RDC, INCL, 18-37

TCON, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL, 18-43  
TCON, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT, 18-54  
TCON, FROM, TO, PFW, NFW, 18-66  
TCON, FROM, TO, RDC, CUS, INCL, PRIOUT, 18-73  
TDIS, FROM, CB, INCL, OOS, 18-78  
TDIS, FROM, TO, INCL, OOS, DCC, 18-83  
TDIS, FROM, TO, INCL, OOS, DCC, PRIOUT, 18-90  
TDIS, FROM, TO, OOS, INCL, PRIOUT, 18-96  
TS0, R, NPC, OLD, NEW, 18-101  
TS0MBOFL, 18-105  
TTST, HUB, TO, TG, 18-108  
TTST, HUB, TO, TP, NAM, 18-115  
TTST, LPD, TG, 18-122  
TTST, LPD, TP, 18-124  
TTST, MON, TG, 18-128  
TTST, MON, TO, NAM, TP, 18-134  
TTST, MON, TO, TG, 18-145  
TTST, SPL, TG, 18-153  
TTST, SPL, TP, 18-159  
TTST, TGR, TG, OOS, 18-164  
TTST, TLA, NOT, TP, 18-172  
TTST, TLA, TG, 18-179  
TTST, TLR, NOT, TP, 18-184  
TTST, TLR, TG, 18-191  
TTST, TPR, ALL, OOS, 18-196  
TTST, TPR, TP, OOS, FRC, 18-198

---

## U

UTL, ACO, 19-2  
UTL, BMTR, FROM, TO, EXCT, INCL, UPGRD, 19-4  
UTL, BOOT, FRAME, CLR, 19-10  
UTL, CLR, ALL, 19-12  
UTL, CLR, ERR, HWER, SWER, 19-14  
UTL, CLR, NPC, 19-16  
UTL, CLR, NPC, ALL, AI, MONDAT, MONTIM, 19-22  
UTL, CLR, NPC, PARAMS, 19-30  
UTL, CLR, PWR, 19-34  
UTL, DATE, FORMAT, INT, 19-36  
UTL, INIT, ALM, 19-39  
UTL, LOC, 19-41  
UTL, QRY, ALL, 19-53  
UTL, QRY, ALL, COMMON, 19-60  
UTL, QRY, ALL, UNIT, 19-66  
UTL, QRY, ALM, INTV, 19-86  
UTL, QRY, ALMOPT, NPC, AIS, 19-88  
UTL, QRY, ALMS, 19-97  
UTL, QRY, ALMS, DBASE, 19-124  
UTL, QRY, APPL, NPC, ALL, 19-137

UTL, QRY, BC, NPC, ALL, 19-143  
UTL, QRY, BC, TO, 19-152  
UTL, QRY, BCAST, ALL, 19-157  
UTL, QRY, BCAST, FROM, 19-161, 19-167  
UTL, QRY, CMAP, 19-172  
UTL, QRY, CNFGR, 19-204  
UTL, QRY, DATE, 19-207  
UTL, QRY, DD, 19-209  
UTL, QRY, DD, NPC, DDCT, ALL, 19-214  
UTL, QRY, DMAP, 19-220  
UTL, QRY, DS3, BERMT, UNIT, 19-249  
UTL, QRY, DS3, LBO, 19-251  
UTL, QRY, EQD, COMMON, 19-253  
UTL, QRY, EQD, CONN, 19-257  
UTL, QRY, EQD, ETSIS, 19-259  
UTL, QRY, EQD, MXRS, 19-261  
UTL, QRY, EQD, NPC, TOTAL, UNIT, 19-263  
UTL, QRY, EQD, TSIS, 19-276  
UTL, QRY, EQD, UNIT, 19-278  
UTL, QRY, EQD, UNITS, 19-297  
UTL, QRY, ERR, SWER, HWER, INT, DATE, TOD, TN, 19-299  
UTL, QRY, ESR, CCN, 19-309  
UTL, QRY, ESR, ECCN, 19-312  
UTL, QRY, ESR, MP, 19-316  
UTL, QRY, ESR, NPC, SIDE, 19-321  
UTL, QRY, ESR, UNIT, 19-329  
UTL, QRY, ESR, UNIT, DSPI, 19-333  
UTL, QRY, ESR, UNIT, FC, 19-335  
UTL, QRY, ESR, UNIT, FLI, 19-338  
UTL, QRY, ESR, UNIT, FTMI, 19-341  
UTL, QRY, ESR, UNIT, MXR, 19-345  
UTL, QRY, FALMS, TYPE, ALL, 19-350  
UTL, QRY, FPKG, 19-368  
UTL, QRY, FROM, 19-372, 19-393  
UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC, 19-398  
UTL, QRY, LIST, MACRO, USER, 19-408  
UTL, QRY, LIST, MAP, USER, 19-411  
UTL, QRY, LOG, ALL, 19-414  
UTL, QRY, LPBK, NPC, 19-418  
UTL, QRY, MACRO, ATTR, USER, ALL, 19-425  
UTL, QRY, MACRO, MAP, SPACE, USER, ALL, 19-429  
UTL, QRY, MACRO, USER, 19-432  
UTL, QRY, MAP, ATTR, ALL, USER, MAPNM, 19-435  
UTL, QRY, MARK, 19-438, 19-448  
UTL, QRY, MEMSTAT, 19-458  
UTL, QRY, NFS, NPC, 19-466  
UTL, QRY, NPC, 19-471  
UTL, QRY, NPC, ALL, AI, LV, MONDAT, MONTIM, 19-483  
UTL, QRY, NPC, CBTIMER, 19-495  
UTL, QRY, NPC, MAP, USER, 19-498  
UTL, QRY, NPCTG, 19-503  
UTL, QRY, OPT, TYPE, ALL, NPC, 19-508  
UTL, QRY, PEST, FAIL, OOS, COMMON, 19-513  
UTL, QRY, PEST, FAIL, OOS, UNIT, 19-518  
UTL, QRY, ROLL, DS0, NPC, ALL, UNIT, 19-538  
UTL, QRY, ROLL, DS1, NPC, ALL, UNIT, 19-545  
UTL, QRY, RPSFI, 19-552  
UTL, QRY, SALMS, ALL, 19-554  
UTL, QRY, SCR, LINK, USER, LINKS, USERS, 19-557  
UTL, QRY, SIGST, 19-565  
UTL, QRY, SQN, 19-571  
UTL, QRY, STATE, ACO, 19-573  
UTL, QRY, STATE, NPC, 19-575, 19-605  
UTL, QRY, STATE, SYNC, 19-628  
UTL, QRY, STR, LINK, 19-631  
UTL, QRY, STR, SYNC, 19-641  
UTL, QRY, STR, SYNC, TLI, 19-647  
UTL, QRY, STR, SYNC, TLI, SSP, 19-650  
UTL, QRY, STR, XC, 19-655  
UTL, QRY, SYNC, TYPE, 19-657  
UTL, QRY, TGS, 19-660  
UTL, QRY, TO, 19-665, 19-700  
UTL, QRY, TOD, CFA, MONDAT, 19-718  
UTL, QRY, TPS, 19-721  
UTL, QRY, TS0, NPC, 19-727  
UTL, QRY, TS0M, NPC, 19-732  
UTL, QRY, UNIT, FTMI, IMP, 19-737  
UTL, QRY, WHO, 19-739  
UTL, QRY, XCSB, UNIT, 19-742  
UTL, RCY, COND, IN, PROGRESS, 19-749  
UTL, RCY, PASSWD, 19-752  
UTL, TOD, CFA, PRIM, X, MONDAT, 19-754





**Lucent Technologies**  
Bell Labs Innovations



**DACS II**  
**Release 8.2.3, PDS**  
**2.048-Mb/s Interface**  
**Command and Message Manual**

**Volume III**

365-353-242  
Issue 1  
February 1999

**Copyright © 1999 Lucent Technologies**  
**All Rights Reserved**  
**Printed in U.S.A**

### **Notice**

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

### **Security Statement**

In rare instances, unauthorized individuals make connections to the telecommunications network through the use of remote access features. In such event, applicable tariffs require that the customer pay all network charges for traffic. Lucent Technologies cannot be responsible for such charges, and will not make any allowance or give any credit for charges that result from unauthorized access.

### **Documentation Ordering Information**

The ordering number for this document is 365-353-242. To order this document, call the Lucent Technologies Customer Information Center in Indianapolis, Indiana, on 1-888-582-3688. For more ordering information, refer to "How to Order Documentation" in the section "About this Document."

### **Technical Support Telephone Number**

The Lucent Technologies Regional Technical Assistance Center (RTAC) provides a technical assistance telephone number which is staffed 24 hours a day. For technical assistance, simply call 1-800-225-RTAC.

### **Documentation Support Telephone Number**

Lucent Technologies provides a telephone number for you to report errors or to ask questions about the information in this document. The support telephone numbers are:

Outside North Carolina - 1-800-334-0404  
Inside North Carolina - 1-919-727-6681.

Developed by The Lucent Technologies Customer Training & Information Products Organization

# How Are We Doing?

Document Title: DACS II Release 8.2.3, PDS 2.048-Mb/s Interface Command and Message Manual Volume III

Document No.: 365-353-242

Issue 1

Date: February 1999

Lucent Technologies welcomes your feedback on this document. Your comments can be of great value in helping us improve our documentation.

1. Please rate the effectiveness of this document in the following areas:

|                      | Excellent | Good | Fair | Poor | Not Applicable   |
|----------------------|-----------|------|------|------|------------------|
| Ease of Use          |           |      |      |      | //////////////// |
| Clarity              |           |      |      |      | //////////////// |
| Completeness         |           |      |      |      | //////////////// |
| Accuracy             |           |      |      |      | //////////////// |
| Organization         |           |      |      |      | //////////////// |
| Appearance           |           |      |      |      | //////////////// |
| Examples             |           |      |      |      |                  |
| Illustrations        |           |      |      |      |                  |
| Overall Satisfaction |           |      |      |      | //////////////// |

2. Please check the ways you feel we could improve this document:

- |                                                            |                                                                     |
|------------------------------------------------------------|---------------------------------------------------------------------|
| <input type="checkbox"/> Improve the overview/introduction | <input type="checkbox"/> Make it more concise/brief                 |
| <input type="checkbox"/> Improve the table of contents     | <input type="checkbox"/> Add more step-by-step procedures/tutorials |
| <input type="checkbox"/> Improve the organization          | <input type="checkbox"/> Add more troubleshooting information       |
| <input type="checkbox"/> Include more figures              | <input type="checkbox"/> Make it less technical                     |
| <input type="checkbox"/> Add more examples                 | <input type="checkbox"/> Add more/better quick reference aids       |
| <input type="checkbox"/> Add more detail                   | <input type="checkbox"/> Improve the index                          |

Please provide details for the suggested improvement. \_\_\_\_\_

3. What did you like most about this document?

---

---

4. Feel free to write any comments below or on an attached sheet.

---

---

---

---

If we may contact you concerning your comments, please complete the following:

Name: \_\_\_\_\_ Telephone Number: \_\_\_\_\_

Company/Organization: \_\_\_\_\_ Date: \_\_\_\_\_

Address: \_\_\_\_\_

When you have completed this form, please fold, tape, and return to address on back or Fax to: 910-727-3043.

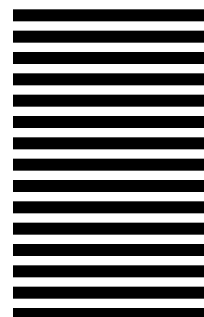
**Lucent Technologies**  
Bell Labs Innovations



-----Do Not Cut—Fold Here And Tape-----



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT NO. 1999 GREENSBORO, N.C.

POSTAGE WILL BE PAID BY ADDRESSEE

**DOCUMENTATION SERVICES**  
**2400 Reynolda Road**  
**Winston-Salem, NC 27199-2029**



---

# Contents

---

|                                |      |
|--------------------------------|------|
| <b>Introduction</b>            | 1-1  |
| ■ DACS II Messages             | 1-2  |
| ■ Communicating With DACS II   | 1-5  |
| ■ DACS II Administrative Links | 1-23 |
| ■ NPC Addressing               | 1-24 |
| ■ On-Line Help Feature         | 1-25 |
| ■ System Configuration         | 1-30 |
| ■ Documentation Support        | 1-46 |
| ■ Glossary                     | 1-58 |

---

|                                    |     |
|------------------------------------|-----|
| <b>Alphabetic List of Messages</b> | 2-1 |
| ■ Alphabetic List of Keywords      | 2-1 |

---

|                                   |     |
|-----------------------------------|-----|
| <b>Numerical List of Messages</b> | 3-1 |
| ■ Numeric List of Keywords        | 3-1 |

---

|                                  |      |
|----------------------------------|------|
| <b>Summary of Input Commands</b> | 4-1  |
| ■ Alphabetic Command Summary     | 4-2  |
| ■ Numeric Command Summary        | 4-35 |

---

|                            |      |
|----------------------------|------|
| <b>Autonomous Messages</b> | 5-1  |
| ■ Alarms Messages          | 5-2  |
| ■ Audits Messages          | 5-5  |
| ■ Error Recovery Messages  | 5-10 |
| ■ Event Reporting Messages | 5-16 |
| ■ Input Denials Messages   | 5-17 |

---

## Contents

|                    |      |
|--------------------|------|
| ■ Startup Messages | 5-18 |
|--------------------|------|

---

|                                          |       |
|------------------------------------------|-------|
| <b>ABT — AUD</b>                         | 6-1   |
| ■ ABT                                    | 6-2   |
| ■ ACO,ACTIVE                             | 6-5   |
| ■ ACT,MAP,CLR,INCL                       | 6-7   |
| ■ ADD,LINK,K,T1,T3,N2,A,B                | 6-14  |
| ■ ADD,LINK,PTCOL,S,X,T,M,BAUD,ALM,BS,ENQ | 6-16  |
| ■ ADD,LINK,W,P,T20,T22,T23,T25,T26,R20   | 6-21  |
| ■ ADD,NPC                                | 6-28  |
| ■ ADD,USER,LINK,INCL,ALL,LANG,M,P,F      | 6-31  |
| ■ ADD,USER,NEW,PASSWD                    | 6-38  |
| ■ ALM,IDLD,AI,NPC                        | 6-41  |
| ■ ALM,NPC                                | 6-45  |
| ■ ALM,NPC,AI,COUNT,THLEV                 | 6-49  |
| ■ ALM,PMC,PMA,DMA,MI,CCN,OOS             | 6-53  |
| ■ ALM,PMC,PMA,DMA,MI,ECCN,OOS            | 6-55  |
| ■ ALM,PMC,PMA,DMA,MI,NPC,RPSFI,IDLD      | 6-57  |
| ■ ALM,PMC,PMA,DMA,MI,SMEM                | 6-60  |
| ■ ALM,RESET,DATE,TOD,FORMAT,MDY,DMY,PMC  | 6-62  |
| ■ ALWSW,UNIT,MMFG,TOPRTN,TOSRVC          | 6-64  |
| ■ APPEND,END                             | 6-66  |
| ■ APPL,RESET,IN,PROGRESS                 | 6-68  |
| ■ AR01,MISC,ALM,IDLD,PBA                 | 6-70  |
| ■ AR01,MISC,ALM,PBA                      | 6-74  |
| ■ AUD,PARAMS                             | 6-79  |
| ■ AUD,QRY,BER,ALL,NPCS,TOT               | 6-81  |
| ■ AUD,QRY,BER,ALL,NPCS,TOT,EOM           | 6-83  |
| ■ AUD,QRY,CFA,CGA,LOS                    | 6-89  |
| ■ AUD,QRY,CFA,CGA,LOS                    | 6-97  |
| ■ AUD,QRY,CFA,CGA,LOS                    | 6-107 |

---

|                      |     |
|----------------------|-----|
| <b>BADVERB — BX2</b> | 7-1 |
|----------------------|-----|

---

## Contents

|                                          |      |
|------------------------------------------|------|
| ■ BADVERB,BAD,SYNTAX,STOPPED             | 7-2  |
| ■ BADVERB,CMD,INERR,STOPPED              | 7-4  |
| ■ BC,R,TO,X,ZO,NA                        | 7-7  |
| ■ BCON,FROM,TO,NTR,LPD,CONV,NAM,CUS,INCL | 7-9  |
| ■ BCON,FROM,TO,RDC,CUS,INCL,NTR,LPD,CONV | 7-20 |
| ■ BCON,FROM,TOX                          | 7-26 |
| ■ BCON,FROM,TOX,NTR,LPD,CONV,NAM,CUS     | 7-33 |
| ■ BCON,FROM,TOX,RDC,CUS,INCL,NTR,LPD     | 7-45 |
| ■ BDIS,FROM,TO,CONV,OOS,DCC,INCL         | 7-51 |
| ■ BDIS,FROM,TO,OOS,INCL,CONV             | 7-58 |
| ■ BDIS,FROM,TOX,CONV,OOS,DCC,INCL        | 7-63 |
| ■ BDIS,FROM,TOX,OOS,INCL,CONV            | 7-70 |
| ■ BOOT,FAILED,BAD,DEVICE                 | 7-76 |
| ■ BOOT,FROM,PMEM,FAILED,ATTEMPTING,TO    | 7-78 |
| ■ BOOT,FROM,PMEM,SMEM                    | 7-80 |
| ■ BX2,STF,ATP                            | 7-82 |

---

|                                         |      |
|-----------------------------------------|------|
| <b>CBOFL — CTST</b>                     | 8-1  |
| ■ CBOFL,SIDE,EOM                        | 8-2  |
| ■ CFR,FRAME                             | 8-9  |
| ■ CFR,SYNC,FPLL                         | 8-11 |
| ■ CFR,SYNC,MASTER,SLAVED                | 8-13 |
| ■ CFR,SYNC,STRATUM,STR2,STR3,TOLL,LOCAL | 8-15 |
| ■ CFR,XC,INCL                           | 8-17 |
| ■ CHG,ALMS,ON,OFF                       | 8-19 |
| ■ CHG,BC,X,TO                           | 8-21 |
| ■ CHG,BCOFF,TO                          | 8-26 |
| ■ CHG,DD,TO                             | 8-31 |
| ■ CHG,ERB,TYPE                          | 8-36 |
| ■ CHG,FALMS,TYPE,PMACR,PMAMJ,DMAMN,MI   | 8-38 |
| ■ CHG,FROM,TO,NOT,TLA,TLR,F,T,B,A,INCL  | 8-54 |
| ■ CHG,FROM,TO,NOT,TLA,TLR,F,T,B,L,G,A   | 8-60 |
| ■ CHG,FROM,TO,TLP,NG,ES,INCL            | 8-68 |
| ■ CHG,INTV,ON,OFF                       | 8-75 |
| ■ CHG,MACRO,MAP,SPACE                   | 8-77 |
| ■ CHG,MSGLOG,ON,OFF                     | 8-79 |

---

## Contents

|                                        |       |
|----------------------------------------|-------|
| ■ CHG,NPC,ALL,TLI,SYNC,CCN,LEV         | 8-81  |
| ■ CHG,NPC,ALMOPT,AIS,MI,PMA,PMC,DMA    | 8-86  |
| ■ CHG,NPC,CBTIMER                      | 8-92  |
| ■ CHG,NPC,LPBK                         | 8-95  |
| ■ CHG,NPC,NFS                          | 8-102 |
| ■ CHG,NPC,OPTS,THMODE                  | 8-108 |
| ■ CHG,NPC,TS0                          | 8-136 |
| ■ CHG,NPC,TS0M                         | 8-142 |
| ■ CHG,NPC,TYPE,IW,X                    | 8-148 |
| ■ CHG,NPC,TYPE,IW,X,INCL               | 8-166 |
| ■ CHG,PASSWD,OLD,NEW                   | 8-171 |
| ■ CHG,SALMS,PMACR,PMAMJ,DMAMN,MI,RESET | 8-174 |
| ■ CHG,SETOP,TYPE,ALL,NPCOP             | 8-176 |
| ■ CHG,SWCH,TOX,INCL                    | 8-186 |
| ■ CHG,SWCH,TOX,INCL                    | 8-192 |
| ■ CHG,SYNC,TLI,SSP,TYPE,NPC,SRC        | 8-197 |
| ■ CHG,TYPE,OPTS,THMODE                 | 8-204 |
| ■ CHG,TYPE,THMODE                      | 8-230 |
| ■ CHG,UNIT,CONN                        | 8-233 |
| ■ CHG,USER,LINK,INCL,SCR,GR,MCON,MCOFF | 8-236 |
| ■ CI,ECI,RESET                         | 8-240 |
| ■ CI,ECI,STARTUP,STF,ATP               | 8-242 |
| ■ CMD,MC,OOS,MCOND,INSERVICE,MPDBASE   | 8-244 |
| ■ COPY,NPC,TO                          | 8-246 |
| ■ CTST,FAD,AIS,INCL                    | 8-276 |
| ■ CTST,FAD,EMODE,FMODE,INCL            | 8-284 |
| ■ CTST,FAD,FROM,TO,AIS,INCL            | 8-291 |
| ■ CTST,HUB,FAD,TO,INCL                 | 8-299 |
| ■ CTST,LPBKT,FAD,INCL                  | 8-304 |
| ■ CTST,TNR,ALL,OOS                     | 8-308 |
| ■ CTST,TNR,FAD,OOS                     | 8-310 |

---

|                   |            |
|-------------------|------------|
| <b>DDIS — DGN</b> | <b>9-1</b> |
| ■ DDIS,FROM,TO    | 9-2        |
| ■ DELETE,END      | 9-6        |
| ■ DGN,CCB,CFT,X   | 9-8        |



---

## Contents

|                                         |       |
|-----------------------------------------|-------|
| ■ DGN,CCI,CFT,X                         | 9-15  |
| ■ DGN,CCNI,CFT,X                        | 9-19  |
| ■ DGN,CI,CFT,X                          | 9-25  |
| ■ DGN,ETSI,CFT,X                        | 9-29  |
| ■ DGN,ETSI,ECCN,ALL                     | 9-33  |
| ■ DGN,IN,PROGRESS                       | 9-36  |
| ■ DGN,LINK,CFT,X                        | 9-38  |
| ■ DGN,MC,CFT,X                          | 9-41  |
| ■ DGN,MP,CFT,X                          | 9-45  |
| ■ DGN,NPC                               | 9-48  |
| ■ DGN,NPC,SIDE,CFT,X                    | 9-54  |
| ■ DGN,PMEM,SMEM,CFT,X,EXCT,DBASE,VERIFY | 9-74  |
| ■ DGN,SYNC                              | 9-79  |
| ■ DGN,SYNC,TLI,CRO                      | 9-82  |
| ■ DGN,SYNC,TLI,SSP                      | 9-85  |
| ■ DGN,TSI,CFT,X                         | 9-88  |
| ■ DGN,TSIS,CCN,ALL                      | 9-96  |
| ■ DGN,TSIS,CCN,UNIT,CONN                | 9-99  |
| ■ DGN,UNIT,DSPI,CFT,X                   | 9-102 |
| ■ DGN,UNIT,FC,CFT,X                     | 9-105 |
| ■ DGN,UNIT,FTMI,CFT,X                   | 9-110 |
| ■ DGN,UNIT,UC,CFT,X                     | 9-113 |

---

|                       |             |
|-----------------------|-------------|
| <b>DGRTH — DSPC</b>   | <b>10-1</b> |
| ■ DGRTH,NPC           | 10-2        |
| ■ DGRTH,NPC,NPCTG,TGR | 10-14       |
| ■ DGRTH,NPC,NPCTP,TPR | 10-19       |
| ■ DGRTH,SYNC,TB       | 10-24       |
| ■ DGRTH,SYNC,TLI,SSP  | 10-26       |
| ■ DGRTH,TG            | 10-31       |
| ■ DGRTH,TP            | 10-33       |
| ■ DGRTH,UNIT          | 10-35       |
| ■ DGRTH,UNIT,FTMI     | 10-40       |
| ■ DGRTH,UNIT,MXR      | 10-42       |
| ■ DLT,FPKG            | 10-44       |
| ■ DLT,MACRO,MAP,USER  | 10-48       |

---

## Contents

|            |       |
|------------|-------|
| ■ DLT,NPC  | 10-50 |
| ■ DLT,USER | 10-54 |
| ■ DSPC     | 10-56 |

---

|                                          |             |
|------------------------------------------|-------------|
| <b>EBX — EXC</b>                         | <b>11-1</b> |
| ■ EBX,STARTUP,STF,ATP                    | 11-2        |
| ■ ED,CRET,MAP,PIC                        | 11-4        |
| ■ ED,MACRO,MAP                           | 11-8        |
| ■ EMTC,STARTUP,STF,ATP                   | 11-14       |
| ■ ERR,CMD,ABT,TN,STOPPED                 | 11-16       |
| ■ ERR,ESR,ANALYSIS,REPORT,EVENT          | 11-18       |
| ■ ERR,ESR,CCB,TN,EVENT,COND              | 11-21       |
| ■ ERR,ESR,CCI,TN,EVENT,COND              | 11-23       |
| ■ ERR,ESR,CCNI,TN,EVENT,COND             | 11-26       |
| ■ ERR,ESR,ETSI,TN,EVENT,COND             | 11-33       |
| ■ ERR,ESR,MC,MP,CI,TN                    | 11-36       |
| ■ ERR,ESR,MC,MP,TN,EVENT,COND,CI,BX,EBX  | 11-38       |
| ■ ERR,ESR,NPC,SIDE,TN,EVENT,COND         | 11-42       |
| ■ ERR,ESR,NPC,TN,EVENT,COND              | 11-48       |
| ■ ERR,ESR,SYNC,TLI,SSP,TN,EVENT,NPC,COND | 11-53       |
| ■ ERR,ESR,SYNC,TLI,TN,EVENT,COND         | 11-59       |
| ■ ERR,ESR,SYNC,TN,EVENT,COND             | 11-63       |
| ■ ERR,ESR,TSI,TN,EVENT,COND              | 11-68       |
| ■ ERR,ESR,UNIT,DSPI,TN,EVENT,COND        | 11-72       |
| ■ ERR,ESR,UNIT,FC,TN,EVENT,COND          | 11-75       |
| ■ ERR,ESR,UNIT,FTMI,TN,EVENT,COND        | 11-78       |
| ■ ERR,ESR,UNIT,UC,UBX,TN,EVENT,COND      | 11-81       |
| ■ ERR,HARDWARE,TN,COND,EVENT,ACTION      | 11-84       |
| ■ ERR,LINK,TN,STATUS                     | 11-88       |
| ■ ERR,MSGs,TO,LOG,DISCARDED              | 11-91       |
| ■ ERR,PMEM,SMEM,TN,EVENT,COND            | 11-93       |
| ■ ERR,PWR,PMC,PMA,DMA,MI,TN              | 11-95       |
| ■ ERR,SOFTWARE,MC,ERROR,MID,TN,RC,ACTION | 11-98       |
| ■ ERR,SYNC,MODE,FAST,HOLDOVER,NORMAL     | 11-102      |
| ■ ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN    | 11-107      |
| ■ ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN    | 11-112      |

---

## Contents

|             |        |
|-------------|--------|
| ■ EXC,MACRO | 11-117 |
|-------------|--------|

---

|                                          |        |
|------------------------------------------|--------|
| <b>FRADTS — LOGOFF</b>                   | 12-1   |
| ■ FRADTS,BMCMP                           | 12-2   |
| ■ FRADTS,DGN                             | 12-4   |
| ■ FRADTS,FRCMP                           | 12-7   |
| ■ FRADTS,MC,DGN                          | 12-107 |
| ■ GRTH,FRAME,CHAR,UID                    | 12-109 |
| ■ GRTH,NPC,NPCTG                         | 12-112 |
| ■ GRTH,NPC,NPCTP                         | 12-116 |
| ■ GRTH,NPC,TYPE                          | 12-120 |
| ■ GRTH,NPC,TYPE,CBTIMER                  | 12-127 |
| ■ GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,DMA | 12-132 |
| ■ GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,PMC | 12-157 |
| ■ GRTH,SYNC,TB,TYPE                      | 12-177 |
| ■ GRTH,SYNC,TLI,TYPE                     | 12-179 |
| ■ GRTH,SYNC,TLI,TYPE,SSP,SRC,NPC         | 12-181 |
| ■ GRTH,TG,NPCTG                          | 12-187 |
| ■ GRTH,TP                                | 12-190 |
| ■ GRTH,UNIT,FTMI,IMP                     | 12-194 |
| ■ GRTH,UNIT,MXR,TYPE,BERM,BERT,LBO       | 12-196 |
| ■ GRTH,UNIT,TYPE,CONN                    | 12-199 |
| ■ IN,PROGRESS                            | 12-204 |
| ■ INHSW,UNIT,MMFG,TOPRTN,TOSRVC          | 12-206 |
| ■ INSTALL                                | 12-208 |
| ■ INVALID,SFW,ID,BLOCK,COND              | 12-216 |
| ■ LINE                                   | 12-218 |
| ■ LIST,END                               | 12-220 |
| ■ LOGIN,USER,PASSWD                      | 12-223 |
| ■ LOGOFF,USER,LINK,INCL                  | 12-226 |

---

|                 |      |
|-----------------|------|
| <b>MC — MTC</b> | 13-1 |
| ■ MC,MCOND      | 13-2 |

---

## Contents

|                                    |       |
|------------------------------------|-------|
| ■ MC,RESET,RELEASE,ISSUE,FPKG,COND | 13-4  |
| ■ MOVE,FROM,END,TO                 | 13-8  |
| ■ MP,STARTUP,STF,ATP               | 13-10 |
| ■ MTC,STF,ATP                      | 13-12 |

---

|                                        |       |
|----------------------------------------|-------|
| <b>OCNT — OVERLOAD</b>                 | 14-1  |
| ■ OCNT,FROM,TO,MPM,NAM,CUS,INCL,RDC    | 14-2  |
| ■ OCNT,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT | 14-11 |
| ■ OCNT,FROM,TO,RDC,CUS,INCL,PRIOUT     | 14-21 |
| ■ OCON,FROM,TO,MPM,CUS,INCL,RDC,NAM    | 14-26 |
| ■ OCON,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT | 14-35 |
| ■ OCON,FROM,TO,RDC,CUS,INCL,PRIOUT     | 14-45 |
| ■ ODIS,FROM,TO,INCL,OOS,DCC            | 14-50 |
| ■ ODIS,FROM,TO,INCL,OOS,DCC,PRIOUT     | 14-57 |
| ■ ODIS,FROM,TO,OOS,INCL,PRIOUT         | 14-63 |
| ■ OVERLOAD,MP,CI,UNIT,UC,TN,PROCESSOR  | 14-68 |

---

|                                    |       |
|------------------------------------|-------|
| <b>RESET — RMV</b>                 | 15-1  |
| ■ RESET,DATE,TOD,FORMAT,MDY,DMY    | 15-2  |
| ■ RESET,STOPPED                    | 15-4  |
| ■ RMV,CCB                          | 15-5  |
| ■ RMV,CCI                          | 15-7  |
| ■ RMV,CCNI                         | 15-10 |
| ■ RMV,ETSI                         | 15-12 |
| ■ RMV,ETSI,ECCN,ALL                | 15-14 |
| ■ RMV,LINK                         | 15-16 |
| ■ RMV,MC                           | 15-18 |
| ■ RMV,NPC,SIDE,INCL                | 15-20 |
| ■ RMV,SMEM,PMEM                    | 15-46 |
| ■ RMV,SYNC                         | 15-49 |
| ■ RMV,SYNC,TLI,CRO                 | 15-51 |
| ■ RMV,SYNC,TLI,PMC,PMA,DMA,MI,COND | 15-53 |
| ■ RMV,SYNC,TLI,SSP                 | 15-55 |

---

## Contents

|                          |       |
|--------------------------|-------|
| ■ RMV,TSI                | 15-58 |
| ■ RMV,TSIS,CCN,ALL       | 15-60 |
| ■ RMV,TSIS,CCN,UNIT,CONN | 15-63 |
| ■ RMV,UNIT,FC            | 15-66 |
| ■ RMV,UNIT,FLI           | 15-69 |
| ■ RMV,UNIT,FMT           | 15-71 |
| ■ RMV,UNIT,FTMI,DSPI     | 15-73 |
| ■ RMV,UNIT,MMFG,FRC,INCL | 15-76 |
| ■ RMV,UNIT,UC            | 15-79 |

---

|                                |       |
|--------------------------------|-------|
| <b>RST</b>                     | 16-1  |
| ■ RST,CCB                      | 16-2  |
| ■ RST,CCI                      | 16-4  |
| ■ RST,CCNI                     | 16-6  |
| ■ RST,ETSI                     | 16-8  |
| ■ RST,ETSI,ECCN,ALL            | 16-10 |
| ■ RST,LINK                     | 16-13 |
| ■ RST,MC,MCOND,NOJRN,CLR,ALL   | 16-15 |
| ■ RST,NPC,MON                  | 16-20 |
| ■ RST,NPC,SIDE                 | 16-25 |
| ■ RST,NPC,TS0M                 | 16-49 |
| ■ RST,PMEM,SMEM,CLR,FRC,BKGRND | 16-53 |
| ■ RST,SYNC                     | 16-59 |
| ■ RST,SYNC,TLI,CRO             | 16-61 |
| ■ RST,SYNC,TLI,SSP             | 16-63 |
| ■ RST,TSI                      | 16-65 |
| ■ RST,TSIS,CCN,ALL             | 16-67 |
| ■ RST,TSIS,CCN,UNIT,CONN       | 16-70 |
| ■ RST,UNIT,FC                  | 16-73 |
| ■ RST,UNIT,FLI                 | 16-75 |
| ■ RST,UNIT,FMT                 | 16-77 |
| ■ RST,UNIT,FTMI,DSPI           | 16-79 |
| ■ RST,UNIT,UC                  | 16-81 |

---

|                  |      |
|------------------|------|
| <b>SAVE — SW</b> | 17-1 |
|------------------|------|

---

## Contents

|                                     |       |
|-------------------------------------|-------|
| ■ SAVE                              | 17-2  |
| ■ STOP,MACRO,LINK                   | 17-4  |
| ■ SW,BCAST,OLD,NEW,INCL             | 17-6  |
| ■ SW,BCAST,OLD,NEW,INCL             | 17-13 |
| ■ SW,DISC,OOS                       | 17-21 |
| ■ SW,DISC,OOS                       | 17-26 |
| ■ SW,ROLL,OLD,NEW,INCL,FRC,OOS      | 17-33 |
| ■ SW,ROLL,OLD,NEW,INCL,FRC,OOS,TWAY | 17-39 |
| ■ SW,UNIT,FLI,TOPTN                 | 17-45 |
| ■ SW,UNIT,FLI,TOSRVC                | 17-47 |
| ■ SW,UNIT,MMFG,TOPTN,FRC            | 17-49 |
| ■ SW,UNIT,MMFG,TOSRVC               | 17-52 |

---

|                                         |             |
|-----------------------------------------|-------------|
| <b>TCNT — TTST</b>                      | <b>18-1</b> |
| ■ TCNT,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL | 18-2        |
| ■ TCNT,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT  | 18-13       |
| ■ TCNT,FROM,TO,PFW,NFW                  | 18-25       |
| ■ TCNT,FROM,TO,RDC,CUS,INCL,PRIOUT      | 18-32       |
| ■ TCON,FROM,CB,CUS,RDC,INCL             | 18-37       |
| ■ TCON,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL | 18-43       |
| ■ TCON,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT  | 18-54       |
| ■ TCON,FROM,TO,PFW,NFW                  | 18-66       |
| ■ TCON,FROM,TO,RDC,CUS,INCL,PRIOUT      | 18-73       |
| ■ TDIS,FROM,CB,INCL,OOS                 | 18-78       |
| ■ TDIS,FROM,TO,INCL,OOS,DCC             | 18-83       |
| ■ TDIS,FROM,TO,INCL,OOS,DCC,PRIOUT      | 18-90       |
| ■ TDIS,FROM,TO,OOS,INCL,PRIOUT          | 18-96       |
| ■ TS0,R,NPC,OLD,NEW                     | 18-101      |
| ■ TS0MBOFL                              | 18-105      |
| ■ TTST,HUB,TO,TG                        | 18-108      |
| ■ TTST,HUB,TO,TP,NAM                    | 18-115      |
| ■ TTST,LPD,TG                           | 18-122      |
| ■ TTST,LPD,TP                           | 18-124      |
| ■ TTST,MON,TG                           | 18-128      |
| ■ TTST,MON,TO,NAM,TP                    | 18-134      |
| ■ TTST,MON,TO,TG                        | 18-145      |

---

## Contents

|                       |        |
|-----------------------|--------|
| ■ TTST,SPL,TG         | 18-153 |
| ■ TTST,SPL,TP         | 18-159 |
| ■ TTST,TGR,TG,OOS     | 18-164 |
| ■ TTST,TLA,NOT,TP     | 18-172 |
| ■ TTST,TLA,TG         | 18-179 |
| ■ TTST,TLR,NOT,TP     | 18-184 |
| ■ TTST,TLR,TG         | 18-191 |
| ■ TTST,TPR,ALL,OOS    | 18-196 |
| ■ TTST,TPR,TP,OOS,FRC | 18-198 |

---

|                                    |        |
|------------------------------------|--------|
| <b>UTL</b>                         | 19-1   |
| ■ UTL,ACO                          | 19-2   |
| ■ UTL,BMTR,FROM,TO,EXCT,INCL,UPGRD | 19-4   |
| ■ UTL,BOOT,FRAME,CLR               | 19-10  |
| ■ UTL,CLR,ALL                      | 19-12  |
| ■ UTL,CLR,ERR,HWER,SWER            | 19-14  |
| ■ UTL,CLR,NPC                      | 19-16  |
| ■ UTL,CLR,NPC,ALL,AI,MONDAT,MONTIM | 19-22  |
| ■ UTL,CLR,NPC,PARAMS               | 19-30  |
| ■ UTL,CLR,PWR                      | 19-34  |
| ■ UTL,DATE,FORMAT,INT              | 19-36  |
| ■ UTL,INIT,ALM                     | 19-39  |
| ■ UTL,LOC                          | 19-41  |
| ■ UTL,QRY,ALL                      | 19-53  |
| ■ UTL,QRY,ALL,COMMON               | 19-60  |
| ■ UTL,QRY,ALL,UNIT                 | 19-66  |
| ■ UTL,QRY,ALM,INTV                 | 19-86  |
| ■ UTL,QRY,ALMOPT,NPC,AIS           | 19-88  |
| ■ UTL,QRY,ALMS                     | 19-97  |
| ■ UTL,QRY,ALMS,DBASE               | 19-124 |
| ■ UTL,QRY,APPL,NPC,ALL             | 19-137 |
| ■ UTL,QRY,BC,NPC,ALL               | 19-143 |
| ■ UTL,QRY,BC,TO                    | 19-152 |
| ■ UTL,QRY,BCAST,ALL                | 19-157 |
| ■ UTL,QRY,BCAST,FROM               | 19-161 |
| ■ UTL,QRY,BCAST,FROM               | 19-167 |

---

## Contents

|                                                 |        |
|-------------------------------------------------|--------|
| ■ UTL, QRY, CMAP                                | 19-172 |
| ■ UTL, QRY, CNFGR                               | 19-204 |
| ■ UTL, QRY, DATE                                | 19-207 |
| ■ UTL, QRY, DD                                  | 19-209 |
| ■ UTL, QRY, DD, NPC, DDCT, ALL                  | 19-214 |
| ■ UTL, QRY, DMAP                                | 19-220 |
| ■ UTL, QRY, DS3, BERMT, UNIT                    | 19-249 |
| ■ UTL, QRY, DS3, LBO                            | 19-251 |
| ■ UTL, QRY, EQD, COMMON                         | 19-253 |
| ■ UTL, QRY, EQD, CONN                           | 19-257 |
| ■ UTL, QRY, EQD, ETSIS                          | 19-259 |
| ■ UTL, QRY, EQD, MXRS                           | 19-261 |
| ■ UTL, QRY, EQD, NPCS, TOTAL, UNIT              | 19-263 |
| ■ UTL, QRY, EQD, TSIS                           | 19-276 |
| ■ UTL, QRY, EQD, UNIT                           | 19-278 |
| ■ UTL, QRY, EQD, UNITS                          | 19-297 |
| ■ UTL, QRY, ERR, SWER, HWER, INT, DATE, TOD, TN | 19-299 |
| ■ UTL, QRY, ESR, CCN                            | 19-309 |
| ■ UTL, QRY, ESR, ECCN                           | 19-312 |
| ■ UTL, QRY, ESR, MP                             | 19-316 |
| ■ UTL, QRY, ESR, NPC, SIDE                      | 19-321 |
| ■ UTL, QRY, ESR, UNIT                           | 19-329 |
| ■ UTL, QRY, ESR, UNIT, DSPI                     | 19-333 |
| ■ UTL, QRY, ESR, UNIT, FC                       | 19-335 |
| ■ UTL, QRY, ESR, UNIT, FLI                      | 19-338 |
| ■ UTL, QRY, ESR, UNIT, FTMI                     | 19-341 |
| ■ UTL, QRY, ESR, UNIT, MXR                      | 19-345 |
| ■ UTL, QRY, FALMS, TYPE, ALL                    | 19-350 |
| ■ UTL, QRY, FPKG                                | 19-368 |
| ■ UTL, QRY, FROM                                | 19-372 |
| ■ UTL, QRY, FROM                                | 19-393 |
| ■ UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC      | 19-398 |
| ■ UTL, QRY, LIST, MACRO, USER                   | 19-408 |
| ■ UTL, QRY, LIST, MAP, USER                     | 19-411 |
| ■ UTL, QRY, LOG, ALL                            | 19-414 |
| ■ UTL, QRY, LPBK, NPC                           | 19-418 |
| ■ UTL, QRY, MACRO, ATTR, USER, ALL              | 19-425 |
| ■ UTL, QRY, MACRO, MAP, SPACE, USER, ALL        | 19-429 |



---

## Contents

|                                              |        |
|----------------------------------------------|--------|
| ■ UTL, QRY, MACRO, USER                      | 19-432 |
| ■ UTL, QRY, MAP, ATTR, ALL, USER, MAPNM      | 19-435 |
| ■ UTL, QRY, MARK                             | 19-438 |
| ■ UTL, QRY, MARK                             | 19-448 |
| ■ UTL, QRY, MEMSTAT                          | 19-458 |
| ■ UTL, QRY, NFS, NPC                         | 19-466 |
| ■ UTL, QRY, NPC                              | 19-471 |
| ■ UTL, QRY, NPC, ALL, AI, LV, MONDAT, MONTIM | 19-483 |
| ■ UTL, QRY, NPC, CBTIMER                     | 19-495 |
| ■ UTL, QRY, NPC, MAP, USER                   | 19-498 |
| ■ UTL, QRY, NPCTG                            | 19-503 |
| ■ UTL, QRY, OPT, TYPE, ALL, NPCS             | 19-508 |
| ■ UTL, QRY, PEST, FAIL, OOS, COMMON          | 19-513 |
| ■ UTL, QRY, PEST, FAIL, OOS, UNIT            | 19-518 |
| ■ UTL, QRY, ROLL, DS0, NPC, ALL, UNIT        | 19-538 |
| ■ UTL, QRY, ROLL, DS1, NPC, ALL, UNIT        | 19-545 |
| ■ UTL, QRY, RPSFI                            | 19-552 |
| ■ UTL, QRY, SALMS, ALL                       | 19-554 |
| ■ UTL, QRY, SCR, LINK, USER, LINKS, USERS    | 19-557 |
| ■ UTL, QRY, SIGST                            | 19-565 |
| ■ UTL, QRY, SQN                              | 19-571 |
| ■ UTL, QRY, STATE, ACO                       | 19-573 |
| ■ UTL, QRY, STATE, NPC                       | 19-575 |
| ■ UTL, QRY, STATE, NPC                       | 19-605 |
| ■ UTL, QRY, STATE, SYNC                      | 19-628 |
| ■ UTL, QRY, STR, LINK                        | 19-631 |
| ■ UTL, QRY, STR, SYNC                        | 19-641 |
| ■ UTL, QRY, STR, SYNC, TLI                   | 19-647 |
| ■ UTL, QRY, STR, SYNC, TLI, SSP              | 19-650 |
| ■ UTL, QRY, STR, XC                          | 19-655 |
| ■ UTL, QRY, SYNC, TYPE                       | 19-657 |
| ■ UTL, QRY, TGS                              | 19-660 |
| ■ UTL, QRY, TO                               | 19-665 |
| ■ UTL, QRY, TO                               | 19-700 |
| ■ UTL, QRY, TOD, CFA, MONDAT                 | 19-718 |
| ■ UTL, QRY, TPS                              | 19-721 |
| ■ UTL, QRY, TS0, NPC                         | 19-727 |
| ■ UTL, QRY, TS0M, NPC                        | 19-732 |

---

## Contents

|                                  |        |
|----------------------------------|--------|
| ■ UTL, QRY, UNIT, FTMI, IMP      | 19-737 |
| ■ UTL, QRY, WHO                  | 19-739 |
| ■ UTL, QRY, XCSB, UNIT           | 19-742 |
| ■ UTL, RCY, COND, IN, PROGRESS   | 19-749 |
| ■ UTL, RCY, PASSWD               | 19-752 |
| ■ UTL, TOD, CFA, PRIM, X, MONDAT | 19-754 |

---

## Glossary

G-1

---

## IN

## Index

IN-1

---

## Tables

|       |                                                             |       |
|-------|-------------------------------------------------------------|-------|
| 7-1.  | Allowable Signaling Type and Signaling<br>Consequent Action | 7-15  |
| 7-2.  | Allowable Cross-Connected Time slot<br>Consequent Action    | 7-15  |
| 7-3.  | Allowable Cross-Connected Time slot<br>Consequence Action   | 7-30  |
| 7-4.  | Allowable Signaling Type and Signaling<br>Consequent Action | 7-39  |
| 7-5.  | Allowable Cross-Connected Time slot<br>Consequence Action   | 7-40  |
| 8-1.  | Provisioning values for $x$                                 | 8-39  |
| 8-2.  | Provisioning values for $y$                                 | 8-41  |
| 8-3.  | Provisioning values for $z$                                 | 8-42  |
| 8-4.  | Combinations of $x$ and $y$ Values                          | 8-45  |
| 8-5.  | Combinations of $y$ and $z$ Values                          | 8-46  |
| 8-6.  | Combinations of $x$ and $z$ Values                          | 8-47  |
| 8-7.  | NPC Provisioning Options                                    | 8-47  |
| 8-8.  | Parameter Register Threshold Range and<br>Default Values    | 8-115 |
| 8-9.  | Provisioning values for $x$                                 | 8-117 |
| 8-10. | Provisioning values for $y$                                 | 8-118 |
| 8-11. | Provisioning values for $z$                                 | 8-119 |
| 8-12. | Combinations of $x$ and $y$ Values                          | 8-122 |
| 8-13. | Combinations of $y$ and $z$ Values                          | 8-123 |
| 8-14. | Combinations of $x$ and $z$ Values                          | 8-124 |
| 8-15. | NPC Provisioning Options                                    | 8-124 |
| 8-16. | Provisioning values for $x$                                 | 8-152 |
| 8-17. | Provisioning values for $y$                                 | 8-153 |
| 8-18. | Provisioning values for $z$                                 | 8-154 |
| 8-19. | Combinations of $x$ and $y$ Values                          | 8-157 |
| 8-20. | Combinations of $y$ and $z$ Values                          | 8-158 |
| 8-21. | Combinations of $x$ and $z$ Values                          | 8-159 |
| 8-22. | NPC Provisioning Options                                    | 8-159 |
| 8-23. | Parameter Register Threshold Range and<br>Default Values    | 8-179 |
| 8-24. | NPC Provisioning Options                                    | 8-206 |
| 8-25. | Provisioning values for $x$                                 | 8-212 |
| 8-26. | Provisioning values for $y$                                 | 8-213 |
| 8-27. | Provisioning values for $z$                                 | 8-214 |

---

## Tables

|       |                                                          |        |
|-------|----------------------------------------------------------|--------|
| 8-28. | Combinations of $x$ and $y$ Values                       | 8-217  |
| 8-29. | Combinations of $y$ and $z$ Values                       | 8-218  |
| 8-30. | Combinations of $x$ and $z$ Values                       | 8-219  |
| 8-31. | Parameter Register Threshold Range and Default Values    | 8-221  |
| 8-32. | Parameter Register Threshold Range and Default Values    | 8-268  |
| 12-1. | Provisioning values for $x$                              | 12-138 |
| 12-2. | Provisioning values for $y$                              | 12-139 |
| 12-3. | Provisioning values for $z$                              | 12-141 |
| 12-4. | Combinations of $x$ and $y$ Values                       | 12-144 |
| 12-5. | Combinations of $y$ and $z$ Values                       | 12-145 |
| 12-6. | Combinations of $x$ and $z$ Values                       | 12-146 |
| 12-7. | Parameter Register Threshold Range and Default Values    | 12-148 |
| 12-8. | NPC Provisioning Options                                 | 12-163 |
| 14-1. | Allowable Signaling Type and Signaling Consequent Action | 14-17  |
| 14-2. | Allowable Cross-Connected Time slot Consequent Action    | 14-17  |
| 14-3. | Allowable Signaling Type and Signaling Consequent Action | 14-40  |
| 14-4. | Allowable Cross-Connected Time slot Consequent Action    | 14-41  |
| 15-1. | NPC Provisioning Options                                 | 15-32  |
| 15-2. | Provisioning values for $x$                              | 15-37  |
| 15-3. | Provisioning values for $y$                              | 15-38  |
| 15-4. | Provisioning values for $z$                              | 15-39  |
| 15-5. | Combinations of $x$ and $y$ Values                       | 15-42  |
| 15-6. | Combinations of $y$ and $z$ Values                       | 15-43  |
| 15-7. | Combinations of $x$ and $z$ Values                       | 15-44  |
| 16-1. | NPC Provisioning Options                                 | 16-35  |
| 16-2. | Provisioning values for $x$                              | 16-40  |
| 16-3. | Provisioning values for $y$                              | 16-41  |
| 16-4. | Provisioning values for $z$                              | 16-42  |
| 16-5. | Combinations of $x$ and $y$ Values                       | 16-45  |
| 16-6. | Combinations of $y$ and $z$ Values                       | 16-46  |
| 16-7. | Combinations of $x$ and $z$ Values                       | 16-47  |

---

## Tables

|        |                                                             |        |
|--------|-------------------------------------------------------------|--------|
| 18-1.  | Allowable Signaling Type and Signaling<br>Consequent Action | 18-19  |
| 18-2.  | Allowable Cross-Connected Time Slot<br>Consequent Action    | 18-20  |
| 18-3.  | Allowable Signaling Type and Signaling<br>Consequent Action | 18-60  |
| 18-4.  | Allowable Cross-Connected Time Slot<br>Consequent Action    | 18-61  |
| 19-1.  | NPC Provisioning Options                                    | 19-187 |
| 19-2.  | Provisioning values for $x$                                 | 19-192 |
| 19-3.  | Provisioning values for $y$                                 | 19-193 |
| 19-4.  | Provisioning values for $z$                                 | 19-194 |
| 19-5.  | Combinations of $x$ and $y$ Values                          | 19-197 |
| 19-6.  | Combinations of $y$ and $z$ Values                          | 19-199 |
| 19-7.  | Combinations of $x$ and $z$ Values                          | 19-200 |
| 19-8.  | NPC Provisioning Options                                    | 19-231 |
| 19-9.  | Provisioning values for $x$                                 | 19-236 |
| 19-10. | Provisioning values for $y$                                 | 19-237 |
| 19-11. | Provisioning values for $z$                                 | 19-238 |
| 19-12. | Combinations of $x$ and $y$ Values                          | 19-241 |
| 19-13. | Combinations of $y$ and $z$ Values                          | 19-242 |
| 19-14. | Combinations of $x$ and $z$ Values                          | 19-243 |
| 19-15. | Provisioning values for $x$                                 | 19-354 |
| 19-16. | Provisioning values for $y$                                 | 19-355 |
| 19-17. | Provisioning values for $z$                                 | 19-357 |
| 19-18. | Combinations of $x$ and $y$ Values                          | 19-360 |
| 19-19. | Combinations of $y$ and $z$ Values                          | 19-361 |
| 19-20. | Combinations of $x$ and $z$ Values                          | 19-362 |
| 19-21. | NPC Provisioning Options                                    | 19-362 |
| 19-22. | Provisioning values for $x$                                 | 19-377 |
| 19-23. | Provisioning values for $y$                                 | 19-379 |
| 19-24. | Provisioning values for $z$                                 | 19-380 |
| 19-25. | Combinations of $x$ and $y$ Values                          | 19-383 |
| 19-26. | Combinations of $y$ and $z$ Values                          | 19-384 |
| 19-27. | Combinations of $x$ and $z$ Values                          | 19-385 |
| 19-28. | NPC Provisioning Options                                    | 19-385 |
| 19-29. | NPC Provisioning Options                                    | 19-585 |
| 19-30. | Provisioning values for $x$                                 | 19-590 |
| 19-31. | Provisioning values for $y$                                 | 19-591 |

---

## Tables

|        |                                    |        |
|--------|------------------------------------|--------|
| 19-32. | Provisioning values for $z$        | 19-592 |
| 19-33. | Combinations of $x$ and $y$ Values | 19-595 |
| 19-34. | Combinations of $y$ and $z$ Values | 19-596 |
| 19-35. | Combinations of $x$ and $z$ Values | 19-597 |
| 19-36. | Provisioning values for $x$        | 19-610 |
| 19-37. | Provisioning values for $y$        | 19-611 |
| 19-38. | Provisioning values for $z$        | 19-612 |
| 19-39. | Combinations of $x$ and $y$ Values | 19-615 |
| 19-40. | Combinations of $y$ and $z$ Values | 19-616 |
| 19-41. | Combinations of $x$ and $z$ Values | 19-617 |
| 19-42. | Provisioning values for $x$        | 19-680 |
| 19-43. | Provisioning values for $y$        | 19-681 |
| 19-44. | Provisioning values for $z$        | 19-683 |
| 19-45. | Combinations of $x$ and $y$ Values | 19-686 |
| 19-46. | Combinations of $y$ and $z$ Values | 19-687 |
| 19-47. | Combinations of $x$ and $z$ Values | 19-688 |
| 19-48. | NPC Provisioning Options           | 19-688 |
| 19-49. | Provisioning values for $x$        | 19-704 |
| 19-50. | Provisioning values for $y$        | 19-705 |
| 19-51. | Provisioning values for $z$        | 19-706 |
| 19-52. | Combinations of $x$ and $y$ Values | 19-709 |
| 19-53. | Combinations of $y$ and $z$ Values | 19-710 |
| 19-54. | Combinations of $x$ and $z$ Values | 19-711 |
| 19-55. | NPC Provisioning Options           | 19-711 |

---

## About This Document

---

### Purpose

---

The *DACS II Release 8.2.3 Command and Message Manual* describes the input commands and output messages of Release 8.2.3 of the Digital Access and Cross-Connect System II (DACS II). In addition, it provides full support for previous product releases.

**⇒ NOTE:**

Those customers using this manual with Releases 3 through 7.0.3 software should be aware that all features of a particular message shown for Release 8.2.3 may or may not apply to previous releases.

This manual consists of three volumes as follows:

- **Volume I** - This volume contains general information about the document, a detailed introduction that defines DACS II messages, relates how to communicate with DACS II, introduces the administrative links, and discusses in detail NPC addressing, on-line help feature, system configuration and features a listing of related documentation. Message listings in this volume include alphabetical and numerical, summary list of input commands and a list of autonomous messages. A comprehensive presentation of input commands and output messages (ABT through DGN) concludes this volume.
- **Volume II and III** - These two volumes contain input commands and output messages in the following order:
  - **Volume II** - DGRTH through RST
  - **Volume III** - SAVE through UTL and the Glossary

---

## **Reason for Issue**

---

The *DACS II Release 8.2.3 Command and Message Manual* has been issued to include updated and new commands applicable to Release 8.2.3.

## **Intended Audiences**

---

This manual is a catalog of messages intended for reference by a technician or craftperson who needs additional details about a message. It provides the user with supplemental information for the Digital Access and Cross-Connect System II (DACS II) that is programmed in the Program Documentation Standards (PDS) language. An example of a user is someone performing a task from an operation and maintenance manual who needs the definition of a specific keyword to complete the task.

## **How to Order Documentation**

---

To order additional copies of this document, send or call in an order as follows:

- To order by Mail:

Lucent Technologies  
Customer Information Center  
Attention: Order Entry Section  
2855 N. Franklin Road  
P. O. Box 19901  
Indianapolis, IN 46219



- 
- To order by Telephone (Monday through Friday);

Within the United States of America:

**1-800-LUCENT8 (582-3688)** (7:30 a.m. to 6:30 p.m. EST)

From Canada:

**1-800-255-1242**

Worldwide:

Toll: **1-317-352-8557**

FAX: **1-317-352-8484**

For RBOC/BOC customers, process orders through your Company Documentation Coordinator.

For commercial customers, a check, money order, purchase order number, or charge card number is required with all orders. Make checks payable to Lucent Technologies.

Lucent Technologies entities should use Form IND 1-80.80 FA, available through the Customer Information Center.

One-time orders include a binder (if applicable) and the document contents for the current issue in effect at the time of order. After placing a one-time order, you can request a standing order for any document revisions *of that software release*. Documents for new software releases do *not* go to standing-order customers. You will only get those documents if you order the new software release.

## **How to Comment on This Document**

A feedback form is located at the beginning of this publication, immediately after the title page. Please fill out the feedback form and return it (postage free) to the address on the back.

If the feedback form is missing, send comment on this publication to:

Lucent Technologies  
DACS II Documentation Coordinator  
Attn: Tabatha Wright  
101 Crawfords Corner Road  
Room 1B-320  
Holmdel, NJ 07733-3030 USA



---

**Contents**

|                              |      |
|------------------------------|------|
| <b>SAVE</b>                  | 17-2 |
| ■ Explanation Of Command     | 17-2 |
| ■ Command                    | 17-2 |
| ■ Completion Message         | 17-2 |
| ■ Denial Message             | 17-2 |
| ■ Autonomous Message         | 17-2 |
| ■ Explanation Of Parameters  | 17-3 |
| <b>STOP,MACRO,LINK</b>       | 17-4 |
| ■ Explanation Of Command     | 17-4 |
| ■ Command                    | 17-4 |
| ■ Completion Message         | 17-4 |
| ■ Denial Message             | 17-4 |
| ■ Autonomous Message         | 17-5 |
| ■ Explanation Of Parameters  | 17-5 |
| <b>SW,BCAST,OLD,NEW,INCL</b> | 17-6 |
| ■ Explanation Of Command     | 17-6 |
| ■ Command                    | 17-7 |
| ■ Nonhierarchical            | 17-7 |
| ■ Hierarchical               | 17-7 |
| ■ Completion Message         | 17-7 |
| ■ Nonhierarchical            | 17-7 |
| ■ Hierarchical               | 17-7 |
| ■ Denial Message             | 17-7 |
| ■ Nonhierarchical            | 17-7 |
| ■ Hierarchical               | 17-8 |
| ■ Autonomous Message         | 17-8 |

---

## Contents

|                              |       |
|------------------------------|-------|
| ■ Explanation Of Parameters  | 17-8  |
| <b>SW,BCAST,OLD,NEW,INCL</b> | 17-13 |
| ■ Explanation Of Command     | 17-13 |
| ■ Command                    | 17-14 |
| ■ Nonhierarchical            | 17-14 |
| ■ Hierarchical               | 17-14 |
| ■ Completion Message         | 17-14 |
| ■ Nonhierarchical            | 17-14 |
| ■ Hierarchical               | 17-14 |
| ■ Denial Message             | 17-15 |
| ■ Nonhierarchical            | 17-15 |
| ■ Hierarchical               | 17-15 |
| ■ Autonomous Message         | 17-15 |
| ■ Explanation Of Parameters  | 17-15 |
| <b>SW,DISC,OOS</b>           | 17-21 |
| ■ Explanation Of Command     | 17-21 |
| ■ Command                    | 17-22 |
| ■ Nonhierarchical            | 17-22 |
| ■ Hierarchical               | 17-22 |
| ■ Completion Message         | 17-22 |
| ■ Nonhierarchical            | 17-22 |
| ■ Hierarchical               | 17-22 |
| ■ Common                     | 17-22 |
| ■ Denial Message             | 17-22 |
| ■ Nonhierarchical            | 17-22 |
| ■ Hierarchical               | 17-23 |
| ■ Autonomous Message         | 17-23 |
| ■ Explanation Of Parameters  | 17-23 |
| <b>SW,DISC,OOS</b>           | 17-26 |
| ■ Explanation Of Command     | 17-26 |
| ■ Command                    | 17-26 |
| ■ Nonhierarchical            | 17-26 |
| ■ Hierarchical               | 17-27 |
| ■ Completion Message         | 17-27 |
| ■ Nonhierarchical            | 17-27 |
| ■ Hierarchical               | 17-27 |
| ■ Denial Message             | 17-27 |
| ■ Nonhierarchical            | 17-27 |

---

## Contents

|                                          |       |
|------------------------------------------|-------|
| ■ Hierarchical                           | 17-27 |
| ■ Autonomous Message                     | 17-27 |
| ■ Explanation Of Parameters              | 17-28 |
| <b>SW,ROLL,OLD,NEW,INCL,FRC,OOS</b>      | 17-33 |
| ■ Explanation Of Command                 | 17-33 |
| ■ Command                                | 17-34 |
| ■ Nonhierarchical                        | 17-34 |
| ■ Hierarchical                           | 17-34 |
| ■ Completion Message                     | 17-34 |
| ■ Nonhierarchical                        | 17-34 |
| ■ Hierarchical                           | 17-34 |
| ■ Denial Message                         | 17-34 |
| ■ Nonhierarchical                        | 17-34 |
| ■ Hierarchical                           | 17-35 |
| ■ Autonomous Message                     | 17-35 |
| ■ Explanation Of Parameters              | 17-35 |
| <b>SW,ROLL,OLD,NEW,INCL,FRC,OOS,TWAY</b> | 17-39 |
| ■ Explanation Of Command                 | 17-39 |
| ■ Command                                | 17-39 |
| ■ Nonhierarchical                        | 17-39 |
| ■ Hierarchical                           | 17-40 |
| ■ Completion Message                     | 17-40 |
| ■ Nonhierarchical                        | 17-40 |
| ■ Hierarchical                           | 17-40 |
| ■ Denial Message                         | 17-40 |
| ■ Nonhierarchical                        | 17-40 |
| ■ Hierarchical                           | 17-40 |
| ■ Autonomous Message                     | 17-40 |
| ■ Explanation Of Parameters              | 17-41 |
| <b>SW,UNIT,FLI,TOPRTN</b>                | 17-45 |
| ■ Explanation Of Command                 | 17-45 |
| ■ Command                                | 17-45 |
| ■ Completion Message                     | 17-45 |
| ■ Denial Message                         | 17-45 |
| ■ Autonomous Message                     | 17-45 |
| ■ Explanation Of Parameters              | 17-46 |
| <b>SW,UNIT,FLI,TOSRVC</b>                | 17-47 |

---

## Contents

|                                |       |
|--------------------------------|-------|
| ■ Explanation Of Command       | 17-47 |
| ■ Command                      | 17-47 |
| ■ Completion Message           | 17-47 |
| ■ Denial Message               | 17-47 |
| ■ Autonomous Message           | 17-47 |
| ■ Explanation Of Parameters    | 17-48 |
| <b>SW,UNIT,MMFG,TOPRTN,FRC</b> | 17-49 |
| ■ Explanation Of Command       | 17-49 |
| ■ Command                      | 17-50 |
| ■ Completion Message           | 17-51 |
| ■ Denial Message               | 17-51 |
| ■ Autonomous Message           | 17-51 |
| ■ Explanation Of Parameters    | 17-51 |
| <b>SW,UNIT,MMFG,TOSRVC</b>     | 17-52 |
| ■ Explanation Of Command       | 17-52 |
| ■ Command                      | 17-52 |
| ■ Completion Message           | 17-52 |
| ■ Denial Message               | 17-52 |
| ■ Autonomous Message           | 17-52 |
| ■ Explanation Of Parameters    | 17-53 |

---

## **SAVE — SW**

---

## **SAVE — SW**

---

This section documents the commands **SAVE** through **SW**.

## **SAVE**

---

### **SAVE COMPONENT COMMANDS**

#### **Explanation Of Command**

---

This command is used to save the contents of a macro while in the macro session.

#### **Command**

---

[I.19081]

SAVE[:FRM xy,SEQ ww:]!

#### **Completion Message**

---

[O.19081]

M hh:mm:ss xy,ww n[vv] SAVE <macro name> SPACE sss \  
USED uuu COMPL

#### **Denial Message**

---

[O.19081.01]

M hh:mm:ss xy,ww n[vv] SAVE <macro name> SPACE sss \  
USED uuu COND cc DNY

#### **Autonomous Message**

---

Not applicable.



---

### Explanation Of Parameters

---

macro name

- The name of the macro to be saved

**SPACE** - Space

**sss** - Number representing the percent of total disk space allocated to macro storage

**USED** - Used

**uuu** - Number representing the percent of the allocated disk space (sss) being used to store macros

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**60**    User macro/map space is full

**61**    System macro/map space is full

**65**    Command invalid while backup in progress

**6E**    No edit session active

**6C**    File is empty

## **STOP,MACRO,LINK**

### **STOP MACRO**

#### **Explanation Of Command**

This command is used to stop the execution of a macro.

A regular DACS II user can use the link number option to stop macro execution on the link he or she is currently using. A frame administrator may use this option to stop macro execution on any link.

If this command was entered by the frame administrator then output from this command will be sent only to the link on which the frame administrator entered the command.

#### **Command**

[I.39311]

**STOP:FRM xy,SEQ ww:MACRO[,LINK l[mm]]!**

#### **Completion Message**

[O.39311]

**M hh:mm:ss xy,ww n[vv] STOP MACRO <macro name>[ l[mm]] COMPL**

#### **Denial Message**

[O.39311.01]

**M hh:mm:ss xy,ww n[vv] STOP MACRO <macro name>[ l[mm]] \  
COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**MACRO** - Macro

**LINK** - Link

**l[mm]** - Administrative link number

**l** - Physical link number (1 through 6)

**mm** - Virtual circuit number (01 through 16)

Variable m is the virtual circuit number in the administrative link.  
mm may only be specified when l is 5 or 6.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**6A**    No macro is currently executing

**D0**    Command is Frame administrator (DAX) only.

## **SW,BCAST,OLD,NEW,INCL**

### **DS0 CIRCUIT ROLL - BRIDGE COMMAND**

#### **Explanation Of Command**

This command is used to perform the Bridge step of the DS0 (64kbit/s) Roll operation. (For DS1 or 2 Mbit/s Roll operations use the commands I.14061, I.14071, and I.14081.)

Test signals may exist on the new DS0. If allowed to remain they will overwrite the signal transferred from the old DS0.

Use the UTL::QRY,TSIG,NPC command, prior to executing this command, to verify that no test signals exist on the new DS0.

The DS0 (64kbit/s) Roll procedure consists of three commands:

1. Bridge

This step will bridge the transmit data by broadcasting to the new DS0 as well as the old DS0. Use this command.

2. Roll

This step rolls the service by switching the receive data from the old DS0 to the new DS0. Use command I.14031.

3. Cut

This step takes down the bridge by disconnecting the transmit data from the old DS0. Use command I.14041.

**NOTE:** The ROLL procedure will re-direct ALL cross-connections associated with the DS0 signal being rolled.

### **Command**

---

#### **Nonhierarchical**

---

[I.14021]

SW:FRM xy,SEQ ww:BCAST,OLD [s]abcddd[-eee],NEW [t]ghijjj\  
[-kkk][,INCL]

#### **Hierarchical**

---

[I.14021]

SW:FRM xy,SEQ ww:BCAST,OLD uvmnpddd[-eee],NEW wxqrrjjj\  
[-kkk][,INCL]

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.14021]

M hh:mm:ss xy,ww n[vv] SW BCAST [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ INCL] COMPL

#### **Hierarchical**

---

[O.14021]

M hh:mm:ss xy,ww n[vv] SW BCAST uvmnpddd[-eee],wxqrrjjj[-kkk]\  
[ INCL] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.14021.01]

M hh:mm:ss xy,ww n[vv] SW BCAST [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ INCL][ mmm,nnn] COND cc DNY

## **Hierarchical**

---

[O.14021.01]

M hh:mm:ss xy,ww n[vv] SW BCAST uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ INCL][ mmm,nnn] COND cc DNY

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**BCAST** - Broadcast

**OLD** - Old

The bridge step does not need the OLD NPC to be in service, however the roll step does. Therefore, it is possible that the bridge step will be allowed when the subsequent roll step will be denied.

For the hierarchical unit entities, however, the bridge step needs both the OLD NPC hierarchy and the NEW NPC hierarchy to be in service. Otherwise, the bridge step will be denied.

**NEW** - New

**[s]abc** - The 3- or 4-digit nonhierarchical OLD NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical NEW NPC number

**Note:** Valid types for old and new NPC's are PAxyz, PBxyz and PCxyz, except for the following cases:

- Either NPC is of type PAxyz where y=C or y=D (Clear 2Mb/s).
- The old NPC supports Channel Associated Signaling (CAS) and the new NPC does not.
- The old NPC supports Non-Signaling Associated, the new NPC supports CAS, and CTS16 is being rolled to CTS16.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical OLD NPC number  
**wxkqr** - Hierarchical NEW NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd, jjj**  
- Channel numbers for beginning of channel range

**eee, kkk**  
- Channel numbers for end of channel range

To connect a range of channels, use the optional fields eee and kkk.

**INCL** - Inclusive

A circuit designated as a customer controlled circuit, a red circuit or a substrate T1 circuit cannot be modified without using the inclusive keyword in the message. Also, an NPC which supports these circuits cannot be manually removed unless the INCL keyword is given in the remove message.

**mmm** - The OLD channel number involved in denial (ddd through eee).

**nnn** - The NEW channel number involved in denial (jjj through kkk).



**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                     |
|-----------|--------------|------------------------------------------------------------------------|
| <b>02</b> |              | Subject entity is not equipped                                         |
| <b>04</b> |              | Subject entity is out of service                                       |
| <b>05</b> |              | Subject entity is pested                                               |
| <b>1E</b> |              | Customer control or red circuit exists                                 |
| <b>26</b> |              | NPC type error                                                         |
| <b>01</b> |              | Invalid range for specified NPC type                                   |
| <b>12</b> |              | Active CCN side not IS or failed or pested or hardware OOS             |
| <b>13</b> |              | UNIT not equipped, not in service, or failed                           |
| <b>14</b> |              | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS  |
| <b>15</b> |              | FTMI not equipped, not in service, or failed                           |
| <b>16</b> |              | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS    |
| <b>17</b> |              | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS  |
| <b>18</b> |              | DSPI not equipped, not in service, or failed                           |
| <b>21</b> |              | Trunk conditioning is invalid                                          |
| <b>32</b> |              | Termination is under test                                              |
| <b>33</b> |              | Termination is a test port                                             |
| <b>C8</b> |              | Exceeded depth limit of 6 on broadcast conference concatenation        |
| <b>1A</b> |              | Required FLI not equipped, not in service, or failed                   |
| <b>1B</b> |              | Required MXR not equipped, not in service, or failed                   |
| <b>1C</b> |              | Reqd FMT not eqd,not IS,or failed,or inact side FMT not eqd, or not IS |
| <b>1D</b> |              | Required MIU not equipped, not in service, or failed                   |
| <b>46</b> |              | NPC Failed or Out of Service                                           |
| <b>A9</b> |              | Cross-connect not consistent with feature package                      |
| <b>B7</b> |              | No DSP unit equipped                                                   |
| <b>B8</b> |              | No CBTYPE NPC equipped                                                 |
| <b>B9</b> |              | No CBTYPE NPC capacity remaining                                       |
| <b>BA</b> |              | Inactive side NPC out of service and inactive side in service          |
| <b>EA</b> |              | AIS invalid for cross-connection specified                             |
| <b>EC</b> | <b>MCOND</b> | Invalid channel 000 cross-connection specified                         |
| <b>ED</b> | <b>MCOND</b> | Invalid channel 031 cross-connection specified                         |
| <b>0A</b> |              | All CBTYPE NPCs out of service or failed                               |
| <b>7E</b> |              | Incomplete circuit exists on OLD NPC                                   |
| <b>E0</b> |              | ETSI not equipped, not in service, or failed                           |
| <b>68</b> |              | NEW NPC already cross-connect or mapped channel(s) on new              |
| <b>69</b> |              | Mapped parity channel(s) on new                                        |
| <b>6C</b> |              | Old and new chan on same NPC and within the range                      |
| <b>6E</b> |              | Old or new is a non-channelized type in a DS0 command                  |
| <b>6F</b> |              | The OLD or NEW NPC is already being rolled.                            |

| <b>cc</b> | <b>st</b> | <i>Explanation</i>                                          |
|-----------|-----------|-------------------------------------------------------------|
| <b>70</b> |           | One of the FAR end channels is being rolled                 |
| <b>71</b> |           | Unmapped channel(s) on old                                  |
| <b>72</b> |           | One of the far NPC(s) is SLC                                |
| <b>73</b> |           | Channel has a FAR, which is within the range                |
| <b>77</b> |           | Obsolete circuit type                                       |
| <b>78</b> |           | Ranges of old and new do not match                          |
| <b>79</b> |           | DCTN conference channel cannot be rolled                    |
| <b>7A</b> |           | Testport/testgroup channel cannot be rolled                 |
| <b>7B</b> |           | Channel out-of-bounds in a Broadcast or Virtual circuit.    |
| <b>7C</b> |           | Parity channel out of bound on new                          |
| <b>7D</b> |           | Not first channel in a BCON/virtual conf                    |
| <b>9C</b> |           | Parity channel cannot be within the range of a DS0 command. |

## **SW,BCAST,OLD,NEW,INCL**

### **FACILITY ROLL - BRIDGE COMMAND**

#### **Explanation Of Command**

This input command is used to perform the Bridge step of the DS1 or 2Mbit/s Roll operation. (For DS0 Roll operations use the commands I.14021, I.14031, and I.14041.)

Test signals may exist on the new DS0. If allowed to remain they will overwrite the signal transferred from the old DS0.

Use the UTL::QRY,TSIG,NPC command, prior to executing this command, to verify that no test signals exist on the new DS0.

This command will be denied with a condition code of **73** if one or more pairs of channels within the old NPC are cross-connected to each other. This command will also be denied with the same condition code if a channel is looped back on itself.

The error message that corresponds to condition code **73** is:

#### **Channel has a FAR, which is within the range**

The term **FAR** in that error message refers to the other channel that is cross-connected to a channel on the NPC that is being rolled, but the other channel of the cross-connection must not be rolled, thus the error message occurs for a cross-connection that connects two channels on the same NPC.

The DS1 or 2Mbit/s Roll procedure consists of three commands:

1. Bridge

This step will bridge the transmit data by broadcasting to the new NPC as well as the old NPC. Use this command.

2. Roll

This step rolls the service by switching the receive data from the old NPC to the new NPC. Use command I.14071.

### 3. Cut

This step takes down the bridge by disconnecting the transmit data from the old NPC. Use command I.14081.

#### **Command**

---

##### **Nonhierarchical**

---

[I.14061]

SW:FRM xy,SEQ ww:BCAST,OLD [s]abc,NEW [t]ghi[,INCL]

##### **Hierarchical**

---

[I.14061]

SW:FRM xy,SEQ ww:BCAST,OLD uvmnp,NEW wxkqr[,INCL]

#### **Completion Message**

---

##### **Nonhierarchical**

---

[O.14061]

M hh:mm:ss xy,ww n[vv] SW BCAST [s]abc,[t]ghi[ INCL] COMPL

##### **Hierarchical**

---

[O.14061]

M hh:mm:ss xy,ww n[vv] SW BCAST uvmnp,wxkqr[ INCL] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.14061.01]

M hh:mm:ss xy,ww n[vv] SW BCAST [s]abc,[t]ghi\  
[ INCL][ mmm,nnn] COND cc DNY

### **Hierarchical**

---

[O.14061.01]

M hh:mm:ss xy,ww n[vv] SW BCAST uvmnp,wxkqr\  
[ INCL][ mmm,nnn] COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**BCAST** - Broadcast

**OLD** - Old

The bridge step does not need the OLD NPC to be in service, however the roll step does. Therefore, it is possible that the bridge step will be allowed but the subsequent roll step will be denied.

For the hierarchical unit entities, however, the bridge step needs both the OLD NPC hierarchy and the NEW NPC hierarchy to be in service. Otherwise, the bridge step will be denied.

**NEW** - New

**[s]abc** - The 3- or 4-digit nonhierarchical OLD NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical NEW NPC number

**Note:** Valid types for old and new NPC's are PAXyz,  
PBxyz and PCxyz.

**Note:** The valid combinations of old/new NPCs are as follow:

- When the old NPC is of type PBxyz/PCxyz, the new NPC is of type PBxyz/PCxyz and the xyz values of the old and new NPCs are the same.
- When the old NPC is of type PBxyz/PCxyz, the new NPC is of type PAxyz, and the xyz values of the old and new NPCs are equivalent. The characteristics in the PBxyz/PCxyz are present in the PAxyz type, even though the xyz values are different.
- When the old NPC is of type PAxyz, the new NPC is of type PAxyz and the xyz values of the old and new NPCs are the same.

The roll procedure will be denied based upon the valid combinations rules, the service status of the old/new NPCs, the new NPC under PBA, channels on the old/new NPCs under test or loopback. The denial messages will explain the denial condition.

If a channel is involved in C-bit monitoring (i.e. its C bits is being monitored by the C-bit processor), the roll still takes place, the CTS16 cross-connection to the C-bit processor on the old NPC remains unimpacted, and the rolled channel will not automatically be C-bit monitored on the new NPC.

At the facility level, however, 2Mbit/s roll will be denied if the CTS16 is cross-connected to the C-bit processor.

Some information is carried forward from the old to the new NPC. Some information is NOT carried forward with the roll.

**Information being carried forward to the new NPC:**

- Channel Timeslot 0 (CTS0) alarm bit settings (e.g. alarm bits 3,4,5 can be set to 0 or 1).
- Spare bit settings for CTS0 to CTS0 cross connection. (dictate how the spare bits will be treated: passthrough, invert, etc.)
- Spare bit settings for CTS0 to non CTS0 cross connection.
- The Pseudo Frame Word (PFW) or the NFW (Mode 2) mode.
- All circuit parameters (e.g. RDLC, CUS, trunk conditioning, etc.) are retained for all channels.

It is important to note that if a roll procedure is reversed, the copying of the CTS0 settings to the new NPC will NOT be reversed. Therefore, the copied CTS0 settings on the new NPC will remain there.

**Information NOT being carried forward to the new NPC:**

- Alarm severity level information (alarms can be provisioned to be informational, minor, major, etc.)
- Threshold parameters, including THMODE state.
- Since xyz must be the same (or equivalent) between the old and new NPCs, if the old NPC is provisioned to be a possible Synchronization source, the new NPC must also be provisioned as one. However, the roll will not cause the new NPC to be an **active** sync source, even if the old one is.

In addition, it should be noted that all of the CTS0-related settings on the old NPC will not be affected by the roll. They will remain unchanged.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical OLD NPC number

**wxkqr** - Hierarchical NEW NPC number

**uv,wx** - Unit number

**m,k** - Module number

**np,qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**INCL** - Inclusive

A circuit designated as a customer controlled circuit, a red circuit or a substrate T1 circuit cannot be modified without using the inclusive keyword in the message.

Also, an NPC which supports these circuits cannot be manually removed unless the INCL keyword is given in the remove message.



**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                                        |
|-----------|------------------------------------------------------------------------|
| <b>02</b> | Subject entity is not equipped                                         |
| <b>04</b> | Subject entity is out of service                                       |
| <b>05</b> | Subject entity is pested                                               |
| <b>1E</b> | Customer control or red circuit exists                                 |
| <b>26</b> | NPC type error                                                         |
| <b>01</b> | Invalid range for specified NPC type                                   |
| <b>12</b> | Active CCN side not IS or failed or pested or hardware OOS             |
| <b>13</b> | UNIT not equipped, not in service, or failed                           |
| <b>14</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS  |
| <b>15</b> | FTMI not equipped, not in service, or failed                           |
| <b>16</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS    |
| <b>17</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS  |
| <b>18</b> | DSPI not equipped, not in service, or failed                           |
| <b>21</b> | Trunk conditioning is invalid                                          |
| <b>32</b> | Termination is under test                                              |
| <b>C8</b> | Exceeded depth limit of 6 on broadcast conference concatenation        |
| <b>1A</b> | Required FLI not equipped, not in service, or failed                   |
| <b>1B</b> | Required MXR not equipped, not in service, or failed                   |
| <b>1C</b> | Reqd FMT not eqd,not IS,or failed,or inact side FMT not eqd, or not IS |
| <b>1D</b> | Required MIU not equipped, not in service, or failed                   |
| <b>46</b> | NPC Failed or Out of Service                                           |
| <b>A9</b> | Cross-connect not consistent with feature package                      |
| <b>B6</b> | C-bit operations are enabled                                           |
| <b>B7</b> | No DSP unit equipped                                                   |
| <b>B8</b> | No CBTYP NPC equipped                                                  |
| <b>B9</b> | No CBTYP NPC capacity remaining                                        |
| <b>BA</b> | Inactive side NPC out of service and inactive side in service          |
| <b>EA</b> | AIS invalid for cross-connection specified                             |
| <b>0A</b> | All CBTYP NPCs out of service or failed                                |
| <b>7E</b> | Incomplete circuit exists on OLD NPC                                   |
| <b>E0</b> | ETSI not equipped, not in service, or failed                           |
| <b>68</b> | NEW NPC already cross-connect or mapped channel(s) on new              |
| <b>6B</b> | No mapped channel on old                                               |
| <b>6D</b> | One NPC is a non-channelized type and the other is not                 |
| <b>6F</b> | The OLD or NEW NPC is already being rolled.                            |
| <b>70</b> | One of the FAR end channels is being rolled                            |
| <b>72</b> | One of the far NPC(s) is SLC                                           |
| <b>73</b> | Channel has a FAR, which is within the range                           |
| <b>74</b> | Old and new are the same NPC in a DS1 command                          |
| <b>77</b> | Obsolete circuit type                                                  |
| <b>79</b> | DCTN conference channel cannot be rolled                               |
| <b>7A</b> | Testport/testgroup channel cannot be rolled                            |

**cc**    *Explanation*

- 7B**    Channel out-of-bounds in a Broadcast or Virtual circuit.
- 7C**    Parity channel out of bound on new
- 7D**    Not first channel in a BCON/virtual conf
- 9B**    Termination is under test or is a test port or group
- 9C**    Parity channel cannot be within the range of a DS0 command.

## **SW,DISC,OOS**

### **DS0 CIRCUIT ROLL - DISCONNECT COMMAND**

#### **Explanation Of Command**

This input command is used to perform the Cut step of the DS0 (or 64kbit/s) Roll operation. (For DS1 or 2 Mbit/s Roll operations use the commands I.14061, I.14071, and I.14081.)

The DS0 (or 64kbit/s) Roll procedure consists of three commands:

1. Bridge

This step will bridge the transmit data by broadcasting to the new DS0 as well as the old DS0. Use command I.14021.

2. Roll

This step rolls the service by switching the receive data from the old DS0 to the new DS0. Use command I.14031.

3. Cut

This step takes down the bridge by disconnecting the transmit data from the old DS0. Use this command.

**NOTE:**

The ROLL procedure will re-direct ALL cross-connections associated with the DS0 signal being rolled.

### **Command**

---

### **Nonhierarchical**

---

[I.14041]

SW:FRM xy,SEQ ww:DISC [s]abcddd[-eee][,OOS]

### **Hierarchical**

---

Same as North American.  
Not applicable.

### **Completion Message**

---

### **Nonhierarchical**

---

[O.14041]

M hh:mm:ss xy,ww n[vv] SW DISC [s]abcddd[-eee][ OOS] COMPL

### **Hierarchical**

---

[O.14041]

M hh:mm:ss xy,ww n[vv] SW DISC uvmnpddd[-eee][ OOS] COMPL

### **Common**

---

Not applicable

### **Denial Message**

---

### **Nonhierarchical**

---

[O.14041.01]

M hh:mm:ss xy,ww n[vv] SW DISC [s]abcddd[-eee]\  
[ OOS][ mmm] COND cc DNY

## Hierarchical

[O.14041.01]

M hh:mm:ss xy,ww n[vv] SW DISC uvmnpddd[-eee]\  
[ OOS][ mmm] COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**DISC** - Disconnect

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

**Note:** Valid NPC types are PAxyz, PBxyz, and PCxyz, except for the following cases:

- Either NPC is of type PAxyz where y=C or y=D (Clear 2Mb/s)
- The old NPC supports Channel Associated Signaling (CAS) and the new NPC does not.
- The old NPC supports Non-Signaling Associated (NSA), the new NPC supports CAS and CTS16 is being rolled to CTS16.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical OLD NPC number  
**wxkqr** - Hierarchical NEW NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - Channel number for beginning of channel range

**eee** - Channel number for end of channel range

To connect a range of channels, use the optional field eee.

**OOS** - Out Of Service

The OOS keyword is used to force a disconnect from an NPC which is out of service.

**mmm** - The channel number involved in denial (ddd through eee).

**cc** - Hexadecimal condition code

|           |           |                    |
|-----------|-----------|--------------------|
| <b>cc</b> | <b>st</b> | <i>Explanation</i> |
|-----------|-----------|--------------------|

|           |  |                                                   |
|-----------|--|---------------------------------------------------|
| <b>A9</b> |  | Cross-connect not consistent with feature package |
|-----------|--|---------------------------------------------------|

|           |              |                                                |
|-----------|--------------|------------------------------------------------|
| <b>EC</b> | <b>MCOND</b> | Invalid channel 000 cross-connection specified |
|-----------|--------------|------------------------------------------------|

|           |              |                                                |
|-----------|--------------|------------------------------------------------|
| <b>ED</b> | <b>MCOND</b> | Invalid channel 031 cross-connection specified |
|-----------|--------------|------------------------------------------------|

## **SW,DISC,OOS**

---

### **FACILITY ROLL - DISCONNECT COMMAND**

#### **Explanation Of Command**

---

This input command is used to perform the Cut step of the DS1 or 2Mbit/s Roll procedure. (For DS0 Roll operations use the commands I.14021, I.14031, and I.14041.)

The DS1 or 2Mbit/s Roll procedure consists of three commands:

1. Bridge

This step will bridge the transmit data by broadcasting to the new NPC as well as the old NPC. Use command I.14061.

2. Roll

This step rolls the service by switching the receive data from the old NPC to the new NPC. Use command I.14071.

3. Cut

This step takes down the bridge by disconnecting the transmit data from the old NPC. Use this command.

#### **Command**

---

#### **Nonhierarchical**

---

[I.14081]

**SW:FRM xy,SEQ ww:DISC [s]abc[,OOS]**



**Hierarchical**

---

[I.14081]

SW:FRM xy,SEQ ww:DISC uvmnp[,OOS]

**Completion Message**

---

**Nonhierarchical**

---

[O.14081]

M hh:mm:ss xy,ww n[vv] SW DISC [s]abc[ OOS] COMPL

**Hierarchical**

---

[O.14081]

M hh:mm:ss xy,ww n[vv] SW DISC uvmnp[ OOS] COMPL

**Denial Message**

---

**Nonhierarchical**

---

[O.14081.01]

M hh:mm:ss xy,ww n[vv] SW DISC [s]abc[ OOS][ mmm] COND cc DNY

**Hierarchical**

---

[O.14081.01]

M hh:mm:ss xy,ww n[vv] SW DISC uvmnp [ OOS][ mmm] COND cc DNY

**Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**DISC** - Disconnect

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

**Note:** Valid NPC types are PAxyz, PBxyz, and PCxyz.

**Note:** The valid combinations of old/new NPCs are as follow:

- When the old NPC is of type PBxyz/PCxyz, the new NPC is of type PBxyz/PCxyz and the xyz values of the old and new NPCs are the same.
- When the old NPC is of type PBxyz/PCxyz, the new NPC is of type PAxyz, and the xyz values of the old and new NPCs are equivalent. The characteristics in the PBxyz/PCxyz are present in the PAxyz type, even though the xyz values are different.
- When the old NPC is of type PAxyz, the new NPC is of type PAxyz and the xyz values of the old and new NPCs are the same.

The roll procedure will be denied based upon the valid combinations rules, the service status of the old/new NPCs, the new NPC under PBA, channels on the old/new NPCs under test or loopback. The denial messages will explain the denial condition.

If a channel is involved in C-bit monitoring (i.e. its C bits is being monitored by the C-bit processor), the roll still takes place, the CTS16 cross-connection to the C-bit processor on the old NPC remains unimpacted, and the rolled channel will not automatically be C-bit monitored on the new NPC.

At the facility level, however, 2Mbit/s roll will be denied if the CTS16 is cross-connected to the C-bit processor.

Some information is carried forward from the old to the new NPC. Some information is NOT carried forward with the roll.

**Information being carried forward to the new NPC:**

- Channel Timeslot 0 (CTS0) alarm bit settings (e.g. alarm bits 3,4,5 can be set to 0 or 1).
- Spare bit settings for CTS0 to CTS0 cross connection. (dictate how the spare bits will be treated: passthrough, invert, etc.)
- Spare bit settings for CTS0 to non CTS0 cross connection.
- The Pseudo Frame Word (PFW) or the NFW (Mode 2) mode.
- All circuit parameters (e.g. RDLC, CUS, trunk conditioning, etc.) are retained for all channels.

It is important to note that if a roll procedure is reversed, the copying of the CTS0 settings to the new NPC will NOT be reversed. Therefore, the copied CTS0 settings on the new NPC will remain there.

**Information NOT being carried forward to the new NPC:**

- Alarm severity level information (alarms can be provisioned to be informational, minor, major, etc.)
- Threshold parameters, including THMODE state.
- Since xyz must be the same (or equivalent) between the old and new NPCs, if the old NPC is provisioned to be a possible Synchronization source, the new NPC must also be provisioned as one. However, the roll will not cause the new NPC to be an **active** sync source, even if the old one is.

In addition, it should be noted that all of the CTS0-related settings on the old NPC will not be affected by the roll. They will remain unchanged.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical OLD NPC number

**wxkqr** - Hierarchical NEW NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**OOS** - Out of service

The OOS keyword is used to force a disconnect from an NPC which is out of service.

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 02** Subject entity is not equipped
- 04** Subject entity is out of service
- 01** Invalid range for specified NPC type
- 12** Active CCN side not IS or failed or pested or hardware OOS
- 13** UNIT not equipped, not in service, or failed
- 14** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS
- 15** FTMI not equipped, not in service, or failed
- 16** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS
- 17** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS
- 18** DSPI not equipped, not in service, or failed
- C8** Exceeded depth limit of 6 on broadcast conference concatenation
- 1A** Required FLI not equipped, not in service, or failed
- 1B** Required MXR not equipped, not in service, or failed
- 1C** Reqd FMT not eqd,not IS,or failed,or inact side FMT not eqd, or not IS
- 1D** Required MIU not equipped, not in service, or failed
- A9** Cross-connect not consistent with feature package
- B7** No DSP unit equipped
- B8** No CBTYPE NPC equipped
- B9** No CBTYPE NPC capacity remaining
- BA** Inactive side NPC out of service and inactive side in service
- 0A** All CBTYPE NPCs out of service or failed
- E0** ETSI not equipped, not in service, or failed
- 67** Improper roll command sequence
- 6B** No mapped channel on old
- 75** Old and new channels have not been paired by a BCAST command.
- 76** Channel or NPC not bridged
- 79** DCTN conference channel cannot be rolled
- 7A** Testport/testgroup channel cannot be rolled

**cc**    *Explanation*

- 7B**    Channel out-of-bounds in a Broadcast or Virtual circuit.
- 7C**    Parity channel out of bound on new
- 7D**    Not first channel in a BCON/virtual conf
- 9C**    Parity channel cannot be within the range of a DS0 command.

## **SW,ROLL,OLD,NEW,INCL,FRC,OOS**

### **DS0 CIRCUIT ROLL- ROLL COMMAND**

#### **Explanation Of Command**

This input command is used to perform the Roll step of the DS0 (or 64kbit/s) Roll operation. (For DS1 or 2 Mbit/s Roll operations use the commands I.14061, I.14071, and I.14081.)

The DS0 (or 64kbit/s) Roll procedure consists of three commands:

1. Bridge

This step will bridge the transmit data by broadcasting to the new DS0 as well as the old DS0. Use command I.14021.

2. Roll

This step rolls the service by switching the receive data from the old DS0 to the new DS0. Use this command.

3. Cut

This step takes down the bridge by disconnecting the transmit data from the old DS0. Use command I.14041.

**NOTE:**

The ROLL procedure will re-direct ALL cross-connections associated with the DS0 signal being rolled.

## **Command**

---

### **Nonhierarchical**

---

[I.14031]

SW:FRM xy,SEQ ww:ROLL,OLD [s]abcddd[-eee],NEW [t]ghijjj[-kkk]\  
[,INCL][,FRC][,OOS]

### **Hierarchical**

---

[I.14031]

SW:FRM xy,SEQ ww:ROLL,OLD uvmnpddd[-eee],NEW wxkqrjjj[-kkk]\  
[,INCL][,FRC][,OOS]

## **Completion Message**

---

### **Nonhierarchical**

---

[O.14031]

M hh:mm:ss xy,ww n[vv] SW ROLL [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ INCL][ FRC][ OOS] COMPL

### **Hierarchical**

---

[O.14031]

M hh:mm:ss xy,ww n[vv] SW ROLL uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ INCL][ FRC][ OOS] COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.14031.01]

M hh:mm:ss xy,ww n[vv] SW ROLL [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ INCL][ FRC][ OOS] 2 LN MSG:  
[ mmm,nnn] COND cc DNY



### **Hierarchical**

---

[O.14031.01]

M hh:mm:ss xy,ww n[vv] SW ROLL uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ INCL][ FRC][ OOS] 2 LN MSG:  
[ mmm,nnn] COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**ROLL** - Roll

**OLD** - Old termination

**NEW** - New termination

[s]abc - The 3- or 4-digit nonhierarchical OLD NPC number

[t]ghi - The 3- or 4-digit nonhierarchical NEW NPC number

**Note:** Valid types for old and new NPC's are  
PAxyz, PBxyz, and PCxyz, except for the following cases:

- Either is of type PAxyz where y=C or y=D (Clear 2Mb/s)
- The old NPC supports Channel Associated Signaling (CAS) and the new NPC does not.
- The old NPC supports Non-Signaling Associated (NSA), the new NPC supports CAS, and CTS16 is being rolled to CTS16.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical OLD NPC number  
**wxkqr** - Hierarchical NEW NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd, jjj**  
- Channel numbers for beginning of channel range

**eee, kkk**  
- Channel numbers for end of channel range

To connect a range of channels, use the optional fields eee and kkk.

**INCL** - Inclusive

A circuit designated as a customer controlled circuit, a red circuit or a substrate T1 circuit cannot be modified without using the inclusive keyword in the message.

The FRC keyword is used to force a roll to an NPC which is in PBA.

**OOS** - Out of service

The OOS keyword is used to force a roll from an NPC which is out of service.

**mmm** - The OLD channel number involved in denial (ddd through eee).

**nnn** - The NEW channel number involved in denial (jjj through kkk).

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                |
|-----------|--------------|---------------------------------------------------|
| <b>A9</b> |              | Cross-connect not consistent with feature package |
| <b>EC</b> | <b>MCOND</b> | Invalid channel 000 cross-connection specified    |
| <b>ED</b> | <b>MCOND</b> | Invalid channel 031 cross-connection specified    |

## **SW,ROLL,OLD,NEW,INCL,FRC,OOS,TWAY**

### **FACILITY ROLL - ROLL COMMAND**

#### **Explanation Of Command**

This input command is used to perform the Roll step of the DS1 or 2Mbit/s Roll procedure. (For DS0 Roll operations use the commands I.14021, I.14031, and I.14041.)

The DS1 or 2Mbit/s Roll procedure consists of three commands:

1. Bridge

This step will bridge the transmit data by broadcasting to the new NPC as well as the old NPC. Use command I.14061.

2. Roll

This step rolls the service by switching the receive data from the old NPC to the new NPC. Use this command.

3. Cut

This step takes down the bridge by disconnecting the transmit data from the old NPC. Use command I.14081.

#### **Command**

#### **Nonhierarchical**

[I.14071]

**SW:FRM xy,SEQ ww:ROLL,OLD [s]abc,NEW [t]ghi[,INCL][,FRC]\  
[,OOS][,TWAY]**

### **Hierarchical**

---

[I.14071]

SW:FRM xy,SEQ ww:ROLL,OLD uvmnp,NEW wxkqr[,INCL][,FRC]\  
[,OOS][,TWAY]

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.14071]

M hh:mm:ss xy,ww n[vv] SW ROLL [s]abc,[t]ghi[ INCL][ FRC]\  
[ OOS][ TWAY] COMPL

### **Hierarchical**

---

[O.14071]

M hh:mm:ss xy,ww n[vv] SW ROLL uvmnp,wxkqr[ INCL][ FRC][ OOS]\  
[ TWAY] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.14071.01]

M hh:mm:ss xy,ww n[vv] SW ROLL [s]abc,[t]ghi\  
[ INCL][ FRC][ OOS][ TWAY][ mmm,nnn] COND cc DNY

### **Hierarchical**

---

[O.14071.01]

M hh:mm:ss xy,ww n[vv] SW ROLL uvmnp,wxkqr\  
[ INCL][ FRC][ OOS][ TWAY][ mmm,nnn] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**ROLL** - Roll

**OLD** - Old  
The old termination

**NEW** - New  
The new termination

**[s]abc** - The 3- or 4-digit nonhierarchical OLD NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical NEW NPC number

**Note:** Valid types for old and new NPC's are PAxyz, PBxyz, and PCxyz.

**Note:** The valid combinations of old/new NPCs are as follow:

- When the old NPC is of type PBxyz/PCxyz, the new NPC is of type PBxyz/PCxyz and the xyz values of the old and new NPCs are the same.
- When the old NPC is of type PBxyz/PCxyz, the new NPC is of type PAxyz, and the xyz values of the old and new NPCs are equivalent. The characteristics in the PBxyz/PCxyz are present in the PAxyz type, even though the xyz values are different.
- When the old NPC is of type PAxyz, the new NPC is of type PAxyz and the xyz values of the old and new NPCs are the same.

The roll procedure will be denied based upon the valid combinations rules, the service status of the old/new NPCs, the new NPC under PBA, channels on the old/new NPCs under test or loopback. The denial messages will explain the denial condition.

If a channel is involved in C-bit monitoring (i.e. its C bits is being monitored by the C-bit processor), the roll still takes place, the CTS16 cross-connection to the C-bit processor on the old NPC remains unimpacted, and the rolled channel will not automatically be C-bit monitored on the new NPC.

At the facility level, however, 2Mbit/s roll will be denied if the CTS16 is cross-connected to the C-bit processor.

Some information is carried forward from the old to the new NPC. Some information is NOT carried forward with the roll.

**Information being carried forward to the new NPC:**

- Channel Timeslot 0 (CTS0) alarm bit settings (e.g. alarm bits 3,4,5 can be set to 0 or 1).
- Spare bit settings for CTS0 to CTS0 cross connection. (dictate how the spare bits will be treated: passthrough, invert, etc.)
- Spare bit settings for CTS0 to non CTS0 cross connection.
- The Pseudo Frame Word (PFW) or the NFW (Mode 2) mode.
- All circuit parameters (e.g. RDLC, CUS, trunk conditioning, etc.) are retained for all channels.

It is important to note that if a roll procedure is reversed, the copying of the CTS0 settings to the new NPC will NOT be reversed. Therefore, the copied CTS0 settings on the new NPC will remain there.

**Information NOT being carried forward to the new NPC:**

- Alarm severity level information (alarms can be provisioned to be informational, minor, major, etc.)
- Threshold parameters, including THMODE state.
- Since xyz must be the same (or equivalent) between the old and new NPCs, if the old NPC is provisioned to be a possible Synchronization source, the new NPC must also be provisioned as one. However, the roll will not cause the new NPC to be an **active** sync source, even if the old one is.

In addition, it should be noted that all of the CTS0-related settings on the old NPC will not be affected by the roll. They will remain unchanged.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |



If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical OLD NPC number  
**wxkqr** - Hierarchical NEW NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**INCL** - Inclusive

A circuit designated as a customer controlled circuit, a red circuit or a substrate T1 circuit cannot be modified without using the inclusive keyword in the message. Also, an NPC which supports these circuits cannot be manually removed unless the INCL keyword is given in the remove message.

**FRC** - Force

The FRC keyword is used to force a roll to an NPC which is in CGA.

**OOS** - Out of service

The OOS keyword is used to force a roll from an NPC which is out of service.

**TWAY** - Two-way

The TWAY keyword is used to request a two-way Roll (Bridge and Roll combined).

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**A9**    Cross-connect not consistent with feature package

**B6**    C-bit operations are enabled

## **SW,UNIT,FLI,TOPRTN**

### **SWITCH FLI TO PROTECTION**

#### **Explanation Of Command**

This message requests and reports a switch from the selected facility line interface (FLI) on a DS3 unit (DS3U) or a Hybrid DS3 unit (HDS3U). This message only covers the direction of switch from the service FLI in a DS3U or HDS3U to protection. The other direction of the FLI switch is covered in Message I.35105. The output message reports the occurrence of autonomous protection switching.

#### **Command**

[I.35101]

**SW:FRM xy,SEQ ww:UNIT [q]q,FLI, TOPRTN!**

#### **Completion Message**

[O.35101]

**M hh:mm:ss xy,ww n[vv] SW UNIT [q]q FLI TOPRTN COMPL**

#### **Denial Message**

[O.35101.01]

**M hh:mm:ss xy,ww n[vv] SW UNIT [q]q FLI TOPRTN COND cc DNY**

#### **Autonomous Message**

[O.35101]

**I hh:mm:ss xy,ww SW UNIT [q]q FLI TOPRTN COMPL**

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FLI** - Facility Line Interface

**TOPRTN** - To protection pack

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

## **SW,UNIT,FLI,TOSRVC**

### **SWITCH FLI TO SERVICE**

#### **Explanation Of Command**

This message requests and reports a switch from the protected facility line interface (FLI) on a DS3 unit (DS3U) or a Hybrid DS3 unit (HDS3U) to the service FLI. The output message reports the occurrence of automatic switchback.

#### **Command**

[I.35105]

**SW:FRM xy,SEQ ww:UNIT [q]q,FLI,TOSRVC!**

See I.35101

#### **Completion Message**

[O.35105]

**M hh:mm:ss xy,ww n[vv] SW UNIT [q]q FLI TOSRVC COMPL**

#### **Denial Message**

**M hh:mm:ss xy,ww n[vv] SW UNIT [q]q FLI TOSRVC COND cc DNY**

#### **Autonomous Message**

[O.35105]

**I hh:mm:ss xy,ww SW UNIT [q]q FLI TOSRVC COMPL**

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**TOSRVC** - To Service Pack

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**11** UC is out of service

**12** UC is in service but failed

## **SW,UNIT,MMFG,TOPRTN,FRC**

### **SWITCH MMFG TO PROTECTION**

#### **Explanation Of Command**

This command requests and reports a switch from multiplexer-multiple interface unit functional group (MMFG) c to MMFG P on a DS3 or HDS3 unit. The input message can force MMFG P to serve the MMFG c facility, even though MMFG P was serving another facility which can result in that facility being out-of-service. Alarm reporting is discussed below in the case of a switch that results in that facility being out-of-service.

**Alarm reporting in the case of double MMFG failures:**

(For example, a unit is equipped with MMFG 1 , 2 and P).

Event           MMFG 1 fails  
Automatic protection switch occurs

Message       I hh:mm:ss xy,ww SW UNIT q MMFG 1 TOPRTN COMPL  
MMFG 1 is autonomously removed

Message       \*\*hh:mm:ss xy,ww RMV UNIT q MMFG 1 COMPL

Event           MMFG 2 fails

Message       \*C hh:mm:ss xy,ww RMV UNIT q MMFG 2 COND cc DNY

Event           The craft decides that MMFG-2 is more important and makes  
a switch

Command       SW:FRM xy,ww:UNIT q,MMFG 2,TOPRTN,FRC!

Message       M hh:mm:ss xy,ww[ n[vv]] SW UNIT q MMFG 1 TOPRTN FRC COMPL  
MMFG 1 will switch back to service automatically

Message       I hh:mm:ss xy,ww SW UNIT q MMFG 1 TOSRVC COMPL

Notice that after the switch to protection of MMFG 2, there will be no alarm reporting associated with loss of service of MMFG 1. The alarm condition, which is escalated to critical after loss of service of MMFG 2, actually covers both failures. If the FRC keyword is used, then the MMFG that **was** under protection will no longer be in alarm but will still need to be restored. When the FRC keyword is used, the alarm is idled on the MMFG that **was** under protection, even though it is still OOS. Note also that the autonomous switch message will precede the removal command on the first failure.

**Command**

[I.35111]

**SW:FRM xy,SEQ ww:UNIT [q]q,MMFG c,TOPRTN[,FRC]!**



### **Completion Message**

---

[O.35111]

**M** hh:mm:ss xy,ww[ n[vv]] **SW UNIT [q]q MMFG c TOPRTN[ FRC] \**  
**COMPL**

### **Denial Message**

---

[O.35111.01]

**M** hh:mm:ss xy,ww n[vv] **SW UNIT [q]q MMFG c TOPRTN[ FRC] COND \**  
**cc DNY**

### **Autonomous Message**

---

[O.35111]

**I** hh:mm:ss xy,ww[ n[vv]] **SW UNIT [q]q MMFG c TOPRTN[ FRC] \**  
**COMPL**

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**MMFG** - Multiplexer-multiplexer interface unit functional Group

**c** - The number of the service MMFG within the unit ( $1 \leq c \leq 6$ )

**TOPRTN** - Protection Pack

**FRC** - Force the switch to protection MMFG even though it was serving another facility.

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                             |
|-----------|-----------------------------|
| <b>10</b> | <b>Unit is not equipped</b> |
|-----------|-----------------------------|

|           |                             |
|-----------|-----------------------------|
| <b>11</b> | <b>UC is out of service</b> |
|-----------|-----------------------------|

|           |                                    |
|-----------|------------------------------------|
| <b>12</b> | <b>UC is in service but failed</b> |
|-----------|------------------------------------|

## **SW,UNIT,MMFG,TOSRVC**

### **SWITCH MMFG TO SERVICE**

#### **Explanation Of Command**

This command requests and reports a switch from multiplexer-multiple interface unit functional group (MMFG) P to MMFG c on a DS3 or HDS3 unit. MMFG P was serving the DS3 or HDS3 facility associated with MMFG c. The output message also reports the occurrence of automatic switchback from protection.

#### **Command**

[I.35121]

**SW:FRM xy,SEQ ww:UNIT [q]q,MMFG c,TOSRVC!**

#### **Completion Message**

[O.35121]

**M hh:mm:ss xy,ww n[vv] SW UNIT [q]q MMFG c TOSRVC COMPL**

#### **Denial Message**

[O.35121.01]

**M hh:mm:ss xy,ww n[vv] SW UNIT [q]q MMFG c TOSRVC COND cc DNY**

#### **Autonomous Message**

[O.35121]

**I hh:mm:ss xy,ww SW UNIT [q]q MMFG c TOSRVC COMPL**

### **Explanation Of Parameters**

---

- UNIT** - Unit
- [q]q** - Unit number (1 through 16)
- MMFG** - Multiplexer-multiplexer interface unit functional group
- c** - The number of the service MMFG within the unit (1 through 6)
- TOSRVC** - To service
- Priority of action
- I** - Information
- M** - Manual
- cc** - Hexadecimal condition code
- | <b>cc</b> | <i>Explanation</i>          |
|-----------|-----------------------------|
| <b>10</b> | Unit is not equipped        |
| <b>11</b> | UC is out of service        |
| <b>12</b> | UC is in service but failed |



---

**Contents****TCNT, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL 18-2**

|                             |      |
|-----------------------------|------|
| ■ Explanation Of Command    | 18-2 |
| ■ Command                   | 18-2 |
| ■ Nonhierarchical           | 18-2 |
| ■ Hierarchical              | 18-2 |
| ■ Completion Message        | 18-3 |
| ■ Nonhierarchical           | 18-3 |
| ■ Hierarchical              | 18-3 |
| ■ Denial Message            | 18-3 |
| ■ Nonhierarchical           | 18-3 |
| ■ Hierarchical              | 18-3 |
| ■ Autonomous Message        | 18-4 |
| ■ Explanation Of Parameters | 18-4 |

**TCNT, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT 18-13**

|                             |       |
|-----------------------------|-------|
| ■ Explanation Of Command    | 18-13 |
| ■ Command                   | 18-13 |
| ■ Nonhierarchical           | 18-13 |
| ■ Hierarchical              | 18-13 |
| ■ Completion Message        | 18-14 |
| ■ Nonhierarchical           | 18-14 |
| ■ Hierarchical              | 18-14 |
| ■ Denial Message            | 18-14 |
| ■ Nonhierarchical           | 18-14 |
| ■ Hierarchical              | 18-15 |
| ■ Autonomous Message        | 18-15 |
| ■ Explanation Of Parameters | 18-15 |

---

## Contents

|                                               |       |
|-----------------------------------------------|-------|
| <b>TCNT, FROM, TO, PFW, NFW</b>               | 18-25 |
| ■ Explanation Of Command                      | 18-25 |
| ■ Command                                     | 18-25 |
| ■ Nonhierarchical                             | 18-25 |
| ■ Hierarchical                                | 18-25 |
| ■ Completion Message                          | 18-26 |
| ■ Nonhierarchical                             | 18-26 |
| ■ Hierarchical                                | 18-26 |
| ■ Denial Message                              | 18-26 |
| ■ Nonhierarchical                             | 18-26 |
| ■ Hierarchical                                | 18-26 |
| ■ Autonomous Message                          | 18-26 |
| ■ Explanation Of Parameters                   | 18-27 |
| <b>TCNT, FROM, TO, RDC, CUS, INCL, PRIOUT</b> | 18-32 |
| ■ Explanation Of Command                      | 18-32 |
| ■ Command                                     | 18-32 |
| ■ Nonhierarchical                             | 18-32 |
| ■ Hierarchical                                | 18-32 |
| ■ Completion Message                          | 18-32 |
| ■ Nonhierarchical                             | 18-32 |
| ■ Hierarchical                                | 18-33 |
| ■ Denial Message                              | 18-33 |
| ■ Nonhierarchical                             | 18-33 |
| ■ Hierarchical                                | 18-33 |
| ■ Autonomous Message                          | 18-33 |
| ■ Explanation Of Parameters                   | 18-33 |
| <b>TCON, FROM, CB, CUS, RDC, INCL</b>         | 18-37 |
| ■ Explanation Of Command                      | 18-37 |
| ■ Command                                     | 18-37 |
| ■ Nonhierarchical                             | 18-37 |
| ■ Hierarchical                                | 18-37 |
| ■ Completion Message                          | 18-37 |
| ■ Nonhierarchical                             | 18-37 |
| ■ Hierarchical                                | 18-38 |
| ■ Denial Message                              | 18-38 |
| ■ Nonhierarchical                             | 18-38 |
| ■ Hierarchical                                | 18-38 |
| ■ Autonomous Message                          | 18-38 |

---

## Contents

|                                                      |       |
|------------------------------------------------------|-------|
| ■ Explanation Of Parameters                          | 18-39 |
| <b>TCON, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL</b> | 18-43 |
| ■ Explanation Of Command                             | 18-43 |
| ■ Command                                            | 18-43 |
| ■ Nonhierarchical                                    | 18-43 |
| ■ Hierarchical                                       | 18-43 |
| ■ Completion Message                                 | 18-44 |
| ■ Nonhierarchical                                    | 18-44 |
| ■ Hierarchical                                       | 18-44 |
| ■ Denial Message                                     | 18-44 |
| ■ Nonhierarchical                                    | 18-44 |
| ■ Hierarchical                                       | 18-44 |
| ■ Autonomous Message                                 | 18-45 |
| ■ Explanation Of Parameters                          | 18-45 |
| <b>TCON, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT</b>   | 18-54 |
| ■ Explanation Of Command                             | 18-54 |
| ■ Command                                            | 18-54 |
| ■ Nonhierarchical                                    | 18-54 |
| ■ Hierarchical                                       | 18-54 |
| ■ Completion Message                                 | 18-55 |
| ■ Nonhierarchical                                    | 18-55 |
| ■ Hierarchical                                       | 18-55 |
| ■ Denial Message                                     | 18-55 |
| ■ Nonhierarchical                                    | 18-55 |
| ■ Hierarchical                                       | 18-56 |
| ■ Autonomous Message                                 | 18-56 |
| ■ Explanation Of Parameters                          | 18-56 |
| <b>TCON, FROM, TO, PFW, NFW</b>                      | 18-66 |
| ■ Explanation Of Command                             | 18-66 |
| ■ Command                                            | 18-66 |
| ■ Nonhierarchical                                    | 18-66 |
| ■ Hierarchical                                       | 18-66 |
| ■ Completion Message                                 | 18-66 |
| ■ Nonhierarchical                                    | 18-66 |
| ■ Hierarchical                                       | 18-67 |
| ■ Denial Message                                     | 18-67 |
| ■ Nonhierarchical                                    | 18-67 |
| ■ Hierarchical                                       | 18-67 |

---

## Contents

|                                         |       |
|-----------------------------------------|-------|
| ■ Autonomous Message                    | 18-67 |
| ■ Explanation Of Parameters             | 18-68 |
| <b>TCON,FROM,TO,RDC,CUS,INCL,PRIOUT</b> | 18-73 |
| ■ Explanation Of Command                | 18-73 |
| ■ Command                               | 18-73 |
| ■ Nonhierarchical                       | 18-73 |
| ■ Hierarchical                          | 18-73 |
| ■ Completion Message                    | 18-74 |
| ■ Nonhierarchical                       | 18-74 |
| ■ Hierarchical                          | 18-74 |
| ■ Denial Message                        | 18-74 |
| ■ Nonhierarchical                       | 18-74 |
| ■ Hierarchical                          | 18-74 |
| ■ Autonomous Message                    | 18-74 |
| ■ Explanation Of Parameters             | 18-75 |
| <b>TDIS,FROM,CB,INCL,OOS</b>            | 18-78 |
| ■ Explanation Of Command                | 18-78 |
| ■ Command                               | 18-78 |
| ■ Nonhierarchical                       | 18-78 |
| ■ Hierarchical                          | 18-78 |
| ■ Completion Message                    | 18-78 |
| ■ Nonhierarchical                       | 18-78 |
| ■ Hierarchical                          | 18-79 |
| ■ Denial Message                        | 18-79 |
| ■ Nonhierarchical                       | 18-79 |
| ■ Hierarchical                          | 18-79 |
| ■ Autonomous Message                    | 18-79 |
| ■ Explanation Of Parameters             | 18-80 |
| <b>TDIS,FROM,TO,INCL,OOS,DCC</b>        | 18-83 |
| ■ Explanation Of Command                | 18-83 |
| ■ Command                               | 18-83 |
| ■ Nonhierarchical                       | 18-83 |
| ■ Hierarchical                          | 18-83 |
| ■ Completion Message                    | 18-84 |
| ■ Nonhierarchical                       | 18-84 |
| ■ Hierarchical                          | 18-84 |
| ■ Denial Message                        | 18-84 |
| ■ Nonhierarchical                       | 18-84 |



---

## Contents

|                                         |        |
|-----------------------------------------|--------|
| ■ Hierarchical                          | 18-84  |
| ■ Autonomous Message                    | 18-85  |
| ■ Explanation Of Parameters             | 18-85  |
| <b>TDIS,FROM,TO,INCL,OOS,DCC,PRIOUT</b> | 18-90  |
| ■ Explanation Of Command                | 18-90  |
| ■ Command                               | 18-90  |
| ■ Nonhierarchical                       | 18-90  |
| ■ Hierarchical                          | 18-90  |
| ■ Completion Message                    | 18-90  |
| ■ Nonhierarchical                       | 18-90  |
| ■ Hierarchical                          | 18-91  |
| ■ Denial Message                        | 18-91  |
| ■ Nonhierarchical                       | 18-91  |
| ■ Hierarchical                          | 18-91  |
| ■ Autonomous Message                    | 18-91  |
| ■ Explanation Of Parameters             | 18-92  |
| <b>TDIS,FROM,TO,OOS,INCL,PRIOUT</b>     | 18-96  |
| ■ Explanation Of Command                | 18-96  |
| ■ Command                               | 18-96  |
| ■ Nonhierarchical                       | 18-96  |
| ■ Hierarchical                          | 18-96  |
| ■ Completion Message                    | 18-96  |
| ■ Nonhierarchical                       | 18-96  |
| ■ Hierarchical                          | 18-97  |
| ■ Denial Message                        | 18-97  |
| ■ Nonhierarchical                       | 18-97  |
| ■ Hierarchical                          | 18-97  |
| ■ Autonomous Message                    | 18-97  |
| ■ Explanation Of Parameters             | 18-98  |
| <b>TS0,R,NPC,OLD,NEW</b>                | 18-101 |
| ■ Explanation Of Command                | 18-101 |
| ■ Command                               | 18-101 |
| ■ Completion Message                    | 18-101 |
| ■ Denial Message                        | 18-101 |
| ■ Autonomous Message                    | 18-101 |
| ■ Nonhierarchical                       | 18-101 |
| ■ Hierarchical                          | 18-102 |
| ■ Explanation Of Parameters             | 18-102 |

---

## Contents

|                             |        |
|-----------------------------|--------|
| <b>TS0MBOFL</b>             | 18-105 |
| ■ Explanation Of Command    | 18-105 |
| ■ Command                   | 18-105 |
| ■ Completion Message        | 18-105 |
| ■ Denial Message            | 18-105 |
| ■ Autonomous Message        | 18-105 |
| ■ Nonhierarchical           | 18-105 |
| ■ Hierarchical              | 18-106 |
| ■ Explanation Of Parameters | 18-106 |
| <b>TTST,HUB,TO,TG</b>       | 18-108 |
| ■ Explanation Of Command    | 18-108 |
| ■ Command                   | 18-108 |
| ■ Nonhierarchical           | 18-108 |
| ■ Hierarchical              | 18-108 |
| ■ Completion Message        | 18-109 |
| ■ Nonhierarchical           | 18-109 |
| ■ Hierarchical              | 18-109 |
| ■ Denial Message            | 18-109 |
| ■ Nonhierarchical           | 18-109 |
| ■ Hierarchical              | 18-109 |
| ■ Autonomous Message        | 18-109 |
| ■ Explanation Of Parameters | 18-110 |
| <b>TTST,HUB,TO,TP,NAM</b>   | 18-115 |
| ■ Explanation Of Command    | 18-115 |
| ■ Command                   | 18-115 |
| ■ Nonhierarchical           | 18-115 |
| ■ Hierarchical              | 18-115 |
| ■ Completion Message        | 18-116 |
| ■ Nonhierarchical           | 18-116 |
| ■ Hierarchical              | 18-116 |
| ■ Denial Message            | 18-116 |
| ■ Nonhierarchical           | 18-116 |
| ■ Hierarchical              | 18-116 |
| ■ Autonomous Message        | 18-117 |
| ■ Explanation Of Parameters | 18-117 |
| <b>TTST,LPD,TG</b>          | 18-122 |
| ■ Explanation Of Command    | 18-122 |

---

## Contents

|                             |        |
|-----------------------------|--------|
| ■ Command                   | 18-122 |
| ■ Completion Message        | 18-122 |
| ■ Denial Message            | 18-122 |
| ■ Autonomous Message        | 18-122 |
| ■ Explanation Of Parameters | 18-123 |
| <b>TTST,LPD,TP</b>          | 18-124 |
| ■ Explanation Of Command    | 18-124 |
| ■ Command                   | 18-124 |
| ■ Completion Message        | 18-124 |
| ■ Denial Message            | 18-125 |
| ■ Autonomous Message        | 18-125 |
| ■ Explanation Of Parameters | 18-125 |
| <b>TTST,MON,TG</b>          | 18-128 |
| ■ Explanation Of Command    | 18-128 |
| ■ Command                   | 18-128 |
| ■ Completion Message        | 18-128 |
| ■ Nonhierarchical           | 18-128 |
| ■ Hierarchical              | 18-129 |
| ■ Denial Message            | 18-129 |
| ■ Autonomous Message        | 18-129 |
| ■ Explanation Of Parameters | 18-129 |
| <b>TTST,MON,TO,NAM,TP</b>   | 18-134 |
| ■ Explanation Of Command    | 18-134 |
| ■ Command                   | 18-135 |
| ■ Nonhierarchical           | 18-135 |
| ■ Hierarchical              | 18-135 |
| ■ Completion Message        | 18-135 |
| ■ Nonhierarchical           | 18-135 |
| ■ Hierarchical              | 18-135 |
| ■ Denial Message            | 18-136 |
| ■ Nonhierarchical           | 18-136 |
| ■ Hierarchical              | 18-136 |
| ■ Autonomous Message        | 18-136 |
| ■ Explanation Of Parameters | 18-137 |
| <b>TTST,MON,TO,TG</b>       | 18-145 |
| ■ Explanation Of Command    | 18-145 |
| ■ Command                   | 18-145 |

---

## Contents

|                             |        |
|-----------------------------|--------|
| ■ Nonhierarchical           | 18-145 |
| ■ Hierarchical              | 18-145 |
| ■ Completion Message        | 18-146 |
| ■ Nonhierarchical           | 18-146 |
| ■ Hierarchical              | 18-146 |
| ■ Denial Message            | 18-146 |
| ■ Nonhierarchical           | 18-146 |
| ■ Hierarchical              | 18-146 |
| ■ Autonomous Message        | 18-146 |
| ■ Explanation Of Parameters | 18-147 |
| <b>TTST,SPL,TG</b>          | 18-153 |
| ■ Explanation Of Command    | 18-153 |
| ■ Command                   | 18-153 |
| ■ Completion Message        | 18-153 |
| ■ Nonhierarchical           | 18-153 |
| ■ Hierarchical              | 18-154 |
| ■ Denial Message            | 18-154 |
| ■ Autonomous Message        | 18-154 |
| ■ Explanation Of Parameters | 18-154 |
| <b>TTST,SPL,TP</b>          | 18-159 |
| ■ Explanation Of Command    | 18-159 |
| ■ Command                   | 18-159 |
| ■ Completion Message        | 18-159 |
| ■ Nonhierarchical           | 18-159 |
| ■ Hierarchical              | 18-160 |
| ■ Denial Message            | 18-160 |
| ■ Nonhierarchical           | 18-160 |
| ■ Hierarchical              | 18-160 |
| ■ Common                    | 18-160 |
| ■ Autonomous Message        | 18-160 |
| ■ Explanation Of Parameters | 18-161 |
| <b>TTST,TGR,TG,OOS</b>      | 18-164 |
| ■ Explanation Of Command    | 18-164 |
| ■ Command                   | 18-164 |
| ■ Completion Message        | 18-165 |
| ■ Nonhierarchical           | 18-165 |
| ■ Hierarchical              | 18-166 |
| ■ Denial Message            | 18-166 |

---

## Contents

|                             |        |
|-----------------------------|--------|
| ■ Autonomous Message        | 18-167 |
| ■ Nonhierarchical           | 18-167 |
| ■ Hierarchical              | 18-167 |
| ■ Common                    | 18-167 |
| ■ Explanation Of Parameters | 18-168 |
| <b>TTST,TLA,NOT,TP</b>      | 18-172 |
| ■ Explanation Of Command    | 18-172 |
| ■ Command                   | 18-172 |
| ■ Nonhierarchical           | 18-172 |
| ■ Hierarchical              | 18-172 |
| ■ Completion Message        | 18-173 |
| ■ Nonhierarchical           | 18-173 |
| ■ Hierarchical              | 18-173 |
| ■ Denial Message            | 18-173 |
| ■ Nonhierarchical           | 18-173 |
| ■ Hierarchical              | 18-173 |
| ■ Common                    | 18-174 |
| ■ Autonomous Message        | 18-174 |
| ■ Explanation Of Parameters | 18-174 |
| <b>TTST,TLA,TG</b>          | 18-179 |
| ■ Explanation Of Command    | 18-179 |
| ■ Command                   | 18-179 |
| ■ Completion Message        | 18-179 |
| ■ Nonhierarchical           | 18-179 |
| ■ Hierarchical              | 18-180 |
| ■ Denial Message            | 18-180 |
| ■ Autonomous Message        | 18-180 |
| ■ Explanation Of Parameters | 18-180 |
| <b>TTST,TLR,NOT,TP</b>      | 18-184 |
| ■ Explanation Of Command    | 18-184 |
| ■ Command                   | 18-184 |
| ■ Nonhierarchical           | 18-184 |
| ■ Hierarchical              | 18-184 |
| ■ Completion Message        | 18-185 |
| ■ Nonhierarchical           | 18-185 |
| ■ Hierarchical              | 18-185 |
| ■ Denial Message            | 18-185 |
| ■ Nonhierarchical           | 18-185 |

---

## Contents

|                             |        |
|-----------------------------|--------|
| ■ Hierarchical              | 18-185 |
| ■ Common                    | 18-186 |
| ■ Autonomous Message        | 18-186 |
| ■ Explanation Of Parameters | 18-186 |
| <b>TTST,TLR,TG</b>          | 18-191 |
| ■ Explanation Of Command    | 18-191 |
| ■ Command                   | 18-191 |
| ■ Completion Message        | 18-191 |
| ■ Nonhierarchical           | 18-191 |
| ■ Hierarchical              | 18-192 |
| ■ Denial Message            | 18-192 |
| ■ Autonomous Message        | 18-192 |
| ■ Explanation Of Parameters | 18-192 |
| <b>TTST,TPR,ALL,OOS</b>     | 18-196 |
| ■ Explanation Of Command    | 18-196 |
| ■ Command                   | 18-196 |
| ■ Completion Message        | 18-196 |
| ■ Denial Message            | 18-196 |
| ■ Autonomous Message        | 18-196 |
| ■ Explanation Of Parameters | 18-197 |
| <b>TTST,TPR,TP,OOS,FRC</b>  | 18-198 |
| ■ Explanation Of Command    | 18-198 |
| ■ Command                   | 18-198 |
| ■ Completion Message        | 18-198 |
| ■ Nonhierarchical           | 18-198 |
| ■ Hierarchical              | 18-199 |
| ■ Denial Message            | 18-199 |
| ■ Nonhierarchical           | 18-199 |
| ■ Hierarchical              | 18-199 |
| ■ Common                    | 18-199 |
| ■ Autonomous Message        | 18-199 |
| ■ Nonhierarchical           | 18-199 |
| ■ Hierarchical              | 18-200 |
| ■ Common                    | 18-200 |
| ■ Explanation Of Parameters | 18-200 |

---

## **TCNT — TTST**

---

## **TCNT — TTST**

---

This section documents the commands **TCNT** through **TTST**.

---

## TCNT, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL

TWO-WAY CROSS-CONNECT TERMINATE,  
FROM, TO, MULTIPOINT MODE

### Explanation Of Command

This message requests the two-way terminated cross-connection of a leg to a multipoint circuit. The circuit will be set up in the terminated state with the disconnect channel code (DCC) inserted in both directions of transmission.

**Note:** Range values apply only to the FTU end of an FTU to Virtual NPC circuit.

### Command

#### Nonhierarchical

[I.12021]

```
TCNT:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk],\
MPM(fmd,tmd)[,<tc>][,NAM][,NTR m][,RDC][,{CUS|INCL}]!
```

#### Hierarchical

[I.12021]

```
TCNT:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\
MPM(fmd,tmd)[,<tc>][,NAM][,NTR m][,RDC][,{CUS|INCL}]!
```



## **Completion Message**

---

### **Nonhierarchical**

---

[O.12021]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
2 LN MSG:  
fmd,tmd[ <tc>][ NAM][ NTR m][ NOBBL {F|T}][ CUS][ RDC] COMPL

### **Hierarchical**

---

[O.12021]

M hh:mm:ss xy,ww n[vv] TCNT uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
2 LN MSG:  
fmd,tmd[ <tc>][ NAM][ NTR m][ NOBBL {F|T}][ CUS][ RDC] COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.12021.01]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,nnn] cc <st> DNY

[O.12021.02]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,nnn] <d> <st> DNY

### **Hierarchical**

---

[O.12021.01]

M hh:mm:ss xy,ww n[vv] TCNT uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
[ mmm,nnn] cc <st> DNY

[O.12021.02]

M hh:mm:ss xy,ww n[vv] TCNT uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
[ mmm,nnn] <d> <st> DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

[s]abc - The 3- or 4-digit nonhierarchical FROM NPC number  
[t]ghi - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The list of valid values given below is limited by the equipage of the frame.

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

|           |          |              |                                 |
|-----------|----------|--------------|---------------------------------|
| Unit      | Module   | NPC          |                                 |
| <b>99</b> | <b>1</b> | <b>01-02</b> | <b>(DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06</b> | <b>(DACS II CEF frames)</b>     |

**ddd,**  
**jjj** - Channel numbers  
**eee,**  
**kkk** - Channel numbers denoting the end of a range specification

Range variables eee and kkk apply only to the FTU end of an FTU to Virtual NPC circuit; that is, they cannot apply to the Virtual NPC end. Range variables do not apply to either end of an FTU to DMB or DMB to DMB circuit.

Channel numbers

000-030      CEPT type NPCs grown as CAS  
000-031      CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Conference numbers  
001-500      (Virtual NPC)

Cross-connections may be between various Network Processing Circuit (NPC) types:

Facility Terminating Unit (IFTU/FTU)/DS3U NPC and DMB  
DMB and DMB  
IFTU/FTU/DS3U NPC and Virtual NPC  
**MPM**      - Multipoint mode  
**fmd**      - Multipoint mode of FROM end of the circuit  
**tmd**      - Multipoint mode of TO end of the circuit  
The direction of data flow is indicated by MPM (fmd,tmd)

For DMB circuits, there are four possible values for fmd and tmd:

| <b>fmd</b> | <b>tmd</b> | <i>Explanation</i>                                                                          |
|------------|------------|---------------------------------------------------------------------------------------------|
| SYM        |            | For legs of a symmetrical multipoint circuit (must be a DMB channel)                        |
| BRD        |            | For nonbackbone (tributary) legs of a broadcast multipoint circuit (must be a DMB channel)  |
| BBL        |            | For the backbone leg of a broadcast multipoint circuit (must be a DMB channel)              |
| LEG        |            | For the end that does not terminate on the multipoint circuit (must be an FTU/DS3U channel) |

For virtual NPC circuits, there are three possible values for fmd and tmd:

| <b>fmd</b> |                                                                                           |
|------------|-------------------------------------------------------------------------------------------|
| <b>tmd</b> | <i>Explanation</i>                                                                        |
| BRD        | For nonbackbone legs of a broadcast multipoint circuit (must be a virtual NPC channel)    |
| BBL        | For the backbone leg of a broadcast multipoint circuit (must be a virtual NPC channel)    |
| LEG        | For the end that does not terminate on the multipoint circuit (must be FTU/DS3U channels) |

The possible combinations are:

For within a DMB or virtual conference:

LEG,BBL  
LEG,BRD  
SYM,LEG (only for DMB)

For concatenation of conferences:

BRD,BBL  
BBL,BBL  
SYM,SYM

**Note:** To avoid possible transmission delays in the conferencers, DACS II will not allow DMB broadcast conferences to be concatenated more than six deep. However, each concatenated conference will support the maximum allowable number of legs. This allows conferences to branch out at any point in the daisy chain, as long as each branch does not concatenate more than six conferences from the backbone leg.

**Note:** Default values for noise guard (NG) and echo suppression (ES) are applied to symmetrical bridges (multipoint mode SYM) and polling circuits (multipoint mode BBL,BRD). These default values are:

|                     |            |            |
|---------------------|------------|------------|
| Symmetrical bridges | NG = -18db | ES = -18db |
| Polling circuits    | NG = 0db   | ES = 0db   |

**tc** - Trunk conditioning, which has the input form

**TRSP, {IW X'pq|TRB|MUX}**

Represents the desired cross-connected signaling and insertion word applied when a failure occurs. A trunk conditioning specification consists of a combination of a signaling specification followed by an insertion word specification. The TRSP (transparent) signaling specification is the only one allowed.

The following signaling options are allowed:

| <i>signaling</i> | <i>Explanation</i>        |
|------------------|---------------------------|
| TRSP             | Transparent, no signaling |

The following insertion word options are allowed:

| <i>IW</i> | <i>Explanation</i>                                                                                                                       |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq   | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line. |
| TRB       | Standard trouble code, equal to IW X'E4, not valid for CEPT.                                                                             |
| MUX       | MUX out of sync code, equal to IW X'1A, not valid for CEPT.                                                                              |
| Omitted   | Only valid for CEPT, will default to IW-X-FF.                                                                                            |

All leg connections to multipoint circuits using a DMB NPC or a Virtual NPC must use TRSP signaling. The insertion word portion is user specified as noted above and may be varied from leg to leg.

For all multipoint to multipoint conference cross-connections (DMB concatenated conferences) the only allowable trunk conditioning specification is TRSP, and need not be specified, as it is the default. An insertion word is not valid for concatenated conferences.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**NTR** - No transmit

**m** - Direction in which transmission is shut off

| <i>m</i> | <i>Explanation</i> |
|----------|--------------------|
| F        | FROM               |
| T        | TO                 |

To set up one-way connections; that is, to shut off transmission towards a FROM or TO termination, use NTR and specify the direction in variable m. If NTR m is specified on the BBL (backbone leg) of a multipoint circuit, then the broadcast (BRD) legs of this circuit have their outward transmission turned off.

NTR m is optional if the virtual NPC is part of the circuit.

**NOBBL** - No backbone leg

If the type of circuit was a broadcast circuit, NOBBL indicates that no backbone leg is yet specified in either the FROM or TO direction. This argument will appear until a backbone leg is specified for this circuit.

*m*      *Explanation*

**F**      - From

**T**      - To

**CUS** - Customer

Customer-controlled circuit

The optional CUS keyword is used to flag a circuit as a customer controlled circuit. On output it indicates that the circuit is customer controlled.

All legs on a multipoint customer controlled circuit must be designated as CUS.

**RDC** - Red circuit

On input the optional RDC keyword is used to mark a circuit as a Red Circuit. On output it indicates that the circuit is a Red Circuit.

All legs on a multipoint Red Circuit must be designated RDC.

**INCL** - Inclusive

A termination designated as CUS or RDC cannot be disconnected or modified without using the INCL keyword in the message. Also, an NPC which supports these circuits cannot be manually removed unless the INCL keyword is given in the remove message.

A disconnected termination previously marked CUS remains a customer controlled termination. The INCL keyword must be used to reconnect this termination to other terminations. However, if they are reconnected without the CUS keyword, they lose their customer controlled status.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Multi-Point:*

**E1 to E1** Multi-point cross-connects have A-law to  $\mu$ -law and  $\mu$ -law to A-law set as a default. This conversion is performed on pure E1 multi-point connections in case a DS1 leg is ever added to the broadcast connection. The **NAM** keyword is used to disable the conversions. It may be desirable to disable conversions in a pure E1 multi-point cross-connect since such a connection has more quantization noise than a pure E1 two-point cross-connect. This is due to the back to back A-law to  $\mu$ -law and  $\mu$ -law to A-law conversions which are taking place.

**E1 to DS1 or DS1 to E1** Same explanation as E1 to E1.

**DS1 to DS1** Not applicable.

**mmm** - FROM channel number involved in the denial (ddd through eee)

**nnn** - TO channel number involved in the denial (jjj through kkk)

**st** - Status of denial

**d** - Direction

**d** *Explanation*

**B** Both

**F** FROM

**T** TO

**cc** - Hexadecimal condition code

**cc st** *Explanation*

**06 INERR** Invalid range for specified FROM NPC type

**07 INERR** Invalid range for specified TO NPC type

**08 INERR** Invalid FROM NPC type for AIS insertion

**09 INERR** Invalid TO NPC type for AIS insertion

**12 MCOND** Active CCN side not IS or failed or pested or hardware OOS

**13 MCOND** UNIT not equipped, not in service, or failed



| <b>cc</b> | <b>st</b>      | <i>Explanation</i>                                                    |
|-----------|----------------|-----------------------------------------------------------------------|
| <b>14</b> | <b>MCOND</b>   | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b>   | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b>   | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b>   | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>18</b> | <b>MCOND</b>   | DSPI not equipped, not in service, or failed                          |
| <b>20</b> | <b>MCOND</b>   | Line format types are incompatible                                    |
| <b>21</b> | <b>MCOND</b>   | Trunk conditioning is invalid                                         |
| <b>22</b> | <b>MCOND</b>   | FMC cannot be cross-connected in this format                          |
| <b>50</b> | <b>INERR</b>   | Trunk conditioning doesn't match that of conference                   |
| <b>51</b> | <b>INERR</b>   | CUS flag doesn't match that of conference                             |
| <b>52</b> | <b>INERR</b>   | RDC flag doesn't match that of conference                             |
| <b>70</b> | <b>CONFERR</b> | Try to add a BBL to VC, but the VC already has backbone               |
| <b>78</b> | <b>CONFERR</b> | Try to operate a ONE-WAY conference with a TWO-WAY input command      |
| <b>80</b> | <b>CONFERR</b> | Database conference width does not match the range in input command   |
| <b>83</b> | <b>INERR</b>   | Invalid input BBL in terminated TWOWAY/ONEWAY command                 |
| <b>84</b> | <b>CONFERR</b> | Trying to add or delete a leg when a conference is under test         |
| <b>85</b> | <b>CONFERR</b> | Input BRD (BBL) has same NPC and channel as BBL (BRD)                 |
| <b>A0</b> | <b>INERR</b>   | Illegal LEG LEG combination                                           |
| <b>A1</b> | <b>INERR</b>   | Illegal BBL BBL combination                                           |
| <b>A2</b> | <b>INERR</b>   | Illegal BRD BRD combination                                           |
| <b>A3</b> | <b>INERR</b>   | Illegal SYM BRD combination                                           |
| <b>A4</b> | <b>INERR</b>   | Illegal BRD SYM combination                                           |
| <b>A5</b> | <b>INERR</b>   | Illegal BBL SYM combination                                           |
| <b>A6</b> | <b>INERR</b>   | Illegal SYM BBL combination                                           |
| <b>A7</b> | <b>INERR</b>   | LEG mode was assigned to a DSPU-type NPC on the input                 |
| <b>A8</b> | <b>INERR</b>   | A DMB mode was assigned to a FTU-type NPC on the input                |
| <b>A9</b> | <b>INERR</b>   | Trying to add a BBL to a DMB conference that already has one          |
| <b>AA</b> | <b>INERR</b>   | Trying to add a broadcast leg to a conference set up as SYM           |
| <b>AB</b> | <b>INERR</b>   | Trying to add a SYM leg to conference set up as broadcast             |
| <b>AC</b> | <b>INERR</b>   | Trying to add a BBL leg to a conference set up as SYM                 |
| <b>B0</b> | <b>INERR</b>   | Bad use of INCL, cannot override the current state of the conference  |
| <b>B1</b> | <b>INERR</b>   | Bad use of INCL, cannot use keyword on conf.-to-conf. connection      |
| <b>B5</b> | <b>INERR</b>   | CPR circuit pack specified in the command                             |
| <b>D6</b> | <b>INERR</b>   | Invalid FROM channel number                                           |
| <b>D7</b> | <b>INERR</b>   | Invalid TO channel number                                             |
| <b>D9</b> | <b>INERR</b>   | Invalid FROM channel number range                                     |
| <b>DA</b> | <b>INERR</b>   | Invalid TO channel number range                                       |
| <b>DC</b> | <b>INERR</b>   | A loopback is active on the FROM termination                          |

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                          |
|-----------|--------------|-------------------------------------------------------------|
| <b>DD</b> | <b>INERR</b> | A loopback is active on the TO termination                  |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                     |
| <b>E1</b> | <b>INERR</b> | A locally switched channel is specified as BBL, LEG, or BRD |
| <b>E8</b> | <b>INERR</b> | SC invalid for cross-connection specified                   |
| <b>E9</b> | <b>INERR</b> | MUX or TRB invalid for cross-connection specified           |
| <b>EA</b> | <b>INERR</b> | AIS invalid for cross-connection specified                  |
| <b>EB</b> | <b>INERR</b> | NAM invalid for cross-connection specified                  |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified              |
| <b>ED</b> | <b>INERR</b> | Invalid channel 031 cross-connection specified              |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                   |

| <b>st</b>     | <b>d</b>       | <i>Explanation</i>                         |
|---------------|----------------|--------------------------------------------|
| <b>ASGN</b>   | <b>{F T B}</b> | Termination assigned                       |
| <b>CUS</b>    | <b>{F T B}</b> | Customer-controlled Circuit                |
| <b>FAIL</b>   | <b>{F T B}</b> | Failed                                     |
| <b>NOCHAN</b> | <b>{F T B}</b> | Conference has no more channels to connect |
| <b>NOCUS</b>  | <b>{F T B}</b> | Conference not CUS                         |
| <b>NORDC</b>  | <b>{F T B}</b> | Conference not RDC                         |
| <b>OOS</b>    | <b>{F T B}</b> | Out-of-service                             |
| <b>RDC</b>    | <b>{F T B}</b> | Red Circuit                                |
| <b>TG</b>     | <b>{F T B}</b> |                                            |
| <b>TP</b>     | <b>{F T B}</b> | NPC is used for test access                |
| <b>UEQD</b>   | <b>{F T B}</b> | Unequipped                                 |
| <b>UTST</b>   | <b>{F T B}</b> | Under Test                                 |

## **TCNT, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT**

### **TWO-WAY CROSS-CONNECTION TERMINATED**

#### **Explanation Of Command**

This command requests a set of terminated cross-connections over a range of specified From-direction and To-direction terminations.

If the user wants to cross-connect Nx64 kbits/s circuits, then the range feature of this command should be used.

The circuit will be formed in the terminated state with the disconnect code (DCC) inserted in both directions of transmission.

#### **Command**

##### **Nonhierarchical**

[I.12001]

```
TCNT:[FRM xy,SEQ ww]:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\
[,<tc>][,<sc>][NAM][,{CUS|INCL}][,RDC][,PRIOUT]!
```

##### **Hierarchical**

[I.12001]

```
TCNT:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\
[,<tc>][,<sc>][NAM][,{CUS|INCL}][,RDC][,PRIOUT]!
```

## **Completion Message**

---

### **Nonhierarchical**

---

[O.12001]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ <tc>][ <sc>][ NAM][ CUS][ RDC][ PRIOUT] COMPL

[O.12002]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd[-eee],[t]ghijjj[-kkk] 2 LN MSG:  
[<tc> ][<sc> ][NAM ][CUS ][RDC ][PRIOUT ]COMPL

### **Hierarchical**

---

[O.12001]

M hh:mm:ss xy,ww n[vv] TCNT uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ <tc>][ <sc>][ NAM][ CUS][ RDC][ PRIOUT] COMPL

[O.12002]

M hh:mm:ss xy,ww n[vv] TCNT uvmnpddd[-eee],wxkqrjjj[-kkk] 2 LN MSG:  
[<tc> ][<sc> ][ NAM][CUS ][RDC ][PRIOUT ]COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.12001.01]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.12001.02]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

## Hierarchical

[O.12001.01]

**M** hh:mm:ss xy,ww n[vv] TCNT uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.12001.02]

**M** hh:mm:ss xy,ww n[vv] TCNT uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**FROM** - From

[s]abcddd

- Nonhierarchical termination in to direction

[s]abc - The 3- or 4-digit NPC number  
ddd - Channel number, beginning of range

**TO** - To

[s]ghijjj

- Nonhierarchical termination in from direction

[s]ghi - NPC number  
jjj - Channel number, beginning of range  
The values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnpddd**

- Hierarchical termination in from direction

**wxkqrjjj**

- Hierarchical termination in to direction

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

**ddd, jjj**

- Channel number, beginning of range

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**eee, kkk**

- Channel numbers for end of channel range

To connect a range of channels, use the optional fields **eee** and **kkk**.

|         |                             |
|---------|-----------------------------|
| 000-030 | CEPT type NPCs grown as CAS |
| 000-031 | CEPT type NPCs grown as NSA |

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

The following channels are not allowed in a channel range:

- Channel 000
- CAS (channel associated signaling) channel 031 (S16 of a CEPT type NPC)

**tc** - Trunk conditioning

Defines the cross-connected signaling and insertion word applied to the circuit during a failure condition. The signaling and insertion word are separately specified, using a comma as the delimiter using the form:

<tc\_sig>, <tc\_iw>

where: tc\_sig is the **signaling** portion of trunk conditioning and  
tc\_iw is the **insertion word** portion of trunk conditioning.

Valid values for two-way cross-connects are:

*4-state signaling*

**TC(ijkl, mnop), IW X'nn**

*16-state signaling*

**TC(efghijkl, mnopqrst), IW X'nn**  
**TC(X'uv, X'yz), IW X'nn**

*Transparent signaling*

**TRSP, IW X'nn**  
**TRSP**

**Note:** 4-state signaling will be expanded to 16-state by duplicating the bits.

**Note:** If <tc> is omitted and both terminations are Channel Associated Signaling (CAS) types, it will default to 16-state signaling with all ones and an insertion word of all ones.

Example:

**TC(X'FF, X'FF), IW X'FF**

**Note:** If <tc> is omitted, and one or both terminations are Non-Signaling Associated (NSA) types, it will default to transparent signaling with no insertion word.

Example:

**TRSP**

**ijkl** - 4-state binary signaling value - From direction

**mnop** - 4-state binary signaling value - To direction

**efghijkl**

- 16-state binary signaling value - From direction

**mnopqrst**

- 16-state binary signaling value - To direction

**uv** - 16-state hexadecimal signaling value - From direction

**yz** - 16-state hexadecimal signaling value - To direction

**nn** - Hexadecimal Insertion Word



**TRSP** - Transparent

Outgoing signaling will be fixed at **1101** (hex **D**) in slot 16 for Channel Associated Signaling (CAS) primaries. **TRSP** is the only allowable option for Non-Signaling Associated (NSA) primaries.

**Note:** When the provisioning insertion word (PIW) is assigned in the **GRTH: :NPC** command, a four-bit pattern is inserted into the associated portion of time slot 16 for CAS circuits when the circuit is disconnected.

Additional rules apply for 2.048 Mbit/s termination cross-connects.

The allowable signaling type and signaling consequent action are shown in the following table.

**Table 18-1. Allowable Signaling Type and Signaling Consequent Action**

| Primary Type<br>in<br>Cross-connect | Allowable<br><tc><br>Signaling<br>Specification | Resulting<br>Signaling<br>Code<br><br>FROM, TO    | Resulting<br>Signaling<br>Consequent<br>Action<br>(Hardware)<br>FROM, TO | Resulting<br>Signaling<br>Consequent<br>Action<br>(Firmware)<br>FROM, TO | Resulting<br>Disconnect<br>(When DCC used<br>in disconnect<br>command) |
|-------------------------------------|-------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------|
| CAS ↔ CAS                           | <b>TRSP</b>                                     | Fixed at <b>X'D</b>                               | Fixed at <b>X'D</b>                                                      | Fixed at <b>X'D</b>                                                      | <b>X'D</b>                                                             |
|                                     | <b>TC-X'uv, X'yz*</b>                           | CAS<br>(Passed Through)                           | <b>X'F</b>                                                               | <b>X'uv, X'yz</b>                                                        | <b>X'v, X'z</b>                                                        |
|                                     | Omitted                                         | CAS<br>(Passed Through)                           | <b>X'F</b>                                                               | <b>X'F</b>                                                               | <b>X'F</b>                                                             |
| NSA ↔ CAS                           | <b>TRSP/Omitted</b>                             | None (Fixed at<br><b>X'D</b> in CAS<br>direction) | Fixed at<br><b>X'D</b> in CAS<br>direction                               | Fixed at<br><b>X'D</b> in CAS<br>direction                               | <b>X'D</b> in CAS<br>direction                                         |
| NSA ↔ NSA                           | <b>TRSP/Omitted</b>                             | Not appl.                                         | Not appl.                                                                | Not appl.                                                                | Not appl.                                                              |

\* For TCON and TCNT TC is X'uv, X'yz.  
For OCON, OCNT and BCON TC is --, X'yz.

The allowable cross-connected time slot consequent action are shown in the following table.

**Table 18-2. Allowable Cross-Connected Time Slot Consequent Action**

| Allowable <tc><br>Insertion<br>Word | Resulting Cross-Connected<br>Time Slot Consequent Action<br>FROM, TO | Resulting Disconnect<br>Code (When DCC used<br>in disconnect command) |
|-------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------|
| Omitted                             | X'FF, X'FF                                                           | X'FF                                                                  |
| IW X'pq *                           | X'FF, X'FF                                                           | X'pq                                                                  |

\* Only used as a means of providing per time slot DCC codes. If the DCC code is not used when issuing the disconnect command, then the insertion word at the time the NPC was grown is used. This growth insertion word defaults to hex "D5" if not explicitly specified at growth time.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**sc** - Signaling control

This variable represents the optional signaling bit control specification and is used only in the Channel Associated Signaling (CAS) to CAS application with CAS signaling.

If this option is not used, all four cross-connected time slot 16 (**abcd**) signaling bits in each direction will be cross-connected unchanged.

Signaling control is specified as follows:

**SC(abcd, efgh)**

**abcd** - Time slot 16 signalling bits, From direction

**efgh** - Time slot 16 signalling bits, To direction

All 8 bits can be controlled independently. Control is applied by replacing each character in variable **abcd** or **efgh** with the appropriate control character.

The allowable control characters are:

*Bit*

*Setting Explanation*

**P** Pass through unchanged

**V** Pass through inverted

**0** Set output to 0

**1** Set output to 1

The effect of the **V** control character depends upon whether the connection is international or gateway.

International: Inversion takes place on both the From and To-direction sides. The net effect is to cancel out the inversion. Hence it will appear that no inversion took place.

Gateway: Inversion takes place only on the international side of the connection. The effect is an inversion.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Two-Point:*

- E1 to DS1      Gateway cross-connects have A-law to  $\mu$ -law and  $\mu$ -law to A-law conversion set as a default. The **NAM** keyword is used to disable the conversions.
- E1 to E1      Default, the **NAM** keyword may be used but there is no need to specify **NAM** explicitly since A-law to  $\mu$ -law and  $\mu$ -law to A-law conversion is not needed, and therefore not performed, for a pure E1 cross-connect.
- DS1 to DS1    Not applicable.

**CUS** - Customer

This optional keyword is used to flag a circuit as a customer controlled circuit. On output it indicates that the circuit is customer controlled.

**RDC** - Red circuit

This optional keyword is used to mark a circuit as a Red Circuit. On output it indicates that the circuit is a Red Circuit.

**INCL** - Inclusive

A termination designated as a customer controlled circuit or a red circuit cannot be disconnected or modified without using this keyword in the message. Also, an NPC which supports these circuits cannot be manually removed unless this keyword is given in the remove command.

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**mmm** - The From-direction channel number involved in denial (**ddd** through **eee**).

**nnn** - The To-direction channel number involved in denial (**jjj** through **kkk**).

**d** - Direction

|          |                    |
|----------|--------------------|
| <b>d</b> | <i>Explanation</i> |
| <b>F</b> | FROM               |
| <b>T</b> | TO                 |
| <b>B</b> | Both               |

**st** - Status of denial

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>06</b> | <b>INERR</b> | Invalid range for specified FROM NPC type                             |
| <b>07</b> | <b>INERR</b> | Invalid range for specified TO NPC type                               |
| <b>08</b> | <b>INERR</b> | Invalid FROM NPC type for AIS insertion                               |
| <b>09</b> | <b>INERR</b> | Invalid TO NPC type for AIS insertion                                 |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>20</b> | <b>MCOND</b> | Line format types are incompatible                                    |
| <b>21</b> | <b>MCOND</b> | Trunk conditioning is invalid                                         |
| <b>22</b> | <b>MCOND</b> | FMC cannot be cross-connected in this format                          |
| <b>D6</b> | <b>INERR</b> | Invalid FROM channel number                                           |
| <b>D7</b> | <b>INERR</b> | Invalid TO channel number                                             |
| <b>D9</b> | <b>INERR</b> | Invalid FROM channel number range                                     |
| <b>DA</b> | <b>INERR</b> | Invalid TO channel number range                                       |
| <b>DC</b> | <b>INERR</b> | A loopback is active on the FROM termination                          |
| <b>DD</b> | <b>INERR</b> | A loopback is active on the TO termination                            |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                               |
| <b>E8</b> | <b>INERR</b> | SC invalid for cross-connection specified                             |
| <b>E9</b> | <b>INERR</b> | MUX or TRB invalid for cross-connection specified                     |
| <b>EA</b> | <b>INERR</b> | AIS invalid for cross-connection specified                            |
| <b>EB</b> | <b>INERR</b> | NAM invalid for cross-connection specified                            |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                        |
| <b>ED</b> | <b>INERR</b> | Invalid channel 031 cross-connection specified                        |
| <b>EE</b> | <b>INERR</b> | Trunk type is not allowed in the circuit specified                    |
| <b>40</b> | <b>MCOND</b> | Not enough DSPPs are equipped                                         |
| <b>41</b> | <b>MCOND</b> | Not enough DSPPs are in service                                       |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |

| st   | d       | Explanation                  |
|------|---------|------------------------------|
| ASGN | {F T B} | Termination assigned         |
| CUS  | {F T B} | Customer-controlled Circuit  |
| FAIL | {F T B} | Failed                       |
| OOS  | {F T B} | Out-of-service               |
| RDC  | {F T B} | Red Circuit                  |
| TG   | {F T B} | NPC is grown as a test group |
| TP   | {F T B} | NPC is used for test access  |
| UEQD | {F T B} | Unequipped                   |
| UTST | {F T B} | Under Test                   |

## **TCNT, FROM, TO, PFW, NFW**

### **TWO WAY CROSS-CONNECTION TERMINATE**

#### **Explanation Of Command**

This command requests the terminated connection of timeslot 0 (TS0) of one NPC to a timeslot other than TS0 (non-TS0) on another NPC. A cross-connect mode must be chosen to prevent the TS0 Frame Alignment Signal from being transmitted in a non-TS0 timeslot.

#### **Command**

##### **Nonhierarchical**

[I.12051]

```
TCNT:FRM xy,SEQ ww:FROM [s]abcddd,TO [t]ghijjj\
[, {PFW(abcdefg,ijklmno)|NFW}]!
```

##### **Hierarchical**

[I.12051]

```
TCNT:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj\
[, {PFW(abcdefg,ijklmno)|NFW}]!
```

## **Completion Message**

---

### **Nonhierarchical**

---

[O.12051]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd,[t]ghijjj \ {PFW(abcdefg,ijklmno)|NFW} COMPL

### **Hierarchical**

---

M hh:mm:ss xy,ww n[vv] TCNT uvmnpddd,wxkqrjjj \ {PFW(abcdefg,ijklmno)|NFW} COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.12051.01]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd,[t]ghijjj\ [ {PFW(abcdefg,ijklmno)|NFW}] cc <st> DNY

[O.12051.02]

M hh:mm:ss xy,ww n[vv] TCNT [s]abcddd,[t]ghijjj\ [ {PFW(abcdefg,ijklmno)|NFW}] d <st> DNY

### **Hierarchical**

---

[O.12051.01]

M hh:mm:ss xy,ww n[vv] TCNT uvmnpddd,wxkqrjjj\ [ {PFW(abcdefg,ijklmno)|NFW}] cc <st> DNY

[O.12051.02]

M hh:mm:ss xy,ww n[vv] TCNT uvmnpddd,wxkqrjjj\ [ {PFW(abcdefg,ijklmno)|NFW}] d <st> DNY

## **Autonomous Message**

---

Not applicable.



## Explanation Of Parameters

**FRM** - Frame

**FROM** - From

**TO** - To

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number

**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - Channel number for FROM NPC

**jjj** - Channel number for TO NPC

000-030 on CEPT type NPCs grown as CAS

000-031 on CEPT type NPCs grown as NSA

**Note:** One of the channel numbers specified (ddd or jjj) must be channel 000 (TS0), while the other channel number (jjj or ddd) must be a number other than channel 000 (non-TS0).

The NPC containing the TS0 channel must be a PA or TH type NPC, while the NPC containing the non-TS0 channel can be either a PA, PB, PC or TH type NPC.

Channel 000 is not allowed in a range of channels.

**PFW** - Pseudo Frame Word

The PFW parameter is used to select Mode 1 of TS0 Cross-Connect:  
In both directions of transmission the Frame Word is replaced  
by a Pseudo Frame Word.

**abcdefg**

- Value of the Pseudo Frame Word

This value replaces the Frame Alignment Signal (Bits 2 - 8) of the Frame  
Word being transmitted from the TO NPC to the FROM NPC.

The characters in the field represent the following bits:

|          |                           |
|----------|---------------------------|
| <b>a</b> | - Pseudo Frame Word Bit 2 |
| <b>b</b> | - Pseudo Frame Word Bit 3 |
| <b>c</b> | - Pseudo Frame Word Bit 4 |
| <b>d</b> | - Pseudo Frame Word Bit 5 |
| <b>e</b> | - Pseudo Frame Word Bit 6 |
| <b>f</b> | - Pseudo Frame Word Bit 7 |
| <b>g</b> | - Pseudo Frame Word Bit 8 |

Values for bits a - g:

|     |                                     |
|-----|-------------------------------------|
| "0" | - Sets the corresponding bit to "0" |
| "1" | - Sets the corresponding bit to "1" |

**ijklmno**

- Value of the Pseudo Frame Word

This value replaces the Frame Alignment Signal (Bits 2 - 8) of the Frame  
Word being transmitted from the FROM NPC to the TO NPC.

The characters in the field represent the following bits:

|          |                           |
|----------|---------------------------|
| <b>i</b> | - Pseudo Frame Word Bit 2 |
| <b>j</b> | - Pseudo Frame Word Bit 3 |
| <b>k</b> | - Pseudo Frame Word Bit 4 |
| <b>l</b> | - Pseudo Frame Word Bit 5 |
| <b>m</b> | - Pseudo Frame Word Bit 6 |
| <b>n</b> | - Pseudo Frame Word Bit 7 |
| <b>o</b> | - Pseudo Frame Word Bit 8 |

Values for bits i - o:

|     |                                     |
|-----|-------------------------------------|
| "0" | - Sets the corresponding bit to "0" |
| "1" | - Sets the corresponding bit to "1" |

**Note:** Bit 2 of timeslot 0 in a 2Mbit/s signal is used to distinguish the Frame Word from the Non Frame Word and it must always be '0' in the FW and '1' in the NFW. When defining the Pseudo Frame Word the user must make sure that the Pseudo Frame Word can be distinguished from the Non Frame Word.

**NFW** - Non frame word

The NFW parameter is used to select Mode 2 of TS0 Cross-Connect. In both directions of transmission the Frame Word is replaced by the Non Frame Word, thus repeating the content of the Non Frame Word in consecutive frames.

If no mode is selected in the command, the default shall be NFW, that is, the default mode of operation is Mode 2.

**d** - Direction

| <b>d</b> | <i>Explanation</i> |
|----------|--------------------|
| F        | From               |
| T        | To                 |
| B        | Both               |

**st** - Status

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>06</b> | <b>INERR</b> | Invalid range for specified FROM NPC type                             |
| <b>07</b> | <b>INERR</b> | Invalid range for specified TO NPC type                               |
| <b>08</b> | <b>INERR</b> | Invalid FROM NPC type for AIS insertion                               |
| <b>09</b> | <b>INERR</b> | Invalid TO NPC type for AIS insertion                                 |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>20</b> | <b>MCOND</b> | Line format types are incompatible                                    |
| <b>21</b> | <b>MCOND</b> | Trunk conditioning is invalid                                         |
| <b>E8</b> | <b>INERR</b> | SC invalid for cross-connection specified                             |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                        |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |
| <b>3A</b> | <b>SCERR</b> | Invalid FPI value                                                     |

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                   |
|-----------|--------------|------------------------------------------------------|
| <b>8A</b> | <b>INERR</b> | Mismatch between channel 0 crossconnect and keywords |

## **TCNT, FROM, TO, RDC, CUS, INCL, PRIOUT**

### **TERMINATED TWO-WAY CROSS CONNECT**

#### **Explanation Of Command**

This message terminates two-way cross connections of non-channelized network processing circuits. The alarm-indication signal (AIS) is the idle code and does not need to be entered. Trunk condition options for 64 kbit/s cross connection are not allowed for non-channelized connections.

When a failure occurs or during an alarm state, the AIS is transmitted toward the TO NPC.

#### **Command**

##### **Nonhierarchical**

[I.12031]

TCNT:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC][,{CUS|INCL}][,PRIOUT]!

##### **Hierarchical**

[I.12031]

TCNT:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}][,PRIOUT]!

#### **Completion Message**

##### **Nonhierarchical**

[O.12031]

M hh:mm:ss xy,ww n[vv] TCNT [s]abc,[t]ghi[ RDC][ CUS][ PRIOUT] COMPL

### **Hierarchical**

---

[O.12031]

M hh:mm:ss xy,ww n[vv] TCNT uvmnp,wxkqr[ RDC][ CUS][ PRIOUT] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.12031.01]

M hh:mm:ss xy,ww n[vv] TCNT [s]abc,[t]ghi cc <st> DNY

[O.12031.02]

M hh:mm:ss xy,ww n[vv] TCNT [s]abc,[t]ghi d <st> DNY

### **Hierarchical**

---

[O.12031.01]

M hh:mm:ss xy,ww n[vv] TCNT uvmnp,wxkqr cc <st> DNY

[O.12031.02]

M hh:mm:ss xy,ww n[vv] TCNT uvmnp,wxkqr d <st> DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

[s]abc - The 3- or 4-digit non-hierarchical non-channelized FROM NPC number

[t]ghi - The 3- or 4-digit non-hierarchical non-channelized TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |



| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical non-channelized FROM NPC number

**wxkqr** - Hierarchical non-channelized TO NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The valid values are listed below:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**RDC** - Red circuit

**CUS** - Customer  
Customer-controlled circuit

**INCL** - Inclusive  
This option will remove CUS marking

**PRIOUT** - Priority Output  
This keyword is used on the command line to prioritize  
the output response.

**st** - Status of denial

**d** - Direction

| <b>d</b> | <b>FIExplanation</b> |
|----------|----------------------|
| F        | From                 |
| T        | To                   |
| B        | Both                 |

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |

| <b>st</b>    | <b>d</b>       | <i>Explanation</i>          |
|--------------|----------------|-----------------------------|
| <b>ASGN</b>  | <b>{F T B}</b> | Termination assigned        |
| <b>CUS</b>   | <b>{F T B}</b> | Customer-controlled Circuit |
| <b>FAIL</b>  | <b>{F T B}</b> | Failed                      |
| <b>INVLD</b> | <b>{F T B}</b> | Invalid NPC type            |
| <b>NPCTA</b> | <b>{F T B}</b> | NPC used for Test Access    |
| <b>OOS</b>   | <b>{F T B}</b> | Out-of-service              |
| <b>UEQD</b>  | <b>{F T B}</b> | Unequipped                  |
| <b>UTST</b>  | <b>{F T B}</b> | Under Test                  |

## **TCON, FROM, CB, CUS, RDC, INCL**

### **TWO-WAY C-BIT CROSS-CONNECTS**

#### **Explanation Of Command**

This message establishes a cross-connection between signaling timeslot 16 (channel 031) of the PB- or PC-type NPC provisioned for channel associated signaling and the C-bit (CB) type NPC on the DSPU. The software automatically assigns the CB number and the channel number on the CB.

#### **Command**

##### **Nonhierarchical**

[I.11041]

TCON:FRM xy,SEQ ww:FROM [s]abc,CB[,CUS][,RDC][,INCL]!

##### **Hierarchical**

[I.11041]

TCON:FRM xy,SEQ ww:FROM uvmnp,CB[,CUS][,RDC][,INCL]!

#### **Completion Message**

##### **Nonhierarchical**

[O.11041]

M hh:mm:ss: xy,ww n[vv] TCON [s]abc CB[ CUS][ RDC]\  
[ INCL] COMPL

### **Hierarchical**

---

[O.11041]

M hh:mm:ss: xy,ww n[vv] TCON uvmnp,CB[ CUS][ RDC]\  
[ INCL] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.11041.01]

M hh:mm:ss: xy,ww n[vv] TCON [s]abc CB cc <st> DNY

[O.11041.02]

M hh:mm:ss: xy,ww n[vv] TCON [s]abc CB <d> <st> DNY

### **Hierarchical**

---

[O.11041.01]

M hh:mm:ss: xy,ww n[vv] TCON uvmnp CB cc <st> DNY

[O.11041.02]

M hh:mm:ss: xy,ww n[vv] TCON uvmnp CB <d> <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From

FTU NPC identifier keyword

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

Values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**CB** - C-bit

C-bit processing NPC identifier keyword

**Note:** The CB number and the channel number on the CB are automatically assigned by software.

**CUS** - Customer

Specify that this cross-connect is customer controlled

**RDC** - Red circuit

Specify that this is a red circuit

**INCL** - Inclusive

Specify that red circuits and/or customer controlled circuits are to be included. A termination designated as a CUS or a RDC cannot be disconnected or modified without using the INCL keyword in the message. An NPC which supports these circuits cannot be manually removed unless the INCL keyword is given in the remove message.

**d** - Direction

**d**      *Explanation*

F      FROM

T      TO

B      Both

**st** - Status

**cc** - Hexadecimal condition code

**cc**    **st**      *Explanation*

**03**    **INERR**    No RDC or CUS circuits and INCL keyword used

**12**    **MCOND**    Active CCN side not IS or failed or pested or hardware OOS

**13**    **MCOND**    UNIT not equipped, not in service, or failed

**14**    **MCOND**    CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15**    **MCOND**    FTMI not equipped, not in service, or failed

**16**    **MCOND**    FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17**    **MCOND**    TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**18**    **MCOND**    DSPI not equipped, not in service, or failed

**30**    **INERR**    NPC not provisioned for CAS

**B7**    **MCOND**    No DSP unit equipped

**B8**    **MCOND**    No CBTYPE NPC equipped

**B9**    **MCOND**    No CBTYPE NPC capacity remaining

**BA**    **MCOND**    Inactive side NPC out of service and inactive side in service

**F1**    **INERR**    Parameter only valid with PA, PB, or PC type NPCs

**0A**    **OOS**      All CBTYPE NPCs out of service or failed

**FF**    **ROLL**      Termination is in process of being rolled

**E0**    **MCOND**    ETSI not equipped, not in service, or failed

**2C**                    not allowed for clear 2MB

| <b>st</b>   | <b>d</b> | <i>Explanation</i>          |
|-------------|----------|-----------------------------|
| <b>ASGN</b> | <b>F</b> | Termination assigned        |
| <b>CUS</b>  | <b>F</b> | Customer-controlled Circuit |
| <b>FAIL</b> | <b>F</b> | Failed                      |
| <b>OOS</b>  | <b>F</b> | Out-of-service              |
| <b>UEQD</b> | <b>F</b> | Unequipped                  |
| <b>UTST</b> | <b>F</b> | Under Test                  |



## **TCON, FROM, TO, MPM, NAM, NTR, RDC, CUS, INCL**

### **TWO-WAY CROSS-CONNECT FROM, TO MULTIPOINT MODE**

#### **Explanation Of Command**

This command requests a multipoint two-way cross-connection between the specified FROM and TO end terminations and is used to connect a DS0 leg to a multipoint circuit, or to cross-connect a leg, consisting of a single or a contiguous range of DS0 channels, to a multipoint circuit in the virtual network processing circuit. Cross-connections may be between various network processing circuit types.

If the user wants to cross-connect Nx64 kbits/s circuits, then the range feature of this command should be used.

#### **Command**

##### **Nonhierarchical**

[I.11021]

```
TCON:FRM xy,SEQ ww:FROM [s]abcdddd[-eee],TO [t]ghijjj[-kkk],\
MPM(fmd,tmd)[,<tc>][,NAM],[NTR m][,RDC][,{CUS|INCL}]!
```

##### **Hierarchical**

[I.11021]

```
TCON:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk],\
MPM(fmd,tmd)[,<tc>][,NAM],[NTR m][,RDC][,{CUS|INCL}]!
```

---

## Completion Message

---

### Nonhierarchical

---

[O.11021]

M hh:mm:ss xy,ww n[vv] TCON [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
2 LN MSG:  
fmd,tmd[ <tc>][ NAM][ NTR m][ NOBBL {F|T}][ {CUS|INCL}][ RDC] \\  
COMPL

### Hierarchical

---

[O.11021]

M hh:mm:ss xy,ww n[vv] TCON uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
2 LN MSG:  
fmd,tmd[ <tc>][ NAM][ NTR m][ NOBBL {F|T}][ {CUS|INCL}][ RDC] \\  
COMPL

---

## Denial Message

---

### Nonhierarchical

---

[O.11021.01]

M hh:mm:ss xy,ww n[vv] TCON [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,nnn] cc <st> DNY

[O.11021.02]

M hh:mm:ss xy,ww n[vv] TCON [s]abcddd[-eee],[t]ghijjj[-kkk] \\  
[ mmm,nnn] d <st> DNY

### Hierarchical

---

[O.11021.01]

M hh:mm:ss xy,ww n[vv] TCON uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
[ mmm,nnn] cc <st> DNY

[O.11021.02]

M hh:mm:ss xy,ww n[vv] TCON uvmnpddd[-eee],wxkqrjjj[-kkk] \\  
[ mmm,nnn] d <st> DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

[s]abc - The 3- or 4-digit nonhierarchical FROM NPC number  
[t]ghi - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number

**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number

Unit Type VI (Virtual)

|           |          |              |                                 |
|-----------|----------|--------------|---------------------------------|
| Unit      | Module   | NPC          |                                 |
| <b>99</b> | <b>1</b> | <b>01-02</b> | <b>(DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06</b> | <b>(DACS II CEF frames)</b>     |

**ddd,**

**jjj** - Channel or conference numbers

**eee,**

**kkk** - Channel or conference numbers denoting the end of range specification

Channel numbers

000-030      CEPT type NPCs grown as CAS  
000-031      CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Conference numbers  
001-500      (Virtual NPC)

Cross-connections may be between various Network Processing Circuit (NPC) types:

DMB and DMB

**MPM**    - Multipoint mode

**fmd**    - FROM mode

**tmd**    - TO mode

Multipoint modes of the FROM and TO ends of the circuit

For DMB circuits, there are four possible values for fmd and tmd:

**fmd**

**tmd**

**SYM**    For legs of a symmetrical multipoint circuit (must be a DMB channel)

**BRD**    For nonbackbone (tributary) legs of a broadcast multipoint circuit (must be a DMB channel)

**BBL**    For the backbone leg of a broadcast multipoint circuit (must be a DMB channel)

**LEG**    For the end that does not terminate on the multipoint circuit (must be an FTU/DS3U/HDS3U channel)

For virtual NPC circuits, there are three possible values for fmd and tmd:

**fmd**

**tmd**

- BRD For nonbackbone legs of a broadcast multipoint circuit (must be a virtual NPC channel)
- BBL For the backbone leg of a broadcast multipoint circuit (must be a virtual NPC channel)
- LEG For the end that does not terminate on the multipoint circuit (must be FTU/DS3U/HDS3U channels)

The valid combinations of fmd and tmd are:

For within a DMB or virtual conference:

LEG, BBL or BBL, LEG  
LEG, BRD or BRD, LEG  
SYM, LEG or LEG, SYM (only for DMB)

For concatenation of conferences:

BRD, BBL or BBL, BRD  
BBL, BBL  
SYM, SYM

**Note:** Default values for noise guard (NG) and echo suppression (ES) are applied to symmetrical bridges (multipoint mode SYM) and polling circuits (multipoint mode BBL, BRD). These default values are:

|                     |            |            |
|---------------------|------------|------------|
| Symmetrical bridges | NG = -18db | ES = -18db |
| Polling circuits    | NG = 0db   | ES = 0db   |

**Note:** To avoid possible transmission delays in the conferencers, DACS II will not allow DMB broadcast conferences to be concatenated more than six deep. However, each concatenated conference will support the maximum allowable number of legs. This allows conferences to branch out at any point in the daisy chain, as long as each branch does not concatenate more than six conferences from the backbone leg.

**tc** - Trunk conditioning, which has the input form

**TRSP, {IW X'pq|TRB|MUX}**

Represents the desired cross-connected signaling and insertion word applied when a failure occurs. A trunk conditioning specification consists of a combination of a signaling specification followed by an insertion word specification. The TRSP (transparent) signaling specification is the only one allowed.

The following signaling options are allowed:

| <i>signaling</i> | <i>Explanation</i>        |
|------------------|---------------------------|
| TRSP             | Transparent, no signaling |

The following insertion word options are allowed:

| <i>IW</i> | <i>Explanation</i>                                                                                                                       |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq   | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line. |
| TRB       | Standard trouble code, equal to IW X'E4, not valid for CEPT.                                                                             |
| MUX       | MUX out of sync code, equal to IW X'1A, not valid for CEPT.                                                                              |
| Omitted   | Only valid for CEPT, will default to IW-X-FF.                                                                                            |

All leg connections to multipoint circuits using a DMB NPC or a Virtual NPC must use TRSP signaling. The insertion word is user specified and may be varied from leg to leg.

For all multipoint to multipoint conference cross-connections (DMB concatenated conferences) only TRSP signaling is allowed and is the default hence it need not be specified. The insertion word is not valid for concatenated conferences.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**NTR** - No Transmit

**m** - The direction toward which transmission is shut off

*m*      *Explanation*

F      FROM

T      TO

The NTR option is used to set up one-way connections; that is, to shut off transmission towards the specified FROM or TO termination. If NTR m is specified on the BBL (backbone leg) of a multipoint circuit, then the BRD (broadcast) legs of this circuit have their outward transmission turned off.

The NTR field is optional if the virtual NPC is part of the circuit. The direction of the data flow is indicated by the MPM (fmd,tmd) field.

**CUS** - Customer

All legs on a multipoint customer controlled circuit must be designated as CUS. A disconnected termination previously marked CUS remains as a customer controlled termination.

**INCL** - Inclusive

The INCL keyword must be used to reconnect a termination to other terminations. However, if they are reconnected without the CUS keyword, they lose their customer controlled status.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Multi-Point:*

E1 to E1      Multi-point cross-connects have A-law to  $\mu$ -law and  $\mu$ -law to A-law set as a default. This conversion is performed on pure E1 multi-point connections in case a DS1 leg is ever added to the broadcast connection. The **NAM** keyword is used to disable the conversions. It may be desirable to disable conversions in a pure E1 multi-point cross-connect since such a connection has more quantization noise than a pure E1 two-point cross-connect. This is due to the back to back A-law to  $\mu$ -law and  $\mu$ -law to A-law conversions which are taking place.

E1 to DS1 or      Same explanation as E1 to E1.  
DS1 to E1

DS1 to DS1      Not applicable.



**RDC** - Red circuit

If the optional RDC field is present, the circuit will be flagged as a Red Circuit. All legs on a multipoint red circuit must be designated RDC.

**NOBBL** - No backbone leg

If the type of circuit was a broadcast circuit, the optional NOBBL indicates that no backbone leg is yet specified in either the FROM or TO direction. This argument will appear until a backbone leg is specified for this circuit.

**F** - From

**T** - To

**mmm** - FROM channel number involved in the denial (ddd through eee)

**nnn** - TO channel number involved in the denial (jjj through kkk)

**st** - Status

**d** - Direction

*d Explanation*

F FROM

T TO

B BOTH

**cc** - Hexadecimal condition code

*cc st Explanation*

**06 INERR** Invalid range for specified FROM NPC type

**07 INERR** Invalid range for specified TO NPC type

**08 INERR** Invalid FROM NPC type for AIS insertion

**09 INERR** Invalid TO NPC type for AIS insertion

**12 MCOND** Active CCN side not IS or failed or pested or hardware OOS

**13 MCOND** UNIT not equipped, not in service, or failed

**14 MCOND** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15 MCOND** FTMI not equipped, not in service, or failed

**16 MCOND** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17 MCOND** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**18 MCOND** DSPI not equipped, not in service, or failed

**20 MCOND** Line format types are incompatible

**21 MCOND** Trunk conditioning is invalid

**22 MCOND** FMC cannot be cross-connected in this format

| <b>cc</b> | <b>st</b>      | <i>Explanation</i>                                                   |
|-----------|----------------|----------------------------------------------------------------------|
| <b>37</b> | <b>INERR</b>   | Two confs. were prev. connected or the concat. cause BRD-BBL loop    |
| <b>50</b> | <b>INERR</b>   | Trunk conditioning doesn't match that of conference                  |
| <b>51</b> | <b>INERR</b>   | CUS flag doesn't match that of conference                            |
| <b>52</b> | <b>INERR</b>   | RDC flag doesn't match that of conference                            |
| <b>70</b> | <b>CONFERR</b> | Try to add a BBL to VC, but the VC already has backbone              |
| <b>78</b> | <b>CONFERR</b> | Try to operate a ONE-WAY conference with a TWO-WAY input command     |
| <b>80</b> | <b>CONFERR</b> | Database conference width does not match the range in input command  |
| <b>84</b> | <b>CONFERR</b> | Trying to add or delete a leg when a conference is under test        |
| <b>85</b> | <b>CONFERR</b> | Input BRD (BBL) has same NPC and channel as BBL (BRD)                |
| <b>A1</b> | <b>INERR</b>   | Illegal BBL BBL combination                                          |
| <b>A2</b> | <b>INERR</b>   | Illegal BRD BRD combination                                          |
| <b>A3</b> | <b>INERR</b>   | Illegal SYM BRD combination                                          |
| <b>A4</b> | <b>INERR</b>   | Illegal BRD SYM combination                                          |
| <b>A5</b> | <b>INERR</b>   | Illegal BBL SYM combination                                          |
| <b>A6</b> | <b>INERR</b>   | Illegal SYM BBL combination                                          |
| <b>A7</b> | <b>INERR</b>   | LEG mode was assigned to a DSPU-type NPC on the input                |
| <b>A8</b> | <b>INERR</b>   | A DMB mode was assigned to a FTU-type NPC on the input               |
| <b>A9</b> | <b>INERR</b>   | Trying to add a BBL to a DMB conference that already has one         |
| <b>AA</b> | <b>INERR</b>   | Trying to add a broadcast leg to a conference set up as SYM          |
| <b>AB</b> | <b>INERR</b>   | Trying to add a SYM leg to conference set up as broadcast            |
| <b>AC</b> | <b>INERR</b>   | Trying to add a BBL leg to a conference set up as SYM                |
| <b>B0</b> | <b>INERR</b>   | Bad use of INCL, cannot override the current state of the conference |
| <b>B1</b> | <b>INERR</b>   | Bad use of INCL, cannot use keyword on conf.-to-conf. connection     |
| <b>C8</b> | <b>INERR</b>   | Exceeded depth limit of 6 on broadcast conference concatenation      |
| <b>AE</b> | <b>INERR</b>   | A substrate circuit pack is specified in the command line            |
| <b>B5</b> | <b>INERR</b>   | CPR circuit pack specified in the command                            |
| <b>D6</b> | <b>INERR</b>   | Invalid FROM channel number                                          |
| <b>D7</b> | <b>INERR</b>   | Invalid TO channel number                                            |
| <b>D9</b> | <b>INERR</b>   | Invalid FROM channel number range                                    |
| <b>DA</b> | <b>INERR</b>   | Invalid TO channel number range                                      |
| <b>DC</b> | <b>INERR</b>   | A loopback is active on the FROM termination                         |
| <b>DD</b> | <b>INERR</b>   | A loopback is active on the TO termination                           |
| <b>DF</b> | <b>INERR</b>   | Unmatched channel range                                              |
| <b>E1</b> | <b>INERR</b>   | A locally switched channel is specified as BBL, LEG, or BRD          |
| <b>E8</b> | <b>INERR</b>   | SC invalid for cross-connection specified                            |
| <b>E9</b> | <b>INERR</b>   | MUX or TRB invalid for cross-connection specified                    |
| <b>EA</b> | <b>INERR</b>   | AIS invalid for cross-connection specified                           |
| <b>EB</b> | <b>INERR</b>   | NAM invalid for cross-connection specified                           |

| <b>cc</b>     | <b>st</b>      | <i>Explanation</i>                             |
|---------------|----------------|------------------------------------------------|
| <b>EC</b>     | <b>INERR</b>   | Invalid channel 000 cross-connection specified |
| <b>ED</b>     | <b>INERR</b>   | Invalid channel 031 cross-connection specified |
| <b>FF</b>     | <b>ROLL</b>    | Termination is in process of being rolled      |
| <b>st</b>     | <b>d</b>       | <i>Explanation</i>                             |
| <b>ASGN</b>   | <b>{F T B}</b> | Termination assigned                           |
| <b>CUS</b>    | <b>{F T B}</b> | Customer-controlled Circuit                    |
| <b>FAIL</b>   | <b>{F T B}</b> | Failed                                         |
| <b>NOCHAN</b> | <b>{F T B}</b> | Conference has no more channels to connect     |
| <b>NOCUS</b>  | <b>{F T B}</b> | Conference not CUS                             |
| <b>NORDC</b>  | <b>{F T B}</b> | Conference not RDC                             |
| <b>OOS</b>    | <b>{F T B}</b> | Out-of-service                                 |
| <b>RDC</b>    | <b>{F T B}</b> | Red Circuit                                    |
| <b>TG</b>     | <b>{F T B}</b> |                                                |
| <b>TP</b>     | <b>{F T B}</b> | NPC is used for test access                    |
| <b>UEQD</b>   | <b>{F T B}</b> | Unequipped                                     |
| <b>UTST</b>   | <b>{F T B}</b> | Under Test                                     |

## **TCON, FROM, TO, NAM, CUS, INCL, RDC, PRIOUT**

### **TWO-WAY CROSS-CONNECTION**

#### **Explanation Of Command**

This command requests the two-point two-way connection of two specified cross-connect circuits or a range of cross-connected circuits.

If the user wants to cross-connect Nx64 kbits/s circuits, then the range feature of this command should be used.

#### **Command**

##### **Nonhierarchical**

[|.11001]

```
TCON:[FRM xy,SEQ ww]:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\
[,<tc>][,<sc>][,NAM][,{CUS|INCL}][,RDC][,PRIOUT]!
```

##### **Hierarchical**

[|.11001]

```
TCON:[FRM xy,SEQ ww]:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\
[,<tc>][,<sc>][,NAM][,{CUS|INCL}][,RDC][,PRIOUT]!
```

## **Completion Message**

---

### **Nonhierarchical**

---

[O.11001]

M hh:mm:ss xy,ww n[vv] TCON [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ <tc>][ <sc>][ NAM][ CUS][ RDC][ PRIOUT] COMPL

[O.11002]

M hh:mm:ss xy,ww n[vv] TCON [s]abcddd[-eee],[t]ghijjj[-kkk] 2 LN MSG:  
[ <tc>][ <sc>][ NAM][ CUS][ RDC][ PRIOUT] COMPL

### **Hierarchical**

---

[O.11001]

M hh:mm:ss xy,ww n[vv] TCON uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ <tc>][ <sc>][ NAM][ CUS][ RDC][ PRIOUT] COMPL

[O.11002]

M hh:mm:ss xy,ww n[vv] TCON uvmnpddd[-eee],wxkqrjjj[-kkk] 2 LN MSG:  
[ <tc>][ <sc>][ NAM][ CUS][ RDC][ PRIOUT] COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.11001.01]

M hh:mm:ss xy,ww n[vv] TCON [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.11001.02]

M hh:mm:ss xy,ww n[vv] TCON [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] d <st> DNY

## Hierarchical

[O.11001.01]

**M** hh:mm:ss xy,ww n[vv] TCON uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.11001.02]

**M** hh:mm:ss xy,ww n[vv] TCON uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] d <st> DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**FROM** - From

[s]abcdddd

- Nonhierarchical termination in from direction

[s]abc - The 3- or 4-digit NPC number

ddd - Channel number, beginning of range

**TO** - To

[s]ghijjj

- Nonhierarchical termination in to direction

[s]ghi - The 3- or 4-digit NPC number

jjj - Channel number, beginning of range

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnpddd**

- Hierarchical termination in from direction

**wxkqrjjj**

- Hierarchical termination in to direction

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

**ddd, jjj**

- Channel number, beginning of range

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

If the channel being connected is an FDL (Facility Data Link), then **ddd** (**jjj**) is **000** and signaling type should be of type **TC(ijkl,mnop)**.

Only the FDL of a DE type NPC with ESF Format can be cross-connected.

**eee, kkk**

- Channel numbers for end of channel range

To connect a range of channels, use the optional fields **eee** and **kkk**.

|         |                             |
|---------|-----------------------------|
| 000-030 | CEPT type NPCs grown as CAS |
| 000-031 | CEPT type NPCs grown as NSA |

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Channel 000 and channel 031 (that is, TS16 of a CEPT type NPC) are not allowed in a range of channel numbers.



**tc** - Trunk conditioning

Defines the cross-connected signaling and insertion word applied to the circuit during a failure condition. The signaling and insertion word are separately specified, using a comma as the delimiter using the form:

<tc\_sig>, <tc\_iw>

where: tc\_sig is the **signaling** portion of trunk conditioning and  
tc\_iw is the **insertion word** portion of trunk conditioning.

Valid values for two-way cross-connects are:

*4-state signaling*

**TC(ijkl, mnop), IW X'nn**

*16-state signaling*

**TC(efghijkl, mnopqrst), IW X'nn**  
**TC(X'uv, X'yz), IW X'nn**

*Transparent signaling*

**TRSP, IW X'nn**  
**TRSP**

**Note:** 4-state signaling will be expanded to 16-state by duplicating the bits.

**Note:** If <tc> is omitted and both terminations are Channel Associated Signaling (CAS) types, it will default to 16-state signaling with all ones and an insertion word of all ones.

Example:

**TC(X'FF, X'FF), IW X'FF**

**Note:** If <tc> is omitted, and one or both terminations are Non-Signaling Associated (NSA) types, it will default to transparent signaling with no insertion word.

Example:

**TRSP**

**ijkl** - 4-state binary signaling value - From direction

**mnop** - 4-state binary signaling value - To direction

**efghijkl**

- 16-state binary signaling value - From direction

**mnopqrst**

- 16-state binary signaling value - To direction

**uv** - 16-state hexadecimal signaling value - From direction

**yz** - 16-state hexadecimal signaling value - To direction

**nn** - Hexadecimal Insertion Word

**TRSP** - Transparent

Outgoing signaling will be fixed at **1101** (hex **D**) in slot 16 for Channel Associated Signaling (CAS) primaries. **TRSP** is the only allowable option for Non-Signaling Associated (NSA) primaries.

**Note:** When the provisioning insertion word (PIW) is assigned in the **GRTH: :NPC** command, a four-bit pattern is inserted into the associated portion of time slot 16 for CAS circuits when the circuit is disconnected.

Additional rules apply for 2.048 Mbit/s termination cross-connects.

The allowable signaling type and signaling consequent action are shown in the following table.

**Table 18-3. Allowable Signaling Type and Signaling Consequent Action**

| Primary Type<br>in<br>Cross-connect | Allowable<br><tc><br>Signaling<br>Specification | Resulting<br>Signaling<br>Code<br><br>FROM, TO    | Resulting<br>Signaling<br>Consequent<br>Action<br>(Hardware)<br>FROM, TO | Resulting<br>Signaling<br>Consequent<br>Action<br>(Firmware)<br>FROM, TO | Resulting<br>Disconnect<br>(When DCC used<br>in disconnect<br>command) |
|-------------------------------------|-------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------|
| CAS ↔ CAS                           | <b>TRSP</b>                                     | Fixed at <b>X'D</b>                               | Fixed at <b>X'D</b>                                                      | Fixed at <b>X'D</b>                                                      | <b>X'D</b>                                                             |
|                                     | <b>TC-X'uv, X'yz*</b>                           | CAS<br>(Passed Through)                           | <b>X'F</b>                                                               | <b>X'uv, X'yz</b>                                                        | <b>X'v, X'z</b>                                                        |
|                                     | Omitted                                         | CAS<br>(Passed Through)                           | <b>X'F</b>                                                               | <b>X'F</b>                                                               | <b>X'F</b>                                                             |
| NSA ↔ CAS                           | <b>TRSP/Omitted</b>                             | None (Fixed at<br><b>X'D</b> in CAS<br>direction) | Fixed at<br><b>X'D</b> in CAS<br>direction                               | Fixed at<br><b>X'D</b> in CAS<br>direction                               | <b>X'D</b> in CAS<br>direction                                         |
| NSA ↔ NSA                           | <b>TRSP/Omitted</b>                             | Not appl.                                         | Not appl.                                                                | Not appl.                                                                | Not appl.                                                              |

\* For TCON and TCNT TC is X'uv,X'yz.  
For OCON, OCNT and BCON TC is --,X'yz.

The allowable cross-connected time slot consequent action are shown in the following table.

**Table 18-4. Allowable Cross-Connected Time Slot Consequent Action**

| Allowable <tc><br>Insertion<br>Word | Resulting Cross-Connected<br>Time Slot Consequent Action<br>FROM, TO | Resulting Disconnect<br>Code (When DCC used<br>in disconnect command) |
|-------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------|
| Omitted                             | X' FF, X' FF                                                         | X' FF                                                                 |
| IW X' pq *                          | X' FF, X' FF                                                         | X' pq                                                                 |

\* Only used as a means of providing per time slot DCC codes. If the DCC code is not used when issuing the disconnect command, then the insertion word at the time the NPC was grown is used. This growth insertion word defaults to hex "D5" if not explicitly specified at growth time.

**Note:** In a gateway application, when E1 channels are connected to T1 channels, the following rules apply to the transmittal of the Insertion Word (IW) towards the facility. If the Insertion Word needs to be transmitted towards the facility as a result of consequent action, then the Insertion Word transmitted by the T1 NPC towards its transmission facility is the Insertion Word specified in this command; however, the Insertion Word transmitted by the E1 NPC towards its facility is always X'FF.

**sc** - Signaling control

This variable represents the optional signaling bit control specification and is used only in the Channel Associated Signaling (CAS) to CAS application with CAS signaling.

If this option is not used, all four cross-connected time slot 16 (**abcd**) signaling bits in each direction will be cross-connected unchanged.

Signaling control is specified as follows:

**SC(abcd, efgh)**

**abcd** - Time slot 16 signalling bits, From direction

**efgh** - Time slot 16 signalling bits, To direction

All 8 bits can be controlled independently. Control is applied by replacing each character in variable **abcd** or **efgh** with the appropriate control character.

The allowable control characters are:

*Bit*

*Setting Explanation*

**P** Pass through unchanged

**V** Pass through inverted

**0** Set output to 0

**1** Set output to 1

The effect of the **V** control character depends upon whether the connection is international or gateway.

International: Inversion takes place on both the From and To-direction sides. The net effect is to cancel out the inversion. Hence it will appear that no inversion took place.

Gateway: Inversion takes place only on the international side of the connection. The effect is an inversion.

**NAM** - No A-law to  $\mu$ -law

The A-law to  $\mu$ -law and  $\mu$ -law to A-law code translators on the E1 type NPC are disabled. This keyword is valid in the following types of cross-connects:

*Two-Point:*

E1 to DS1      Gateway cross-connects have A-law to  $\mu$ -law and  $\mu$ -law to A-law conversion set as a default. The **NAM** keyword is used to disable the conversions.

E1 to E1      Default, the **NAM** keyword may be used but there is no need to specify **NAM** explicitly since A-law to  $\mu$ -law and  $\mu$ -law to A-law conversion is not needed, and therefore not performed, for a pure E1 cross-connect.

DS1 to DS1      Not applicable.

**CUS** - Customer

This optional keyword is used to flag a circuit as a customer controlled circuit. On output it indicates that the circuit is customer controlled.

**RDC** - Red circuit

This optional keyword is used to mark a circuit as a Red Circuit. On output it indicates that the circuit is a Red Circuit.

**INCL** - Inclusive

A termination designated as a customer controlled circuit or a red circuit cannot be disconnected or modified without using this keyword in the message. Also, an NPC which supports these circuits cannot be manually removed unless this keyword is given in the remove command.

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**mmm** - The From-direction channel number involved in denial (**ddd** through **eee**).

**nnn** - The To-direction channel number involved in denial (**jjj** through **kkk**).

**d** - Direction

**d**      *Explanation*

**F**      FROM

**T**      TO

**B**      Both

**st** - Status

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>06</b> | <b>INERR</b> | Invalid range for specified FROM NPC type                             |
| <b>07</b> | <b>INERR</b> | Invalid range for specified TO NPC type                               |
| <b>08</b> | <b>INERR</b> | Invalid FROM NPC type for AIS insertion                               |
| <b>09</b> | <b>INERR</b> | Invalid TO NPC type for AIS insertion                                 |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>20</b> | <b>MCOND</b> | Line format types are incompatible                                    |
| <b>21</b> | <b>MCOND</b> | Trunk conditioning is invalid                                         |
| <b>22</b> | <b>MCOND</b> | FMC cannot be cross-connected in this format                          |
| <b>D6</b> | <b>INERR</b> | Invalid FROM channel number                                           |
| <b>D7</b> | <b>INERR</b> | Invalid TO channel number                                             |
| <b>D9</b> | <b>INERR</b> | Invalid FROM channel number range                                     |
| <b>DA</b> | <b>INERR</b> | Invalid TO channel number range                                       |
| <b>DC</b> | <b>INERR</b> | A loopback is active on the FROM termination                          |
| <b>DD</b> | <b>INERR</b> | A loopback is active on the TO termination                            |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                               |
| <b>E8</b> | <b>INERR</b> | SC invalid for cross-connection specified                             |
| <b>E9</b> | <b>INERR</b> | MUX or TRB invalid for cross-connection specified                     |
| <b>EA</b> | <b>INERR</b> | AIS invalid for cross-connection specified                            |
| <b>EB</b> | <b>INERR</b> | NAM invalid for cross-connection specified                            |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                        |
| <b>ED</b> | <b>INERR</b> | Invalid channel 031 cross-connection specified                        |
| <b>EE</b> | <b>INERR</b> | Trunk type is not allowed in the circuit specified                    |
| <b>40</b> | <b>MCOND</b> | Not enough DSPPs are equipped                                         |
| <b>41</b> | <b>MCOND</b> | Not enough DSPPs are in service                                       |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |

| st    | d       | Explanation                  |
|-------|---------|------------------------------|
| ASGN  | {F T B} | Termination assigned         |
| CUS   | {F T B} | Customer-controlled Circuit  |
| FAIL  | {F T B} | Failed                       |
| INVLD | {F T B} | Invalid NPC type             |
| OOS   | {F T B} | Out-of-service               |
| RDC   | {F T B} | Red Circuit                  |
| TG    | {F T B} | NPC is grown as a test group |
| TP    | {F T B} | NPC is used for test access  |
| UEQD  | {F T B} | Unequipped                   |
| UTST  | {F T B} | Under Test                   |

## **TCON, FROM, TO, PFW, NFW**

### **TWO-WAY CROSS-CONNECTIONS**

#### **Explanation Of Command**

This command requests a TS0 to non-TS0 cross-connection. A cross-connect mode must be chosen to prevent the TS0 Frame Alignment Signal from being transmitted in a non-TS0 timeslot.

#### **Command**

##### **Nonhierarchical**

[I.11051]

```
TCON:FRM xy,SEQ ww:FROM [s]abcddd,TO [t]ghijjj\
[, {PFW(abcdefg,ijklmno)|NFW}]!
```

##### **Hierarchical**

[I.11051]

```
TCON:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj\
[, {PFW(abcdefg,ijklmno)|NFW}]!
```

#### **Completion Message**

##### **Nonhierarchical**

[O.11051]

```
M hh:mm:ss xy,ww n[vv] TCON [s]abcddd,[t]ghijjj \
{PFW(abcdefg,ijklmno)|NFW} COMPL
```



### **Hierarchical**

---

[O.11051]

M hh:mm:ss xy,ww n[vv] TCON uvmnpddd,wxkqrjjj \  
{PFW(abcdefg,ijklmno)|NFW} COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.11051.01]

M hh:mm:ss xy,ww n[vv] TCON [s]abcddd,[t]ghijjj\  
[ {PFW(abcdefg,ijklmno)|NFW}] cc <st> DNY

[O.11051.02]

M hh:mm:ss xy,ww n[vv] TCON [s]abcddd,[t]ghijjj\  
[ {PFW(abcdefg,ijklmno)|NFW}] d <st> DNY

### **Hierarchical**

---

[O.11051.01]

M hh:mm:ss xy,ww n[vv] TCON uvmnpddd,wxkqrjjj\  
[ {PFW(abcdefg,ijklmno)|NFW}] cc <st> DNY

[O.11051.02]

M hh:mm:ss xy,ww n[vv] TCON uvmnpddd,wxkqrjjj\  
[ {PFW(abcdefg,ijklmno)|NFW}] d <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**TO** - To

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - Channel number for FROM NPC

**jjj** - Channel number for TO NPC

000-030 on CEPT type NPCs grown as CAS  
000-031 on CEPT type NPCs grown as NSA

**Note:** One of the channel numbers specified (ddd or jjj) must be channel 000 (TS0), while the other channel number (jjj or ddd) must be a number other than channel 000 (non-TS0).

The NPC containing the TS0 channel must be a PA or TH type NPC, while the NPC containing the non-TS0 channel can be either a PA, PB or PC or TH type NPC.

Channel 000 is not allowed in a range of channels.

**PFW** - Pseudo Frame Word

The PFW parameter is used to select Mode 1 of TS0 Cross-Connect:  
In both directions of transmission the Frame Word is replaced  
by a Pseudo Frame Word.

**abcdefg** - Value of the Pseudo Frame Word

This value replaces the Frame Alignment Signal (Bits 2 - 8) of the Frame  
Word being transmitted from the TO NPC to the FROM NPC.

The characters in the field represent the following bits:

- a** - Pseudo Frame Word Bit 2
- b** - Pseudo Frame Word Bit 3
- c** - Pseudo Frame Word Bit 4
- d** - Pseudo Frame Word Bit 5
- e** - Pseudo Frame Word Bit 6
- f** - Pseudo Frame Word Bit 7
- g** - Pseudo Frame Word Bit 8

Values for bits a - g:

- "0"** - Sets the corresponding bit to "0"
- "1"** - Sets the corresponding bit to "1"

**ijklmno** - Value of the Pseudo Frame Word

This value replaces the Frame Alignment Signal (Bits 2 - 8) of the Frame  
Word being transmitted from the FROM NPC to the TO NPC.

The characters in the field represent the following bits:

- i** - Pseudo Frame Word Bit 2
- j** - Pseudo Frame Word Bit 3
- k** - Pseudo Frame Word Bit 4
- l** - Pseudo Frame Word Bit 5
- m** - Pseudo Frame Word Bit 6
- n** - Pseudo Frame Word Bit 7
- o** - Pseudo Frame Word Bit 8

Values for bits i - o:

- "0"** - Sets the corresponding bit to "0"
- "1"** - Sets the corresponding bit to "1"

**Note:** Bit 2 of timeslot 0 in a 2Mbit/s signal is used to distinguish the Frame Word from the Non Frame Word and it must always be '0' in the FW and '1' in the NFW. When defining the Pseudo Frame Word the user must make sure that the Pseudo Frame Word can be distinguished from the Non Frame Word.

**NFW** - Non frame word

The NFW parameter is used to select Mode 2 of TS0 Cross-Connect. In both directions of transmission the Frame Word is replaced by the Non Frame Word, thus repeating the content of the Non Frame Word in consecutive frames.

If no mode is selected in the command, the default shall be NFW, that is, the default mode of operation is Mode 2.

**NORM** - Normal

NORM, NORM means that the cross-connection will come up in the normal state. The NORM keyword corresponds to the PDS TCON command.

**TERM** - Terminate

TERM, TERM means that the cross-connection will come up in the terminated state. The TERM keyword corresponds to the PDS TCNT command.

**d** - Direction

| <b>d</b> | <b>Explanation</b> |
|----------|--------------------|
| F        | From               |
| T        | To                 |
| B        | Both               |

**st** - Status

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>06</b> | <b>INERR</b> | Invalid range for specified FROM NPC type                             |
| <b>07</b> | <b>INERR</b> | Invalid range for specified TO NPC type                               |
| <b>08</b> | <b>INERR</b> | Invalid FROM NPC type for AIS insertion                               |
| <b>09</b> | <b>INERR</b> | Invalid TO NPC type for AIS insertion                                 |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>20</b> | <b>MCOND</b> | Line format types are incompatible                                    |
| <b>21</b> | <b>MCOND</b> | Trunk conditioning is invalid                                         |
| <b>E8</b> | <b>INERR</b> | SC invalid for cross-connection specified                             |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                        |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |
| <b>3A</b> | <b>SCERR</b> | Invalid FPI value                                                     |
| <b>8A</b> | <b>INERR</b> | Mismatch between channel 0 crossconnect and keywords                  |
| <b>9D</b> | <b>INERR</b> | NPC containing channel 000 is invalid type.                           |

| <b>st</b>   | <b>d</b> | <i>Explanation</i>          |
|-------------|----------|-----------------------------|
| <b>ASGN</b> | <b>F</b> | Termination assigned        |
| <b>CUS</b>  | <b>F</b> | Customer-controlled Circuit |
| <b>FAIL</b> | <b>F</b> | Failed                      |
| <b>OOS</b>  | <b>F</b> | Out-of-service              |
| <b>UEQD</b> | <b>F</b> | Unequipped                  |
| <b>UTST</b> | <b>F</b> | Under Test                  |

## **TCON, FROM, TO, RDC, CUS, INCL, PRIOUT**

### **TWO-WAY NON-CHANNELIZED DIGITAL SIGNAL CROSS CONNECTION**

#### **Explanation Of Command**

This message is used to form a two-way cross-connection between two non-channelized network processing circuits (NPCs). It is also used to form a terminated two-way cross-connection. The idle code is the alarm-indication signal (AIS, all ones) and does not need to be specified. The disconnect code (DCC) for 64 kbit/s disconnection cannot be used for non-channelized NPCs.

When a failure occurs or during an alarm state, the AIS is transmitted toward the TO NPC.

NPCs with customer-controlled marking retain the CUS status when disconnected. When the NPCs are reconnected without CUS or inclusive (INCL) keyword, the command will be denied. If the NPCs are reconnected with INCL keyword, they lose the CUS status.

Red circuit marking is removed when the circuit is disconnected.

#### **Command**

##### **Nonhierarchical**

[I.11011]

**TCON:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,RDC][,{CUS|INCL}][,PRIOUT]!**

##### **Hierarchical**

[I.11011]

**TCON:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,RDC][,{CUS|INCL}][,PRIOUT]!**

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.11011]

M hh:mm:ss xy,ww n[vv] TCON [s]abc,[t]ghi[ RDC][ CUS][ PRIOUT] COMPL

#### **Hierarchical**

---

[O.11011]

M hh:mm:ss xy,ww n[vv] TCON uvmnp,wxkqr[ RDC][ CUS][ PRIOUT] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.11011.01]

M hh:mm:ss xy,ww n[vv] TCON [s]abc,[t]ghi cc <st> DNY

[O.11011.02]

M hh:mm:ss xy,ww n[vv] TCON [s]abc,[t]ghi d <st> DNY

#### **Hierarchical**

---

[O.11011.01]

M hh:mm:ss xy,ww n[vv] TCON uvmnp,wxkqr cc <st> DNY

[O.11011.02]

M hh:mm:ss xy,ww n[vv] TCON uvmnp,wxkqr d <st> DNY

### **Autonomous Message**

---

Not applicable.



### Explanation Of Parameters

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1952  | 2081-2112  | 2241-2272  | 2401-2432  |
| 1961-1992  | 2121-2152  | 2281-2312  | 2441-2472  |
| 2001-2032  | 2161-2192  | 2321-2352  | 2481-2512  |
| 2041-2072  | 2201-2232  | 2361-2392  | 2521-2552  |

**uvmp** - Hierarchical FROM NPC number

**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The values are listed below:

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

**RDC** - Red circuit

**CUS** - Customer

Indicates a customer-controlled Circuit

**INCL** - Inclusive

Inclusive option must be used to remove CUS marking

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**st** - Status of denial

**d** - Direction

**d** *Explanation*

F From

T To

B Both

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                        |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |

| <b>st</b>    | <b>d</b>       | <i>Explanation</i>          |
|--------------|----------------|-----------------------------|
| <b>ASGN</b>  | <b>{F T B}</b> | Termination assigned        |
| <b>CUS</b>   | <b>{F T B}</b> | Customer-controlled Circuit |
| <b>FAIL</b>  | <b>{F T B}</b> | Failed                      |
| <b>INVLD</b> | <b>{F T B}</b> | Invalid NPC type            |
| <b>NPCTA</b> | <b>{F T B}</b> | NPC used for Test Access    |
| <b>OOS</b>   | <b>{F T B}</b> | Out-of-service              |
| <b>UEQD</b>  | <b>{F T B}</b> | Unequipped                  |
| <b>UTST</b>  | <b>{F T B}</b> | Under Test                  |

## **TDIS, FROM, CB, INCL, OOS**

### **DISCONNECTIONS**

#### **Explanation Of Command**

This message requests a disconnection between the Facility Terminating Unit (FTU) or Hybrid DS3 Unit (HDS3U) type NPC signaling time slot 16 and the C-Bit Processor (CB) type NPC on the Digital Signal Processing Unit (DSPU). The CB number and the channel number on the CB are automatically specified by software.

#### **Command**

##### **Nonhierarchical**

[I.15004]

TDIS:FRM xy,SEQ ww:FROM [s]abc,CB[,INCL][,OOS]!

##### **Hierarchical**

[I.15004]

TDIS:FRM xy,SEQ ww:FROM uvmnp,CB[,INCL][,OOS]!

#### **Completion Message**

##### **Nonhierarchical**

[O.15004]

M hh:mm:ss: xy,ww n[vv] TDIS [s]abc,CB[ OOS][ CUS][ RDC]\  
[ INCL] COMPL

### **Hierarchical**

---

[O.15004]

M hh:mm:ss: xy,ww n[vv] TDIS uvmnp,CB[ OOS][ CUS][ RDC]\  
[ INCL] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.15004.01]

M hh:mm:ss: xy,ww n[vv] TDIS [s]abc,CB cc <st> DNY

[O.15004.02]

M hh:mm:ss: xy,ww n[vv] TDIS [s]abc,CB <d> <st> DNY

### **Hierarchical**

---

[O.15004.01]

M hh:mm:ss: xy,ww n[vv] TDIS uvmnp,CB cc <st> DNY

[O.15004.02]

M hh:mm:ss: xy,ww n[vv] TDIS uvmnp,CB <d> <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From termination

**TO** - To termination

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number

**uv** - Unit number

**m** - Module number

**np** - NPC number

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

An Out-Of-Service disconnect may be done by giving the optional OOS keyword. At least one end of the circuit must be out-of-service or the OOS disconnect will be denied.

**d** - Direction {F-from | T-to | B-both}

**st** - Status

| <i>d</i> | <i>st</i> | <i>Explanation</i>               |
|----------|-----------|----------------------------------|
| F        | UEQD      | FROM Unequipped                  |
| F        | OOS       | FROM Out-of-service              |
| F        | FAIL      | FROM Failed                      |
| F        | UASG      | FROM Termination unassigned      |
| F        | CUS       | FROM Customer Controlled Circuit |
| F        | RDC       | FROM Red Circuit                 |
| F        | NOMTH     | FROM No Match                    |

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>03</b> | <b>INERR</b> | No RDC or CUS circuits and INCL keyword used                          |
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>18</b> | <b>MCOND</b> | DSPI not in service or failed                                         |
| <b>30</b> | <b>INERR</b> | NPC not provisioned for CAS                                           |
| <b>B6</b> | <b>INERR</b> | C-bit operations are enabled                                          |
| <b>F1</b> | <b>INERR</b> | Parameter only valid with PA, PB, or PC type NPCs                     |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |



## **TDIS, FROM, TO, INCL, OOS, DCC**

### **TWO-WAY DISCONNECTIONS**

#### **Explanation Of Command**

This message requests a disconnection between the specified FROM and TO end terminations and is used to disconnect a leg or legs from a multipoint circuit.

Disconnections may be between various Network Processing Circuit (NPC) types:

Facility Terminating Unit (FTU)/DS3U/HDS3U NPC and Digital Signal Processing (DSPU) Unit NPC

FTU/DS3U/HDS3U NPC and Virtual NPC

DSPU NPC and DSPU NPC

#### **Command**

##### **Nonhierarchical**

[I.15002]

**TDIS:FRM xy,SEQ ww:FROM [s]abcddd,TO [t]ghijjj[,INCL][,OOS]\[,DCC]!**

##### **Hierarchical**

[I.15002]

**TDIS:FRM xy,SEQ ww:FROM uvmnpddd,TO wxkqrjjj[,INCL][,OOS]\[,DCC]!**

## **Completion Message**

---

### **Nonhierarchical**

---

[O.15002]

M hh:mm:ss xy,ww n[vv] TDIS [s]abcddd,[t]ghijjj 2 LN MSG:  
[NOBBL {F|T}][ MPDIS {F|T|B}][ OOS][ CUS][ DDC][ RDC] COMPL

### **Hierarchical**

---

[O.15002]

M hh:mm:ss xy,ww n[vv] TDIS uvmnpddd,wxkqrjjj 2 LN MSG:  
[NOBBL {F|T}][ MPDIS {F|T|B}][ OOS][ CUS][ DDC][ RDC] COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.15001.01]

M hh:mm:ss xy,ww n[vv] TDIS [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.15001.02]

M hh:mm:ss xy,ww n[vv] TDIS [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

### **Hierarchical**

---

[O.15001.01]

M hh:mm:ss xy,ww n[vv] TDIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.15001.02]

M hh:mm:ss xy,ww n[vv] TDIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**FROM** - From termination  
**TO** - To termination

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number  
**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number for beginning of NPC range

**wxkqr** - Hierarchical TO NPC number for end of NPC range

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

| Unit      | Module   | NPC                                   |
|-----------|----------|---------------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

**Note:** The range of allowable NPC numbers is dependent on the equipage of the frame.

**ddd** - FROM channel or conference number

**jjj** - TO channel number or conference number

#### Channel Numbers

000-030          CEPT type NPCs grown as CAS  
000-031          CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

#### Conference Numbers

001-500          (Virtual NPC)

#### **INCL** - Inclusive

To disconnect a channel or range of channels including one or more channels marked as a Red Circuit, use the INCL (inclusive) option. If this option is not used, the message will be denied if any circuits in the range are Red Circuits.

#### **OOS** - Out-of-service

An Out-Of-Service disconnection may be done by giving the optional OOS keyword. At least one end of the circuit must be out-of-service or the OOS disconnection will be denied.

#### **DCC** - Disconnect code

If DCC is specified, DACS II will insert the user-defined disconnect code and signaling into the disconnected channels. This disconnect code and signaling are specified by the trunk conditioning field of the TCON command that initially connected to the channels. If the DCC option is not used, the disconnect code specified in the GRTH NPC command will be used.

#### **mmm, nnn**

- Channel numbers involved in the denial. Otherwise, the same as ddd.

#### **CUS** - Customer

Indicates the circuit is a customer controlled Circuit.

**NOBBL** - No backbone leg

This optional field will appear if the multipoint circuit(s) FROM or TO is in the broadcast mode but has no backbone leg after the TDIS command.

**MPDIS** - Multipoint disconnect

Full disconnection of the multipoint circuits is indicated by MPDIS for FROM, TO, or BOTH.

**RDC** - Red circuit

RDC indicates that the disconnection was performed on a Red Circuit. This implies that the INCL keyword was given in the input message. If the disconnection was given on more than one circuit, then at least one of them was a Red Circuit.

**d** - Direction

*d*      *Explanation*

**F**      - From

**T**      - To

**B**      - Both

**st** - Status of denial

17              Required ETSI not equipped, not in service, or failed  
or inactive side ETSI not equipped or not in service

**cc** - Hexadecimal condition code

**cc**    **st**      *Explanation*

**04**    **INERR**      No NPC's out of service and OOS keyword used

**06**    **INERR**      Invalid range for specified FROM NPC type

**07**    **INERR**      Invalid range for specified TO NPC type

**12**    **MCOND**      Active CCN side not IS or failed or pested or hardware OOS

**13**    **MCOND**      UNIT not equipped, not in service, or failed

**15**    **MCOND**      FTMI not equipped, not in service, or failed

**16**    **MCOND**      FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17**    **MCOND**      TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**18**    **MCOND**      DSPI not equipped, not in service, or failed

**71**    **CONFERR**      Try to delete a BBL leg from VC; however, VC has no BBL leg

**72**    **CONFERR**      The NPC of VC BBL leg doesn't match that in the input command

**73**    **CONFERR**      The first channel of VC BBL leg doesn't match that in the input command

| cc | st      | Explanation                                                             |
|----|---------|-------------------------------------------------------------------------|
| 74 | CONFERR | Try to delete a BRD leg from VC; however, VC has no BRD leg             |
| 75 | CONFERR | The input BRD leg is not in VC                                          |
| 76 | CONFERR | The first channel of VC BRD leg doesn't match that in the input command |
| 77 | CONFERR | Tried to disconnect a nonexistent VC                                    |
| 78 | CONFERR | Try to operate a ONE-WAY conference with a TWO-WAY input command        |
| 80 | CONFERR | Database conference width does not match the range in input command     |
| 84 | CONFERR | Trying to add or delete a leg when a conference is under test           |
| A1 | INERR   | Illegal BBL BBL combination                                             |
| A2 | INERR   | Illegal BRD BRD combination                                             |
| A3 | INERR   | Illegal SYM BRD combination                                             |
| A4 | INERR   | Illegal BRD SYM combination                                             |
| A5 | INERR   | Illegal BBL SYM combination                                             |
| A6 | INERR   | Illegal SYM BBL combination                                             |
| AF | INERR   | Delete or change a leg from a conference that has no leg                |
| D3 | SCERR   | Corresponding NPC for FROM virtual channel is not provisioned           |
| D4 | SCERR   | Corresponding NPC for TO virtual channel is not provisioned             |
| D6 | INERR   | Invalid FROM channel number                                             |
| D7 | INERR   | Invalid TO channel number                                               |
| D9 | INERR   | Invalid FROM channel number range                                       |
| DA | INERR   | Invalid TO channel number range                                         |
| DC | INERR   | A loopback is active on the FROM termination                            |
| DD | INERR   | A loopback is active on the TO termination                              |
| DF | INERR   | Unmatched channel range                                                 |
| EC | INERR   | Invalid channel 000 cross-connection specified                          |
| ED | INERR   | Invalid channel 031 cross-connection specified                          |
| FF | ROLL    | Termination is in process of being rolled                               |

| st      | d       | Explanation                         |
|---------|---------|-------------------------------------|
| CUS     | {F T B} | Customer-controlled Circuit         |
| FAIL    | {F T B} | Failed                              |
| NOMTH   | {F T B} | No Match                            |
| OOS     | {F T B} | Out-of-service                      |
| RDC     | {F T B} | Red Circuit                         |
| TP      | {F T B} | NPC is used for test access         |
| UNPASGN | {F T B} | Unassigned or Not Properly Assigned |
| UEQD    | {F T B} | Unequipped                          |
| UTST    | {F T B} | Under Test                          |

## **TDIS, FROM, TO, INCL, OOS, DCC, PRIOUT**

### **DISCONNECTIONS, CROSS-CONNECT CIRCUITS**

#### **Explanation Of Command**

This message requests the disconnection of two-way, two-point cross-connect circuits or a range of cross-connected circuits.

#### **Command**

##### **Nonhierarchical**

[I.15001]

TDIS:FRM xy,SEQ ww:FROM [s]abcddd[-eee],TO [t]ghijjj[-kkk]\  
[,INCL][,OOS][,DCC][,PRIOUT]!

##### **Hierarchical**

[I.15001]

TDIS:FRM xy,SEQ ww:FROM uvmnpddd[-eee],TO wxkqrjjj[-kkk]\  
[,INCL][,OOS][,DCC][,PRIOUT]!

#### **Completion Message**

##### **Nonhierarchical**

[O.15001]

M hh:mm:ss xy,ww n[vv] TDIS [s]abcddd[-eee],[t]ghijjj[-kkk]\  
[ OOS][ DCC][ RDC][ PRIOUT] COMPL



### **Hierarchical**

---

[O.15001]

M hh:mm:ss xy,ww n[vv] TDIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ OOS][ DCC][ RDC][ PRIOUT] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.15001.01]

M hh:mm:ss xy,ww n[vv] TDIS [s]abcdddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.15001.02]

M hh:mm:ss xy,ww n[vv] TDIS [s]abcdddd[-eee],[t]ghijjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

### **Hierarchical**

---

[O.15001.01]

M hh:mm:ss xy,ww n[vv] TDIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] cc <st> DNY

[O.15001.02]

M hh:mm:ss xy,ww n[vv] TDIS uvmnpddd[-eee],wxkqrjjj[-kkk]\  
[ mmm,nnn] <d> <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From termination  
**TO** - To termination

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number  
**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module  
The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd, jjj**  
- Channel numbers

**eee, kkk**  
- Channel numbers, denoting the end of a range.

000-030 CEPT type NPCs grown as CAS  
000-031 CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

**INCL** - Inclusive

To disconnect a circuit or range of circuits including one or more circuits marked either RDC or CUS, use the optional INCL keyword. If this keyword is not used, the message will be denied if any circuits in the range are red circuits or customer controlled circuits.

**OOS** - Out of service

An Out-Of-Service disconnection may be done by giving the optional OOS keyword. At least one end of the circuit must be out-of-service or the OOS disconnection will be denied. This keyword is not valid if the DSPP NPC is the only NPC out-of-service.

**DCC** - Disconnect code

If the Disconnect Code (DCC) option is specified, DACS II will insert the user-defined disconnect code and signaling into the disconnected channels. This disconnect code and signaling are specified by the trunk conditioning field of the cross connect command that initially connected the channels. Only the post 2.5 second signaling will be inserted in the disconnected channels. If the DCC option was specified on a fully transparent (TRSP with no insertion word) domestic circuit, DACS II will insert the default trouble code X'E4. If the DCC option is not used, the disconnect code specified in the grow NPC command will be used.

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**CUS** - Customer

Customer-controlled circuit

Terminations cross-connected using the optional CUS keyword retain their CUS status when disconnected. If the terminations are reconnected without the CUS or INCL keyword, the command will be denied. When they are reconnected with the INCL keyword, they lose their customer controlled status.

**RDC** - Red circuit

**mmm, nnn**

- Channel number involved in the denial. Otherwise the same as ddd.

**d** - Direction

| <b>d</b> | <i>Explanation</i> |
|----------|--------------------|
| F        | From               |
| T        | To                 |
| B        | Both               |

**st** - Status of denial

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>st</b>    | <i>Explanation</i>                                                    |
|-----------|--------------|-----------------------------------------------------------------------|
| <b>04</b> | <b>INERR</b> | No NPC's out of service and OOS keyword used                          |
| <b>06</b> | <b>INERR</b> | Invalid range for specified FROM NPC type                             |
| <b>07</b> | <b>INERR</b> | Invalid range for specified TO NPC type                               |
| <b>12</b> | <b>MCOND</b> | Active CCN side not IS or failed or pested or hardware OOS            |
| <b>13</b> | <b>MCOND</b> | UNIT not equipped, not in service, or failed                          |
| <b>14</b> | <b>MCOND</b> | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| <b>15</b> | <b>MCOND</b> | FTMI not equipped, not in service, or failed                          |
| <b>16</b> | <b>MCOND</b> | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| <b>17</b> | <b>MCOND</b> | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| <b>D6</b> | <b>INERR</b> | Invalid FROM channel number                                           |
| <b>D7</b> | <b>INERR</b> | Invalid TO channel number                                             |
| <b>D9</b> | <b>INERR</b> | Invalid FROM channel number range                                     |
| <b>DA</b> | <b>INERR</b> | Invalid TO channel number range                                       |
| <b>DC</b> | <b>INERR</b> | A loopback is active on the FROM termination                          |
| <b>DD</b> | <b>INERR</b> | A loopback is active on the TO termination                            |
| <b>DF</b> | <b>INERR</b> | Unmatched channel range                                               |
| <b>EC</b> | <b>INERR</b> | Invalid channel 000 cross-connection specified                        |
| <b>ED</b> | <b>INERR</b> | Invalid channel 031 cross-connection specified                        |
| <b>42</b> | <b>MCOND</b> | DSPP not in service, or failed                                        |
| <b>FF</b> | <b>ROLL</b>  | Termination is in process of being rolled                             |
| <b>E0</b> | <b>MCOND</b> | ETSI not equipped, not in service, or failed                          |

| <b>st</b>      | <b>d</b>       | <i>Explanation</i>                  |
|----------------|----------------|-------------------------------------|
| <b>CUS</b>     | <b>{F T B}</b> | Customer-controlled Circuit         |
| <b>FAIL</b>    | <b>{F T B}</b> | Failed                              |
| <b>NOMTH</b>   | <b>{F T B}</b> | No Match                            |
| <b>OOS</b>     | <b>{F T B}</b> | Out-of-service                      |
| <b>RDC</b>     | <b>{F T B}</b> | Red Circuit                         |
| <b>TP</b>      | <b>{F T B}</b> | NPC is used for test access         |
| <b>UNPASGN</b> | <b>{F T B}</b> | Unassigned or Not Properly Assigned |
| <b>UEQD</b>    | <b>{F T B}</b> | Unequipped                          |
| <b>UTST</b>    | <b>{F T B}</b> | Under Test                          |

## **TDIS, FROM, TO, OOS, INCL, PRIOUT**

### **TWO-WAY DISCONNECTION**

#### **Explanation Of Command**

This message disconnects a two-way cross-connection between two non-channelized network processing circuits. When the circuit is disconnected, the idle code (AIS) is transmitted.

#### **Command**

##### **Nonhierarchical**

[I.15011]

TDIS:FRM xy,SEQ ww:FROM [s]abc,TO [t]ghi[,OOS][,INCL][,PRIOUT]!

##### **Hierarchical**

[I.15011]

TDIS:FRM xy,SEQ ww:FROM uvmnp,TO wxkqr[,OOS][,INCL][,PRIOUT]!

#### **Completion Message**

##### **Nonhierarchical**

[O.15011]

M hh:mm:ss xy,ww n[vv] TDIS [s]abc,[t]ghi[ OOS][ RDC][ CUS] \  
[ PRIOUT] COMPL

### **Hierarchical**

---

[O.15011]

M hh:mm:ss xy,ww n[vv] TDIS uvmnp,wxkqr[ OOS][ RDC][ CUS] \  
[ PRIOUT] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.15011.01]

M hh:mm:ss xy,ww n[vv] TDIS [s]abc,[t]ghi cc <st> DNY

[O.15011.02]

M hh:mm:ss xy,ww n[vv] TDIS [s]abc,[t]ghi d <st> DNY

### **Hierarchical**

---

[O.15011.01]

M hh:mm:ss xy,ww n[vv] TDIS uvmnp,wxkqr cc <st> DNY

[O.15011.02]

M hh:mm:ss xy,ww n[vv] TDIS uvmnp,wxkqr d <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**FROM** - From termination  
**TO** - To termination

**[s]abc** - The 3- or 4-digit non-hierarchical non-channelized FROM NPC number  
**[t]ghi** - The 3- or 4-digit non-hierarchical non-channelized TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |



| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical number of non-channelized FROM NPC

**wxkqr** - Hierarchical number of non-channelized TO NPC

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number

The valid values are listed below:

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**INCL** - Inclusive

Required for a CUS circuit or a red circuit

**PRIOUT** - Priority Output

This keyword is used on the command line to prioritize the output response.

**OOS** - Out-of-Service

May be specified if one or both NPCs are out of service

**RDC** - Red circuit

Disconnection of Red circuit

**CUS** - Customer

Disconnection of Customer-controlled Circuit

**st** - Status of denial

**d** - Direction

*d Explanation*

F From

T To

B Both

**cc** - Hexadecimal condition code

**cc st Explanation**

**04 INERR** No NPC's out of service and OOS keyword used

**12 MCOND** Active CCN side not IS or failed or pested or hardware OOS

**13 MCOND** UNIT not equipped, not in service, or failed

**14 MCOND** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15 MCOND** FTMI not equipped, not in service, or failed

**16 MCOND** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17 MCOND** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**FF ROLL** Termination is in process of being rolled

**E0 MCOND** ETSI not equipped, not in service, or failed

**st d Explanation**

**CUS** {F|T|B} Customer-controlled Circuit

**FAIL** {F|T|B} Failed

**INVLD** {F|T|B} Invalid NPC type

**NOMTH** {F|T|B} No Match

**NPCTA** {F|T|B} NPC used for Test Access

**OOS** {F|T|B} Out-of-service

**RDC** {F|T|B} Red Circuit

**UNPASGN** {F|T|B} Unassigned or Not Properly Assigned

**UEQD** {F|T|B} Unequipped

**UTST** {F|T|B} Under Test

---

## **TS0,R,NPC,OLD,NEW**

---

### **TIME SLOT ZERO RECEIVE NPC**

#### **Explanation Of Command**

This autonomous output message reports a change of state in the spare national and international bits being received in time slot zero of a network processing circuit. The change of state probably is incompatible provisioning by using time slot zero monitor.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

#### **Nonhierarchical**

[O.65201]

**I** hh:mm:ss xy,ww    **TS0 R NPC [s]abc OLD abcdefgh NEW \**  
**abcdefgh COMPL**

## Hierarchical

[O.65201]

**I** hh:mm:ss xy,ww    **TS0** **R** **NPC** uvmpn **OLD** abcdefgh **NEW** \  
abcdefgh **COMPL**

## Explanation Of Parameters

**TS0**    - Time slot zero keyword

**R**       - Received bits in time slot zero

**NPC**    - Network processing circuit

**[s]abc**       - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**OLD** - Old time slot zero pattern keyword

**NEW** - New time slot zero pattern keyword

**abcdefgh**  
- Time slot zero bits

**Note:** The only bit values which will be output are those which have been provisioned for monitoring. All other bits will be output as "-" (dash).

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

---

## **TS0MBOFL**

---

### **ALARM TS0MBOFL**

#### **Explanation Of Command**

---

This output message prints out the buffer overflow condition for the time slot zero monitor (TS0M). This message applies to PA, PB, and PC type NPCs.

#### **Command**

---

Not applicable.

#### **Completion Message**

---

Not applicable.

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

#### **Nonhierarchical**

---

[O.65231]

**I** hh:mm:ss xy,ww    TS0MBOFL [s]abc COMPL

## Hierarchical

[O.65231]

I hh:mm:ss xy,ww TS0MBOFL uvmnp COMPL

## Explanation Of Parameters

### TS0MBOFL

- Time Slot 0 Monitor Buffer Overflow

[s]abc - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0032 | 0161-0192 | 0321-0352 | 0481-0512 |
| 0041-0072 | 0201-0232 | 0361-0392 | 0521-0552 |
| 0081-0112 | 0241-0272 | 0401-0432 | 0561-0592 |
| 0121-0152 | 0281-0312 | 0441-0472 | 0601-0632 |
| Unit<br>5 | Unit<br>6 | Unit<br>7 | Unit<br>8 |
| NPC       | NPC       | NPC       | NPC       |
| 0641-0672 | 0801-0832 | 0961-0992 | 1121-1152 |
| 0681-0712 | 0841-0872 | 1001-1032 | 1161-1192 |
| 0721-0752 | 0881-0912 | 1041-1072 | 1201-1232 |
| 0761-0792 | 0921-0952 | 1081-1112 | 1241-1272 |



| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number

**m** - Module number

**np** - NPC number

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

## **TTST,HUB,TO,TG**

### **NX64Kbit/s TWO-WAY TEST ACCESS, HUB**

#### **Explanation Of Command**

To set up an Nx64Kbit/s hub test access connection via a test-access group to an Nx64Kbit/s TO termination. The TO termination consists of two Nx64Kbit/s bundles that will be connected to the test-access group's east and west bundles. These channel bundles must be of the same width as the test-access group. If all of the channels, starting at the number specified for the TO termination, are not available the first unavailable channel encountered will cause the command to be denied. The channel that caused the denial will be reported in the denial message.

#### **Command**

##### **Nonhierarchical**

[I.24021]

TTST:FRM xy,SEQ ww:HUB,TO ([s]abcddd,[t]ghijjj),TG mmm[,<tc>]!

##### **Hierarchical**

[I.24021]

TTST:FRM xy,SEQ ww:HUB,TO (uvmnpddd,wxkqrjjj),TG mmm[,<tc>]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.24021]

M hh:mm:ss xy,ww n[vv] TTST HUB [s]abcddd,[t]ghijjj NN TG mmm \  
2 LN MSG:  
<tc> <sc> CGA(fsb) COMPL

#### **Hierarchical**

---

[O.24021]

M hh:mm:ss xy,ww n[vv] TTST HUB uvmnpddd,wxkqrjjj NN TG mmm \  
2 LN MSG:  
<tc> <sc> CGA(fsb) COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.24021.01]

M hh:mm:ss xy,ww n[vv] TTST HUB [s]abcddd,[t]ghijjj TG mmm \  
[[u]jklppp] COND cc DNY

#### **Hierarchical**

---

[O.24021.01]

M hh:mm:ss xy,ww n[vv] TTST HUB uvmnpddd,wxkqrjjj TG mmm \  
[jklmnp] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**TG** - Test (access) group

**mmm** - Test access group number (001 through 400)

TG is designated as in the GRTH,TG,NPCTG command.

**HUB** - Hub

**[s]abc** - 3- or 4-digit non-hierarchical first TO NPC number

**[t]ghi** - 3- or 4-digit non-hierarchical second TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical first TO NPC number  
**wxkqr** - Hierarchical second TO NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - Starting channel number of first TO NPC  
**jjj** - Starting channel number of second TO NPC  
**ppp** - First channel causing denial

001-030 Primary NPCs grown as Channel Associated Signaling (CAS)  
001-031 Primary NPCs grown as Non Signaling Associated (NSA)

**tc** - Trunk conditioning

For TGs supported by NSA NPCTG(s), the TO NPC(s) must be NSA type also. The default and the only allowed <tc> is TRSP IW FF. Any other input will result in denial.

For TGs supported by CAS NPCTG(s), the TO NPC(s) must be CAS type also. If TRSP is entered as <tc>, TRSP IW FF will be used as <tc>. If anything else or nothing is entered, TC(FF,FF) IW FF is used.

#### **sc** - Signaling control

This variable represents the optional signaling bit control specification and is used only in the Channel Associated Signaling (CAS) to CAS application with CAS signaling.

If this option is not used, all four cross-connected time slot 16 (**abcd**) signaling bits in each direction will be cross-connected unchanged.

Signaling control is specified as follows:

#### **SC(abcd,efgh)**

**abcd** - Time slot 16 signalling bits, From direction

**efgh** - Time slot 16 signalling bits, To direction

All 8 bits can be controlled independently. Control is applied by replacing each character in variable **abcd** or **efgh** with the appropriate control character.

The allowable control characters are:

#### *Bit*

#### *Setting Explanation*

**P** Pass through unchanged

**V** Pass through inverted

**0** Set output to 0

**1** Set output to 1

The effect of the **V** control character depends upon whether the connection is international or gateway.

International: Inversion takes place on both the From and To-direction sides. The net effect is to cancel out the inversion. Hence it will appear that no inversion took place.

Gateway: Inversion takes place only on the international side of the connection. The effect is an inversion.

#### **CGA** - Carrier group alarm

#### **PBA** - Primary block alarm

**fsb** - CGA or PBA state

f - First TO NPC CGA or PBA state

*f Explanation*

F First TO NPC is in CGA or PBA

0 First TO NPC is not in CGA or PBA

s - Second TO NPC CGA or PBA state

*s Explanation*

S Second TO NPC is in CGA or PBA

0 Second TO NPC is not in CGA or PBA

b - TG digroup CGA or PBA state

*b Explanation*

E East-bundle NPCTG in CGA or PBA

W West-bundle NPCTG in CGA or PBA

B NPCTG(s) supporting both bundles in CGA or PBA

0 NPCTG(s) not in CGA or PBA

**RDC** - Red circuit

The cross-connection tested is a red circuit.

**CUS** - Customer

The cross-connection tested is a customer-controlled circuit.

**COND** - Condition

**NN** - TG width (1 through 31)

**cc** - Hexadecimal condition code

*cc Explanation*

**26** NPC type error

**12** Active CCN side not IS or failed or pested or hardware OOS

**13** UNIT not equipped, not in service, or failed

**14** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15** FTMI not equipped, not in service, or failed

**16** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**18** DSPI not equipped, not in service, or failed

**cc**    *Explanation*

- 1A**    Required FLI not equipped, not in service, or failed
- 1B**    Required MXR not equipped, not in service, or failed
- 1C**    Req'd FMT not eq'd, not IS, or failed, or inact side FMT not eq'd, or not IS
- 1D**    Required MIU not equipped, not in service, or failed
- E0**    ETSI not equipped, not in service, or failed
- 3C**    TS0 specified with width not 1
- 3D**    Illegal test access mode for TS0
- 3E**    TS16 specified for test with width not 1
- 3F**    Illegal test access mode for TS16
- 47**    Invalid channel number
- 49**    test group unequipped
- 4A**    channel part of a TP or TG
- 4B**    channel already under test
- 4D**    Gateway test access not supported
- 51**    TG width incompatible with circuit
- 53**    inconsistent HUB width for specified TG
- 59**    Invalid TC specification
- 5A**    NPC not in service or failed
- 5D**    Inconsistent Signaling on CEPT NPCTGs
- 5E**    invalid test access mode
- 5F**    input channel out of range (SLC not supported)
- 60**    circuit contains mapped channels for HUB request
- 95**    TG East/West type inconsistent with each other or circuit
- 96**    incompatible HUB feature types



## **TTST,HUB,TO,TP,NAM**

### **TWO-WAY TEST ACCESS, HUB**

#### **Explanation Of Command**

This command requests a hubbing mode test access via a specified test port (TP) to the TO termination. In the hubbing mode, DACS II is used as a test access concentrator to connect a local TP to a remote TP. The cross-connection will be made between TP **kk** and two 64-kb/s channels, the TO end of which is specified in the command. Successive termination numbers **jjj** and **ddd** correspond to lower and upper channels of the test port, respectively. These two channels are from a test port in another DACS II or other test access device to be cross-connected. DACS II does not know if the requested access is, in fact, to a hubbed test port on another frame; however, the request will be denied if either channel is mapped, under test, or if channel **jjj** would be out of range on the NPC.

Trunk conditioning **<tc** may be specified, however, it only has an effect on Gateway (T1-E1) conversion circuits. For hub test access of non-Gateway circuits, any trunk conditioning values entered by the user will be overwritten by all one values for the circuit's signaling and insertion word.

#### **Command**

##### **Nonhierarchical**

[I.24001]

TTST:FRM xy,SEQ ww:HUB,TO [t]ghijjj,TP kk[,<tc>][,NAM]!

##### **Hierarchical**

[I.24001]

TTST:FRM xy,SEQ ww:HUB,TO uvmnpjjj,TP kk[,<tc>][,NAM]!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.24001]

M hh:mm:ss xy,ww n[vv] TTST HUB [t]ghijjj,[t]ghimmm TP kk \\  
2 LN MSG:  
[<tc>][ NAM] CGA(ftp) COMPL

#### **Hierarchical**

---

[O.24001]

M hh:mm:ss xy,ww n[vv] TTST HUB uvmnpjjj,uvmnpmmm TP kk \\  
2 LN MSG:  
[<tc>][ NAM] CGA(ftp) COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.24001.01]

M hh:mm:ss xy,ww n[vv] TTST HUB [t]ghijjj <tc>[ NAM] TP kk <st> \\  
DNY

If the error response exceeds 80 characters:

[O.24001.02]

M hh:mm:ss xy,ww n[vv] TTST HUB [t]ghijjj <tc> 2 LN MSG:  
[NAM ]TP kk <st> DNY

#### **Hierarchical**

---

[O.24001.01]

M hh:mm:ss xy,ww n[vv] TTST HUB uvmnpjjj <tc>[ NAM] TP kk <st> \\  
DNY

If the error response exceeds 80 characters:

[O.24001.02]

M hh:mm:ss xy,ww n[vv] TTST HUB uvmnpjjj <tc> 2 LN MSG:  
[NAM ]TP kk <st> DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

**HUB** - Hub

**TO** - To

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0032 | 0161-0192 | 0321-0352 | 0481-0512 |
| 0041-0072 | 0201-0232 | 0361-0392 | 0521-0552 |
| 0081-0112 | 0241-0272 | 0401-0432 | 0561-0592 |
| 0121-0152 | 0281-0312 | 0441-0472 | 0601-0632 |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical TO NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**jjj** - TO channel number

The TO channel number must correspond to a lower channel of a test port  
for CEPT and Primary digroups

**tc** - Trunk conditioning

tc represents the desired cross-connected signaling and insertion word applied when a failure occurs. A trunk conditioning specification consists of a combination of a signaling specification followed by an insertion word specification. The signaling and the insertion word specification are entered separately, with a comma as the delimiter.

| <i>signaling</i>      | <i>Explanation</i>                                                                                                                                                                |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TC(ijkl,mnop)         | 2-way, 4-state signaling in binary. For CEPT and ESF type framing format, software will expand 4-state to 16-state by duplicating the bits.                                       |
| TC(efghijkl,mnopqrst) | 2-way, 16-state in binary.                                                                                                                                                        |
| TC(X'ab,X'cd)         | 2-way, 16-state in hexadecimal.                                                                                                                                                   |
| TRSP                  | Transparent, no signaling.                                                                                                                                                        |
| Omitted               | Default is TC X'FF,X'FF if both terminations are channel associated signaling types (CAS). Default will be TRSP if one of the terminations is nonsignaling associated (NSA) type. |

| <i>insertion word</i> | <i>Explanation</i>                                                                                                                       |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq               | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line. |
| Omitted               | Will default to IW X'FF.                                                                                                                 |

**mmm** - Channel number

Variable mmm is equal to jjj + 1. Must be an even number.

**TP** - Test port

**kk** - Test port number (01 through 96)

**CGA** - Carrier group alarm

**f** - FROM CGA status

*f*      *Explanation*

F      FROM NPC is in CGA

0      FROM NPC is not in CGA

**t** - TO CGA status

*t*      *Explanation*

T      TO NPC is in CGA

0      TO NPC is not in CGA

**p** - Test port NPC CGA status

*p*      *Explanation*

P      Test port NPC is in CGA

0      Test port NPC is not in CGA

**Note:** FROM test port NPC will never appear in the CGA condition.

Signaling mode of port

**T** - Transparent

**R** - Robbed bit Signaling

**C** - Channel associated signaling (CAS)

**H** - Hubbing

**ASGN** - Assigned

The test port is already assigned.

**NMON** - Not monitor

The test port is not in monitor mode.

**st** - Status

**Note:** When st is set to "T NOT LOWER", for CEPT type NPCs, jjj must be one of the following channels:

005, 007, 009, 011, 013, 016, 018, 020, 022, 024, 026, or 028.

| <b>st</b>          | <i>Explanation</i>                                         |
|--------------------|------------------------------------------------------------|
| <b>BADCCB</b>      | CCB OOS or failed                                          |
| <b>BADCCN</b>      | CCN OOS or failed                                          |
| <b>BADCHAN</b>     | Bad channel number was specified                           |
| <b>BADFC</b>       | FC OOS or failed                                           |
| <b>BADFCB</b>      | FCB OOS or failed                                          |
| <b>BADFLI</b>      | FLI OOS or failed                                          |
| <b>BADFMT</b>      | FMT (Formatter) OOS or failed                              |
| <b>BADFTMI</b>     | FTMI OOS or failed                                         |
| <b>BADMIU</b>      | MIU OOS or failed                                          |
| <b>BADMXR</b>      | MXR OOS or failed                                          |
| <b>BADNPC</b>      | Bad NPC number                                             |
| <b>BADTSI</b>      | TSI OOS or failed                                          |
| <b>BADUNIT</b>     | UNIT OOS or failed                                         |
| <b>EVEN</b>        | TO termination is not an odd channel                       |
| <b>FAIL</b>        | Test port Group NPC failed                                 |
| <b>IMPR TC</b>     | Improper trunk conditioning specification                  |
| <b>MCOND</b>       | An entity in the network is OOS or failed                  |
| <b>NA</b>          | DACS CCN or UNIT involved cannot perform the cross-connect |
| <b>NAM_NA</b>      | NAM keyword is not applicable to the cross-connection type |
| <b>NOT IDLE</b>    | Test port is not idle                                      |
| <b>OOS</b>         | Test port Group NPC out of service                         |
| <b>SG COND 02</b>  | Test port is static                                        |
| <b>T CLR</b>       | The TO NPC is a clear-DS1 or clear-2Mb NPC                 |
| <b>T FAIL</b>      | TO side NPC is marked failed                               |
| <b>T NOT CAS</b>   | TO termination not CAS.                                    |
| <b>T NOT LOWER</b> | TO termination is not the lower test access channel        |
| <b>T OOS</b>       | TO side NPC is Out Of Service                              |
| <b>T UEQD</b>      | TO side NPC is Unequipped                                  |
| <b>T UTST</b>      | TO termination is under test                               |
| <b>TERM ASGN</b>   | TO termination is assigned                                 |
| <b>TG</b>          |                                                            |
| <b>TP</b>          | TO termination is a test port                              |
| <b>T_SCDG</b>      | TO termination is an RT (DL) termination                   |
| <b>UEQD</b>        | The test port Group NPC is unequipped                      |

## **TTST,LPD,TG**

### **NX64Kbit/s LOOPED TEST ACCESS**

#### **Explanation Of Command**

This command is used to place both bundles of a test-access group (TG) in the looped mode. If the TG is not provisioned or currently assigned the command will be denied.

#### **Command**

[I.29021]

TTST:FRM xy,SEQ ww:LPD,TG mmm[,<tc>]!

#### **Completion Message**

[O.29021]

M hh:mm:ss xy,ww n[vv] TTST LPD TG mmm NN <tc> COMPL

#### **Denial Message**

[O.29021.01]

M hh:mm:ss xy,ww n[vv] TTST LPD TG mmm COND cc DNY

#### **Autonomous Message**

Not applicable.



## Explanation Of Parameters

**LPD** - Looped

**TG** - Test (access) group

**mmm** - TG number (001 through 400)

**tc** - Trunk conditioning

If the static tc was not furnished in the growth TG command, it must be dynamically specified in this command or the test access will be denied. A dynamic tc will override any static tc. The effective tc will be used, and will be output.

**COND** - Condition

**NN** - TG width (1 through 31)

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 12** Active CCN side not IS or failed or pested or hardware OOS
- 13** UNIT not equipped, not in service, or failed
- 14** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS
- 15** FTMI not equipped, not in service, or failed
- 16** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS
- 17** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS
- 18** DSPI not equipped, not in service, or failed
- 1A** Required FLI not equipped, not in service, or failed
- 1B** Required MXR not equipped, not in service, or failed
- 1C** Reqd FMT not eqd,not IS,or failed,or inact side FMT not eqd, or not IS
- 1D** Required MIU not equipped, not in service, or failed
- E0** ETSI not equipped, not in service, or failed
- 3D** Illegal test access mode for TS0
- 3F** Illegal test access mode for TS16
- 49** test group unequipped
- 59** Invalid TC specification
- 5A** NPC not in service or failed
- 5D** Inconsistent Signaling on CEPT NPCTGs
- 5E** invalid test access mode

## **TTST,LPD,TP**

### **LOOPED TEST ACCESS**

#### **Explanation Of Command**

This message requests that both test port channels on a given test port be placed in the looped mode.

Trunk conditioning *may be specified* to loop a static test port **kk**. If specified it will override the specification given when the test port was equipped. If not specified it will default to the specification given when the test port was equipped.

Trunk conditioning *must be specified* to loop a dynamic test port **kk** since tc is dynamically set when any test access message makes the test port active. If trunk conditioning is omitted, the request will be denied.

**TTST : : TPR, TP** will undo this command.

The test port is mapped to predesignated channels of a network processing circuit for test ports (NPCTP) during the provisioning of that test port. All CEPT types that have been provisioned for channel associated signaling (CAS) can be provisioned as NPCTP. For the mapping between the test ports and the channels of the test NPCs, see the CRTE::TP message.

#### **Command**

[I.29001]

**TTST:FRM xy,SEQ ww:LPD,TP kk,<tc>!**

#### **Completion Message**

[O.29001]

**M hh:mm:ss xy,ww n[vv] TTST LPD TP kk <tc> COMPL**

### Denial Message

[O.29001.01]

M hh:mm:ss xy,ww n[vv] TTST LPD TP kk <st> DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

**LPD** - Looped

**TP** - Test port

**kk** - Test port number (01 through 96)

**tc** - Trunk conditioning

Represents the desired cross-connected signaling and insertion word applied when a failure occurs. A trunk conditioning specification consists of a combination of a signaling specification followed by an insertion word specification. For example, TRSP,IW X'pq (input form).

The following signaling options are allowed:

| <i>signaling</i>      | <i>Explanation</i>                                                                                                                                                                                                     |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TC(ijkl,mnop)         | 2-way,4-state signaling in binary. For CEPT type framing format, software will expand 4-state to 16-state by duplicating the format on the remaining frames on a superframe.                                           |
| TC(efghijkl,mnopqrst) | 2-way,16-state in binary. Only valid for CEPT framing format.                                                                                                                                                          |
| TC(X'ab,X'cd)         | 2-way,16-state in hexadecimal                                                                                                                                                                                          |
| TRSP                  | Transparent, no signaling                                                                                                                                                                                              |
| omitted               | Only valid for CEPT cross-connections, defaults to TC(X'FF,X'FF) if both terminations are channel associated signaling type. It will default to TRSP if one of the terminations is nonsignaling associated (NSA) type. |

The following insertion words options are allowed:

*insertion word   Explanation*

IW X'pq      The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted to the downstream direction of a failure on either line.

Omitted      Only valid for CEPT, will default to IW X'FF

For channel 016 on a CAS primary trunk conditioning defaults to TRSP,IW X'FF

and will override any trunk conditioning option provided in this message.

The following trunk conditioning usage applies:

- If trunk conditioning is omitted from this message and was omitted from GRTH::TP, the message will be denied.
- If trunk conditioning is omitted from this message but was provided in GRTH::TP, the trunk conditioning value provided in GRTH::TP, is applied.
- If trunk conditioning is provided in this message, it overrides the value, (if provided), in GRTH::TP.

**st**      - Status

**st**      *Explanation*

|                |                                                            |
|----------------|------------------------------------------------------------|
| <b>ASGN</b>    | Termination assigned                                       |
| <b>BADCCN</b>  | CCN OOS or failed                                          |
| <b>BADFC</b>   | FC OOS or failed                                           |
| <b>BADFLI</b>  | FLI OOS or failed                                          |
| <b>BADFMT</b>  | FMT (Formatter) OOS or failed                              |
| <b>BADFTMI</b> | FTMI OOS or failed                                         |
| <b>BADMIU</b>  | MIU OOS or failed                                          |
| <b>BADMXR</b>  | MXR OOS or failed                                          |
| <b>BADTSI</b>  | TSI OOS or failed                                          |
| <b>BADUNIT</b> | UNIT OOS or failed                                         |
| <b>FAIL</b>    | Test port Group NPC failed                                 |
| <b>IMPR TC</b> | Improper trunk conditioning specification                  |
| <b>MCOND</b>   | An entity in the network is OOS or failed                  |
| <b>NA</b>      | DACS CCN or UNIT involved cannot perform the cross-connect |
| <b>NO TC</b>   | <tc> not provided                                          |

| <b>st</b>         | <i>Explanation</i>                                 |
|-------------------|----------------------------------------------------|
| <b>NOT IDLE</b>   | Test port is not idle                              |
| <b>OOS</b>        | Test port Group NPC out of service                 |
| <b>SG COND 02</b> | Trunk conditioning not given for dynamic test port |
| <b>UEQD</b>       | The test port Group NPC is unequipped              |

---

## TTST,MON,TG

---

### NX64Kbit/s TWO-WAY TEST ACCESS, MONITOR

#### Explanation Of Command

---

This command is used to change the mode of a test-access group, that is currently in the split mode, to the monitor mode.

**Note:** If the test-access group is already in the monitor mode this command will be denied.

#### Command

---

[I.21031]

TTST:FRM xy,SEQ ww:MON,TG mmm!

#### Completion Message

---

#### Nonhierarchical

---

[O.21031]

```
M hh:mm:ss xy,ww n[vv] TTST MON TG mmm FROM [s]abc TO [t]ghi \
6 LN MSG:
SG g CGA(ftb)[RDC][CUS][ONEWAY] {TLA s|BCAST|UMPD <tc>}
ddd ddd ddd ddd ddd ddd ddd ddd
ddd ddd ddd ddd ddd ddd ddd ddd
ddd ddd ddd ddd ddd ddd ddd ddd
ddd ddd ddd ddd ddd ddd ddd ddd COMPL
```

---

### Hierarchical

[O.21031]

M hh:mm:ss xy,ww n[vv] TTST MON TG mmm FROM uvmnp TO wxkqr \\  
6 LN MSG:  
SG g CGA(ftb)[ RDC][ CUS][ ONEWAY] {TLA s|BCAST|UMPD <tc>}  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd COMPL

---

### Denial Message

[O.21031.01]

M hh:mm:ss xy,ww n[vv] TTST MON TG mmm COND cc DNY

---

### Autonomous Message

Not applicable.

---

### Explanation Of Parameters

**TG** - Test-access group

**mmm** - Test-access group number (001 through 400)

The TG is designated as in message 31421, and must have the same width as the number of channels specified in this message.

**MON** - Monitor

**[s]abc** - 3- or 4-digit non-hierarchical FROM NPC number

**[t]ghi** - 3- or 4-digit non-hierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |



| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - FROM Channel numbers

001-031\* Primary NPCs grown as Channel Associated Signaling (CAS)  
001-031 Primary NPCs grown as Non Signaling Associated (NSA)

\*Circuits involving CAS channel 31 can only be tested individually.

The FROM channel ddd will be '---' for circuits not involved in this test session. For unmapped TO channel(s) or a BBL without return, ddd will be '000' in the corresponding channel position(s). If TO channel is mapped to a channel 000, the circuit can only be tested as N = 1, the corresponding FROM channel ddd will be '000'.

**tc** - Trunk conditioning

For mapped circuits, <tc> will be omitted.  
For unmapped circuits, the effective <tc> will be output.

**SG** - Signaling

**g** - Signaling mode of the TG

*g*      *Explanation*

T      All channels are Transparent (TRSP)

C      One or more channels is CAS or non-TRSP

**CGA** - Carrier group alarm

**PBA** - Primary block alarm

**ftb** - CGA or PBA state

f - FROM CGA or PBA state

*f*      *Explanation*

F      FROM NPC is in CGA or PBA

0      FROM NPC is not in CGA or PBA

t - TO CGA or PBA state

*t*      *Explanation*

T      TO NPC is in CGA or PBA

0      TO NPC is not in CGA or PBA

b - TG digroup CGA or PBA state

*b*      *Explanation*

E      East-bundle NPCTG in CGA or PBA

W      West-bundle NPCTG in CGA or PBA

B      NPCTG(s) supporting both bundles in CGA or PBA

0      NPCTG(s) not in CGA or PBA

**RDC** - Red circuit

The cross-connection tested is a red circuit.

**CUS** - Customer

The cross-connection tested is a customer-controlled circuit.

**ONEWAY** - One-way

The cross-connection tested is a one-way circuit.

**BCAST** - Broadcast

The cross-connection tested is part of a broadcast circuit.

**TLA** - Terminate and leave active

**S**

- Termination state of the circuit

*s Explanation*

R All channels are released

F One or more FROM channel is terminated

T One or more TO channel is terminated

B One or more of FROM and TO channels are terminated

**UMPD** - Unmapped

The circuit under test is unmapped.

**COND** - Condition

**cc** - Hexadecimal condition code

*cc Explanation*

**12** Active CCN side not IS or failed or pested or hardware OOS

**13** UNIT not equipped, not in service, or failed

**14** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15** FTMI not equipped, not in service, or failed

**16** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**18** DSPI not equipped, not in service, or failed

**1A** Required FLI not equipped, not in service, or failed

**1B** Required MXR not equipped, not in service, or failed

**1C** Reqd FMT not eqd,not IS,or failed,or inact side FMT not eqd, or not IS

**1D** Required MIU not equipped, not in service, or failed

**E0** ETSI not equipped, not in service, or failed

**47** Invalid channel number

**49** test group unequipped

**5A** NPC not in service or failed

**5E** invalid test access mode

## **TTST,MON,TO,NAM,TP**

### **TWO-WAY TEST ACCESS, MONITOR**

#### **Explanation Of Command**

This command can be used to do one of two things:

1. To set up a previously unassigned test port to monitor a particular termination.
2. To change a previously assigned test port to monitor mode.

If the test port is already in the monitor mode, DACS II will deny the execution of the message.

The trunk conditioning (**tc**) specified in this command applies only when accessing an unmapped termination. For an access to a mapped circuit, **tc** is adopted from the circuit being accessed and, therefore, will be ignored if specified.

The DACS II test ports are either static or dynamic. A test port is defined as static when trunk conditioning is specified in a test port provisioning command otherwise it is a dynamic test port. If this test port is static, trunk conditioning must be specified.

If the test port is in the split mode, do not specify the TO NPC number.

For Broadcast (BCON) connections test access shall be denied except for the TS0 to non-TS0 connection.

This command does **not** monitor any connections inside a Digital Signal Processing Platform (DSPP) application, such as the DDS Subrate and MJU application, the X.50 International subrate application, or the DMB application. However, test ports may be established to any of the applications via application commands, and may then be used, again via application commands, to monitor or split circuits within the application. If a test port has been established to an application, then that test port will always appear as a split connection in an invocation of the UTL::QRY,TPS command, regardless of whether that test port is in monitor, split, or release mode inside the application.

### **Command**

---

### **Nonhierarchical**

---

[I.21001]

TTST:FRM xy,SEQ ww:MON[,TO [t]ghijjj][,<tc>][,NAM],TP kk!

### **Hierarchical**

---

[I.21001]

TTST:FRM xy,SEQ ww:MON[,TO uvmnpjjj][,<tc>][,NAM],TP kk!

### **Completion Message**

---

### **Nonhierarchical**

---

[O.21001]

M hh:mm:ss xy,ww n[vv] TTST MON [s]abcddd,[t]ghijjj TP kk \\  
2 LN MSG:  
<tc>[ NAM] SG g CGA(ftp)[ RDC][ CUS] [ ONEWAY] TLA s COMPL

[O.21002]

M hh:mm:ss xy,ww n[vv] TTST MON [t]ghijjj TP kk[ NAM] SG g \\  
2 LN MSG:  
<tc> CGA(ftp) UMPD COMPL

### **Hierarchical**

---

[O.21001]

M hh:mm:ss xy,ww n[vv] TTST MON wxkqrddd,uvmnpjjj TP kk \\  
2 LN MSG:  
<tc>[ NAM] SG g CGA(ftp)[ RDC][ CUS][ ONEWAY] TLA s COMPL

[O.21002]

M hh:mm:ss xy,ww n[vv] TTST MON uvmnpjjj TP kk[ NAM] SG g \\  
2 LN MSG:  
<tc> CGA(ftp) UMPD COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.21001.01]

M hh:mm:ss xy,ww n[vv] TTST TP kk <reason> DNY

[O.21001.02]

M hh:mm:ss xy,ww n[vv] TTST MON[ [t]ghijjj] TP kk 2 LN MSG:  
[<tc> ][NAM ]<reason> DNY

[O.21001.03]

M hh:mm:ss xy,ww n[vv] TTST MON [t]ghijjj TP kk [s] \  
klmnnn,[t]pqrsss ASGN DNY

[O.21001.04]

M hh:mm:ss xy,ww n[vv] TTST MON [s]abcddd,[t]ghijjj TP kk \  
<reason> DNY

### **Hierarchical**

---

[O.21001.01]

M hh:mm:ss xy,ww n[vv] TTST TP kk <reason> DNY

[O.21001.02]

M hh:mm:ss xy,ww n[vv] TTST MON[ uvmnpjjj] TP kk 2 LN MSG:  
[<tc> ][NAM ]<reason> DNY

[O.21001.03]

M hh:mm:ss xy,ww n[vv] TTST MON uvmnpjjj TP kk edhfgnnn, \  
opjstsss ASGN DNY

[O.21001.04]

M hh:mm:ss xy,ww n[vv] TTST MON wxkqrddd,uvmnpjjj TP kk \  
<reason> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**TP** - Test port

**kk** - Test port number (01 through 96)

A test port is mapped to predesignated channels of a network processing circuit for test ports (NPCTP) during the provisioning of that test port.

Only NPC types that have been provisioned for channel associated signaling (CAS) can be provisioned as an NPCTP.

For the mapping between the test ports and the channels of the test NPCs, see the GRTH::TP Message

The DACS II test ports are either static or dynamic, as defined in the GRTH::TP message.

If the test port is in the split mode, TO [t]ghijj may not be specified.

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical TO NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**jjj** - TO Channel number

Channel numbers



000-030        CEPT type NPCs grown as CAS  
000-031        CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Conference numbers  
001-085        (MB NPC)

**tc**    - Trunk conditioning

If the tc option was not furnished in the test port provisioning command, it must be furnished in this input command to provide a test connection for unmapped circuits; otherwise, the test access will be denied.

Represents the desired signaling and insertion word to be applied when a failure occurs. A trunk conditioning specification consists of a combination of a signaling specification followed by an insertion word specification. For example, TRSP,IW X'pq (input form).

For channel 031 on a CAS primary, tc must take on the value TRSP, and will override any tc option provided in the input command.

**Note:** For mapped terminations, tc takes on the mapped cross-connect tc value and overrides any tc option provided in the input command.

For unmapped terminations, trunk conditioning will be applied as follows:  
If tc is omitted from this command and was omitted in the test port provisioning command, the command will be denied (unless CAS channel 031).

If tc is omitted from this command but was provided in the test port provisioning command, the tc value provided in the provisioning command is applied.

If tc is provided in this command, it overrides the value, (if provided), in the test port provisioning command.

| <i>signaling</i>      | <i>Explanation</i>                                                                                                                                                             |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TC(ijkl,mnop)         | 2-way, 4-state signaling in binary. For CEPT and ESF type framing format, software will expand 4-state to 16-state by duplicating the bits.                                    |
| TC(efghijkl,mnopqrst) | 2-way, 16-state in binary.                                                                                                                                                     |
| TC(X'ab,X'cd)         | 2-way, 16-state in hexadecimal.                                                                                                                                                |
| TRSP                  | Transparent, no signaling.                                                                                                                                                     |
| Omitted               | Default is TC X'FF,X'FF if both terminations are channel associated signaling types. Default will be TRSP if one of the is terminations is nonsignaling associated (NSA) type. |

| <i>insertion word</i> | <i>Explanation</i>                                                                                                                       |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq               | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line. |
| Omitted               | Will default to IW X'FF.                                                                                                                 |

For 4-state signaling, the A/B signaling bits of both test port channels are specified by ijkl for the receive time slot interchange (RTSI), and by mnop for the transmit time slot interchange (TTSI).

For 16-state signaling, the A/B/C/D signaling bits of both test port channels are specified by efghijkl (or hexadecimal digits ab) for the RTSI, and by mnopqrst (or hexadecimal digits cd) for the TTSI.

**NAM** - No A to Mu (conversion)

This keyword is used to disable the A- to  $\mu$ -law conversions on CEPT type NPCs which can be either the tested circuit or a test port itself.

The NAM keyword will have this meaning only on the following three configurations; in other test access configurations the DACS II will provision the accessed circuits appropriately and therefore the NAM keyword will be ignored.

Unmapped domestic termination accessed via a CEPT test port

Unmapped CEPT termination accessed via a domestic test port

Mapped pure domestic circuit accessed via a CEPT test port

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number  
**[s]klm** - The 3- or 4-digit nonhierarchical FROM NPC number  
**[t]pqr** - The 3- or 4-digit nonhierarchical TO NPC number

**uvmnp** - Hierarchical TO NPC number  
**wxkqr** - Hierarchical FROM NPC number.

Supports the termination that is cross-connected to channel ghijj.

**[s]klmnnn**  
- Nonhierarchical format termination being tested as FROM on test port kk otherwise the same as [s]abcd. If this field is all zeroes, test port kk is assigned to an unmapped termination.

**edhfgnnn**  
- Hierarchical format of [s]klmnnn

**pqrss**  
- Nonhierarchical format termination being tested as TO on test port kk; otherwise, the same as abcd.

**opjstsss**  
- Hierarchical format of [t]pqrss

**ddd** - FROM channel number of the termination that is cross-connected to  
**nnn** - FROM channel number of the termination that is cross-connected to channel [t]ghi-jjj.

**sss** - TO channel number

**SG** - Signaling

**g** - Signaling mode of test port kk

*g*      *Explanation*

C      Channel Associated Signaling (CAS)

R      Robbed Bit Signaling

T      Transparent

**CGA** - Carrier group alarm

**ftp** - PBA state

f - FROM PBA state

*f*      *Explanation*

F      FROM NPC is in PBA

0      FROM NPC is not in PBA

t - TO PBA state

*t*      *Explanation*

T      TO NPC is in PBA

0      TO NPC is not in PBA

p - Test port digroup PBA state

*p*      *Explanation*

P      Test port NPC is in PBA

0      Test port NPC is not in PBA

**RDC** - Red circuit

**CUS** - Customer

The cross-connection tested is a customer controlled circuit.

**ONEWAY**

- One-way

The cross-connection tested is a one-way circuit.

**TLA** - Terminate and leave activate

**s**  
- Termination state of the circuit

*s Explanation*

R RELEASED. Neither side is terminated  
F FROM side is terminated  
T TO side is terminated  
B BOTH sides are terminated

**ASGN** - Assigned  
The test port is already assigned to another termination, denoted

**UMPD** - Unmapped

**reason** - Reason for denial

**cc** - Hexadecimal condition code

*cc st Explanation*

**D4 SCERR** Corresponding NPC for TO virtual channel is not provisioned  
**D7 SCERR** Invalid TO channel number

*st Explanation*

**BADCCB** CCB OOS or failed  
**BADCCN** CCN OOS or failed  
**BADCHAN** Bad channel number was specified  
**BADDSPI** DSPI OOS or failed  
**BADFC** FC OOS or failed  
**BADFLI** FLI OOS or failed  
**BADFMT** FMT (Formatter) OOS or failed  
**BADFTMI** FTMI OOS or failed  
**BADMIU** MIU OOS or failed  
**BADMXR** MXR OOS or failed  
**BADNPC** Bad NPC number  
**BADTSI** TSI OOS or failed  
**BCAST** The TO side is part of a broadcast circuit  
**C TOO DEEP** DMB concatenations go too deep (for more than 6 level)  
**CBIT** The TO side is part of a c-bit cross-connection  
**CWNOT1** Conference width is not equal to 1 (for virtual conferences)  
**F ASGN** The FROM side NPC, wx-k-qr, is assigned  
**F FAIL** FROM side NPC is marked failed  
**F OOS** FROM side NPC (abc) is out of service

| <b>st</b>           | <i>Explanation</i>                                                        |
|---------------------|---------------------------------------------------------------------------|
| <b>F UEQD</b>       | The DACS unit supporting the FROM termination is out-of-service or failed |
| <b>FAIL</b>         | Test port Group NPC failed                                                |
| <b>IMPR TC</b>      | Improper trunk conditioning specification                                 |
| <b>INERR</b>        | Input error                                                               |
| <b>INV CKT TYPE</b> | TO termination has invalid circuit type for test access                   |
| <b>NA</b>           | DACS CCN or UNIT involved cannot perform the cross-connect                |
| <b>OOS</b>          | Test port Group NPC out of service                                        |
| <b>SG COND 02</b>   | Test port is dynamic                                                      |
| <b>T ASGN</b>       | The TO side NPC is assigned                                               |
| <b>T CLR</b>        | The TO NPC is a clear-DS1 NPC                                             |
| <b>T FAIL</b>       | TO side NPC is marked failed                                              |
| <b>T OOS</b>        | TO side NPC is Out Of Service                                             |
| <b>T UEQD</b>       | TO side NPC is Unequipped                                                 |
| <b>T UTST</b>       | TO termination is under test                                              |
| <b>TG</b>           |                                                                           |
| <b>TP</b>           | The TO termination is part of a test port                                 |
| <b>T_DCLU</b>       | Attempt to test a locally switched channel                                |
| <b>UEQD</b>         | Test port kk is unequipped                                                |
| <b>UTST</b>         | Under Test                                                                |

---

## **TTST,MON,TO,TG**

---

### **NX64Kbit/s TWO-WAY TEST ACCESS, MONITOR**

#### **Explanation Of Command**

---

This command is used to request a monitor test access of a specified group of Nx64Kbit/s terminations. Monitor test access of a broadcast TS0 to non-TS0 connection will not use this command but will use I.21001 instead. The test access is made through the test-access group specified in the command line.

The N TO channels to be tested may be entered as a range, a list, or a combination of both, in ascending order. For two-point circuits, the numbers do not have to be consecutive, and the circuits may have been cross-connected separately. For a one-way circuit under test, the other direction of the same termination cannot be tested at the same time. For Nx64Kbit/s broadcast circuits, the channels have to be consecutive and must have been set up together for the same broadcast circuit.

The primary output line will not echo the input with range(s) of channels, but will show a list of all channels.

#### **Command**

---

##### **Nonhierarchical**

---

[I.21021]

```
TTST:FRM xy,SEQ ww:MON,TO [t]ghi(jjj[-kkk][,lll,...])[,<tc>],\
TG mmm!
```

##### **Hierarchical**

---

[I.21021]

```
TTST:FRM xy,SEQ ww:MON,TO wxkqr(jjj[-kkk][,lll,...])[,<tc>],\
TG mmm!
```

## **Completion Message**

---

### **Nonhierarchical**

---

[O.21021]

M hh:mm:ss xy,ww n[vv] TTST MON TG mmm FROM [s]abc TO [t]ghi \\  
6 LN MSG:  
SG g CGA(ftb)[ RDC][ CUS][ ONEWAY] {TLA s|BCAST|UMPD <tc>}  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd COMPL

### **Hierarchical**

---

[O.21021]

M hh:mm:ss xy,ww n[vv] TTST MON TG mmm FROM uvmnp TO wxkqr \\  
6 LN MSG:  
SG g CGA(ftb)[ RDC][ CUS][ ONEWAY] {TLA s|BCAST|UMPD <tc>}  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.21021.01]

M hh:mm:ss xy,ww n[vv] TTST MON TG mmm[ [t]ghipp] COND cc DNY

### **Hierarchical**

---

[O.21021.01]

M hh:mm:ss xy,ww n[vv] TTST MON TG mmm[ wxkqrppp] COND cc DNY

### **Autonomous Message**

---

Not applicable.



## Explanation Of Parameters

**MON** - Monitor

**TO** - To

**[s]abc** - 3- or 4-digit non-hierarchical FROM NPC number

**[t]ghi** - 3- or 4-digit non-hierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

For an unmapped TO termination, or a backbone leg (BBL) without return, the FROM NPC number will be shown as zeroes.

**ddd** - FROM Channel number  
**jjj, kkk, lll**  
- TO Channel numbers  
**ppp** - First TO Channel number causing denial

kkk is shown as an example of a range jjj-kkk of TO channels, and lll is an example of an item on a list of TO channels.

001-031\*      Primary NPCs grown as Channel Associated Signaling (CAS)  
001-031      Primary NPCs grown as Non Signaling Associated (NSA)

\* Circuits involving CAS channel 31 can only be tested individually.

The FROM channel ddd will be '---' for circuits not involved in this test session. For unmapped TO channel(s) or a BBL without return, ddd will be '000' in the corresponding channel position(s). If channel jjj is mapped to a channel 000, the circuit can only be tested as N = 1, and the corresponding FROM channel ddd will be '000'.

**tc**      - Trunk conditioning

For mapped circuits, regardless of what is specified here, the circuit's tc will be used but not shown in the output response.

For unmapped circuits, if the static tc was not furnished when the TG was provisioned, it must be dynamically specified in this command or the test access will be denied. A dynamic tc will override any static tc. The effective tc will be used for all channels under test, and will be shown in the output.

For any unmapped circuits tested by NSA TGs, TRSP must be entered for tc or the command will be denied.

For channel 031 on a CAS primary, any tc value specified will be replaced by TRSP.

**TG**      - Test-access Group

**mmm**      - Test-access Group number (001 through 400)

The TG is designated as in GRTH::TG,NPCTG and must have the same width as the number of channels specified in this message.

**SG**      - Signaling

**g**      - Signaling mode of the TG

|          |                                         |
|----------|-----------------------------------------|
| <i>g</i> | <i>Explanation</i>                      |
| T        | All channels are Transparent (TRSP)     |
| C        | At least one channel is CAS or non-TRSP |

**CGA** - Carrier group alarm

**PBA** - Primary block alarm

**ftb** - CGA or PBA state

f - FROM CGA or PBA state

| <i>f</i> | <i>Explanation</i>            |
|----------|-------------------------------|
| F        | FROM NPC is in CGA or PBA     |
| 0        | FROM NPC is not in CGA or PBA |

t - TO CGA or PBA state

| <i>t</i> | <i>Explanation</i>          |
|----------|-----------------------------|
| T        | TO NPC is in CGA or PBA     |
| 0        | TO NPC is not in CGA or PBA |

b - TG digroup CGA or PBA state

| <i>b</i> | <i>Explanation</i>                             |
|----------|------------------------------------------------|
| B        | NPCTG(s) supporting both bundles in CGA or PBA |
| E        | East-bundle NPCTG in CGA or PBA                |
| W        | West-bundle NPCTG in CGA or PBA                |
| 0        | NPCTG(s) not in CGA or PBA                     |

**RDC** - Red circuit

The cross-connection tested is a red circuit.

**CUS** - Customer

The cross-connection tested is a customer-controlled circuit.

**ONEWAY** - One-way

The cross-connection tested is a one-way circuit.

**BCAST** - Broadcast

The cross-connection tested is part of a broadcast circuit.

**TLA** - Terminate and leave active

**s**  
- Termination state of the circuit

| <i>s</i> | <i>Explanation</i>                             |
|----------|------------------------------------------------|
| R        | All channels are released                      |
| F        | At least one FROM channel is terminated        |
| T        | At least one TO channel is terminated          |
| B        | At least one FROM and TO channel is terminated |

**UMPD** - Unmapped

The circuit under test is unmapped.

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>                                                    |
|-----------|-----------------------------------------------------------------------|
| 26        | NPC type error                                                        |
| 12        | Active CCN side not IS or failed or pested or hardware OOS            |
| 13        | UNIT not equipped, not in service, or failed                          |
| 14        | CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS |
| 15        | FTMI not equipped, not in service, or failed                          |
| 16        | FC not eqd, not IS, or failed or inactive side FC not eqd or not IS   |
| 17        | TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS |
| 1D        | Required MIU not equipped, not in service, or failed                  |
| E0        | ETSI not equipped, not in service, or failed                          |
| 3C        | TS0 specified with width not 1                                        |
| 3D        | Illegal test access mode for TS0                                      |
| 3E        | TS16 specified for test with width not 1                              |
| 3F        | Illegal test access mode for TS16                                     |
| 45        | NPC not provisioned as DGA                                            |
| 46        | virtual SLC NPC not provisioned                                       |
| 47        | Invalid channel number                                                |
| 48        | Invalid SLC Mode-III channel number                                   |
| 49        | test group unequipped                                                 |
| 4A        | channel part of a TP or TG                                            |
| 4B        | channel already under test                                            |
| 4C        | BCON BBL has one or more legs under test                              |
| 4D        | Gateway test access not supported                                     |
| 4F        | inconsistent BCON width for test access                               |
| 50        | invalid channel designation for BCON                                  |
| 51        | TG width incompatible with circuit                                    |
| 52        | FDL selected with width not 1                                         |

**cc**    *Explanation*

- 57**    Designated TG or circuit to be tested in process of being rolled
- 59**    Invalid TC specification
- 5A**    NPC not in service or failed
- 5B**    channel is OCON in opposite direction
- 5C**    Inconsistent or invalid circuit type for Nx64Kbit TA
- 5D**    Inconsistent Signaling on CEPT NPCTGs
- 5E**    invalid test access mode
- 5F**    input channel out of range (SLC not supported)
- 61**    not all FROM channels on same NPC
- 95**    TG East/West type inconsistent with each other or circuit
- A9**    Circuits TCONed itself cannot be UTST

---

## TTST,SPL,TG

---

### NX64Kbit/s TWO-WAY TEST ACCESS, SPLIT

#### Explanation Of Command

---

This command is used to split each direction of transmission of an Nx64Kbit/s circuit that is currently under test access in monitor mode.

The optional keyword NOYLW is added to allow DACS II to disable the yellow alarm transmission while the facility is connected to a Test Group which is set to split mode via this command with NOYLW option.

**Note:** If the test-access group is connected to an unmapped Nx64Kbit/s termination, this command connects both directions of the unmapped termination to the test-access group's west bundle.

#### Command

---

[I.23021]

TTST:FRM xy,SEQ ww:SPL,TG mmm!

#### Completion Message

---

#### Nonhierarchical

---

[O.23021]

```
M hh:mm:ss xy,ww n[vv] TTST SPL TG mmm FROM [s]abc TO [t]ghi \
5 LN MSG:
SG g CGA(ftb)[RDC][CUS][ONEWAY] {TLA s|BCAST|UMPD <tc>}
ddd ddd ddd ddd ddd ddd ddd ddd
ddd ddd ddd ddd ddd ddd ddd ddd
ddd ddd ddd ddd ddd ddd ddd ddd
ddd ddd ddd ddd ddd ddd ddd ddd COMPL
```

## **Hierarchical**

---

[O.23021]

```
M hh:mm:ss xy,ww n[vv] TTST SPL TG mmm FROM uvmnp TO wxkqr \
5 LN MSG:
SG g CGA(ftb)[RDC][CUS][ONEWAY] {TLA s|BCAST|UMPD <tc>}
ddd ddd ddd ddd ddd ddd ddd ddd
ddd ddd ddd ddd ddd ddd ddd ddd
ddd ddd ddd ddd ddd ddd ddd ddd
ddd ddd ddd ddd ddd ddd ddd ddd COMPL
```

## **Denial Message**

---

[O.23021.01]

```
M hh:mm:ss xy,ww n[vv] TTST SPL TG mmm COND cc DNY
```

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

TG - Test-access group

mmm - Test-access Group number (001 through 400)

The TG is designated as in message 31421

SPL - Split

[s]abc - 3- or 4-digit non-hierarchical FROM NPC number

[t]ghi - 3- or 4-digit non-hierarchical TO NPC number



If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| 001-032    | 161-192    | 321-352    | 481-512    | 641-672    | 801-832    |
| 041-072    | 201-232    | 361-392    | 521-552    | 681-712    | 841-872    |
| 081-112    | 241-272    | 401-432    | 561-592    | 721-752    | 881-912    |
| 121-152    | 281-312    | 441-472    | 601-632    | 761-792    | 921-952    |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  |
|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| 0001-0032  | 0161-0192  | 0321-0352  | 0481-0512  |
| 0041-0072  | 0201-0232  | 0361-0392  | 0521-0552  |
| 0081-0112  | 0241-0272  | 0401-0432  | 0561-0592  |
| 0121-0152  | 0281-0312  | 0441-0472  | 0601-0632  |

| Unit<br>5  | Unit<br>6  | Unit<br>7  | Unit<br>8  |
|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| 0641-0672  | 0801-0832  | 0961-0992  | 1121-1152  |
| 0681-0712  | 0841-0872  | 1001-1032  | 1161-1192  |
| 0721-0752  | 0881-0912  | 1041-1072  | 1201-1232  |
| 0761-0792  | 0921-0952  | 1081-1112  | 1241-1272  |

| Unit<br>9  | Unit<br>10 | Unit<br>11 | Unit<br>12 |
|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| 1281-1312  | 1441-1472  | 1601-1632  | 1761-1792  |
| 1321-1352  | 1481-1512  | 1641-1672  | 1801-1832  |
| 1361-1392  | 1521-1552  | 1681-1712  | 1841-1872  |
| 1401-1432  | 1561-1592  | 1721-1752  | 1881-1912  |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number

**wxkqr** - Hierarchical TO NPC number

**uv,wx** - Unit number

**m,k** - Module number

**np,qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - FROM Channel numbers

001-031\* Primary NPCs grown as Channel Associated Signaling (CAS)

001-031 Primary NPCs grown as Non Signaling Associated (NSA)

\*Circuits involving CAS channel 31 can only be tested individually.

The FROM channel ddd will be '---' for circuits not involved in this test session. For unmapped TO channel(s) or a BBL without return, ddd will be '000' in the corresponding channel position(s). If TO channel is mapped to a channel 000, the circuit can only be tested as N = 1, the corresponding FROM channel ddd will be '000'.

**tc** - Trunk conditioning

For mapped circuits, <tc> will be omitted.

For unmapped circuits, the effective <tc> will be output.

**SG** - Signaling

**g** - Signaling mode of the TG

*g Explanation*

T All channels are Transparent (TRSP)

C One or more channels is CAS or non-TRSP

**CGA** - Carrier group alarm

**PBA** - Primary block alarm

**ftb** - CGA or PBA state

f - FROM CGA or PBA state

*f Explanation*

F FROM NPC is in CGA or PBA

0 FROM NPC is not in CGA or PBA

t - TO CGA or PBA state

*t Explanation*

T TO NPC is in CGA or PBA

0 TO NPC is not in CGA or PBA

b - TG digroup CGA or PBA state

*b Explanation*

E East-bundle NPCTG in CGA or PBA

W West-bundle NPCTG in CGA or PBA

B NPCTG(s) supporting both bundles in CGA or PBA

0 NPCTG(s) not in CGA or PBA

**RDC** - Red circuit

The cross-connection tested is a red circuit.

**CUS** - Customer

The cross-connection tested is a customer-controlled circuit.

**TLA** - Terminate and leave active

**S** - Termination state of the circuit

| <i>s</i> | <i>Explanation</i>                                 |
|----------|----------------------------------------------------|
| R        | All channels are released                          |
| F        | One or more FROM channel is terminated             |
| T        | One or more TO channel is terminated               |
| B        | One or more of FROM and TO channels are terminated |

**COND cc**  
- Condition code

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>                       |
|-----------|------------------------------------------|
| <b>3D</b> | Illegal test access mode for TS0         |
| <b>3E</b> | TS16 specified for test with width not 1 |
| <b>3F</b> | Illegal test access mode for TS16        |
| <b>51</b> | TG width incompatible with circuit       |
| <b>5A</b> | NPC not in service or failed             |
| <b>5E</b> | invalid test access mode                 |

## **TTST,SPL,TP**

### **TWO-WAY TEST ACCESS**

#### **Explanation Of Command**

This command splits a mapped circuit in the normal circuit state. Also, in the normal circuit state, it connects both directions of an unmapped termination to test port **kk** (01 through 48). If the test port is connected to an unmapped termination, this command will connect both directions of an unmapped termination to the test port.

This command does **not** split any connections inside a Digital Signal Processing Platform (DSPP) application, such as the DDS Subrate and MJU application, the X.50 International subrate application, or the DMB application. However, test ports may be established to any of the applications via application commands, and may then be used, again via application commands, to monitor or split circuits within the application. If a test port has been established to an application, then that test port will always appear as a split connection in an invocation of the UTL::QRY,TPS command, regardless of whether that test port is in monitor, split, or release mode inside the application.

#### **Command**

[I.23001]

TTST:FRM xy,SEQ ww:SPL,TP kk!

#### **Completion Message**

#### **Nonhierarchical**

[O.23001]

M hh:mm:ss xy,ww n[vv] TTST SPL [s]abcddd,[t]ghijjj \  
[ RDC] [ CUS] TP kk[ TLA s] COMPL

### **Hierarchical**

---

[O.23001]

M hh:mm:ss xy,ww n[vv] TTST SPL wxkqrddd,uvmnpjjj \  
[ RDC] [ CUS] TP kk[ TLA s] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.23001.02]

M hh:mm:ss xy,ww n[vv] TTST SPL [s]abcddd,[t]ghijjj \  
TP kk <st> DNY

### **Hierarchical**

---

[O.23001.02]

M hh:mm:ss xy,ww n[vv] TTST SPL wxkqrddd,uvmnpjjj \  
TP kk <st> DNY

### **Common**

---

[O.23001.01]

M hh:mm:ss xy,ww n[vv] TTST SPL TP kk <st> DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

- TP** - Test port  
**kk** - Test port number (01 through 96)

The test port is mapped to predesignated channels of a network processing circuit for test ports (NPCTP) during the provisioning of that test port. The NPC types that can be provisioned as NPCTP are all domestic non-SLC NPC types and all CEPT types that have been provisioned for channel associated signaling (CAS). For the mapping between the test ports and the channels of the test NPCs, see Message No. 31411.

The DACS II test ports are either static or dynamic, as defined in Message No. I.31411.

- SPL** - Split

- [s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number  
**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmp** - Hierarchical TO NPC number  
**wxkqr** - Hierarchical FROM NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - FROM channel number  
**jjj** - TO channel number

The valid values are:

Channel numbers



000-030      CEPT type NPCs grown as CAS  
000-031      CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Conference numbers  
001-085      (MB NPC)

**NOTE:** If the field [s]abccddd (or wxkqrddd in Hierarchical addressing) is all zeroes, then this test port is assigned to a unmapped termination.

**CUS**      - Customer  
Customer-controlled circuit.

**RDC**      - Red circuit

**TLA**      - Terminate and leave activate

**s**          - Termination state of the circuit:

| <i>s</i> | <i>Explanation</i>                   |
|----------|--------------------------------------|
| R        | RELEASED. Neither side is terminated |
| F        | FROM side is terminated              |
| T        | TO side is terminated                |
| B        | BOTH sides are terminated            |

**st**          - Status

| <b>st</b>        | <i>Explanation</i>                                         |
|------------------|------------------------------------------------------------|
| <b>F FAIL</b>    | FROM side NPC is marked failed                             |
| <b>F OOS</b>     | FROM side NPC (abc) is out of service                      |
| <b>MCOND</b>     | An entity in the network is OOS or failed                  |
| <b>NA</b>        | DACS CCN or UNIT involved cannot perform the cross-connect |
| <b>NMON</b>      | Not Monitor, the testport is not currently in monitor mode |
| <b>SIG TS NS</b> | Signaling timeslot (CAS TS16) cannot be split              |
| <b>T FAIL</b>    | TO side NPC is marked failed                               |
| <b>T OOS</b>     | TO side NPC is Out Of Service                              |

## **TTST,TGR,TG,OOS**

### **NX64Kbit/s TWO-WAY TEST ACCESS, TEST- ACCESS GROUP RELEASE**

#### **Explanation Of Command**

This command is used to release one or more currently active test-access groups, and restore any circuits under test to their normal, terminated, or unmapped state. The OOS keyword is required to release a test-access group in two cases:

1. The associated circuit under test is out-of-service.
2. One of both of the NPCs supporting the test-access group is out-of-service.

Where more than one test-access group is specified in the input command the completion message will list the test-access groups in ascending order by the test-access group number and provide information for all test-access groups. If an attempt is made to release a range of test-access groups and no test-access groups in the range have been provisioned the release will be denied. The output for test-access groups testing in other monitor or split modes is printed with a mapping of channels.

When an administrative link fails, all test-access groups associated with that link will be released; automatically. All circuits under test by those TGs will be restored to their normal state; mapped or unmapped. Any termination state entered before or during the test access will remain in effect.

If a failure in an entity involved in an autonomous test-access group release causes the release to fail the release may be performed manually by this command.

#### **Command**

[I.27021]

**TTST:FRM xy,SEQ ww:TGR,TG mmm[-nnn][,OOS]!**

---

## Completion Message

---

### Nonhierarchical

---

[O.27021]

M hh:mm:ss xy,ww n[vv] TTST TGR TG mmm NN[ OOS] 5 LN MSG:  
FROM [s]abc TO [t]ghi[ RDC][ CUS][ TLA s][ NTR]  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd {EOM|COMPL}

or

M hh:mm:ss xy,ww n[vv] TTST TGR TG mmm[-nnn] UEQD {EOM|COMPL}

or

M hh:mm:ss xy,ww n[vv] TTST TGR TG mmm NN {UASGN|LPD} {EOM|COMPL}

or

M hh:mm:ss xy,ww n[vv] TTST TGR TG mmm NN HUB [s]abcddd,\  
[t]ghijjj[ OOS] {EOM|COMPL}

## **Hierarchical**

---

[O.27021]

M hh:mm:ss xy,ww n[vv] TTST TGR TG mmm NN[ OOS] 5 LN MSG:  
FROM uvmnp TO wxkqr[ RDC][ CUS][ TLA s][ NTR]  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd {EOM|COMPL}

or

M hh:mm:ss xy,ww n[vv] TTST TGR TG mmm[-nnn] UEQD {EOM|COMPL}

or

M hh:mm:ss xy,ww n[vv] TTST TGR TG mmm NN {UASGN|LPD} {EOM|COMPL}

or

M hh:mm:ss xy,ww n[vv] TTST TGR TG mmm NN HUB uvmnpddd,wxkqrjjj\  
[ OOS] {EOM|COMPL}

## **Denial Message**

---

[O.27021.01]

M hh:mm:ss xy,ww n[vv] TTST TGR TG mmm[-nnn] COND cc DNY

---

### Autonomous Message

---

#### Nonhierarchical

---

[O.27021]

I hh:mm:ss xy,ww TTST TGR TG mmm NN[ OOS] 5 LN MSG:  
FROM [s]abc TO [t]ghi[ RDC][ CUS][ TLA s][ NTR]  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd COMPL

or

I hh:mm:ss xy,ww TTST TGR TG mmm NN HUB [s]abcddd [t]ghijjj\  
[ OOS] COMPL

#### Hierarchical

---

[O.27021]

I hh:mm:ss xy,ww TTST TGR TG mmm NN[ OOS] 5 LN MSG:  
FROM uvmnp TO wxkqr[ RDC][ CUS][ TLA s][ NTR]  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd COMPL

or

I hh:mm:ss xy,ww TTST TGR TG mmm NN HUB uvmnpddd wxkqrjjj\  
[ OOS] COMPL

#### Common

---

[O.27021]

I hh:mm:ss xy,ww TTST TGR TG mmm NN {UASGN|LPD} COMPL

[O.27021.01]

I hh:mm:ss xy,ww TTST TGR TG mmm COND cc DNY

## Explanation Of Parameters

**TGR** - Test (access) group release

**TG** - Test (access) group

**mmm** - TG number (001 through 400)

**nnn** - TG number (001 through 400, greater than mmm)

Variable mmm is used to specify a single TG number or to specify the beginning of a range of TG numbers. Variable nnn is used to specify the end of a range of TG numbers.

so resettabs

**[s]abc** - 3- or 4-digit non-hierarchical FROM NPC number or first TO NPC number if TG is in HUB mode

**[t]ghi** - 3- or 4-digit non-hierarchical TO NPC number or second TO NPC number if TG is in HUB mode

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number or first TO NPC number if TG is in HUB mode

**wxkqr** - Hierarchical TO NPC number or second TO NPC number if TG is in HUB mode

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

For an unmapped TO termination, or a backbone leg (BBL) without a return, the FROM NPC number will be shown as zeroes.

**ddd** - FROM channel number or starting channel of first TO NPC in HUB mode

**jjj** - Starting channel of second TO NPC in HUB mode

001-031\*      Primary NPCs grown as Channel Associated Signaling (CAS)  
001-031        Primary NPCs grown as Non Signaling Associated (NSA)

\*    Circuits involving CAS channel 31 can only be tested for N = 1.

The FROM channel ddd will be '---' for circuits not involved in this test session. For unmapped TO channel(s) or a BBL without return, ddd will be '000' in the corresponding channel position(s).

If channel jjj is mapped to a channel 000 (N = 1 only), the corresponding FROM channel ddd will be '000'.

**OOS**    - Out-of-service

**RDC**    - Red circuit

The circuit is a red circuit

**CUS**    - Customer

The circuit is customer controlled

**TLA**    - Terminate and leave active

**s**        - Termination state of the circuit

s        Explanation

R        All channels are released

F        One or more FROM channel is terminated

T        One or more TO channel is terminated

B        One or more of FROM and TO channels are terminated



**NTR** - No Transmit  
Backbone leg with no return

**UASGN** - Unassigned  
TG is unassigned or idle

**LPD** - Looped

**UEQD** - Unequipped  
TG is not equipped

**HUB** - Hub  
TG is in Hub mode

**COND** - Condition

**NN** - TG width (1 through 31)

**cc** - Hexadecimal condition code

**cc**    *Explanation*

- 12**    Active CCN side not IS or failed or pested or hardware OOS
- 13**    UNIT not equipped, not in service, or failed
- 14**    CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS
- 15**    FTMI not equipped, not in service, or failed
- 16**    FC not eqd, not IS, or failed or inactive side FC not eqd or not IS
- 17**    TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS
- 18**    DSPI not equipped, not in service, or failed
- 1A**    Required FLI not equipped, not in service, or failed
- 1B**    Required MXR not equipped, not in service, or failed
- 1C**    Reqd FMT not eqd,not IS,or failed,or inact side FMT not eqd, or not IS
- 1D**    Required MIU not equipped, not in service, or failed
- E0**    ETSI not equipped, not in service, or failed
- 49**    test group unequipped
- 58**    NPC is OOS for a TGR command and OOS keyword not specified
- 5A**    NPC not in service or failed

## **TTST,TLA,NOT,TP**

### **TWO-WAY TEST ACCESS**

#### **Explanation Of Command**

This message is used to modify the terminate and leave activate status of one or both ends of the cross-connected channel associated with the specified test port. The test port is mapped to a predesignated channel of a network processing circuit for test ports during the provisioning of that test port. All domestic NPC types except SLC® NPCs can be provisioned as NPC test ports (NPCTP). All CEPT NPC types that have been provisioned with channel associated signaling may be provisioned as NPC test ports (NPCTP).

#### **Command**

##### **Nonhierarchical**

[I.25101]

TTST:FRM xy,SEQ ww:TLA m[,NOT [t]rstvvv],TP kk!

##### **Hierarchical**

[I.25101]

TTST:FRM xy,SEQ ww:TLA m[,NOT uvmnpvvv],TP kk!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.25101]

M hh:mm:ss xy,ww n[vv] TTST TLA m [s]abcddd,[t]ghijjj TP kk \  
2 LN MSG:  
[NOT [t]rstvvv][ RDC][ CUS] TLA s COMPL

#### **Hierarchical**

---

[O.25101]

M hh:mm:ss xy,ww n[vv] TTST TLA m edhfgddd,wxkqrjjj TP kk \  
2 LN MSG:  
[NOT uvmnpvvv][ RDC][ CUS] TLA s COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.25101.02]

M hh:mm:ss xy,ww n[vv] TTST TLA m [t]ghijjj TP kk T UASGN\  
DNY

[O.25101.03]

M hh:mm:ss xy,ww n[vv] TTST TLA m [s]abcddd,[t]ghijjj\  
TP kk <reason> DNY

[O.25101.04]

M hh:mm:ss xy,ww n[vv] TTST TLA m [s]abcddd,[t]ghijjj\  
[ RDC] [ CUS] TP kk TLA s PTLA DNY

#### **Hierarchical**

---

[O.25101.02]

M hh:mm:ss xy,ww n[vv] TTST TLA m wxkqrjjj TP kk T UASGN DNY

[O.25101.03]

M hh:mm:ss xy,ww n[vv] TTST TLA m edhfgddd,wxkqrjjj\  
TP kk <reason> DNY

[O.25101.04]

M hh:mm:ss xy,ww n[vv] TTST TLA m edhfgddd,wxkqrjjj\  
[ RDC] [ CUS] TP kk TLA s PTLA DNY

### Common

---

[O.25101.01]

M hh:mm:ss xy,ww n[vv] TTST TLA m TP kk <reason> DNY

### Autonomous Message

---

Not applicable.

### Explanation Of Parameters

---

**TLA** - Terminate and leave activate

**m** - The end of the tested circuit that must be put into the TLA state.  
Set m to one of the values given below:

| <i>m</i> | <i>Explanation</i>        |
|----------|---------------------------|
| F        | Apply TLA to the FROM end |
| T        | Apply TLA to the TO end   |
| B        | Apply TLA to BOTH ends    |

The following apply only to a DMB/conference

|   |                                          |
|---|------------------------------------------|
| L | Apply TLA on all legs towards facilities |
| G | Apply TLA on all legs towards bridge     |
| A | Apply TLA on all legs in both directions |

The end or ends of the channel to which termination has been applied will transmit the idle code specified in the insertion word entered in the GRTH::NPC message, or its default, instead of passing data from the other end of the circuit. If the growth insertion word is MUX (X'1A), the terminate transmit word is the UMC code (X'18).

This message will be denied if test port kk is not in the monitor or split mode or if the tested circuit is already in the specified termination state.

**[t]rst** - The 3- or 4-digit nonhierarchical NPC number of a termination that must not be affected by this command.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical TO NPC number of a termination that must not be affected by this command.

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

|           |          |              |                                 |
|-----------|----------|--------------|---------------------------------|
| Unit      | Module   | NPC          |                                 |
| <b>99</b> | <b>1</b> | <b>01-02</b> | <b>(DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06</b> | <b>(DACS II CEF frames)</b>     |

**vvv** - Channel or conference number

Channel numbers

000-030        CEPT type NPCs grown as CAS  
000-031        CEPT type NPCs grown as NSA

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Conference numbers  
001-500        (Virtual NPC)

**NOT**    - Not

Not means that the following channel number must not be affected by this command. This field is only valid if the termination state is equal to L, G, or A.

**TP**    - Test port

**kk**    - Test port number (01 through 96)

The test port is mapped to predesignated channels of a Network Processing Circuit for test ports (NPCTP) during the provisioning of that test port.

For information on the mapping between the test ports and the channels of the test NPCs (NPCTP), see GRTH::TP kk[,<tc>].

**[s]abc**        - The 3- or 4-digit nonhierarchical FROM NPC number with the same valid values as [t]rst.

**[t]ghi**        - The 3- or 4-digit nonhierarchical TO NPC number with the same valid values as [t]rst.

**wxkqr**    - Hierarchical NPC number of the TO termination of the circuit assigned to the test port (with the same valid values as uvmnp).

**edhfg**    - Hierarchical NPC number side of the FROM termination of the circuit assigned to the test port. If the test port is assigned to an unmapped termination, this field will be all zeroes (with the same valid values as uvmnp).

**ed,wx**    - Unit number

**h,k**      - Module number

**fg,qr**    - NPC number

**jjj** - TO channel number with the same value as vvv.  
**ddd** - FROM channel number with the same value as vvv.

**s** - Termination state of the circuit

| <i>s</i> | <i>Explanation</i>                   |
|----------|--------------------------------------|
| B        | BOTH sides are terminated            |
| F        | FROM side is terminated              |
| R        | RELEASED. Neither side is terminated |
| T        | TO side is terminated                |

**RDC** - Red circuit

**CUS** - Customer  
Customer-controlled circuit

**T UASGN** - The test port is assigned to an unmapped termination.  
**PTLA** - The requested TLA state is the present TLA state.

**reason** - Denial reason

| <i>st</i>      | <i>Explanation</i>                                         |
|----------------|------------------------------------------------------------|
| <b>BADCCN</b>  | CCN OOS or failed                                          |
| <b>BADFC</b>   | FC OOS or failed                                           |
| <b>BADFLI</b>  | FLI OOS or failed                                          |
| <b>BADFMT</b>  | FMT (Formatter) OOS or failed                              |
| <b>BADFTMI</b> | FTMI OOS or failed                                         |
| <b>BADMIU</b>  | MIU OOS or failed                                          |
| <b>BADMXR</b>  | MXR OOS or failed                                          |
| <b>BADUNIT</b> | UNIT OOS or failed                                         |
| <b>CHREST</b>  | CAS channel 031 not allowed                                |
| <b>F FAIL</b>  | FROM side NPC is marked failed                             |
| <b>F OOS</b>   | FROM side NPC (abc) is out of service                      |
| <b>FAIL</b>    | Test port Group NPC failed                                 |
| <b>INERR</b>   | Input error in the specification of TLA direction          |
| <b>MCOND</b>   | An entity in the network is OOS or failed                  |
| <b>NA</b>      | DACS CCN or UNIT involved cannot perform the cross-connect |
| <b>OOS</b>     | Test port Group NPC out of service                         |
| <b>T FAIL</b>  | TO side NPC is marked failed                               |
| <b>T OOS</b>   | TO side NPC is Out Of Service                              |



---

## TTST,TLA,TG

---

### NX64Kbit/s TWO-WAY TEST ACCESS, TERMINATE- AND-LEAVE-ACTIVE

#### Explanation Of Command

---

This command is used to terminate one or both ends of an Nx64Kbit/s cross-connection associated with a test-access group.

**Note:** In the terminated state the data normally transmitted over the circuit is replaced by the trunk conditioning specified when the cross-connection was made. The Nx64Kbit/s circuit must be an unterminated, mapped one-way or two-way circuit that is currently in the Monitor or Split test access mode.

#### Command

---

[I.25121]

TTST:FRM xy,SEQ ww:TLA m,TG mmm!

#### Completion Message

---

#### Nonhierarchical

---

[O.25121]

M hh:mm:ss xy,ww n[vv] TTST TLA m TG mmm FROM [s]abc TO [t]ghi \\  
6 LN MSG:  
TLA s[ RDC][ CUS][ ONEWAY]  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd COMPL

## Hierarchical

[O.25121]

M hh:mm:ss xy,ww n[vv] TTST TLA m TG mmm FROM uvmnp TO wxkqr \\  
6 LN MSG:  
TLA s[ RDC][ CUS][ ONEWAY]  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd COMPL

## Denial Message

[O.25121.01]

M hh:mm:ss xy,ww n[vv] TTST TLA m TG mmm COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**TG** - Test-access Group

**mmm** - Test-access Group number (001 through 400)

The TG is designated as in message 31421

**[s]abc** - 3- or 4-digit non-hierarchical FROM NPC number

**[t]ghi** - 3- or 4-digit non-hierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - FROM Channel numbers

|          |                                                          |
|----------|----------------------------------------------------------|
| 001-031* | Primary NPCs grown as Channel Associated Signaling (CAS) |
| 001-031  | Primary NPCs grown as Non Signaling Associated (NSA)     |

\*Circuits involving CAS channel 31 can only be tested individually.

The FROM channel ddd will be '---' for circuits not involved in this test session. For unmapped TO channel(s) or a BBL without return, ddd will be '000' in the corresponding channel position(s). If TO channel is mapped to a channel 000, the circuit can only be tested as N = 1, the corresponding FROM channel ddd will be '000'.

**RDC** - Red circuit

The cross-connection tested is a red circuit.

**CUS** - Customer

The cross-connection tested is a customer-controlled circuit.

**TLA** - Terminate and leave active

**m**

- Direction of the circuit to be terminated

|          |                           |
|----------|---------------------------|
| <i>m</i> | <i>Explanation</i>        |
| F        | FROM side is terminated   |
| T        | TO side is terminated     |
| B        | BOTH sides are terminated |

**S**

- Termination state of the circuit

*s Explanation*

F One or more FROM channel is terminated

T One or more TO channel is terminated

B One or more of FROM and TO channels are terminated

**UMPD** - Unmapped

Circuit under test is unmapped.

**COND cc**

- Condition code

**cc** - Hexadecimal condition code

*cc Explanation*

**12** Active CCN side not IS or failed or pested or hardware OOS

**13** UNIT not equipped, not in service, or failed

**14** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15** FTMI not equipped, not in service, or failed

**16** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**18** DSPI not equipped, not in service, or failed

**1A** Required FLI not equipped, not in service, or failed

**1B** Required MXR not equipped, not in service, or failed

**1C** Reqd FMT not eqd,not IS,or failed,or inact side FMT not eqd, or not IS

**1D** Required MIU not equipped, not in service, or failed

**E0** ETSI not equipped, not in service, or failed

**44** Invalid direction specified for NTST TLA/TLR

**49** test group unequipped

**54** invalid mode for TLA/TLR

**55** circuit already terminated

**5A** NPC not in service or failed

## **TTST,TLR,NOT,TP**

### **TWO-WAY TEST ACCESS**

#### **Explanation Of Command**

This message is used to modify the Terminate and Leave Release status of one or both ends of the cross-connected channels associated with the specified test port. This message will be denied if the specified test port is not in the monitor or split mode or if the tested circuit is already in the specified termination release state. When used with the Subrate Feature for a circuit termination, the system response will be STST TLA TP or STST TLA MPTM TP. When used with the Subrate Feature for a circuit termination, the system response will be DISC TACC TS RLS or DISC TACC TS RLS MJU.

#### **Command**

##### **Nonhierarchical**

[I.25501]

TTST:FRM xy,SEQ ww:TLR m[,NOT [t]rstvvv],TP kk!

##### **Hierarchical**

[I.25501]

TTST:FRM xy,SEQ ww:TLR m[,NOT uvmnpvvv],TP kk!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.25501]

M hh:mm:ss xy,ww n[vv] TTST TLR m [s]abcddd,[t]ghijjj TP kk \\  
2 LN MSG:  
[NOT [t]rstvvv][ RDC][ CUS] TLR s COMPL

#### **Hierarchical**

---

[O.25501]

M hh:mm:ss xy,ww n[vv] TTST TLR m edhfgddd,wxkqrjjj TP kk \\  
2 LN MSG:  
[NOT uvmnpvvv] [RDC] [CUS] TLR s COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.25501.02]

M hh:mm:ss xy,ww n[vv] TTST TLR m [t]ghijjj TP kk T UASGN DNY

[O.25501.03]

M hh:mm:ss xy,ww n[vv] TTST TLR m [s]abcddd,[t]ghijjj TP kk\  
<reason> DNY

[O.25501.04]

M hh:mm:ss xy,ww n[vv] TTST TLR m [s]abcddd,[t]ghijjj TP kk\  
TLR s NTLA DNY

#### **Hierarchical**

---

[O.25501.02]

M hh:mm:ss xy,ww n[vv] TTST TLR m wxkqrjjj TP kk T UASGN DNY

[O.25501.03]

M hh:mm:ss xy,ww n[vv] TTST TLR m edhfgddd,wxkqrjjj TP kk\  
<reason> DNY

[O.25501.04]

M hh:mm:ss xy,ww n[vv] TTST TLR m edhfgddd,wxkqrjjj TP kk\  
TLR s NTLA DNY

### Common

---

[O.25501.01]

M hh:mm:ss xy,ww n[vv] TTST TLR m TP kk <reason> DNY

### Autonomous Message

---

Not applicable.

### Explanation Of Parameters

---

**TLR** - Terminate and leave release

**m** - The end of the tested circuit that must be put into the terminate and leave release state.

Set m to one of the values listed below:

| <i>m</i> | <i>Explanation</i> |
|----------|--------------------|
|----------|--------------------|

|   |                           |
|---|---------------------------|
| F | Apply TLR to the FROM end |
|---|---------------------------|

|   |                         |
|---|-------------------------|
| T | Apply TLR to the TO end |
|---|-------------------------|

|   |                        |
|---|------------------------|
| B | Apply TLR to BOTH ends |
|---|------------------------|

The following apply only to multipoint circuits

|   |                                          |
|---|------------------------------------------|
| L | Apply TLR on all legs towards facilities |
|---|------------------------------------------|

|   |                                      |
|---|--------------------------------------|
| G | Apply TLR on all legs towards bridge |
|---|--------------------------------------|

|   |                                          |
|---|------------------------------------------|
| A | Apply TLR on all legs in both directions |
|---|------------------------------------------|

**NOT** - Not

NOT means that the termination number following the NOT keyword is not to be affected by this command. This field is only valid for m values

L, G, or A.



**TP** - Test port

**kk** - Test port number (01 through 96)

The test port is mapped to predesignated channels of a network processing circuit for test ports (NPCTP) during the provisioning of that test port. All domestic nonSLC NPC types can be provisioned as NPCTP. For the mapping between the test ports and the channels of the test NPCs, see the GRTH::TP message.

**[t]rst** - The 3- or 4-digit Nonhierarchical NPC number of a termination that must not be affected by the command.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number of a termination that must not be affected by this command

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

| Unit      | Module   | NPC                                   |
|-----------|----------|---------------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

**vvv** - Channel or conference number

Channel numbers

|         |                             |
|---------|-----------------------------|
| 000-030 | CEPT type NPCs grown as CAS |
| 000-031 | CEPT type NPCs grown as NSA |

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Conference numbers

|         |               |
|---------|---------------|
| 001-500 | (Virtual NPC) |
|---------|---------------|

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number with the same valid values as [t]rst.

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number with the same valid values as [t]rst.

**wxkqr** - The hierarchical NPC number of the TO termination of the circuit assigned to the test port with the same valid values as uvmnp.

**edhfg** - The hierarchical NPC number of the FROM termination of the circuit assigned to the test port. If the test port is assigned to an unmapped termination, this field will be all zeros (with the same valid values as uvmnp).

**ed,wx** - Unit number

**h,k** - Module number

**fg,qr** - NPC number

**jjj** - TO channel with the same valid values as vvv.

**ddd** - FROM channel with the same valid values as vvv.

**CUS** - Customer

The circuit is a Customer-controlled Circuit

**RDC** - Red circuit

The tested circuit is a protected circuit

**s** - Termination state of the circuit

*s Explanation*

F FROM side is terminated  
T TO side is terminated  
B BOTH sides are terminated  
R Neither side is terminated

**T UASGN**

- The test port is assigned to an unmapped termination

**NTLA** - The requested TLA state is the present TLR (RLS) state

**reason** - Denial reason

*st Explanation*

**SCERR D2** NOT NPC is not provisioned as DGA  
**SCERR D5** Corresponding NPC for NOT virtual channel is not provisioned  
**SCERR D8** Invalid NOT channel number  
**BADCCN** CCN OOS or failed  
**BADFC** FC OOS or failed  
**BADFLI** FLI OOS or failed  
**BADFMT** FMT (Formatter) OOS or failed  
**BADFTMI** FTMI OOS or failed  
**BADMIU** MIU OOS or failed  
**BADMXR** MXR OOS or failed  
**BADUNIT** UNIT OOS or failed  
**CHREST** CAS channel 031 not allowed  
**F FAIL** FROM side NPC is marked failed  
**F OOS** FROM side NPC (abc) is out of service  
**FAIL** Test port Group NPC failed  
**INERR** Input error in the specification of TLA direction  
**MCOND** An entity in the network is OOS or failed  
**NA** DACS CCN or UNIT involved cannot perform the cross-connect  
**OOS** Test port Group NPC out of service  
**T FAIL** TO side NPC is marked failed  
**T OOS** TO side NPC is Out Of Service

---

## **TTST,TLR,TG**

---

**NX64Kbit/s TWO-WAY TEST ACCESS, TERMINATE-  
AND-LEAVE-RELEASE**

### **Explanation Of Command**

---

This command is used to release one or both ends of an Nx64Kbit/s cross-connection associated with the specified test-access group. The circuit to be released must be a terminated, mapped one-way or two-way circuit, that is currently in the Monitor or Split test access mode. Upon release normal data transmission is restored in the direction specified in the command.

### **Command**

---

[I.25521]

TTST:FRM xy,SEQ ww:TLR m,TG mmm!

### **Completion Message**

---

### **Nonhierarchical**

---

[O.25521]

M hh:mm:ss xy,ww n[vv] TTST TLR m TG mmm FROM [s]abc TO [t]ghi \\  
6 LN MSG:

TLA s[ RDC][ CUS][ ONEWAY]  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd ddd COMPL

## Hierarchical

[O.25521]

M hh:mm:ss xy,ww n[vv] TTST TLR m TG mmm FROM uvmnp TO wxkqr \\  
6 LN MSG:  
TLA s[ RDC][ CUS][ ONEWAY]  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd  
ddd ddd ddd ddd ddd ddd ddd COMPL

## Denial Message

[O.25521.01]

M hh:mm:ss xy,ww n[vv] TTST TLR m TG mmm COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**TG** - Test-access group

**mmm** - Test-access Group number (001 through 400)

The TG is designated as in message 31421

**[s]abc** - 3- or 4-digit non-hierarchical FROM NPC number

**[t]ghi** - 3- or 4-digit non-hierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM NPC number  
**wxkqr** - Hierarchical TO NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - FROM Channel number

|          |                                                          |
|----------|----------------------------------------------------------|
| 001-031* | Primary NPCs grown as Channel Associated Signaling (CAS) |
| 001-031  | Primary NPCs grown as Non Signaling Associated (NSA)     |

\*Circuits involving CAS channel 31 can only be tested individually.

The FROM channel ddd will be '---' for circuits not involved in this test session. For unmapped TO channel(s) or a BBL without return, ddd will be '000' in the corresponding channel position(s). If TO channel is mapped to a channel 000, the circuit can only be tested as N = 1, the corresponding FROM channel ddd will be '000'.

**RDC** - Red circuit

The cross-connection tested is a red circuit.

**CUS** - Customer

The cross-connection tested is a customer-controlled circuit.

**TLR** - Terminate and leave released

**m**

- Direction of the circuit to be released

|          |                         |
|----------|-------------------------|
| <i>m</i> | <i>Explanation</i>      |
| F        | FROM side is released   |
| T        | TO side is released     |
| B        | BOTH sides are released |

**TLA** - Terminate and leave active



**S**

- Termination state of the circuit

*s Explanation*

R All channels are released

F One or more FROM channel is terminated

T One or more TO channel is terminated

**UMPD** - Unmapped

Circuit under test is unmapped.

**COND cc**

- Condition code

**cc** - Hexadecimal condition code

*cc Explanation*

**12** Active CCN side not IS or failed or pested or hardware OOS

**13** UNIT not equipped, not in service, or failed

**14** CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS

**15** FTMI not equipped, not in service, or failed

**16** FC not eqd, not IS, or failed or inactive side FC not eqd or not IS

**17** TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS

**18** DSPI not equipped, not in service, or failed

**1A** Required FLI not equipped, not in service, or failed

**1B** Required MXR not equipped, not in service, or failed

**1C** Reqd FMT not eqd,not IS,or failed,or inact side FMT not eqd, or not IS

**1D** Required MIU not equipped, not in service, or failed

**E0** ETSI not equipped, not in service, or failed

**44** Invalid direction specified for NTST TLA/TLR

**49** test group unequipped

**56** circuit not terminated

**5A** NPC not in service or failed

## **TTST,TPR,ALL,OOS**

### **TEST PORT RELEASE**

#### **Explanation Of Command**

This command requests that all test ports set up by the link on which this command is input be restored to the released mode. An individual output message will be received for each test port released (see TTST,TPR,TP,OOS)

This output message will be received after all test ports have been released.

Substrate test sessions are also released by this command.

#### **Command**

[I.27002]

TTST:FRM xy,SEQ ww:TPR,ALL[,OOS]!

#### **Completion Message**

[O.27002]

M hh:mm:ss xy,ww n[vv] TTST TPR ALL COND cc COMPL

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.27002]

I hh:mm:ss xy,ww TTST TPR ALL COND cc COMPL

### **Explanation Of Parameters**

---

**TPR** - Test Port Release

**ALL** - All

**OOS** - Out-of-service

The OOS keyword is used to release test ports on an out-of-service circuit. Any test port, regardless of the type of circuit accessed, will be released.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

**00** No conditions

**01** No test ports were activated by link n

**02** One or more test ports could not be released

## **TTST,TPR,TP,OOS,FRC**

### **TWO-WAY TEST ACCESS**

#### **Explanation Of Command**

This command allows a circuit under test to be put in the release mode and to be restored to its mapped (terminated or normal) state. When the Subrate Feature is used for a circuit termination, the system response will be a Subrate test port release message.

The FRC keyword is only used for an emergency disconnect of a test port from a DSP Platform application in the unlikely event that an application cannot disconnect the test port itself using an application command. The FRC keyword may only be used by users who have the RMON (Restricted Maintenance privilege ON) privilege. After the use of this command with the FRC keyword, the user should use the DDIS command (I.15061) to disconnect the cross-connect that was used for the test port connection to the application. The UTL::QRY,CMAP command (I.52011) should be used to find the appropriate pair of application channel numbers **before** this command and command I.15061 are used to take the test port and then the cross-connection down.

#### **Command**

[I.27001]

TTST:FRM xy,SEQ ww:TPR,TP kk[,OOS][,FRC]!

#### **Completion Message**

#### **Nonhierarchical**

[O.27001]

M hh:mm:ss xy,ww n[vv] TTST TPR [s]abcddd,[t]ghijjj \  
[ RDC][ CUS] TP kk[ TLA s][ OOS][ FRC] [NTR] COMPL

### **Hierarchical**

---

[O.27001]

M hh:mm:ss xy,ww n[vv] TTST TPR wxkqrddd,uvmnpjjj \  
[ RDC][ CUS] TP kk[ TLA s][ OOS][ FRC] [NTR] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.27001.02]

M hh:mm:ss xy,ww n[vv] TTST TPR [s]abcddd,[t]ghijjj \  
TP kk <reason> DNY

### **Hierarchical**

---

[O.27001.02]

M hh:mm:ss xy,ww n[vv] TTST TPR wxkqrddd,uvmnpjjj \  
TP kk <reason> DNY

### **Common**

---

[O.27001.01]

M hh:mm:ss xy,ww n[vv] TTST TPR TP kk <reason> DNY

### **Autonomous Message**

---

### **Nonhierarchical**

---

[O.27001]

I hh:mm:ss xy,ww TTST TPR [s]abcddd,[t]ghijjj \  
[ RDC][ CUS] TP kk[ TLA s][ OOS] [NTR] COMPL

[O.27001.02]

I hh:mm:ss xy,ww TTST TPR [s]abcddd,[t]ghijjj\  
TP kk <reason> DNY

## **Hierarchical**

---

[O.27001]

**I** hh:mm:ss xy,ww TTST TPR wxkqrddd,uvmnpjjj \  
[ RDC][ CUS] TP kk[ TLA s][ OOS] [NTR] COMPL

[O.27001.02]

**I** hh:mm:ss xy,ww TTST TPR wxkqrddd,uvmnpjjj \  
TP kk <reason> DNY

## **Common**

---

[O.27001.01]

**I** hh:mm:ss xy,ww TTST TPR TP kk <reason> DNY

## **Explanation Of Parameters**

---

**TP** - Test port

**kk** - Test port number (01 through 96)

**OOS** - Out-of-service  
Used to release test ports on an out-of-service circuit

**FRC** - Force the disconnect  
This keyword is used only in an emergency, when a DSP Platform application (such as DDS Subrate, X.50 Subrate, or DMB) running on a TG193B circuit pack cannot disestablish a test port via an application command. This keyword is also restricted to users with the RMON privilege.

**[s]abc** - The 3- or 4-digit nonhierarchical FROM NPC number

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |



| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Hierarchical TO NPC number of the circuit assigned to the test port.

**wxkqr** - Hierarchical FROM NPC number of the circuit assigned to the test port.

If the test port is assigned to an unmapped termination, this field will be all zeroes.

**uv,wx** - Unit number

**m,k** - Module number

**np,qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

| Unit      | Module   | NPC                                   |
|-----------|----------|---------------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**ddd** - FROM channel or conference number  
**jjj** - TO channel or conference number

Channel numbers

|         |                             |
|---------|-----------------------------|
| 000-030 | CEPT type NPCs grown as CAS |
| 000-031 | CEPT type NPCs grown as NSA |

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

Conference numbers

|         |               |
|---------|---------------|
| 001-500 | (Virtual NPC) |
|---------|---------------|

**TPR** - Test port release

**TLA** - Terminate and leave active

**s** - Termination state of the circuit

|          |                                      |
|----------|--------------------------------------|
| <b>s</b> | Explanation                          |
| <b>R</b> | RELEASED. Neither side is terminated |
| <b>F</b> | FROM side is terminated              |
| <b>T</b> | TO side is terminated                |
| <b>B</b> | Both sides are terminated            |

**RDC** - Red circuit

**CUS** - Customer  
Customer-controlled circuit

**NTR** - No transmit

|               |                                                                           |
|---------------|---------------------------------------------------------------------------|
| <b>st</b>     | <i>Explanation</i>                                                        |
| <b>F FAIL</b> | FROM side NPC is marked failed                                            |
| <b>F OOS</b>  | FROM side NPC (abc) is out of service                                     |
| <b>F UEQD</b> | The DACS unit supporting the FROM termination is out-of-service or failed |
| <b>FAIL</b>   | Test port Group NPC failed                                                |
| <b>MCOND</b>  | An entity in the network is OOS or failed                                 |
| <b>NA</b>     | DACS CCN or UNIT involved cannot perform the cross-connect                |
| <b>NUTST</b>  | Test port kk is presently idle                                            |
| <b>OOS</b>    | Test port Group NPC out of service                                        |
| <b>T FAIL</b> | TO side NPC is marked failed                                              |
| <b>T OOS</b>  | TO side NPC is Out Of Service                                             |
| <b>T UEQD</b> | The DACS unit supporting the TO termination is out-of-service or failed   |
| <b>UEQD</b>   | The test port Group NPC or the test port is not equipped                  |

---

**Contents**

|                                         |       |
|-----------------------------------------|-------|
| <b>UTL,ACO</b>                          | 19-2  |
| ■ Explanation Of Command                | 19-2  |
| ■ Command                               | 19-2  |
| ■ Completion Message                    | 19-2  |
| ■ Denial Message                        | 19-2  |
| ■ Autonomous Message                    | 19-3  |
| ■ Explanation Of Parameters             | 19-3  |
| <b>UTL,BMTR,FROM,TO,EXCT,INCL,UPGRD</b> | 19-4  |
| ■ Explanation Of Command                | 19-4  |
| ■ Command                               | 19-6  |
| ■ Completion Message                    | 19-6  |
| ■ Denial Message                        | 19-6  |
| ■ Autonomous Message                    | 19-6  |
| ■ Explanation Of Parameters             | 19-7  |
| <b>UTL,BOOT,FRAME,CLR</b>               | 19-10 |
| ■ Explanation Of Command                | 19-10 |
| ■ Command                               | 19-10 |
| ■ Completion Message                    | 19-10 |
| ■ Denial Message                        | 19-11 |
| ■ Autonomous Message                    | 19-11 |
| ■ Explanation Of Parameters             | 19-11 |
| <b>UTL,CLR,ALL</b>                      | 19-12 |
| ■ Explanation Of Command                | 19-12 |
| ■ Command                               | 19-12 |
| ■ Completion Message                    | 19-12 |
| ■ Denial Message                        | 19-12 |

---

## Contents

|                                         |       |
|-----------------------------------------|-------|
| ■ Autonomous Message                    | 19-12 |
| ■ Explanation Of Parameters             | 19-13 |
| <b>UTL,CLR,ERR,HWER,SWER</b>            | 19-14 |
| ■ Explanation Of Command                | 19-14 |
| ■ Command                               | 19-14 |
| ■ Completion Message                    | 19-14 |
| ■ Denial Message                        | 19-14 |
| ■ Autonomous Message                    | 19-14 |
| ■ Explanation Of Parameters             | 19-15 |
| <b>UTL,CLR,NPC</b>                      | 19-16 |
| ■ Explanation Of Command                | 19-16 |
| ■ Command                               | 19-16 |
| ■ Nonhierarchical                       | 19-16 |
| ■ Hierarchical                          | 19-16 |
| ■ Completion Message                    | 19-16 |
| ■ Nonhierarchical                       | 19-16 |
| ■ Hierarchical                          | 19-17 |
| ■ Denial Message                        | 19-17 |
| ■ Nonhierarchical                       | 19-17 |
| ■ Hierarchical                          | 19-17 |
| ■ Autonomous Message                    | 19-17 |
| ■ Explanation Of Parameters             | 19-18 |
| <b>UTL,CLR,NPC,ALL,AI,MONDAT,MONTIM</b> | 19-22 |
| ■ Explanation Of Command                | 19-22 |
| ■ Command                               | 19-23 |
| ■ Nonhierarchical                       | 19-23 |
| ■ Hierarchical                          | 19-23 |
| ■ Completion Message                    | 19-23 |
| ■ Nonhierarchical                       | 19-23 |
| ■ Hierarchical                          | 19-23 |
| ■ Denial Message                        | 19-24 |
| ■ Nonhierarchical                       | 19-24 |
| ■ Hierarchical                          | 19-24 |
| ■ Autonomous Message                    | 19-24 |
| ■ Explanation Of Parameters             | 19-25 |
| <b>UTL,CLR,NPC,PARAMS</b>               | 19-30 |
| ■ Explanation Of Command                | 19-30 |

---

## Contents

|                             |       |
|-----------------------------|-------|
| ■ Command                   | 19-30 |
| ■ Nonhierarchical           | 19-30 |
| ■ Hierarchical              | 19-30 |
| ■ Completion Message        | 19-30 |
| ■ Nonhierarchical           | 19-30 |
| ■ Hierarchical              | 19-31 |
| ■ Denial Message            | 19-31 |
| ■ Nonhierarchical           | 19-31 |
| ■ Hierarchical              | 19-31 |
| ■ Autonomous Message        | 19-31 |
| ■ Explanation Of Parameters | 19-31 |
| <b>UTL,CLR,PWR</b>          | 19-34 |
| ■ Explanation Of Command    | 19-34 |
| ■ Command                   | 19-34 |
| ■ Completion Message        | 19-34 |
| ■ Denial Message            | 19-34 |
| ■ Autonomous Message        | 19-34 |
| ■ Explanation Of Parameters | 19-35 |
| <b>UTL,DATE,FORMAT,INT</b>  | 19-36 |
| ■ Explanation Of Command    | 19-36 |
| ■ Command                   | 19-36 |
| ■ Completion Message        | 19-36 |
| ■ Denial Message            | 19-36 |
| ■ Autonomous Message        | 19-36 |
| ■ Explanation Of Parameters | 19-37 |
| <b>UTL,INIT,ALM</b>         | 19-39 |
| ■ Explanation Of Command    | 19-39 |
| ■ Command                   | 19-39 |
| ■ Completion Message        | 19-39 |
| ■ Denial Message            | 19-39 |
| ■ Autonomous Message        | 19-39 |
| ■ Explanation Of Parameters | 19-40 |
| <b>UTL,LOC</b>              | 19-41 |
| ■ Explanation Of Command    | 19-41 |
| ■ Command                   | 19-41 |
| ■ Completion Message        | 19-41 |
| ■ Denial Message            | 19-41 |

---

## Contents

|                                   |       |
|-----------------------------------|-------|
| ■ Autonomous Message              | 19-41 |
| ■ Explanation Of Parameters       | 19-42 |
| <b>UTL, QRY, ALL</b>              | 19-53 |
| ■ Explanation Of Command          | 19-53 |
| ■ Command                         | 19-53 |
| ■ Completion Message              | 19-53 |
| ■ Nonhierarchical                 | 19-53 |
| ■ Hierarchical                    | 19-54 |
| ■ Denial Message                  | 19-55 |
| ■ Autonomous Message              | 19-55 |
| ■ Explanation Of Parameters       | 19-56 |
| <b>UTL, QRY, ALL, COMMON</b>      | 19-60 |
| ■ Explanation Of Command          | 19-60 |
| ■ Command                         | 19-60 |
| ■ Completion Message              | 19-60 |
| ■ Denial Message                  | 19-61 |
| ■ Autonomous Message              | 19-61 |
| ■ Explanation Of Parameters       | 19-61 |
| <b>UTL, QRY, ALL, UNIT</b>        | 19-66 |
| ■ Explanation Of Command          | 19-66 |
| ■ Command                         | 19-66 |
| ■ Completion Message              | 19-67 |
| ■ Nonhierarchical                 | 19-67 |
| ■ Hierarchical                    | 19-70 |
| ■ Denial Message                  | 19-73 |
| ■ Autonomous Message              | 19-73 |
| ■ Explanation Of Parameters       | 19-73 |
| <b>UTL, QRY, ALM, INTV</b>        | 19-86 |
| ■ Explanation Of Command          | 19-86 |
| ■ Command                         | 19-86 |
| ■ Completion Message              | 19-86 |
| ■ Denial Message                  | 19-86 |
| ■ Autonomous Message              | 19-86 |
| ■ Explanation Of Parameters       | 19-87 |
| <b>UTL, QRY, ALMOPT, NPC, AIS</b> | 19-88 |
| ■ Explanation Of Command          | 19-88 |
| ■ Command                         | 19-88 |



---

## Contents

|                                 |        |
|---------------------------------|--------|
| ■ Nonhierarchical               | 19-88  |
| ■ Hierarchical                  | 19-88  |
| ■ Completion Message            | 19-89  |
| ■ Nonhierarchical               | 19-89  |
| ■ Hierarchical                  | 19-90  |
| ■ Denial Message                | 19-90  |
| ■ Nonhierarchical               | 19-90  |
| ■ Hierarchical                  | 19-90  |
| ■ Autonomous Message            | 19-91  |
| ■ Explanation Of Parameters     | 19-91  |
| <b>UTL, QRY, ALMS</b>           | 19-97  |
| ■ Explanation Of Command        | 19-97  |
| ■ Command                       | 19-97  |
| ■ Completion Message            | 19-97  |
| ■ Nonhierarchical               | 19-97  |
| ■ Hierarchical                  | 19-103 |
| ■ Denial Message                | 19-108 |
| ■ Common                        | 19-108 |
| ■ Autonomous Message            | 19-108 |
| ■ Explanation Of Parameters     | 19-108 |
| <b>UTL, QRY, ALMS, DBASE</b>    | 19-124 |
| ■ Explanation Of Command        | 19-124 |
| ■ Command                       | 19-124 |
| ■ Completion Message            | 19-125 |
| ■ Nonhierarchical               | 19-125 |
| ■ Hierarchical                  | 19-126 |
| ■ Denial Message                | 19-126 |
| ■ Autonomous Message            | 19-126 |
| ■ Explanation Of Parameters     | 19-127 |
| <b>UTL, QRY, APPL, NPC, ALL</b> | 19-137 |
| ■ Explanation Of Command        | 19-137 |
| ■ Command                       | 19-138 |
| ■ Nonhierarchical               | 19-138 |
| ■ Hierarchical                  | 19-138 |
| ■ Completion Message            | 19-139 |
| ■ Nonhierarchical               | 19-139 |
| ■ Hierarchical                  | 19-140 |
| ■ Denial Message                | 19-140 |

---

## Contents

|                               |        |
|-------------------------------|--------|
| ■ Nonhierarchical             | 19-140 |
| ■ Hierarchical                | 19-140 |
| ■ Autonomous Message          | 19-140 |
| ■ Explanation Of Parameters   | 19-141 |
| <b>UTL, QRY, BC, NPC, ALL</b> | 19-143 |
| ■ Explanation Of Command      | 19-143 |
| ■ Command                     | 19-143 |
| ■ Nonhierarchical             | 19-143 |
| ■ Hierarchical                | 19-143 |
| ■ Completion Message          | 19-144 |
| ■ Nonhierarchical             | 19-144 |
| ■ Hierarchical                | 19-146 |
| ■ Denial Message              | 19-147 |
| ■ Nonhierarchical             | 19-147 |
| ■ Hierarchical                | 19-147 |
| ■ Autonomous Message          | 19-147 |
| ■ Explanation Of Parameters   | 19-148 |
| <b>UTL, QRY, BC, TO</b>       | 19-152 |
| ■ Explanation Of Command      | 19-152 |
| ■ Command                     | 19-152 |
| ■ Nonhierarchical             | 19-152 |
| ■ Hierarchical                | 19-152 |
| ■ Completion Message          | 19-152 |
| ■ Nonhierarchical             | 19-152 |
| ■ Hierarchical                | 19-153 |
| ■ Denial Message              | 19-153 |
| ■ Nonhierarchical             | 19-153 |
| ■ Hierarchical                | 19-153 |
| ■ Autonomous Message          | 19-153 |
| ■ Explanation Of Parameters   | 19-153 |
| <b>UTL, QRY, BCAST, ALL</b>   | 19-157 |
| ■ Explanation Of Command      | 19-157 |
| ■ Command                     | 19-157 |
| ■ Completion Message          | 19-157 |
| ■ Nonhierarchical             | 19-157 |
| ■ Hierarchical                | 19-158 |
| ■ Common                      | 19-158 |
| ■ Denial Message              | 19-158 |

---

## Contents

|                              |        |
|------------------------------|--------|
| ■ Autonomous Message         | 19-158 |
| ■ Explanation Of Parameters  | 19-159 |
| <b>UTL, QRY, BCAST, FROM</b> | 19-161 |
| ■ Explanation Of Command     | 19-161 |
| ■ Command                    | 19-161 |
| ■ Nonhierarchical            | 19-161 |
| ■ Hierarchical               | 19-161 |
| ■ Completion Message         | 19-162 |
| ■ Nonhierarchical            | 19-162 |
| ■ Hierarchical               | 19-162 |
| ■ Denial Message             | 19-162 |
| ■ Nonhierarchical            | 19-162 |
| ■ Hierarchical               | 19-163 |
| ■ Autonomous Message         | 19-163 |
| ■ Explanation Of Parameters  | 19-163 |
| <b>UTL, QRY, BCAST, FROM</b> | 19-167 |
| ■ Explanation Of Command     | 19-167 |
| ■ Command                    | 19-167 |
| ■ Nonhierarchical            | 19-167 |
| ■ Hierarchical               | 19-167 |
| ■ Completion Message         | 19-167 |
| ■ Nonhierarchical            | 19-167 |
| ■ Hierarchical               | 19-168 |
| ■ Denial Message             | 19-169 |
| ■ Nonhierarchical            | 19-169 |
| ■ Hierarchical               | 19-169 |
| ■ Autonomous Message         | 19-169 |
| ■ Explanation Of Parameters  | 19-169 |
| <b>UTL, QRY, CMAP</b>        | 19-172 |
| ■ Explanation Of Command     | 19-172 |
| ■ Command                    | 19-173 |
| ■ Nonhierarchical            | 19-173 |
| ■ Hierarchical               | 19-173 |
| ■ Completion Message         | 19-174 |
| ■ Nonhierarchical            | 19-174 |
| ■ Hierarchical               | 19-176 |
| ■ Denial Message             | 19-179 |
| ■ Nonhierarchical            | 19-179 |

---

## Contents

|                                     |        |
|-------------------------------------|--------|
| ■ Hierarchical                      | 19-179 |
| ■ Autonomous Message                | 19-179 |
| ■ Explanation Of Parameters         | 19-179 |
| <b>UTL, QRY, CNFGR</b>              | 19-204 |
| ■ Explanation Of Command            | 19-204 |
| ■ Command                           | 19-204 |
| ■ Completion Message                | 19-204 |
| ■ Denial Message                    | 19-204 |
| ■ Autonomous Message                | 19-204 |
| ■ Explanation Of Parameters         | 19-205 |
| <b>UTL, QRY, DATE</b>               | 19-207 |
| ■ Explanation Of Command            | 19-207 |
| ■ Command                           | 19-207 |
| ■ Completion Message                | 19-207 |
| ■ Denial Message                    | 19-207 |
| ■ Autonomous Message                | 19-207 |
| ■ Explanation Of Parameters         | 19-208 |
| <b>UTL, QRY, DD</b>                 | 19-209 |
| ■ Explanation Of Command            | 19-209 |
| ■ Command                           | 19-209 |
| ■ Nonhierarchical                   | 19-209 |
| ■ Hierarchical                      | 19-209 |
| ■ Completion Message                | 19-209 |
| ■ Nonhierarchical                   | 19-209 |
| ■ Hierarchical                      | 19-210 |
| ■ Denial Message                    | 19-210 |
| ■ Nonhierarchical                   | 19-210 |
| ■ Hierarchical                      | 19-210 |
| ■ Autonomous Message                | 19-210 |
| ■ Explanation Of Parameters         | 19-210 |
| <b>UTL, QRY, DD, NPC, DDCT, ALL</b> | 19-214 |
| ■ Explanation Of Command            | 19-214 |
| ■ Command                           | 19-214 |
| ■ Nonhierarchical                   | 19-214 |
| ■ Hierarchical                      | 19-214 |
| ■ Completion Message                | 19-215 |
| ■ Nonhierarchical                   | 19-215 |

---

## Contents

|                                   |        |
|-----------------------------------|--------|
| ■ Hierarchical                    | 19-216 |
| ■ Denial Message                  | 19-217 |
| ■ Nonhierarchical                 | 19-217 |
| ■ Hierarchical                    | 19-217 |
| ■ Autonomous Message              | 19-217 |
| ■ Explanation Of Parameters       | 19-217 |
| <b>UTL, QRY, DMAP</b>             | 19-220 |
| ■ Explanation Of Command          | 19-220 |
| ■ Command                         | 19-220 |
| ■ Completion Message              | 19-221 |
| ■ Nonhierarchical                 | 19-221 |
| ■ Hierarchical                    | 19-223 |
| ■ Denial Message                  | 19-225 |
| ■ Autonomous Message              | 19-226 |
| ■ Explanation Of Parameters       | 19-226 |
| <b>UTL, QRY, DS3, BERMT, UNIT</b> | 19-249 |
| ■ Explanation Of Command          | 19-249 |
| ■ Command                         | 19-249 |
| ■ Completion Message              | 19-249 |
| ■ Denial Message                  | 19-249 |
| ■ Autonomous Message              | 19-250 |
| ■ Explanation Of Parameters       | 19-250 |
| <b>UTL, QRY, DS3, LBO</b>         | 19-251 |
| ■ Explanation Of Command          | 19-251 |
| ■ Command                         | 19-251 |
| ■ Completion Message              | 19-251 |
| ■ Denial Message                  | 19-251 |
| ■ Autonomous Message              | 19-252 |
| ■ Explanation Of Parameters       | 19-252 |
| <b>UTL, QRY, EQD, COMMON</b>      | 19-253 |
| ■ Explanation Of Command          | 19-253 |
| ■ Command                         | 19-253 |
| ■ Completion Message              | 19-254 |
| ■ Denial Message                  | 19-254 |
| ■ Autonomous Message              | 19-254 |
| ■ Explanation Of Parameters       | 19-255 |
| <b>UTL, QRY, EQD, CONN</b>        | 19-257 |

---

## Contents

|                                         |        |
|-----------------------------------------|--------|
| ■ Explanation Of Command                | 19-257 |
| ■ Command                               | 19-257 |
| ■ Completion Message                    | 19-257 |
| ■ Denial Message                        | 19-257 |
| ■ Autonomous Message                    | 19-258 |
| ■ Explanation Of Parameters             | 19-258 |
| <b>UTL, QRY, EQD, ETSIS</b>             | 19-259 |
| ■ Explanation Of Command                | 19-259 |
| ■ Command                               | 19-259 |
| ■ Completion Message                    | 19-259 |
| ■ Denial Message                        | 19-259 |
| ■ Autonomous Message                    | 19-259 |
| ■ Explanation Of Parameters             | 19-260 |
| <b>UTL, QRY, EQD, MXRS</b>              | 19-261 |
| ■ Explanation Of Command                | 19-261 |
| ■ Command                               | 19-261 |
| ■ Completion Message                    | 19-261 |
| ■ Denial Message                        | 19-261 |
| ■ Autonomous Message                    | 19-262 |
| ■ Explanation Of Parameters             | 19-262 |
| <b>UTL, QRY, EQD, NPCS, TOTAL, UNIT</b> | 19-263 |
| ■ Explanation Of Command                | 19-263 |
| ■ Command                               | 19-264 |
| ■ Completion Message                    | 19-265 |
| ■ Nonhierarchical                       | 19-265 |
| ■ Hierarchical                          | 19-266 |
| ■ Common                                | 19-266 |
| ■ Denial Message                        | 19-267 |
| ■ Autonomous Message                    | 19-267 |
| ■ Explanation Of Parameters             | 19-267 |
| <b>UTL, QRY, EQD, TSIS</b>              | 19-276 |
| ■ Explanation Of Command                | 19-276 |
| ■ Command                               | 19-276 |
| ■ Completion Message                    | 19-276 |
| ■ Denial Message                        | 19-277 |
| ■ Autonomous Message                    | 19-277 |
| ■ Explanation Of Parameters             | 19-277 |

---

## Contents

|                                                      |        |
|------------------------------------------------------|--------|
| <b>UTL, QRY, EQD, UNIT</b>                           | 19-278 |
| ■ Explanation Of Command                             | 19-278 |
| ■ Command                                            | 19-278 |
| ■ Completion Message                                 | 19-279 |
| ■ Nonhierarchical                                    | 19-279 |
| ■ Hierarchical                                       | 19-283 |
| ■ Denial Message                                     | 19-286 |
| ■ Autonomous Message                                 | 19-286 |
| ■ Explanation Of Parameters                          | 19-287 |
| <b>UTL, QRY, EQD, UNITS</b>                          | 19-297 |
| ■ Explanation Of Command                             | 19-297 |
| ■ Command                                            | 19-297 |
| ■ Completion Message                                 | 19-297 |
| ■ Denial Message                                     | 19-297 |
| ■ Autonomous Message                                 | 19-297 |
| ■ Explanation Of Parameters                          | 19-298 |
| <b>UTL, QRY, ERR, SWER, HWER, INT, DATE, TOD, TN</b> | 19-299 |
| ■ Explanation Of Command                             | 19-299 |
| ■ Command                                            | 19-300 |
| ■ Completion Message                                 | 19-301 |
| ■ Denial Message                                     | 19-301 |
| ■ Autonomous Message                                 | 19-301 |
| ■ Explanation Of Parameters                          | 19-302 |
| <b>UTL, QRY, ESR, CCN</b>                            | 19-309 |
| ■ Explanation Of Command                             | 19-309 |
| ■ Command                                            | 19-309 |
| ■ Completion Message                                 | 19-309 |
| ■ Denial Message                                     | 19-309 |
| ■ Autonomous Message                                 | 19-309 |
| ■ Explanation Of Parameters                          | 19-310 |
| <b>UTL, QRY, ESR, ECCN</b>                           | 19-312 |
| ■ Explanation Of Command                             | 19-312 |
| ■ Command                                            | 19-312 |
| ■ Completion Message                                 | 19-313 |
| ■ Denial Message                                     | 19-313 |
| ■ Autonomous Message                                 | 19-313 |
| ■ Explanation Of Parameters                          | 19-314 |

---

## Contents

|                                  |        |
|----------------------------------|--------|
| <b>UTL, QRY, ESR, MP</b>         | 19-316 |
| ■ Explanation Of Command         | 19-316 |
| ■ Command                        | 19-316 |
| ■ Completion Message             | 19-316 |
| ■ Denial Message                 | 19-316 |
| ■ Autonomous Message             | 19-316 |
| ■ Explanation Of Parameters      | 19-317 |
| <b>UTL, QRY, ESR, NPC, SIDE</b>  | 19-321 |
| ■ Explanation Of Command         | 19-321 |
| ■ Command                        | 19-321 |
| ■ Nonhierarchical                | 19-321 |
| ■ Hierarchical                   | 19-321 |
| ■ Completion Message             | 19-321 |
| ■ Nonhierarchical                | 19-321 |
| ■ Hierarchical                   | 19-322 |
| ■ Denial Message                 | 19-322 |
| ■ Nonhierarchical                | 19-322 |
| ■ Hierarchical                   | 19-322 |
| ■ Autonomous Message             | 19-322 |
| ■ Explanation Of Parameters      | 19-323 |
| <b>UTL, QRY, ESR, UNIT</b>       | 19-329 |
| ■ Explanation Of Command         | 19-329 |
| ■ Command                        | 19-329 |
| ■ Completion Message             | 19-329 |
| ■ Denial Message                 | 19-329 |
| ■ Autonomous Message             | 19-330 |
| ■ Explanation Of Parameters      | 19-330 |
| <b>UTL, QRY, ESR, UNIT, DSPI</b> | 19-333 |
| ■ Explanation Of Command         | 19-333 |
| ■ Command                        | 19-333 |
| ■ Completion Message             | 19-333 |
| ■ Denial Message                 | 19-333 |
| ■ Autonomous Message             | 19-333 |
| ■ Explanation Of Parameters      | 19-334 |
| <b>UTL, QRY, ESR, UNIT, FC</b>   | 19-335 |
| ■ Explanation Of Command         | 19-335 |
| ■ Command                        | 19-335 |



---

## Contents

|                                   |        |
|-----------------------------------|--------|
| ■ Completion Message              | 19-335 |
| ■ Denial Message                  | 19-335 |
| ■ Autonomous Message              | 19-335 |
| ■ Explanation Of Parameters       | 19-336 |
| <b>UTL, QRY, ESR, UNIT, FLI</b>   | 19-338 |
| ■ Explanation Of Command          | 19-338 |
| ■ Command                         | 19-338 |
| ■ Completion Message              | 19-338 |
| ■ Denial Message                  | 19-338 |
| ■ Autonomous Message              | 19-338 |
| ■ Explanation Of Parameters       | 19-339 |
| <b>UTL, QRY, ESR, UNIT, FTMI</b>  | 19-341 |
| ■ Explanation Of Command          | 19-341 |
| ■ Command                         | 19-341 |
| ■ Completion Message              | 19-341 |
| ■ Denial Message                  | 19-341 |
| ■ Autonomous Message              | 19-341 |
| ■ Explanation Of Parameters       | 19-342 |
| <b>UTL, QRY, ESR, UNIT, MXR</b>   | 19-345 |
| ■ Explanation Of Command          | 19-345 |
| ■ Command                         | 19-345 |
| ■ Completion Message              | 19-345 |
| ■ Denial Message                  | 19-345 |
| ■ Autonomous Message              | 19-346 |
| ■ Explanation Of Parameters       | 19-346 |
| <b>UTL, QRY, FALMS, TYPE, ALL</b> | 19-350 |
| ■ Explanation Of Command          | 19-350 |
| ■ Command                         | 19-350 |
| ■ Completion Message              | 19-350 |
| ■ Denial Message                  | 19-353 |
| ■ Autonomous Message              | 19-353 |
| ■ Explanation Of Parameters       | 19-353 |
| <b>UTL, QRY, FPKG</b>             | 19-368 |
| ■ Explanation Of Command          | 19-368 |
| ■ Command                         | 19-368 |
| ■ Completion Message              | 19-369 |
| ■ Denial Message                  | 19-369 |

---

## Contents

|                                                 |        |
|-------------------------------------------------|--------|
| ■ Autonomous Message                            | 19-369 |
| ■ Explanation Of Parameters                     | 19-370 |
| <b>UTL, QRY, FROM</b>                           | 19-372 |
| ■ Explanation Of Command                        | 19-372 |
| ■ Command                                       | 19-372 |
| ■ Nonhierarchical                               | 19-372 |
| ■ Hierarchical                                  | 19-372 |
| ■ Completion Message                            | 19-373 |
| ■ Nonhierarchical                               | 19-373 |
| ■ Hierarchical                                  | 19-373 |
| ■ Denial Message                                | 19-374 |
| ■ Nonhierarchical                               | 19-374 |
| ■ Hierarchical                                  | 19-374 |
| ■ Autonomous Message                            | 19-374 |
| ■ Explanation Of Parameters                     | 19-374 |
| <b>UTL, QRY, FROM</b>                           | 19-393 |
| ■ Explanation Of Command                        | 19-393 |
| ■ Command                                       | 19-393 |
| ■ Nonhierarchical                               | 19-393 |
| ■ Hierarchical                                  | 19-393 |
| ■ Completion Message                            | 19-393 |
| ■ Nonhierarchical                               | 19-393 |
| ■ Hierarchical                                  | 19-394 |
| ■ Denial Message                                | 19-394 |
| ■ Nonhierarchical                               | 19-394 |
| ■ Hierarchical                                  | 19-394 |
| ■ Autonomous Message                            | 19-394 |
| ■ Explanation Of Parameters                     | 19-394 |
| <b>UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC</b> | 19-398 |
| ■ Explanation Of Command                        | 19-398 |
| ■ Command                                       | 19-398 |
| ■ Nonhierarchical                               | 19-398 |
| ■ Hierarchical                                  | 19-398 |
| ■ Completion Message                            | 19-399 |
| ■ Nonhierarchical                               | 19-399 |
| ■ Hierarchical                                  | 19-402 |
| ■ Denial Message                                | 19-404 |
| ■ Autonomous Message                            | 19-404 |

---

## Contents

|                                         |        |
|-----------------------------------------|--------|
| ■ Explanation Of Parameters             | 19-404 |
| <b>UTL, QRY, LIST, MACRO, USER</b>      | 19-408 |
| ■ Explanation Of Command                | 19-408 |
| ■ Command                               | 19-408 |
| ■ Completion Message                    | 19-408 |
| ■ Denial Message                        | 19-409 |
| ■ Autonomous Message                    | 19-409 |
| ■ Explanation Of Parameters             | 19-409 |
| <b>UTL, QRY, LIST, MAP, USER</b>        | 19-411 |
| ■ Explanation Of Command                | 19-411 |
| ■ Command                               | 19-411 |
| ■ Completion Message                    | 19-411 |
| ■ Denial Message                        | 19-412 |
| ■ Autonomous Message                    | 19-412 |
| ■ Explanation Of Parameters             | 19-412 |
| <b>UTL, QRY, LOG, ALL</b>               | 19-414 |
| ■ Explanation Of Command                | 19-414 |
| ■ Command                               | 19-414 |
| ■ Completion Message                    | 19-414 |
| ■ Denial Message                        | 19-415 |
| ■ Autonomous Message                    | 19-415 |
| ■ Explanation Of Parameters             | 19-416 |
| <b>UTL, QRY, LPBK, NPC</b>              | 19-418 |
| ■ Explanation Of Command                | 19-418 |
| ■ Command                               | 19-418 |
| ■ Nonhierarchical                       | 19-418 |
| ■ Hierarchical                          | 19-418 |
| ■ Completion Message                    | 19-419 |
| ■ Nonhierarchical                       | 19-419 |
| ■ Hierarchical                          | 19-420 |
| ■ Denial Message                        | 19-420 |
| ■ Nonhierarchical                       | 19-420 |
| ■ Hierarchical                          | 19-420 |
| ■ Autonomous Message                    | 19-420 |
| ■ Explanation Of Parameters             | 19-421 |
| <b>UTL, QRY, MACRO, ATTR, USER, ALL</b> | 19-425 |
| ■ Explanation Of Command                | 19-425 |

---

## Contents

|                                               |        |
|-----------------------------------------------|--------|
| ■ Command                                     | 19-425 |
| ■ Completion Message                          | 19-426 |
| ■ Denial Message                              | 19-426 |
| ■ Autonomous Message                          | 19-426 |
| ■ Explanation Of Parameters                   | 19-427 |
| <b>UTL, QRY, MACRO, MAP, SPACE, USER, ALL</b> | 19-429 |
| ■ Explanation Of Command                      | 19-429 |
| ■ Command                                     | 19-429 |
| ■ Completion Message                          | 19-429 |
| ■ Denial Message                              | 19-430 |
| ■ Autonomous Message                          | 19-430 |
| ■ Explanation Of Parameters                   | 19-431 |
| <b>UTL, QRY, MACRO, USER</b>                  | 19-432 |
| ■ Explanation Of Command                      | 19-432 |
| ■ Command                                     | 19-432 |
| ■ Completion Message                          | 19-432 |
| ■ Denial Message                              | 19-432 |
| ■ Autonomous Message                          | 19-432 |
| ■ Explanation Of Parameters                   | 19-433 |
| <b>UTL, QRY, MAP, ATTR, ALL, USER, MAPNM</b>  | 19-435 |
| ■ Explanation Of Command                      | 19-435 |
| ■ Command                                     | 19-435 |
| ■ Completion Message                          | 19-436 |
| ■ Denial Message                              | 19-436 |
| ■ Autonomous Message                          | 19-436 |
| ■ Explanation Of Parameters                   | 19-436 |
| <b>UTL, QRY, MARK</b>                         | 19-438 |
| ■ Explanation Of Command                      | 19-438 |
| ■ Command                                     | 19-439 |
| ■ Nonhierarchical                             | 19-439 |
| ■ Hierarchical                                | 19-439 |
| ■ Completion Message                          | 19-439 |
| ■ Nonhierarchical                             | 19-439 |
| ■ Hierarchical                                | 19-440 |
| ■ Denial Message                              | 19-440 |
| ■ Nonhierarchical                             | 19-440 |
| ■ Hierarchical                                | 19-441 |

---

## Contents

|                             |        |
|-----------------------------|--------|
| ■ Autonomous Message        | 19-441 |
| ■ Explanation Of Parameters | 19-441 |
| <b>UTL, QRY, MARK</b>       | 19-448 |
| ■ Explanation Of Command    | 19-448 |
| ■ Command                   | 19-448 |
| ■ Nonhierarchical           | 19-448 |
| ■ Hierarchical              | 19-448 |
| ■ Completion Message        | 19-449 |
| ■ Nonhierarchical           | 19-449 |
| ■ Hierarchical              | 19-449 |
| ■ Denial Message            | 19-450 |
| ■ Nonhierarchical           | 19-450 |
| ■ Hierarchical              | 19-450 |
| ■ Autonomous Message        | 19-451 |
| ■ Explanation Of Parameters | 19-451 |
| <b>UTL, QRY, MEMSTAT</b>    | 19-458 |
| ■ Explanation Of Command    | 19-458 |
| ■ Command                   | 19-459 |
| ■ Completion Message        | 19-460 |
| ■ Denial Message            | 19-462 |
| ■ Autonomous Message        | 19-462 |
| ■ Explanation Of Parameters | 19-462 |
| <b>UTL, QRY, NFS, NPC</b>   | 19-466 |
| ■ Explanation Of Command    | 19-466 |
| ■ Command                   | 19-466 |
| ■ Nonhierarchical           | 19-466 |
| ■ Hierarchical              | 19-466 |
| ■ Completion Message        | 19-467 |
| ■ Nonhierarchical           | 19-467 |
| ■ Hierarchical              | 19-467 |
| ■ Denial Message            | 19-467 |
| ■ Nonhierarchical           | 19-467 |
| ■ Hierarchical              | 19-467 |
| ■ Autonomous Message        | 19-467 |
| ■ Explanation Of Parameters | 19-468 |
| <b>UTL, QRY, NPC</b>        | 19-471 |
| ■ Explanation Of Command    | 19-471 |

---

## Contents

|                                                   |               |
|---------------------------------------------------|---------------|
| ■ Command                                         | 19-471        |
| ■ Nonhierarchical                                 | 19-471        |
| ■ Hierarchical                                    | 19-472        |
| ■ Completion Message                              | 19-472        |
| ■ Nonhierarchical                                 | 19-472        |
| ■ Hierarchical                                    | 19-475        |
| ■ Denial Message                                  | 19-477        |
| ■ Nonhierarchical                                 | 19-477        |
| ■ Hierarchical                                    | 19-477        |
| ■ Autonomous Message                              | 19-477        |
| ■ Explanation Of Parameters                       | 19-477        |
| <b>UTL, QRY, NPC, ALL, AI, LV, MONDAT, MONTIM</b> | <b>19-483</b> |
| ■ Explanation Of Command                          | 19-483        |
| ■ Command                                         | 19-484        |
| ■ Nonhierarchical                                 | 19-484        |
| ■ Hierarchical                                    | 19-484        |
| ■ Completion Message                              | 19-484        |
| ■ Nonhierarchical                                 | 19-484        |
| ■ Hierarchical                                    | 19-486        |
| ■ Denial Message                                  | 19-487        |
| ■ Nonhierarchical                                 | 19-487        |
| ■ Hierarchical                                    | 19-488        |
| ■ Autonomous Message                              | 19-488        |
| ■ Explanation Of Parameters                       | 19-488        |
| <b>UTL, QRY, NPC, CBTIMER</b>                     | <b>19-495</b> |
| ■ Explanation Of Command                          | 19-495        |
| ■ Command                                         | 19-495        |
| ■ Nonhierarchical                                 | 19-495        |
| ■ Hierarchical                                    | 19-495        |
| ■ Completion Message                              | 19-495        |
| ■ Nonhierarchical                                 | 19-495        |
| ■ Hierarchical                                    | 19-496        |
| ■ Denial Message                                  | 19-496        |
| ■ Nonhierarchical                                 | 19-496        |
| ■ Hierarchical                                    | 19-496        |
| ■ Autonomous Message                              | 19-496        |
| ■ Explanation Of Parameters                       | 19-496        |
| <b>UTL, QRY, NPC, MAP, USER</b>                   | <b>19-498</b> |

---

## Contents

|                                          |        |
|------------------------------------------|--------|
| ■ Explanation Of Command                 | 19-498 |
| ■ Command                                | 19-498 |
| ■ Completion Message                     | 19-499 |
| ■ Nonhierarchical                        | 19-499 |
| ■ Hierarchical                           | 19-500 |
| ■ Denial Message                         | 19-500 |
| ■ Autonomous Message                     | 19-500 |
| ■ Explanation Of Parameters              | 19-501 |
| <b>UTL, QRY, NPCTG</b>                   | 19-503 |
| ■ Explanation Of Command                 | 19-503 |
| ■ Command                                | 19-503 |
| ■ Completion Message                     | 19-504 |
| ■ Nonhierarchical                        | 19-504 |
| ■ Hierarchical                           | 19-504 |
| ■ Denial Message                         | 19-505 |
| ■ Autonomous Message                     | 19-505 |
| ■ Explanation Of Parameters              | 19-505 |
| <b>UTL, QRY, OPT, TYPE, ALL, NPCS</b>    | 19-508 |
| ■ Explanation Of Command                 | 19-508 |
| ■ Command                                | 19-508 |
| ■ Completion Message                     | 19-509 |
| ■ Denial Message                         | 19-510 |
| ■ Autonomous Message                     | 19-511 |
| ■ Explanation Of Parameters              | 19-511 |
| <b>UTL, QRY, PEST, FAIL, OOS, COMMON</b> | 19-513 |
| ■ Explanation Of Command                 | 19-513 |
| ■ Command                                | 19-513 |
| ■ Completion Message                     | 19-514 |
| ■ Denial Message                         | 19-514 |
| ■ Autonomous Message                     | 19-514 |
| ■ Explanation Of Parameters              | 19-515 |
| <b>UTL, QRY, PEST, FAIL, OOS, UNIT</b>   | 19-518 |
| ■ Explanation Of Command                 | 19-518 |
| ■ Command                                | 19-518 |
| ■ Completion Message                     | 19-519 |
| ■ Nonhierarchical                        | 19-519 |
| ■ Hierarchical                           | 19-523 |

---

## Contents

|                                            |        |
|--------------------------------------------|--------|
| ■ Denial Message                           | 19-527 |
| ■ Autonomous Message                       | 19-527 |
| ■ Explanation Of Parameters                | 19-527 |
| <b>UTL, QRY, ROLL, DS0, NPC, ALL, UNIT</b> | 19-538 |
| ■ Explanation Of Command                   | 19-538 |
| ■ Command                                  | 19-539 |
| ■ Nonhierarchical                          | 19-539 |
| ■ Hierarchical                             | 19-539 |
| ■ Completion Message                       | 19-539 |
| ■ Nonhierarchical                          | 19-539 |
| ■ Hierarchical                             | 19-540 |
| ■ Denial Message                           | 19-541 |
| ■ Autonomous Message                       | 19-541 |
| ■ Explanation Of Parameters                | 19-542 |
| <b>UTL, QRY, ROLL, DS1, NPC, ALL, UNIT</b> | 19-545 |
| ■ Explanation Of Command                   | 19-545 |
| ■ Command                                  | 19-546 |
| ■ Nonhierarchical                          | 19-546 |
| ■ Hierarchical                             | 19-546 |
| ■ Completion Message                       | 19-546 |
| ■ Nonhierarchical                          | 19-546 |
| ■ Hierarchical                             | 19-547 |
| ■ Denial Message                           | 19-548 |
| ■ Autonomous Message                       | 19-548 |
| ■ Explanation Of Parameters                | 19-548 |
| <b>UTL, QRY, RPSFI</b>                     | 19-552 |
| ■ Explanation Of Command                   | 19-552 |
| ■ Command                                  | 19-552 |
| ■ Completion Message                       | 19-552 |
| ■ Nonhierarchical                          | 19-552 |
| ■ Hierarchical                             | 19-553 |
| ■ Denial Message                           | 19-553 |
| ■ Autonomous Message                       | 19-553 |
| ■ Explanation Of Parameters                | 19-553 |
| <b>UTL, QRY, SALMS, ALL</b>                | 19-554 |
| ■ Explanation Of Command                   | 19-554 |
| ■ Command                                  | 19-554 |



---

## Contents

|                                                |        |
|------------------------------------------------|--------|
| ■ Completion Message                           | 19-554 |
| ■ Denial Message                               | 19-555 |
| ■ Autonomous Message                           | 19-555 |
| ■ Explanation Of Parameters                    | 19-555 |
| <b>UTL, QRY, SCR, LINK, USER, LINKS, USERS</b> | 19-557 |
| ■ Explanation Of Command                       | 19-557 |
| ■ Command                                      | 19-558 |
| ■ Completion Message                           | 19-558 |
| ■ Denial Message                               | 19-559 |
| ■ Autonomous Message                           | 19-559 |
| ■ Explanation Of Parameters                    | 19-559 |
| <b>UTL, QRY, SIGST</b>                         | 19-565 |
| ■ Explanation Of Command                       | 19-565 |
| ■ Command                                      | 19-565 |
| ■ Nonhierarchical                              | 19-565 |
| ■ Hierarchical                                 | 19-565 |
| ■ Completion Message                           | 19-566 |
| ■ Nonhierarchical                              | 19-566 |
| ■ Hierarchical                                 | 19-566 |
| ■ Denial Message                               | 19-566 |
| ■ Nonhierarchical                              | 19-566 |
| ■ Hierarchical                                 | 19-566 |
| ■ Autonomous Message                           | 19-566 |
| ■ Explanation Of Parameters                    | 19-567 |
| <b>UTL, QRY, SQN</b>                           | 19-571 |
| ■ Explanation Of Command                       | 19-571 |
| ■ Command                                      | 19-571 |
| ■ Completion Message                           | 19-571 |
| ■ Denial Message                               | 19-571 |
| ■ Autonomous Message                           | 19-571 |
| ■ Explanation Of Parameters                    | 19-572 |
| <b>UTL, QRY, STATE, ACO</b>                    | 19-573 |
| ■ Explanation Of Command                       | 19-573 |
| ■ Command                                      | 19-573 |
| ■ Completion Message                           | 19-573 |
| ■ Denial Message                               | 19-573 |
| ■ Autonomous Message                           | 19-573 |

---

## Contents

|                              |        |
|------------------------------|--------|
| ■ Explanation Of Parameters  | 19-574 |
| <b>UTL, QRY, STATE, NPC</b>  | 19-575 |
| ■ Explanation Of Command     | 19-575 |
| ■ Command                    | 19-576 |
| ■ Nonhierarchical            | 19-576 |
| ■ Hierarchical               | 19-576 |
| ■ Completion Message         | 19-577 |
| ■ Nonhierarchical            | 19-577 |
| ■ Hierarchical               | 19-578 |
| ■ Denial Message             | 19-579 |
| ■ Nonhierarchical            | 19-579 |
| ■ Hierarchical               | 19-579 |
| ■ Autonomous Message         | 19-579 |
| ■ Explanation Of Parameters  | 19-579 |
| <b>UTL, QRY, STATE, NPC</b>  | 19-605 |
| ■ Explanation Of Command     | 19-605 |
| ■ Command                    | 19-605 |
| ■ Nonhierarchical            | 19-605 |
| ■ Hierarchical               | 19-605 |
| ■ Completion Message         | 19-606 |
| ■ Nonhierarchical            | 19-606 |
| ■ Hierarchical               | 19-607 |
| ■ Denial Message             | 19-607 |
| ■ Nonhierarchical            | 19-607 |
| ■ Hierarchical               | 19-608 |
| ■ Autonomous Message         | 19-608 |
| ■ Explanation Of Parameters  | 19-608 |
| <b>UTL, QRY, STATE, SYNC</b> | 19-628 |
| ■ Explanation Of Command     | 19-628 |
| ■ Command                    | 19-628 |
| ■ Completion Message         | 19-628 |
| ■ Denial Message             | 19-628 |
| ■ Autonomous Message         | 19-628 |
| ■ Explanation Of Parameters  | 19-629 |
| <b>UTL, QRY, STR, LINK</b>   | 19-631 |
| ■ Explanation Of Command     | 19-631 |
| ■ Command                    | 19-631 |

---

## Contents

|                                      |        |
|--------------------------------------|--------|
| ■ Completion Message                 | 19-631 |
| ■ Denial Message                     | 19-632 |
| ■ Autonomous Message                 | 19-633 |
| ■ Explanation Of Parameters          | 19-633 |
| <b>UTL, QRY, STR, SYNC</b>           | 19-641 |
| ■ Explanation Of Command             | 19-641 |
| ■ Command                            | 19-641 |
| ■ Completion Message                 | 19-641 |
| ■ Denial Message                     | 19-641 |
| ■ Autonomous Message                 | 19-641 |
| ■ Explanation Of Parameters          | 19-642 |
| <b>UTL, QRY, STR, SYNC, TLI</b>      | 19-647 |
| ■ Explanation Of Command             | 19-647 |
| ■ Command                            | 19-647 |
| ■ Completion Message                 | 19-647 |
| ■ Denial Message                     | 19-647 |
| ■ Autonomous Message                 | 19-647 |
| ■ Explanation Of Parameters          | 19-648 |
| <b>UTL, QRY, STR, SYNC, TLI, SSP</b> | 19-650 |
| ■ Explanation Of Command             | 19-650 |
| ■ Command                            | 19-650 |
| ■ Completion Message                 | 19-650 |
| ■ Nonhierarchical                    | 19-650 |
| ■ Hierarchical                       | 19-650 |
| ■ Denial Message                     | 19-651 |
| ■ Autonomous Message                 | 19-651 |
| ■ Explanation Of Parameters          | 19-651 |
| <b>UTL, QRY, STR, XC</b>             | 19-655 |
| ■ Explanation Of Command             | 19-655 |
| ■ Command                            | 19-655 |
| ■ Completion Message                 | 19-655 |
| ■ Denial Message                     | 19-655 |
| ■ Autonomous Message                 | 19-655 |
| ■ Explanation Of Parameters          | 19-656 |
| <b>UTL, QRY, SYNC, TYPE</b>          | 19-657 |
| ■ Explanation Of Command             | 19-657 |
| ■ Command                            | 19-657 |

---

## Contents

|                             |        |
|-----------------------------|--------|
| ■ Completion Message        | 19-657 |
| ■ Denial Message            | 19-657 |
| ■ Autonomous Message        | 19-657 |
| ■ Explanation Of Parameters | 19-658 |
| <b>UTL, QRY, TGS</b>        | 19-660 |
| ■ Explanation Of Command    | 19-660 |
| ■ Command                   | 19-660 |
| ■ Completion Message        | 19-660 |
| ■ Nonhierarchical           | 19-660 |
| ■ Hierarchical              | 19-661 |
| ■ Denial Message            | 19-661 |
| ■ Autonomous Message        | 19-661 |
| ■ Explanation Of Parameters | 19-661 |
| <b>UTL, QRY, TO</b>         | 19-665 |
| ■ Explanation Of Command    | 19-665 |
| ■ Command                   | 19-666 |
| ■ Nonhierarchical           | 19-666 |
| ■ Hierarchical              | 19-666 |
| ■ Completion Message        | 19-666 |
| ■ Nonhierarchical           | 19-666 |
| ■ Hierarchical              | 19-668 |
| ■ Denial Message            | 19-670 |
| ■ Nonhierarchical           | 19-670 |
| ■ Hierarchical              | 19-670 |
| ■ Autonomous Message        | 19-670 |
| ■ Explanation Of Parameters | 19-670 |
| <b>UTL, QRY, TO</b>         | 19-700 |
| ■ Explanation Of Command    | 19-700 |
| ■ Command                   | 19-700 |
| ■ Nonhierarchical           | 19-700 |
| ■ Hierarchical              | 19-700 |
| ■ Completion Message        | 19-700 |
| ■ Nonhierarchical           | 19-700 |
| ■ Hierarchical              | 19-701 |
| ■ Denial Message            | 19-701 |
| ■ Nonhierarchical           | 19-701 |
| ■ Hierarchical              | 19-701 |
| ■ Autonomous Message        | 19-701 |

---

## Contents

|                                   |        |
|-----------------------------------|--------|
| ■ Explanation Of Parameters       | 19-702 |
| <b>UTL, QRY, TOD, CFA, MONDAT</b> | 19-718 |
| ■ Explanation Of Command          | 19-718 |
| ■ Command                         | 19-718 |
| ■ Completion Message              | 19-718 |
| ■ Denial Message                  | 19-718 |
| ■ Autonomous Message              | 19-718 |
| ■ Explanation Of Parameters       | 19-719 |
| <b>UTL, QRY, TPS</b>              | 19-721 |
| ■ Explanation Of Command          | 19-721 |
| ■ Command                         | 19-721 |
| ■ Completion Message              | 19-722 |
| ■ Nonhierarchical                 | 19-722 |
| ■ Hierarchical                    | 19-723 |
| ■ Denial Message                  | 19-723 |
| ■ Autonomous Message              | 19-723 |
| ■ Explanation Of Parameters       | 19-724 |
| <b>UTL, QRY, TS0, NPC</b>         | 19-727 |
| ■ Explanation Of Command          | 19-727 |
| ■ Command                         | 19-727 |
| ■ Nonhierarchical                 | 19-727 |
| ■ Hierarchical                    | 19-727 |
| ■ Completion Message              | 19-728 |
| ■ Nonhierarchical                 | 19-728 |
| ■ Hierarchical                    | 19-728 |
| ■ Denial Message                  | 19-728 |
| ■ Nonhierarchical                 | 19-728 |
| ■ Hierarchical                    | 19-728 |
| ■ Autonomous Message              | 19-728 |
| ■ Explanation Of Parameters       | 19-729 |
| <b>UTL, QRY, TS0M, NPC</b>        | 19-732 |
| ■ Explanation Of Command          | 19-732 |
| ■ Command                         | 19-732 |
| ■ Nonhierarchical                 | 19-732 |
| ■ Hierarchical                    | 19-732 |
| ■ Completion Message              | 19-733 |
| ■ Nonhierarchical                 | 19-733 |

---

## Contents

|                                     |        |
|-------------------------------------|--------|
| ■ Hierarchical                      | 19-733 |
| ■ Denial Message                    | 19-733 |
| ■ Nonhierarchical                   | 19-733 |
| ■ Hierarchical                      | 19-733 |
| ■ Autonomous Message                | 19-734 |
| ■ Explanation Of Parameters         | 19-734 |
| <b>UTL, QRY, UNIT, FTML, IMP</b>    | 19-737 |
| ■ Explanation Of Command            | 19-737 |
| ■ Command                           | 19-737 |
| ■ Completion Message                | 19-737 |
| ■ Denial Message                    | 19-737 |
| ■ Autonomous Message                | 19-737 |
| ■ Explanation Of Parameters         | 19-738 |
| <b>UTL, QRY, WHO</b>                | 19-739 |
| ■ Explanation Of Command            | 19-739 |
| ■ Command                           | 19-739 |
| ■ Completion Message                | 19-739 |
| ■ Denial Message                    | 19-739 |
| ■ Autonomous Message                | 19-739 |
| ■ Explanation Of Parameters         | 19-740 |
| <b>UTL, QRY, XCSB, UNIT</b>         | 19-742 |
| ■ Explanation Of Command            | 19-742 |
| ■ Command                           | 19-743 |
| ■ Completion Message                | 19-743 |
| ■ Nonhierarchical                   | 19-743 |
| ■ Hierarchical                      | 19-744 |
| ■ Common                            | 19-744 |
| ■ Denial Message                    | 19-744 |
| ■ Autonomous Message                | 19-744 |
| ■ Explanation Of Parameters         | 19-745 |
| <b>UTL, RCY, COND, IN, PROGRESS</b> | 19-749 |
| ■ Explanation Of Command            | 19-749 |
| ■ Command                           | 19-749 |
| ■ Completion Message                | 19-749 |
| ■ Denial Message                    | 19-749 |
| ■ Autonomous Message                | 19-749 |
| ■ Explanation Of Parameters         | 19-750 |

---

## Contents

|                                  |        |
|----------------------------------|--------|
| <b>UTL,RCY,PASSWD</b>            | 19-752 |
| ■ Explanation Of Command         | 19-752 |
| ■ Command                        | 19-752 |
| ■ Completion Message             | 19-752 |
| ■ Denial Message                 | 19-752 |
| ■ Autonomous Message             | 19-752 |
| ■ Explanation Of Parameters      | 19-753 |
| <b>UTL,TOD,CFA,PRIM,X,MONDAT</b> | 19-754 |
| ■ Explanation Of Command         | 19-754 |
| ■ Command                        | 19-755 |
| ■ Completion Message             | 19-755 |
| ■ Denial Message                 | 19-755 |
| ■ Autonomous Message             | 19-755 |
| ■ Explanation Of Parameters      | 19-756 |





---

## UTL

---

## UTL

---

This section documents the **UTL** command.

## **UTL,ACO**

---

### **ALARM CUTOFF**

#### **Explanation Of Command**

---

This message executes an audible alarm cutoff (ACO), silencing any currently active central office audible frame alarms. DACS II also illuminates the green ACO LED on the front status panel. The ACO remains active and the green LED remains illuminated until all frame alarms are retired or a new alarm appears on the system.

Note that executing an ACO **does not** inhibit subsequent audible alarms from being generated for additional failures. In addition, the ACO does not retire local or remote **visible** indications and does not cause the system to issue an alarm clear notification.

Executing an ACO by inputting this command is equivalent to pressing the status panel ACO push-button. When the ACO push-button is pressed, a message indicating that the ACO has been activated is generated by the system.

#### **Command**

---

[I.51111]

**UTL:FRM xy,SEQ ww:ACO!**

#### **Completion Message**

---

[O.51111]

**pahh:mm:ss xy,ww n[vv] UTL ACO {ACTIVE|INACT} COMPL**

#### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**ACO** - Alarm cutoff

**ACTIVE** - Active alarm

The appearance of this keyword indicates that the audible alarm cutoff has been activated in the system.

**INACT** - Inactive alarm

The appearance of this keyword indicates that there were no alarms on the system and the audible alarm cutoff was not activated.

## **UTL,BMTR,FROM,TO,EXCT,INCL,UPGRD**

### **BACKUP MEMORY TRANSFER**

#### **Explanation Of Command**

This command performs the following functions:

1. When the MC is in-service, it may be used to request a transfer of database information from random access memory (RAM) to the memory device (MEM) or devices that are in-service. The Primary Memory (PMEM) device will always be in-service. The Secondary Memory (SMEM) device may or may not be in-service. If SMEM is in-service, then a transfer of database information will be performed from RAM to SMEM.
2. When the MC is in maintenance condition (MCOND), it may be used to request a transfer of executables or database information between PMEM and SMEM or between SMEM and PMEM. If the optional EXCT keyword is **not** used, only database information will be transferred. If the EXCT keyword **is** used only executables will be transferred.
3. During a release upgrade procedure, when in MCOND, it transfers the database and DSP Platform Applications, if any, from SMEM to PMEM. The UPGRD keyword must be used in that case. Note that the UPGRD keyword is only available to user DAX with the frame in MCOND.

Restricted maintenance privilege is required for transfers of executables or database information from SMEM to PMEM.

Every ten minutes the state of the frame is checked to look for changes in provisioning and/or cross connections. If a change has occurred within that period, an autonomous request is made to transfer data base information from RAM to MEM.

If the user issues a command transferring database information or executables from PMEM to SMEM, the command is executed immediately; however, if the transfer occurs from SMEM to PMEM the following message will appear (see below when the UPGRD keyword is used):

**ARE YOU SURE? (YES/NO)**

Only if the answer is YES, will the command be executed. If the answer is not YES or the user does not respond within 60 seconds, the following will be displayed:

**COMMAND ABORTED**

When transferring executables between PMEM and SMEM in either direction, Digital Signal Processing Platform (DSPP) application executables (if present) are treated as follows:

1. If executables for a particular application are on the source card, but not on the destination card, the transfer of those application executables takes place.
2. If executables for a particular application are on the destination card, but not on the source card, the application executables are not erased, even if executables for another application are copied from source to destination card.
3. If executables of the same application (the "x" in SDxyz is the same) that have the same version identifiers are on both the source and the destination card, then both executables remain untouched and no transfer takes place for that application.
4. If different versions of the executables of the same application are on the source and the destination card respectively, then this command is denied. The user must invoke the INSTALL command to first list and then remove one or the other version of the application before invoking this command again.

The **UPGRD** keyword must only be used during an upgrade procedure for the purpose of copying the database and previously installed DSP Platform Applications from SMEM to PMEM. The following restrictions apply for the use of the UPGRD keyword.

1. Only a copy from SMEM to PMEM is allowed.
2. The EXCT keyword is not allowed.
3. The INCL keyword is not allowed.
4. The Main Controller must be in Maintenance Condition (MCOND).
5. The user must be user DAX.
6. The release identifier for the executables on the PMEM card must refer to a newer release than the release identifier of the database on the SMEM card; i.e., this must be a genuine upgrade situation.

At the beginning of the invocation of this utility with the UPGRD keyword the following message will appear:

**WARNING - YOU HAVE INVOKED THE "UPGRD" KEYWORD.  
THE "UPGRD" KEYWORD SHOULD ONLY BE USED DURING A GENERIC UPGRADE.  
DO YOU WISH TO CONTINUE? (YES/NO)**

The user should respond with a **YES** if and only if an upgrade for the DACS II generic is to be done.

During the execution of this copy utility during an upgrade procedure (i.e., with the UPGRD keyword), the database is copied from SMEM to PMEM and a retrofit of the size of the database takes place if needed. In addition, all the applications residing on SMEM, if any, are copied to PMEM.

New PMEM cards with new DACS II executable software should **not** have any application software on them. Therefore, if for some reason, a different version of the same application resides on the PMEM card that resides on the SMEM card, then this command will be denied.

### **Command**

---

[I.55701]

**UTL:FRM xy,SEQ ww:BMTR,FROM <from>,TO <to>[, {EXCT|INCL|UPGRD}]!**

### **Completion Message**

---

[O.55701]

**M hh:mm:ss xy,ww n[vv] UTL BMTR FROM <from> TO <to>\**  
**[ {EXCT|INCL|UPGRD}] COMPL**

[O.55702]

**M hh:mm:ss xy ww n[vv] UTL BMTR IN PROGRESS**

### **Denial Message**

---

[O.55701.01]

**M hh:mm:ss xy,ww n[vv] UTL BMTR FROM <from> TO <to>[ {EXCT|INCL|UPGRD}] \**  
**COND cc DNY**

### **Autonomous Message**

---

[O.55701]

**A hh:mm:ss xy,ww UTL BMTR FROM <from> TO <to>[ EXCT] COMPL**

[O.55701.01]

A hh:mm:ss xy,ww UTL BMTR FROM <from> TO <to>[ EXCT] \  
COND cc DNY

### Explanation Of Parameters

---

**BMTR** - Backup memory transfer

**FROM** - From

**from** - Source for backup memory transfer

**TO** - To

**to** - Destination for backup memory transfer

RAM Random access memory  
PMEM Primary memory device  
SMEM Secondary memory device  
MEM PMEM, SMEM or both

**Note:** The only permissible combinations are listed below:

**from to**

RAM MEM  
PMEM SMEM  
SMEM PMEM

**EXCT** - Executable

Transfer generic executable software only. May not be used when transferring memory contents from RAM to MEM. Frame must be in maintenance condition state (MCOND) when transferring executable software from PMEM to SMEM or SMEM to PMEM. Additionally, SMEM to PMEM requires restricted maintenance (RMON) privileges.

**INCL** - Inclusive

The INCL keyword is used to request that the data base on PMEM be transferred to SMEM excluding the generic journal files. This keyword cannot be combined with the EXCT keyword. INCL may not be used when transferring RAM to MEM.

The INCL keyword is used only as a preparatory step before starting a generic upgrade. It makes sure that the database residing on the SMEM card has no journal files before the upgrade is started. This is different from an invocation of this utility to copy from RAM to MEM, which converts the journals to the database leaving the journal files empty, but which does not remove the journal files.

## UPGRD - Upgrade

The UPGRD keyword must be used only during a DACS II Release upgrade for the purpose of copying the database and any previously installed DSP Platform Applications from SMEM to PMEM. It is an assumption that the PMEM card has the new executables and nothing else, while the SMEM card contains the old executables, all installed DSPP Applications, and a complete database with no remaining journal entries. Only user DAX may use this keyword; also, the MC must be in MCOND.

## cc - Hexadecimal condition code

### cc Explanation

|           |                                                           |
|-----------|-----------------------------------------------------------|
| <b>8C</b> | DB MP or units ram error                                  |
| <b>8D</b> | DB PMEM error OP-CL-RD-WR-SK                              |
| <b>8E</b> | DB can't send or receive mail                             |
| <b>8F</b> | Can't lock or unlock ram database                         |
| <b>90</b> | DB can't get the slave mail box                           |
| <b>95</b> | Invalid option,mailbox or flag                            |
| <b>96</b> | Unit(s) OOS, and additional backup required               |
| <b>97</b> | Entity can't be addressed in this configuration           |
| <b>98</b> | Checksums verification failed                             |
| <b>99</b> | G1 SMEM for SMEM->PMEM w/journals                         |
| <b>20</b> | Software Identification Block is not readable             |
| <b>21</b> | Software Identification Block failed comparison           |
| <b>A5</b> | FPI on SMEM does not match one on PMEM                    |
| <b>84</b> | Problem occurred while accessing SMEM or unformatted SMEM |
| <b>85</b> | Problem occurred while accessing PMEM                     |
| <b>86</b> | Source does not contain requested information             |
| <b>87</b> | Old_tape is a special install tape                        |
| <b>88</b> | SMEM is a normal SMEM                                     |
| <b>89</b> | Problem occurred while accessing BOTH_MEM                 |
| <b>90</b> | Can't mount or unmount BOTH_MEM                           |
| <b>91</b> | Can't mount or unmount SMEM                               |
| <b>92</b> | Can't mount or unmount PMEM                               |
| <b>93</b> | SMEM is not present                                       |
| <b>94</b> | SMEM unit is not restored                                 |
| <b>E6</b> | DB SMEM error OP-CL-RD-WR-SK                              |
| <b>E7</b> | PMEM not restored                                         |
| <b>B4</b> | Can't copy executables                                    |
| <b>B8</b> | Application version mismatch                              |
| <b>F0</b> | SSC Diagnostic Failure                                    |
| <b>F7</b> | Can't mount or unmount old_tape                           |
| <b>F8</b> | Old_tape is not present                                   |
| <b>F9</b> | Old_tape unit is not restored                             |
| <b>FA</b> | Bad old_tape DB generic                                   |
| <b>FB</b> | Old_tape with journal                                     |
| <b>FC</b> | Invalid executable on card                                |



**cc**    *Explanation*

**FD**    Problem occurred while accessing old\_tape  
**FE**    Fail transfer DB from old\_tape to SMEM  
**FF**    DB retrofit fail

## **UTL,BOOT,FRAME,CLR**

### **UTILITY BOOT**

#### **Explanation Of Command**

This command requests the transfer of the data base from the primary memory (PMEM) to the random access memory (RAM).

**Note:** No hardware circuit packs or memory cards should be removed from or inserted into the frame while a boot or reset is in progress.

The optional CLR keyword is unnecessary but it is allowed for compatibility with older software releases.

#### **Command**

[I.58001]

**UTL:FRM xy,SEQ ww:BOOT,FRAME[,CLR]!**

#### **Completion Message**

[O.58001]

**M hh:mm:ss xy,ww n[vv] UTL BOOT FRAME[ CLR] COND cc COMPL**

[O.58002]

**M hh:mm:ss xy,ww n[vv] UTL BOOT FRAME IN PROGRESS**

### **Denial Message**

---

[O.58001.01]

**M** hh:mm:ss xy,ww n[vv] **UTL BOOT FRAME[ CLR] COND cc DNY**

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**CLR** - Clear

The optional CLR keyword is unnecessary but it is allowed for compatibility with older software releases.

**PMEM** - Primary memory card.

**cc** - Hexadecimal condition code

**cc**    *Explanation*

- |           |                                                                  |
|-----------|------------------------------------------------------------------|
| <b>46</b> | Failed to boot CONF file                                         |
| <b>47</b> | Failed to boot DB                                                |
| <b>48</b> | Failed to boot journal--recurrence indicates database corruption |
| <b>49</b> | Failed to boot unit                                              |
| <b>4C</b> | Failed to boot CI                                                |
| <b>51</b> | General boot failure (vanilla flavor)                            |
| <b>18</b> | DSPI not equipped, not in service, or failed                     |
| <b>52</b> | Database is empty                                                |
| <b>92</b> | Can't mount or unmount PMEM                                      |

## **UTL,CLR,ALL**

### **UTILITY CLEAR**

#### **Explanation Of Command**

This message requests a clear of the counters or state on a specified facility performance parameter for all in-service network processing circuits (NPCs) which have the specified parameter.

DACS II will silently skip NPCs which can not be cleared.

#### **Command**

[I.56011]

**UTL:FRM xy,SEQ ww:CLR,<parameter>,ALL!**

#### **Completion Message**

[O.56011]

**M hh:mm:ss xy,ww n UTL CLR <parameter> ALL COMPL**

#### **Denial Message**

[O.56011.01]

**M hh:mm:ss xy,ww n UTL CLR <parameter> ALL COND cc DNY**

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

**CLR** - Clear

### parameter

- Facility performance monitoring parameter

The addition to this message requests a clear of the counters or state of the facility performance PM 24 hour, PM previous 15 minute and PM current 15 minute or the total since "local midnight" for the parameters listed below for all in-service PB and or PC type NPCs.

| <i>parameter</i> | <i>Explanation</i>                                      |
|------------------|---------------------------------------------------------|
| CRC              | CRC-4 check block error events                          |
| FRER             | Framing error events                                    |
| LOFA             | Loss of frame alignment events                          |
| MER              | Multiframe error alignment events (time slot 16)        |
| PM               | Performance monitoring. Clears the following registers: |
|                  | DM Degraded Minutes                                     |
|                  | ERS Errored Seconds                                     |
|                  | SERS Severely Errored Seconds                           |
|                  | SLIP Slip Events                                        |
|                  | US Unavailable Seconds                                  |

**cc** - Hexadecimal condition code

### cc Explanation

|           |                                                          |
|-----------|----------------------------------------------------------|
| <b>04</b> | Subject entity is out of service                         |
| <b>10</b> | Unit is not equipped                                     |
| <b>11</b> | UC is out of service                                     |
| <b>12</b> | UC is in service but failed                              |
| <b>14</b> | FTMI is out of service                                   |
| <b>15</b> | NPC is unequipped                                        |
| <b>1F</b> | FTMI is in service but failed                            |
| <b>24</b> | Unit type error                                          |
| <b>26</b> | NPC type error                                           |
| <b>46</b> | NPC Failed or Out of Service                             |
| <b>7E</b> | Bank id number not found                                 |
| <b>A0</b> | No SAFE alarm for DGP                                    |
| <b>A1</b> | The parameter specified does not match with the NPC type |

## **UTL,CLR,ERR,HWER,SWER**

### **UTILITY CLEAR HARDWARE/SOFTWARE ERROR RECOVERY LOG FILE**

#### **Explanation Of Command**

This message clears the DACS II error rate (ERR) recovery log. The log is a file that contains the history of the recovery events.

#### **Command**

[I.56061]

**UTL:FRM xy,SEQ ww:CLR,ERR,{HWER|SWER}!**

#### **Completion Message**

[O.56061]

**M hh:mm:ss xy,ww n[vv] UTL CLR ERR {HWER|SWER} COMPL**

#### **Denial Message**

[O.56061.01]

**M hh:mm:ss xy,ww n[vv] UTL CLR ERR {HWER|SWER} COND cc DNY**

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**CLR** - Clear

**ERR** - Error rate recovery

**HWER** - Hardware error recovery log file

**SWER** - Software error recovery log file

**cc** - Hexadecimal condition code

**cc** *Explanation*

**F1** File has already been cleared

## **UTL,CLR,NPC**

---

### **UTILITY CLEAR**

#### **Explanation Of Command**

---

This message requests a given facility performance parameter be cleared of the count or state for a single network processing circuit (NPC) or a range of circuits in a facility terminating unit (FTU) or a Hybrid DS3 unit (HDS3U).

#### **Command**

---

##### **Nonhierarchical**

---

[I.56001]

UTL:FRM xy,SEQ ww:CLR,<parameter>,NPC [s]abc[-[t]def]!

##### **Hierarchical**

---

[I.56001]

UTL:FRM xy,SEQ ww:CLR,<parameter>,NPC uvmnp[-wxkqr]!

#### **Completion Message**

---

##### **Nonhierarchical**

---

[O.56001]

M hh:mm:ss xy,ww n UTL CLR <parameter>  
NPC [s]abc[-[t]def][ NONE] COMPL



### **Hierarchical**

---

[O.56001]

M hh:mm:ss xy,ww n UTL CLR <parameter> NPC uvmnp[-wxkqr][ NONE] COMPL

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.56001.01]

M hh:mm:ss xy,ww n UTL CLR <parameter> NPC [s]abc[-[t]def] \ {UEQD|BADNPC} DNY

[O.56001.02]

M hh:mm:ss xy,ww n UTL CLR <parameter>[ NPC [s]abc] COND cc DNY

### **Hierarchical**

---

[O.56001.01]

M hh:mm:ss xy,ww n UTL CLR <parameter> NPC uvmnp[-wxkqr] {UEQD|\ BADNPC} DNY

[O.56001.02]

M hh:mm:ss xy,ww n UTL CLR <parameter>[ NPC uvmnp] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**CLR** - Clear

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, the first NPC number of a range

**[t]def** - The 3- or 4-digit nonhierarchical NPC number, the last NPC number of a range

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number, the first NPC number of a range

**wxkqr** - Hierarchical NPC number, the last NPC number of a range

**uv,wx** - Unit number

**m,k** - Module number

**np,qr** - NPC number

The allowable values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

# parameter

- One chosen from the list below:

| Parameter | Explanation                                                                                                                                                                  |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BER       | Bit Error Rate                                                                                                                                                               |
| BPV       | Bipolar Violation                                                                                                                                                            |
| COFA      | Change Of Frame Alignment                                                                                                                                                    |
| CRC       | Cyclic redundancy (CR) code<br>CR check block error events (CRC-4)                                                                                                           |
| ER        | Error Rate (same as BER for D4 framing)                                                                                                                                      |
| ERS       | Errored Seconds                                                                                                                                                              |
| FRER      | Framing Error                                                                                                                                                                |
| LOFA      | Loss of Frame Alignment Events                                                                                                                                               |
| MER       | Multiframe Alignment Error Events (Time slot 16)                                                                                                                             |
| OOF       | Out Of Frame                                                                                                                                                                 |
| SERS      | Severely Errored Seconds                                                                                                                                                     |
| SLIP      | Slip count                                                                                                                                                                   |
| PM        | Clears the following registers (CEPT):<br>DM - Degraded Minutes<br>SERS - Severely Errored Seconds<br>ERS - Errored Seconds<br>US - Unavailable Seconds<br>SLIP - Slip count |

**Note:** Only the BER and SLIP parameters are allowed for Clear-DS1 NPCs.  
SERS, ERS, and SLIP are only individually clearable for domestic NPCs.  
For CEPT NPCs they will be cleared by the PM parameter.

**UEQD** - Unequipped

**BADNPC** - Bad NPC

The selected parameter is not valid for this NPC.

**cc** - Hexadecimal condition code

| cc | Explanation                      |
|----|----------------------------------|
| 04 | Subject entity is out of service |
| 10 | Unit is not equipped             |
| 11 | UC is out of service             |
| 12 | UC is in service but failed      |
| 13 | FTMI is not equipped             |
| 14 | FTMI is out of service           |
| 1F | FTMI is in service but failed    |
| 24 | Unit type error                  |
| 26 | NPC type error                   |

**cc**    *Explanation*

**0B**    Invalid CEPT NPC

**46**    NPC Failed or Out of Service

**A1**    The parameter specified does not match with the NPC type

## **UTL,CLR,NPC,ALL,AI,MONDAT,MONTIM**

### **UTILITY CLEAR DA/TA/PA/TH NPC PARAMETERS**

#### **Explanation Of Command**

This message clears the facility performance monitoring parameter counts of DA, TA, TH, and PA type NPCs.

This command will handle NPC addressing in the input command as follows: If only a single NPC is addressed in the input command, then either a completion or denial response will be generated for the addressed NPC. DACS II will always deny invalid commands to specifically addressed NPCs.

If a range of NPCs is addressed or the ALL NPC keyword is used and the feature applies to one or more NPCs within the range, DACS II will perform the operation on the NPCs in the range that support the requested feature, but skip the NPCs which do not support the requested feature. DACS II provides a variety of line termination types which support different features and can be randomly mixed within the frame. If at least one of the NPCs in the addressed range supports the requested feature, DACS II will generate a completion response for the entire range of NPCs; individual denial responses will not be generated for NPCs within the range which do not support the feature. If *none* of the NPCs in the addressed range support the requested feature, DACS II will generate a range denial response. NPC - Network processing circuit

If an NPC range is specified in the input command, the following floating window rules apply:

1. Unequipped NPCs within the requested range will be skipped.
2. If a CEPT gap is within the requested range, the NPCs in the gap will be skipped.
3. If an endpoint of the requested range is in a CEPT gap, then the command will be denied."

## Command

---

### Nonhierarchical

---

[I.56071]

UTL:FRM xy,SEQ ww:CLR,{NPC [s]abc[-[t]def]|ALL},<parameter>,AI aaaaa \  
[,MONDAT dddd][,MONTIM tttt]!

### Hierarchical

---

[I.56071]

UTL:FRM xy,SEQ ww:CLR,{NPC uvmnp[-wxkqr]|ALL},<parameter>,AI aaaaa \  
[,MONDAT dddd][,MONTIM tttt]!

## Completion Message

---

### Nonhierarchical

---

[O.56071]

M hh:mm:ss xy,ww n[vv] UTL CLR {NPC [s]abc[-[t]def]|ALL} <parameter> \  
AI aaaaa [MONDAT dddd ][MONTIM tttt ]COMPL

### Hierarchical

---

[O.56071]

M hh:mm:ss xy,ww n[vv] UTL CLR {NPC uvmnp[-wxkqr]|ALL} <parameter> \  
AI aaaaa [MONDAT dddd ][MONTIM tttt ]COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

If the output message requires less than 80 characters:

[O.56071.01]

```
M hh:mm:ss xy,ww n[vv] UTL CLR {NPC [s]abc[-[t]def]|ALL} <parameter> \
AI aaaaa [MONDAT dddd][MONTIM tttt]COND cc DNY
```

If the output message requires more than 80 characters:

[O.56071.01]

```
M hh:mm:ss xy,ww n[vv] UTL CLR {NPC [s]abc[-[t]def]|ALL} <parameter> 2 LN MSG:
AI aaaaa [MONDAT dddd][MONTIM tttt]COND cc DNY
```

### **Hierarchical**

---

If the output message requires less than 80 characters:

[O.56071.01]

```
M hh:mm:ss xy,ww n[vv] UTL CLR {NPC uvmnp[-wxkqr]|ALL} <parameter> \
AI aaaaa [MONDAT dddd][MONTIM tttt]COND cc DNY
```

If the output message requires more than 80 characters:

[O.56071.01]

```
M hh:mm:ss xy,ww n[vv] UTL CLR {NPC uvmnp[-wxkqr]|ALL} <parameter> 2 LN MSG:
AI aaaaa [MONDAT dddd][MONTIM tttt]COND cc DNY
```

### **Autonomous Message**

---

Not applicable.



## Explanation Of Parameters

**NPC** - Network processing circuit

**uvmnp** - Hierarchical NPC number

**wxkqr** - Hierarchical NPC number

**ALL** - All

This keyword is a valid option for NPCs rather than specifying a single or range of NPCs. It is used to clear a single parameter on all PA/TH type NPCs. If the ALL NPC option is selected, the input command must specify only a single facility parameter. An input command with the ALL NPC key word and any facility parameter groupings, i.e., ALLPM, ALLE or ALLF, will be denied.

[s]abc - The 3- or 4-digit nonhierarchical NPC number

[t]def - The 3- or 4-digit nonhierarchical NPC number

The valid values are:

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**wxkqr** - Hierarchical NPC number

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**parameter**

- Parameter name

The type of monitored parameter accumulation registers which are to be reset. If only a single NPC is specified in the input command, all types of its parameter accumulators may be reset (possibly restricted by the choices of other input parameters) by selecting the value ALLPM in the <parameter> field. If more than one NPC is specified in the input command, then ALLPM, ALLE, and ALLF are not valid values for parameter.

The values ALLE or ALLF may be selected to clear all Near-end or all Far-end parameters, respectively, as a group. The far-end parameters are: FEBE, FES, FSES, and FUAS. All other parameters are near-end parameters. **Note that parameters FEBE, FES, FSES and FUAS are not applicable for the TH type NPCs.**

**parameter**      *Explanation*

|       |                                      |
|-------|--------------------------------------|
| ALLE  | All Near-end parameters listed below |
| ALLF  | All Far-end parameters listed below  |
| ALLPM | All parameters listed below          |
| CRC   | CRC Block Errors                     |
| CSS   | Controlled Slip Seconds              |
| CV    | Coding Violations                    |
| ES    | Errored Seconds                      |
| FEBE  | Far End Block Errors                 |
| FES   | Far End Errored Seconds              |
| FRER  | Framing Errors                       |
| FSES  | Far End Severely Errored Seconds     |
| FUAS  | Far End Unavailable Seconds          |
| MER   | Multiframe Errors                    |
| OFS   | Out of Frame Seconds                 |
| SES   | Severely Errored Seconds             |
| UAS   | Unavailable Seconds                  |
| UATC  | Unavailable Time Count               |

**AI** - Accumulation interval

**aaaaa** - The accumulation time period for the specified parameter

If the ALLAI option is specified, the command will be applied to all 15-minute and daily accumulators. That is, all accumulators will be reset.

**aaaaa** *Explanation*

15MIN Parameter count from a 15-minute accumulator

ALLAI Parameter counts from both 15-minute and daily accumulators

DAILY Parameter count from a daily accumulator

**MONDAT** - Monitored Date

**dddd** - This option specifies the performance monitoring period to be reset. It is used to allow users to specify the counts of which 24-hour period (current or previous) are to be cleared. Therefore, this option is applicable only if the AI option is entered with "DAILY". If the "AI DAILY" option is entered without this "MONDAT" field, both the current and previous 24-hour counts will be cleared. The "MONDAT" option cannot be specified with the AI option being 15MIN or ALLAI.

**dddd** *Explanation*

CURD Current day

HIST Previous 24-hour period

**MONTIM** - Monitored Time

**tttt** - This option specifies the performance monitoring period to be reset and can be entered. It is used to allow users to specify the counts of which 15-minute period (current or previous) are to be cleared. Therefore, this option is applicable only if the AI option is entered with "15MIN". If the "AI 15MIN" option is entered without this "MONTIM" field, both the current and previous 15-minute counts will be cleared. The "MONTIM" option cannot be specified with the AI option being DAILY or ALLAI.

**tttt** *Explanation*

CURT Current 15-minute period

HIST Previous 15-minute period

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                                 |
|-----------|-----------------------------------------------------------------|
| <b>04</b> | Subject entity is out of service                                |
| <b>11</b> | UC is out of service                                            |
| <b>12</b> | UC is in service but failed                                     |
| <b>14</b> | FTMI is out of service                                          |
| <b>15</b> | NPC is unequipped                                               |
| <b>1F</b> | FTMI is in service but failed                                   |
| <b>26</b> | NPC type error                                                  |
| <b>0C</b> | The MONDAT and MONTIM parameters can not both be specified      |
| <b>B7</b> | The associated MXR is In-Service but pested                     |
| <b>A1</b> | The parameter specified does not match with the NPC type        |
| <b>17</b> | Command did not execute for any entity specified in the command |
| <b>1B</b> | Historical data can not be specified                            |
| <b>1E</b> | Monitored Date field is not allowed                             |
| <b>20</b> | Only DAILY for accumulation interval is allowed                 |
| <b>21</b> | Only 15MIN for accumulation interval is allowed                 |
| <b>22</b> | FTMI is PESTED                                                  |
| <b>23</b> | No PM data available                                            |
| <b>24</b> | Monitored Time field is not allowed                             |
| <b>25</b> | Accumulation Interval field is missing                          |
| <b>27</b> | Only historical data can be specified                           |
| <b>31</b> | Accumulation Interval field is not allowed                      |
| <b>89</b> | Interval is not valid/not available                             |

## **UTL,CLR,NPC,PARAMS**

### **CLEAR FACILITY PERFORMANCE PARAMETERS**

#### **Explanation Of Command**

This message requests the facility performance parameters be cleared of the values or state for one network processing circuit (NPC).

This message clears all facility performance parameters except the loss of frame alignment (LOFA) parameter on one CEPT PB or PC type NPC.

#### **Command**

##### **Nonhierarchical**

[I.56051]

UTL:FRM xy,SEQ ww:CLR,NPC [s]abc,PARAMS!

##### **Hierarchical**

[I.56051]

UTL:FRM xy,SEQ ww:CLR,NPC uvmnp,PARAMS!

#### **Completion Message**

##### **Nonhierarchical**

[O.56051]

M hh:mm:ss xy,ww n[vv] UTL CLR NPC [s]abc PARAMS COMPL

### **Hierarchical**

[O.56051]

M hh:mm:ss xy,ww n[vv] UTL CLR NPC uvmnp PARAMS COMPL

### **Denial Message**

### **Nonhierarchical**

[O.56051.01]

M hh:mm:ss xy,ww n[vv] UTL CLR NPC [s]abc PARAMS COND cc DNY

### **Hierarchical**

[O.56051.01]

M hh:mm:ss xy,ww n[vv] UTL CLR NPC uvmnp PARAMS COND cc DNY

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**CLR** - Clear



**PARAMS** - Parameters

For CEPT NPCs, the parameters which will be cleared with this command are:

| <i>Parameter</i> | <i>Explanation</i>                               |
|------------------|--------------------------------------------------|
| CRC              | Cyclic Redundancy Code                           |
| FRER             | Framing Error                                    |
| MER              | Multiframe Alignment Error Events (time slot 16) |
| DM               | Degraded minutes                                 |
| ERS              | Errored Seconds                                  |
| SERS             | Severe Errored Seconds                           |
| US               | Unavailable seconds                              |
| SLIP             | Slip count                                       |

**Note:** BER condition is not clearable for CEPT type NPCs, even though it is clearable for domestic type NPCs.

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>               |
|-----------|----------------------------------|
| <b>02</b> | Subject entity is not equipped   |
| <b>04</b> | Subject entity is out of service |
| <b>10</b> | Unit is not equipped             |
| <b>11</b> | UC is out of service             |
| <b>12</b> | UC is in service but failed      |
| <b>13</b> | FTMI is not equipped             |
| <b>14</b> | FTMI is out of service           |
| <b>1F</b> | FTMI is in service but failed    |
| <b>46</b> | NPC Failed or Out of Service     |

## **UTL,CLR,PWR**

---

### **CLEAR POWER SUPPLY OR BACKUP FAILURE**

#### **Explanation Of Command**

---

This message clears alarms caused by a power supply failure.

#### **Command**

---

[I.56052]

UTL:FRM xy,SEQ ww:CLR,PWR pp!

#### **Completion Message**

---

[O.56052]

M hh:mm:ss xy,,ww n[vv] UTL CLR PWR pp COMPL

#### **Denial Message**

---

[O.56052.01]

M hh:mm:ss xy,,ww n[vv] UTL CLR PWR pp COND cc DNY

#### **Autonomous Message**

---

Not applicable.

### Explanation Of Parameters

---

**CLR** - Clear

**PWR** - Power

**pp** - Power supply identifier

| <i>pp</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |                    |
|----|--------------------|
| 00 | All power supplies |
|----|--------------------|

|    |                        |
|----|------------------------|
| 01 | Unit Controller (UC) 1 |
|----|------------------------|

|    |      |
|----|------|
| 02 | UC 2 |
|----|------|

|    |      |
|----|------|
| 03 | UC 3 |
|----|------|

|    |      |
|----|------|
| 04 | UC 4 |
|----|------|

|    |      |
|----|------|
| 05 | UC 5 |
|----|------|

|    |      |
|----|------|
| 06 | UC 6 |
|----|------|

|    |                       |
|----|-----------------------|
| 07 | Synchronizer (SYNC) 0 |
|----|-----------------------|

|    |        |
|----|--------|
| 08 | SYNC 1 |
|----|--------|

|    |                                                                     |
|----|---------------------------------------------------------------------|
| 09 | Cross-connect network (CCN)/Expanded cross-connect network (ECCN) 0 |
|----|---------------------------------------------------------------------|

|    |            |
|----|------------|
| 10 | CCN/ECCN 1 |
|----|------------|

|    |      |
|----|------|
| 11 | UC 7 |
|----|------|

|    |      |
|----|------|
| 12 | UC 8 |
|----|------|

|    |      |
|----|------|
| 13 | UC 9 |
|----|------|

|    |       |
|----|-------|
| 14 | UC 10 |
|----|-------|

|    |       |
|----|-------|
| 15 | UC 11 |
|----|-------|

|    |       |
|----|-------|
| 16 | UC 12 |
|----|-------|

|    |       |
|----|-------|
| 17 | UC 13 |
|----|-------|

|    |       |
|----|-------|
| 18 | UC 14 |
|----|-------|

|    |       |
|----|-------|
| 19 | UC 15 |
|----|-------|

|    |       |
|----|-------|
| 20 | UC 16 |
|----|-------|

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                         |
|-----------|-----------------------------------------|
| <b>96</b> | Subject PWR to be cleared is not failed |
|-----------|-----------------------------------------|

## **UTL,DATE,FORMAT,INT**

### **SET DATE**

#### **Explanation Of Command**

This command sets the date (month-day-year or day-month-year) and the interval at which it will be printed for the DACS II clock.

#### **Command**

[I.51021]

UTL:FRM xy,SEQ ww:DATE <new-date>[,FORMAT ggg][,INT ii]!

#### **Completion Message**

[O.51021]

M hh:mm:ss xy,ww n[vv] UTL DATE aa/bb/cc FORMAT ggg INT ii COMPL

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

**DATE** - Date

### new-date

- Date specified in one of the following formats:

| <i>new-date</i> | <i>Date format</i>                       |
|-----------------|------------------------------------------|
| moda[ce]yr      | Month, followed by day, followed by year |
| damo[ce]yr      | Day, followed by month, followed by year |

**mo** - month  
**da** - day  
**ce** - century  
**yr** - year

The 2-digit century (ce) field is optional. If the user enters a 2-digit number for the year field, DACS II assumes a default value of 19 for the century for the range of years between 86 and 99 and a default value of 20 for the century for the range between 00 and 85. Any 4-digit century-year entry from 1986 onward is also acceptable.

**INT** - Interval

**ii** - Interval at which DACS II will print the date

| <i>ii</i> | <i>Meaning</i>                                        |
|-----------|-------------------------------------------------------|
| 01        | Every hour on the hour                                |
| 02        | Every even hour on the hour                           |
| 04        | Every fourth hour on the hour: 04, 08, 12, 16, 20, 24 |
| 06        | Every sixth hour on the hour: 06, 12, 18, 24          |
| 08        | Every eighth hour on the hour: 08, 16, 24             |
| 12        | Twice daily on the hour: 12, 24                       |
| 24        | Once daily at midnight (default)                      |

**FORMAT** - Format

**ggg** - Date format

The format to be used for interpreting the date from the input message and printing it on PDS output messages.

|     |                                       |
|-----|---------------------------------------|
| ggg | Date format                           |
| MDY | Month/Day/Year (USA format)           |
| DMY | Day/Month/Year (International format) |

**DATE** - Date

**aa** - Month or day

**bb** - Day or Month

**cc** - Year (2 or 4 digits)

The DATE will be displayed in either the USA format or the International format, depending on the value of ggg.

## **UTL,INIT,ALM**

---

### **UTILITIES, ALARM REPORTING**

#### **Explanation Of Command**

---

This message sets the DACS II audio/visual alarm reporting method to either remote only (**a = 2**) or to local and remote (**a = 3**).

#### **Command**

---

[I.51101]

**UTL:FRM xy,SEQ ww:INIT,ALM a!**

#### **Completion Message**

---

[O.51101]

**M hh:mm:ss xy,ww n[vv] UTL INIT ALM a COMPL**

#### **Denial Message**

---

[O.51101.01]

**M hh:mm:ss xy,ww n[vv] UTL INIT ALM a COND cc DNY**

#### **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**INIT** - Initialize

**ALM** - Alarm

**a** - Alarm reporting method

a Explanation

2 Remote

3 Local and Remote

**cc** - Hexadecimal condition code

**cc** *Explanation*

**03** Subject entity is in service

**11** UC is out of service

**12** UC is in service but failed

**14** FTMI is out of service

**15** NPC is unequipped

**1F** FTMI is in service but failed

**46** NPC Failed or Out of Service



## **UTL,LOC**

---

### **UTILITY LOCATION**

#### **Explanation Of Command**

---

This message requests a printout of the physical location of a plug-in entity using the equipment location (EQL) method. A similar method must be used if nonplug-in entities must be located, such as a network processing circuit, main controller, cross-connect network, etc.

#### **Command**

---

[I.56401]

UTL:FRM xy,SEQ ww:LOC,<entity>!

#### **Completion Message**

---

[O.56401]

M hh:mm:ss xy,ww n[vv] UTL LOC <entity> \  
b[-[q]q]-vv hhh[,c[-[q]q]-uu iii] COMPL

#### **Denial Message**

---

[O.56401.01]

M hh:mm:ss xy,ww n[vv] UTL LOC <entity> COND cc DNY

#### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**LOC** - Location

Physical location

**entity** - Plug-in equipment entity

Main Controller Entities:

| <i>entity</i> | <i>Explanation</i>                              |                 |
|---------------|-------------------------------------------------|-----------------|
| MC            | Main controller                                 |                 |
| CPU           | Central processing unit                         |                 |
| BX            | Bus extender                                    | (SBF/Non-CEF)   |
| MTC           | Maintenance circuit pack                        | (SBF/Non-CEF)   |
| EBX           | Expanded bus extender                           | (CEF/ECEF/ESBF) |
| EMTC          | Expanded maintenance circuit pack               | (CEF/ECEF/ESBF) |
| CI            | Communications interface                        |                 |
| PMEM          | Primary Memory Card, within CPU board           |                 |
| DISK          | Secondary Memory Card, plugs into the CPU board |                 |
| STATUS PANEL  | (Note 1)                                        |                 |

**Note 1:** The location of this entity is not on the designation strip. The approximate location is returned in the output message.

The entity CPU cannot be used with UNIT to query the Unit Controller; instead only the entity UC can be used.

Synchronizer entities:

| entity                                                                                                                       | Explanation                                      |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| SYNC 0<br>SYNC 1                                                                                                             | Synchronizer                                     |
| SYNC 0,TB<br>SYNC 1,TB                                                                                                       | Synchronizer Time Base                           |
| SYNC 0,TLI 1<br>SYNC 0,TLI 2<br>SYNC 0,TLI 3<br>SYNC 0,TLI 4<br>SYNC 1,TLI 1<br>SYNC 1,TLI 2<br>SYNC 1,TLI 3<br>SYNC 1,TLI 4 | Synchronizer Timing Link Interface               |
| SYNC,TLI 3,CRO                                                                                                               | Synchronizer Clock Reference Oscillator (Note 2) |

**Note 2:** The location of the CRO is not on the designation strip. It is a Time Base application for TLI slots 3 and 4 on sides 0 and 1.

Cross-Connect entities:

| <b>entity</b> | <b>Explanation</b>              |                    |
|---------------|---------------------------------|--------------------|
| CCN 0         | Cross-connect network           | (SBF/ESBF/Non-CEF) |
| CCN 1         |                                 |                    |
| CCNI 0        | Cross-connect network interface | (SBF/ESBF/Non-CEF) |
| CCNI 1        |                                 |                    |
| CCB 01        | Cross-connect buffer            | (SBF/ESBF/Non-CEF) |
| CCB 02        |                                 |                    |
| CCB 03        |                                 |                    |
| CCB 04        |                                 |                    |
| CCB 05        |                                 |                    |
| CCB 06        |                                 |                    |
| CCB 11        |                                 |                    |
| CCB 12        |                                 |                    |
| CCB 13        |                                 |                    |
| CCB 14        |                                 |                    |
| CCB 15        |                                 |                    |
| CCB 16        |                                 |                    |
| ECCN 0        | Expanded cross-connect network  | (CEF/ECEF)         |
| ECCN 1        |                                 |                    |
| CCI 0         | Clock and control interface     | (CEF/ECEF)         |
| CCI 1         |                                 |                    |
| BT 01         | Bus terminator                  | (CEF/ECEF)         |
| BT 02         |                                 |                    |
| BT 11         |                                 |                    |
| BT 12         |                                 |                    |

Time-Slot Interchange entities: (SBF/ESBF/Non-CEF)

| <b>entity</b> | <b>entity</b> | <b>entity</b> | <b>entity</b> |
|---------------|---------------|---------------|---------------|
| TSI 011       | TSI 111       | TSI 041       | TSI 141       |
| TSI 012       | TSI 112       | TSI 042       | TSI 142       |
| TSI 013       | TSI 113       | TSI 043       | TSI 143       |
| TSI 014       | TSI 114       | TSI 044       | TSI 144       |
| TSI 015       | TSI 115       | TSI 045       | TSI 145       |
| TSI 016       | TSI 116       | TSI 046       | TSI 146       |
|               |               |               |               |
| TSI 021       | TSI 121       | TSI 051       | TSI 151       |
| TSI 022       | TSI 122       | TSI 052       | TSI 152       |
| TSI 023       | TSI 123       | TSI 053       | TSI 153       |
| TSI 024       | TSI 124       | TSI 054       | TSI 154       |
| TSI 025       | TSI 125       | TSI 055       | TSI 155       |
| TSI 026       | TSI 126       | TSI 056       | TSI 156       |
|               |               |               |               |
| TSI 031       | TSI 131       | TSI 061       | TSI 161       |
| TSI 032       | TSI 132       | TSI 062       | TSI 162       |
| TSI 033       | TSI 133       | TSI 063       | TSI 163       |
| TSI 034       | TSI 134       | TSI 064       | TSI 164       |
| TSI 035       | TSI 135       | TSI 065       | TSI 165       |
| TSI 036       | TSI 136       | TSI 066       | TSI 166       |

| <b>entity</b> | <b>Explanation</b>                         |
|---------------|--------------------------------------------|
| ETSI 001      | Expanded Time Slot Interchanger (CEF/ECEF) |
| ETSI 002      |                                            |
| ETSI 003      |                                            |
| ETSI 004      |                                            |
| ETSI 005      |                                            |
| ETSI 006      |                                            |
| ETSI 007      |                                            |
| ETSI 008      |                                            |
| ETSI 009      |                                            |
| ETSI 010      |                                            |
| ETSI 011      |                                            |
| ETSI 012      |                                            |
| ETSI 013      |                                            |
| ETSI 014      |                                            |
| ETSI 015      |                                            |
| ETSI 016      |                                            |
| ETSI 101      | Expanded Time Slot Interchanger (CEF/ECEF) |
| ETSI 102      |                                            |
| ETSI 103      |                                            |
| ETSI 104      |                                            |
| ETSI 105      |                                            |
| ETSI 106      |                                            |
| ETSI 107      |                                            |
| ETSI 108      |                                            |
| ETSI 109      |                                            |
| ETSI 110      |                                            |
| ETSI 111      |                                            |
| ETSI 112      |                                            |
| ETSI 113      |                                            |
| ETSI 114      |                                            |
| ETSI 115      |                                            |
| ETSI 116      |                                            |

FTU/IFTU/IFTU2 entities:

| <i>entity</i>    | <b>Explanation</b>                                         |
|------------------|------------------------------------------------------------|
| UNIT [q]q,UBX    | Unit bus extender                                          |
| UNIT [q]q,FTMI b | Facility terminating module interface<br>(b = 1 through 4) |
| UNIT [q]q,FC 0b  | Format converter                                           |
| UNIT [q]q,FC 1b  |                                                            |

DSPU entities:

| <i>entity</i>  | Explanation                         |
|----------------|-------------------------------------|
| UNIT [q]q,DSPI | Digital signal processing interface |

If the unit is equipped as a DS3 Unit or a Hybrid DS3 Unit:

UNIT Common Equipment entities:

| <b>entity</b>   | Explanation                                        |
|-----------------|----------------------------------------------------|
| UNIT [q]q       | Unit [q]q's Protection MXR (1 through 16)          |
| UNIT [q]q,UC    | Unit Controller                                    |
| UNIT [q]q,MXR d | Multiplexer/Hybrid Multiplexer (d = P,1 through 6) |
| UNIT [q]q,MIU d | Multiple Interface Unit                            |
| UNIT [q]q,FLI k | Facility Line Interface (k = S or P)               |
| UNIT [q]q,FMT s | Formatter/Hybrid Formatter (s = 0 or 1)            |

Network Processing Circuit entities of an FTU:

| <b>entity</b>       | <b>Explanation</b>         |
|---------------------|----------------------------|
| NPC [s]abc[-[t]def] | Nonhierarchical NPC number |
| NPC uvmpnp[-wxkqr]  | Hierarchical NPC number    |
| NPC [s]abc[-[t]def] | Nonhierarchical NPC number |
| NPC uvmpnp[-wxkqr]  | Hierarchical NPC number    |

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

If an NPC is in an FTU, the command will return the location of the Dual Digroup Card that processes the NPC.

The valid nonhierarchical FTU NPC numbers are:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |



| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

The valid hierarchical FTU NPC numbers are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

If an NPC is in a DS3/HDS3 Unit, the command will return the location of the Service MXR/HMXR that processes the NPC.

Network Processing Circuit entities of a DSPU:

*entity*

NPC [s]abc[-[t]def],SIDE-s  
NPC uvmnp[-wxkqr],SIDE-s

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

As shown above, the command will return the location of the DSPC pack including the side information, the value of "s" can be either 0 or 1.

The valid nonhierarchical DSPU NPC numbers are:

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |
| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |
|             |             |             |             |
| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

The valid hierarchical DSPU NPC numbers are:

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

**b, c** - Bay number (1 through 7)

The bay in which the entity is located.

**[q]q** - Unit number (1 through 16)

**vv, uu** - Entity height, in inches.

For an FTU, the value is the number of inches from the bottom of the unit shelf to the center of the entity. The possible vv and uu values are:

02, 06, 10, 14, and 18 inches

For a DSPU the value of variables vv and uu can only be 06.

For a DS3U/HDS3U the value of variables vv and uu can only be 06.

**hhh, iii**

- Entity horizontal location in inches

Entity horizontal distance from the left front side of the bay, approximately 1-1/4 inches to the right of the bay upright, in 1/8 inch increments, to the center of the circuit pack slot of the entity (000 through 158).

The values for any entity will be the same as those shown on the designation strips for that entity, located above the entity. Note, however, that for duplicated entities the side (0 or 1) value precedes the name on the designation strip.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**97** Entity can't be addressed in this configuration

---

## UTL, QRY, ALL

---

### UTILITY QUERY ALL

#### Explanation Of Command

---

This message requests a printout on a specified facility performance parameter for all Network Processing Circuits (NPCs).

Note that DS3U message segment applies to both DS3 unit and Hybrid DS3 unit (HDS3U). The MXR applies to both MXR and Hybrid MXR.

#### Command

---

[I.56031]

UTL:FRM xy,SEQ ww:QRY,<parameter>,ALL!

#### Completion Message

---

#### Nonhierarchical

---

[O.56031]

M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> ALL \  
NPCS [s]abc-[t]def[ RESET] TOT nnnn 5 LN MSG:  
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx  
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx COMPL

M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> ALL COMPL

**Note:** The above message applies to parameters other than BER.

[O.56031]

M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> ALL \  
NPCS [s]abc-[t]def[ RESET] TOT nnnn 5 LN MSG:  
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx  
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx  
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx  
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx EOM

.  
.  
.

**Note:** The above message applies to a DS3 or a HDS3 module (that is, a MXR or a HMXR) and parameter other than ER and BER.

[O.56032]

M hh:mm:ss xy,ww n[vv] UTL QRY BER ALL NPCS [s]abc-[t]def\  
[ RESET] TOT nnnn 5 LN MSG:  
xx xx xx xx xx xx xx xx  
xx xx xx xx xx xx xx xx  
xx xx xx xx xx xx xx xx  
xx xx xx xx xx xx xx xx EOM

.  
.  
.

## Hierarchical

[O.56031]

M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> ALL NPCS uvmnp-uvmqr\  
[ RESET] TOT nnnn 5 LN MSG:  
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx  
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx  
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx  
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx EOM

M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> ALL COMPL

**Note:** The above message applies to parameters other than BER.

[O.56031]

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> ALL NPCS uvmnp-uvmqr\
[RESET] TOT nnnn 5 LN MSG:
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx EOM
.
.
.
```

**Note:** The above message applies to a DS3 or a HDS3 module (that is, a MXR or a HMXR) and parameter other than ER and BER.

[O.56032]

```
M hh:mm:ss xy,ww n[vv] UTL QRY BER ALL NPCS uvmnp-uvmqr[RESET] \
TOT nnnn 5 LN MSG:
xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx EOM
.
.
.
```

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**ALL** - All

### parameter

- Facility performance parameter

The parameter values listed below are applicable only to PB or PC type NPCs. If there are PA or THNPCs in the FTM, dashes ("-") will be output in the position of these NPCs:

| <b>parameter</b> | <i>Explanation</i>                                 |
|------------------|----------------------------------------------------|
| <b>DM</b>        | Degraded minutes                                   |
| <b>SERS</b>      | Severely errored seconds                           |
| <b>ERS</b>       | Errored seconds                                    |
| <b>US</b>        | Unavailable seconds                                |
| <b>SLIP</b>      | Slip events                                        |
| <b>CRC</b>       | Cyclic redundancy check-4 check block error events |
| <b>FRER</b>      | Framing error events                               |
| <b>LOFA</b>      | Loss of frame alignment events                     |
| <b>MER</b>       | Multiframe alignment error events (Time slot 16)   |

**Note:** If the parameter reports threshold alarms (DM, SERS, ERS, US, or SLIP), the count represents the total for the last 24 hours (a rolling 24-hour count). The other parameter counts represent the total since local midnight.

The parameter value below is applicable to all CEPT NPC types, that is, PA, PB, PC and TH:

| <b>parameter</b> | <i>Explanation</i>                                            |
|------------------|---------------------------------------------------------------|
| <b>BER</b>       | Bit Error Rate<br>(Also MBER/RBER for NPCs with MBER feature) |

**Note:** For BER and RBER, the message reports NPCs that are currently in the BER state.

A message segment will be omitted for:

- Unequipped FTMs
- Equipped FTM with no equipped NPC
- Equipped FTM with all NPCs having zero value of <parameter>
- Equipped CEPT FTM with all NPCs being PA type but with a parameter other than BER.



xxxxxx - Parameter count values

Dashes ("-") will be output for NPCs that are not equipped or are provisioned with a type unapplicable to the parameter. If an entire FTM is unequipped or all its NPCs are dashes, the segment is skipped.

xx - BER states

xx represents a combination of the excessive error rate (EER), bit error rate (BER), and remote bit error rate (RBER). It is interpreted as either a prompt maintenance alarm-major (PMA), deferred maintenance alarm -minor(DMA), prompt maintenance alarm-critical (PMC), or clear.

| xx | EER/BER state                    | RBER state     |
|----|----------------------------------|----------------|
| CR | PMC                              |                |
| MJ | EER/PMA                          | Not applicable |
| MN | DMA                              | Inactive       |
| RN | DMA                              | Active         |
| CL | Clear*                           | Inactive       |
| RL | Clear*                           | Active         |
| -- | NPC unequipped or out of service |                |

\* Clear refers to a Facility type NPC whose received error rate is less than the Minor BER threshold.

without CRC ( $10^{-5}$ )  
with CRC ( $10^{-6}$ )

**Note:** EER has priority over the BER/RBER states. EER does not coexist with them; however, BER and RBER coexist with each other.

Unless the CHG::NPC,TS0 command is used to redefine the active value of bit 4 of CTS 0, the RBER values are:

*RBER Explanation*

|   |          |
|---|----------|
| 1 | Inactive |
| 0 | Active   |

NPC(S) - Network processing circuit(s)

**[s]abc** - The first 3- or 4-digit nonhierarchical NPC number in a module

**[t]def** - The last 3- or 4-digit nonhierarchical NPC number in a module

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number of the first NPC in a module

**uvmqr** - Hierarchical NPC number of the last NPC in a module

**uv,** - Unit number

**m,** - Module number

**np, qr** - NPC number within the module

The allowable values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

The parameter value for the first NPC is listed in the first position (upper left corner) of the first line of each message segment. The value for the last NPC occurs in the last position (lower right corner).

**TOT** - Total

**nnnn** - Cumulative count of NPCs returning nonzero states or values

The last nnnn, the one printed out in the last message module, gives the total number of NPCs with nonzero states or values in the frame.

**RESET** - Reset

Indicates that one or more autonomous resets have occurred.

---

## UTL, QRY, ALL, COMMON

---

### QUERY ALL COMMON EQUIPMENT

#### Explanation Of Command

---

This message is used to request reports on the out-of-service, fail, or pest status of the common frame equipment. Common frame equipment includes the administrative links, cross-connects, clock and control interfaces or cross-connect network interfaces (CEF or nonCEF, respectively), synchronizers, clock reference oscillator, timing link interfaces, time slot interchangers and expanded time slot interchangers.

#### Command

---

[I.53104]

UTL:FRM xy,SEQ ww:QRY,ALL,COMMON!

#### Completion Message

---

[O.53104]

M hh:mm:ss xy,ww n[vv] UTL QRY ALL COMMON 4 LN MSG:  
OOS g h i j k l m n o p  
FAIL g h i j k l m n o p  
PEST g h i j k l m n o p EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALL COMMON 4 LN MSG:  
SYNC ofp ófp CRO ofp  
TLI ofp ofp ofp ofp ofp ofp ofp ofp ofp ofp ofp ofp ofp ofp ofp ofp ofp ofp  
a b c d e f g h i j k l m n o p EOM

The next segment(s) describes the CCN hardware but the format depends upon whether the frame is a CEF or nonCEF.

For DACS II nonCEF frames there are two segments:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL TOTAL TSIS tt oo ff pp 5 LN MSG:  
11 ofp ofp 12 ofp ofp 13 ofp ofp 14 ofp ofp 15 ofp ofp 16 ofp ofp  
21 ofp ofp 22 ofp ofp 23 ofp ofp 24 ofp ofp 25 ofp ofp 26 ofp ofp  
31 ofp ofp 32 ofp ofp 33 ofp ofp 34 ofp ofp 35 ofp ofp 36 ofp ofp  
41 ofp ofp 42 ofp ofp 43 ofp ofp 44 ofp ofp 45 ofp ofp 46 ofp ofp EOP

M hh:mm:ss xy,ww n[vv] UTL QRY ALL TOTAL TSIS tt oo ff pp 3 LN MSG:  
51 ofp ofp 52 ofp ofp 53 ofp ofp 54 ofp ofp 55 ofp ofp 56 ofp ofp  
61 ofp ofp 62 ofp ofp 63 ofp ofp 64 ofp ofp 65 ofp ofp 66 ofp ofp EOM

For DACS II CEF frames there is only one segment:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL TOTAL ETSIS tt oo ff pp 5 LN MSG:  
01 ofp ofp 02 ofp ofp 03 ofp ofp 04 ofp ofp  
05 ofp ofp 06 ofp ofp 07 ofp ofp 08 ofp ofp  
09 ofp ofp 10 ofp ofp 11 ofp ofp 12 ofp ofp  
13 ofp ofp 14 ofp ofp 15 ofp ofp 16 ofp ofp EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALL COMMON COMPL

### Denial Message

---

Not applicable.

### Autonomous Message

---

Not applicable.

### Explanation Of Parameters

---

**ALL** - All

**COMMON** - Common

**OOS** - Out of service

**FAIL** - Fail

**PEST** - Pest

For the OOS, FAIL and PEST keywords, variables g through p each represent a frame entity. The values of these variables give the OOS, FAIL, or PEST status of the associated entity. Values are interpreted using the table below. The entity associated with a given variable is given following the explanation of PEST below.

| Value | OOS            | FAIL           | PEST           |
|-------|----------------|----------------|----------------|
| 1     | out-of-service | failed         | pested         |
| 0     | in service     | not failed     | unpested       |
| -     | not applicable | not applicable | not applicable |

to the particular entity. For example, an unequipped circuit would display a "-" in the position of its OOS, FAIL and PEST indicators g through p.

The keyword PEST is used to indicate that error reporting is disabled. Out-of-service (OOS) entities and entities related to a side that is out of service are pested to prevent error messages from being reported to the main controller. Error reporting is undesirable if an entity is OOS since it would interrupt normal operations by repeatedly interrupting the microprocessor.

- g** - Link 1
- h** - Link 2
- i** - Link 3
- j** - Link 4
- k** - Link 5
- l** - Link 6
- m** - XC0 (cross-connect 0)
- n** - XC1 (cross-connect 1)

#### CEF frame

- o** - CCI 0 (clock and control interface 0)
- p** - CCI 1 (clock and control interface 1)

#### nonCEF frame

- o** - CCNI (cross-connect network interface 0)
- p** - CCNI (cross-connect network interface 1)

**SYNC** - Synchronizer

**ofp** - Side 0 synchronizer status

- o** - Out of service
- f** - Fail
- p** - Pest

**ofp** - Side 1 synchronizer status

**o** - Out of service  
**f** - Fail  
**p** - Pest

**CRO** - Clock reference oscillator

**ofp** - CRO status

**o** - Out of service  
**f** - Fail  
**p** - Pest

To aid in interpreting the variables associated with the timing link interface the following lines from the message are printed here for reference.

|<----- Side 0 ----->|<----- Side 1 ----->|

| TLI | ofp<br>a | ofp<br>b | ofp<br>c | ofp<br>d | ofp<br>e | ofp<br>f | ofp<br>g | ofp<br>h | ofp<br>i | ofp<br>j | ofp<br>k | ofp<br>l | ofp<br>m | ofp<br>n | ofp<br>o | ofp<br>p | EOM     |
|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|
|     | 1        | 1        | 2        | 2        | 3        | 3        | 4        | 4        | 1        | 1        | 2        | 2        | 3        | 3        | 4        | 4        | TLI No. |
|     | 0        | 1        | 0        | 1        | 0        | 1        | 0        | 1        | 0        | 1        | 0        | 1        | 0        | 1        | 0        | 1        | SSP No. |

**TLI** - Timing link interface

**ofp** - Side 0 TLI status

**o** - Out of service  
**f** - Fail  
**p** - Pest

**ofp** - Side 1 TLI status

**o** - Out of service  
**f** - Fail  
**p** - Pest

**TLI** - Timing link interface

There are four TLIs in each synchronizer side and each TLI has two synchronizer synchronization ports (SSP) for a total of eight SSPs per side. Variables a through p represent these SSPs and are associated with each TLI as shown below. The values of a through p give the priority of each SSP as a synchronization source. Priorities range in value from 1 through 8 and are interpreted as shown below.

**1** - Highest priority  
**8** - Lowest priority

**a** - TLI 1 SSP 0 priority  
**b** - TLI 1 SSP 1 priority

**c** - TLI 2 SSP 0 priority  
**d** - TLI 2 SSP 1 priority

**e** - TLI 3 SSP 0 priority  
**f** - TLI 4 SSP 1 priority

**g** - TLI 4 SSP 0 priority  
**h** - TLI 4 SSP 1 priority

**i** - TLI 1 SSP 0 priority  
**j** - TLI 1 SSP 1 priority

**k** - TLI 2 SSP 0 priority  
**l** - TLI 2 SSP 1 priority

**m** - TLI 3 SSP 0 priority  
**n** - TLI 3 SSP 1 priority

**o** - TLI 4 SSP 0 priority  
**p** - TLI 4 SSP 1 priority

**TSI** - Time slot interchanger

**ETSI** - Expanded time slot interchanger

**f** - FROM unit (1 through 6)  
**t** - TO Unit (1 through 6)

**ofp** - Side 0 TLI status

**o** - Out of service  
**f** - Fail  
**p** - Pest



**ofp** - Side 1 TLI status

**o** - Out of service

**f** - Fail

**p** - Pest

**TSIS** - Time slot interchanger

**ETSIS** - Expanded time slot interchangers

**tt** - Total number of equipped TSIs or ETSIs

**oo** - Total number of out-of-service TSIs or ETSIs.

**ff** - Total number of failed TSIs or ETSIs.

**pp** - Total number of pested TSIs or ETSIs.

## **UTL, QRY, ALL, UNIT**

---

### **QUERY ALL**

#### **Explanation Of Command**

---

This command is used to request reports on the out-of-service, failed, or pested status of the entire DACS II frame, including the common frame equipment, or the equipment in a specific unit.

The text of the output message varies depending on the input message format and immediately follows the input format.

The UNIT option is specified to query that unit only. The UNIT field must be omitted if the command is used for the entire frame. If the UNIT option is specified, only the information related to the equipment in that unit will be generated.

**Note:** The odd and even DSPU NPCs do not have independent service states.

**Note:** The DS3U message segment applies to both the DS3 unit and the Hybrid DS3 unit (HDS3U). Also, the MXR portion of the message applies to both MXR and Hybrid MXR.

#### **Command**

---

[I.53101]

**UTL:FRM xy,SEQ ww:QRY,ALL[,UNIT [q]q]!**



The output then continues with segments about the common equipment in the units. One module will be generated per unit, in ascending order by number. The unit equipped for a given unit number determines the output message printed.

The output segment for an FTU, IFTU, or IFTU2:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL FTU 3 LN MSG:
UNIT [q]q UC ofp FTMI ofp ofp ofp ofp [CCB ofp rst]
FC ofp rst ofp rst ofp rst ofp rst EOM
```

The output segment for a DSPU:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q UC ofp DSPU ofp [CCB ofp rst] EOM
```

Then, the output continues with information about individual NPCs. One output message will be printed for each equipped FTM (Facility Terminating Module) or unit in the case of a DSPU.

The output segment for a CEPT FTM is as follows. If any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and dashes will be shown in its place:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL FTU NPCS [s]aaa-[t]bbb tt 5 LN MSG:
ofp ofp ofp ofp ofp ofp ofp ofp OOS oo FAIL ff PEST pp
ofp ofp ofp ofp ofp ofp ofp ofp
ofp ofp ofp ofp ofp ofp ofp ofp
ofp ofp ofp ofp ofp ofp ofp ofp EOM
```

The output segment for a DSPU:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL DSPU NPCS [s]aaa-[t]bbb tt 3 LN MSG:
[z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst
[z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst EOM
```

The output segment for an equipped FTM or DSPU with no failed, pested or out-of-service NPCs:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL {FTU|DSPU} NPCS [s]aaa-[t]bbb tt 2 LN MSG:
OOS 00 FAIL 00 PEST 00 EOM
```

The following segment is output to complete the message:

[O.53101]

M hh:mm:ss xy,ww n[vv] UTL QRY ALL COMPL

**For UTL::QRY ALL UNIT:**

For an FTU, IFTU, or IFTU2:

[O.53101]

M hh:mm:ss xy,ww n[vv] UTL QRY ALL FTU UNIT [q]q 3 LN MSG:  
UC ofp FTMI ofp ofp ofp ofp [CCB ofp rst]  
FC ofp rst ofp rst ofp rst ofp rst EOM

The above message is followed by up to 4 of the following segments depending on the CEPT FTM equipage. Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and dashes will be shown in its place:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q FTU NPCS [s]aaa-[t]bbb tt 5 LN MSG:  
ofp ofp ofp ofp ofp ofp ofp ofp OOS oo FAIL ff PEST pp  
ofp ofp ofp ofp ofp ofp ofp ofp  
ofp ofp ofp ofp ofp ofp ofp ofp  
ofp ofp ofp ofp ofp ofp ofp ofp EOM

For a DSPU:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q UC ofp DSPI ofp [CCB ofp rst] EOM  
  
M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q DSPU NPCS [s]aaa-[t]bbb tt 3 LN MSG:  
[z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst  
[z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst EOM

The output segment for an equipped FTM or DSPU with no failed, pested or out-of-service NPCs:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q {FTU|DSPU} NPCS [s]aaa-[t]bbb  
tt 2 LN MSG:  
OOS 00 FAIL 00 PEST 00 EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q COMPL

**For UTL::QRY ALL:**

[O.53101]

```

M hh:mm:ss xy,ww n[vv] UTL QRY ALL COMMON 4 LN MSG:
OOS g h i j k l m n o p
FAIL g h i j k l m n o p
PEST g h i j k l m n o p EOM

```

```

M hh:mm:ss xy,ww n[vv] UTL QRY ALL COMMON 4 LN MSG:
SYNC ofp rst CRO ofp
TLI ofp ofp ofp ofp ofp ofp ofp ofp rst rst rst rst rst rst rst rst
 a b c d e f g h i j k l m n o p EOM

```

For DACS II Non-CEF frames, the next segment describes the CCN hardware:

```

M hh:mm:ss xy,ww n[vv] UTL QRY ALL TOTAL TSIS tt oo ff pp 5 LN MSG:
11 ofp rst 12 ofp rst 13 ofp rst 14 ofp rst 15 ofp rst 16 ofp rst
21 ofp rst 22 ofp rst 23 ofp rst 24 ofp rst 25 ofp rst 26 ofp rst
31 ofp rst 32 ofp rst 33 ofp rst 34 ofp rst 35 ofp rst 36 ofp rst
41 ofp rst 42 ofp rst 43 ofp rst 44 ofp rst 45 ofp rst 46 ofp rst EOM

```

M hh:mm:ss xy,ww n[vv] UTL QRY ALL TOTAL TSIS tt oo ff pp 3 LN MSG:  
51 ofp rst 52 ofp rst 53 ofp rst 54 ofp rst 55 ofp rst 56 ofp rst  
61 ofp rst 62 ofp rst 63 ofp rst 64 ofp rst 65 ofp rst 66 ofp rst EOM

For DACS II CEF frames, the next segment describes the ECCN hardware:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL TOTAL ETSIS tt oo ff pp 5 LN MSG:
01 ofp rst 02 ofp rst 03 ofp rst 04 ofp rst
05 ofp rst 06 ofp rst 07 ofp rst 08 ofp rst
09 ofp rst 10 ofp rst 11 ofp rst 12 ofp rst
13 ofp rst 14 ofp rst 15 ofp rst 16 ofp rst EOM
```

The output then continues with segments about the common equipment in the units. One module will be generated per unit, in ascending order by number. The unit equipped for a given unit number determines the output message printed.

The output segment for an FTU, IFTU, or IFTU2:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL FTU 3 LN MSG:
UNIT [q]q UC ofp FTMI ofp ofp ofp ofp [CCB ofp rst]
FC ofp rst ofp rst ofp rst ofp rst EOM
```

The output segment for a DSPU:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q UC ofp DSPI ofp [CCB ofp rst] EOM
```

The output then continues with segments about the NPCs equipped in an FTM or a DSPU:

The output segment for NPCs in a CEPT FTM is as follows. Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and dashes will be shown in its place:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL FTU NPCS uvmnp-uxkqr tt 5 LN MSG:
ofp ofp ofp ofp ofp ofp ofp ofp 00S oo FAIL ff PEST pp
ofp ofp ofp ofp ofp ofp ofp ofp
ofp ofp ofp ofp ofp ofp ofp ofp
ofp ofp ofp ofp ofp ofp ofp ofp EOM
```

The output message for NPCs in a DSPU:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL DSPU NPCS uvmnp-uxkqr tt 3 LN MSG:
uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst
uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst EOM
```

The output segment for an equipped CEPT FTM or DSPU with no failing, pested or out-of-service NPCs using hierarchical addressing:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL {FTU|DS3U|DSPU} NPCS uvmnp-uxkqr tt 2 LN MSG:
00S 00 FAIL 00 PEST 00 EOM
```

If an FTM or DSPU is not equipped, or if it is equipped but has no NPCs, then the message segment for that FTM or DSPU will not appear.

The following segment is output to complete the message:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL COMPL

#### For UTL::QRY ALL UNIT:

For an FTU, IFTU, or IFTU2:

[O.53101]

M hh:mm:ss xy,ww n[vv] UTL QRY ALL FTU UNIT [q]q 3 LN MSG:  
UC ofp FTMI ofp ofp ofp ofp [CCB ofp rst]  
FC ofp rst ofp rst ofp rst ofp rst EOM

This output segment will be followed by up to 4 additional segments for each CEPT FTM depending on the FTM equipment as follows. Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and dashes will be shown in its place:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q FTU NPCS uvmnp-uxkqr tt 5 LN MSG:  
ofp ofp ofp ofp ofp ofp ofp ofp OOS oo FAIL ff PEST pp  
ofp ofp ofp ofp ofp ofp ofp ofp  
ofp ofp ofp ofp ofp ofp ofp ofp  
ofp ofp ofp ofp ofp ofp ofp ofp EOM

For a DSPU:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q UC ofp DSPI ofp [CCB ofp rst] EOM  
  
M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q DSPU NPCS uvmnp-uxkqr tt 3 LN MSG:  
uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst  
uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst EOM

If the CEPT FTM or DSPU has no failing, pested or out-of-service NPCs the following segment will be output:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q {FTU|DSPU} NPCS uvmnp-uxkqr tt 2 LN MSG:  
OOS 00 FAIL 00 PEST 00 EOM

If the FTM/DSPU is not equipped, or if it is equipped but has no NPCs, then the message segment for that FTM/DSPU will not appear.



The following segment is output to complete the message:

M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q COMPL

### **Denial Message**

---

[O.53101.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ALL UNIT [q]q COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

To aid referencing the parameters listed for a given message in a number of cases, the line containing the parameters is listed for those cases just before the explanation of that particular set of parameters is given.

**ALL** - All

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

The UNIT option is specified to query that unit. The UNIT field will be null when the command is used for the entire frame. If the UNIT option is specified, only the information related to the equipment in that unit will be generated.

**OOS** - Out of service

**FAIL** - Failed

**PEST** - Pested

For the OOS, FAIL and PEST keywords, variables g through p each represent a frame entity. The values of these variables give the OOS, FAIL, or PEST status of the associated entity. Values are interpreted using the table below. The entity associated with a given variable is given following the explanation of PEST below.

| Value | OOS            | FAIL           | PEST           |
|-------|----------------|----------------|----------------|
| 1     | out-of-service | failed         | pested         |
| 0     | in service     | not failed     | unpested       |
| -     | not applicable | not applicable | not applicable |

As shown above, a hyphen "-" indicates the parameter is not applicable to the particular entity. For example, an unequipped entity would display a "-" in the position of its OOS, FAIL and PEST indicators g through p.

The keyword PEST is used to indicate that error reporting is disabled. Out-of-service (OOS) entities and entities related to a side that is out of service are pested to prevent error messages from being reported to the main controller. Error reporting is undesirable if an entity is OOS since it would interrupt normal operations by repeatedly interrupting the microprocessor.

|             |                                |                              |
|-------------|--------------------------------|------------------------------|
| <b>OOS</b>  | <b>g h i j k l m n o p</b>     | (message line for reference) |
| <b>FAIL</b> | <b>g h i j k l m n o p</b>     | "                            |
| <b>PEST</b> | <b>g h i j k l m n o p EOM</b> | "                            |

The DACS II entities and their status fields are as follows:

|          |                                                     |
|----------|-----------------------------------------------------|
| <b>g</b> | - Link 1                                            |
| <b>h</b> | - Link 2                                            |
| <b>i</b> | - Link 3                                            |
| <b>j</b> | - Link 4                                            |
| <b>k</b> | - Link 5                                            |
| <b>l</b> | - Link 6                                            |
| <b>m</b> | - XC0 (Cross-Connect 0)                             |
| <b>n</b> | - XC1 (Cross-Connect 1)                             |
| <b>o</b> | - CCNI 0 (Cross-Connect Network Interface 0) NonCEF |
| <b>p</b> | - CCNI 1 (Cross-Connect Network Interface 1) NonCEF |
| <b>o</b> | - CCI 0 (Clock and Control Interface 0) CEF         |
| <b>p</b> | - CCI 1 (Clock and Control Interface 1) CEF         |

**SYNC ofp rst CRO ofp** (message line for reference)

**SYNC** - Synchronizer

**ofp** - Side 0 sync status

**rst** - Side 1 sync status

**o, r** - Out of service

**f, s** - Failed

**p, t** - Pested

**CRO** - Clock reference oscillator

**ofp** - CRO status

**o** - Out of service

**f** - Failed

**p** - Pested

To aid in interpreting the variables associated with the timing link interface, two lines from the message are printed below for reference. These lines have been marked with identifying information.

```
|<----- Side 0 ----->|<----- Side 1 ----->|
 TLI ofp ofp ofp ofp ofp ofp ofp ofp rst rst rst rst rst rst rst rst
 a b c d e f g h i j k l m n o p EOM
TLI No. 1 1 2 2 3 3 4 4 1 1 2 2 3 3 4 4
SSP No. 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1
```

**TLI** - Timing link interface

**ofp** - Side 0 TLI status

**o** - Out of service

**f** - Failed

**p** - Pested

**rst** - Side 1 TLI status

**r** - Out of service

**s** - Failed

**t** - Pested

There are four TLIs in each synchronizer side and each TLI has two synchronizer synchronization ports (SSP) for a total of eight SSPs per side. Variables a through p represent these SSPs and are associated with each TLI as shown below. The values of a through p give the priority of each SSP as a synchronization source. Priorities range in value from 1 through 8 and are interpreted as shown below.

**1** - Highest priority  
**8** - Lowest priority

**a** - TLI 1 SSP 0 priority  
**b** - TLI 1 SSP 1 priority

**c** - TLI 2 SSP 0 priority  
**d** - TLI 2 SSP 1 priority

**e** - TLI 3 SSP 0 priority  
**f** - TLI 4 SSP 1 priority

**g** - TLI 4 SSP 0 priority  
**h** - TLI 4 SSP 1 priority

**i** - TLI 1 SSP 0 priority  
**j** - TLI 1 SSP 1 priority

**k** - TLI 2 SSP 0 priority  
**l** - TLI 2 SSP 1 priority

**m** - TLI 3 SSP 0 priority  
**n** - TLI 3 SSP 1 priority

**o** - TLI 4 SSP 0 priority  
**p** - TLI 4 SSP 1 priority

**UTL QRY ALL TOTAL TSIS tt oo ff pp** (message line for reference)

**UTL QRY ALL TOTAL ETSIS tt oo ff pp** (message line for reference)

**TOTAL** - Total

**TSIS** - Time slot interchangers Non-CEF

**ET SIS** - Expanded time slot interchangers CEF

**tt** - Total number of equipped TSIS or ETSIS  
**oo** - Total number of equipped but out-of-service TSIS or ETSIS  
**ff** - Total number of equipped but failed TSIS or ETSIS  
**pp** - Total number of equipped but pested TSIS or ETSIS

The following lines are message lines for reference.

UNIT [q]q UC ofp FTMI ofp ofp ofp ofp [CCB ofp rst]

| FTM number | 1 | 2 | 3 | 4 |
|------------|---|---|---|---|
|------------|---|---|---|---|

FC ofp rst ofp rst ofp rst ofp rst EOM

|            |   |   |   |   |   |   |   |
|------------|---|---|---|---|---|---|---|
| FTM No. 1  | 1 | 2 | 2 | 3 | 3 | 4 | 4 |
| Side No. 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

**UC** - Unit controller  
**FTMI** - Facility terminating module interface  
**CCB** - Cross-connect buffer Non-CEF  
**FC** - Format converter

**o, r** - Out of service  
**f, s** - Failed  
**p, t** - Pested

The following line is a message line for reference.

UNIT [q]q UC ofp FLI ofp rst FMT ofp rst [CCB ofp rst]

|              |   |   |     |
|--------------|---|---|-----|
| FLI ID.      | S | P |     |
| FMT Side No. |   |   | 0 1 |

**ofp** - Service (S) FLI  
**rst** - Protection (P) FLI

**o, r** - Out of service  
**f, s** - Failed  
**p, t** - Pested

**FTU** - Facility terminating unit

The term FTU represents the original facility terminating unit as well as the Integrated facility terminating units (IFTU or IFTU2) that have been delivered as part of a DACS II.

**DSPU** - Digital signal processing unit

**UC ofp DSPI ofp [CCB ofp, rst]** (message line for reference)

**DSPI** - Digital signal processing interface

**ofp** - UC, DSPI, and for non-CEFs, side 0 of the CCB

**rst** - for non-CEFs, side 1 of the CCB

**o, r** - Out of service

**f, s** - Failed

**p, t** - Pested

The following lines are message lines for reference.

**[z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst [z]zzz ofp rst EOM**

**uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst uvmnp ofp rst EOM**

**ofp** - Refers to side 0 DSPU NPC

**rst** - Refers to side 1 DSPU NPC

**o, r** - Out of service

**f, s** - Failed

**p, t** - Pested

**[s]aaa** - The first 3- or 4-digit nonhierarchical NPC number of an FTM, MXR, or DSPU

**[t]bbb** - The last 3- or 4-digit nonhierarchical NPC number of an FTM, MXR, or DSPU

**[z]zzz** - The 3- or 4-digit nonhierarchical DSPU NPC number

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |
| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |
| <br>        |             |             |             |
| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |



If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - The first hierarchical NPC number of an FTM, MXR, or DSPU  
**uxkqr** - The last hierarchical NPC number of an FTM, MXR, or DSPU

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

- tt** - Total number of equipped NPCs
  - oo** - Total number of equipped but out-of-service NPCs
  - ff** - Total number of equipped but failed NPCs
  - pp** - Total number of equipped but pested NPCs
  - cc** - Hexadecimal condition code
- cc**    *Explanation*
- 02**    Subject entity is not equipped

## **UTL,QRY,ALM,INTV**

---

### **RETRIEVE Intervention Level Status**

#### **Explanation Of Command**

---

This message retrieves the current status of the Intervention Level Feature; that is, whether or not the feature is ON or OFF.

#### **Command**

---

[I.53351]

UTL:[FRM xy,SEQ ww]:QRY,ALM,INTV!

#### **Completion Message**

---

[O.53351]

M hh:mm:ss xy,ww n[vv] UTL QRY ALM INTV {ON|OFF} COMPL

[O.53351]

```
[<xy>] yy-mm-dd hh:mm:ss LINK-n[vv]
M RTRV ALM:::[<ww>]:INTV COMPLD
/* [O.53351] */
 "Intervention Level-[ON|OFF]"
;
```

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**INTV** - Intervention

**ON** - Intervention Level Feature ON

**OFF** - Intervention Level Feature OFF

**cc** - Hexadecimal condition code

**cc Explanation**

**00 No conditions**

## **UTL, QRY, ALMOPT, NPC, AIS**

### **UTILITY QUERY, ALARM OPTION, AIS**

#### **Explanation Of Command**

This command requests alarm indication signal (AIS) information for one or more facility terminating unit (FTU/IFTU/IFTU2), DS3 unit (DS3U) or Hybrid DS3 Unit (HDS3U) network processing circuits. The range can cross the unit boundary, and the two NPCs entered can be from different types of units. This command is not applicable to digital signal processing unit (DSPU) NPCs. DSPU NPCs will be skipped in the output message if they are within the range.

Digital Signal Processing Platform (DSPP) NPCs and the even numbered NPCs immediately following the actual DSPP NPCs will be skipped in the output by using dashes if they are within the range of this command.

#### **Command**

##### **Nonhierarchical**

[I.56021]

**UTL:FRM xy,SEQ ww:QRY,ALMOPT,NPC [s]abc[-[v]ghi],AIS!**

##### **Hierarchical**

[I.56021]

**UTL:FRM xy,SEQ ww:QRY,ALMOPT,NPC uvmnp[-wxkqr],AIS!**



## Completion Message

---

### Nonhierarchical

---

[O.56021]

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPCS [s]abc-[t]def AIS \
TOT nnn e LN MSG:
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPCS [u]jkl-[v]ghi AIS \
TOT nnn e LN MSG:
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPCS [s]abc-[v]ghi AIS COMPL
```

**Note:** The above message applies to FTU, IFTU, or IFTU2 units.

## Hierarchical

---

[O.56021]

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPCS uvmnp-defgh AIS \
TOT nnn e LN MSG:
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPCS ijklm-wxkqr AIS \
TOT nnn e LN MSG:
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt
tttt tttt tttt tttt tttt tttt tttt tttt EOM
```

M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPCS uvmnp-wxkqr AIS COMPL

**Note:** The above message applies to FTU, IFTU, or IFTU2 units.

## Denial Message

---

### Nonhierarchical

---

[O.56021.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPC [t]def[-[u]jkl] AIS \
UEQD DNY
```

[O.56021.02]

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPC [t]def[-[u]jkl] AIS \
COND cc DNY
```

## Hierarchical

---

[O.56021.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPC defgh[-ijklm] AIS UEQD DNY
```

[O.56021.02]

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMOPT NPC defgh[-ijklm] AIS \
COND cc DNY
```

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**ALMOPT** - Alarm option

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit starting nonhierarchical NPC number

**[v]ghi** - The 3- or 4-digit ending nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|
| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Starting hierarchical NPC number

**wxkqr** - Ending hierarchical NPC number

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**[t]def** - The 3- or 4-digit nonhierarchical NPC number ([s]abc through [u]jkl)

**[u]jkl** - The 3- or 4-digit nonhierarchical NPC number ([t]def through [v]ghi)

**edfgh** - Hierarchical NPC number (uvmnp through ijklm)

**ijklm** - Hierarchical NPC number (edfgh through wxkqr)

- ed** - Unit number (uv through wx)
- f** - Module number
- gh** - NPC number
  
- e** - Number of lines in message  
The number of lines in the message depends on the number of equipped NPCs to be reported.
  
- nnn** - Total number of alarms
  
- TOT** - Total
  
- tttt** - AIS Alarm option programmed for the NPC
  - tttt** *Explanation*
  - INFO** Information message (for all domestic NPCs)
  - MJ** Major alarm (for all domestic NPCs)
  - MN** Minor alarm (for domestic non-SLC type NPCs)
  - MI** Information message (for CEPT NPCs)
  - PMA** Prompt maintenance alarm major (for CEPT NPCs)
  - PMC** Prompt maintenance critical alarm (for CEPT NPCs)
  - DMA** Deferred maintenance minor alarm (for CEPT NPCs)
  - Unequipped
  
- Digital Signal Processing Platform NPCs that run applications will also cause dashes to be produced for **tttt**.
  
- UEQD** - Unequipped
  
- cc** - Hexadecimal condition code
  - cc** *Explanation*
  - 60** Selectable AIS not valid for specified NPC(s) type
  - 61** All NPC(s) are either not valid or not grown



## **UTL,QRY,ALMS**

### **UTILITY QUERY ALARMS**

#### **Explanation Of Command**

This command reports the source of all alarms currently on the DACS II frame. For each entity that has been autonomously removed, the resulting alarm state is given.

If there are no alarms to report, a short line message is output indicating that the total number of alarms is **000**.

Note that the DS3U message segment applies to both the DS3 unit and the Hybrid DS3 unit (HDS3U). The MXR message applies to both MXR and Hybrid MXR.

Separate message segments will be shown for the "Alarm Severity - Intervention Level - Message Logging" feature as appropriate.

#### **Command**

[I.53111]

**UTL:FRM xy,SEQ ww:QRY,ALMS!**

#### **Completion Message**

#### **Nonhierarchical**

**When there are no alarms active on the frame, the following output appears:**

[O.53112]

**M hh:mm:ss xy,ww n[vv] UTL QRY ALMS TOTAL 000 COMPL**

**When there are alarms active on the frame, the following output appears:**

The individual message segments are shown in the order they appear.  
Explanatory text accompanies each message segment.

[O.53111]

1) The following segment appears only if the alarm severity, intervention level, and message logging features are present.

**M hh:mm:ss xy,ww n[vv] Alarm Severity Feature is {ON|OFF}**  
**M hh:mm:ss xy,ww n[vv] Intervention Level Feature is {ON|OFF}**

2) Summary line showing status of CR, MJ, MN, MC, and PWR alarms.

**M hh:mm:ss xy,ww n[vv] UTL QRY ALMS SUMMARY CR t MJu MN v \**  
**MC w PWR z EOM**

3) Summary line showing alarm status of the various power units within each FTU/IFTU/IFTU2/DSPU, the Synchronizer, the Main Controller, and CCN/ECCN.

For DACS II NonCEF frames (CCN),

**M hh:mm:ss xy,ww n[vv] UTL QRY PWR w w w w w w w w w w EOM**

For DACS II CEF frames (ECCN),

**M hh:mm:ss xy,ww n[vv] UTL QRY ALMS PWR 2 LN MSG:**  
**w w w w w w w w w w w w w w w w w w EOM**

4) Summary line showing status of alarms on the main controller and switch complex (CCN/ECCN).

For both DACS II NonCEF and CEF frames (CCN and ECCN)

**M hh:mm:ss xy,ww n[vv] UTL QRY ALMS a b c d e f g h i j k l m \**  
**n o p q r s EOM**

For DACS II nonCEF and CEF frames (CCN and ECCN) **with** the alarm severity, intervention level, and message logging feature present.

```

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS a b c d e f g h i j k l m \
n o p q r s
 y - - - y - - - - - y \
y y y y y y
 z - - - z - - - - - z \
z z z z z z
 u - - - u - - - - - u \
u u u u u u EOM

```

5) Summary line showing synchronizer entities alarm status.

**Without** the alarm severity, intervention level, and message logging feature present.

```

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS 3 LN MSG:
SYNC x y CRO x
TLI a b c d e f g h a b c d e f g h EOM

```

**With** the alarm severity, intervention level, and message logging feature present.

```

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS 9 LN MSG:
SYNC x y CRO x
 y y y
 z z z
 u u u
TLI a b c d e f g h a b c d e f g h
 y y y y y y y y y y y y y y
 z z z z z z z z z z z z z z
 u u u u u u u u u u u u u u EOM

```

6) Summary line showing cross-connect (CCN/ECCN) entity alarm status.

For DACS II NonCEF frames (CCN)

```

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS TOTAL TSIS tt nn 5 LN MSG:
ft x y ft x y ft x y ft x y ft x y ft x y
ft x y ft x y ft x y ft x y ft x y ft x y
ft x y ft x y ft x y ft x y ft x y ft x y
ft x y ft x y ft x y ft x y ft x y ft x y EOP

```

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS TOTAL TSIS tt nn 3 LN MSG:  
ft x y ft x y ft x y ft x y ft x y ft x y  
ft x y ft x y ft x y ft x y ft x y ft x y EOM

For DACS II CEF frames (ECCN)

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS TOTAL ETSIS tt nn 3 LN MSG:  
01 x y 02 x y 03 x y 04 x y 05 x y 06 x y 07 x y 08 x y  
09 x y 10 x y 11 x y 12 x y 13 x y 14 x y 15 x y 16 x y EOM

7) Alarm status of the common equipment within each unit, in unit number order (Only those units which are equipped will be shown in the output; for example, if only two units are equipped, only two data lines will appear).

For NonCEF frames:

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:  
<data line for first equipped unit>  
<data line for second equipped unit>  
<data line for third equipped unit>  
<data line for fourth equipped unit>  
EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:  
<data line for fifth equipped unit>  
<data line for sixth equipped unit>  
EOM

For CEF frames:

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:  
<data line for first equipped unit>  
<data line for second equipped unit>  
<data line for third equipped unit>  
<data line for fourth equipped unit> EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:  
<data line for fifth equipped unit>  
<data line for sixth equipped unit>  
<data line for seventh equipped unit>  
<data line for eighth equipped unit> EOM

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:
<data line for ninth equipped unit>
<data line for tenth equipped unit>
<data line for eleventh equipped unit>
<data line for twelfth equipped unit> EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:
<data line for thirteenth equipped unit>
<data line for fourteenth equipped unit>
<data line for fifteenth equipped unit>
<data line for sixteenth equipped unit> EOM
```

*Data Lines For Summary Alarm Information On A Unit (FTU/IFTU/IFTU2, DSPU)*

Data line for a unit equipped as an FTU/IFTU/IFTU2:

```
UNIT [q]q UC a FTMI b c d e FC f g h i j k l m[CCB r s][00S]
```

Data line for a unit equipped as a DSPU:

```
UNIT [q]q UC a DSPI b [CCB r s][00S]
```

8) NPC alarm data per unit (FTU/IFTU/IFTU2, DSPU), shown in unit order (1,2,...). If a unit or module is unequipped or there are no NPC alarms, the corresponding message segment is skipped:

For a DS1 Facility Terminating Module (FTM) **without** the alarm severity, intervention level, and message logging feature present, or if present, with intervention levels turned off:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS FTU NPCS [s]aaa-[t]bbb \
tt[00S] 5 LN MSG:
x x x x x x x x x x ALMS nn
x x x x x x x x x x
x x x x x x x x x x
x x x x x x x x x x EOM
```

**Note:** If Digital Signal Processing Platform (DSPP) NPCs, which are always odd, are provisioned within the FTU/IFTU/IFTU2, then the even NPCs immediately following those DSPP NPCs will appear as being unequipped. Therefore, these even NPCs will always be shown as dashes.

For a DS1 Facility Terminating Module (FTM) **with** the alarm severity, intervention level, and message logging feature present and intervention levels turned on:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS FTU NPCS [s]aaa-[t]bbb \
tt[00S] 5 LN MSG:
[s]ccc-[t]ddd
x x x x x x x x x x
y y y y y y y y y y
z z z z z z z z z z
u u u u u u u u u u
[s]ccc-[t]ddd
x x x x x x x x x x
y y y y y y y y y y
z z z z z z z z z z
u u u u u u u u u u
[s]ccc-[t]ddd
x x x x x x x x x x
y y y y y y y y y y
z z z z z z z z z z
u u u u u u u u u u
[s]ccc-[t]ddd
x x x x x x x x x x
y y y y y y y y y y
z z z z z z z z z z
u u u u u u u u u u
ALMS nn EOM
```

**Note:** If Digital Signal Processing Platform (DSPP) NPCs, which are always odd, are provisioned within the FTU/IFTU/IFTU2, then the even NPCs immediately following those DSPP NPCs will appear as being unequipped. Therefore, these even NPCs will always be shown as dashes.

For a DSPU:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS UNIT [q]q DSPU NPCS\
[00S] 3 LN MSG:
[s]zzz x y [s]zzz x y [s]zzz x y [s]zzz x y ALMS nn
[s]zzz x y [s]zzz x y [s]zzz x y [s]zzz x y EOM
```

9) Completion line

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS COMPL
```

## **Hierarchical**

---

**When there are no alarms active on the frame, the following output appears:**

[O.53112]

**M hh:mm:ss xy,ww n[vv] UTL QRY ALMS TOTAL 000 COMPL**

**When there are alarms active on the frame, the following output appears:**

The individual message segments are shown in the order they appear.  
Explanatory text accompanies each message segment.

[O.53111]

1) The following segment appears only if the alarm severity, intervention level, and message logging features are present.

**M hh:mm:ss xy,ww n[vv] Alarm Severity Feature is {ON|OFF}**

**M hh:mm:ss xy,ww n[vv] Intervention Level Feature is {ON|OFF}**

2) Summary line showing status of CR, MJ, MN, MC, and PWR alarms.

**M hh:mm:ss xy,ww n[vv] UTL QRY ALMS SUMMARY CR t MJ u MN v \**  
**MC w PWR z EOM**

3) Summary line showing alarm status of the various power units within each FTU/IFTU/IFTU2/DSPU, the Synchronizer, the Main Controller, and CCN/ECCN.

For DACS II NonCEF frames (CCN),

**M hh:mm:ss xy,ww n[vv] UTL QRY PWR w w w w w w w w w w EOM**

For DACS II CEF frames (ECCN),

**M hh:mm:ss xy,ww n[vv] UTL QRY ALMS PWR 2 LN MSG:**  
**w w w w w w w w w w w w w w w w w w w w EOM**

4) Summary line showing status of alarms on the main controller and switch complex (CCN/ECCN).

For both DACS II NonCEF and CEF frames (CCN and ECCN)

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS a b c d e f g h i j k l m \n o p q r s EOM

For DACS II nonCEF and CEF frames (CCN and ECCN) **with** the alarm severity, intervention level, and message logging feature present.

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS a b c d e f g h i j k l m \n o p q r s  
y - - - y - - - - - y \n  
y y y y y y z - - - z - - - - - z \n  
z z z z z z u - - - u - - - - - u \n  
u u u u u u EOM

5) Summary line showing synchronizer entities alarm status.

**Without** the alarm severity, intervention level, and message logging feature present.

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS 3 LN MSG:  
SYNC x y CRO x  
TLI a b c d e f g h a b c d e f g h EOM

**With** the alarm severity, intervention level, and message logging feature present.

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS 9 LN MSG:  
SYNC x y CRO x  
y y y  
z z z  
u u u  
TLI a b c d e f g h a b c d e f g h  
y y y y y y y y y y y y y y  
z z z z z z z z z z z z z z  
u u u u u u u u u u u u u u EOM



6) Summary line showing cross-connect (CCN/ECCN) entity alarm status.

For DACS II NonCEF frames (CCN)

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS TOTAL TSIS tt nn 5 LN MSG:
ft x y ft x y ft x y ft x y ft x y ft x y
ft x y ft x y ft x y ft x y ft x y ft x y
ft x y ft x y ft x y ft x y ft x y ft x y
ft x y ft x y ft x y ft x y ft x y ft x y EOP
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS TOTAL TSIS tt nn 3 LN MSG:
ft x y ft x y ft x y ft x y ft x y ft x y
ft x y ft x y ft x y ft x y ft x y ft x y EOM
```

For DACS II CEF frames (ECCN)

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS TOTAL ETSIS tt nn 3 LN MSG:
01 x y 02 x y 03 x y 04 x y 05 x y 06 x y 07 x y 08 x y
09 x y 10 x y 11 x y 12 x y 13 x y 14 x y 15 x y 16 x y EOM
```

7) Alarm status of the common equipment within each unit, in unit number order (Only those units which are equipped will be shown in the output; for example, if only two units are equipped, only two data lines will appear).

For NonCEF frames:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:
<data line for first equipped unit>
<data line for second equipped unit>
<data line for third equipped unit>
<data line for fourth equipped unit>
EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:
<data line for fifth equipped unit>
<data line for sixth equipped unit>
EOM
```

For CEF frames:

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:  
<data line for first equipped unit>  
<data line for second equipped unit>  
<data line for third equipped unit>  
<data line for fourth equipped unit> EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:  
<data line for fifth equipped unit>  
<data line for sixth equipped unit>  
<data line for seventh equipped unit>  
<data line for eighth equipped unit> EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:  
<data line for ninth equipped unit>  
<data line for tenth equipped unit>  
<data line for eleventh equipped unit>  
<data line for twelfth equipped unit> EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS e LN MSG:  
<data line for thirteenth equipped unit>  
<data line for fourteenth equipped unit>  
<data line for fifteenth equipped unit>  
<data line for sixteenth equipped unit> EOM

*Data Lines For Summary Alarm Information On A Unit (FTU/IFTU/IFTU2, DSPU)*

Data line for a unit equipped as an FTU/IFTU/IFTU2:

UNIT [q]q UC a FTMI b c d e FC f g h i j k l m[ CCB r s][ 00S]

Data line for a unit equipped as a DSPU:

UNIT [q]q UC a DSPI b [CCB r s][ 00S]

8) NPC alarm data per unit (FTU/IFTU/IFTU2, DSPU), shown in unit order (1,2,...). If a unit or module is unequipped or there are no NPC alarms, the corresponding message segment is skipped:

For a DS1 Facility Terminating Module (FTM) **without** the alarm severity, intervention level, and message logging feature present, or if present, with intervention levels turned off:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS FTU NPCS uvmnp-wxkqr tt\
[00S] 5 LN MSG:
x x x x x x x x x x ALMS nn
x x x x x x x x x x
x x x x x x x x x x
x x x x x x x x x x EOM
```

**Note:** If Digital Signal Processing Platform (DSPP) NPCs, which are always odd, are provisioned within the FTU/IFTU/IFTU2, then the even NPCs immediately following those DSPP NPCs will appear as being unequipped. Therefore, these even NPCs will always be shown as dashes.

For a DS1 Facility Terminating Module (FTM) **with** the alarm severity, intervention level, and message logging feature present and intervention levels turned on:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS FTU NPCS uvmnp-wxkqr tt\
[00S] 5 LN MSG:
uvmnp-wxkqr
x x x x x x x x x x
y y y y y y y y y y
z z z z z z z z z z
u u u u u u u u u u
uvmnp-wxkqr
x x x x x x x x x x
y y y y y y y y y y
z z z z z z z z z z
u u u u u u u u u u
uvmnp-wxkqr
x x x x x x x x x x
y y y y y y y y y y
z z z z z z z z z z
u u u u u u u u u u
uvmnp-wxkqr
x x x x x x x x x x
y y y y y y y y y y
z z z z z z z z z z
u u u u u u u u u u
ALMS nn EOM
```

**Note:** If Digital Signal Processing Platform (DSPP) NPCs, which are always odd, are provisioned within the FTU/IFTU/IFTU2, then the even NPCs immediately following those DSPP NPCs will appear as being unequipped. Therefore, these even NPCs will always be shown as dashes.

For a DSPU:

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS UNIT [q]q DSPU NPCS\
[00S] 3 LN MSG:
uvmnp x y uvmnp x y uvmnp x y uvmnp x y ALMS nn
uvmnp x y uvmnp x y uvmnp x y uvmnp x y EOM
```

9) Completion line

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALMS COMPL
```

### **Denial Message**

---

#### **Common**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

To aid referencing the parameters listed for a given message, the line containing the parameters is listed below just before the explanation of that particular set of parameters is given.

When an FTM module has been provisioned as CEPT, then there will be 32 NPCs per Facility Terminating Module (FTM).

The DACS II frame alarm state summary is given at the beginning of the alarm report for these variables:

CR t MJ u MN v MC w PWR z

**CR** - Critical

**t** - Critical alarm status

**MJ** - Major

**u** - Major alarm status

- MN** - Minor  
**v** - Minor alarm status  
**MC** - Main controller  
**w** - Main controller alarm status  
**PWR** - Power  
**z** - Power alarm status

The value of variables t, u, v, w, and z determines the alarm status.  
These values and their meaning are given below for t through z.

*t-z Status*

- 1 Active  
0 Not Active

- w** - Power failure indicator

Each w in the output message corresponds to a particular power unit in the frame.  
The w's are numbered from left to right beginning with 1. If the frame is a non-CEF frame, the w's will end with 10. If the frame is a CEF, the w's will end with 20.

Determine the number associated with the w of interest then use the table below to determine the affected power unit.

The value of w determines the status of the power unit

| <i>w</i> | <i>Power unit status</i> |
|----------|--------------------------|
| M        | Power failure (Major)    |
| -        | No power failure         |

- |    |                                       |
|----|---------------------------------------|
| 1  | Power unit of unit 1                  |
| 2  | Power unit of unit 2                  |
| 3  | Power unit of unit 3                  |
| 4  | Power unit of unit 4                  |
| 5  | Power unit of unit 5                  |
| 6  | Power unit of unit 6                  |
| 7  | Synchronizer (SYNC) 0                 |
| 8  | SYNC 1                                |
| 9  | Cross-Connect Network (CCN or ECCN) 0 |
| 10 | CCN or ECCN 1                         |

For CEF frames,

- 11 power unit of unit 7
- 12 power unit of unit 8
- 13 power unit of unit 9
- 14 power unit of unit 10
- 15 power unit of unit 11
- 16 power unit of unit 12
- 17 power unit of unit 13
- 18 power unit of unit 14
- 19 power unit of unit 15
- 20 power unit of unit 16

ALMS a b c d e f g h i j k l m n o p q r s

**x** - Alarm Severity

- x** *Explanation*
- a** Autonomously removed
- Does not apply, or part of a larger failure group
- \*** Minor alarm
- M** Major alarm
- C** Critical alarm
- I** Information

The following y,z,and u parameters are printed only if the Intervention Level feature is ON.

**y** -Intervention level setting(1-6)

**z** -Intervention Level

- z** *Intervention Level*
- I** IMA (Immediate Maintenance Action)
- D** DMA(Deferred Maintenance Action
- N** NI(No Intervention)
- Not applicable

**u** - New Individual Alarm Status effected by Intervention Level

- *No alarm or unprovisioned*
- I** Information
- M** Major alarm
- C** Critical

**ALMS** - Alarms

Each of the letters a through s following the keyword ALMS represents an entity in the DACS II frame. The entities are listed following this paragraph by the letter used to represent them. The values these letters assume give the alarm status of the particular entity. These values are listed immediately following the entity listing. Some entities do not use the full range of values but their values are separately described in the list of entities.

- a** - MC (Main controller)
- b** - MP (Main processor)
- c** - CI/ECI (Communications interface)
- d** - SCC (Secondary source controller)
- e** - PMEM
- f** - SMEM
- g** - Link 1
- h** - Link 2
- i** - Link 3
- j** - Link 4
- k** - Link 5
- l** - Link 6
- m** - XC0 (Cross-Connect 0)
- n** - XC1 (Cross-Connect 1)
- o** - CCNI 0 (Cross-Connect Network Interface 0 for NonCEF frame)  
CCI 0 (Clock and Control Interface 0 for CEF frame)
- p** - CCNI 1 (Cross-Connect Network Interface 1 for NonCEF frame)  
CCI 1 (Clock and Control Interface 1 for CEF frame)
- q** - TOD (Time of Day) reset
- r** - DATE (Time of Day) reset
- s** - SMEM OOS

**Value** *Explanation*

- a** Autonomously removed
- Does not apply, or part of a larger failure group
- \*** Minor alarm
- M** Major alarm
- C** Critical alarm
- I** Information

"I" reports maintenance information for E1 signals. This state exists for the conditions listed below:

AIS - Alarm indication signal  
RAI - Remote alarm indication  
RBER - Remote bit error rate indication  
RAIS - Remote alarm indication signal  
SFI - Synchronization failure indication  
A16 - AIS in CTS 16  
R16 - RAI in CTS 16

The value "I" will appear in reports for E1s where performance monitoring thresholds have been exceeded if those thresholds were provisioned at the maintenance information (MI) level.

The value "\*" will appear in reports of a BER alarm on CEPT NPCs (E1s), in addition to reporting all the minor alarm conditions supported in previous releases.

If the embedded signals within a DS3 or a Hybrid DS3 signal are in AIS (Alarm Indication Signal), then an "I" is shown for that signal. In addition, when the entire DS3 or Hybrid DS3 is receiving AIS the embedded DS1 and E1 signals will show an "I".

Where a failure group includes more than one circuit pack and individual circuit pack information is available, the character "a" will be used to indicate removal or attempted removal of that pack.

A hyphen (-) indicates the alarm state is not applicable to the particular circuit. For example, an unequipped circuit would display a "-" in its status field.

SYNC x y

**SYNC** - Synchronizer

**x** - Side 0 alarm status of the synchronizer

**y** - Side 1 alarm status of the synchronizer

|          |                                                   |
|----------|---------------------------------------------------|
| <b>x</b> | <i>Explanation</i>                                |
| <b>a</b> | Autonomously removed                              |
| <b>-</b> | Does not apply, or part of a larger failure group |
| <b>*</b> | Minor alarm                                       |
| <b>M</b> | Major alarm                                       |
| <b>C</b> | Critical alarm                                    |
| <b>I</b> | Information                                       |



**CRO** - Clock reference oscillator

**x** - Side 0 alarm status of the oscillator

**x** *Explanation*

**a** Autonomously removed

**-** Does not apply, or part of a larger failure group

**\*** Minor alarm

**M** Major alarm

**C** Critical alarm

**I** Information

**TLI** **a b c d e f g h a b c d e f g h**

**TLI** - Timing link interface

**a** - TLI 1 or Synchronizer sync port (SSP) 0 of TLI 1 side 0

**b** - SSP 1 of TLI 1 side 0

**c** - TLI 2 or SSP 0 of TLI 2 side 0

**d** - SSP 1 of TLI 2 side 0

**e** - TLI 3 or SSP 0 of TLI 3 side 0

**f** - SSP 1 of TLI 3 side 0

**g** - TLI 4 or SSP 0 of TLI 4 side 0

**h** - SSP 1 of TLI 4 side 0

**a** - TLI 1 or SSP 0 of TLI 1 side 1

**b** - SSP 1 of TLI 1 side 1

**c** - TLI 2 or SSP 0 of TLI 2 side 1

**d** - SSP 1 of TLI 2 side 1

**e** - TLI 3 or SSP 0 of TLI 3 side 1

**f** - SSP 1 of TLI 3 side 1

**g** - TLI 4 or SSP 0 of TLI 4 side 1

**h** - SSP 1 of TLI 4 side 1

See the ALMS section given previously for the alarm status values.

For NonCEF frames only:

TSIS tt nn

**TSIS** - Time slot interchangers

**tt** - Total No. of equipped TSIs (1-36)

**nn** - Total No. of alarming TSIs (0-36)

**ft** - Unit numbers

**f** - FROM unit number (1-6)

**t** - TO unit number (1-6)

**x** - Side 0 alarm status of the TSI

**y** - Side 1 alarm status of the TSI

Variables x and y can assume one of the two alarm status values given below.

**a** *Autonomously removed*

- Does not apply, or part of a larger failure group

**\*** Minor alarm

**M** Major alarm

**C** Critical alarm

**I** Information

For CEF frames only:

ETSIS tt nn

**ETSIS** - Expanded time slot interchangers

**tt** - Total No. of equipped ETSIs (01 through 32)

**nn** - Total No. of alarming ETSIs (01 through 32)

UNIT [q]q UC a FTMI b c d e FC f g h i j k l m [CCB r s][ OOS]

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**UC** - Unit controller

**a** - UC status

The UC status values are the same as those given previously for entities a through s in the explanation of ALMS. This table follows the explanation of variable s.

FTMI b c d e

**FTMI** - Facility terminating module interface

- b** - Status for FTMI 1 of specified unit
- c** - Status for FTMI 2 of specified unit
- d** - Status for FTMI 3 of specified unit
- e** - Status for FTMI 4 of specified unit

See the ALMS section given previously for the alarm status values.

FC f g h i j k l m

**FC** - Format converter

- f** - Status for FC 01 of specified FTU
- g** - Status for FC 11 of specified FTU
- h** - Status for FC 02 of specified FTU
- i** - Status for FC 12 of specified FTU
- j** - Status for FC 03 of specified FTU
- k** - Status for FC 13 of specified FTU
- l** - Status for FC 04 of specified FTU
- m** - Status for FC 14 of specified FTU

See the ALMS section given previously for the alarm status values.

For NonCEF frames only:

CCB r s

**CCB** - Cross-connect buffer

- r** - Status for CCB 0q in CCN 0 for specified unit q
- s** - Status for CCB 1q in CCN 1 for specified unit q

See the ALMS section given previously for the alarm status values.

**OOS** - Out-of-Service

The OOS state applies to the Unit Controller.

DSPI b

**DSPI** - Digital signal processing interface

**b** - Status for DSPI (digital signal processing interface) of specified DSPU

See the ALMS section given previously for the alarm status values.

**rr** - Total number of **equipped** DS3 or HDS3 facilities in the frame  
NonCEF (01 through 36)  
CEF (01 through 96)

UNIT [q]q y y y y y ALMS gg

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**y** - DS3 facility alarm status.

The DS3 facility will be in a critical alarm if the incoming facility is in LOS, OOF, or BER. The DS3 facility will be in a major alarm if the incoming facility has a Remote Alarm Indication (RAI). There will be an informational "I" alarm, if AIS is received on the DS3 facility.

**gg** - Total number of alarming DS3 facilities in the frame  
NonCEF (01 through 36)  
CEF (01 through 96)

*FOR FTU AND DS3U/HDS3U NPC ALARM DATA LINES*

**[s]aaa** - The 3- or 4-digit nonhierarchical number of the first NPC in the module

**[t]bbb** - The 3- or 4-digit nonhierarchical number of the last NPC in the module

**[s]ccc** - The 3- or 4-digit nonhierarchical number of the last NPC in the module

**[t]ddd** - The 3- or 4-digit nonhierarchical number of the last NPC in the module

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Hierarchical number of the first NPC in the module

**wxkqr** - Hierarchical number of the last NPC in the module

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number within the module

Valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |



SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**tt** - Total number of equipped NPCs

01 through 32

**nn** - Total number of alarming NPCs

01 through 32

*FOR DSPU NPC ALARM DATA LINE*

**[s]zzz** - The 3- or 4-digit nonhierarchical DSPU NPC number

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

|            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|
| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |

| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

## **UTL, QRY, ALMS, DBASE**

### **UTILITY QUERY ALARMS**

#### **Explanation Of Command**

This message reports the following alarms:

- Critical frame alarms caused by duplex failures.
- Buffer overflow alarm on each of the eight C-bit processor (CPR) packs.
- Failed or out-of-service alarms for the FTU/IFTU/IFTU2 NPCs. This includes Digital Signal Processing Platform (DSPP) NPCs.
- Primary block failure alarm(s).
- Received time slot zero (TS0) failure for Transmic 1G.

#### **Command**

[I.53151]

**UTL:FRM xy,SEQ ww:QRY,ALMS,DBASE!**

## Completion Message

### Nonhierarchical

[O.53151]

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS c EOM

[M hh:mm:ss xy,ww n[vv] UTL QRY ALMS CB NPC BOFL 2 LN MSG:]  
[[s]ghi [s]ghi [s]ghi [s]ghi [s]ghi [s]ghi [s]ghi [s]ghi EOM]

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS FTU NPC A00S e LN MSG:  
[s]abc [s]abc [s]abc [s]abc [s]abc [s]abc [s]abc [s]abc

.

[s]abc [s]abc [s]abc [s]abc [s]abc [s]abc [s]abc [s]abc EOM

.

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS FTU NPC A00S e LN MSG:  
[s]abc [s]abc [s]abc [s]abc [s]abc [s]abc [s]abc [s]abc

.

[s]abc [s]abc [s]abc [s]abc [s]abc [s]abc [s]abc [s]abc EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS CGA [s]abc k[l[m[...]]] EOM

.

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS CGA [t]def k[l[m[...]]] EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS NPC [s]abc[ PBA k[l[m[...]]]] \\  
[ TS0 abcdefgh] EOM

.

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS NPC [t]def[ PBA k[l[m[...]]] \\  
[ TS0 abcdefgh] EOM

M hh:mm:ss xy,mm n[vv] UTL QRY ALMS DBASE COMPL

## **Hierarchical**

---

[O.53151]

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS c EOM

[M hh:mm:ss xy,ww n[vv] UTL QRY ALMS CB NPC BOFL 2 LN MSG:]

[edfgh edfgh edfgh edfgh edfgh edfgh edfgh EOM]

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS FTU NPC A00S e LN MSG:

uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp

.

.

uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp EOM

.

.

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS FTU NPC A00S e LN MSG:

uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp

.

.

uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS CGA uvmnp k[l[m]...] EOM

.

.

.

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS CGA wxkqr k[l[m]...] EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS NPC uvmnp[ PBA k[l[m]...]] \

[ TS0 abcdefgh] EOM

.

.

.

M hh:mm:ss xy,ww n[vv] UTL QRY ALMS NPC wxkqr[ PBA k[l[m]...]] \

[ TS0 abcdefgh] EOM

M hh:mm:ss xy,mm n[vv] UTL QRY ALMS DBASE COMPL

## **Denial Message**

---

Not applicable.

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**ALM(S)** - Alarm(s)

**DBASE** - Data base

Used to provide the output necessary to verify data base coherence between DACS II and the DACS controller.

**c** - Duplex frame alarm status

| <i>c</i> | <i>Explanation</i> |
|----------|--------------------|
|----------|--------------------|

|   |                    |
|---|--------------------|
| 1 | Duplex frame alarm |
|---|--------------------|

|   |                       |
|---|-----------------------|
| 0 | No Duplex frame alarm |
|---|-----------------------|

**CB** - C-bit

**NPC** - Network processing circuit

**BOFL** - Buffer overflow

The section of the message reporting buffer overflow is optional. It will only appear if there are C-bit Processor (CPR) circuit packs exhibiting a buffer overflow condition.

**e** - Number of lines in message (from 1 to 5 lines)

**FTU** - Facility terminating unit

Only alarmed FTU NPCs (including DSPP NPCs) will be reported. Hence the number of NPCs in the message and the number of lines will be variable.

**[s]ghi** - The 3- or 4-digit nonhierarchical CB type NPC number.

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |
| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |



| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |
| <br>        |             |             |             |
| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

**[s]abc, [t]def**

- The 3- or 4-digit nonhierarchical NPC numbers.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**edfgh** - Hierarchical CB-type NPC number

**ed** - Unit number  
**f** - Module number  
**gh** - NPC number

The values are:

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

**uvmnp** - Hierarchical FTU NPC number

**wxkqr** - Hierarchical FTU NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**BOFL** - Buffer overflow

**A00S** - Autonomous out-of-service (autonomous removal)

**PBA** - Primary block alarm

The primary block alarms are output only for those FTU NPCs for which the alarms have been reported and without regard for how the NPC is provisioned.

**k, l, m, . . .**

- Representation for multiple alarms

*k, l, or m (PBA) Explanation*

For PA type NPCs:

- A** Primary AIS - AIS received in all 32 time slots.
- B** BER - Bit error rate detected in received signal.
- C** LCMA - Loss of CRC4 multiframe alignment in TS0.
- E** RBER - Remote bit error rate detected in TS0 bit 4.
- F** LOF - Loss of Frame type Primary block failure.
- G** FLCMA - Far-end Loss of CRC4 multiframe alignment in TS0.
- I** RAIS - Remote AIS detected in TS0 bit 4.
- L** LMA - Loss of multiframe alignment in CAS TS16.
- M** R16 - RAI received in TS16 bit 6 of frame 0.
- P** PFWOOF - TS0 Pseudo Frame Word Out-Of-Frame
- R** LOS - Loss of Signal type Primary block failure.
- S** SFI - Synchronization failure indication in TS0 bit 5.
- V** A16 - AIS received in CAS TS16
- X** EER - Excessive error rate
- Y** RAI - Remote alarm indication received in TS0 bit 3.
- Z** RPSFI- Remote Power Supply Failure Indicator

For PB and PC type NPCs:

- A** Primary AIS - AIS received in all 32 time slots.
- B** BER - Bit error rate detected in received signal.
- E** RBER - Remote bit error rate detected in TS0 bit 4.
- I** RAIS - Remote AIS detected in TS0 bit 4.
- L** LMA - Loss of multiframe alignment in CAS TS16.
- M** R16 - RAI received in TS16 bit 6 of frame 0.
- R** PBF - Primary block failure caused by LOS or LOF.
- S** SFI - Synchronization failure indication in TS0 bit 5.
- V** A16 - AIS received in CAS TS16
- X** EER - EER - Excessive error rate
- Y** RAI - Remote alarm indication received in TS0 bit 3.
- Z** RPSFI- Remote Power Supply Failure Indicator

**TS0** - Time slot 0

abcdefgh

- Spare bits in TS0

"TS0-abcdefgh" will only appear in the message for NPCs that are provisioned for Transmic 1G.

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

Valid values for a through h are described below:

| <i>Bit value</i> | <i>Explanation</i>                                                |
|------------------|-------------------------------------------------------------------|
| <b>0</b>         | Transmitted bit set to binary "0"                                 |
| <b>1</b>         | Transmitted bit set to binary "1"                                 |
| <b>P</b>         | Pass-through: the received bit will be cross-connected unchanged. |



## **UTL,QRY,APPL,NPC,ALL**

### **RETRIEVE CROSS-CONNECT INFORMATION BETWEEN PLATFORM APPLICATIONS**

#### **Explanation Of Command**

This command retrieves the cross-connect information between platform application cards either for all application cards grown in the frame or for an individual application card.

The output message identifies:

1. The pseudo channel number for an individual connection that is used in the application-to-application cross-connect commands to identify the connection.
2. The NPC number and application assigned channel number for the first (FROM) application that is part of the connection.
3. The NPC number and application assigned channel number for the second (TO) application if available that is part of the connection.
4. The status of the connection, which is either:
  - fully connected, or
  - reserved.

A reserved connection can be identified by the missing channel number for the application that has not yet requested the connection or the application that has already disconnected the connection. A missing channel number is represented by "---".

Pseudo channel numbers are not real channel numbers; instead, they identify table entries in DACS II that contain the pairs of application channels that are cross-connected to each other. Each cross-connection between application card channels has a unique pseudo channel number that identifies it. Cross-connections between application cards are established by using the NPC number of the other application card that the first application card expects to be cross-connected to and the pseudo channel number. A command to each of the two applications referring to the other application in the command is required. DACS II matches the requests from the two applications that have requested to be cross-

connected by matching the pseudo channel numbers in both requests. For further information, see the manual(s) for the application(s) that you are using.

A cross-connection between applications is considered to be in the "reserved" state if at the time of executing this utility

1. only one application has made a request for the connection, or
2. one of the applications has already disconnected, but the other has not.

An actual physical cross-connect is only made when both applications have made matching requests. Also, the physical cross-connection between applications is taken down when the first of the two applications issues a disconnect command.

### **Command**

---

#### **Nonhierarchical**

---

[I.51201]

**UTL:[FRM xy,SEQ ww]:QRY,APPL,{NPC [s]abc|ALL}!**

#### **Hierarchical**

---

[I.51201]

**UTL:[FRM xy,SEQ ww]:QRY,APPL,{NPC uvmp|ALL}!**

## Completion Message

---

### Nonhierarchical

---

[O.51201]

M hh:mm:ss xy,ww n[vv] UTL QRY APPL {NPC [s]abc|ALL} e LN MSG:

PCHAN APPL1 CHAN1 APPL2 CHAN2

ddd [s]abc eee [v]ghi jjj

.

.

ddd [s]abc eee [v]ghi jjj EOM

.

.

M hh:mm:ss xy,ww n[vv] UTL QRY APPL {NPC [s]abc|ALL} e LN MSG:

PCHAN APPL1 CHAN1 APPL2 CHAN2

ddd [s]abc eee [v]ghi jjj

.

.

ddd [s]abc eee [v]ghi jjj

UTL QRY APPL COMPL

### **Hierarchical**

---

[O.51201]

M hh:mm:ss xy,ww n[vv] UTL QRY APPL {NPC uvmnp|ALL} e LN MSG:

| PCHAN | APPL1 | CHAN1 | APPL2 | CHAN2 |
|-------|-------|-------|-------|-------|
| ddd   | uvmnp | eee   | wxkqr | jjj   |

.

.

|     |       |     |       |     |     |
|-----|-------|-----|-------|-----|-----|
| ddd | uvmnp | eee | wxkqr | jjj | EOM |
|-----|-------|-----|-------|-----|-----|

.

.

M hh:mm:ss xy,ww n[vv] UTL QRY APPL {NPC uvmnp|ALL} e LN MSG:

| PCHAN | APPL1 | CHAN1 | APPL2 | CHAN2 |
|-------|-------|-------|-------|-------|
| ddd   | uvmnp | eee   | wxkqr | jjj   |

.

.

|     |       |     |       |     |
|-----|-------|-----|-------|-----|
| ddd | uvmnp | eee | wxkqr | jjj |
|-----|-------|-----|-------|-----|

UTL QRY APPL COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.51201.01]

M hh:mm:ss xy,ww n[vv] UTL QRY APPL {NPC [s]abc|ALL} COND cc DNY

### **Hierarchical**

---

[O.51201.01]

M hh:mm:ss xy,ww n[vv] UTL QRY APPL {NPC uvmnp|ALL} COND cc DNY

### **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**APPL** - This utility refers to application cards

The following are currently available applications:

**Type**    *Application*

**SD111** X.50/X.57 Subrate Application

**SD311** Digital Multipoint Bridge (DMB) Application

**SD411** DDS Subrate and MJU Application

**SDxyz** Any other application created after issuing this manual

**NPC** - This command refers to an NPC of the application type

**[s]abc** - NPC number for the application card (3- or 4-digit),  
which must always be odd.

**uvmnp** - NPC number for the application card (hierarchical), "np" must always be odd.

If the NPC number is coded, then the command will generate output for only those application-to-application cross-connections that connect to that application card.

**ALL** - Output of the entire application-to-application card  
cross-connect table is requested.

**e** - number of lines in message (maximum of 10)

**PCHAN** - Pseudo Channel number column

**ddd** - Pseudo channel number for this connection, range 1-999

**APPL1** - Column for NPC number(s) of first application

**[s]abc** - NPC number of first application (3- or 4-digit)

**uvmnp** - NPC number of first application (hierarchical)

**CHAN1** - Column for channel number(s) assigned by first application

**eee** - Channel number assigned by first application

If the channel number is not present because the first application has already disconnected, then three dashes are shown as channel number.

**APPL2** - Column for NPC number(s) of second application

**[v]ghi** - NPC number of second application (3- or 4-digit)

**wxkqr** - NPC number of second application (hierarchical)

**CHAN2** - Column for channel number(s) assigned by second application

**jjj** - Channel number assigned by second application

If the channel number is not present because the second application has not yet requested the connection or the second application has already disconnected, then three dashes are shown as channel number.

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**02**    Subject entity is not equipped

**6A**    No application NPCs grown in the frame

**6B**    No application-to-application connections present in the frame

**6D**    This application card does not connect to another application card

## **UTL,QRY,BC,NPC,ALL**

### **QUERY BIT-C NPC**

#### **Explanation Of Command**

This message queries the C-bit state and the pattern for all CAS-type channels for a network processing circuit (NPC), a range of NPCs or all NPCs.

#### **Command**

##### **Nonhierarchical**

[I.56351]

UTL:FRM xy,SEQ ww:QRY,BC s,{NPC [s]abc[-[t]def]|ALL}!

##### **Hierarchical**

[I.56351]

UTL:FRM xy,SEQ ww:QRY,BC s,{NPC uvmnp[-wxkqr]|ALL}!

## Completion Message

---

### Nonhierarchical

---

[O.56351]

M hh:mm:ss xy,ww n[vv] UTL QRY BC s [s]abc 001-015 4 LN MSG:  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} \  
EOM

M hh:mm:ss xy,ww n[vv] UTL QRY BC s [s]abc 016-030 4 LN MSG:  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} \  
COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY BC s [t]def 001-015 4 LN MSG:]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} \  
EOM]

[M hh:mm:ss xy,ww n[vv] UTL QRY BC s [t]def 016-030 4 LN MSG:]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} \  
COMPL]

[M hh:mm:ss xy,ww n[vv] UTL QRY BC s [s]abc-[t]def COMPL]



[O.56352]

M hh:mm:ss xy,ww n[vv] UTL QRY BC D n LN MSG:  
abcddd {xxxx|zz} abcddd {xxxx|zz} abcddd {xxxx|zz} \  
abcddd {xxxx|zz} abcddd {xxxx|zz} abcddd {xxxx|zz}

.  
.  
.

abcddd {xxxx|zz} abcddd {xxxx|zz} abcddd {xxxx|zz} \  
abcddd {xxxx|zz} abcddd {xxxx|zz} abcddd {xxxx|zz} \  
EOM

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY BC D n LN MSG:]  
[defddd {xxxx|zz} defddd {xxxx|zz} defddd {xxxx|zz} \  
defddd {xxxx|zz} defddd {xxxx|zz} defddd {xxxx|zz}]

.  
.  
.

[defddd {xxxx|zz} defddd {xxxx|zz} defddd {xxxx|zz} \  
defddd {xxxx|zz} defddd {xxxx|zz} defddd {xxxx|zz} \  
EOM]

[M hh:mm:ss xy,ww n[vv] UTL QRY BC D ALL COMPL]

## Hierarchical

[O.56351]

M hh:mm:ss xy,ww n[vv] UTL QRY BC s uvmnp 001-015 4 LN MSG:  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} \  
EOM

M hh:mm:ss xy,ww n[vv] UTL QRY BC s uvmnp 016-030 4 LN MSG:  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}  
{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} \  
COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY BC s wxkqr 001-015 4 LN MSG:]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}] \  
EOM]

[M hh:mm:ss xy,ww n[vv] UTL QRY BC s wxkqr 016-030 4 LN MSG:]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}]  
[{xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz} {xxxxxx|zz}] \  
COMPL]

[M hh:mm:ss xy,ww n[vv] UTL QRY BC s uvmnp-wxkqr COMPL]

[O.56352]

```
M hh:mm:ss xy,ww n[vv] UTL QRY BC D n LN MSG:
uvmnpddd {xxxx|zz} uvmnpddd {xxxx|zz} uvmnpddd {xxxx|zz} \
uvmnpddd {xxxx|zz} uvmnpddd {xxxx|zz} uvmnpddd {xxxx|zz}
.
.
.
uvmnpddd {xxxx|zz} uvmnpddd {xxxx|zz} uvmnpddd {xxxx|zz} \
uvmnpddd {xxxx|zz} uvmnpddd {xxxx|zz} uvmnpddd {xxxx|zz} EOM
.
.
.

[M hh:mm:ss xy,ww n[vv] UTL QRY BC D n LN MSG:]
[wkqrddd {xxxx|zz} wkqrddd {xxxx|zz} wkqrddd {xxxx|zz} \
wkqrddd {xxxx|zz} wkqrddd {xxxx|zz} wkqrddd {xxxx|zz}]
.
.
.
[wkqrddd {xxxx|zz} wkqrddd {xxxx|zz} wkqrddd {xxxx|zz} \
wkqrddd {xxxx|zz} wkqrddd {xxxx|zz} wkqrddd {xxxx|zz} EOM]

[M hh:mm:ss xy,ww n[vv] UTL QRY BC D ALL COMPL]
```

## Denial Message

---

## Nonhierarchical

---

[O.56351.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY BC s {[t]ghi|ALL} COND cc DNY
```

## Hierarchical

---

[O.56351.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY BC s {edhfg|ALL} COND cc DNY
```

## Autonomous Message

---

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit starting nonhierarchical NPC number

**[t]def** - The 3- or 4-digit ending nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Starting hierarchical NPC number (PDS)

**wxkqr** - Ending hierarchical NPC number (PDS)

**uv,wx** - Unit number

**m,k** - Module number

**np,qr** - NPC number within the module

Valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**BC** - Bit-C

**s** - Direction of c-bit pattern to be queried

*s Explanation*

D to query the c-bit state Received by the CPR pack  
in the condensed format of output message O.56352  
R to query the c-bit state Received by the CPR pack  
T to query the c-bit state Transmitted by the CPR pack

When "BC D" is specified in the input command, then the output message

When "BC-D" is specified in the input command, then the output message  
will provide the c-bit pattern for all NPCs without regard to the Unit  
they reside in.

If "BC D" is specified in the input command then the ALL keyword is  
required;

When "BC R" or "BC T" is specified in the input command,  
then the NPC number(s) are required;

**ALL** - All NPCs

Valid only when s=D

**[t]ghi** - The 3- or 4-digit nonhierarchical NPC number that caused the denial.  
([s]abc ≤ [t]ghi ≤ [t]def)

**edhfg** - Hierarchical NPC number that caused the denial  
(uvmnp ≤ edhfg ≤ wxkqr)

**xxxxxx** - c-bit pattern being transmitted or received in the form:  
X'abcd

**xxxxxx** - c-bit pattern being transmitted or received in the form:

**xxxx** - c-bit pattern being transmitted or received in the form: abcd

Hexadecimal number output for those channels on which the c-bit pattern  
is present.

**zz** - State of c-bit processing for the channel

**zz** *Explanation*

for s = D or R

**ZO** Zero.  
Received c-bit channel is ALL 0 including the framing bits

**NA** Network Alarm.  
Framing pattern can not be established and is not ALL 0.

**UN** Undetermined.  
CPR hardware has not reported an initial c-bit pattern

for s = R or T

**UP** Unprovisioned.  
Not provisioned for Monitoring or Transmit.

**Note:** The UN state can be due to the fact that the CPR has just been provisioned to monitor a c-bit and because the network timer (NT) value can be as high as 4600 milliseconds and the state of that bit has not yet been found.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**15** NPC is unequipped

**0B** Invalid CEPT NPC

**54** Cross-connect to CPR is required

**F1** Parameter only valid with PA, PB, or PC type NPCs

## **UTL,QRY,BC,TO**

### **UTILITY QUERY BIT-C TO**

#### **Explanation Of Command**

This message queries the C-bit state and the pattern for a specified network processing circuit (NPC) and channel.

#### **Command**

##### **Nonhierarchical**

[I.56353]

UTL:FRM xy,SEQ ww:QRY,BC s,TO [s]abcddd!

##### **Hierarchical**

[I.56353]

UTL:FRM xy,SEQ ww:QRY,BC s,TO uvmnpddd!

#### **Completion Message**

##### **Nonhierarchical**

[O.56353]

M hh:mm:ss xy,ww n UTL QRY BC s TO [s]abcddd {X'abcd|Z0|NA|UN|UP} COMPL



### Hierarchical

[O.56353]

M hh:mm:ss xy,ww n UTL QRY BC s TO uvmnpddd {X'abcd|ZO|NA|UN|UP} COMPL

### Denial Message

### Nonhierarchical

[O.56353.01]

M hh:mm:ss xy,ww n UTL QRY BC s [s]abc COND cc DNY

### Hierarchical

[O.56353.01]

M hh:mm:ss xy,ww n UTL QRY BC s uvmnp COND cc DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

**TO** - NPC identifier keyword

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number  
Valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number(PDS)

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module  
Valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - Channel number  
Valid values are listed below:

|         |                             |
|---------|-----------------------------|
| 000-030 | CEPT type NPCs grown as CAS |
| 000-031 | CEPT type NPCs grown as NSA |

**Note:** Channel 000 of a CEPT NPC (TS0) can be connected to another channel 000 of a CEPT NPC (TS0).

Channel 031 of a CAS NPC (TS16) can only be cross-connected to another channel 031 of a CAS NPC (TS16) or one-way cross-connected to another channel. Also these two channels cannot be part of any conference.

**BC** - Bit-C keyword

**s** - Direction of c-bit pattern to be queried  
Valid values are listed below:

| <i>s</i> | <i>Explanation</i>                                                                                  |
|----------|-----------------------------------------------------------------------------------------------------|
| D        | to query the c-bit state Received by the CPR pack in the condensed format of output message O.56352 |
| R        | to query the c-bit state Received by the CPR pack                                                   |
| T        | to query the c-bit state Transmitted by the CPR pack                                                |

When "BC D" is specified in the input command, then the output message

When "BC-D" is specified in the input command, then the output message will provide the c-bit pattern for all NPCs without regard to the Unit they reside in.

If "BC D" is specified in the input command then the ALL keyword is required;

When "BC R" or "BC T" is specified in the input command, then the NPC number(s) are required;

**abcd** - C-bit pattern (Hexadecimal) being transmitted or received by the CPR pack

**zz** - C-bit status

zz Explanation

NA Received pattern is the network alarm.

UN Received pattern is undetermined.

**Note:** The UN state can be due to the fact that the CPR has just been provisioned to monitor a c-bit and because the NT value can be as high as 4600 milli-seconds and the state of that bit has not yet been found.

UP Unprovisioned.

ZO Received pattern is all zeros.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped

**10** Unit is not equipped

**15** NPC is unequipped

**0B** Invalid CEPT NPC

**54** Cross-connect to CPR is required

**F1** Parameter only valid with PA, PB, or PC type NPCs

---

## UTL, QRY, BCAST, ALL

---

### QUERY BROADCAST ALL

#### Explanation Of Command

---

This message requests a source listing for all the FROM terminations that are associated with broadcast connections.

The ABT command may be used to stop the output of this message.

#### Command

---

[I.52101]

UTL : : QRY, BCAST, ALL !

#### Completion Message

---

#### Nonhierarchical

---

[O.52101]

```
M hh:mm:ss xy,ww n[vv] UTL QRY BCAST ALL xx e LN MSG:
[[s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj
[[s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj
[[s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj
[s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY BCAST ALL xx e LN MSG:
[[s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj
[[s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj
[[s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj
[[s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj [s]rstjjj COMPL
```

## Hierarchical

[O.52101]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST ALL xx e LN MSG:  
[uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj]  
[uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj]  
[uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj]  
[uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj]  
uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj {EOM|COMPL}

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST ALL xx e LN MSG:  
[uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj]  
[uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj]  
[uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj]  
[uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj]  
uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj uvmnpjjj COMPL

## Common

If there is no broadcast connection

[O.52101]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST ALL 000 COMPL

## Denial Message

Not applicable.

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**BCAST** - Broadcast

**ALL** - All (NPCs)

**xx** - Number of data fields (terminations) in a segment (01 through 32)

**e** - Number of lines in a message segment (2 through 5)

**[s]rstjjj**

- Nonhierarchical termination number of a broadcast source

The termination number will be output as 0000000 if there is no source information for the termination.

**[s]rst** - The 3- or 4-digit nonhierarchical NPC number belonging to FTU, DS3U or HDS3U

**jjj** - Source channel number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

# **uvmnpjjj**

- Hierarchical NPC number of a broadcast source

The termination number will be output as 0000000 if there is no source information for the termination.

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module  
**jjj** - Source channel number

The allowable values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**jjj** - Source channel number

000-031      CEPT



## **UTL,QRY,BCAST,FROM**

### **UTILITY QUERY BROADCAST**

#### **Explanation Of Command**

This command requests a listing of the tributaries (**TO**) connected to a specified broadcast type source (**FROM**).

The output message header line lists the full tributary, and the data lines list all the tributaries (**TOs**) connected to a broadcast type circuit with the specified source (**FROM**). Other **TOs** will appear in following lines, with sufficient lines to report all of the **TOs** involved, six per line. The last line of the message will be filled with zeros if there are less than eight **TOs** (or a multiple thereof) connected.

You must enter the first channel of the broadcast source for this command.

#### **Command**

##### **Nonhierarchical**

[I.52111]

UTL:FRM xy,SEQ ww:QRY,BCAST,FROM [s]abcddd!

##### **Hierarchical**

[I.52111]

UTL:FRM xy,SEQ ww:QRY,BCAST,FROM uvmnpddd!

## Completion Message

---

### Nonhierarchical

---

[O.52111]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM [s]abcd-dd-eee TO [t]ghijjj xx e LN MSG:  
[[t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu]  
[[t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu]  
[[t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu]  
[t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu [t]rstuuu COMPL

### Hierarchical

---

[O.52111]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM uvmnpddd-eee TO wxkqrjjj xx e LN MSG:  
[edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu]  
[edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu]  
[edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu]  
edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu edhfguuu COMPL

## Denial Message

---

### Nonhierarchical

---

[O.52111.01]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM [s]abcd-dd UEQD DNY

[O.52111.02]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM [s]abcd-dd NOBBL DNY

[O.52111.03]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM [s]abcd-dd RT ffff MD g[g] [t]aaa COND cc DNY

[O.52111.04]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM [s]abcd-dd COND cc DNY

## Hierarchical

[O.52111.01]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM uvmnpddd UEQD DNY

[O.52111.02]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM uvmnpddd NOBBL DNY

[O.52111.03]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM uvmnpddd RT ffff MD g[g] \wxjaa COND cc DNY

[O.52111.04]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM uvmnpddd COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

[s]abcd

- Nonhierarchical FROM termination number

[s]abc - The 3- or 4-digit nonhierarchical FROM NPC number belonging to FTU (FT type), DS3U (DT type) or HDS3U (HT type)

ddd - Channel number denoting the first channel of a channel range specification

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>             |                  |                  |                  |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FROM termination number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The allowable values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |
| 000-031      | CEPT       |              |

If a data line contains fewer tributaries than data fields the data fields without corresponding tributary information will be filled with zeros.

**[t]ghijjj**

- Nonhierarchical termination number

**[t]ghi** - The 3- or 4-digit nonhierarchical NPC number of the full tributary with the same valid values as [s]abc.

**jjj** - Channel number of the full tributary with the same valid values as ddd.

**[t]rstuuu**

- Nonhierarchical termination number

**[t]rst** - The 3- or 4-digit nonhierarchical NPC number of additional tributaries with the same valid values as [s]abc.

**uuu** - Channel number of additional tributaries with the same valid values as ddd.

**wxkqr** - Hierarchical TO termination number with the same valid values as uvmnp.

**edhfg** - Hierarchical TO termination number with the same valid values as uvmnp

**eee** - Channel number denoting the last channel of a range specification with the same valid values as ddd.

**xx** - Number of data fields in the current message segment (01 through 32)

**e** - Number of lines in the message (2 through 5)

**UEQD** - Unequipped

**NOBBL** - No backbone leg

The requested printout of all the tributaries connected to the DACS II broadcast source abcdde was denied because the source NPC was not a backbone leg.

**RT** - Remote terminal  
**ffff** - Bank identification number (0000 through 9999)  
**COND** - Condition  
**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b>                                                      |
|-----------|-------------------------------------------------------------------------|
| <b>62</b> | <b>Invalid channel number</b>                                           |
| <b>7F</b> | <b>NPC is not added</b>                                                 |
| <b>F7</b> | <b>Corresponding NPC for<br/>virtual channel is not<br/>provisioned</b> |
| <b>70</b> | <b>NPC invalid type</b>                                                 |

## **UTL,QRY,BCAST,FROM**

### **UTILITY QUERY BROADCAST FROM**

#### **Explanation Of Command**

This message requests a listing of the tributary network processing circuits that is associated with a non-channelized digital signal broadcast connection.

#### **Command**

##### **Nonhierarchical**

[I.52121]

UTL:FRM xy,SEQ ww:QRY,BCAST,FROM [s]abc!

##### **Hierarchical**

[I.52121]

UTL:FRM xy,SEQ ww:QRY,BCAST,FROM uvmnp!

#### **Completion Message**

##### **Nonhierarchical**

[O.52121]

```
M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM [s]abc \
TO [t]ghi xxx e LN MSG:
[t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst
[t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst
[t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst
[t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst EOM

.
.
.
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM [s]abc \
TO [t]ghi xxx e LN MSG:
[t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst
[t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst
[t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst
[t]rst [t]rst [t]rst [t]rst [t]rst [t]rst [t]rst COMPL
```

OR

```
M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM [s]abc 000 COMPL
```

## Hierarchical

[O.52121]

```
M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM uvmnp \
TO ghijk xxx e LN MSG:
wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr
wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr
wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr
wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr EOM

.
.
.
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM uvmnp \
TO ghijk xxx e LN MSG:
wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr
wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr
wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr
wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr wxkqr COMPL
```

OR

```
M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM uvmnp 000 COMPL
```



## Denial Message

### Nonhierarchical

[O.52121.01]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM [s]abc COND cc DNY

### Hierarchical

[O.52121.01]

M hh:mm:ss xy,ww n[vv] UTL QRY BCAST FROM uvmnp COND cc DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

**BCAST** - Broadcast

**FROM** - From

Source network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical non-channelized source (FROM) NPC Number, whose tributaries will be listed

**[t]ghi** - The 3- or 4-digit full tributary (TO) NPC number

**[t]rst** - The 3- or 4-digit tributary (TO) NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical number of source (FROM) NPC  
**ghijk** - Hierarchical number of full tributary (TO) NPC  
**wxkqr** - Hierarchical number of tributary (TO) NPC

**uv, gh, wx**

- Unit number

**m, i, k**

- Module number

**np, jk, qr**

- NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**T0** - To

Tributary

**e** - Number of lines in each message segment (2 through 5)

**xxx** - Number of tributary NPCs in the broadcast connection

**cc** - Hexadecimal condition code

**cc Explanation**

**15 NPC is unequipped**

**AD No BBL leg**

**B4 NPC is channelized type**

## **UTL, QRY, CMAP**

### **QUERY PARTIAL CROSS-CONNECT MAP**

#### **Explanation Of Command**

This command requests a printout of the DACS II cross-connect map for a single network processing circuit (NPC) or a range of NPCs in a facility terminating unit (FTU, IFTU, IFTU2), or digital signal processing unit (DSPU).

If a range of NPCs is specified in this command, DACS II will output the cross-connect maps for only those NPCs that are equipped and have at least one cross-connected channel.

The execution of the command and the generation of the output are aborted by entering ABT.

If the NPCs are unmapped, the TO NPC number is omitted.

For 64 kbit/s test access, the FROM and TO terminations under test by the corresponding active testport channels will be displayed rather than far-end mapped terminations.

For non-channelized digital signal test access, the FROM and TO NPCs of the circuit under test are listed, and if only one NPC is actually under test, it is listed first.

**Note:** No range is allowed for virtual NPCs.

This command will also generate cross-connect maps for application cards that have the type SDxyz (where xyz is a set of hexadecimal numbers that define a particular application). Even though the actual channel numbers of application cards are assigned by the application and not by the user, actual channel numbers are given by this command to ensure consistency.

If an SDxyz application is provisioned in a North American module of an FTU, IFTU, or IFTU2, the number of channels available to the application is 48. If an SDxyz application is provisioned in an international module of an FTU, IFTU, or IFTU2, the number of channels available to the application is 64. The output of this command reflects this difference. Please note that individual modules in an FTU, IFTU, or IFTU2 may be provisioned as international modules, even though the other three modules are provisioned as North American modules.

For application-to-application type cross-connects the user should issue command UTL::QRY,APPL (I.51201) to generate the correlation between pseudo channels that the user refers to in commands and the actual channels assigned by the application.

## **Command**

---

### **Nonhierarchical**

---

[I.52011]

**UTL:[FRM xy,SEQ ww]:QRY,CMAP [s]abc[-[t]def]!**

### **Hierarchical**

---

[I.52011]

**UTL:[FRM xy,SEQ ww]:QRY,CMAP uvmnp[-wxkqr]!**

## Completion Message

### Nonhierarchical

**Note:** The following two message segments will be output for each PA, PB, and PC NPC.

[O.52011]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]abc mnxyz 000-015[{NPCTP|NPCTG|ROLL}] \
5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]abc mnxyz 016-031[{NPCTP|NPCTG|ROLL}] \
5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr {EOM|COMPL}
```

**Note:** The following message segment will be output for each Clear-E1 NPC.

[O.52011]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]jkl mnxyz[{FAD <tmode>|ROLL}] \
[t][v]ghi[r][[v]ghi] {EOM|COMPL}
```

**Note:** The following four message segments will be output for each SDxyz-type NPC in an international module:

[O.52012]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]abc SDxyz 001-016 5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]abc SDxyz 017-032 5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]abc SDxyz 033-048 5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]abc SDxyz 049-064 5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr {EOM|COMPL}
```

**Note:** The following two message segments will be output for each MB NPC.

[O.52013]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]mbn MB100 001-064 DPLX 5 LN MSG:
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]mbn MB100 065-085 DPLX 3 LN MSG:
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll {EOM|COMPL}
```

**Note:** The following four message segments will be output for each CB NPC.

[O.52016]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]cbn CB10z 000-031 DPLX 5 LN MSG:
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]cbn CB10z 032-063 DPLX 5 LN MSG:
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]cbn CB10z 064-095 DPLX 5 LN MSG:
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]cbn CB10z 096-127 DPLX 5 LN MSG:
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq {EOM|COMPL}
```

**Note:** The following message segment will be output as many times as needed for each VI NPC.

[O.52014]

```
M hh:mm ss xy,ww n[vv] UTL QRY CMAP [s]vnp VI100 xx e LN MSG:
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn {EOM|COMPL}
```

**Note:** For the case when multiple NPCs are queried, the following completion message segment will be output after all other NPC segments have been output.

[O.52011]

```
M hh:mm ss xy,ww n[vv] UTL QRY CMAP COMPL
```

## Hierarchical

**Note:** The following two message segments will be output for each PA, PB, and PC NPC.

[O.52011]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP uvmnp mnxyz 000-015[{NPCTP|NPCTG|ROLL}] \
5 LN MSG:
tghikljrr tghikljrr tghikljrr tghikljrr
tghikljrr tghikljrr tghikljrr tghikljrr
tghikljrr tghikljrr tghikljrr tghikljrr
tghikljrr tghikljrr tghikljrr tghikljrr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP uvmnp mnxyz 016-031[{NPCTP|NPCTG|ROLL}] \
5 LN MSG:
tghikljrr tghikljrr tghikljrr tghikljrr
tghikljrr tghikljrr tghikljrr tghikljrr
tghikljrr tghikljrr tghikljrr tghikljrr
tghikljrr tghikljrr tghikljrr tghikljrr {EOM|COMPL}
```

**Note:** The following message segment will be output for each Clear-E1 NPC.

[O.52011]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP edhfg mnxyz[{FAD <tmode>|ROLL}] \
[t]ghikl[r][ghikl] {EOM|COMPL}
```



**Note:** The following four message segments will be output for each SDxyz-type NPC in an international module:

[O.52012]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP uvmnp SDxyz 001-016 5 LN MSG:
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP uvmnp SDxyz 017-032 5 LN MSG:
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP uvmnp SDxyz 033-048 5 LN MSG:
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP uvmnp SDxyz 049-064 5 LN MSG:
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr {EOM|COMPL}
```

**Note:** The following two message segments will be output for each MB NPC.

[O.52013]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP mbnop MB100 001-064 DPLX 5 LN MSG:
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll EOM

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP mbnop MB100 065-085 DPLX 3 LN MSG:
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll {EOM|COMPL}
```

**Note:** The following four message segments will be output for each CB NPC.

[O.52016]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP cbnpq CB10z 000-031 DPLX 5 LN MSG:
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP cbnpq CB10z 032-063 DPLX 5 LN MSG:
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP cbnpq CB10z 064-095 DPLX 5 LN MSG:
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP cbnpq CB10z 096-127 DPLX 5 LN MSG:
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx {EOM|COMPL}
```

**Note:** The following message segment will be output as many times as needed for each VI NPC.

[O.52014]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP vnprs VI100 xx e LN MSG:
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn {EOM|COMPL}
```

**Note:** For the case when multiple NPCs are queried, the following completion message segment will be output after all other NPC segments have been output.

[O.52011]

```
M hh:mm:ss xy,ww n[vv] UTL QRY CMAP COMPL
```

---

## Denial Message

---

### Nonhierarchical

---

[O.52011.01]

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [w]mno UEQD DNY

[O.52011.02]

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP [s]abc[-[t]def] COND cc DNY

### Hierarchical

---

[O.52011.01]

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP edmno UEQD DNY

[O.52011.02]

M hh:mm:ss xy,ww n[vv] UTL QRY CMAP uvmnp[-wxkqr] COND cc DNY

---

## Autonomous Message

---

Not applicable.

---

## Explanation Of Parameters

---

**CMAP** - Cross-connect map

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, the first number of a range

**[t]def** - The 3- or 4-digit nonhierarchical NPC number, the last number of a range

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |
| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |
| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |



| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Hierarchical NPC number, the first number of a range  
**wxkqr** - Hierarchical NPC number, the last number of a range

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

| Unit      | Module   | NPC                                   |
|-----------|----------|---------------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**[s]jkl** - Nonhierarchical non-channelized NPC number in range [s]abc-[s]def

**edhfg** - Hierarchical non-channelized NPC number in range uvmnp-wkxqr

**mnxyz** - NPC-type identifier  
*mnxyz Explanation*

|    |                                                    |
|----|----------------------------------------------------|
| SD | Digital Signal Processing Application Circuit Pack |
| PA | CEPT NPC (75- or 120-ohm)                          |
| PB | CEPT NPC (120-ohm twisted pair)                    |
| PC | CEPT NPC (75-ohm coaxial)                          |
| CB | C-bit processor (CPR) NPC                          |
| VI | Virtual NPC                                        |

**PB- and PC-type xyz fields**

**Table 19-1. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                               |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                                 |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                         |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                          |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA,<br>NFW bit 4=RBER, RAI set in < 2 ms, for c=1<br>(SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                      |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA,<br>NFW bit 4=disabled, RAI set in < 2 ms, for c=1<br>(SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8, in time 144ms (TRANSMIC 1G)                                                                                                    |
|              |            | 111          | Unassigned                                                                                                                                   |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                                |
|              |            | 1            |                                                                                                                                              |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496 ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway cross-connection* the insertion word always defaults to AIS.

mnxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option  $c=0$  is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the **jkl** options. Also see note [jkl].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0     **Both** remote and local alarms are declared and cleared in 144 ms.

c=1     Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when** *jkl=011* or *jkl=101*. **For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option *g* has meaning only if the NPC is provisioned for CAS; that is, option *d=1*, otherwise it is ignored. If option *g=0* is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option *g=1* is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and *h=1*, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option *h* was selected as either 0 or 1, unless it is later set to 0 by setting parameter *e=0* in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of *xyz* the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option *h=1*.

If both *b=1* and *h=1* and the NPC (used as synchronization source) receives NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure**. If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

**[jkl'] minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

c=0 hardware timing

c=1 firmware timing (SFDT=2496 ms,  
CACT=624 ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

- [vii] RBER unalarmed
- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

- NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.
- [m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

#### **PA-Type xyz fields**

The provisioning values of x, y, and z for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (x, y or z) provisioning value):

**Table 19-2. Provisioning values for  $x$** 

| $x$<br>value | CRC-4<br>Mode | Automatic<br>CRC-4 | Far-End<br>PM | NPC used as<br>Sync Source | TS0 Bit 5<br>used for SFI |
|--------------|---------------|--------------------|---------------|----------------------------|---------------------------|
| 0            | Y             |                    |               |                            |                           |
| 1            | Y             |                    | Y             |                            | Y                         |
| 2            | Y             |                    |               |                            | Y                         |
| 3            | Y             |                    | Y             |                            |                           |
| 4            | Y             |                    |               | Y                          |                           |
| 5            | Y             |                    | Y             | Y                          | Y                         |
| 6            | Y             |                    |               | Y                          | Y                         |
| 7            | Y             |                    | Y             | Y                          |                           |
| 8            |               | Y                  | Y             |                            |                           |
| 9            |               | Y                  | Y             |                            | Y                         |
| A            |               |                    |               |                            | Y                         |
| B            |               |                    |               |                            |                           |
| C            |               | Y                  | Y             | Y                          |                           |
| D            |               | Y                  | Y             | Y                          | Y                         |
| E            |               |                    |               | Y                          | Y                         |
| F            |               |                    |               | Y                          |                           |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.

---

\* Automatic CRC-4 is also known as CRC-4 Interworking.



4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 19-3. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the  $abcd$  bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the  $abcd$  bits will be transmitted transparently.

If the "AIS in TS16" option is selected (y value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (y values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For y values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (y=8) or Timeslot Channel Numbering (y=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (y=C) or as an unframed clear 2Mbit/s interface (y=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 19-4. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )

3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
- HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
- FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B.**
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B.** **However,** for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for  $z = 4$  and 8) or 480 ms (for  $z = 5$  and 9) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.
8.  $z$  values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options ( $z = 6-7$  or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms
- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:
 

|                              |                                                |
|------------------------------|------------------------------------------------|
| <b><math>z=6</math> or A</b> | hardware timing                                |
| <b><math>z=7</math> or B</b> | firmware timing (SFDT=2496 ms,<br>CACT=624 ms) |

- [iv] BER alarm level = DMA

**Specific Options for  $z=6$  or 7**

- [v] RBER alarm level = MI
- [vi] NFW bit 4=RBER:
  - DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.  
  
DACS II sets the RBER bit to its idle state, on clearing of the BER condition.
  - DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

[ix] To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of *xyz* for the PA type NPC.

**Table 19-5. Combinations of *x* and *y* Values**

| Invalid<br><i>xyz</i><br>Combinations | Explanation                                                                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                                   | Framed clear 2Mbit/s ( <i>y</i> value C) is valid for all <i>x</i> options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                                   |                                                                                                                                                                                                                                              |
| CCz                                   |                                                                                                                                                                                                                                              |
| DCz                                   |                                                                                                                                                                                                                                              |
| 0Dz                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) is only valid for <i>x</i> values B and F. These are the only <i>x</i> options which do not require decoding of TS0 content.                                                                      |
| 1Dz                                   |                                                                                                                                                                                                                                              |
| 2Dz                                   |                                                                                                                                                                                                                                              |
| 3Dz                                   |                                                                                                                                                                                                                                              |
| 4Dz                                   |                                                                                                                                                                                                                                              |
| 5Dz                                   |                                                                                                                                                                                                                                              |
| 6Dz                                   |                                                                                                                                                                                                                                              |
| 7Dz                                   |                                                                                                                                                                                                                                              |
| 8Dz                                   |                                                                                                                                                                                                                                              |
| 9Dz                                   |                                                                                                                                                                                                                                              |
| ADz                                   |                                                                                                                                                                                                                                              |
| CDz                                   |                                                                                                                                                                                                                                              |
| DDz                                   |                                                                                                                                                                                                                                              |
| EDz                                   |                                                                                                                                                                                                                                              |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 19-6. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z*= value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 19-7. Combinations of  $x$  and  $z$  Values**

| Invalid<br>xyz<br>Combinations | Explanation                                                                                                                                                                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC                            | Use of NPC as Sync Source ( $x$ 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( $z$ value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |
| 5yC                            |                                                                                                                                                                                                                                                         |
| 6yC                            |                                                                                                                                                                                                                                                         |
| 7yC                            |                                                                                                                                                                                                                                                         |
| CyC                            |                                                                                                                                                                                                                                                         |
| DyC                            |                                                                                                                                                                                                                                                         |
| EyC                            |                                                                                                                                                                                                                                                         |
| FyC                            |                                                                                                                                                                                                                                                         |

**SD-type xyz fields (Digital Signal Processing Platform (DSPP) Applications)**

**SD111** X.50/X.57 International subrate application

**SD311** Digital Multipoint Bridge application

**SD411** North American DDS Subrate and MJU application

**SDxyz** Possible future applications with specific values for xyz

**CB-type xyz fields**

**x** - Fixed at 1

**y** - Fixed at 0

**z** - Network timer value

**z** *Value in milliseconds*

**0** 600 to 750

**1** 1500 to 1650

**2** 2400 to 2550

**3** 4650 to 4800



**VI-type xyz fields**

**x** - Fixed at 1

**y** - Fixed at 0

**z** - Fixed at 0

**DPLX** - Duplex  
Duplex equipped

**ccc-ddd**

- Channel number range

The channel number range varies with the NPC type. It is not printed for non-channelized NPCs

Conference numbers  
001-085 (MB NPC)

**[u]lmn** - The 3- or 4-digit nonhierarchical NPC number  
(with the same valid values as [s]abc)

**t** - type of connection

**t** *Type of connection*

**\*** One-way

**" "** Two-way (a blank)

**B** Broadcast (BCON)

**R** Roll

**T** Test Access\*

**P** DSP Platform Application connection, two-way

**Q** DSP Platform Application connection, one-way

\* T will not be displayed for mapped terminations.

**NPCTP** - Network processing circuit for test port  
PBxyz or PCxyz type NPC for DS0 Test Ports

**ROLL** - Roll  
Bridged facility in Roll procedure

**[v]ghi**jjj

- Nonhierarchical number of NPC and channel or conference port number/circuit ID. For a non-channelized cross-connect, the channel number jjj will not be shown.

**[v]ghi**

- Nonhierarchical NPC with the same valid values as [s]abc.

For an FAD, the tested NPC is listed first if only one of the two mapped NPCs is under test.

Some examples of [v]ghijjj are listed below:

[v]ghijjj Explanation

[0]000000 Unmapped channel

[v]ghi000 Mapped channel connected to an FDL of NPC [v]ghi

**r**

- Termination status

*r* Termination status

**T** Terminated

**blank** Not Terminated

**ghikl**jjj

- Hierarchical number of NPC and channel or conference port number/circuit ID. For a non-channelized cross-connection, the channel number jjj will not be shown.

**00000000**

- Unmapped channel

**[s]cbn**

- The 3- or 4-digit nonhierarchical CB type NPC number.

**cbnpq** - Hierarchical CB type NPC number.

**cb**

- Unit number

**n**

- Module number

**pq**

- NPC number

**[v]opq**

- The 3- or 4-digit nonhierarchical PA or PB or PC or ^ITH type NPC number

**opqrx** - Hierarchical PA or PB or PC or TH type NPC number

**op**

- Unit number

**q**

- Module number

**rx**

- NPC number

**[s]mbn**

- The 3- or 4-digit nonhierarchical MB type NPC number

**mbnop** - Hierarchical MB type NPC number

**mb** - Unit number  
**n** - Module number  
**op** - NPC number

**lll** - Number of legs for the multipoint termination (003 through 256)

**[s]vnp** - The 3- or 4-digit nonhierarchical virtual NPC number

**vnprs** - Hierarchical virtual NPC number

**vn** - Unit number  
**p** - Module number  
**rs** - NPC number

**xx** - Number of conferences reported in the segment (01 through 48)

**e** - Number of lines in the segment

**tnnn** - Virtual conference type and number

**t** - *Virtual conference type*

**t** Explanation

**\*** One-way

**" "** Two-way (a blank)

**nnn** - Virtual conference number (001 through 500)

**[w]mno** - The 3- or 4-digit nonhierarchical NPC number that  
that cause the denial ([s]abc through [t]def)

**edmno** - Hierarchical NPC number that caused the denial  
(uvmnp through wxkqr)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**91** SR NPC was specified - not allowed

## **UTL, QRY, CNFGR**

---

### **UTILITY QUERY CONFIGURE**

#### **Explanation Of Command**

---

This command requests information about the configuration of a DACS II frame.

#### **Command**

---

[I.51091]

UTL:FRM xy,SEQ ww:QRY,CNFGR!

#### **Completion Message**

---

[O.51091]

M hh:mm:ss xy,ww n[vv] UTL QRY CNFGR 4 LN MSG:  
ID xy UID <uid> SS <ssn>  
BAY aa TYPE fff-fff UNITS bb CCN c HG d  
UNIT a a a a a a a a a a a a a a \  
NPCAD[ E][ X] H COMPL

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**ID** - Identifier (frame)

**xy** - Frame identifier (00 through ZZ)

**UID** - Unique identifier

**uid** - Unique (frame) identifier (1 to 20 alphanumeric characters)

**SS** - Software serial number

**ssn** - Software serial number value (1 to 10 alphanumeric characters)

The software serial number may be assigned by the user to identify a particular software package. This would eliminate problems in an office where the user has multiple frames and more than one software package is in use.

**BAY** - Bay

**aa** - Total number of bays, in decimal (01 through 07)

**TYPE** - Type

**fff-fff**

- Bay types (-, 1, or 2)

Variable fff-fff gives the bay type assigned to each bay in the frame. Bays are numbered from 1 through 7. When viewed from the front of the frame the bays are positioned in the frame in the same order as the bay numbers shown below. Consult this table to determine the bay associated with the position of a given f.

|             |               |
|-------------|---------------|
| Bay numbers | 6 4 1 2 3 5 7 |
| Assignment  | f f f - f f f |

| <i>f</i> | <i>Explanation</i> |
|----------|--------------------|
|----------|--------------------|

|   |                                          |
|---|------------------------------------------|
| - | Not configured or the Switch Bay (Bay 2) |
|---|------------------------------------------|

|   |                        |
|---|------------------------|
| 1 | Original Interface Bay |
|---|------------------------|

|   |                        |
|---|------------------------|
| 2 | Flexible Interface Bay |
|---|------------------------|

**UNITS** - Units

**bb** - Number of equipped units, in decimal (01 through 16)

**CCN** - Cross-connect network

**c** - Cross-connect network type

*c*      *Explanation*

1      Multibay CCN  
2      Single-bay CCN  
E      ECCN

**HG** - Height

**d** - Height of bay

*d*      *Explanation*

0      7'0" (2133mm)  
1      11'6" (3505mm)  
2      7'2.6" (2200mm)

**UNIT** - Unit

**a** - Unit type

*a*      *Explanation*

-      Not configured  
1      FTU  
2      DSPU  
3      DS3U(or HDS3U)  
4      IFTU  
5      IFTU2  
6      HDS3U

NOTE: The Unit type of 3 indicates DS3U or HDS3U because if the Unit is configured but not grown it can be either. If it is grown as a DS3U, the unit type will be 3. If it is grown as an HDS3U, the unit type will be 6.

**NPCAD** - Network processing circuit addressing

**E** - The 3-digit nonhierarchical (Extended) addressing scheme

**X** - The 4-digit nonhierarchical (Extended) addressing scheme

**H** - Hierarchical addressing scheme

## **UTL, QRY, DATE**

### **QUERY DATE**

#### **Explanation Of Command**

This message requests a printout of the current date (month, day, year) and the time interval at which DACS II prints the date.

#### **Command**

[I.51031]

UTL:FRM xy,SEQ ww:QRY,DATE!

#### **Completion Message**

[O.51031]

M hh:mm:ss xy,ww n[vv] UTL QRY DATE aa/bb/cc FORMAT ggg INT ii \  
COMPL

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.51031]

I hh:mm:ss xy,ww UTL QRY DATE aa/bb/cc FORMAT ggg INT ii COMPL

## Explanation Of Parameters

---

**INT** - Interval

**ii** - Interval at which DACS II will print the date.

ii      Meaning

01      Every hour on the hour.

02      Every even hour on the hour.

04      Every fourth hour on the hour: 04, 08, 12, 16, 20, 24

06      Every sixth hour on the hour: 06, 12, 18, 24

08      Every eighth hour on the hour: 08, 16, 24

12      Twice daily on the hour: 12, 24

24      Once daily at midnight (default).

**DATE** - Date

**aa** - Month or day

**bb** - Day or Month

**cc** - Year (2 or 4 digits)

The DATE will be displayed in the International format

**FORMAT** - Format

**ggg** - Date format

*ggg      Date format*

MDY      Month/Day/Year (USA format)

DMY      Day/Month/Year (International format)



---

## UTL,QRY,DD

---

### UTILITY QUERY DIRECTOR DACS II

#### Explanation Of Command

---

This message queries all the C-bits that are provisioned for the Director DACS on the addressed network processing circuit.

#### Command

---

##### Nonhierarchical

---

[I.56341]

UTL:FRM xy,SEQ ww:QRY,DD [s]abcddd[-fff]!

##### Hierarchical

---

[I.56341]

UTL:FRM xy,SEQ ww:QRY,DD uvmnpddd[-fff]!

#### Completion Message

---

##### Nonhierarchical

---

[O.56341]

M hh:mm:ss xy,ww n[vv] UTL QRY DD [s]abcddd[-fff] 3 LN MSG:  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw COMPL

### **Hierarchical**

---

[O.56341]

M hh:mm:ss xy,ww n[vv] UTL QRY DD uvmnpddd[-fff] 3 LN MSG:  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.56341.01]

M hh:mm:ss xy,ww n[vv] UTL QRY DD [s]abcddd[-fff] COND cc DNY

### **Hierarchical**

---

[O.56341.01]

M hh:mm:ss xy,ww n[vv] UTL QRY DD uvmnpddd[-fff] COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**DD** - Director DACS

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ddd** - Channel number for beginning of channel range

**fff** - Channel number for end of channel range

001-030 (CEPT type NPCs grown as CAS)

**m** - Monitor

**w** - Write

*m Explanation*

0 c-bit not provisioned as a DD for Monitor (default)  
1 c-bit provisioned as a DD for Monitor  
- Channel was not specified

*w Explanation*

0 c-bit not provisioned as a DD for Write (default)  
1 c-bit provisioned as a DD for Write  
- Channel was not specified

The output completion message shows provisioning for 15 channels per line, numbered 1 through 15 on the second line and 16 through 30 on the third line. For those channels which have not been encompassed in the range ddd through fff the "-" (dash) will be output.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

**15** NPC is unequipped

**0B** Invalid CEPT NPC

**54** Cross-connect to CPR is required

**F1** Parameter only valid with PA, PB, or PC type NPCs

## **UTL, QRY, DD, NPC, DDCT, ALL**

### **UTILITY QUERY DIRECTOR DACS NPC**

#### **Explanation Of Command**

This message queries a network processing circuit (NPC) or a range of circuits which are provisioned as the Director of DACS.

The output completion message shows the provisioning for 15 channels on the second line and channels 16 through 30 on the third line.

#### **Command**

##### **Nonhierarchical**

[I.56343]

UTL:FRM xy,SEQ ww:QRY,{DD,NPC [s]abc[-[t]def]|DDCT,ALL}!

##### **Hierarchical**

[I.56343]

UTL:FRM xy,SEQ ww:QRY,{DD,NPC uvmnp[-wxkqr]|DDCT,ALL}!

## Completion Message

### Nonhierarchical

[O.56343]

M hh:mm:ss xy,ww n[vv] UTL QRY DD NPC [s]abc 3 LN MSG:  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY DD NPC [t]def 3 LN MSG:]  
[mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw]  
[mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw COMPL]

M hh:mm:ss xy,ww n[vv] UTL QRY DD NPC [s]abc[-[t]def] COMPL

[O.56344]

M hh:mm:ss xy,ww n[vv] UTL QRY DDCT NPC [s]abc 5 LN MSG:  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx \  
xxxx xxxx xxxx  
xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx \  
xxxx xxxx xxxx EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY DDCT NPC [t]def 5 LN MSG:  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx \  
xxxx xxxx xxxx  
xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx \  
xxxx xxxx xxxx COMPL

M hh:mm:ss xy,ww n[vv] UTL QRY DDCT ALL COMPL

## Hierarchical

[O.56343]

M hh:mm:ss xy,ww n[vv] UTL QRY DD NPC uvmnp 3 LN MSG:  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY DD NPC wxkqr 3 LN MSG:]  
[mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw]  
[mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw COMPL]

M hh:mm:ss xy,ww n[vv] UTL QRY DD NPC uvmnp[-wxkqr] COMPL

[O.56344]

M hh:mm:ss xy,ww n[vv] UTL QRY DDCT NPC uvmnp 5 LN MSG:  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx \\  
xxxx xxxx xxxx  
xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx \\  
xxxx xxxx xxxx EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY DDCT NPC wxkqr 5 LN MSG:  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw mw  
xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx \\  
xxxx xxxx xxxx  
xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx \\  
xxxx xxxx xxxx COMPL

M hh:mm:ss xy,ww n[vv] UTL QRY DDCT ALL COMPL



## Denial Message

### Nonhierarchical

[O.56343.01]

M hh:mm:ss xy,ww n[vv] UTL QRY DD [t]ghi COND cc DNY

### Hierarchical

[O.56343.01]

M hh:mm:ss xy,ww n[vv] UTL QRY DD edhfg COND cc DNY

### Autonomous Message

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit starting nonhierarchical NPC number

**[t]def** - The 3- or 4-digit ending nonhierarchical NPC number

Values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Starting hierarchical NPC number  
**wxkqr** - Ending hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**DD** - Director DACS

**DDCT** - Director DACS with data base coherence feature.

**[t]ghi** - The 3- or 4-digit nonhierarchical NPC number that caused the denial.  
([s]abc ≤ [t]ghi ≤ [t]def)

**edhfg** - Hierarchical NPC number that caused the denial (PDS).  
(uvmnp ≤ edhfg ≤ wxkqr)

**ALL** - Query All NPCs

**mw** - Status of Director DACS setting for a given channel

*m Explanation*

|   |                             |
|---|-----------------------------|
| 0 | Not provisioned for monitor |
| 1 | Provisioned for Monitor     |
| - | Channel was not specified   |

*w Explanation*

|   |                           |
|---|---------------------------|
| 0 | Not provisioned for write |
| 1 | Provisioned for write     |
| - | Channel was not specified |

**xxxx** - Bit pattern sent on a c-bit.

"xxxx" is a the hexadecimal representation of the 14 bit pattern sent on a c-bit (abcd efgh ijkl mnop). Bits "a" and b" are always 0. Bits cdefghijklmnop are sent on a c-bit. For those channels in which no bit pattern is transmitted, the xxxx field contains "----".

**cc** - Hexadecimal condition code

*cc Explanation*

|           |                                                   |
|-----------|---------------------------------------------------|
| <b>10</b> | Unit is not equipped                              |
| <b>15</b> | NPC is unequipped                                 |
| <b>0B</b> | Invalid CEPT NPC                                  |
| <b>54</b> | Cross-connect to CPR is required                  |
| <b>F1</b> | Parameter only valid with PA, PB, or PC type NPCs |

## **UTL,QRY,DMAP**

### **QUERY FULL CROSS-CONNECT MAP**

#### **Explanation Of Command**

This command requests a printout of the DACS II map on ALL cross-connected channels.

The output lists all FROM and TO side identifiers for all equipped network processing circuits (NPCs). Unequipped and fully unassigned Network Processing Circuits will not be listed. The outputs are similar to the **UTL : :QRY, CMAP** output. This command may produce a large volume of output. To terminate the output enter the **ABT** command.

#### **Command**

[I.52031]

**UTL : [FRM xy, SEQ ww] : QRY, DMAP !**

## Completion Message

### Nonhierarchical

**Note:** The following two message segments will be output for each PA, PB, and PC NPC.

[O.52031]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]abc mnxyz 000-015[{NPCTP|NPCTG|ROLL}] \
5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]abc mnxyz 016-031[{NPCTP|NPCTG|ROLL}] \
5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM
```

**Note:** The following message segment will be output for each Clear-E1 NPC.

[O.52031]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]jkl mnxyz[{FAD <tmode>|ROLL}] \
[t][v]ghi[r][[v]ghi] EOM
```

**Note:** The following four message segments will be output for each SDxyz-type NPC in an international module:

[O.52032]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]abc SDxyz 001-016 5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]abc SDxyz 017-032 5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]abc SDxyz 033-048 5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]abc SDxyz 049-064 5 LN MSG:
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr
t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr t[v]ghijjrr EOM
```

**Note:** The following two message segments will be output for each MB NPC.

[O.52033]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]mbn MB100 001-064 DPLX 5 LN MSG:
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]mbn MB100 065-085 DPLX 3 LN MSG:
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll EOM
```

**Note:** The following four message segments will be output for each CB NPC.

[O.52036]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]cbn CB10z 000-031 DPLX 5 LN MSG:
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]cbn CB10z 032-063 DPLX 5 LN MSG:
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]cbn CB10z 064-095 DPLX 5 LN MSG:
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP [s]cbn CB10z 096-127 DPLX 5 LN MSG:
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq
[v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq [v]opq EOM
```

**Note:** The following message segment will be output as many times as needed for each VI NPC.

[O.52034]

```
M hh:mm ss xy,ww n[vv] UTL QRY DMAP [s]vnp TYPE VI100 xx e LN MSG:
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn EOM
```

**Note:** The following completion message segment will be output after all other NPC segments have been output.

[O.52031]

```
M hh:mm ss xy,ww n[vv] UTL QRY DMAP COMPL
```

### **Hierarchical**

**Note:** The following two message segments will be output for each PA, PB, and PC NPC.

[O.52031]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP uvmnp mnxyz 000-015[{NPCTP|NPCTG|ROLL}] \
5 LN MSG:
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP uvmnp mnxyz 016-031[{NPCTP|NPCTG|ROLL}] \
5 LN MSG:
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr
tghikljjr tghikljjr tghikljjr tghikljjr EOM
```

**Note:** The following message segment will be output for each Clear-E1 NPC.

[O.52031]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP edhfg mnxyz[{FAD <tmode>|ROLL}] 2 LN MSG:
[t]ghikl[r][ghikl] EOM
```

**Note:** The following four message segments will be output for each SDxyz-type NPC in an international module:

[O.52032]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP uvmnp SDxyz 001-016 5 LN MSG:
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP uvmnp SDxyz 017-032 5 LN MSG:
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP uvmnp SDxyz 033-048 5 LN MSG:
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP uvmnp SDxyz 049-064 5 LN MSG:
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr
tghikljjjr tghikljjjr tghikljjjr tghikljjjr EOM
```

**Note:** The following two message segments will be output for each MB NPC.

[O.52033]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP mbnop MB100 001-064 DPLX 5 LN MSG:
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP mbnop MB100 065-085 DPLX 3 LN MSG:
lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll lll
lll lll lll lll lll lll EOM
```



**Note:** The following four message segments will be output for each CB NPC.

[O.52036]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP cbnpq CB10z 000-031 DPLX 5 LN MSG:
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP cbnpq CB10z 032-063 DPLX 5 LN MSG:
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP cbnpq CB10z 064-095 DPLX 5 LN MSG:
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP cbnpq CB10z 096-127 DPLX 5 LN MSG:
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx
opqrx opqrx opqrx opqrx opqrx opqrx opqrx opqrx EOM
```

**Note:** The following message segment will be output as many times as needed for each VI NPC.

[O.52034]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP vnprs TYPE VI100 xx e LN MSG:
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
[tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn]
tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn tnnn EOM
```

**Note:** The following completion message segment will be output after all other NPC segments have been output.

[O.52031]

```
M hh:mm:ss xy,ww n[vv] UTL QRY DMAP COMPL
```

### Denial Message

Not applicable.

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**DMAP** - Digroup map

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number  
For FT NPCs excluding non-channelized NPCs.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0001-0039 | 0161-0199 | 0321-0359 | 0481-0519 |
| 0041-0079 | 0201-0239 | 0361-0399 | 0521-0559 |
| 0081-0119 | 0241-0279 | 0401-0439 | 0561-0599 |
| 0121-0159 | 0281-0319 | 0441-0479 | 0601-0639 |

| Unit<br>5 | Unit<br>6 | Unit<br>7 | Unit<br>8 |
|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       |
| 0641-0679 | 0801-0839 | 0961-0999 | 1121-1159 |
| 0681-0719 | 0841-0879 | 1001-1039 | 1161-1199 |
| 0721-0759 | 0881-0919 | 1041-1079 | 1201-1239 |
| 0761-0799 | 0921-0959 | 1081-1119 | 1241-1279 |

| Unit<br>9 | Unit<br>10 | Unit<br>11 | Unit<br>12 |
|-----------|------------|------------|------------|
| NPC       | NPC        | NPC        | NPC        |
| 1281-1319 | 1441-1479  | 1601-1639  | 1761-1799  |
| 1321-1359 | 1481-1519  | 1641-1679  | 1801-1839  |
| 1361-1399 | 1521-1559  | 1681-1719  | 1841-1879  |
| 1401-1439 | 1561-1599  | 1721-1759  | 1881-1919  |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1959  | 2081-2119  | 2241-2279  | 2401-2439  |
| 1961-1999  | 2121-2159  | 2281-2319  | 2441-2479  |
| 2001-2039  | 2161-2199  | 2321-2359  | 2481-2519  |
| 2041-2079  | 2201-2239  | 2361-2399  | 2521-2559  |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**mnxyz** - NPC-type identifier

| <i>mn</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |                                                    |
|----|----------------------------------------------------|
| SD | Digital Signal Processing Application Circuit Pack |
|----|----------------------------------------------------|

|    |                                 |
|----|---------------------------------|
| PA | CEPT NPC (75- or 120-ohm)       |
| PB | CEPT NPC (120-ohm twisted pair) |
| PC | CEPT NPC (75-ohm coaxial)       |

|    |                           |
|----|---------------------------|
| CB | C-bit processor (CPR) NPC |
|----|---------------------------|

**PB- and PC-type xyz fields**

**Table 19-8. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                               |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                                 |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                         |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                          |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA,<br>NFW bit 4=RBER, RAI set in < 2 ms, for c=1<br>(SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                      |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA,<br>NFW bit 4=disabled, RAI set in < 2 ms, for c=1<br>(SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8, in time 144ms (TRANSMIC 1G)                                                                                                    |
|              |            | 111          | Unassigned                                                                                                                                   |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                                |
|              |            | 1            |                                                                                                                                              |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496 ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway* **cross-connection** the insertion word always defaults to AIS.

mnxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option  $c=0$  is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the **jkl** options. Also see note [jkl].



[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0     **Both** remote and local alarms are declared and cleared in 144 ms.

c=1     Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when** *jkl=011* or *jkl=101*. **For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option *g* has meaning only if the NPC is provisioned for CAS; that is, option *d=1*, otherwise it is ignored. If option *g=0* is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option *g=1* is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and *h=1*, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option *h* was selected as either 0 or 1, unless it is later set to 0 by setting parameter *e=0* in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of *xyz* the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option *h=1*.

If both *b=1* and *h=1* and the NPC (used as synchronization source) receives NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure**. If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

**[jkl'] minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

c=0 hardware timing

c=1 firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

#### **PA-Type xyz fields**

The provisioning values of x, y, and z for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (x, y or z) provisioning value):

**Table 19-9. Provisioning values for  $x$** 

| $x$<br>value | CRC-4<br>Mode | Automatic<br>CRC-4 | Far-End<br>PM | NPC used as<br>Sync Source | TS0 Bit 5<br>used for SFI |
|--------------|---------------|--------------------|---------------|----------------------------|---------------------------|
| 0            | Y             |                    |               |                            |                           |
| 1            | Y             |                    | Y             |                            | Y                         |
| 2            | Y             |                    |               |                            | Y                         |
| 3            | Y             |                    | Y             |                            |                           |
| 4            | Y             |                    |               | Y                          |                           |
| 5            | Y             |                    | Y             | Y                          | Y                         |
| 6            | Y             |                    |               | Y                          | Y                         |
| 7            | Y             |                    | Y             | Y                          |                           |
| 8            |               | Y                  | Y             |                            |                           |
| 9            |               | Y                  | Y             |                            | Y                         |
| A            |               |                    |               |                            | Y                         |
| B            |               |                    |               |                            |                           |
| C            |               | Y                  | Y             | Y                          |                           |
| D            |               | Y                  | Y             | Y                          | Y                         |
| E            |               |                    |               | Y                          | Y                         |
| F            |               |                    |               | Y                          |                           |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.

---

\* Automatic CRC-4 is also known as CRC-4 Interworking.

4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 19-10. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the  $abcd$  bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the  $abcd$  bits will be transmitted transparently.

If the "AIS in TS16" option is selected (y value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (y values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For y values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (y=8) or Timeslot Channel Numbering (y=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (y=C) or as an unframed clear 2Mbit/s interface (y=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 19-11. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )

3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:<sup>\*</sup>
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B**. **However**, for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for **z = 4 and 8**) or 480 ms (for **z = 5 and 9**) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.

---

<sup>\*</sup> Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

8. z values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options (z = 6-7 or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms

- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

z=6 or A hardware timing

z=7 or B firmware timing (SFDT=2496 ms, CACT=624 ms)

- [iv] BER alarm level = DMA

**Specific Options for z= 6 or 7**

- [v] RBER alarm level = MI

- [vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

- [vii] RBER unalarmed

- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.



[ix] To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of *xyz* for the PA type NPC.

**Table 19-12. Combinations of *x* and *y* Values**

| Invalid<br><i>xyz</i><br>Combinations | Explanation                                                                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                                   | Framed clear 2Mbit/s ( <i>y</i> value C) is valid for all <i>x</i> options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                                   |                                                                                                                                                                                                                                              |
| CCz                                   |                                                                                                                                                                                                                                              |
| DCz                                   |                                                                                                                                                                                                                                              |
| 0Dz                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) is only valid for <i>x</i> values B and F. These are the only <i>x</i> options which do not require decoding of TS0 content.                                                                      |
| 1Dz                                   |                                                                                                                                                                                                                                              |
| 2Dz                                   |                                                                                                                                                                                                                                              |
| 3Dz                                   |                                                                                                                                                                                                                                              |
| 4Dz                                   |                                                                                                                                                                                                                                              |
| 5Dz                                   |                                                                                                                                                                                                                                              |
| 6Dz                                   |                                                                                                                                                                                                                                              |
| 7Dz                                   |                                                                                                                                                                                                                                              |
| 8Dz                                   |                                                                                                                                                                                                                                              |
| 9Dz                                   |                                                                                                                                                                                                                                              |
| ADz                                   |                                                                                                                                                                                                                                              |
| CDz                                   |                                                                                                                                                                                                                                              |
| DDz                                   |                                                                                                                                                                                                                                              |
| EDz                                   |                                                                                                                                                                                                                                              |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled *z* values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables (*x* values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 19-13. Combinations of  $y$  and  $z$  Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( $y$ value C or D) cannot be used with Firmware controlled Consequent Action ( $z$ values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( $z$ value C) or TRANSMIC 2G ( $z$ value 8).                 |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( $y$ value D) cannot be used with $z$ value 4 (NFW Bit 4 used for RAIS) or with $z$ value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( $y$ values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( $z$ value C).                                                                                                   |

**Table Notes:**

1. If framed clear 2Mbit/s ( $y$  value C) is selected with  $z$  value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s ( $y$  value C) is selected with  $z$ = value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 19-14. Combinations of  $x$  and  $z$  Values**

| Invalid<br>xyz<br>Combinations | Explanation                                                                                                                                                                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC                            | Use of NPC as Sync Source ( $x$ 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( $z$ value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |
| 5yC                            |                                                                                                                                                                                                                                                         |
| 6yC                            |                                                                                                                                                                                                                                                         |
| 7yC                            |                                                                                                                                                                                                                                                         |
| CyC                            |                                                                                                                                                                                                                                                         |
| DyC                            |                                                                                                                                                                                                                                                         |
| EyC                            |                                                                                                                                                                                                                                                         |
| FyC                            |                                                                                                                                                                                                                                                         |

**SD-type xyz fields (Digital Signal Processing Platform (DSPP) Applications)**

**SD111** X.50/X.57 International subrate application

**SD311** Digital Multipoint Bridge application

**SD411** North American DDS Subrate and MJU application

**SDxyz** Possible future applications with specific values for xyz

**CB-type xyz fields**

**x** - Fixed at 1

**y** - Fixed at 0

**z** - Network timer value

**z** *Value in milliseconds*

**0** 600 to 750

**1** 1500 to 1650

**2** 2400 to 2550

**3** 4650 to 4800

**ccc** - Starting channel or conference number

**ddd** - Ending channel or conference number

Channel numbers

000-031 CEPT

Conference numbers

001-085 (MB NPC)

**tjklmddd**

- Hierarchical termination number

**t** - Type of connection  
**jk** - Unit number  
**l** - Module number  
**mn** - NPC number within the module  
**ddd** - Channel number  
**r** - Termination state

*r Explanation*

**T** Terminated  
**blank** Not Terminated

**NPCTP** - NPC for DS0 Test Ports

**NPCTG** - NPC for Nx64 kbit/s Test-access Groups

**ROLL** - bridged facility in Roll procedure

**t[v]ghiijjr**

- Nonhierarchical termination number and state

**t** - Type of connection  
**[v]ghi** - Nonhierarchical NPC number  
**jjj** - Channel/conference number  
**r** - Termination state

*t Explanation*

**\*** One-way  
**blank** Two-way  
**B** Broadcast  
**R** Bridged (from Roll)  
**T** Test access  
**P** DSP Platform Application connection, two-way  
**Q** DSP Platform Application connection, one-way

**[v]ghiijj**

- Nonhierarchical termination number

Number of NPC and channel or conference port number/circuit ID.

[0]000000 Unmapped termination number

|              |                    |
|--------------|--------------------|
| <i>r</i>     | <i>Explanation</i> |
| <b>T</b>     | Terminated         |
| <b>blank</b> | Not Terminated     |

**tghikljrr**

- Hierarchical termination number and state

|            |                             |
|------------|-----------------------------|
| <b>t</b>   | - Type of connection        |
| <b>gh</b>  | - Unit number               |
| <b>i</b>   | - Module number             |
| <b>kl</b>  | - NPC number                |
| <b>jjj</b> | - Channel/conference number |
| <b>r</b>   | - Termination state         |

|                  |                                               |
|------------------|-----------------------------------------------|
| <b>tghikljrr</b> | Hierarchical termination number               |
| <b>00000000</b>  | Unmapped termination number                   |
| <b>tghikl000</b> | Mapped termination number connected to an FDL |

**[s]mbn** - The 3- or 4-digit nonhierarchical MB type NPC number

**mbnop** - Hierarchical MB type NPC number

|           |                 |
|-----------|-----------------|
| <b>mb</b> | - Unit number   |
| <b>n</b>  | - Module number |
| <b>op</b> | - NPC number    |

The valid values are:

**lll** - Number of legs involved in the multipoint conference (000 through 256)

**[s]vnp** - The 3- or 4-digit nonhierarchical virtual NPC number

**vnprs** - Hierarchical virtual NPC number

|           |                 |
|-----------|-----------------|
| <b>vn</b> | - Unit number   |
| <b>p</b>  | - Module number |
| <b>rs</b> | - NPC number    |

The valid values are:

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

| Unit      | Module   | NPC                                   |
|-----------|----------|---------------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

**e** - Number of lines in the message segment

**tnnn** - Virtual conference type and number

**t** - Virtual conference type

**nnn** - Virtual conference number (001 through 500)

*t* Explanation

**\*** one-way

**blank** two-way

**DPLX** - Duplex

Duplex equipped

**[s]jkl** - The 3- or 4-digit non-hierarchical non-channelized NPC number

Values are identical to [s]abc

**edhfg** - Hierarchical non-channelized NPC number

**ed** - Unit number

**h** - Module number

**fg** - NPC number within the module

Valid values are identical to uvmnp

**[t][v]ghi[r]**

- Nonhierarchical termination number and state

**t** - Type of connection

**[v]ghi** - The 3- or 4- digit nonhierarchical NPC number

**r** - Termination state

Valid values are identical to [s]abc

**[t]ghikl[r]**

- Hierarchical termination number and state

**t** - Type of connection

**gh** - Unit number

**i** - Module number

**kl** - NPC number

**r** - Termination state

Valid values are identical to uvmnp

**Note:** For a non-channelized PTN that is under test, the tested NPC is listed first if only one of the two mapped NPCs is under test.

**[s]cbn** - The 3- or 4-digit nonhierarchical NPC number

The valid values are:

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |
| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |

| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

**cbnpq** - Hierarchical NPC number

**cb** - Unit number  
**n** - Module number  
**pq** - NPC number

The valid values are:

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

**[v]opq** - The 3- or 4-digit nonhierarchical NPC number

**opqrx** - Hierarchical NPC number

**op** - Unit number  
**q** - Module number  
**rx** - NPC number



---

## **UTL, QRY, DS3, BERMT, UNIT**

---

### **UTILITY QUERY DS3 BIT ERROR RATE**

#### **Explanation Of Command**

---

This message reports the bit error rate calculation method and the bit error rate threshold setting for the DS3 facilities in a DS3 or Hybrid DS3 (HDS3) unit or for all of the DS3 units, including HDS3U, in a DACS II frame.

#### **Command**

---

[I.53221]

**UTL:FRM xy,SEQ ww:QRY,DS3,BERMT[,UNIT [q]q]!**

#### **Completion Message**

---

[O.53221]

**M hh:mm:ss xy,ww n[vv] UTL QRY DS3 BERMT UNIT [q]q 3 LN MSG:**

**BERM    m<sub>1</sub> . . . m<sub>6</sub>**  
**BERT    t<sub>1</sub> . . . t<sub>6</sub> EOM**

**M hh:mm:ss xy,ww n[vv] UTL QRY DS3 BERMT COMPL**

[O.53222]

**M hh:mm:ss xy,ww n[vv] UTL QRY DS3 BERMT NONE COMPL**

#### **Denial Message**

---

[O.53221.01]

**M hh:mm:ss xy,ww n[vv] UTL QRY DS3 BERMT UNIT [q]q COND cc DNY**

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**DS3** - Digital signal 3

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**BERM** - Bit error rate calculation method

**BERT** - Bit error rate threshold

**BERMT** - Both BERM and BERT

$m_1 \dots m_6$   
- BERM setting for DS3 1 through 6

| <i>m</i> | <i>Explanation</i> |
|----------|--------------------|
|----------|--------------------|

|   |                    |
|---|--------------------|
| B | Bipolar violations |
|---|--------------------|

|   |                   |
|---|-------------------|
| P | DS3 Parity Errors |
|---|-------------------|

|   |                                                                           |
|---|---------------------------------------------------------------------------|
| C | Both Bipolar violations (BPV) and DS3 Parity Errors, support by HMXR only |
|---|---------------------------------------------------------------------------|

|   |                                                                        |
|---|------------------------------------------------------------------------|
| - | The Service MXR or HMXR associated with the DS3 facility is unequipped |
|---|------------------------------------------------------------------------|

$t_1 \dots t_6$   
- BERT setting for DS3 1 through 6

| <i>t</i> | <i>Explanation</i> |
|----------|--------------------|
|----------|--------------------|

|   |                     |
|---|---------------------|
| 3 | $10^{-3}$ threshold |
|---|---------------------|

|   |                     |
|---|---------------------|
| 6 | $10^{-6}$ threshold |
|---|---------------------|

|   |                                                                        |
|---|------------------------------------------------------------------------|
| - | The Service MXR or HMXR associated with the DS3 facility is unequipped |
|---|------------------------------------------------------------------------|

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                      |
|-----------|----------------------|
| <b>10</b> | Unit is not equipped |
|-----------|----------------------|

---

## UTL, QRY, DS3, LBO

---

### QUERY DS3 LINE BUILD OUT

#### Explanation Of Command

This message reports the line buildout (LBO) settings for the DS3 facilities on the DACS II frame. Output is printed only for DS3 units, including DS3 Hybrid units, that are equipped.

#### Command

[I.53231]

UTL:FRM xy,SEQ ww:QRY,DS3,LBO!

#### Completion Message

[O.53231]

M hh:mm:ss xy,ww n[vv] UTL QRY DS3 LBO e LN MSG:

UNIT [q]q 1bbb 2bbb 3bbb 4bbb 5bbb 6bbb

          :          :  
          :          :

UNIT [q]q 1bbb 2bbb 3bbb 4bbb 5bbb 6bbb COMPL

The following message will be generated if no service MXR is equipped in the DACS frame.

[O.53232]

M hh:mm:xx xy,ww n[vv] UTL QRY DS3 LBO NONE COMPL

#### Denial Message

Not applicable.

---

### Autonomous Message

Not applicable.

---

### Explanation Of Parameters

**DS3** - Digital signal 3 (44.736 Mb/s rate)

**e** - Number of line in the segment (2 through 5)

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**LBO** - The line buildout setting provisioned per DS3 facility.

**bbb** - LBO setting for each DS3 facility

*bbb Explanation*

ON Line buildout is turned on

OFF Line build out is turned off

--- Service MXR or HMXR corresponding to the DS3 or Hybrid DS3 is not equipped

LBO is required as shown in the following table.

734A Cabling to DSX-3 KS-19224, L2 Cabling to DSX-3 LBO

|                 |                |     |
|-----------------|----------------|-----|
| 0 to 225 feet   | 0 to 75 feet   | ON  |
| 225 to 450 feet | 75 to 150 feet | OFF |

## **UTL, QRY, EQD, COMMON**

### **UTILITY QUERY EQUIPAGE, COMMON**

#### **Explanation Of Command**

This message requests reports on the equipage of common equipment in the frame.

In the output message each entity is represented by a single character alphabetic variable.  
The value of this variable gives the equipage status of the entity represented by the variable.

#### **Command**

[I.53109]

**UTL:FRM xy,SEQ ww:QRY,EQD,COMMON!**

### **Completion Message**

---

[O.53109]

M hh:mm:ss xy,ww n[vv] UTL QRY EQD g h i j k l m n o p EOM

M hh:mm:ss xy,ww n[vv] UTL QRY EQD 3 LN MSG:  
SYNC x y CRO x  
TLI x x x x x x x x y y y y y y y y EOM

For DACS II Non-CEF frames, the next segment describes the CCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TOTAL TSIS tt nn 5 LN MSG:  
11 x y 12 x y 13 x y 14 x y 15 x y 16 x y  
21 x y 22 x y 23 x y 24 x y 25 x y 26 x y  
31 x y 32 x y 33 x y 34 x y 35 x y 36 x y  
41 x y 42 x y 43 x y 44 x y 45 x y 46 x y EOP

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TOTAL TSIS tt nn 3 LN MSG:  
51 x y 52 x y 53 x y 54 x y 55 x y 56 x y  
61 x y 62 x y 63 x y 64 x y 65 x y 66 x y EOM

For DACS II CEF frames, the next segment describes the ECCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TOTAL ETSIS tt 3 LN MSG:  
01 x y 02 x y 03 x y 04 x y 05 x y 06 x y 07 x y 08 x y  
09 x y 10 x y 11 x y 12 x y 13 x y 14 x y 15 x y 16 x y EOM

M hh:mm:ss xy,ww n[vv] UTL QRY EQD COMMON COMPL

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**EQD** - Equipped

*The equipage status of an entity is given as follows:*

|   |            |
|---|------------|
| 1 | Equipped   |
| 0 | Unequipped |

The DACS II entities and their status fields are as follows:

|          |                                                                                                                     |
|----------|---------------------------------------------------------------------------------------------------------------------|
| <b>g</b> | - Link 1                                                                                                            |
| <b>h</b> | - Link 2                                                                                                            |
| <b>i</b> | - Link 3                                                                                                            |
| <b>j</b> | - Link 4                                                                                                            |
| <b>k</b> | - Link 5                                                                                                            |
| <b>l</b> | - Link 6                                                                                                            |
| <b>m</b> | - XC0 (Cross-connect 0)                                                                                             |
| <b>n</b> | - XC1 (Cross-connect 1)                                                                                             |
| <b>o</b> | - CCNI/CCI 0 (Cross-connect network interface 0 for non-CEF frame)<br>(Clock and control interface 0 for CEF frame) |
| <b>p</b> | - CCNI/CCI 1 (Cross-connect network interface 1 for non-CEF frame)<br>(Clock and control interface 1 for CEF frame) |

**TLI** - Timing link interface

**x** - Side 0

**y** - Side 1

The TLI entities are listed, in the messages, from left to right in the following order.

**TLI 1, SSP 0**

**TLI 1, SSP 1**

**TLI 2, SSP 0**

**TLI 2, SSP 1**

**TLI 3, SSP 0**

**TLI 3, SSP 1**

**TLI 4, SSP 0**

**TLI 4, SSP 1**

**TLI 1, SSP 0**

**TLI 1, SSP 1**

**TLI 2, SSP 0**

**TLI 2, SSP 1**

**TLI 3, SSP 0**

**TLI 3, SSP 1**

**TLI 4, SSP 0**

**TLI 4, SSP 1**

**TSIS** - Time slot interchanges **NonCEF**

**ETSIS** - Expanded time slot interchangers **CEF**

**f** - FROM unit (1 through 6)

**t** - TO Unit (1 through 6)

**SYNC** - Synchronizer

**x** - Side 0 synchronizer equipage status

**y** - Side 1 synchronizer equipage status

**CR0** - Clock reference oscillator

**x** - CR0 equipage status

**tt** - Total number of equipped TSIs/ETSIs.



---

## UTL, QRY, EQD, CONN

---

### UTILITY QUERY, EQUIPMENT CONNECTIVITY

#### Explanation Of Command

---

This message requests a printout of all units that are equipped. This message provides a connectivity matrix showing a "1" at the intersection of rows and columns of units for which time slot cross-connections can be made. A "0" is shown where there is no connectivity. The matrix is thus also an equipage map of the time slot interchange on each side of the cross-connect network.

#### Command

---

[I.53031]

UTL:FRM xy,SEQ ww:QRY,EQD,CONN!

#### Completion Message

---

[O.53031]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD CONN 5 LN MSG:
UNITS 1 2 3 4 5 6 UNITS 1 2 3 4 5 6
 1 x x x x x x 4 x x x x x x
 2 x x x x x x 5 x x x x x x
 3 x x x x x x 6 x x x x x x COMPL
```

#### Denial Message

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**EQD** - Request equipage status

**CONN** - Request information on connectivity between units

**x** - Interunit connectivity

x Explanation

1 Connectivity

0 No connectivity

---

## UTL, QRY, EQD, ETSIS

---

UTILITIES, ETSIS

### Explanation Of Command

---

This message requests equipage information for all expanded time slot interchange circuit packs.

### Command

---

[I.53022]

UTL:FRM xy,SEQ ww:QRY,EQD,ET SIS!

### Completion Message

---

[O.53022]

M hh:mm:ss xy,ww n[vv] UTL QRY EQD ETSIS 4 LN MSG:  
TOTAL ETSIS tt  
0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq  
0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq 0qq 1qq COMPL

### Denial Message

---

Not applicable.

### Autonomous Message

---

Not applicable.

### **Explanation Of Parameters**

---

**EQD** - Request equipage status

**ET SIS** - Request information on ETSI circuit packs

**t t** - Total number of equipped ETSIs (00 through 32)

**qq** - Unit number (01 through 16)

If the ETSI pack is not equipped, the number "00" shall be shown in the "qq" field. The "0" or "1" shown before the "qq" is the side number.

---

## UTL, QRY, EQD, MXRS

---

UTILITIES, QUERY, EQUIPPED, MULTIPLEXERS

### Explanation Of Command

---

This message queries the equipment of the Multiplexers (MXRs) or Hybrid Multiplexers (HMXRs) in the DS3 or Hybrid DS3 (HDS3) Unit Service slots of the DACS II frame.

### Command

---

[I.53211]

UTL:FRM xy,SEQ ww:QRY,EQD,MXRS!

### Completion Message

---

[O.53211]

M hh:mm:ss xy,ww n[vv] UTL QRY EQD MXRS tt e LN MSG:

UNIT [q]q 1mnxyz 2mnxyz 3mnxyz 4mnxyz 5mnxyz 6mnxyz TOTAL a

.  
.  
.

UNIT [q]q 1mnxyz 2mnxyz 3mnxyz 4mnxyz 5mnxyz 6mnxyz TOTAL a COMPL

[O.53212]

M hh:mm:ss xy,ww n[vv] UTL QRY EQD MXRS TOTAL 00 COMPL

**Note:** This command will be generated if no MXRs are equipped in the DACS II frame.

### Denial Message

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**EQD** - Equipped state

**MXRS** - Service Multiplexers (MXR or HMXR)

Only units that are equipped as DS3 or HDS3 Units will have corresponding output lines.

**tt** - total number of equipped MXRs or HMXRs in the DACS frame (01 through 96) (not including Protection MXRs or HMXRs)

**e** - number of lines in a segment (2 through 5)

**a** - the number of equipped Service MXRs or HMXRs in a unit (1 through 6)

**mnxyz** - The DS3 format processed by the MXR:

**mn** - DS3 type

| <b>mn</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|           |                                                                                              |
|-----------|----------------------------------------------------------------------------------------------|
| <b>MX</b> | The original R4.0 DS3 facility type supported by the Multiplexer (MXR) circuit pack (KCR-1). |
|-----------|----------------------------------------------------------------------------------------------|

|           |                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------|
| <b>EX</b> | The enhanced R6.0 DS3 facility type supported by the Enhanced Multiplexer (EMXR) circuit pack (KCR-5). |
|-----------|--------------------------------------------------------------------------------------------------------|

|           |                                                                                           |
|-----------|-------------------------------------------------------------------------------------------|
| <b>HX</b> | The hybrid facility type supported by the Hybrid Multiplexer (HMXR) circuit pack (KCR-8). |
|-----------|-------------------------------------------------------------------------------------------|

If the unit is a regular DS3U of unit type DT100, then the default is the MX type for backward compatibility.

If the unit is a Hybrid DS3U of unit type HT100, then the default is HX.

**Note:** If a particular MXR or HMXR is not equipped, five hyphens(-----) will occupy the mnxyz field.

## **UTL,QRY,EQD,NPCS,TOTAL,UNIT**

### **QUERY EQUIPPED NPCS**

#### **Explanation Of Command**

This command reports the equipage state for each of the network processing circuits (NPCs) on the DACS II frame and can provide the total number of circuits that are equipped in the facility terminating units (FTU/IFTU/IFTU2), DS3 units (DS3U), Hybrid DS3 units (HDS3U) and digital signal processing units (DSPU).

Digital Signal Processing Platform (DSPP) NPCs that are provisioned within an FTU, IFTU, or IFTU2 will be displayed in the output message or will be counted in the total number of circuits as appropriate. One NPC will count as one circuit even though one NPC occupies a physical slot that normally is occupied by two NPCs.

The results of the output message are in fragment sequence starting with the lowest unit number and ending with the highest unit number.

Within a fragment, the information is listed in NPC number sequence, starting with the lowest number at the top left and increasing to the right. The next line starts with the next highest NPC number.

The output of a partially equipped frame should conform to these rules:

- Omit the output message fragments for half of facility terminating module (FTM) for which there are no equipped NPCs.
- In nonhierarchical addressing, omit the output message fragment for one DS3 or HDS3 FTM (MXR or HMXR) for which there are no equipped NPCs.
- In hierarchical addressing, omit the output message fragment for half a DS3 or HDS3 FTM (MXR or HMXR) for which there are no equipped NPCs.
- Unequipped unit or module will not be reported
- The output will report on NPCs in increasing unit number order, regardless of whether the units are equipped as FTU, DS3U, HDS3U or DSPU.
- If there are no DSPUs, the DSPU part is omitted.
- If there are no equipped FTUs, DS3Us, HDS3Us and DSPU NPCs, the output is given in message 53043.
- The DS3U or HDS3U keyword will only be generated in message 53043 if the DS3 feature bit is enabled in the software.
- The range of NPCs in one FTM will be spanned in two output segments.
- The range of nonhierarchical NPCs in one DS3 or HDS3 FTM will be spanned in one output segment.
- The range of hierarchical NPCs in one DS3 or HDS3 FTM will be spanned in two output segments.
- The range of NPCs in one DSPU will be spanned by one output segment.

This command reports the equipage state of each of the network processing circuit slots on the DACS II frame and the sixteen slots (eight duplicated pairs) in each of the two DACS II DSPUs. In the output message, the fields **mnxyz** are set to "-----" if the slot is unequipped or to the 5-character external type identifier of the NPC that occupies the slot if it is equipped.

## Command

[I.53041]

**UTL:FRM xy, SEQ ww:QRY, EQD, NPCS[, {TOTAL|UNIT [q]q}]!**



## Completion Message

---

### Nonhierarchical

---

Output message fragment for NPCs in one FTM:

[O.53041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD FTU NPCS [UNIT [q]q] tt 5 LN MSG:
[e]eeemnxyz [e]eeemnxyz [e]eeemnxyz [e]eeemnxyz
[e]eeemnxyz [e]eeemnxyz [e]eeemnxyz [e]eeemnxyz
[e]eeemnxyz [e]eeemnxyz [e]eeemnxyz [e]eeemnxyz
[e]eeemnxyz [e]eeemnxyz [e]eeemnxyz [e]eeemnxyz EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD FTU NPCS [UNIT [q]q] tt 5 LN MSG:
[e]eeemnxyz [e]eeemnxyz [e]eeemnxyz [e]eeemnxyz
[e]eeemnxyz [e]eeemnxyz [e]eeemnxyz [e]eeemnxyz
[e]eeemnxyz [e]eeemnxyz [e]eeemnxyz [e]eeemnxyz
[e]eeemnxyz [e]eeemnxyz [e]eeemnxyz [e]eeemnxyz EOM
```

Output message fragment for 3 digit nonhierarchical NPCs in one DSP unit:

[O.53041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD DSPU NPCS [UNIT [q]q] tt 2 LN MSG:
aaamnxyz aaamnxyz aaamnxyz aaamnxyz aaamnxyz aaamnxyz \
aaamnxyz aaamnxyz EOM
```

Output message fragment for 4-digit nonhierarchical NPCs in one DSP unit:

[O.53041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD DSPU NPCS [UNIT [q]q] tt 3 LN MSG:
[a]aaamnxyz [a]aaamnxyz [a]aaamnxyz [a]aaamnxyz
[a]aaamnxyz [a]aaamnxyz [a]aaamnxyz [a]aaamnxyz EOM
```

## Hierarchical

Output message fragment for NPCs in one FTM:

[O.53041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD FTU NPCS [UNIT [q]q] tt 5 LN MSG:
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD FTU NPCS [UNIT [q]q] tt 5 LN MSG:
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz EOM
```

Output message fragment for NPCs in one DSP unit:

[O.53041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD DSPU NPCS [UNIT [q]q] tt e LN MSG:
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz
uvmnpxyz uvmnpxyz uvmnpxyz uvmnpxyz EOM
```

## Common

Output message when the TOTAL keyword is specified:

[O.53042]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD NPCS TOTAL e LN MSG:
FTU nnnn fff fff fff fff fff fff fff fff fff fff fff \
fff fff fff fff
DS3U hhhh ggg ggg ggg ggg ggg ggg ggg ggg ggg ggg \
ggg ggg ggg ggg
DSPU pppp qqg qqg qqg qqg qqg qqg qqg qqg qqg qqg \
qqg qqg qqg qqg COMPL
```

Output message when there are no equipped NPCs on the frame:

[O.53043]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD NPCS [UNIT [q]q] [FTU 0000]\
[DS3U 0000][DSPU 000] COMPL
```

Overall completion message:

[O.53041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD NPCS [UNIT [q]q] COMPL
```

### **Denial Message**

---

[O.53041.01]

M hh:mm:ss xy,ww n[vv] UTL QRY EQD NPCS UNIT [q]q COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**EQD** - Equipped

Request equipage status

**NPCS** - Network processing circuits

Request information on NPCs

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**TOTAL** - Total

Request summary information

**tt** - Total number of NPCs in a segment

**mnxyz** - The equipage state and type of the NPCs

**mnxyz** *Explanation*

----- Not equipped

**mn** - The type of NPC

Valid values are listed below:

| mn | Explanation |
|----|-------------|
|----|-------------|

|    |                           |
|----|---------------------------|
| PA | CEPT NPC (75- or 120-ohm) |
|----|---------------------------|

|    |                                 |
|----|---------------------------------|
| PB | CEPT NPC (120-ohm twisted pair) |
|----|---------------------------------|

|    |                           |
|----|---------------------------|
| PC | CEPT NPC (75-ohm coaxial) |
|----|---------------------------|

|    |                           |
|----|---------------------------|
| CB | C-bit processor (CPR) NPC |
|----|---------------------------|

|    |                                                    |
|----|----------------------------------------------------|
| SD | Digital Signal Processing Application Circuit Pack |
|----|----------------------------------------------------|

**xyz** - The parameters used to provision the NPC.

See CRTE, EQPT, NPC and CRTE, EQPT, NPC, IW, X, AIS, MI, PMA, DMA for values.

**SDxyz** - Digital Signal Processing Platform (DSPP) Applications

*SDxyz Type of Application*

SD111 X.50/X.57 International Subrate Application

SD311 Digital Multipoint Bridge (DMB) Application

SD411 DDS Subrate and MJU Application

SDxyz Future applications with specific values for x, y, and z

**[a]aaa** - The 3- or 4-digit nonhierarchical NPC number for DSPU NPCs

Valid values are listed below (or ---).

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |

| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

**uvmnp** - Hierarchical NPC number

On either CEPT FTM, or DSP unit.

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

Valid values are listed below (or -----, -----).

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**nnnn** - Total number of FTU NPCs on the frame.

Dashes (----) will be shown if no unit is grown.

**fff** - Total number of NPCs on each FTU.

Dashes (---) will be shown if the unit is not grown or is not grown as an FTU.

**pppp** - Total number of DSPU NPCs on the frame.

Dashes (----) will be shown if no unit is equipped.

**qqq** - Total number of NPCs on each DSPU.

Dashes (---) will be shown if the unit is not grown or is not grown as a DSPU.

**e** - number of lines in a segment

**[c]ccc** - The 3- or 4-digit nonhierarchical NPC number for FTM

Valid values are listed below (or ---).

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

|                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|
| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |



If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**[d]ddd** - The 3- or 4-digit nonhierarchical NPC number for DS3U or HDS3U NPCs

Valid values are listed below (or ---).

**hhhh** - Total number of DS3U or HDS3U NPCs on the frame.

Dashes (----) will be shown if no unit is grown.

**ggg** - Total number of NPCs on each DS3U or HDS3U.

Dashes (---) will be shown if the unit is not grown or is not grown as a DS3U or HDS3U.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**10** Unit is not equipped

---

## UTL, QRY, EQD, TSIS

---

### UTILITY QUERY EQUIPPED

#### Explanation Of Command

---

This message requests a printout for all the equipped time slot interchange (TSI) circuit packs.

A fully equipped Enclosed Single Bay Frame (ESBF) shows the following TSI equipage status:

11 15 51 55

A fully equipped non-ESBF frame shows the following TSI equipage status:

|                   |                   |
|-------------------|-------------------|
| 11 12 13 14 15 16 | 41 42 43 44 45 46 |
| 21 22 23 24 25 26 | 51 52 53 54 55 56 |
| 31 32 33 34 35 36 | 61 62 63 64 65 66 |

#### Command

---

[I.53021]

UTL:FRM xy,SEQ ww:QRY,EQD,TSIS!

#### Completion Message

---

[O.53021]

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TSIS 5 LN MSG:  
TOTAL TSIS tt  
ft ft ft ft ft ft ft ft ft ft ft ft  
ft ft ft ft ft ft ft ft ft ft ft ft  
ft ft ft ft ft ft ft ft ft ft ft COMPL

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**EQD** - Request equipage status

**TSIS** - Request information on TSI circuit packs

**tt** - Total number of equipped TSIs on the in-service side. The total number of equipped TSIs in the frame is twice this number.

**ft** - TSI equipage status:

| <i>ft</i> | <i>Explanation</i> |
|-----------|--------------------|
| 00        | Unequipped         |
| TSI No.   | Equipped           |

## **UTL,QRY,EQD,UNIT**

### **UTILITY QUERY ENTITY EQUIPAGE**

#### **Explanation Of Command**

This command is used to retrieve the state information associated with equipment.

The UNIT option is specified only when the EQPT modifier is used to query that unit. The UNIT field will be null when the command is used to query the whole frame.

#### **Command**

[I.53108]

**UTL:FRM xy,SEQ ww:QRY,EQD[,UNIT [q]q]!**

## **Completion Message**

### **Nonhierarchical**

**If the unit number is not entered, the following output messages will be generated:**

The output message starts with:

[O.53108]

M hh:mm:ss xy,ww n[vv] UTL QRY EQD g h i j k l m n o p EOM

M hh:mm:ss xy,ww n[vv] UTL QRY EQD 3 LN MSG:

SYNC x x CRO x

TLI x x x x x x x x x x x x x x EOM

**For DACS II Non-CEF frames, the next segment describes the CCN hardware:**

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TOTAL TSIS tt 5 LN MSG:

11 x 12 x 13 x 14 x 15 x 16 x

21 x 22 x 23 x 24 x 25 x 26 x

31 x 32 x 33 x 34 x 35 x 36 x

41 x 42 x 43 x 44 x 45 x 46 x EOP

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TOTAL TSIS tt 3 LN MSG:

51 x 52 x 53 x 54 x 55 x 56 x

61 x 62 x 63 x 64 x 65 x 66 x EOM

**For DACS II CEF frames, the segment describes the ECCN hardware:**

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TOTAL ETSIS tt 3 LN MSG:

01 x 02 x 03 x 04 x 05 x 06 x 07 x 08 x

09 x 10 x 11 x 12 x 13 x 14 x 15 x 16 x EOM

The output then continues with segments that contain information about common equipment in the equipped units. If more than 4 units are equipped, the unit equipage output will be divided into multiple segments.

[O.53108]

```
[M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNITS e LN MSG:]
[<data line for common equipment in the first equipped unit>]
[<data line for common equipment in the second equipped unit>]
[<data line for common equipment in the third equipped unit>]
[<data line for common equipment in the fourth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNITS e LN MSG:]
[<data line for common equipment in the fifth equipped unit>]
[<data line for common equipment in the sixth equipped unit>]
[<data line for common equipment in the seventh equipped unit>]
[<data line for common equipment in the eighth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNITS e LN MSG:]
[<data line for common equipment in the ninth equipped unit>]
[<data line for common equipment in the tenth equipped unit>]
[<data line for common equipment in the eleventh equipped unit>]
[<data line for common equipment in the twelfth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNITS e LN MSG:]
[<data line for common equipment in the thirteenth equipped unit>]
[<data line for common equipment in the fourteenth equipped unit>]
[<data line for common equipment in the fifteenth equipped unit>]
[<data line for common equipment in the sixteenth equipped unit> EOM]
```

Data line for a unit equipped as a DS1 FTU:

```
UNIT [q]q UC a FTMI b c d e FC f g h j k m p q[CCB r s]
```

Data line for a unit equipped as a DSPU:

```
UNIT [q]q UC a DSPI b[CCB r s]
```

The output message then lists the NPC numbers of equipped NPCs in each FTM/DS3U/HDS3U/DSPU. Output messages will be generated successively in ascending order by NPC number. If an FTM/DS3U/HDS3U/DSPU has no NPC equipped, the segment for that FTM/DS3U/HDS3U/DSPU will not be output.



Output message for equipage of NPCs in a CEPT FTM:

Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and dashes will be shown in its place:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD FTU NPCS [a]aaa-[b]bbb tt 5 LN MSG:
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx EOM
```

Output message for equipage of NPCs in a DSPU:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD DSPU NPCS [a]aaa-[b]bbb tt 2 LN MSG:
[z]zzz [z]zzz [z]zzz [z]zzz [z]zzz [z]zzz [z]zzz [z]zzz EOM
```

After the above information is output, the following format will be generated to complete the output response:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD COMPL
```

**If the unit number is specified in the input, the following output messages will be generated:**

Output message format for an FTU:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD 2 LN MSG:
UNIT [q]q UC a FTMI b c d e FC f g h j k m p q[CCB r s] EOM
```

The output then continues with up to 4 of the following segment; one for each FTM:

Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and dashes will be shown in its place:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT [q]q FTU NPCS [a]aaa-[b]bbb tt 5 LN MSG:
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx EOM
```

Output message format for a DSPU:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT [q]q UC a DSPI b[CCB r s] EOM

M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT [q]q DSPU NPCS [a]aaa-[b]bbb tt 2 LN MSG:
[z]zzz [z]zzz [z]zzz [z]zzz [z]zzz [z]zzz [z]zzz [z]zzz EOM
```

After the above information is output, the following message will be generated to complete the response:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT [q]q COMPL
```

## Hierarchical

If the unit number is not entered, the following output messages will be generated:

The output message starts with:

[O.53108]

M hh:mm:ss xy,ww n[vv] UTL QRY EQD g h i j k l m n o p EOM

M hh:mm:ss xy,ww n[vv] UTL QRY EQD 3 LN MSG:  
SYNC x x CRO x  
TLI x x x x x x x x x x x x x x EOM

For DACS II Non-CEF frames, the next segment describes the CCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TOTAL TSIS tt 5 LN MSG:  
11 x 12 x 13 x 14 x 15 x 16 x  
21 x 22 x 23 x 24 x 25 x 26 x  
31 x 32 x 33 x 34 x 35 x 36 x  
41 x 42 x 43 x 44 x 45 x 46 x EOP

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TOTAL TSIS tt 3 LN MSG:  
51 x 52 x 53 x 54 x 55 x 56 x  
61 x 62 x 63 x 64 x 65 x 66 x EOM

For DACS II CEF frames, the segment describes the ECCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY EQD TOTAL ETSIS tt 3 LN MSG:  
01 x 02 x 03 x 04 x 05 x 06 x 07 x 08 x  
09 x 10 x 11 x 12 x 13 x 14 x 15 x 16 x EOM

The output then continues with segments that contain information about common equipment in the equipped units. If more than 4 units are equipped, the unit equipage output will be divided into multiple segments.

[O.53108]

```
[M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNITS e LN MSG:]
[<data line for common equipment in the first equipped unit>]
[<data line for common equipment in the second equipped unit>]
[<data line for common equipment in the third equipped unit>]
[<data line for common equipment in the fourth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNITS e LN MSG:]
[<data line for common equipment in the fifth equipped unit>]
[<data line for common equipment in the sixth equipped unit>]
[<data line for common equipment in the seventh equipped unit>]
[<data line for common equipment in the eighth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNITS e LN MSG:]
[<data line for common equipment in the ninth equipped unit>]
[<data line for common equipment in the tenth equipped unit>]
[<data line for common equipment in the eleventh equipped unit>]
[<data line for common equipment in the twelfth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNITS e LN MSG:]
[<data line for common equipment in the thirteenth equipped unit>]
[<data line for common equipment in the fourteenth equipped unit>]
[<data line for common equipment in the fifteenth equipped unit>]
[<data line for common equipment in the sixteenth equipped unit> EOM]
```

Data line for a unit equipped as an FTU:

```
UNIT [q]q UC a FTMI b c d e FC f g h j k m p q[CCB r s]
```

Data line for a unit equipped as a DSPU:

```
UNIT [q]q UC a DSPI b[CCB r s]
```

The output message then lists the NPC numbers of equipped NPCs in each FTM/DS3U/HDS3U/DSPU. Output messages will be generated successively in ascending order by NPC number. If an FTM/DS3U/HDS3U/DSPU has no NPC equipped, the segment for that FTM/DS3U/HDS3U/DSPU will not be output.

Output message for equipage of NPCs in a CEPT FTM:

Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and dashes will be shown in its place:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD FTU NPCS uvmnp-uxkqr tt 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

Output message for equipage of NPCs in a DSPU:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD DSPU NPCS uvmnp-uxkqr tt 2 LN MSG:
zzzzz zzzzz zzzzz zzzzz zzzzz zzzzz zzzzz zzzzz EOM
```

After the above information is output, the following format will be generated to complete the output response:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD COMPL
```

**If the unit number is specified in the input, the following output messages will be generated:**

Output message format for an FTU:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD 2 LN MSG:
UNIT [q]q UC a FTMI b c d e FC f g h j k m p q[CCB r s] EOM
```

The output then continues with up to 4 of the following segment; one for each FTM:

Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and dashes will be shown in its place:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT [q]q FTU NPCS uvmnp-uxkqr tt 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

Output message format for a DSPU:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT [q]q UC a DSPI b[CCB r s] EOM

M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT [q]q DSPU NPCS uvmnp-uxkqr tt 2 LN MSG:
zzzzz zzzzz zzzzz zzzzz zzzzz zzzzz zzzzz zzzzz EOM
```

After the above information is output, the following message will be generated to complete the response:

[O.53108]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT [q]q COMPL
```

## Denial Message

[O.53108.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT [q]q COND cc DNY
```

## Autonomous Message

Not applicable.

## Explanation Of Parameters

---

**EQD** - Equipped

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

The UNIT option is specified to query that unit. The UNIT field will be null when the command is used for the entire frame. If the UNIT option is specified, only the information related to the equipment in that unit will be generated.

For the equipped query, each entity in the DACS II frame is represented by a single character variable. This variable can have a value of 1 or 0 indicating the following status:

| Value | EQD or EQPD |
|-------|-------------|
| 1     | equipped    |
| 0     | unequipped  |

The DACS II entities and their status fields are as follows:

|          |                                                                                                                     |
|----------|---------------------------------------------------------------------------------------------------------------------|
| <b>g</b> | - Link 1                                                                                                            |
| <b>h</b> | - Link 2                                                                                                            |
| <b>i</b> | - Link 3                                                                                                            |
| <b>j</b> | - Link 4                                                                                                            |
| <b>k</b> | - Link 5                                                                                                            |
| <b>l</b> | - Link 6                                                                                                            |
| <b>m</b> | - XC0 (cross-connect 0)                                                                                             |
| <b>n</b> | - XC1 (cross-connect 1)                                                                                             |
| <b>o</b> | - CCNI/CCI 0 (cross-connect network interface 0 for non-CEF frame)<br>(clock and control interface 0 for CEF frame) |
| <b>p</b> | - CCNI/CCI 1 (cross-connect network interface 1 for non-CEF frame)<br>(clock and control interface 1 for CEF frame) |

**SYNC** - Synchronizer

**CRO** - Clock reference oscillator

**TLI** - Timing link interface

The TLI entities are reported in the following order:

**TLI 1, SSP 0, Side 0**  
**TLI 1, SSP 1, Side 0**  
**TLI 2, SSP 0, Side 0**  
**TLI 2, SSP 1, Side 0**  
**TLI 3, SSP 0, Side 0**  
**TLI 3, SSP 1, Side 0**  
**TLI 4, SSP 0, Side 0**  
**TLI 4, SSP 1, Side 0**

**TLI 1, SSP 0, Side 1**  
**TLI 1, SSP 1, Side 1**  
**TLI 2, SSP 0, Side 1**  
**TLI 2, SSP 1, Side 1**  
**TLI 3, SSP 0, Side 1**  
**TLI 3, SSP 1, Side 1**  
**TLI 4, SSP 0, Side 1**  
**TLI 4, SSP 1, Side 1**

**TSIS** - Time slot interchangers NonCEF

**ETSIS** - Expanded time slot interchangers CEF

**f** - FROM unit (1 through 6)

**t** - TO Unit (1 through 6)

**x** - Equipage indication of an entity or of a side 0 entity if duplicated.

**x** - Equipage indication of a side 1 entity.

**UC** - Unit controller

**FTMI** - Facility terminating module interface

**FC** - Format converter

**FLI** - Facility line interface

**FMT** - Formatter or Hybrid Formatter

**MXR** - Multiplexer or Hybrid Multiplexer

**MIU** - Multiple interface unit



**DSPI** - Digital signal processing interface

- [a]aaa** - The first 3- or 4-digit nonhierarchical NPC number of an FTM/DSPU.  
**[b]bbb** - The last 3- or 4-digit nonhierarchical NPC number of an FTM/DSPU.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|
| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |
| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9  | Unit<br>10 | Unit<br>11 | Unit<br>12 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1281       | 1441       | 1601       | 1761       |
| 1301       | 1461       | 1621       | 1781       |
| 1321       | 1481       | 1641       | 1801       |
| 1341       | 1501       | 1661       | 1821       |
| 1361       | 1521       | 1681       | 1841       |
| 1381       | 1541       | 1701       | 1861       |
| 1401       | 1561       | 1721       | 1881       |
| 1421       | 1581       | 1741       | 1901       |
|            |            |            |            |
| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
| NPC        | NPC        | NPC        | NPC        |
| 1921       | 2081       | 2241       | 2401       |
| 1941       | 2101       | 2261       | 2421       |
| 1961       | 2121       | 2281       | 2441       |
| 1981       | 2141       | 2301       | 2461       |
| 2001       | 2161       | 2321       | 2481       |
| 2021       | 2181       | 2341       | 2501       |
| 2041       | 2201       | 2361       | 2521       |
| 2061       | 2221       | 2381       | 2541       |

**[z]zzz** - The 3- or 4-digit nonhierarchical DSPU NPC number, the span refers to the odd DSPU circuit pack NPCs, and the total is the number of NPC pairs equipped.

**uvmnp** - The first hierarchical NPC number of an FTM/DSPU or a hierarchical DSPU NPC number.

**uxkqr** - The last hierarchical NPC number of an FTM/DSPU

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-39 |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

|              |            |           |
|--------------|------------|-----------|
| Unit         | Module     | NPC       |
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |

**tt** - Total number of equipped NPCs

For FTU Entities:

- a** - Status for UC
- b** - Status for FTMI 1 of specified Unit
- c** - Status for FTMI 2 of specified Unit
- d** - Status for FTMI 3 of specified Unit
- e** - Status for FTMI 4 of specified Unit
- f** - Status for FC 01 of specified Unit
- g** - Status for FC 11 of specified Unit
- h** - Status for FC 02 of specified Unit
- j** - Status for FC 12 of specified Unit
- k** - Status for FC 03 of specified Unit
- m** - Status for FC 13 of specified Unit
- p** - Status for FC 04 of specified Unit
- q** - Status for FC 14 of specified Unit

**CCB** - Cross-connect buffer NonCEF

**r** - Status for CCB 0q in CCN 0 for specified Unit q

**s** - Status for CCB 1q in CCN 1 for specified Unit q

For DSPU Entities:

- a** - Status for UC
- b** - Status of DSPI for specified unit

**[x]xxx** - The 3- or 4-digit nonhierarchical FTU NPC number  
([a]aaa through [b]bbb)

**xxxxxx** - Hierarchical FTU NPC number (uvmnp through uxkqr)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped



## **UTL, QRY, EQD, UNITS**

### **UTILITIES, EQUIPAGE STATUS**

#### **Explanation Of Command**

This message requests a printout of all units that are equipped.

#### **Command**

[I.53011]

UTL:FRM xy,SEQ ww:QRY,EQD,UNITS!

#### **Completion Message**

[O.53011]

M hh:mm:ss xy,ww n[vv] UTL QRY EQD UNIT 2 LN MSG:  
aa bb cc dd ee ff gg hh ii jj kk ll mm nn oo pp COMPL

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**EQD** - Request equipage status

**UNITS** - Request information on units

**aa** - Equipage status of Unit number 01  
**bb** - Equipage status of Unit number 02  
**cc** - Equipage status of Unit number 03  
**dd** - Equipage status of Unit number 04  
**ee** - Equipage status of Unit number 05  
**ff** - Equipage status of Unit number 06  
**gg** - Equipage status of Unit number 07  
**hh** - Equipage status of Unit number 08  
**ii** - Equipage status of Unit number 09  
**jj** - Equipage status of Unit number 10  
**kk** - Equipage status of Unit number 11  
**ll** - Equipage status of Unit number 12  
**mm** - Equipage status of Unit number 13  
**nn** - Equipage status of Unit number 14  
**oo** - Equipage status of Unit number 15  
**pp** - Equipage status of Unit number 16

If the unit is equipped, the unit number will be shown in its corresponding position. If the unit is not equipped, the number "00" will be shown.

## **UTL,QRY,ERR,SWER,HWER,INT,DATE,TOD,TN**

### **QUERY SOFTWARE/HARDWARE ERROR RECOVERY**

#### **Explanation Of Command**

This message requests a printout of the contents of the error recovery log file. The log file contains the past history of error recovery events and can be very large. Therefore, the printout can be aborted. Because the printout is of a technical nature, assistance may be necessary for interpretation.

At least one option must be specified in the input command or it will be denied.

**Note:** Both the USA date format and international date format are supported by this command. The date format is set by the UTL::DATE,FORMAT,INT command and this message must use the same format. The date format shown in the output for this command will match the current setting.

**Note:** In the 8-character Block number 10 output of the hardware error log file, the first 4 numbers display the unit number while the second four numbers equate to the NPC number. For the hardware error log, the number of NPCs per unit is 170 instead of 160. This is because the DACS II supports a flexible frame configuration. In each DS3 unit, there are 168 NPCs. To obtain the NPC number, convert the hexadecimal number to decimal and add 1 and then subtract 10 from the result for the NPCs in Unit 2, subtract 20 from the result for the NPCs in Unit 3, . . . , subtract 150 from the result for the NPCs in Unit 16. For example, the first NPC in Unit 1 (NPC 1) will be displayed as 0 (not 1) in hexadecimal format, the first NPC in Unit 2 (NPC 161) will be displayed as 170 (not 161) in hexadecimal format, the first NPC in Unit 3 (NPC 321) will be displayed as 340 (not 321) in hexadecimal format, and so on.

Therefore, the output for the hardware log will be:

|                        |                                                   |
|------------------------|---------------------------------------------------|
| 00000000 thru 000000a7 | for NPC 001 thru 16H (1 - 160, 16A - 16H)         |
| 000100aa thru 00010151 | for NPC 161 thru 32H (161 - 320, 32A - 32H)       |
| 00020154 thru 000201fb | for NPC 321 thru 48H (321 - 480, 48A - 48H)       |
| 000301fe thru 000302a5 | for NPC 481 thru 64H (481 - 640, 64A - 64H)       |
| 000402a8 thru 0004034f | for NPC 641 thru 80H (641 - 800, 80A - 80H)       |
| 00050352 thru 000503f9 | for NPC 801 thru 96H (801 - 960, 96A - 96H)       |
| 000603fc thru 000604a3 | for NPC 961 thru 112H (961 - 1120, 112A - 112H)   |
| 000704a6 thru 0007054d | for NPC 1121 thru 128H (1121 - 1280, 128A - 128H) |
| 00080550 thru 000805f7 | for NPC 1281 thru 144H (1281 - 1440, 144A - 144H) |
| 000905fa thru 000906a1 | for NPC 1441 thru 160H (1441 - 1600, 160A - 160H) |
| 000a06a4 thru 000a074b | for NPC 1601 thru 176H (1601 - 1760, 176A - 176H) |
| 000b074e thru 000b07f5 | for NPC 1761 thru 192H (1761 - 1920, 192A - 192H) |
| 000c07f8 thru 000c089f | for NPC 1921 thru 208H (1921 - 2080, 208A - 208H) |
| 000d08a2 thru 000d0949 | for NPC 2081 thru 224H (2081 - 2240, 224A - 224H) |
| 000e094c thru 000e09f3 | for NPC 2241 thru 240H (2241 - 2400, 240A - 240H) |
| 000f09f6 thru 000f0a9d | for NPC 2401 thru 256H (2401 - 2560, 256A - 256H) |

## Command

[I.55011]

UTL:FRM xy,SEQ ww:QRY,ERR,{SWER|HWER}[,{INT mn|[DATE moda[ce]yr,] TOD hrmsnc}}\  
[,TN x'dddd][,EVENT x'eeee][,ERCL{HARD|TRANS|APPINT}][,ENTY <entity>]|ALL]!

## Completion Message

---

[O.55011]

M hh:mm:ss xy,ww n[vv] UTL QRY ERR SWER mo/da/yr hr:mn:sc 3 LN MSG:  
ENTITY=xxxxxx ERROR=xxxxxx SOURCE=xxxxxx DP=xx  
TN=xxxx PID=xxxxxx RC=xxxxxx MID=xxxx PROC=xxxxxx EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ERR SWER TROUBLE SHOOTING ARGS 3 LN MSG:  
TSARGSxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx  
FAUDTIME xxxxxxxx FACyxxxx FATNxxxx ISPExxxx xxxxxxxx EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ERR SWER STACK TRACE ONE 5 LN MSG:  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ERR SWER STACK TRACE TWO 5 LN MSG:  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx {EOM|COMPL}

[O.55012]

M hh:mm:ss xy,ww n[vv] UTL QRY ERR HWER mo/da/yr hr:mn:sc 5 LN MSG:  
HOSTxxxx ENTtxxxx ERRCxxxx ERRTxxxx TRANxxxx EVENxxxx  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx  
xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx {EOM|COMPL}

[O.55013]

M hh:mm:ss xy,ww n[vv] UTL QRY ERR SWER BACKGROUND AUDITS 3 LN MSG:  
MSGTYP=<1000> SOURCE=<2000> ADD1=<400000> ADD2=xx  
DATA=<5000> CHKACT=<6000> CHKCOM=<7000> COMMT0=<8000> {EOM|COMPL}

[O.55014]

M hh:mm:ss xy,ww n[vv] UTL QRY ERR {{SWER|HWER}|ALL} COMPL

## Denial Message

---

[O.55011.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ERR HWER ENTY <entity> cc DNY

## Autonomous Message

---

Not applicable.

## **Explanation Of Parameters**

---

**ALL** - Output the entire hardware and software log file.

The ALL keyword will cause the entire log file, both hardware and software log messages, to be output. The user should understand that this keyword may generate a large volume of output. No other optional keywords should be coded together with the ALL keyword.

**ERR** - Error recovery

Refers to the error recovery log file

**SWER** - Software error

Query the software error log file.

**HWER** - Hardware error

Query the hardware error log file.

**INT** - Time interval

The user may retrieve entries by specifying a past interval of time. This interval may be specified as the last 59 minutes or less or as the interval beginning at a specified date and time of day (see DATE and TOD keywords). If the time but not the optional date is specified, DACS II assumes the present date.

During a system boot the time on the system clock defaults to the time 00:00:00 and the date 12/31/1999 until the clock is initialized. Errors occurring during the boot process consequently are logged as though they occurred in the future when actually they occurred in the past. Because of this behavior a user requesting the errors over one of the intervals mentioned above may experience a large volume of error output listing errors that will (seemingly) occur in the future. These errors actually occurred before the system clock was initialized and should be interpreted as such.

**mn** - minutes (00 to 59)

**DATE** - date

moda[ce]yr

**mo** - Month (01 through 12)

**da** - Day (01 through 31)

**ce** - Century (19 or 20)

**yr** - Year (00 through 99)

**TOD** - time of day

**hrmns** - Hours, minutes, seconds  
hr-mn-sc

**hr** - hour (00 through 23)  
**mn** - Minutes (00 through 59)  
**sc** - seconds (00 through 59)

**TN** - Transaction

**X** - Hexadecimal

**dddd** - Transaction number

**EVENT** - Event

**eeee** - Event number

**ERCL** - Error class

This keyword applies only to queries of the hardware error log file (HWER option). It is not applicable to queries of the software error log file (SWER option) and it returns no data for the software case. The hardware log file may be queried for errors of either the hardware or transient error class.

**HARD** - Hard

Hardware error detected by Error Recovery

**TRANS** - Transient

Transient error detected by Error Recovery

**APPINT** - Application interrupt

Hardware error detected by applications

**ENTY** - Entity (hardware)

This keyword applies only to queries of the hardware error log file (HWER option). It is not applicable to queries of the software error log file (SWER option) and it returns no data for the software case. The hardware log file may be queried for entries related to particular DACS II hardware entities.

**entity** - Entity type

*entity Explanation*

|      |                                       |
|------|---------------------------------------|
| BX   | Bus extender                          |
| CCB  | Cross-connect buffer                  |
| CCNI | Cross-connect network interface       |
| CCI  | Clock and control interface           |
| CI   | Communications interface              |
| CPR  | C-bit processor                       |
| CRO  | Clock reference oscillator            |
| DDC  | Dual digroup circuit                  |
| DISK | Hard disk                             |
| DMB  | Digital multipoint bridge             |
| DSPI | Digital signal processor interface    |
| EBX  | Expanded bus extender                 |
| EMTC | Expanded maintenance circuit          |
| ETSI | Expanded time slot interchanger       |
| FC   | Format converter                      |
| FLI  | Facility line interface               |
| FMT  | Formatter                             |
| FTMI | Facility terminating module interface |
| LINK | Administrative link                   |
| MC   | Main controller                       |
| MIU  | Multiplexer interface unit            |
| MJU  | Multipoint junction unit              |
| MP   | Main processor                        |
| MTC  | Maintenance circuit                   |
| MXR  | Multiplexer                           |
| NPC  | Network processing circuit            |
| SRM  | Subrate multiplexer                   |
| SSC  | Secondary storage controller          |
| SYNC | Synchronizers (DPLL, TB)              |
| TAPE | Tape drive                            |
| TL   | Timing link                           |
| TLI  | Timing link interface                 |
| TSI  | Time slot interchange                 |
| UBX  | Unit bus extender                     |
| UC   | Unit controller                       |

**ENTITY** - Entity

**ERROR** - Error

**SOURCE** - Source

**DP** - Decision point



**PID** - Process identification

**RC** - Return code (of function in which the error occurred)

**MID** - Mbox identification

**PROC** - Process

**TSARGS** - Trouble shooting arguments

**FAUDTIME** - Frame audit time

**FACY** - Frame audits cycle number when the error occurred

**FATN** - Frame audits test number when the error occurred

**ISPE** - ISPer LAN error count

**HOST** - Host

**xxxx** - Error identification

Controller (sub-system) on which the error occurred

*xxxx error*

|      |      |
|------|------|
| 0000 | UC1  |
| 0001 | UC2  |
| 0002 | UC3  |
| 0003 | UC4  |
| 0004 | UC5  |
| 0005 | UC6  |
| 0006 | UC7  |
| 0007 | UC8  |
| 0008 | UC9  |
| 0009 | UC10 |
| 000a | UC11 |
| 000b | UC12 |
| 000c | UC13 |
| 000d | UC14 |
| 000e | UC15 |
| 000f | UC16 |
| 0010 | CI   |
| 0011 | MP   |

**ENTT** - Hardware entity for hardware error recovery

| <i>xxxx</i> | <i>Explanation</i> |
|-------------|--------------------|
| 0001        | Unit UC            |
| 0002        | UBX                |
| 0003        | EBX                |
| 0004        | FTMI               |
| 0005        | FC                 |
| 0006        | DDC                |
| 0007        | DSPI               |
| 0008        | DMB                |
| 0009        | CCNI               |
| 000A        | CCB                |
| 000B        | TSI                |
| 000C        | SSC                |
| 000D        | EMTC               |
| 000E        | SYNC               |
| 000F        | TLI                |
| 0010        | Timing Link        |
| 0011        | DISK               |
| 0012        | TAPE               |
| 0013        | MP                 |
| 0014        | CI                 |
| 0015        | LINK               |
| 0016        | NPC                |
| 0017        | MC                 |
| 0018        | MJU                |
| 0019        | SRM                |
| 001A        | DS3U MXR           |
| 001B        | DS3U FLI           |
| 001C        | DS3U FMT           |
| 001D        | DS3U MIU           |
| 001E        | PR                 |
| 001F        | ECCN CCI           |
| 0020        | EBX                |
| 0021        | CCI                |
| 0022        | ETSI               |

**ERRC** - Error class

**xxxx** - Error identification

*xxxx Error*

0001 Hardware Error  
0002 Transient Error  
0003 Power Failure  
0004 Error Sanity Bit Error  
0005 CI Link related errors  
0006 Sync mode switch  
0007 Software error recovery  
0008 Error not found  
0009 Sync booted message from boot  
000A Sync timing link errors  
000B Background audits  
000C Facility errors  
000D Disk log of errors from HARDERR()  
000E Error detected from Frame Audits

**ERRT** - Error type

**TRAN** - Transaction number (software)

**EVEN** - Event number (software)

**MSGTYP** - Message type

**ADD1** - Address 1

First address of failed range

**ADD2** - Address 2

Second address of failed range

**DATA** - Data

**CHKACT** - Actual check

**CHKCOM** - Computed check

**COMMT0** - Communication to (lost)

**MEMORY DATA**  
- Memory data

READY QUEUE

- Ready queue

PAUSE QUEUE

- Pause queue

LOCAL STACK

- Local stack

STACK TRACE

- Stack trace

**cc** - Hexadecimal condition code

**cc** *Explanation*

**97** Entity can't be addressed in this configuration

## **UTL,QRY,ESR,CCN**

### **UTILITY QUERY ERROR SOURCE REGISTER**

#### **Explanation Of Command**

This message requests a printout of the error source register for one side of a cross-connect network (CCN).

#### **Command**

[I.55401]

UTL:FRM xy,SEQ ww:QRY,ESR,CCN s!

#### **Completion Message**

[O.55401]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR CCN s 4 LN MSG:  
MAIN,CCB abcdef ghijkl  
FTMI abcd efgh ijkl mnop qrst uvwx  
TSIS <tsi a> <tsi b> <tsi c> <tsi d> <tsi e> <tsi f> COMPL

#### **Denial Message**

[O.55401.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR CCN s COND cc DNY

#### **Autonomous Message**

Not applicable.

## **Explanation Of Parameters**

---

**ESR** - Error source register

**CCN** - Cross-connect network

**s** - Cross-connect network side (0 or 1)

**CCB** - Cross-connect buffer

### **abcdef, ghijkl**

- MAIN, CCB error source register information

- a is set to indicate an error has occurred on the synchronizer.
- b is set to indicate a parity error was detected on the address bus.
- c is set to indicate a parity error was detected on the low byte of data.
- d is set to indicate a parity error was detected on the high byte of data.
- e is set to indicate an error was detected on the BSR (Bus Status Register). This error indicates that there was a parity error over the work written in the register.
- f is set to indicate a parity error has occurred on autonomous

Switch Enable Circuit - ghijkl represents CCB 1 through 6.

**FTMI** - Facility terminating module interface

### **abcd, efgh, ijkl, mnop,qrst, uvwx**

- FTMI error source register information

**abcd** - FTMI 1 - 4 of Unit 1 (not used)

**efgh** - FTMI 1 - 4 of Unit 2 (not used)

**ijkl** - FTMI 1 - 4 of Unit 3 (not used)

**mnop** - FTMI 1 - 4 of Unit 4 (not used)

**qrst** - FTMI 1 - 4 of Unit 5 (not used)

**uvwx** - FTMI 1 - 4 of Unit 6 (not used)

**TSI** - Time slot interchange

<tsi a>, ..., <tsi f> - TSI error source register information.

Each register is six bits long. A bit set indicates the denoted entity is either out of frame or in frame but under alarm state.

**tsi a** - Denotes for TSI 1,1; 1,2; 1,3; 1,4; 1,5; 1,6

**tsi b** - Denotes for TSI 2,1; 2,2; 2,3; 2,4; 2,5; 2,6

**tsi c** - Denotes for TSI 3,1; 3,2; 3,3; 3,4; 3,5; 3,6

**tsi d** - Denotes for TSI 4,1; 4,2; 4,3; 4,4; 4,5; 4,6

**tsi e** - Denotes for TSI 5,1; 5,2; 5,3; 5,4; 5,5; 5,6

**tsi f** - Denotes for TSI 6,1; 6,2; 6,3; 6,4; 6,5; 6,6

**cc** - Hexadecimal condition code

**cc** *Explanation*

**04** Subject entity is out of service

## **UTL,QRY,ESR,ECCN**

### **QUERY ECCN ERROR SOURCE REGISTER**

#### **Explanation Of Command**

This message requests a printout of the contents of the Expanded Cross-Connect Network Error Source Register.

#### **Command**

[I.55411]

**UTL:FRM xy,SEQ ww:QRY,ESR,ECCN s!**



---

### Completion Message

[O.55411]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR ECCN s 4 LN MSG:  
CCI wd02 wd01 wd00  
aaaa bbbb cccc dddd eeee ffff gggg hhhh  
iiii jjjj kkkk llll mmmm nnnn oooo pppp {EOM|COMPL}

[M hh:mm:ss xy,ww n[vv] UTL QRY ESR ECCN s e LN MSG:]  
[ETSI sqq wd05 wd04 wd03 wd02 wd01 wd00]  
[ETSI sqq wd05 wd04 wd03 wd02 wd01 wd00]  
[ETSI sqq wd05 wd04 wd03 wd02 wd01 wd00]  
[ETSI sqq wd05 wd04 wd03 wd02 wd01 wd00 EOM]

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY ESR ECCN s e LN MSG:]  
[ETSI sqq wd05 wd04 wd03 wd02 wd01 wd00]  
[ETSI sqq wd05 wd04 wd03 wd02 wd01 wd00]  
[ETSI sqq wd05 wd04 wd03 wd02 wd01 wd00]  
[ETSI sqq wd05 wd04 wd03 wd02 wd01 wd00 {EOM|COMPL}]

---

### Denial Message

[O.55411.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR ECCN s COND cc DNY

---

### Autonomous Message

Not applicable.

## Explanation Of Parameters

**ESR** - Error source register

**e** - Number of lines in the segment (2 through 5)

**ECCN** - Expanded cross-connect network

**s** - ECCN side (0 or 1)

**qq** - Unit number (01 through 16)

**ETSI** - Expanded Time Slot Interchanger

The ESR data for a ETSI will be shown only if the ETSI is restored. If no ETSI in the ECCN side is restored, only the ESR data of the CCI will be shown.

**CCI** - Clock and Control Interface

**wd02,**

**wd01,**

**wd00** - Error source register data words for the CCI. Each word is a 4-digit hexadecimal number.

*wdx* *Definition*

wd00 CCI System Status Register

wd01 CCI Status Register

wd02 CCI Bus Status Register

**Note:** wd02 shows the active side; therefore, it is normal to have a non-zero value.

**aaaa,**

**bbbb,**

**cccc,**

**dddd** - CCI register for ETSI alarm information.

This 16 bit register is shown as four 4-bit binary numbers. Each bit represents one ETSI. The ETSIs are arranged by unit number in descending order from left to right. That is, the left-most bit reports alarm information for the unit 16 ETSI, while the right-most bit reports alarm information for the unit 1 ETSI.

**Descending order-->**

**aaaa bbbb cccc dddd**

**^**

**^**

**|**

**Unit 1 ETSI**

**Unit 16 ETSI**

**eeee,**  
**ffff,**  
**gggg,**  
**hhhh** - CCI register for ETSI equipage information  
See the explanation given for aaaa-dddd above.

**iiii,**  
**jjjj,**  
**kkkk,**  
**llll** - CCI register for ETSI ready timeout information  
See the explanation given for aaaa-dddd above.

**mmmm,**  
**nnnn,**  
**oooo,**  
**pppp** - CCI register for ETSI read high information  
See the explanation given for aaaa-dddd above.

**sqq** - Combined ECCN side and unit number  
See the definitions of s and qq above.

**wd05,**  
**wd04,**  
...,  
**wd00** - Error source register data words for the ETSI  
Each word is a 4-digit hexadecimal number representing the contents of  
the error source register listed in the table below.

| <i>wdxx</i> | <i>Definition</i>                   |
|-------------|-------------------------------------|
| wd00        | Circuit Pack Summary Register       |
| wd01        | Receive Status Register             |
| wd02        | Transmit Status Register            |
| wd03        | Control RAM Status Register         |
| wd04        | Control RAM Port Alarm Register     |
| wd05        | Control RAM Data RAM Alarm Register |

## **UTL, QRY, ESR, MP**

---

### **QUERY ERROR SOURCE REGISTER MAIN PROCESSOR**

#### **Explanation Of Command**

---

This message requests a printout of the 40-bit error source register (ESR) for the main processor (MP).

#### **Command**

---

[I.55111]

UTL:FRM xy,SEQ ww:QRY,ESR,MP!

#### **Completion Message**

---

[O.55111]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR MP 2 LN MSG:  
aa bb cc dd ee[ ff gg hh ii] COMPL

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**ESR** - Error source register

**MP** - Main Processor

Variables aa, bb, cc, dd, ee, ff, gg, hh, and ii are two digit hexadecimal numbers representing error source registers. The bits in these registers are numbered as shown below:

hex hh = bbbbbb binary  
76543210 Bit numbering

**aa** - Error Source Bit (ESB) group. (hexadecimal)

*aa Function*

|    |                             |
|----|-----------------------------|
| a0 | SYNC 0 power supply ESB     |
| a1 | SYNC 1 power supply ESB     |
| a2 | CCN/ECCN 0 power supply ESB |
| a3 | CCN/ECCN 1 power supply ESB |
| a4 | Spare                       |
| a5 | Spare                       |
| a6 | Spare                       |
| a7 | Spare                       |

**bb** - Error Source Bit (ESB) group. (hexadecimal)

*bb Function*

|    |                                                   |
|----|---------------------------------------------------|
| b0 | UC 01 power supply ESB                            |
| b1 | UC 02 power supply ESB                            |
| b2 | UC 03 power supply ESB                            |
| b3 | UC 04 power supply ESB                            |
| b4 | UC 05 power supply ESB                            |
| b5 | UC 06 power supply ESB                            |
| b6 | UC 07 power supply ESB for CEF, Spare for Non-CEF |
| b7 | Spare                                             |

**cc** - Error Source Bit (ESB) group. (hexadecimal)

| <i>cc</i> | <i>Function</i>                      |
|-----------|--------------------------------------|
| c0        | UC 01 ESB                            |
| c1        | UC 02 ESB                            |
| c2        | UC 03 ESB                            |
| c3        | UC 04 ESB                            |
| c4        | UC 05 ESB                            |
| c5        | UC 06 ESB                            |
| c6        | UC 07 ESB for CEF, Spare for Non-CEF |
| c7        | UC 08 ESB for CEF, Spare for Non-CEF |

**dd** - Error Source Bit (ESB) group. (hexadecimal)

| <i>dd</i> | <i>Function</i>       |
|-----------|-----------------------|
| d0        | MC CPU ESB            |
| d1        | MC CI ESB             |
| d2        | MC SSC ESB            |
| d3        | Spare                 |
| d4        | MC power supply 0 ESB |
| d5        | MC power supply 1 ESB |
| d6        | Spare                 |
| d7        | Spare                 |

**ee** - Error Source Bit (ESB) group. (hexadecimal)

| <i>ee</i> | <i>Function</i>                                                   |
|-----------|-------------------------------------------------------------------|
| e0        | Parity over Low Data Byte                                         |
| e1        | Parity over High Data Byte                                        |
| e2        | Error from Side 0 Bus Extension                                   |
| e3        | Error from Side 1 Bus Extension                                   |
| e4        | ECCN side 0 circuit not present for CEF, Spare for Non-CEF        |
| e5        | ECCN side 1 circuit not present for CEF, Spare for Non-CEF        |
| e6        | Write parity error over low byte data for CEF, Spare for Non-CEF  |
| e7        | Write parity error over high byte data for CEF, Spare for Non-CEF |

The following parameters (ff, gg, hh, ii) apply only to CEF frames:

**ff** - Error Source Bit (ESB) group. (hexadecimal)

| <i>ff</i> | <i>Function</i>        |
|-----------|------------------------|
| f0        | UC 08 power supply ESB |
| f1        | UC 09 power supply ESB |
| f2        | UC 10 power supply ESB |
| f3        | UC 11 power supply ESB |
| f4        | UC 12 power supply ESB |
| f5        | Spare                  |
| f6        | Spare                  |
| f7        | Spare                  |

**gg** - Error Source Bit (ESB) group. (hexadecimal)

| <i>gg</i> | <i>Function</i>        |
|-----------|------------------------|
| g0        | UC 13 power supply ESB |
| g1        | UC 14 power supply ESB |
| g2        | UC 15 power supply ESB |
| g3        | UC 16 power supply ESB |
| g4        | Spare                  |
| g5        | Spare                  |
| g6        | Spare                  |
| g7        | Spare                  |

**hh** - Error Source Bit (ESB) group. (hexadecimal)

| <i>hh</i> | <i>Function</i> |
|-----------|-----------------|
| h0        | UC 09 ESB       |
| h1        | UC 10 ESB       |
| h2        | UC 11 ESB       |
| h3        | UC 12 ESB       |
| h4        | Spare           |
| h5        | Spare           |
| h6        | Spare           |
| h7        | Spare           |

**ii** - Error Source Bit (ESB) group. (hexadecimal)

| <i>ii</i> | <i>Function</i> |
|-----------|-----------------|
| i0        | UC 13 ESB       |
| i1        | UC 14 ESB       |
| i2        | UC 15 ESB       |
| i3        | UC 16 ESB       |
| i4        | Spare           |
| i5        | Spare           |
| i6        | Spare           |
| i7        | Spare           |



## **UTL, QRY, ESR, NPC, SIDE**

### **UTILITY QUERY ESR FOR FTU OR SUBRATE NPC**

#### **Explanation Of Command**

This message requests a print out of the error source register for a particular network processing circuit (NPC).

#### **Command**

##### **Nonhierarchical**

[I.55601]

UTL:FRM xy,SEQ ww:QRY,ESR,NPC [s]abc[,SIDE s]!

##### **Hierarchical**

[I.55601]

UTL:FRM xy,SEQ ww:QRY,ESR,NPC uvmnp[,SIDE s]!

#### **Completion Message**

##### **Nonhierarchical**

[O.55601]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR NPC [s]abc 2 LN MSG:  
aa bb cc dd ee ff gg hh ii jj COMPL

**Note:** The above message applies if the side is not specified.

[O.55602]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR NPC [s]abc SIDE s \  
TYPE mnxyz 2 LN MSG:  
defghijk lmnopqrs COMPL

**Note:** The above message applies if the side is specified.

### **Hierarchical**

---

[O.55601]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR NPC uvmnp 2 LN MSG:  
aa bb cc dd ee ff gg hh ii jj COMPL

**Note:** The above message applies if the side is not specified.

[O.55602]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR NPC uvmnp SIDE s \  
TYPE mnxyz 2 LN MSG:  
defghijk lmnopqrs COMPL

**Note:** The above message applies if the side is specified.

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.55601.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR NPC [s]abc[ SIDE s] COND cc DNY

#### **Hierarchical**

---

[O.55601.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR NPC uvmnp[ SIDE s] COND cc DNY

#### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**ESR** - Error source register

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**SIDE** - Side

**s** - Side number (0 or 1)

Substrate type circuit packs are duplicated; therefore, the side must be specified in order to request the contents of the error source register. The side must not be specified when the NPC is a facility terminating NPC.

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The allowable values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**Note:** In the error source register listings below, the bits are each shown set individually (bit value = 1). In actual practice the bits may be set in combination. For example a value of 0C for register dd would be interpreted as follows:

X'0C = 00001100 binary

Bits 2 and 3 are set to one. An examination of the bits for register dd shows that X'0C means RAM diagnostic complete and power up ready.

**aa** - Communications Interface ESR 1 (Hexadecimal)

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>            |
|------------|--------------|----------------------------------|
| 0          | 1            | Channel controller error         |
| 1          | 1            | Unassigned                       |
| 2          | 1            | Chip identification parity error |
| 3          | 1            | Sync error                       |
| 4          | 1            | Facility processor sanity error  |
| 5          | 1            | Hardware error                   |
| 6          | 1            | Transceiver A error              |
| 7          | 1            | Transceiver B error              |

**bb** - Not used

**cc** - Channel Controller ESR (Hexadecimal)

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>               |
|------------|--------------|-------------------------------------|
| 0          | 1            | Exercise indicator                  |
| 1          | 1            | Receive data parity error           |
| 2          | 1            | Transmit data parity error          |
| 3          | 1            | Instruction RAM parity error        |
| 4          | 1            | Configuration register parity error |
| 5          | 1            | Processor error                     |
| 6          | 1            | Sync error                          |
| 7          | 1            | Loss of clock (8 MHz)               |

**dd** - Hardware error data from DDC shared RAM (Hexadecimal)

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>   |
|------------|--------------|-------------------------|
| 0          | 1            | Not used                |
| 1          | 1            | Not used                |
| 2          | 1            | RAM diagnostic complete |
| 3          | 1            | Power up ready          |
| 4          | 1            | Not used                |
| 5          | 1            | Not used                |
| 6          | 1            | RAM diagnostic failure  |
| 7          | 1            | ROM checksum failure    |

**ee** - Transceiver A ESR (framer alarms) (Hexadecimal)

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>                     |
|------------|--------------|-------------------------------------------|
| 0          | 1            | Device error Remote Frame Alignment       |
| 1          | 1            | Device error Remote Multiframe Alignment  |
| 2          | 1            | Device error Loss of Multiframe Alignment |
| 3          | 1            | Device error Framing Bit Error            |
| 4          | 1            | Not used                                  |
| 5          | 1            | Not used                                  |
| 6          | 1            | Not used                                  |
| 7          | 1            | Not used                                  |

**ff** - Transceiver A ESR (receive sync alarms) (Hexadecimal)

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>             |
|------------|--------------|-----------------------------------|
| 0          | 1            | STOMP block device error          |
| 1          | 1            | ALU block device error            |
| 2          | 1            | ALU block device error            |
| 3          | 1            | Data link                         |
| 4          | 1            | Missing receive synchronizer sync |
| 5          | 1            | Signaling RAM parity error        |
| 6          | 1            | PCM RAM parity error              |
| 7          | 1            | E signaling bit error             |

**gg** - Transceiver A ESR (transmitter alarms) (Hexadecimal)

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>                        |
|------------|--------------|----------------------------------------------|
| 0          | 1            | Transmit framing bit generator circuit       |
| 1          | 1            | Transmitter SLIP                             |
| 2          | 1            | Internal parity error                        |
| 3          | 1            | Missing transmit sync                        |
| 4          | 1            | Misaligned transmit sync                     |
| 5          | 1            | Transmit SLC®-96 carrier framer device alarm |
| 6          | 1            | Missing SLC 96 carrier Fs superframe sync    |
| 7          | 1            | Misaligned SLC 96 carrier Fs superframe sync |

**hh** - Transceiver A ESR (framer alarms) (Hexadecimal)

Values and explanations are the same as ee

**ii** - Transceiver B ESR (receive sync alarms) (Hexadecimal)

Values and explanations are the same as ff

**jj** - Transceiver B ESR (transmitter alarms) (Hexadecimal)

Values and explanations are the same as gg

The meaning of the bits for types MJ100 and SR100 depends upon the type reported in the output message.

#### TYPE SR100

##### defghijk

- First 8 bits of Substrate circuit pack error source register

| <i>Bit</i> | <i>Value</i> | <i>Fault</i>                                                                                                                   |
|------------|--------------|--------------------------------------------------------------------------------------------------------------------------------|
| d          | 1            | Parallel interface between the DSPU processor and the SR100                                                                    |
| e          | 1            | Data interface between the DSPU backplane and the SR100                                                                        |
| f          | 1            | Data path internal to the SR100 including the Error Correction Device (ECD)                                                    |
| g          | 1            | Data interface between the DSPU backplane and the SR100, or data path internal to the SR100 including the ECD, or PROM5 device |
| h          | 1            | Output block of SR100, or bus feeding the output block                                                                         |
| i          | 1            | Internal data RAM                                                                                                              |
| j          | 1            | Multiplexer state machine, or bus feeding the output block                                                                     |
| k          | 1            | Clock circuitry                                                                                                                |

##### lmnopqrs

- Second 8 bits of Substrate circuit pack error source register

| <i>Bit</i> | <i>Value</i> | <i>Fault</i>              |
|------------|--------------|---------------------------|
| l          | 1            | Built-in self test on ECD |
| m-s        | 0            | Unused                    |

#### TYPE MJ100

##### defghijk

- First 8 bits of Substrate circuit pack error source register

| <i>Bit</i> | <i>Value</i> | <i>Fault</i>                                                                                                                          |
|------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------|
| d          | 1            | Parallel interface Device (PID), or parallel control bus                                                                              |
| e          | 1            | Data interface between the ETSI and the MJ100                                                                                         |
| f          | 1            | ECD data input, or ECD                                                                                                                |
| g          | 1            | MJU control memory parity                                                                                                             |
| h          | 1            | Data path to the output block, or output data interface block, or control code state machine, or FTU time slot parity correction PROM |
| i          | 1            | MJU control signal PROM                                                                                                               |
| j          | 1            | Overwrite state machine, or secondary channel state machine, or ECD control memory                                                    |
| k          | 1            | Clock                                                                                                                                 |

# **l m n o p q r s**

- Second 8 bits of Substrate circuit pack error source register

| <i>Bit</i> | <i>Value</i> | <i>Fault</i>              |
|------------|--------------|---------------------------|
| <b>l</b>   | <b>1</b>     | Built-in self test on ECD |
| <b>m-s</b> | <b>0</b>     | Unused                    |

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>                       |
|-----------|------------------------------------------|
| <b>02</b> | Subject entity is not equipped           |
| <b>04</b> | Subject entity is out of service         |
| <b>10</b> | Unit is not equipped                     |
| <b>11</b> | UC is out of service                     |
| <b>14</b> | FTMI is out of service                   |
| <b>26</b> | NPC type error                           |
| <b>37</b> | DSPI out-of-service                      |
| <b>3E</b> | DSPI failed                              |
| <b>0F</b> | Side specified for non-duplicated NPC    |
| <b>2A</b> | Incorrect pack type in slot              |
| <b>57</b> | SIDE must be specified for substrate NPC |



## **UTL, QRY, ESR, UNIT**

### **UTILITY QUERY ERROR SOURCE REGISTER**

#### **Explanation Of Command**

This message prints out the contents of the error source register for a facility terminating unit (FTU), DS3 unit (DS3U), or Hybrid DS3 unit (HDS3U)

#### **Command**

[I.55501]

**UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q!**

#### **Completion Message**

[O.55501]

**M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q aa COMPL**

**Note:** The above message applies to an FTU.

[O.55501]

**M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q bbbb cccc dddd \  
eeee COMPL**

**Note:** The above message applies to a DS3 unit.

#### **Denial Message**

[O.55501.01]

**M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q COND cc DNY**

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**ESR** - Error source register

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**aa** - FTU ESR

*aa Explanation*

A2 Error from FTMI 1

A4 Error from FTMI 2

A5 Error from FTMI 3

A6 Error from FTMI 4

**bbbb** - DS3U or HDS3U Interrupt holding register 0.  
Hexadecimal digits are numbered 3210 in left to right order.

*hex*

| digit | Bit  | Value | Definition                |
|-------|------|-------|---------------------------|
| 0     | 0    | 1     | Ram Parity Error          |
| 0     | 1    | 1     | Internal Bus Error        |
| 0     | 2    | 1     | Parallel Bus Parity Error |
| 0     | 3    | 1     | Series Bus Parity Error   |
| 1-3   | 4-15 |       | Unused                    |

**cccc** - DS3U or HDS3U Interrupt holding register 1  
Hexadecimal digits are numbered 3210 in left to right order.

| <i>hex</i><br>digit | Bit | Value | Definition                |
|---------------------|-----|-------|---------------------------|
| 0                   | 0   | 1     | MXR1 Power Loss Interrupt |
| 0                   | 1   | 1     | MXR2 Power Loss Interrupt |
| 0                   | 2   | 1     | MXR3 Power Loss Interrupt |
| 0                   | 3   | 1     | MXR4 Power Loss Interrupt |
| 1                   | 4   | 1     | MXR5 Power Loss Interrupt |
| 1                   | 5   | 1     | MXR6 Power Loss Interrupt |
| 1                   | 6   | 1     | MXRP Power Loss Interrupt |
| 1                   | 7   | 1     | SFLI Power Loss Interrupt |
| 2                   | 8   | 1     | MIU1 Power Loss Interrupt |
| 2                   | 9   | 1     | MIU2 Power Loss Interrupt |
| 2                   | 10  | 1     | MIU3 Power Loss Interrupt |
| 2                   | 11  | 1     | MIU4 Power Loss Interrupt |
| 3                   | 12  | 1     | MIU5 Power Loss Interrupt |
| 3                   | 13  | 1     | MIU6 Power Loss Interrupt |
| 3                   | 14  | 1     | MIUP Power Loss Interrupt |
| 3                   | 15  | 1     | PFLI Power Loss Interrupt |

**dddd** - DS3U or HDS3U Interrupt holding register 2 (hexadecimal)  
Hexadecimal digits are numbered 3210 in left to right order.

| <i>hex</i><br>digit | Bit | Value | Definition                |
|---------------------|-----|-------|---------------------------|
| 0                   | 0   | 1     | MXR1 Interrupt            |
| 0                   | 1   | 1     | MXR2 Interrupt            |
| 0                   | 2   | 1     | MXR3 Interrupt            |
| 0                   | 3   | 1     | MXR4 Interrupt            |
| 1                   | 4   | 1     | MXR5 Interrupt            |
| 1                   | 5   | 1     | MXR6 Interrupt            |
| 1                   | 6   | 1     | MXRP Interrupt            |
| 1                   | 7   | 1     | 0FMT Power Loss Interrupt |
| 2                   | 8   | 1     | MIU1 Interrupt            |
| 2                   | 9   | 1     | MIU2 Interrupt            |
| 2                   | 10  | 1     | MIU3 Interrupt            |
| 2                   | 11  | 1     | MIU4 Interrupt            |
| 3                   | 12  | 1     | MIU5 Interrupt            |
| 3                   | 13  | 1     | MIU6 Interrupt            |
| 3                   | 14  | 1     | MIUP Interrupt            |
| 3                   | 15  | 1     | 1FMT Power Loss Interrupt |

**eeee** - DS3U or HDS3U CI error source register (hexadecimal)  
Hexadecimal digits are numbered 3210 in left to right order.

| <i>hex</i><br>digit | Bit   | Value | Definition           |
|---------------------|-------|-------|----------------------|
| 0                   | 0     | 1     | Link 1 Error         |
| 0                   | 1     | 1     | Link 2 Error         |
| 0                   | 2     | 1     | Link 3 Error         |
| 0                   | 3     | 1     | Link 4 Error         |
| 1                   | 4     | 1     | Link 5 Error         |
| 1                   | 5     | 1     | Link 6 Error         |
| 1                   | 6     | 1     | Link 7 Error         |
| 1                   | 7     | 1     | Link 8 Error         |
| 2                   | 8     | 1     | CI device ID Error   |
| 2                   | 9     | 1     | Address Parity Error |
| 2                   | 10    | 1     | Data Strobe Error    |
| 2                   | 11    | 1     | Loss of Timing Error |
| 3                   | 12-15 |       | Not Used             |

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 02** Subject entity is not equipped
- 04** Subject entity is out of service

## **UTL, QRY, ESR, UNIT, DSPI**

### **QUERY ERROR SOURCE REGISTER**

#### **Explanation Of Command**

This message prints out the contents of the error source register for the digital signal processing interface (DSPI) in a digital signal processing unit (DSPU).

#### **Command**

[I.55531]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,DSPI!

#### **Completion Message**

[O.55531]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q DSPI 2 LN MSG:  
SIDE 0: p1p2p3p4p5p6p7p8 SIDE 1: p1p2p3p4p5p6p7p8 COMPL

#### **Denial Message**

[O.55531.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q DSPI 2 LN MSG:  
<reason> DNY

#### **Autonomous Message**

Not applicable.

### Explanation Of Parameters

---

**ESR** - Error source register

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**DSPI** - Digital signal processing interface

**p1, . . . , p8**  
- Register data bits

| <i>Bit<br/>Position</i> | <i>Error Interrupt For DSPU<br/>Circuit Packs</i> |
|-------------------------|---------------------------------------------------|
| p1                      | 1                                                 |
| p2                      | 2                                                 |
| p3                      | 3                                                 |
| p4                      | 4                                                 |
| p5                      | 5                                                 |
| p6                      | 6                                                 |
| p7                      | 7                                                 |
| p8                      | 8                                                 |

**reason** - Reason for denial

*reason*

UNIT [q]q IS NOT EQUIPPED  
UNIT [q]q IS OUT-OF-SERVICE  
UNIT [q]q IS FAILED

## **UTL, QRY, ESR, UNIT, FC**

### **QUERY ERROR SOURCE REGISTER**

#### **Explanation Of Command**

This message prints out the contents of the error source register for a format converter (FC) in a particular unit.

#### **Command**

[I.55521]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,FC sb!

#### **Completion Message**

[O.55521]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q FC sb 2 LN MSG:  
aa bb cc dd ee COMPL

#### **Denial Message**

[O.55521.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q FC sb COND cc DNY

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

**ESR** - Error source register

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FC** - Format converter

**s** - Side (0 or 1)

**b** - Format converter number (1 through 4)

**Note:** Data bytes aa through gg must be converted from hexadecimal to binary before the tables below can be used to interpret the data byte values. Each hexdigit converts to 4 binary digits. Bits are numbered from right to left starting from 0 as follows; 76543210.

For example if aa = 01 the binary equivalent of this is 0000 0001. Using the table for aa below this indicates that there is an alarm on the Receive formatter.

| Bit value | Explanation                 |
|-----------|-----------------------------|
| 0         | Indicates NO error or alarm |
| 1         | Indicates an error or alarm |

**aa** - Communications interface (CI) error source register 0 (ESR0) (Hexadecimal)

| <i>Bit</i> | <i>Explanation</i>                                                        |
|------------|---------------------------------------------------------------------------|
| 0          | Receive formatter summary (look at bytes bb, cc, dd , and ee for details) |
| 1          | Transmit formatter summary (look at byte ee for details)                  |
| 2          | Circuit ID error                                                          |
| 3          | Timing error                                                              |
| 4-7        | Not used                                                                  |

**bb** - Receive Formatter (RF) device ESR0 (Hexadecimal)

| <i>Bit</i> | <i>Explanation</i> |
|------------|--------------------|
| 0          | Port 0 alarm       |
| 1          | Port 1 alarm       |
| 2          | Port 2 alarm       |
| 3          | Port 3 alarm       |
| 4          | Port 4 alarm       |
| 5          | Port 5 alarm       |
| 6          | Port 6 alarm       |
| 7          | Port 7 alarm       |



**cc** - RF device ESR1 (Hexadecimal)

| <i>Bit</i> | <i>Explanation</i> |
|------------|--------------------|
| 8          | Port 8 alarm       |
| 9          | Port 9 alarm       |
| 10         | Port 10 alarm      |
| 11         | Port 11 alarm      |
| 12         | Port 12 alarm      |
| 13         | Port 13 alarm      |
| 14         | Port 14 alarm      |
| 15         | Port 15 alarm      |

**dd** - RF device ESR2 (Hexadecimal)

| <i>Bit</i> | <i>Explanation</i> |
|------------|--------------------|
| 0          | Port 17 alarm      |
| 1          | Port 18 alarm      |
| 2          | Port 19 alarm      |
| 3          | Port 20 alarm      |
| 4-7        | Not used           |

**ee** - RF/Transmitter Formatter (TF) device status register (Hexadecimal)

| <i>Bit</i> | <i>Explanation</i>                          |
|------------|---------------------------------------------|
| 0          | Domestic/CEPT mode (Domestic = 0, CEPT = 1) |
| 1          | Network data error                          |
| 2          | Frame sync error                            |
| 3          | Clock error                                 |
| 4          | Microprocessor bus error                    |
| 5-7        | Not used                                    |

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>               |
|-----------|----------------------------------|
| <b>04</b> | Subject entity is out of service |
| <b>10</b> | Unit is not equipped             |
| <b>11</b> | UC is out of service             |
| <b>13</b> | FTMI is not equipped             |
| <b>14</b> | FTMI is out of service           |

## **UTL, QRY, ESR, UNIT, FLI**

### **QUERY ERROR SOURCE REGISTER FACILITY LINE INTERFACE**

#### **Explanation Of Command**

This message requests a print out of the error source register (ESR) on one facility line interface (FLI) circuit pack.

#### **Command**

[I.55801]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,FLI k!

#### **Completion Message**

[O.55801]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q FLI k 2 LN MSG:  
aa bb ee dd COMPL

#### **Denial Message**

[O.55801.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q FLI k COND cc DNY

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FLI** - Facility line interface

**k** - The identifier of the FLI:

*k*      *Explanation*

S      Service FLI

P      Protection FLI

**ESR** - Error source register

**aa, bb, ee, dd**

- The error register of the queried circuit pack

Variables aa, bb, ee, and dd are two-digit hexadecimal numbers representing error source registers. The bits in these registers are numbered as shown below:

76543210      Bit numbering

Bit values have the following meaning:

0      No error

1      Error

**aa** - Communication Interface (CI) ESR 1

*bit*      *Explanation*

0      Summary of facility line interface (FLI) ESR 1

1      Summary of FLI ESR 2

2      Chip identification parity error indicator

3      Sync absence or internal counter error indicator

4-7      Not used ( set to zero )

### Example:

aa = 05 (= 00000101 binary). At least one bit in the FLI ESR 1 is set, and a chip ID error has been identified.

**Note:** In practice, the bits may be set in combination.

**bb** - CI ESR 2

*bit*      *Explanation*

0      Address Parity Error

1-7      Not Used

**ee** - FLI ESR 1

| <i>Bit</i> | <i>Value</i> | <i>Explanation</i>                      |
|------------|--------------|-----------------------------------------|
| 0          | 1            | The LOC alarm for DS-3 # 1 is activated |
| 1          | 1            | The LOC alarm for DS-3 # 2 is activated |
| 2          | 1            | The LOC alarm for DS-3 # 3 is activated |
| 3          | 1            | The LOC alarm for DS-3 # 4 is activated |
| 4          | 1            | The LOC alarm for DS-3 # 5 is activated |
| 5          | 1            | The LOC alarm for DS-3 # 6 is activated |
| 6,7        |              | Not Used                                |

**dd** - FLI ESR 2

| <i>Bit</i> | <i>Value</i> | <i>Explanation</i>                        |
|------------|--------------|-------------------------------------------|
| 0          | 1            | The LOS alarm for DS-3 # 1 is activated   |
| 1          | 1            | The LOS alarm for DS-3 # 2 is activated   |
| 2          | 1            | The LOS alarm for DS-3 # 3 is activated   |
| 3          | 1            | The LOS alarm for DS-3 # 4 is activated   |
| 4          | 1            | The LOS alarm for DS-3 # 5 is activated   |
| 5          | 1            | The LOS alarm for DS-3 # 6 is activated   |
| 6          | 1            | Lock and Key procedure alarm is activated |
| 7          |              | Not Used                                  |

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 10** Unit is not equipped
- 11** UC is out of service
- 12** UC is in service but failed

## **UTL, QRY, ESR, UNIT, FTMI**

### **QUERY ERROR SOURCE REGISTER FTMI**

#### **Explanation Of Command**

This message requests a printout of the error source register for a facility terminating module interface in a unit.

#### **Command**

[I.55511]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,FTMI d!

#### **Completion Message**

[O.55511]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q FTMI d 2 LN MSG:  
aa bb cc dd ee ff gg COMPL

#### **Denial Message**

[O.55511.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q FTMI d COND cc DNY

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

**ESR** - Error source register

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FTMI** - Facility terminating module interface

**d** - Facility terminating module interface number (1 through 4)

**Note:** Data bytes aa through gg must be converted from hexadecimal to binary before the tables below can be used to interpret the data byte values. Each hex digit converts to 4 binary digits. Bits are numbered from right to left starting from 0 as follows; 76543210.

For example if aa = 01 the binary equivalent of this is 0000 0001. Using the table for aa below this indicates that there is an alarm on the Communications interface device C.

| Bit value | Explanation                 |
|-----------|-----------------------------|
| 0         | Indicates NO error or alarm |
| 1         | Indicates an error or alarm |

**aa** - FTMI error status register

| <i>Bit</i> | <i>Explanation</i>                                                                                      |
|------------|---------------------------------------------------------------------------------------------------------|
| 0          | Error summary bit from Communications interface device C (CIC)<br>(look at bytes bb and ee for details) |
| 1          | Error summary bit from CIB (look at bytes bc and ff for details)                                        |
| 2          | Error summary bit from CIA (look at bytes dd and gg for details)                                        |
| 3          | Bus error alarm                                                                                         |
| 4-7        | Not used                                                                                                |

**bb** - Communications interface (CI) device A error source register

| <i>Bit</i> | <i>Explanation</i>                    |
|------------|---------------------------------------|
| 0          | Chip identification comparison failed |
| 1          | Address parity error was detected     |
| 2          | Data Strobe signal was not presented  |
| 3          | Loss of timing alarm on the device    |
| 4-7        | Not used                              |

|                                               |                                       |
|-----------------------------------------------|---------------------------------------|
| <b>cc</b> - CI device B error source register |                                       |
| <i>Bit</i>                                    | <i>Explanation</i>                    |
| 0                                             | Chip identification comparison failed |
| 1                                             | Address parity error was detected     |
| 2                                             | Data Strobe signal was not presented  |
| 3                                             | Loss of timing alarm on the device    |
| 4-7                                           | Not used                              |
| <b>dd</b> - CI device C error source register |                                       |
| <i>Bit</i>                                    | <i>Explanation</i>                    |
| 0                                             | Chip identification comparison failed |
| 1                                             | Address parity error was detected     |
| 2                                             | Data Strobe signal was not presented  |
| 3                                             | Loss of timing alarm on the device    |
| 4-7                                           | Not used                              |
| <b>ee</b> - CI device B error source register |                                       |
| <i>Bit</i>                                    | <i>Explanation</i>                    |
| 0                                             | Error summary bit, Link 1             |
| 1                                             | Error summary bit, Link 2             |
| 2                                             | Error summary bit, Link 3             |
| 3                                             | Error summary bit, Link 4             |
| 4                                             | Error summary bit, Link 5             |
| 5                                             | Error summary bit, Link 6             |
| 6                                             | Error summary bit, Link 7             |
| 7                                             | Error summary bit, Link 8             |
| <b>ff</b> - CI device A error source register |                                       |
| <i>Bit</i>                                    | <i>Explanation</i>                    |
| 0                                             | Error summary bit, Link 1             |
| 1                                             | Error summary bit, Link 2             |
| 2                                             | Error summary bit, Link 3             |
| 3                                             | Error summary bit, Link 4             |
| 4                                             | Error summary bit, Link 5             |
| 5                                             | Error summary bit, Link 6             |
| 6                                             | Error summary bit, Link 7             |
| 7                                             | Error summary bit, Link 8             |

**gg** - CI device C error source register

*Bit Explanation*

|   |                           |
|---|---------------------------|
| 0 | Error summary bit, Link 1 |
| 1 | Error summary bit, Link 2 |
| 2 | Error summary bit, Link 3 |
| 3 | Error summary bit, Link 4 |
| 4 | Error summary bit, Link 5 |
| 5 | Error summary bit, Link 6 |
| 6 | Error summary bit, Link 7 |
| 7 | Error summary bit, Link 8 |

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                  |
|-----------|----------------------------------|
| <b>02</b> | Subject entity is not equipped   |
| <b>04</b> | Subject entity is out of service |
| <b>10</b> | Unit is not equipped             |
| <b>11</b> | UC is out of service             |



---

## **UTL, QRY, ESR, UNIT, MXR**

---

### **QUERY ERROR SOURCE REGISTER MULTIPLEXER**

#### **Explanation Of Command**

---

This message requests a printout of the error source register (ESR) for one multiplexer (MXR) or Hybrid MXR (HMXR) circuit pack.

#### **Command**

---

[I.55821]

UTL:FRM xy,SEQ ww:QRY,ESR,UNIT [q]q,MXR c!

#### **Completion Message**

---

[O.55821]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q MXR c 2 LN MSG:  
aa bb dd ee ff COMPL

[O.55822]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q HMXR c 2 LN MSG:  
gg ii jj kk ll nn oo COMPL

#### **Denial Message**

---

[O.55821.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q MXR c COND cc DNY

[O.55822.01]

M hh:mm:ss xy,ww n[vv] UTL QRY ESR UNIT [q]q HMXR c COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**MXR** - Multiplexer

**HMXR** - Hybrid Multiplexer

**c** - The number of the MXR or HMXR within the unit ( $P, 1 \leq c \leq 6$ )

**ESR** - Error source register

**aa, bb, dd, ee, ff, gg, ii, jj, kk, nn, oo**

- The error register of the queried circuit pack. (Hexadecimal format)

**aa** - MXR ESR 1

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>  |
|------------|--------------|------------------------|
| 0          | 1            | DS3 LOS / OOF detected |
| 1          | 1            | CC device #7 Error     |
| 2          | 1            | CC device #6 Error     |
| 3          | 1            | CC device #5 Error     |
| 4          | 1            | CC device #4 Error     |
| 5          | 1            | CC device #3 Error     |
| 6          | 1            | CC device #2 Error     |
| 7          | 1            | CC device #1 Error     |

**bb** - MXR ESR 2

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>                       |
|------------|--------------|---------------------------------------------|
| 0          | 1            | Facility Processor detected Hardwared Error |
| 1          | 1            | CC device #14 Error                         |
| 2          | 1            | CC device #13 Error                         |
| 3          | 1            | CC device #12 Error                         |
| 4          | 1            | CC device #11 Error                         |
| 5          | 1            | CC device #10 Error                         |
| 6          | 1            | CC device #9 Error                          |
| 7          | 1            | CC device #8 Error                          |

**dd** - MXR ESR 3

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>                      |
|------------|--------------|--------------------------------------------|
| 0          | 1            | Facility Processor detected Facility Error |
| 1          | 1            | MXR Reset                                  |
| 2          | 1            | PIF Bus Parity Error                       |
| 3          | 1            | LOC DS3 Clock from the unselected FLI      |
| 4          | 1            | LOC DS3 N Rail from the unselected FLI     |
| 5          | 1            | LOC DS3 P Rail from the unselected FLI     |
| 6          | 1            | 45 MHz Clock Out of Lock                   |
| 7          |              | Not Used                                   |

**ee** - Hardware summary byte 1

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i> |
|------------|--------------|-----------------------|
| 0          | 1            | HSCC error            |
| 1          | 1            | Firmware failure      |
| 2          | 1            | PIF I/O error         |
| 3          | 1            | M13 error             |
| 4          | 1            | XCVR error            |
| 5          | 1            | Program error         |
| 6          | 1            | RAM error             |
| 7          | 1            | ROM error             |

**ff** - Hardware summary byte 2

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>  |
|------------|--------------|------------------------|
| 0-5        |              | Not Used               |
| 6          | 1            | Logic Cell Array error |
| 7          | 1            | Queue overflow         |

**gg** - HMXR ESR 1

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i> |
|------------|--------------|-----------------------|
| 0          | 1            | Bus Error             |
| 1          | 1            | T1 CC device #7 Error |
| 2          | 1            | T1 CC device #6 Error |
| 3          | 1            | T1 CC device #5 Error |
| 4          | 1            | T1 CC device #4 Error |
| 5          | 1            | T1 CC device #3 Error |
| 6          | 1            | T1 CC device #2 Error |
| 7          | 1            | T1 CC device #1 Error |

**ii** - HMXR ESR 2

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>                       |
|------------|--------------|---------------------------------------------|
| 0          | 1            | Facility Processor detected Hardwared Error |
| 1          | 1            | T1 CC device #14 Error                      |
| 2          | 1            | T1 CC device #13 Error                      |
| 3          | 1            | T1 CC device #12 Error                      |
| 4          | 1            | T1 CC device #11 Error                      |
| 5          | 1            | T1 CC device #10 Error                      |
| 6          | 1            | T1 CC device #9 Error                       |
| 7          | 1            | T1 CC device #8 Error                       |

**jj** - HMXR ESR 3

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>                      |
|------------|--------------|--------------------------------------------|
| 0          | 1            | Facility Processor detected Facility Error |
| 1          | 1            | LOC DS3 Clock from the unselected FLI      |
| 2          | 1            | LOC DS3 N Rail from the unselected FLI     |
| 3          | 1            | LOC DS3 P Rail from the unselected FLI     |
| 4          | 1            | Side 1 SY240T Sync Pulse Failure           |
| 5          | 1            | Side 1 Loss of 8.192 MHz System Clock      |
| 6          | 1            | Side 0 SY240T Sync Pulse Failure           |
| 7          | 1            | Side 0 Loss of 8.192 MHz System Clock      |

**kk** - HMXR ESR 4

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>     |
|------------|--------------|---------------------------|
| 0          | 1            | M13 Multiplexer Interrupt |
| 1          | 1            | E1 CC device #7 Error     |
| 2          | 1            | E1 CC device #6 Error     |
| 3          | 1            | E1 CC device #5 Error     |
| 4          | 1            | E1 CC device #4 Error     |

|   |   |                       |
|---|---|-----------------------|
| 5 | 1 | E1 CC device #3 Error |
| 6 | 1 | E1 CC device #2 Error |
| 7 | 1 | E1 CC device #1 Error |

**11** - HMXR ESR 5

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i>  |
|------------|--------------|------------------------|
| 0          |              | Not Used               |
| 1          | 1            | E1 CC device #14 Error |
| 2          | 1            | E1 CC device #13 Error |
| 3          | 1            | E1 CC device #12 Error |
| 4          | 1            | E1 CC device #11 Error |
| 5          | 1            | E1 CC device #10 Error |
| 6          | 1            | E1 CC device #9 Error  |
| 7          | 1            | E1 CC device #8 Error  |

**nn** - Hardware summary byte 1

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i> |
|------------|--------------|-----------------------|
| 0          | 1            | HSCC error            |
| 1          | 1            | FPGA Failure          |
| 2          | 1            | E1 XCVR error         |
| 3          | 1            | M13 error             |
| 4          | 1            | T1 XCVR error         |
| 5          | 1            | Program error         |
| 6          | 1            | RAM error             |
| 7          | 1            | ROM error             |

**oo** - Hardware summary byte 2

| <i>Bit</i> | <i>Value</i> | <i>Bit definition</i> |
|------------|--------------|-----------------------|
| 0-6        |              | Not Used              |
| 7          | 1            | HMXR SW error         |

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>          |
|-----------|-----------------------------|
| <b>10</b> | Unit is not equipped        |
| <b>11</b> | UC is out of service        |
| <b>12</b> | UC is in service but failed |

---

## **UTL, QRY, FALMS, TYPE, ALL**

---

### **RETRIEVE FACILITY ALARM SEVERITY**

#### **Explanation Of Command**

---

This command retrieves the current system alarm severity for a single facility alarm or for all the facility alarms. This command is denied if the Alarm Severity feature is turn OFF. (I.38355 command turn the feature ON and OFF. This command does not check the validity of the facility alarm for the type specified. It assumes all facility alarms are available for all types.

#### **Command**

---

[I.53311]

UTL: [FRM xy, SEQ ww]: QRY, FALMS, TYPE {mn[xyz] | ALL}, {<fa`lm> | ALL}!

#### **Completion Message**

---

If a single facility alarm is requested for a specific NPC type:

[O.53311]

M hh:mm:ss xy, ww n[vv] UTL QRY FALMS TYPE mnxyz <fa`lm> sev COMPL

If a single facility alarm is requested for an NPC type:

[O.53311]

M hh:mm:ss xy, ww n[vv] UTL QRY FALMS TYPE mn DEFAULT <fa`lm> sev COMPL

If ALL facility alarms are requested for a NPC specific type:

[O.53311]

```
M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE mnxyz 6 lines
LOS sev RBER sev LOF sev EER sev
BER sev LCMA sev FLC sev RAI sev
SFI sev RAIS sev AIS sev POF sev
TAI sev LMA sev RABS sev RPSFI sev
PBF sev COMPL
```

If ALL facility alarms are requested for a NPC type:

[O.53311]

```
M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE mn DEFAULT 6 lines
LOS sev RBER sev LOF sev EER sev
BER sev LCMA sev FLC sev RAI sev
SFI sev RAIS sev AIS sev POF sev
TAI sev LMA sev RABS sev RPSFI sev
PBF sev COMPL
```

If the ALL type option is chosen, the message will give the current default for each PA, PB, or PC type and any changes from the default for specific xyz types.

If a single facility alarm is requested:

[O.53311]

```
M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE PA DEFAULT <fal> sev
M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE PB DEFAULT <fal> sev
M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE PC DEFAULT <fal> sev [COMPL]
[M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE mnxyz <fal> sev [COMPL]]
.
.
.
[M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE mnxyz <fal> sev COMPL]
```

If ALL facility alarms were requested:

[O.53311]

M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE PA DEFAULT 6 lines

LOS sev RBER sev LOF sev EER sev  
BER sev LCMA sev FLC sev RAI sev  
SFI sev RAIS sev AIS sev POF sev  
TAI sev LMA sev RABS sev RPSFI sev  
PBF sev

M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE PB DEFAULT 6 lines

LOS sev RBER sev LOF sev EER sev  
BER sev LCMA sev FLC sev RAI sev  
SFI sev RAIS sev AIS sev POF sev  
TAI sev LMA sev RABS sev RPSFI sev  
PBF sev

M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE PC DEFAULT 6 lines

LOS sev RBER sev LOF sev EER sev  
BER sev LCMA sev FLC sev RAI sev  
SFI sev RAIS sev AIS sev POF sev  
TAI sev LMA sev RABS sev RPSFI sev  
PBF sev

[COMPL]

[M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE mnxyz 6 lines]

[LOS sev RBER sev LOF sev EER sev]  
[BER sev LCMA sev FLC sev RAI sev]  
[SFI sev RAIS sev AIS sev POF sev]  
[TAI sev LMA sev RABS sev RPSFI sev]  
[PBF sev

[COMPL]]

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE mnxyz 6 lines]

[LOS sev RBER sev LOF sev EER sev]  
[BER sev LCMA sev FLC sev RAI sev]  
[SFI sev RAIS sev AIS sev POF sev]  
[TAI sev LMA sev RABS sev RPSFI sev]  
[PBF sev

COMPL]



## Denial Message

[O.53311.01]

M hh:mm:ss xy,ww n[vv] UTL QRY FALMS TYPE {ALL|mn[xyz]} {falm|ALL} \  
COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**falm** - Facility Alarms

*falm*    *Explanation*

**RPSFI** Remote Power Supply Failure Indicator  
**LOS**    Loss of Signal  
**LOF**    Loss of Frame  
**AIS**    Alarm Indication Signal  
**EER**    Excessive Error Rate  
**BER**    Bit Error Rate  
**LCMA** Loss of CRC multiframe alignment  
**FLC**    Far End Loss of CRC Multiframe Alignment  
**RAI**    Remote Alarm Indication  
**RAIS** Remote AIS  
**RBER** Remote Bit Error Rate  
**SFI**    Sync Failure Indication  
**POF**    Pseudo Frame Word Out of Frame  
**TAI**    Ts-16 All Ones Alarm  
**LMA**    Loss of Multiframe Alignment  
**RABS** Remote Alarm bit 6, TS16  
**ALL**    ALL above identified shelf alarms

**sev**    - Severity

*sev*    *Explanation*

**PMACR** - Prompt Maintenance Action CRITICAL alarm severity  
**PMAMJ** - Prompt Maintenance Action MAJOR alarm severity  
**DMAMN** - Deferred Maintenance Action MINOR alarm severity  
**MI**    - MESSAGE INFORMATION alarm severity

**TYPE** - Type

*mn Explanation*

**PA** PA NPC Type

**PB** PB NPC Type

**PC** PC NPC Type

**PA-Type xyz fields**

The provisioning values of *x*, *y*, and *z* for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (*x*, *y* or *z*) provisioning value):

**Table 19-15. Provisioning values for *x***

| <b>x<br/>value</b> | <b>CRC-4<br/>Mode</b> | <b>Automatic<br/>CRC-4</b> | <b>Far-End<br/>PM</b> | <b>NPC used as<br/>Sync Source</b> | <b>TS0 Bit 5<br/>used for SFI</b> |
|--------------------|-----------------------|----------------------------|-----------------------|------------------------------------|-----------------------------------|
| <b>0</b>           | Y                     |                            |                       |                                    |                                   |
| <b>1</b>           | Y                     |                            | Y                     |                                    | Y                                 |
| <b>2</b>           | Y                     |                            |                       |                                    | Y                                 |
| <b>3</b>           | Y                     |                            | Y                     |                                    |                                   |
| <b>4</b>           | Y                     |                            |                       | Y                                  |                                   |
| <b>5</b>           | Y                     |                            | Y                     | Y                                  | Y                                 |
| <b>6</b>           | Y                     |                            |                       | Y                                  | Y                                 |
| <b>7</b>           | Y                     |                            | Y                     | Y                                  |                                   |
| <b>8</b>           |                       | Y                          | Y                     |                                    |                                   |
| <b>9</b>           |                       | Y                          | Y                     |                                    | Y                                 |
| <b>A</b>           |                       |                            |                       |                                    | Y                                 |
| <b>B</b>           |                       |                            |                       |                                    |                                   |
| <b>C</b>           |                       | Y                          | Y                     | Y                                  |                                   |
| <b>D</b>           |                       | Y                          | Y                     | Y                                  | Y                                 |
| <b>E</b>           |                       |                            |                       | Y                                  | Y                                 |
| <b>F</b>           |                       |                            |                       | Y                                  |                                   |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.

\* Automatic CRC-4 is also known as CRC-4 Interworking.

2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.
4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 19-16. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the *abcd* bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the *abcd* bits will be transmitted transparently.

If the "AIS in TS16" option is selected ( $y$  value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected ( $y$  values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For  $y$  values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering ( $y=8$ ) or Timeslot Channel Numbering ( $y=9$ ) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface ( $y=C$ ) or as an unframed clear 2Mbit/s interface ( $y=D$ ). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 19-17. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )
3. z values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For z values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For z values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS

in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when z = 0, 1, 4, 5, 6, 7, A or B. **However**, for z values 2 and 8 the set time is 144 ms and for z values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for z = 4 and 8) or 480 ms (for z = 5 and 9) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC, TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.
8. z values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options (z = 6-7 or A-B)**

- [i] Enable BER calculations, and when in the BER state:
  - DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.
  - When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.
- [ii] RAI set in 2 ms
- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:
  - z=6 or A** hardware timing
  - z=7 or B** firmware timing (SFDT=2496 ms, CACT=624 ms)

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

[iv] BER alarm level = DMA

**Specific Options for z= 6 or 7**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

9. To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of  $xyz$  for the PA type NPC.

**Table 19-18. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations | Explanation                                                                                                                                                                                                                        |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                              | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                              |                                                                                                                                                                                                                                    |
| CCz                              |                                                                                                                                                                                                                                    |
| DCz                              |                                                                                                                                                                                                                                    |
| 0Dz                              | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                           |
| 1Dz                              |                                                                                                                                                                                                                                    |
| 2Dz                              |                                                                                                                                                                                                                                    |
| 3Dz                              |                                                                                                                                                                                                                                    |
| 4Dz                              |                                                                                                                                                                                                                                    |
| 5Dz                              |                                                                                                                                                                                                                                    |
| 6Dz                              |                                                                                                                                                                                                                                    |
| 7Dz                              |                                                                                                                                                                                                                                    |
| 8Dz                              |                                                                                                                                                                                                                                    |
| 9Dz                              |                                                                                                                                                                                                                                    |
| ADz                              |                                                                                                                                                                                                                                    |
| CDz                              |                                                                                                                                                                                                                                    |
| DDz                              |                                                                                                                                                                                                                                    |
| EDz                              |                                                                                                                                                                                                                                    |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.



**Table 19-19. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z* = value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 19-20. Combinations of  $x$  and  $z$  Values**

| Invalid<br>xyz<br>Combinations | Explanation                                                                                                                                                                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC                            | Use of NPC as Sync Source ( $x$ 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( $z$ value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |
| 5yC                            |                                                                                                                                                                                                                                                         |
| 6yC                            |                                                                                                                                                                                                                                                         |
| 7yC                            |                                                                                                                                                                                                                                                         |
| CyC                            |                                                                                                                                                                                                                                                         |
| DyC                            |                                                                                                                                                                                                                                                         |
| EyC                            |                                                                                                                                                                                                                                                         |
| FyC                            |                                                                                                                                                                                                                                                         |

**PB- and PC-type xyz fields**
**Table 19-21. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW'bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW'bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                          |
|--------------|------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW'bit'3=RAI set in < 2 ms,                                                                                                            |
|              |            | 001          | NFW'bit'3=RAI set in time $T^{[c']}$                                                                                                    |
|              |            | 010          | NFW'bit'4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                     |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW'bit'4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496'ms, CACT=624' $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW'bit'4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC'2G)                                                                                 |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW'bit'4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496'ms, CACT=624' $ms^{[jkl]}$ ), |
|              |            | 110          | NFW'bits'3-8,in time 144ms (TRANSMIC 1G)                                                                                                |
|              |            | 111          | Unassigned                                                                                                                              |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                           |
|              |            | 1            |                                                                                                                                         |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2'ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496'ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway* **cross-connection** the insertion word always defaults to AIS.

mnxyz'bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2'ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option c=0 is supported and both the AIS and RAI will be applied in less than 2'ms. NFW'bit'3 of TS0 in enhanced CEPT is controlled by selecting the **jkl** options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when jkl=011 or jkl=101. For that case, see note [jkl']**.

[c''] Time T will be 144'ms when option c=0 and 480 ms when option c=1.

[g] Option g has meaning only if the NPC is provisioned for CAS; that is, option d=1, otherwise it is ignored. If option g=0 is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option g=1 is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW'bit'5 when used as SFI, and h=1, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW'bit'5 will default to 1 when the NPC is grown, without regard of whether option h was selected as either 0 or 1, unless it is later set to 0 by setting parameter e=0 in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic'1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of xyz the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit'5 when option h=1.

If both b=1 and h=1 and the NPC (used as synchronization source) receives

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

NFW bit'5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit'3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section'2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2'ms after detecting the failure.** If this option is not specified as 000, use of NFW bit'3 as RAI will remain unchanged except the time when NFW bit'3 is set can be changed to 144'ms as opposed to 2 ms after detecting the failure. NFW'bit'3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW'bit'4 when used as RAIS, and AIS is detected in the received signal, can only be set 144'ms after detecting this condition. Similarly, when the received NFW bit'4 is in the active state, consequent actions are taken 144'ms after detecting this condition.

NFW'bit'4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

[jkl'] minor bit error rate and signaling freeze delay time features:

jkl=011 or jkl=101

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

*c*=0 hardware timing

*c*=1 firmware timing (SFDT=2496'ms, CACT=624'ms)

[iv] BER alarm level = DMA

jkl=011

[v] RBER alarm level = MI

[vi] NFW'bit'4=RBER:

- DACS'II sends a remote indicator in bit'4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144'ms after detecting the minor bit error rate (BER) condition.
- “ DACS'II sets the RBER bit to its idle state, on clearing of the BER condition.
- DACS'II detects the remote setting of the received bit'4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144'ms after detecting this condition.
- “ DACS II generates an appropriate retirement message when the received bit'4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW'bit'4=disabled

NFW'bit'4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d'efgh'0110** or **ab1d'efgh'1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d'efgh'0110** or **ab0d'efgh'1010**.

NFW'bit'4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic'1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic'1G the abcdefgh=00111111.

**cc** - Hexadecimal condition code

**cc Explanation**

|    |                                                                      |
|----|----------------------------------------------------------------------|
| 00 | No conditions                                                        |
| 26 | NPC type error                                                       |
| 34 | NPC type option xyz is unassigned, or<br>invalid for feature package |
| 31 | NPC not provisioned for NSA                                          |
| BB | Timeslot channel numbering not allowed with<br>CAS                   |
| A3 | Transmic 1G NPC designated as SYNC source<br>invalid                 |
| A4 | Firmware timing invalid for Transmic 1G NPC                          |
| 7E | Framed/Unframed clear 2Mbit/s NPC invalid<br>for Automatic CRC-4     |
| 7F | Unframed clear 2Mbit/s NPC invalid for TS0<br>processing             |
| 80 | Framed/Unframed clear 2Mbit/s NPC invalid<br>for Transmic 1G, 2G     |
| 81 | Framed/Unframed clear 2Mbit/s NPC invalid<br>for Firmware Timing     |
| 82 | Unframed clear 2Mbit/s NPC invalid for Bit<br>4 used as RA IS/RBER   |
| F7 | Alarm Severity Feature (already) OFF                                 |

## **UTL,QRY,FPKG**

### **QUERY FEATURE PACKAGE**

#### **Explanation Of Command**

This message requests a listing of the installed features and the feature package identification code.

#### **Command**

[I.51121]

**UTL:FRM xy,SEQ ww:QRY,FPKG!**



### **Completion Message**

---

[O.51121]

M hh:mm:ss xy,ww n[vv] UTL QRY FPKG kkttuuvv DACSIgg.pp r \\  
e LN MSG:  
[BASIC DS1 TERMINATIONS]  
[BASIC CEPT TERMINATIONS]  
[SUBRATE]  
[DIRECT SLC TERMINATION] [{EOM|COMPL}]

[M hh:mm:ss xy,ww n[vv] UTL QRY FPKG kkttuuvv DACSIgg.pp r \\  
e LN MSG:]  
[DS3 TERMINATIONS]  
[ENHANCED CEPT-C-BIT,C-BIT FOLTERING,RPSFI]  
[SWITCHED TELCONFERENCING]  
[CEF] [{EOM|COMPL}]

[M hh:mm:ss xy,ww n[vv] UTL QRY FPKG kkttuuvv DACSIgg.pp r \\  
e LN MSG:]  
[ENHANCED DS1 PERFORMANCE MONITORING]  
[DS0/DS1 SERVICE ROLL FEATURE]  
[SECURITY WARNING MESSAGE]  
[NX64KBIT TEST ACCESS] [{EOM|COMPL}]

[M hh:mm:ss xy,ww n[vv] UTL QRY FPKG kkttuuvv DACSIgg.pp r \\  
e LN MSG:]  
[CLEAR 2MB/S INTERFACE]  
[TS0 TO NON-TS0 XCON]  
[2MB/S ROLL FEATURE]  
[SPARE] [{EOM|COMPL}]

[M hh:mm:ss xy,ww n[vv] UTL QRY FPKG kkttuuvv DACSIgg.pp r \\  
e LN MSG:]  
[INTERVENTION LEVEL]  
[DS3 HYBRID] [COMPL]

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

**e** - The number of lines in an output segment (2 through 6)

**FPKG** - Feature Package

Output includes a list of DACS II optional features.

### **kkttuuvv**

- Feature package identification code

|          |                                               |
|----------|-----------------------------------------------|
| 00000001 | DS1                                           |
| 00000002 | CEPT                                          |
| 00000004 | Subrate                                       |
| 00000008 | Direct SLC® 96 and Series 5 Carrier Interface |
| 00000010 | DS3 Terminations                              |
| 00000020 | Enhanced CEPT                                 |
|          | C-bit                                         |
|          | C-bit filtering                               |
|          | RPSFI                                         |
| 00000040 | Switched Teleconferencing                     |
| 00000080 | CEF                                           |
| 00000100 | Enhanced DS1 Performance Monitoring           |
| 00000200 | DS0/DS1 Roll                                  |
| 00000400 | Security Warning Message                      |
| 00000800 | Nx64kbit Test Access                          |
| 00001000 | Clear 2MB/s Interface                         |
| 00002000 | TS0 to Non-TS0 Cross-connection               |
| 00004000 | 2MB/S Roll                                    |
| 00008000 | SPARE                                         |
| 00010000 | TRT/FT Features                               |
|          | Intervention Level                            |
| 00020000 | DS3 Hybrid                                    |

In general a feature package identification code is a combination of several individual feature package numbers. To determine the individual features that make up a feature package it is necessary to decode the feature package identification code. This code is an eight digit hexadecimal number. Each hexadecimal number represents a four-bit binary number. Within this binary number each feature is associated with one particular bit. Consequently to determine the feature list from a feature package identification code it is necessary to convert each hexadecimal digit to its binary equivalent and look up the features in the list above. For example the feature package identification code 0000000F can be converted to the following binary number working from left to right one hex digit at a time.

0000 0000 0000 0000 0000 0000 0000 1111

This number contains eight binary numbers each representing one of the hexadecimal numbers in the feature package identification code 0000000F. The rightmost number of the code contains four features since there are four bits set to one. This would be decoded as follows using the table of features above.

|       | binary | hex | Feature                      |
|-------|--------|-----|------------------------------|
|       | 0001   | 1   | DS1                          |
|       | 0010   | 2   | CEPT                         |
|       | 0100   | 4   | Subrate                      |
|       | 1000   | 8   | Direct SLC                   |
| Total | 1111   | F   | (DS1 + CEPT + Subrate + SLC) |

- gg** - DACS II software release number
- pp** - DACS II software release point number
- r** - DACS II software PDI number

## **UTL,QRY,FROM**

---

### **UTILITY QUERY FROM**

#### **Explanation Of Command**

---

This command is used to query the FROM side of a one-way cross-connected circuit or a range of similar circuits. The results depend on (1) whether the termination is assigned, and (2) whether it is a test port termination. A test port termination requires the NPC type of this termination and the far-end it is mapped to (if any).

For this utility, DACS II terminations can be divided into two categories:

- Multipoint termination, which is a multipoint circuit on a real digital multipoint bridge (DMB) in the digital signal processing unit (DSPU), or on a virtual network processing circuit.
- All other terminations.

#### **Command**

---

##### **Nonhierarchical**

---

[I.52051]

**UTL:FRM xy,SEQ ww:QRY,FROM [s]abcddd[-eee]!**

##### **Hierarchical**

---

[I.52051]

**UTL:FRM xy,SEQ ww:QRY,FROM uvmnpddd[-eee]!**

---

## Completion Message

---

---

### Nonhierarchical

---

[O.52051]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM [s]abcddd TYPE mnxyz 2 LN MSG:  
[t]ghijjj ppqqq <tc>[ CUS][ RDC][ UTST {TP kk|TG mmm}][ TLA T] EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY FROM [s]abceee TYPE mnxyz 2 LN MSG:  
[t]ghijjj ppqqq <tc>[ CUS][ RDC][ UTST {TP kk|TG mmm}][ TLA T] COMPL

[O.52052]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM [s]abcddd TYPE mnxyz 2 LN MSG:  
UASGN[ <tc> DCC][ CUS][ UTST {TP kk|TG mmm}][ cc] {EOM|COMPL}

[O.52053]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM [s]abcddd TYPE mnxyz NOT OCON {EOM|COMPL}

---

### Hierarchical

---

[O.52051]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM uvmnpddd TYPE mnxyz 2 LN MSG:  
edhfgjjj ppqqq <tc>[ CUS][ RDC][ UTST {TP kk|TG mmm}][ TLA T] EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY FROM uvmnpdee TYPE mnxyz 2 LN MSG:  
edhfgjjj ppqqq <tc>[ CUS][ RDC][ UTST {TP kk|TG mmm}][ TLA T] COMPL

[O.52052]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM uvmnpddd TYPE mnxyz 2 LN MSG:  
UASGN[ <tc> ][DCC][ CUS][ UTST {TP kk|TG mmm}][ cc] {EOM|COMPL}

[O.52053]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM uvmnpddd TYPE mnxyz NOT OCON {EOM|COMPL}

### **Denial Message**

---

### **Nonhierarchical**

---

[O.52051.01]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM [s]abcddd[-eee][ UEQD] \  
COND cc DNY

[O.52051.02]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM [s]abcddd[-eee] \  
TYPE mnxyz RNGIE DNY

### **Hierarchical**

---

[O.52051.01]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM uvmnpddd[-eee][ UEQD] \  
COND cc DNY

[O.52051.02]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM uvmnpddd[-eee] \  
TYPE mnxyz RNGIE DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

[s]abc - The 3- or 4-digit non-hierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

| Unit      | Module   | NPC          |                                 |
|-----------|----------|--------------|---------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02</b> | <b>(DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06</b> | <b>(DACS II CEF frames)</b>     |

**ddd** - Starting channel number  
**eee** - Channel number denoting the end of the range.

The valid values are listed below:

Channel numbers  
000-031 CEPT

Conference numbers  
001-085 (MB NPC)  
001-500 (Virtual NPC)



**TYPE** - Type

**mnxyz** - FROM termination NPC information

**mn** - FROM termination NPC type

Valid values are listed below:

**mn**      *Explanation*

PA      CEPT NPC (75- or 120-ohm)  
PB      CEPT NPC (120-ohm twisted pair)  
PC      CEPT NPC (75-ohm coaxial)

**xyz** - Options and formats for NPCs

#### PA-Type xyz fields

The provisioning values of *x*, *y*, and *z* for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (*x*, *y* or *z*) provisioning value):

**Table 19-22. Provisioning values for *x***

| <b>x<br/>value</b> | <b>CRC-4<br/>Mode</b> | <b>Automatic<br/>CRC-4</b> | <b>Far-End<br/>PM</b> | <b>NPC used as<br/>Sync Source</b> | <b>TS0 Bit 5<br/>used for SFI</b> |
|--------------------|-----------------------|----------------------------|-----------------------|------------------------------------|-----------------------------------|
| <b>0</b>           | Y                     |                            |                       |                                    |                                   |
| <b>1</b>           | Y                     |                            | Y                     |                                    | Y                                 |
| <b>2</b>           | Y                     |                            |                       |                                    | Y                                 |
| <b>3</b>           | Y                     |                            | Y                     |                                    |                                   |
| <b>4</b>           | Y                     |                            |                       | Y                                  |                                   |
| <b>5</b>           | Y                     |                            | Y                     | Y                                  | Y                                 |
| <b>6</b>           | Y                     |                            |                       | Y                                  | Y                                 |
| <b>7</b>           | Y                     |                            | Y                     | Y                                  |                                   |
| <b>8</b>           |                       | Y                          | Y                     |                                    |                                   |
| <b>9</b>           |                       | Y                          | Y                     |                                    | Y                                 |
| <b>A</b>           |                       |                            |                       |                                    | Y                                 |
| <b>B</b>           |                       |                            |                       |                                    |                                   |
| <b>C</b>           |                       | Y                          | Y                     | Y                                  |                                   |
| <b>D</b>           |                       | Y                          | Y                     | Y                                  | Y                                 |
| <b>E</b>           |                       |                            |                       | Y                                  | Y                                 |
| <b>F</b>           |                       |                            |                       | Y                                  |                                   |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled (*x* values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected (*x* values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected (*x* values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.
4. If the NPC is to be used as a Sync Source (*x* values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected (*x* values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6. *x* value B does not enable any of the features shown in the Table; this is a valid option.

---

\* Automatic CRC-4 is also known as CRC-4 Interworking.

**Table 19-23. Provisioning values for *y***

| <i>y</i><br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|-------------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0                 | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2                 | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4                 | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6                 | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8                 |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9                 |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C                 |             |             |                        |                       |                   |                  | Y               |                   |
| D                 |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2. *y* values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For *y* values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected (*y* values 0 and 2), the *abcd* bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected (*y* values 4 and 6), a value of '0000' in the *abcd* bits will be transmitted transparently.

If the "AIS in TS16" option is selected (*y* value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (*y* values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For *y* values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (*y*=8) or Timeslot Channel Numbering (*y*=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (*y*=C) or as an unframed clear 2Mbit/s interface (*y*=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).

- Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 19-24. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )
3. z values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For z values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For z values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*

HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.

FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when  $z = 7$  or B**.

6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when  $z = 0, 1, 4, 5, 6, 7, A$  or  $B$ . **However**, for  $z$  values 2 and 8 the set time is 144 ms and for  $z$  values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for  $z = 4$  and 8) or 480 ms (for  $z = 5$  and 9) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.
8.  $z$  values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options ( $z = 6-7$  or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

[iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

z=6 or A hardware timing

z=7 or B firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**Specific Options for z= 6 or 7**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

[ix] To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of xyz for the PA type NPC.

**Table 19-25. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations | Explanation                                                                                                                                                                                                                        |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                              | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                              |                                                                                                                                                                                                                                    |
| CCz                              |                                                                                                                                                                                                                                    |
| DCz                              |                                                                                                                                                                                                                                    |
| 0Dz                              | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                           |
| 1Dz                              |                                                                                                                                                                                                                                    |
| 2Dz                              |                                                                                                                                                                                                                                    |
| 3Dz                              |                                                                                                                                                                                                                                    |
| 4Dz                              |                                                                                                                                                                                                                                    |
| 5Dz                              |                                                                                                                                                                                                                                    |
| 6Dz                              |                                                                                                                                                                                                                                    |
| 7Dz                              |                                                                                                                                                                                                                                    |
| 8Dz                              |                                                                                                                                                                                                                                    |
| 9Dz                              |                                                                                                                                                                                                                                    |
| ADz                              |                                                                                                                                                                                                                                    |
| CDz                              |                                                                                                                                                                                                                                    |
| DDz                              |                                                                                                                                                                                                                                    |
| EDz                              |                                                                                                                                                                                                                                    |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled ( $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enabled ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 19-26. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z* = value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.



**Table 19-27. Combinations of  $x$  and  $z$  Values**

| Invalid<br>xyz<br>Combinations                       | Explanation                                                                                                                                                                                                                                             |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC<br>5yC<br>6yC<br>7yC<br>CyC<br>DyC<br>EyC<br>FyC | Use of NPC as Sync Source ( $x$ 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( $z$ value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |

**PB- and PC-type xyz fields**

**Table 19-28. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| Digit | Bit | Value | Meaning                                                                                     |
|-------|-----|-------|---------------------------------------------------------------------------------------------|
| y     | e   | 0     | Telephone channel numbering                                                                 |
|       |     | 1     | Channel timeslot numbering                                                                  |
|       | f   | 0     | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|       |     | 1     | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|       | g   | 0     | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|       |     | 1     | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|       | h   | 0     | NFW'bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|       |     | 1     | NFW'bit 5=SFI inverted on SH on output and detected on input                                |

| Digit | Bit | Value | Meaning                                                                                                                                 |
|-------|-----|-------|-----------------------------------------------------------------------------------------------------------------------------------------|
| z     | jkl | 000   | NFW'bit'3=RAI set in < 2 ms,                                                                                                            |
|       |     | 001   | NFW'bit'3=RAI set in time $T^{[c']}$                                                                                                    |
|       |     | 010   | NFW'bit'4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                     |
|       |     | 011   | Enable BER calculations, BER alarm level = DMA, NFW'bit'4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496'ms, CACT=624' $ms^{[jkl]}$ ),     |
|       |     | 100   | NFW'bit'4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC'2G)                                                                                 |
|       |     | 101   | Enable BER calculations, BER alarm level = DMA, NFW'bit'4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496'ms, CACT=624' $ms^{[jkl]}$ ), |
|       |     | 110   | NFW'bits'3-8, in time 144ms (TRANSMIC 1G)                                                                                               |
|       |     | 111   | Unassigned                                                                                                                              |
|       | m   | 0     | Unassigned, only m=0 is valid                                                                                                           |
|       |     | 1     |                                                                                                                                         |

#### Table Notes:

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2'ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496' ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway cross-connection* the insertion word always defaults to AIS.

mnxyz'bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2'ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option c=0 is supported and both the AIS and RAI will be applied in less than 2'ms. NFW'bit'3 of TS0 in enhanced CEPT is controlled by selecting the jkl options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when jkl=011 or jkl=101. For that case, see note [jkl']**.

[c''] Time T will be 144'ms when option c=0 and 480 ms when option c=1.

[g] Option g has meaning only if the NPC is provisioned for CAS; that is, option d=1, otherwise it is ignored. If option g=0 is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option g=1 is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW'bit'5 when used as SFI, and h=1, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW'bit'5 will default to 1 when the NPC is grown, without regard of whether option h was selected as either 0 or 1, unless it is later set to 0 by setting parameter e=0 in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic'1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of xyz the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit'5 when option h=1.

If both b=1 and h=1 and the NPC (used as synchronization source) receives

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

NFW bit'5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit'3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section'2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2'ms after detecting the failure.** If this option is not specified as 000, use of NFW bit'3 as RAI will remain unchanged except the time when NFW bit'3 is set can be changed to 144'ms as opposed to 2 ms after detecting the failure. NFW'bit'3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW'bit'4 when used as RAIS, and AIS is detected in the received signal, can only be set 144'ms after detecting this condition. Similarly, when the received NFW bit'4 is in the active state, consequent actions are taken 144'ms after detecting this condition.

NFW'bit'4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

**[jkl'] minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

**c=0** hardware timing

**c=1** firmware timing (SFDT=2496'ms, CACT=624'ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW'bit'4=RBER:

- DACS'II sends a remote indicator in bit'4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144'ms after detecting the minor bit error rate (BER) condition.
- “ DACS'II sets the RBER bit to its idle state, on clearing of the BER condition.
- DACS'II detects the remote setting of the received bit'4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144'ms after detecting this condition.
- “ DACS II generates an appropriate retirement message when the received bit'4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW'bit'4=disabled

NFW'bit'4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d'efgh'0110** or **ab1d'efgh'1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d'efgh'0110** or **ab0d'efgh'1010**.

NFW'bit'4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic'1G the **abcdefgh=11000000**.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic'1G the **abcdefgh=00111111**.

**[t]ppp** - The 3- or 4-digit nonhierarchical SLC carrier digroup P NPC number.

Valid values are identical to those for [s]abc.

**[t]ghi** - The 3- or 4-digit nonhierarchical TO NPC number.  
Valid values are identical to those for [s]abc.

**edhfg** - Hierarchical TO NPC number  
Valid values are identical to those for uvmnp

**jjj, kkk**  
- TO channel numbers  
Valid values are identical to those for ddd.

**ppqqq** - TO termination NPC information

**pp** - TO termination NPC type  
Valid values are listed below:

| <b>pp</b> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |                                 |
|----|---------------------------------|
| PA | CEPT NPC (75- or 120-ohm)       |
| PB | CEPT NPC (120-ohm twisted pair) |
| PC | CEPT NPC (75-ohm coaxial)       |

|            |                                            |
|------------|--------------------------------------------|
| VI         | Virtual NPC                                |
| <b>qqq</b> | - See xyz above for definition and values. |

**tc** - Trunk conditioning

Represents the desired cross-connected signaling and insertion word applied when a failure occurs. A trunk conditioning specification consists of a combination of a signaling specification followed by an insertion word specification.

pq is a user specified insertion word. The binary pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line.

**Note:** Because there is no signal from the FROM direction, ijk is replaced by ---- in the specification TC(ijk,mnop) and ab is replaced by -- in the specification TC(X'ab,X'cd).

*tc*  
TC(ijkl,mnop)  
TC(efghijkl,mnopqrst)  
TC(X'ab,X'cd)  
TRSP (DMB to DMB)  
Omitted

**Note:** If *tc* is omitted, defaults to TC(X'FF,X'FF) if both terminations are channel associated signaling type. TC will default to TRSP if one of the terminations is non-signaling associated type.

The following insertion word options are allowed:

| <i>Insertion word</i> | <i>Explanation</i>                                                                                                                       |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| IW X'pq               | The 8-bit pattern corresponding to the hexadecimal value of pq will be inserted in the downstream direction of a failure on either line. |
| Omitted               | Will default to IW X'FF.                                                                                                                 |

**RDC** - Red circuit

**CUS** - Customer  
Customer-controlled circuit

**UTST** - Under test  
Given termination is under test

**TP** - Test Port

**kk** - Test port number (01-96)

**TG** - Test Group

**mmm** - Test group number (001-400)

**TLA** - Terminate and leave active

**T** - To  
TO termination is in the terminate and leave state

**DCC** - Disconnect code

**UEQD** - Unequipped

**NOT** - Not

**COND** - Condition

**RNGIE** - Range input error

**UASGN** - Unassigned

**cc** - Hexadecimal condition code

**cc Explanation**

|           |                                                          |
|-----------|----------------------------------------------------------|
| <b>E3</b> | One way unassigned channel/NPC in QRY, TO                |
| <b>62</b> | Invalid channel number                                   |
| <b>7F</b> | NPC is not added                                         |
| <b>91</b> | SR NPC was specified - not allowed                       |
| <b>97</b> | Invalid NPC Type                                         |
| <b>F7</b> | Corresponding NPC for virtual channel is not provisioned |



---

## UTL, QRY, FROM

---

### UTILITY QUERY FROM

#### Explanation Of Command

This message requests provisioning information for a specific FROM non-channelized network processing circuit of a one-way connection.

#### Command

##### Nonhierarchical

[I.52071]

UTL:FRM xy,SEQ ww:QRY, FROM [s]abc!

##### Hierarchical

[I.52071]

UTL:FRM xy,SEQ ww:QRY, FROM uvmnp!

#### Completion Message

##### Nonhierarchical

[O.52071]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM [s]abc TYPE mnxyz \\  
2 LN MSG:  
[t]ghi mnxyz AIS[ CUS][ RDC][ UTST][ TLA T] COMPL

### **Hierarchical**

---

[O.52071]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM uvmnp TYPE mnxyz \\  
2 LN MSG:  
wxkqr mnxyz AIS[ CUS][ RDC][ UTST][ TLA T] COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.52071.01]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM [s]abc TYPE mnxyz \\  
COND cc DNY

### **Hierarchical**

---

[O.52071.01]

M hh:mm:ss xy,ww n[vv] UTL QRY FROM uvmnp TYPE mnxyz \\  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**FROM** - From

**[s]abc** - The 3- or 4-digit non-hierarchical non-channelized FROM NPC  
The valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number of non-channelized FROM NPC

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**[t]ghi** - The 3- or 4-digit nonhierarchical number of TO NPC mapped to the FROM NPC

**wxkqr** - Hierarchical number of TO NPC mapped to the FROM NPC

**TYPE** - NPC type

**mnxyz** - NPC type of TO or FROM NPC

**PAxyz** - FTU NPC  
**PBxyz** - FTU NPC  
**PCxyz** - FTU NPC  
**THxyz** - DS3U NPC  
----- - Unequipped NPC

**AIS** - Alarm indication signal is the idle code for non-channelized digital signal cross-connection.

**CUS** - Customer controlled circuit

**RDC** - Red circuit

**UTST** - Under test

**TLA T** - Terminate and leave activate TO  
Connection is terminated in the TO direction

**cc** - Hexadecimal condition code

**cc** *Explanation*

**15** NPC is unequipped

**62** Invalid channel number

**B4** NPC is channelized type

**4F** NPC is not part of a one-way connection

## UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC

### RETRIEVE INTERVENTION LEVEL SETTING

#### Explanation Of Command

This message retrieves the current intervention level setting for system resources.

#### Command

#### Nonhierarchical

[I.53331]

UTL: [FRM xy, SEQ ww]:QRY, INTV, {NPC {[s]abc[-[t]def]|ALL}|TLI m|CCN|SYNC|ALL}!

#### Hierarchical

[I.53331]

UTL: [FRM xy, SEQ ww]:QRY, INTV, {NPC {uvmnp-uvkqr|ALL}|TLI m|CCN|SYNC|ALL}!

## Completion Message

### Nonhierarchical

[O.53331]

If a single NPC is requested:

M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC [s]abc LEV r COMPL

If a range of NPCs is requested:

M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC [s]abc-[t]def 9 LN MSG:

x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x {EOM|COMPL}

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC [s]abc-[t]def 9 LN MSG:]

[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x COMPL]

If ALL NPCs are requested:

M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC [s]abc-[t]def 9 LN MSG:

x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x EOM

.

.  
.  
[M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC [s]abc-[t]def 9 LN MSG:]  
X X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X COMPL

The output for a TLI is:

M hh:mm:ss xy,ww n[vv] UTL QRY INTV TLI m LEV r COMPL

The output for CCN :

M 17:54:31 00,00 1 UTL QRY INTV CCN0 LEV 2 CCN1 LEV 2 COMPL

The output for SYNC is:

M 17:54:31 00,00 1 UTL QRY INTV SYNC 0 LEV 2 SYNC 1 LEV 2 COMPL

The output for ALL resources is:

M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC [s]abc-[t]def 9 LN MSG:  
X X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X EOM

.  
.  
M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC [s]abc-[t]def 9 LN MSG:]  
X X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X X  
X X X X X X X X X X X X X X X X X X X X COMPL



M hh:mm:ss xy,ww n[vv] UTL QRY INTV ALL 5 LN MSG:  
TLI 001 LEV r  
TLI 002 LEV r  
TLI 003 LEV r  
TLI 004 LEV r EOM

M hh:mm:ss xy,ww n[vv] UTL QRY INTV ALL 3 LN MSG:  
CCN 000 LEV r  
CCN 001 LEV r EOM

M hh:mm:ss xy,ww n[vv] UTL QRY INTV ALL 3 LN MSG:  
SYNC 000 LEV r  
SYNC 001 LEV r COMPL

## Hierarchical

[O.53331]

If a single NPC is requested:

**M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC uvmnp LEV r COMPL**

If a range of NPCs is requested:

**M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC uvmnp-uvkqr 9 LN MSG:**

x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x x {EOM|COMPL}

.  
.  
.

**[M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC uvmnp-uvkqr 9 LN MSG:]**

[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x]  
[x x x x x x x x x x x x x x x x x x x COMPL]

If ALL NPCs are requested:

**M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC uvmnp-uvkqr 9 LN MSG:**

x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x  
x x x x x x x x x x x x x x x x x x x EOM

.  
.  
.

**M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC uvmnp-uvkqr 9 LN MSG:**

x x x x x x x x x x x x x x x x x x x

```
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X COMPL
```

The output for a TLI is:

```
M hh:mm:ss xy,ww n[vv] UTL QRY INTV TLI m LEV r COMPL
```

The output for CCN :

```
M 17:54:31 00,00 1 UTL QRY INTV CCN0 LEV 2 CCN1 LEV 2 COMPL
```

The output for SYNC is:

```
M 17:54:31 00,00 1 UTL QRY INTV SYNC 0 LEV 2 SYNC 1 LEV 2 COMPL
```

The output for ALL resources is:

```
M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC uvmnp-uvkqr 9 LN MSG:
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY INTV NPC uvmnp-uvkqr 9 LN MSG:]
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X
X X X X X X X X X X X X X X X X X X X X X X COMPL
```

M hh:mm:ss xy,ww n[vv] UTL QRY INTV ALL 5 LN MSG:  
TLI 001 LEV r  
TLI 002 LEV r  
TLI 003 LEV r  
TLI 004 LEV r EOM

M hh:mm:ss xy,ww n[vv] UTL QRY INTV ALL 3 LN MSG:  
CCN 000 LEV r  
CCN 001 LEV r EOM

M hh:mm:ss xy,ww n[vv] UTL QRY INTV ALL 3 LN MSG:  
SYNC 000 LEV r  
SYNC 001 LEV r COMPL

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, the first NPC of a range specification.

**NOTE:** The NPC range is not valid for DSPU NPCs. If a range is specified for DSPU NPCs the command will be denied.

**[t]def** - The 3- or 4-digit nonhierarchical NPC number, the last NPC of a range specification.

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

uvmnp - Hierarchical NPC number, the first NPC of a range specification.  
uvkqr - Hierarchical NPC number, the last NPC of a range specification.

**uv** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The allowable values are:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**ALL** - ALL NPCs

**TLI** - Timing Link Interface

**m** - TLI number(1 - 4)

**CCN** - Cross-connect Network

**SYNC** - Synchronizer

**ALL** - All resources

**LEV** - Level

**r** - Intervention Level(1-6)

**x** - NPC Intervention Level (1-6) or  
- NPC intervention level not requested

**cc** - Hexadecimal condition code

**cc Explanation**

**00 No conditions**

---

## UTL, QRY, LIST, MACRO, USER

---

### UTILITY QUERY LIST MACRO

#### Explanation Of Command

---

This command lists the contents of individual or public macros. Only the frame administrator can list all macros, whether owned by an individual or by the public.

#### Command

---

[I.54131]

UTL:FRM xy,SEQ ww:QRY,LIST,MACRO <macro name>\  
[,USER <user id>]!

#### Completion Message

---

[O.54131]

```
M hh:mm:ss xy,ww n[vv] UTL QRY LIST MACRO <macro name>\
[USER <user id>] e LN MSG:
 l <first 70 characters of lth component command line text>
 <remaining characters of lth component command line text>
 .
 .
 .
 m <first 70 characters of mth component command line text>
 <remaining characters of mth component command line text> {EOM|COMPL}

M hh:mm:ss xy,ww n[vv] UTL QRY LIST MACRO <macro name>\
[USER <user id>] e LN MSG:
 n <first 70 characters of nth component command line text>
 <remaining characters of nth component command line text>
 .
 .
 .
 s <first 70 characters of sth component command line text>
 <remaining characters of sth component command line text> COMPL
```



[O.54132]

```
M hh:mm:ss xy,ww n[vv] UTL QRY LIST MACRO <macro name>\
[USER <user id>] NONE COMPL
```

### **Denial Message**

---

[O.54131.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY LIST MACRO <macro name>\
[USER <user id>] COND cc DNY
```

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**LIST** - List

**MACRO** - Macro

**macro name**

- Macro name (seven characters maximum length)

The name of a collection of DACS II commands executed as a group.

A macro name is a string of capitalized alphanumeric characters. There are two type of macros; public and private. A private macros is created by a user in space allocated to the user by the system administrator. Only the user that created it can execute or read (LIST) a private macro. A public macro is created by the system administrator and is executable and readable by all users. A public macro name must start with the letter "P". A private macro name must not start with the letter "P".

**USER** - User

user id - User identifier (two to eight alphabetic characters)

User login identification

A user can query their own macros but only the frame administrator can use the command to query macros owned by other users. The frame administrator must specify the user id to query other users' macros.

**l,**  
**m,**  
**n,**  
**s** - Macro command line numbers

**NONE** - The macro contains no commands

**cc** - Hexadecimal condition code

**cc**    *Explanation*

**62**    File is being accessed  
**64**    File doesn't exist/can't be accessed  
**D0**    Command is Frame administrator (DAX) only.  
**D3**    User does not exist  
**D5**    No user is logged in on the link/vc

## **UTL, QRY, LIST, MAP, USER**

### **UTILITY QUERY LIST MAP**

#### **Explanation Of Command**

This message lists the user's own login on which link and at what time.

Any user can query his/her own login identification but only the frame administrator can query a login owned by another user.

#### **Command**

[I.54101]

UTL:FRM xy,SEQ ww:QRY,LIST,MAP <name>[,USER <user id>]!

#### **Completion Message**

[O.54101]

M hh:mm:ss xy,ww n[vv] UTL QRY LIST MAP <name>[ USER <user id>] \  
STATS ab e LN MSG:  
<TCON ... format ...

.  
.  
.

<TCON ... format ... EOM

M hh:mm:ss xy,ww n[vv] UTL QRY LIST MAP <name>[ USER <user id>] \  
STATS ab e LN MSG:  
<TCON ... format ... >

.  
.  
.

<TCON ... format ... > COMPL

[O.54102]

M hh:mm:ss xy,ww n[vv] UTL QRY LIST MAP <name>\  
[ USER <user id>] NONE COMPL

### Denial Message

---

[O.54101.01]

M hh:mm:ss xy,ww n[vv] UTL QRY LIST MAP <name>\  
[ USER <user id>] COND cc DNY

### Autonomous Message

---

Not applicable.

### Explanation Of Parameters

---

**MAP** - Alternate MAP

**name** - Name of the specified alternate MAP. A MAP name may have up to seven alphanumeric characters. The first character of a MAP name must be an alphabetic character. All alphabetic characters of a MAP name must be capitalized.

**USER** - User

**user id**  
- User login identification is two to eight alphabetic characters.

**STATS** - Status

**ab** - Status field

| <i>ab</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |                                 |
|----|---------------------------------|
| 00 | Map is valid (can be activated) |
|----|---------------------------------|

|    |                                                                               |
|----|-------------------------------------------------------------------------------|
| 01 | Map is not valid (contains conflicting circuits and thus cannot be activated) |
|----|-------------------------------------------------------------------------------|

|    |                                                                           |
|----|---------------------------------------------------------------------------|
| D0 | USER <id> is not your login name and your are not the frame administrator |
|----|---------------------------------------------------------------------------|

|    |                          |
|----|--------------------------|
| D3 | USER <id> does not exist |
|----|--------------------------|

|    |                                                  |
|----|--------------------------------------------------|
| D5 | The command cannot be entered without logging in |
|----|--------------------------------------------------|

**e** - Number of lines in the output segment

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 62** File is being accessed
- 64** File doesn't exist/can't be accessed
- D0** Command is Frame administrator (DAX) only.
- D3** User does not exist
- D5** No user is logged in on the link/vc

## **UTL,QRY,LOG,ALL**

### **QUERY LOG**

#### **Explanation Of Command**

This command is used to query DACS II for the link, user identifier, and date and time of login of the user issuing the command. The frame administrator uses the **ALL** keyword to list information on all current users.

Output from this command is sent only to the link on which the command was input.

#### **Command**

[I.54011]

**UTL:FRM xy,SEQ ww:QRY,LOG[,ALL]!**

#### **Completion Message**

[O.54011]

**M hh:mm:ss xy,ww n[vv] UTL QRY LOG e LN MSG:  
LINK j[mm] USER <user id> {DATE mm/dd/yy FORMAT MDY|\  
DATE dd/mm/yy FORMAT DMY} TOD hh:mm:ss COMPL**

[O.54011]

M hh:mm:ss xy,ww n[vv] UTL QRY LOG ALL e LN MSG:  
LINK j[mm] USER <user id> {DATE mm/dd/yy FORMAT MDY|\  
DATE dd/mm/yy FORMAT DMY} TOD hh:mm:ss

.  
.  
.

LINK j[mm] USER <user id> {DATE mm/dd/yy FORMAT MDY|\  
DATE dd/mm/yy FORMAT DMY} TOD hh:mm:ss {EOM|COMPL}

M hh:mm:ss xy,ww n[vv] UTL QRY LOG ALL e LN MSG:  
LINK j[mm] USER <user id> {DATE mm/dd/yy FORMAT MDY|\  
DATE dd/mm/yy FORMAT DMY} TOD hh:mm:ss

.  
.  
.

LINK j[mm] USER <user id> {DATE mm/dd/yy FORMAT MDY|\  
DATE dd/mm/yy FORMAT DMY} TOD hh:mm:ss COMPL

[O.54012]

M hh:mm:ss xx,yy n[vv] UTL QRY LOG[ ALL] NONE COMPL

### **Denial Message**

---

[O.54011.01]

M hh:mm:ss xy,ww n[vv] UTL QRY LOG[ ALL] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**LOG** - Login

**ALL** - All

All user logins. Used only by the frame administrator.

**USER** - User

**user id**

- User identifier (two to eight alphabetic characters)

User login identification

**LINK** - Link

**j [mm]** - The link number the user is logged onto

**j** - Administrative link number (5 or 6)

**mm** - Virtual link number (1 through 16)

**DATE** - Date

mm/dd/yy, dd/mm/yy

- Date, current

**mm** Month number (01 through 12)

**dd** Day number (01 through 31)

**yy** Year number (00 through 99)

**FORMAT** - Date format

**MDY** - Month/Day/Year format

**DMY** - Day/Month/Year format

**TOD** - Time of day

**hh:mm:ss**

- Time of day in hours, minutes, and seconds

**hh** Hours number (00 through 23)

**mm** Minutes number (00 through 59)

**ss** Seconds number (00 through 59)

**NONE** - No user is logged in to DACS II



**cc** - Hexadecimal condition code

**cc** *Explanation*

**D0** Command is Frame administrator (DAX) only.

**D3** User does not exist

**D7** Cannot execute privileged command

**DF** Command and protocol are inconsistent

## **UTL,QRY,LPBK,NPC**

### **UTILITY QUERY LOOPBACK**

#### **Explanation Of Command**

This command requests a report indicating which Network Processing Circuits are in the loopback state. The message applies to PA, PB, and PC type NPCs. If other NPC types are encountered in a range of NPCs, these other NPC types will be skipped.

#### **Command**

##### **Nonhierarchical**

[I.53131]

UTL:FRM xy,SEQ ww:QRY,LPBK,NPC [s]abc[-[t]def]!

##### **Hierarchical**

[I.53131]

UTL:FRM xy,SEQ ww:QRY,LPBK,NPC uvmnp[-wxkqr]!

## Completion Message

### Nonhierarchical

[O.53131]

M hh:mm:ss xy,ww n[vv] UTL QRY LPBK NPC [u]ghi-[u]jkl TOT nnn\  
[ COND cc] 5 LN MSG:  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t EOM

|     |     |     |
|-----|-----|-----|
| ... | ... | ... |
| ... | ... | ... |
| ... | ... | ... |

M hh:mm:ss xy,ww n[vv] UTL QRY LPBK NPC [v]mno-[v]pqr TOT nnn\  
[ COND cc] 5 LN MSG:  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t COMPL

[O.53132]

M hh:mm:ss xy,ww n[vv] UTL QRY LPBK NPC [s]abc [d]t COMPL

### **Hierarchical**

---

[O.53131]

M hh:mm:ss xy,ww n[vv] UTL QRY LPBK NPC uvmaa-uvmbb TOT nnn\  
[ COND cc] 5 LN MSG:  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t EOM

...                    ...                    ...  
...                    ...                    ...  
...                    ...                    ...

M hh:mm:ss xy,ww n[vv] UTL QRY LPBK NPC wxkaa-wxkbb TOT nnn\  
[ COND cc] 5 LN MSG:  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t  
[d]t [d]t [d]t [d]t [d]t [d]t [d]t [d]t COMPL

[O.53132]

M hh:mm:ss xy,ww n[vv] UTL QRY LPBK NPC uvmnp [d]t COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.53131.01]

M hh:mm:ss xy,ww n[vv] UTL QRY LPBK NPC [s]abc[-[t]def] \  
COND cc DNY

### **Hierarchical**

---

[O.53131.01]

M hh:mm:ss xy,ww n[vv] UTL QRY LPBK NPC uvmnp[-wxkqr] \  
COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

---

**LPBK** - Loopback

**NPC** - Network processing circuit

If an NPC range is specified in the input command, the following floating window rules apply:

1. Unequipped NPCs within the requested range will be skipped.
2. If the first NPC in the range is a DA or TA type NPC, only those NPC types will be reported on.
3. If the first NPC in the range is a TE or TH type NPC on a Hybrid DS3U, then only those type of NPCs will be reported on.
4. If the first NPC in the range is a PA, PB, or PC type NPC, then only those NPC types will be reported on.

**TOT** - Total

**nnn** - Total Number of NPCs in the module that are in the loopback state

**COND** - Condition

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, start of NPC range  
**[t]def** - The 3- or 4-digit nonhierarchical NPC number, end of NPC range

**[u]ghi** - Lowest numbered NPC in the FTM that contains NPC [s]abc  
**[v]mno** - Lowest numbered NPC in the FTM that contains NPC [t]def

**[u]jkl** - Highest numbered NPC in the FTM that contains NPC [s]abc  
**[v]pqr** - Highest numbered NPC in the FTM that contains NPC [t]def

FTM is an acronym for Facility Terminating Module. For FTMs in FTUs or IFTUs, each row contains 10 values of output. For FTMs within DS3Us each row contains 7 values. For FTMs within HDS3Us each row contains 4 values.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1952  | 2081-2112  | 2241-2272  | 2401-2432  |
| 1961-1992  | 2121-2152  | 2281-2312  | 2441-2472  |
| 2001-2032  | 2161-2192  | 2321-2352  | 2481-2512  |
| 2041-2072  | 2201-2232  | 2361-2392  | 2521-2552  |

**uvmnp** - Hierarchical NPC number for beginning of NPC range

**wxkqr** - Hierarchical NPC number for end of NPC range

**uvmaa** - Lowest numbered NPC in the FTM that contains NPC uvmnp

FTM is an acronym for Facility Terminating Module.

The parameter value for NPC aa is in the first position, first line of the message.

**uvmbb** - Highest numbered NPC in the FTM that contains NPC uvmnp

The parameter value for NPC bb is just before EOM or COMPL.

**wxkaa** - Lowest numbered NPC in the FTM that contains NPC wxkqr

The parameter value for NPC aa is in the first position, first line of the message.

**wxkbb** - Highest numbered NPC in the FTM that contains NPC wxkqr

The parameter value for NPC bb is just before EOM or COMPL.

For FTMs in FTUs or IFTUs, each row contains 10 values of output. For FTMs within DS3Us each row contains 7 values. For FTMs within HDS3Us each row contains 4 values.

**uv, wx** - Unit number

**m, k** - Module number

**np, qr, aa, bb**

- NPC number within the module

The valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number

Unit Type FT (IFTU2/IFTU/FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

The range of NPCs in the denial messages will be given either as module or unit boundaries depending upon the reason for the denial.

**d** - Loopback direction specifier

The optional "d" will only be output for PA NPCs. For PDS output, a "blank" space in the "d" position will be used for PB/PC NPCs to line-up the output if at least one PA type NPC is within the specified range. Otherwise, no "blank" space at the "d" position will be used for PB/PC NPCs. No "blank" space is used in the MML output format.

*d Explanation*

|   |                                                                                                                                                 |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------|
| F | Facility loopback, the F type loops the incoming 2 Mbit/s bipolar signal back to the facility.                                                  |
| E | Equipment loopback, the E type loops the outgoing 2 Mbit/s signal back to DACS II equipment. This type is not applicable to PB or PC type NPCs. |
| N | Not in a loopback state                                                                                                                         |
| - | NPC not equipped                                                                                                                                |
| 0 | NPC not specified in the input command, valid for range commands only                                                                           |

**t** - Signal transmission and PM processing specifier for loopback

Values of "t" are presented in NPC order, grouped within messages by Facility Terminating Module

*t Explanation*

|   |                                                                                            |
|---|--------------------------------------------------------------------------------------------|
| A | Loopback with AIS downstream/upstream and facility Performance Monitoring (PM) turned off. |
| B | Loopback with AIS downstream/upstream and PM turned on.                                    |
| C | Loopback with pass-through and PM turned off.                                              |
| T | Loopback with pass-through and PM turned on.                                               |
| N | Not in a loopback state                                                                    |
| - | NPC not equipped                                                                           |
| 0 | NPC not specified in the input command, valid for range commands only                      |

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                      |
|-----------|----------------------|
| <b>10</b> | Unit is not equipped |
| <b>13</b> | FTMI is not equipped |
| <b>25</b> | FTMI type error      |
| <b>26</b> | NPC type error       |
| <b>0B</b> | Invalid CEPT NPC     |



## **UTL,QRY,MACRO,ATTR,USER,ALL**

### **QUERY MACRO ATTRIBUTES**

#### **Explanation Of Command**

This message queries the macro attributes associated with all personally-owned macros and any public macros. The frame administrator can query ALL the macro attributes of any macro, public or private.

For each macro, DACS II lists:

- The macro name
- The user who owns the macro
- The number of parameters in the macro
- The language used
- The amount of space used by the macro.

#### **Command**

[I.54211]

**UTL:FRM xy,SEQ ww:QRY,MACRO,ATTR[, {USER <user id>|ALL}]!**

### **Completion Message**

---

[O.54211]

```
M hh:mm:ss xy,ww n[vv] UTL QRY MACRO ATTR\
[{USER <user id>|ALL}] e LN MSG:
USER <user id> MACRO <name> PRMTR tt LANG {P|M} SPACE nnn \
NPCAD {E|X|H}
```

```
.....
.....
USER <user id> MACRO <name> PRMTR tt LANG {P|M} SPACE nnn \
NPCAD {E|X|H} {EOM|COMPL}
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY MACRO ATTR\
[{USER <user id>|ALL}] e LN MSG:
USER <user id> MACRO <name> PRMTR tt LANG {P|M} SPACE nnn \
NPCAD {E|X|H}
```

```
.....
USER <user id> MACRO <name> PRMTR tt LANG {P|M} SPACE nnn \
NPCAD {E|X|H} COMPL
```

[O.54212]

```
M hh:mm:ss xy,ww n[vv] UTL QRY MACRO ATTR\
[{USER <user id>|ALL}] NONE COMPL
```

### **Denial Message**

---

[O.54211.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY MACRO ATTR\
[{USER <user id>|ALL}] COND cc DNY
```

### **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**ATTR** - Attributes

**user id**

- Query the specified user's private and public macro attributes

User login identification is two to eight alphabetic characters.

**ALL** - Query all private and public macros' attributes (used by the frame administrator only)

**MACRO** - The keyword used to indicate that the "name" shown is a macro name. A Macro is a collection of DACS II commands that can be executed as a group.

**name** - The macro name which is a string of uppercase alphanumeric characters from one to seven characters long. The first character must be an alphabetic character.

A macro name start with the character "P" is a public macro. Only the frame administrator is allowed to create a public macro.

**LANG** - Language

**M** - Man-Machine Language

**P** - Program Documentation Standard

**PRMTR** - Macro parameters

**tt** - Total number of macro parameters used (01 - 10)

**SPACE** - Macro space

**nnn** - Macro space used by the macro in percentage of the user macro space allocation (000 - 100)

**NPCAD** - NPC addressing scheme

**E** - 3-digit extended (nonhierarchical) NPC addressing scheme

**X** - 4-digit extended (nonhierarchical) NPC addressing scheme

**H** - Hierarchical NPC addressing scheme, i.e., address the NPC by using the unit number, module number, and NPC number within the module.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**D0** Command is Frame administrator (DAX) only.

**D3** User does not exist

**D5** No user is logged in on the link/vc

## **UTL,QRY,MACRO,MAP,SPACE,USER,ALL**

### **UTILITY QUERY MACRO/MAP SPACE**

#### **Explanation Of Command**

This message requests the amount of space that the user's alternate map or macro requires and how much space is still available.

The frame administrator can query for all user's macro or alternate map space requirements and for the system space requirements and allocation.

In summary, a user can query his/her own alternate map or macro space, but only the frame administrator can use the ALL and SYSTEM options of the command to query space owned by another user.

#### **Command**

[I.54221]

**UTL:FRM xy,SEQ ww:QRY,{MACRO|MAP},SPACE[, {USER <user id>|ALL|\SYSTEM}]!**

#### **Completion Message**

[O.54221]

**M hh:mm:ss xy,ww n[vv] UTL QRY {MACRO|MAP} SPACE nnn \  
AVAIL xxx  
[ {USER <user id>|SYSTEM}] COMPL**

[O.54222]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {MACRO|MAP} SPACE nnn ALL \
e LN MSG:
USER <user id> AVAIL xxx
USER <user id> AVAIL xxx

USER <user id> AVAIL xxx {EOM|COMPL}
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY {MACRO|MAP} SPACE nnn ALL \
e LN MSG:
USER <user id> AVAIL xxx
USER <user id> AVAIL xxx

USER <user id> AVAIL xxx {EOM|COMPL}
```

```


M hh:mm:ss xy,ww n[vv] UTL QRY {MACRO|MAP} SPACE nnn ALL \
e LN MSG:
USER <user id> AVAIL xxx
USER <user id> AVAIL xxx

USER <user id> AVAIL xxx COMPL
```

### Denial Message

---

[O.54221.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {MACRO|MAP} SPACE\
[{USER <user id>|ALL|SYSTEM}] COND cc DNY
```

### Autonomous Message

---

Not applicable.

### **Explanation Of Parameters**

---

**MAP** - Map

**MACRO** - Macro

**USER** - User

**user id**

- query the specified user's macro/map space status.

User login identification is two to eight alphabetic characters.

**ALL** - query all users' macro/map space status.

**SYSTEM** - query the system macro/map space status.

**nnn** - percentage of macro/map space allocated (000 to 100%). If user ID or ALL option is used, nnn is the user macro/map space allocation percentage. If SYSTEM option is used, nnn is the percentage of system macro/map space allocated, and it is always 100 (i.e., 100%).

**AVAIL** - Percentage of space available.

**xxx** - percentage of user or system macro/map space still available (000 to 100%)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**D0** Command is Frame administrator (DAX) only.

**D3** User does not exist

**D5** No user is logged in on the link/vc

## **UTL, QRY, MACRO, USER**

### **UTILITY QUERY MACRO**

#### **Explanation Of Command**

This command is used to query the attributes of a macro including the language, the number of macro parameters, the amount of user macro space used by the macro, the NPC addressing scheme used by the macro, and the total number of macro command lines in the macro.

A user can query his or her own macros but only the frame administrator can query macros owned by another user.

#### **Command**

[I.54121]

**UTL:FRM xy,SEQ ww:QRY,MACRO <name>[,USER <user id>]!**

#### **Completion Message**

[O.54121]

M hh:mm:ss xy,ww n[vv] UTL QRY MACRO <name>[ USER <user id>] 2 LN MSG:  
LANG {M|P} PRMTR jk SPACE sss NPCAD {E|X|H} TOTAL <line total> COMPL

#### **Denial Message**

[O.54121.01]

M hh:mm:ss xy,ww n[vv] UTL QRY MACRO <name>[ USER <user id>] COND cc DNY

#### **Autonomous Message**

Not applicable.



## **Explanation Of Parameters**

---

### **MACRO** - Macro

**name** - The macro name (seven characters maximum length)

The name of a collection of DACS II commands executed as a group.

A macro name is a string of capitalized alphanumeric characters. There are two type of macros; public and private. A private macros is created by a user in space allocated to the user by the system administrator. Only the user that created it can execute or read (LIST) a private macro. A public macro is created by the system administrator and is executable and readable by all users. A public macro name must start with the letter "P". A private macro name must not start with the letter "P".

### **USER** - User

#### **user id**

- User identifier (two to eight alphabetic characters)

User login identification

A user can query their own macros but only the frame administrator can use the command to query macros owned by other users. The frame administrator must specify the user id to query other users' macros.

### **LANG** - Language

**M** - Man-Machine language

**P** - Program documentation standards

### **PRMTR** - Parameter

**jk** - Total number of macro parameters used (01 through 10)

### **SPACE** - Space

**sss** - User macro or map space allocation (000 through 100 percent)

Variable sss represents the space allocated to user macros or maps for the entire DACS II system as a percentage of the system macro space.

### **TOTAL** - Total

#### **line total**

- Total number of macro command lines in the macro

### **NPCAD** - NPC addressing scheme

- E** - 3-digit extended (non-hierarchical) NPC addressing scheme
- X** - 4-digit extended (non-hierarchical) NPC addressing scheme
- H** - Hierarchical NPC addressing scheme, that is, address the NPC by using the unit number, module number, and NPC number within the module.
- cc** - Hexadecimal condition code

**cc**    *Explanation*

- 64**    File doesn't exist/can't be accessed
- D0**    Command is Frame administrator (DAX) only.
- D3**    User does not exist
- D5**    No user is logged in on the link/vc

## **UTL, QRY, MAP, ATTR, ALL, USER, MAPNM**

### **UTILITY QUERY MAP**

#### **Explanation Of Command**

This message requests the following information on the user's alternate map:

- User identifier
- Status of the map
- Amount of space used by the map.

Only the administrator can request information on other users or request ALL alternate maps on the DACS II frame.

#### **Command**

[I.54201]

UTL:FRM xy,SEQ ww:QRY,MAP,ATTR[, {ALL|USER <user id>|MAPNM <name>}]!

**Note:** Only the DACS II frame administrator can use the ALL option.

## Completion Message

---

[O.54201]

M hh:mm:ss xy,ww n[vv] UTL QRY MAP,ATTR[ {ALL|USER <user id>|\  
MAPNM <name>}}] e LN MSG:  
USER <user id> MAP <name> STATS bb SPACE nnn

.  
.  
.

USER <user id> MAP <name> STATS bb SPACE nnn EOM

M hh:mm:ss xy,ww n[vv] UTL QRY MAP,ATTR[ {ALL|USER <user id>|\  
MAPNM <name>}}] e LN MSG:  
USER <user id> MAP <name> STATS bb SPACE nnn

.  
.  
.

USER <user id> MAP <name> STATS bb SPACE nnn COMPL

[O.54202]

M hh:mm:ss xy,ww n[vv] UTL QRY MAP,ATTR[ {ALL|USER <user id>|\  
MAPNM <name>}}] NONE COMPL

## Denial Message

---

[O.54201.01]

M hh:mm:ss xy,ww n[vv] UTL QRY MAP,ATTR[ {ALL|USER <user id>|\  
MAPNM <name>}}] COND cc DNY

## Autonomous Message

---

Not applicable.

## Explanation Of Parameters

---

**MAP** - Map

**ATTR** - Attributes

**ALL** - All

**USER** - User

**user id**

- User identifier

User login identification is two to eight alphabetic characters.

The USER option is available to a regular DACS II user to query his or her own maps. Only the administrator can use the option to request information on other users or ALL alternate maps on the DACS II frame.

**MAPNM** - Alternate map name

**name** - The alternate map name which is a string of uppercase alphanumeric characters from one to seven characters long. The first character must be an alphabetic character.

A user can query his or her own maps but only the frame administrator can use the command to query maps owned by other users. To do so, the optional USER field must be entered.

**STATS** - Status of the alternate map

**bb** - Map Status

bb Explanation

00 Map is valid (can be activated)

01 Map is not valid (it contains conflicting circuits and therefore cannot be activated)

**SPACE** - Alternate map space

**nnn** - Alternate Map space used by the alternate map in percentage of the user alternate map space allocation (000 - 100)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**64** File doesn't exist/can't be accessed

**D0** Command is Frame administrator (DAX) only.

**D3** User does not exist

**D5** No user is logged in on the link/vc

## **UTL, QRY, MARK**

### **UTILITY QUERY MARKINGS**

#### **Explanation Of Command**

This command is used to query a single or a range of network processing circuits (NPCs) in a facility terminating unit, a digital signal processing unit, a DS3 or a HDS3 unit. DSP Application circuit packs provisioned in a facility terminating unit are supported. This command can be aborted before the entire printout has completed.

When specifying a single NPC, the channel and conference or non-channelized circuit with markings (red circuit and/or customer controlled) are listed. The output for a channel or conference with markings is skipped. When the circuit does not contain markings, the output message indicates this with the NONE keyword. A denial message is printed when the NPC is unequipped.

When specifying a range of NPCs, the channel and conference or non-channelized circuit with markings (red circuit and/or customer controlled) are listed for each equipped NPC. The output for an unequipped or unmarked channel and conference or non-channelized NPC is skipped.

For a non-channelized circuit with markings, a one-line output message segment is printed for each NPC marked, but the channel or conference information is not printed.

For a disconnected channel which was previously used in both two-way and/or one-way cross-connections, the CUS marking is retained for the two-way cross-connection and output by default.

Outputs are skipped under the following conditions:

- NPC is unequipped
- Channel or conference point has no **RDC** or **CUS** marking.

---

## Command

---

---

### Nonhierarchical

---

[I.52201]

UTL:FRM xy,SEQ ww:QRY,MARK [s]abc[-[t]def]!

---

### Hierarchical

---

[I.52201]

UTL:FRM xy,SEQ ww:QRY,MARK uvmnp[-wxkqr]!

---

## Completion Message

---

---

### Nonhierarchical

---

[O.52201]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abc TYPE mnxyz [FDL t000cccr] xx e LN MSG:  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
tnnnccrrr tnnccrrr tnnccrrr tnnccrrr EOM

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY MARK [t]jkl TYPE mnxyz tccrrr EOM]

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [t]def TYPE mnxyz [FDL t000cccr] xx e LN MSG:  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
tnnnccrrr tnnccrrr tnnccrrr tnnccrrr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abc[-[t]def] COMPL

**Note:** The format above assumes all 24 DS0 channels in each NPC are marked.  
Only NPCs with markings are listed.

[O.52203]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abc[-[t]def][ NONE] COMPL

## Hierarchical

---

[O.52201]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK uvmpn TYPE mnxyz [FDL t000ccrrr] xx e LN MSG:  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
tnnnccrrr tnnccrrr tnnccrrr tnnccrrr EOM

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY MARK edhfg TYPE mnxyz tccrrr EOM]

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY MARK wxkqr TYPE mnxyz [FDL t000ccrrr] xx e LN MSG:  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
[tnnnccrrr tnnccrrr tnnccrrr tnnccrrr]  
tnnnccrrr tnnccrrr tnnccrrr tnnccrrr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY MARK uvmpn[-wxkqr] COMPL

**Note:** The format above assumes all 24 DS0 channels in each NPC are marked.  
Only NPCs with markings are listed.

[O.52203]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK uvmpn[-wxkqr] [NONE] COMPL

## Denial Message

---

### Nonhierarchical

---

[O.52201.01]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abc TYPE ----- UEQD DNY

[O.52201.02]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abc[-[t]def] TYPE mnxyz COND cc DNY



## Hierarchical

[O.52201.01]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK uvmnp TYPE ----- UEQD DNY

[O.52201.02]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK uvmnp[-wxkqr] TYPE mnxyz COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**MARK** - Mark

One of the following:

**RDC** - Red circuit

**CUS** - Customer-controlled circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number denoting beginning of range specification

**[t]def** - The 3- or 4-digit nonhierarchical NPC number denoting end of range specification

The valid values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Hierarchical NPC number denoting beginning of range specification  
**wxkqr** - Hierarchical NPC number denoting end of range specification

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The valid values are presented below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

|           |          |                                       |
|-----------|----------|---------------------------------------|
| Unit      | Module   | NPC                                   |
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**[t]jkl** - The 3- or 4-digit NPC number in range [s]abc-[t]def, of a non-channelized NPC.

**edhfg** - Hierarchical non-channelized NPC number in range uvmnp-wxkqr

**TYPE** - Type

**mnxyz** - NPC type

*mnxyz Explanation*

CB10z C-bit Processor  
PAxyz Enhanced 2Mbit/s primary interface  
PBxyz CEPT primary interface (twisted pair termination)  
PCxyz CEPT primary interface (coaxial termination)  
SDxyz DSP Application  
Vlxyz Virtual circuit

**xx** - Total number of marked channels in the message segment (01 through 16)

**FDL** - Facility data link

**t** - Cross-connection type

*t Explanation*

B For broadcast cross-connection  
D For disconnection  
\* For one-way cross-connection

'' Blank for two-way cross-connection,

T A Facility Access Digroup (FAD) or a Test Port (TP) channel

**nnn** - Channel or conference number

**ccc** - CUS if customer controlled or --- if not customer controlled

**rrr** - RDC if red circuit or --- if not red circuit

**UEQD** - Unequipped

----- - Unknown NPC type

## **UTL,QRY,MARK**

---

### **QUERY CHANNEL MARKS**

#### **Explanation Of Command**

---

This command is used to query a network processing circuit for the channel and conference points that are **MARK**ed as red or customer controlled circuits.

The command can be entered to request a listing for a group of channels or conference points or for a single channel or conference point. This command can be aborted before the entire printout has completed.

For a disconnected channel which was previously used in both two-way and one-way cross-connections, the CUS marking retained for the two-way cross-connection is output by default.

Outputs are skipped under the following conditions:

- Unequipped NPC
- Channel/conference point has no red circuit or customer controlled marking.

#### **Command**

---

##### **Nonhierarchical**

---

[I.52211]

UTL:FRM xy,SEQ ww:QRY,MARK [s]abcjjj[-kkk]!

##### **Hierarchical**

---

[I.52211]

UTL:FRM xy,SEQ ww:QRY,MARK uvmnpjjj[-kkk]!



---

## Completion Message

---

---

### Nonhierarchical

---

Usage: Single channel or conference point

[O.52211]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abcjjj TYPE mnxyz tjjjccrrr COMPL

Usage: Range of channels or conference points

[O.52211]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abcjjj-kkk TYPE mnxyz xx e LN MSG:  
[tnnnrrr tnnrrr tnnrrr tnnrrr]  
[tnnnrrr tnnrrr tnnrrr tnnrrr]  
[tnnnrrr tnnrrr tnnrrr tnnrrr]  
tnnnrrr tnnrrr tnnrrr tnnrrr EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abcjjj-kkk TYPE mnxyz xx e LN MSG:  
[tnnnrrr tnnrrr tnnrrr tnnrrr]  
[tnnnrrr tnnrrr tnnrrr tnnrrr]  
[tnnnrrr tnnrrr tnnrrr tnnrrr]  
tnnnrrr tnnrrr tnnrrr tnnrrr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abcjjj[-kkk] COMPL

Usage: No channel or conference points are marked.

[O.52213]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abcjjj[-kkk] NONE COMPL

---

### Hierarchical

---

Usage: Single channel or conference point

[O.52211]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abcjjj TYPE mnxyz tjjjccrrr COMPL

**Usage: Range of channels or conference points**

[O.52211]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abcjjj-kkk TYPE mnxyz xx e LN MSG:  
[tnnnrrr tnnrrrr tnnrrrr tnnrrrr]  
[tnnnrrr tnnrrrr tnnrrrr tnnrrrr]  
[tnnnrrr tnnrrrr tnnrrrr tnnrrrr]  
tnnnrrr tnnrrrr tnnrrrr tnnrrrr EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]abcjjj-kkk TYPE mnxyz xx e LN MSG:  
[tnnnrrr tnnrrrr tnnrrrr tnnrrrr]  
[tnnnrrr tnnrrrr tnnrrrr tnnrrrr]  
[tnnnrrr tnnrrrr tnnrrrr tnnrrrr]  
tnnnrrr tnnrrrr tnnrrrr tnnrrrr EOM

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]uvmnpjjj[-kkk] COMPL

**Usage: No channel or conference points are marked.**

[O.52213]

M hh:mm:ss xy,ww n[vv] UTL QRY MARK [s]uvmnpjjj[-kkk] NONE COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.52211.01]

M hh:mm:ss xy,ww n[vv] QRY MARK [s]abc TYPE ----- UEQD DNY

[O.52211.02]

M hh:mm:ss xy,ww n[vv] QRY MARK [s]abcjjj[-kkk] COND cc DNY

### **Hierarchical**

---

[O.52211.01]

M hh:mm:ss xy,ww n[vv] QRY MARK uvmnp TYPE ----- UEQD DNY

[O.52211.02]

M hh:mm:ss xy,ww n[vv] QRY MARK uvmnpjjj[-kkk] COND cc DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

**MARK** - Mark

Red circuit and customer controlled MARKings

**NONE** - None

This keyword indicates that no channel or conference point is marked as a red and/or customer controlled circuit.

**[s]abcjjj**

- Termination number

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

**jjj** - Channel or conference point number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module  
**jjj** - Channel or conference point number

The valid values follow:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

VI NPC numbers listed by unit, module, and NPC Number  
Unit Type VI (Virtual)

| Unit      | Module   | NPC                                   |
|-----------|----------|---------------------------------------|
| <b>99</b> | <b>1</b> | <b>01-02 (DACS II Non-CEF frames)</b> |
| <b>99</b> | <b>1</b> | <b>01-06 (DACS II CEF frames)</b>     |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**kkk** - Channel or conference point number

Conference numbers

001-085 (MB NPC)

001-500 (Virtual NPC)

**tnnnccrrr**

- Channel or conference information

**t** - Cross-connection type

**t** *Explanation*

|   |                                                                    |
|---|--------------------------------------------------------------------|
| * | One-way cross-connection                                           |
| B | Broadcast cross-connection,<br>Blank for two-way cross-connection, |
| D | Disconnection                                                      |

**nnn** - Channel or conference point number (jjj through kkk)

**ccc** - Customer controlled marking

**ccc** *Explanation*

|     |                         |
|-----|-------------------------|
| CUS | Customer controlled     |
| --- | Not customer controlled |

**rrr** - Red circuit marking

**rrr** *Explanation*

|     |                 |
|-----|-----------------|
| RDC | Red circuit     |
| --- | Not red circuit |

**xx** - Total number of data fields in the segment (01 through 16)

**UEQD** - Unequipped



**TYPE** - Type

**mnxyz** - NPC type

**mnxyz** *Explanation*

----- Unknown NPC type  
MBxyz Multipoint bridge  
PAxyz CEPT NPC (75-ohm or 120-ohm)  
PBxyz CEPT NPC (120-ohm twisted pair)  
PCxyz CEPT NPC (75-ohm coaxial)  
SDxyz DSP Application  
THxyz HDS3U CEPT NPC type

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

**01** Invalid range for specified NPC type  
**62** Invalid channel number  
**7F** NPC is not added  
**91** SR NPC was specified - not allowed  
**B5** CPR circuit pack specified in the command  
**F7** Corresponding NPC for virtual channel is not provisioned  
**70** NPC invalid type

## **UTL, QRY, MEMSTAT**

### **RETRIEVE MEMORY STATUS**

#### **Explanation Of Command**

This command identifies the current contents of the system memory devices. A separate line of information is provided for the Main Controller random access memory (RAM), Primary Memory Card (PMEM) and Secondary Memory Card (SMEM). The message response provides the following information for each particular memory device that can be accessed:

1. Software Release of the Executable Program
2. Software Release of the Database
3. Date and Time Stamps of the Database
4. Frame ID and Unique ID
5. Feature Package ID
6. Serial number of the database
7. Serial number of the SunDisk card (PMEM and SMEM only)
8. Service state of the card (PMEM and SMEM) and the service state of the RAM as it corresponds to the state of the MC. If the MC is in-service RAM is in-service, if the MC is in maintenance condition RAM is out-of-service.

In addition information about applications that reside on the memory cards is given as follows:

1. The type of the application in the form SDx, where "x" indicates the type.
2. The generic, issue, and release numbers that identify the version of the application
3. The date when this version of the application was generated.

The output format depends on what the MEMSTAT command finds on each memory card and whether a memory card is in its respective slot as follows:

1. Applications are listed separately in the output of the command. An application section is only created in the output command if applications actually reside on the memory cards.
2. The output for an application does not contain any information about an executable or a database, because it does not apply. The version information identifies the application.
3. If no memory card is in a particular slot, then the output for that slot will generate dashes for the data.
4. If the SMEM slot contains an application card (the PMEM slot should never have an application card), then SMEM is not mentioned in the main section of the output, but is mentioned only in the application section of the output message. In addition, the type field in the output for an application card has an asterisk at its end to identify the card as an application card.

This message may be executed either while the Main Controller is In-Service or in Maintenance Condition.

### **Command**

---

[I.51001]

**UTL : [FRM xy, SEQ ww] : QRY, MEMSTAT !**

## Completion Message

Normal case with no platform application card in SMEM and no applications residing on PMEM or SMEM, only main section (plus feature package section) is generated, no application section is generated.

[O.51001]

```
M hh:mm:ss xy,ww n[vv] UTL QRY MEMSTAT 5 LN MSG:
DEV EXCT DBASE DATE TIME FID UID
RAM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid>
PMEM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid>
SMEM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid> EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY MEMSTAT 5 LN MSG:
FPKG DBSN FCSN STATE
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqq <state>
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqq <state>
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqq <state> COMPL
```

Normal case with no platform application card in SMEM, but applications residing on PMEM and SMEM. Both a main section and an application section (plus feature package section) are generated.

[O.51001]

```
M hh:mm:ss xy,ww n[vv] UTL QRY MEMSTAT e LN MSG:
DEV EXCT DBASE DATE TIME FID UID
RAM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid>
PMEM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid>
SMEM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid>
DEV APPLICATION TYPE DATE VERSION
PMEM SDx aa/bb/yr gen.iss.rel
.
.
[PMEM SDx aa/bb/yr gen.iss.rel]
SMEM SDx aa/bb/yr gen.iss.rel
.
.
[SMEM SDx aa/bb/yr gen.iss.rel] EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY MEMSTAT 5 LN MSG:
FPKG DBSN FCSN STATE
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqq <state>
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqq <state>
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqq <state> COMPL
```

Case with no card in SMEM slot and platform applications residing on PMEM, both a main section and an application section (plus feature package section) are generated.

[O.51001]

```

M hh:mm:ss xy,ww n[vv] UTL QRY MEMSTAT e LN MSG:
DEV EXCT DBASE DATE TIME FID UID
RAM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid>
PMEM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid>
SMEM -.-.-.- -.-.-.- --/--/-- --:--:-- -- ---
DEV APPLICATION TYPE DATE VERSION
PMEM SDx aa/bb/yr gen.iss.rel
 .
 .
[PMEM SDx aa/bb/yr gen.iss.rel] EOM

M hh:mm:ss xy,ww n[vv] UTL QRY MEMSTAT 5 LN MSG:
FPKG DBSN FCSN STATE
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqqq <state>
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqqq <state>
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqqq <state> COMPL

```

Case with platform application card in SMEM and one application residing on PMEM and SMEM, both a main section and an application section (plus feature package section) are generated.

[O.51001]

```

M hh:mm:ss xy,ww n[vv] UTL QRY MEMSTAT e LN MSG:
DEV EXCT DBASE DATE TIME FID UID
RAM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid>
PMEM gg.pp.r dd.rr.v aa/bb/yr hr:mn:sc fg <uid>
DEV APPLICATION TYPE DATE VERSION
PMEM SDx aa/bb/yr gen.iss.rel
SMEM SDx* aa/bb/yr gen.iss.rel EOM

M hh:mm:ss xy,ww n[vv] UTL QRY MEMSTAT 5 LN MSG:
FPKG DBSN FCSN STATE
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqqq <state>
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqqq <state>
nnnnnnnn 0000000000 qqqqqqqqqqqqqqqqqqqqqq <state> COMPL

```

**Note:** The asterisk (\*) following the application type "SDx" in the application section of the message indicates that SMEM is an application card and not a regular 40 Mbyte memory card. Application cards are used for distributing applications to the customer.

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

#### **MEMSTAT**

- Memory Status

**e** - number of lines in message

**DEV** - Device

**EXCT** - Executables

#### **gg.pp.r**

- Software release identifier.

This field identifies the software release of the executable program that is stored in the memory device. The software release ID is a three part number composed of a release number, a point number, and a version number. This field will appear as a set of dashes if no executable program can be found on the memory device. The software release number "gg.pp.r" is composed of:

**gg** - Software release number

**pp** - Point release number

**r** - Version number

**DBASE** - Database

**dd.rr.v**

- Database release identifier.

This field identifies the release of executable program that the database stored in the memory device is formatted for. A database is formatted for a particular executable program release; however, it is compatible with not only the shown release but all other executable program releases that have a greater release ID. The release ID is a three part number composed of a release number, a point number and a version number. This field will appear as a set of dashes if no database can be found on the memory device. The database release number "dd.rr.v" is composed of:

**dd** - Release number  
**rr** - Point release number  
**v** - Version number

**DATE** - Date

**aa/bb/yr**

- Date of last update to the database.

This field identifies the date that the database was created or last updated. In the RAM data line, this field shows the current system date. For the PMEM and SMEM data lines, this field shows the date that the most recent database backup to the Flash Card occurred.

The date field will appear as a set of dashes if no database can be found on the memory device. The date may be generated in either the month-day or the day-month format, depending on how the user has provisioned it using command I.51021, UTL::DATE.

**aa** Month or Day, depending on selected date format.  
**bb** Day or Month, depending on selected date format.  
**yr** Year

**TIME** - Time

**hr:mn:sc**

- Time of last update to the database.

This field identifies the time that the database was created or last updated. In the RAM memory data line, this field shows the current system time. In the PMEM and SMEM data lines, this field shows the time of day that the most recent database backup to the Flash Card occurred. This field will appear as a set of dashes if no database can be found on the memory device.

**hr** - Hour (00 through 23)  
**mn** - Minute (00 through 59)  
**sc** - Second (00 through 59)

**FID** - Frame ID

**fg** - Frame identifier of the memory device.

This field displays the two alphanumeric character frame identifier "fg" of the memory device. In the RAM memory line, the frame ID shown is that of the DACS II system. For the flash cards, PMEM and/or SMEM, the frame ID identifies the system that the memory card belongs to. This field will be shown as dashes if no frame ID can be found on the memory device.

**UID** - Unique ID

**<uid>** - Unique identifier of the memory device.

This field displays the unique identifier **<uid>**, up to 20 alpha-numeric characters, of the memory device. In the RAM memory line, the unique ID shown is that of the DACS II system. For the flash cards, PMEM and/or SMEM, the unique ID identifies the system that the flash card belongs to. This field will be shown as dashes if no unique ID can be found on the memory device.

#### APPLICATION TYPE

- Application Type

This field identifies the type of application "SDx" that resides on the application card, where "x" is a hexadecimal number that designates the application as shown in the list;

**SD1** X.50/X.57 Subrate application  
**SD3** Digital Multipoint Bridge application  
**SD4** DDS Subrate and Multipoint Junction application  
**SDx** Future application with a specific "x" value

#### VERSION

- Version

This field identifies the version number of an application. The version number is subdivided into four fields as follows:

**gen** Generic number of the application  
**iss** Issue number of the application  
**rel** Release number of the application

**FPKG** - Feature Package ID

**nnnnnnnn**

- Feature package identifier.

This field displays the eight character hexadecimal identifier of the feature package. In the RAM memory line, the feature package ID shown is that of the DACS II system. For the flash cards, PMEM and/or SMEM, the feature package ID identifies the system that the flash card belongs to. This field will be shown as dashes if no feature package ID can be found on the memory device.



For those customers that operate a non-CEF DACS II frame, such as an SBF or ESBF, the feature package identifier may show an anomaly that is harmless. PCMCIA cards are formatted with the CEF feature bit ("00000080" in hexadecimal) on. However, these PCMCIA cards may be used in a non-CEF frame. The program will automatically turn the CEF bit off in the Main Controller's random access memory (RAM), when it finds that it is not running on a CEF. For this reason, there may be a discrepancy between what the feature package ID is in random access memory and what the feature package ID is on the PCMCIA cards. For example, if the feature package ID is "00003822" in RAM, it may be "0038A2" on the PCMCIA cards.

**DBSN** - Database Serial Number

**0000000000**

- Database serial number.

This field displays the ten character numeric identifier of the serial number of the database. In the RAM memory line, the database serial number shown is that of the DACS II system. For the flash cards, PMEM and/or SMEM, the database serial number identifies the system that the flash card belongs to. This field will be shown as dashes if no serial number can be found on the memory device.

This field will be padded with blanks if necessary.

**FCSN** - Flash Card

**qqqqqqqqqqqqqqqqqqqqqq**

- Flash card serial number.

This field displays the 20 character alpha-numeric serial number of the flash card. In the RAM memory line, the flash card serial number shown is that of the DACS II system. For the flash cards, PMEM and/or SMEM, the serial number identifies the system that the flash card belongs to. This field will be shown as dashes if no serial number can be found on the memory device.

This field will be padded with blanks if necessary.

**STATE** - Service State

**<state>** - Identifies the state of the memory device.

This field displays the service state of the memory device. The valid states are:

**state** *Explanation*

**IS** In State

**00S** Out Of State

## **UTL,QRY,NFS,NPC**

### **QUERY NPC NON FRAME-WORD SETTING**

#### **Explanation Of Command**

This command displays the non Frame-Word Setting (NFS) of the spare international and national bits, that are being cross-connected from a timeslot 0 (TS0) to a non-TS0 timeslot. These bits are bit 1 of the Frame Word (FW) and bits 1-8 of the non Frame Word (NFW). The request can be made for the TS0 on one or a range of Network Processing Circuits (NPCs).

#### **Command**

##### **Nonhierarchical**

[I.56324]

**UTL:FRM xy,SEQ ww:QRY,NFS,NPC [s]abc[-[t]def]!**

##### **Hierarchical**

[I.56324]

**UTL:FRM xy,SEQ ww:QRY,NFS,NPC uvmnp[-wxkqr]!**

## **Completion Message**

---

### **Nonhierarchical**

---

[O.56324]

M hh:mm:ss xy,ww n[vv] UTL QRY NFS NPC [s]abc abcdefghi COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY NFS NPC [t]def abcdefghi COMPL]

[M hh:mm:ss xy,ww n[vv] UTL QRY NFS NPC [s]abc-[t]def COMPL]

### **Hierarchical**

---

[O.56324]

M hh:mm:ss xy,ww n[vv] UTL QRY NFS NPC uvmnp abcdefghi COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY NFS NPC wxkqr abcdefghi COMPL]

[M hh:mm:ss xy,ww n[vv] UTL QRY NFS NPC uvmnp-wxkqr COMPL]

## **Denial Message**

---

### **Nonhierarchical**

---

[O.56324.01]

M hh:mm:ss xy,ww n[vv] UTL QRY NFS NPC [[u]ghi[-[v]jkl]] COND cc DNY

### **Hierarchical**

---

[O.56324.01]

M hh:mm:ss xy,ww n[vv] UTL QRY NFS NPC [edhfg[-opjst]] COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number, start of range

**[t]def** - The 3- or 4-digit nonhierarchical NPC number, end of range

**[u]ghi** - The 3- or 4-digit nonhierarchical NPC number ([s]abc through [t]def)

**[v]jkl** - The 3- or 4-digit nonhierarchical NPC number ([s]abc through [t]def)

Values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number, start of range

**wxkqr** - Hierarchical NPC number, end of range

**edhfg** - Hierarchical NPC number (uvmnp through wxkqr)

**opjst** - Hierarchical NPC number (uvmnp through wxkqr)

**uv,wx,ed,op**

- Unit number

**m,k,h,j**

- Module number

**np,qr,fg,st**

- NPC number

Values are listed below:

PA type numbers listed by unit, module, and NPC Number

Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**NFS** - Non-Frame-Word Setting

**abcdefghi**

- Variables representing the TS0 bits to which NFS is applied

For Clear-2Mbit/s NPCs, dashes ("-----") will be shown in place of NFS bits.

- a: Bit 1 of Frame Word (FW) - International spare bit
- b: Bit 1 of Non Frame Word (NFW) - International spare bit
- c: Bit 2 of NFW
- d: Bit 3 of NFW - Remote Alarm Indicator
- e-f: Bits 4-5 of Non Frame Word, National spare bits
- g: Bit 6 of Non Frame Word, RPSFI bit if provisioned for RPSFI  
otherwise National spare bit
- h-i: Bits 7-8 of Non Frame Word, National spare bits.

| Variable<br>Value | Action on corresponding TS0 bit:            |
|-------------------|---------------------------------------------|
| "0" or "1"        | Set TS0 bit to this value                   |
| "V"               | Received bit is inverted and passed through |
| "P"               | Received bit is passed through unchanged    |
| "-"               | Not applicable                              |

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 04** Subject entity is out of service
- 10** Unit is not equipped
- 11** UC is out of service
- 13** FTMI is not equipped
- 14** FTMI is out of service
- 15** NPC is unequipped
- 25** FTMI type error
- 26** NPC type error
- 0B** Invalid CEPT NPC
- 46** NPC Failed or Out of Service
- 3A** Invalid FPI value

---

## UTL,QRY,NPC

---

### QUERY NETWORK PROCESSING CIRCUIT PARAMETER

#### **Explanation Of Command**

---

This message requests a printout of the values for a specified facility performance parameter for a single network processing circuit (NPC), a range of circuits, or a SLC® carrier remote terminal or Digital Carrier Line Unit.

These values may be cleared at any time by using the UTL,CLR,ALL command. This message requests a printout of the values for a specified facility performance parameter for a single network processing circuit (NPC) or a range of circuits.

These values may be cleared at any time by using the INIT,REG,ALL command. This message also reports on the CEPT BER status of NPCs. The responses generated by this command are determined by the number of NPCs addressed in the command.

- If a single NPC is addressed in the input command then one message, either a completion or denial, will be generated for the addressed NPC. DACS II will always deny invalid commands to specifically addressed NPCs.
- If a range of NPCs is addressed in the input command, no denial response will be generated.

#### **Command**

---

#### **Nonhierarchical**

---

[I.56041]

UTL:FRM xy,SEQ ww:QRY,<parameter>,NPC [s]abc[-[t]def]!

## Hierarchical

---

[I.56041]

UTL:FRM xy,SEQ ww:QRY,<parameter>,NPC uvmnp[-wxkqr]!

## Completion Message

---

### Nonhierarchical

---

[O.56041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> \
NPCS [s]jjj[-[t]kkk][RESET] TOT nnnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> \
NPCS [s]ooo[-[t]ppp][RESET] TOT nnnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> NPC [s]abc-[t]def \
COMPL
```

**Note:** The above message applies to CEPT Facility Terminating Module (FTM) and parameter other than BER.



[O.56041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> \
NPCS [s]jjj[-[t]kkk][RESET] TOT nnnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> \
NPCS [s]ooo[-[t]ppp][RESET] TOT nnnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> NPC [s]abc-[t]def COMPL

**Note:** The above message applies to DS3/HDS3 modules (i.e., a MXR/HMXR) and parameter other than ER and BER.

[O.56042]

```
M hh:mm:ss xy,ww n[vv] UTL QRY BER NPCS [s]jjj[-[t]kkk]\
[RESET] TOT nnnn 5 LN MSG:
xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY BER NPCS [s]ooo[-[t]ppp]\
[RESET] TOT nnnn 5 LN MSG:
xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx EOM
```

M hh:mm:ss xy,ww n[vv] UTL QRY BER NPC [s]abc-[t]def COMPL

**Note:** The above message applies to CEPT Facility Terminating Module (FTM) and parameter BER.

[O.56042]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {ER|BER} NPCS [s]jjj[-[t]kkk]\
[RESET] TOT nnnn 5 LN MSG:
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY {ER|BER} NPCS [s]ooo[-[t]ppp]\
[RESET] TOT nnnn 5 LN MSG:
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY {ER|BER} NPCS [s]abc[-[t]kkk]\
COMPL
```

**Note:** The above message applies to DS3/HDS3 modules (i.e., a MXR/HMXR) and either parameter ER or BER.

## Hierarchical

[O.56041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> NPCS uvmkl[-uvmpq]\
[RESET] TOT nnnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> NPCS wxkfg[-wxkst]\
[RESET] TOT nnnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> NPC uvmnp-wxkqr \
COMPL
```

**Note:** The above message applies to CEPT Facility Terminating Module (FTM) and parameter other than BER.

[O.56041]

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> NPCS uvmkl[-uvmpq]\
[RESET] TOT nnnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> NPCS wxkfg[-wxkst]\
[RESET]
TOT nnnn 5 LN MSG:
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> NPC uvmnp-wxkqr \
COMPL
```

**Note:** The above message applies to DS3/HDS3 modules (i.e., a MXR/HMXR) and parameter other than ER and BER.

[O.56042]

```
M hh:mm:ss xy,ww n[vv] UTL QRY BER NPCS uvmkl[-uvmpq]\
[RESET] TOT nnnn 5 LN MSG:
XX XX XX XX XX XX XX XX
XX XX XX XX XX XX XX XX
XX XX XX XX XX XX XX XX
XX XX XX XX XX XX XX XX EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY BER NPCS wxkfg[-wxkst]\
[RESET] TOT nnnn 5 LN MSG:
XX XX XX XX XX XX XX XX
XX XX XX XX XX XX XX XX
XX XX XX XX XX XX XX XX
XX XX XX XX XX XX XX XX EOM
```

M hh:mm:ss xy,ww n[vv] UTL QRY BER NPC uvmnp-wxkqr COMPL

**Note:** The above message applies to CEPT Facility Terminating Module (FTM) and parameter BER.

[O.56042]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {ER|BER} NPCS uvmkl[-unmpq]\
[RESET] TOT nnnn 5 LN MSG:
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY {ER|BER} NPCS wxkfg[-wxkst]\
[RESET] TOT nnnn 5 LN MSG:
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX
XX XX XX XX XX XX XX EOM
```

M hh:mm:ss xy,ww n[vv] UTL QRY {ER|BER} NPC uvmnp-wxkqr COMPL

**Note:** The above message applies to DS3/HDS3 modules (i.e., a MXR/HMXR) and either parameter ER or BER.

## Denial Message

### Nonhierarchical

[O.56041.01]

M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> \  
NPC [s]abc[-[t]def] COND cc DNY

### Hierarchical

[O.56041.01]

M hh:mm:ss xy,ww n[vv] UTL QRY <parameter> \  
NPC uvmpn[-wxkqr] COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

- [s]abc** - The 3- or 4-digit nonhierarchical NPC number, the first number of a range  
**[t]def** - The 3- or 4-digit nonhierarchical NPC number, the last number of a range

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number the first NPC number of a range  
**wxkqr** - Hierarchical NPC number denoting end of an NPC range

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**parameter**

- Facility performance parameter

For CEPT frames, the parameter variable listed below are only applicable to PB or PC type NPCs. If there are PA NPCs in the FTM, dashes ("-") will be output in the position of these NPCs:

| <i>parameter</i> | <i>Explanation</i>                               |
|------------------|--------------------------------------------------|
| DM               | Degraded Minutes,                                |
| SERS             | Severely Errored Seconds,                        |
| ERS              | Errored Seconds,                                 |
| US               | Unavailable Seconds,                             |
| SLIP             | Slip Events                                      |
| CRC              | CRC-4 Check Block Error Events                   |
| FRER             | Framing Error Events                             |
| LOFA             | Loss of Frame Alignment Events                   |
| MER              | Multiframe Alignment Error Events (Time slot 16) |

**Note:** If the parameter reports threshold alarms (DM, SERS, ERS, US, or SLIP), the count represents the total for the last 24 hours (a rolling 24-hour count).

The other parameter counts represent the total since local midnight.

For CEPT frames, the parameter variable below is applicable to all CEPT NPC types, i.e., PA, PB, and PC:

| <i>parameter</i> | <i>Explanation</i>                                                  |
|------------------|---------------------------------------------------------------------|
| BER              | Excessive Error Rate<br>(Also MBER/RBER for NPCs with MBER feature) |

**Note:** For BER and RBER, the message reports NPCs that are currently in the BER state.

A message segment will be omitted for:

- Unequipped FTMs
- Equipped FTMs having no NPCs
- Equipped FTMs with NPCs having zero parameter values.
- DS3/HDS3 modules in case of BPV request
- Equipped CEPT FTM with all NPCs being PA type but with a parameter other than BER.

xxxxxx - Parameter count values

Note that dashes ("-") will be output for NPCs that are not equipped or are provisioned with a type inapplicable to the parameter. If an entire FTM is unequipped or all its NPCs are dashes, the segment is skipped.

xx - BER states

For xx representing CEPT BER/RBER states, the state represents a combination of the Excessive Bit Error Rate (EER), Bit Error Rate (BER), and Remote Bit Error Rate (RBER). It is interpreted as either a Prompt Maintenance Alarm (PMA), Deferred Maintenance Alarm (DMA), or Clear.

| xx | <i>EER/BER state RBER state</i>  |                |
|----|----------------------------------|----------------|
| MJ | EER/PMA                          | Not applicable |
| MN | DMA                              | Inactive       |
| RN | DMA                              | Active         |
| CL | Clear*                           | Inactive       |
| RL | Clear*                           | Active         |
| -- | NPC unequipped or out of service |                |

\* Clear refers to the Facility type NPC whose received error rate is less than the Minor BER threshold.

without CRC ( $10^{-5}$ )

with CRC ( $10^{-6}$ )

Note that EER has priority over the BER/RBER states. EER does not coexist with them; however, BER and RBER coexist with each other.

Unless the active value of bit 4 of channel time slot 0 has been redefined by use of the CHG::NPC,TS0 (1.38321) command,  
the RBER values are:



*RB ER Explanation*

1 Inactive  
0 Active

**[s]jjj** - The Lowest 3- or 4-digit nonhierarchical NPC number in the FTM/MXR/HMXR that contains NPC [s]abc

**[t]kkk** - The Highest 3- or 4-digit nonhierarchical NPC number in the FTM/MXR/HMXR that contains NPC [s]abc

**[s]ooo** - The Lowest 3- or 4-digit nonhierarchical NPC number in the FTM/MXR/HMXR that contains NPC [t]def

**[t]ppp** - The Highest 3- or 4-digit nonhierarchical NPC number in the FTM/MXR/HMXR that contains NPC [t]def

**uvmkl** - Lowest hierarchical NPC number in the FTM/MXR/HMXR that contains NPC uvmnp

**uvmppq** - Highest hierarchical NPC number in the FTM/MXR/HMXR that contains NPC uvmnp

**wxkfg** - Lowest hierarchical NPC number in the FTM/MXR/HMXR that contains NPC wxkqr

**wxkst** - Highest hierarchical NPC number in the FTM/MXR/HMXR that contains NPC wxkqr

**RESET** - Reset. Indicates that one of more autonomous resets have occurred

The parameter value for the first NPC is in the first position (upper left corner); first line of the message. The parameter value for the last NPC is located in the lower right corner.

**nnnn** - Cumulative count of NPCs returning nonzero states or values. The last nnnn, the one printed out in the message concluding with COMPL gives the total number of NPCs with nonzero states or values over the specified range.

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                          |
|-----------|----------------------------------------------------------|
| <b>04</b> | Subject entity is out of service                         |
| <b>11</b> | UC is out of service                                     |
| <b>12</b> | UC is in service but failed                              |
| <b>13</b> | FTMI is not equipped                                     |
| <b>14</b> | FTMI is out of service                                   |
| <b>15</b> | NPC is unequipped                                        |
| <b>1F</b> | FTMI is in service but failed                            |
| <b>24</b> | Unit type error                                          |
| <b>0B</b> | Invalid CEPT NPC                                         |
| <b>46</b> | NPC Failed or Out of Service                             |
| <b>7E</b> | Bank id number not found                                 |
| <b>A1</b> | The parameter specified does not match with the NPC type |

## **UTL,QRY,NPC,ALL,AI,LV,MONDAT,MONTIM**

### **QUERY PERFORMANCE MONITORING DATA FOR DA, TA, TH AND PA TYPE NPCS**

#### **Explanation Of Command**

This message retrieves current and/or historical DS1 performance monitoring data from DA, TA, TH and PA type NPCS. The message response is output in two distinct formats depending on whether the input command is applied to ALL NPCS on the frame or a set of specifically addressed NPCS.

When the command is applied to ALL NPCS, DACS II responds with the current parameter counts of a single specified performance parameter for ALL NPCS. No output level thresholding is performed and all counts, whether they are zero or greater, are output. The output is formatted on a module-by-module basis for Facility Terminating Units, DS3 and Hybrid DS3 Units. If a particular NPC within a module is not a DA, TA TH or PA type NPC, its accumulator count will be printed as a string of dashes. Also for TH type NPCS in a hybrid DS3 unit the fourth NPC which does not exist will be printed as dashes.

When a single NPC or range of NPCS is specifically addressed in the input command, all of the optionally entered user parameters are programmable. DACS II outputs the requested data in a different format, which accommodates the various user options.

This command will handle NPC addressing as follows: If only a single NPC is addressed in the input command, then either a completion or denial response will be generated for the addressed NPC. DACS II will always deny invalid commands to specifically addressed NPCS.

If a range of NPCS is addressed and the feature applies to one or more NPCS within the range, DACS II will perform the command on the NPCS in the range that support the requested feature, but skip the NPCS which do not support the requested feature. DACS II does not output denial responses for a range of NPCS.

Restrictions are placed on the use of the "ALL" options for various keywords to constrain the amount of data that will be output for a single command. In particular,

1. If all parameters are requested, the input command is restricted to specifying a single NPC and a single monitored date and/or historical accumulation interval (monitored time).
2. If all daily accumulation registers are requested, the input command is restricted to specifying a single NPC and a single parameter.
3. If all 15-minute accumulation registers are requested, the input command is restricted to specifying a single NPC and a single parameter.

### **Command**

---

#### **Nonhierarchical**

---

[I.56091]

```
UTL:FRM xy,SEQ ww:QRY,{NPC [s]abc[-[t]def]|ALL},<parameter>,AI aaaaa \
[,LV llllllllll][,MONDAT dddd][,MONTIM tttt]!
```

#### **Hierarchical**

---

[I.56091]

```
UTL:FRM xy,SEQ ww:QRY,{NPC uvmnp[-wxkqr]|ALL},<parameter>,AI aaaaa \
[,LV llllllllll][,MONDAT dddd][,MONTIM tttt]!
```

### **Completion Message**

---

#### **Nonhierarchical**

---

Output message when the ALL keyword is used for NPCs, retrieving the current counter values of a single specified parameter from all PA type NPCs:

**Note:** The following segment applies to a Facility Terminating Module.

[O.56091]

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL NPCS [s]abc-[t]def <parameter> \
AI aaaaa 6 LN MSG:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
EOM

.
.
.

M hh:mm:ss xy,ww n[vv] UTL QRY ALL <parameter> AI aaaaa COMPL
```

Output message when the ALL keyword is not used for NPCs.

[O.56092]

```
M hh:mm:ss xy,ww n[vv] UTL QRY NPCS <parameter> e LN MSG:
AI aaaaa [LV llllllllll][MONDAT dddd][MONTIM tttt]
NPC PARAM COUNT MONDAT MONTIM THMODE
[s]abc pppp cccccccc dddd tttt hhh
. pppp cccccccc dddd tttt hhh
. pppp cccccccc dddd tttt hhh
. pppp cccccccc dddd tttt hhh
. pppp cccccccc dddd tttt hhh
. pppp cccccccc dddd tttt hhh
. pppp cccccccc dddd tttt hhh
. pppp cccccccc dddd tttt hhh
[v]ghi pppp cccccccc dddd tttt hhh EOM

.
.
.
```

| NPC    | PARAM | COUNT     | MONDAT | MONTIM | THMODE |     |
|--------|-------|-----------|--------|--------|--------|-----|
| [u]jkl | pppp  | ccccccccc | dddd   | tttt   | hhh    |     |
| .      | pppp  | ccccccccc | dddd   | tttt   | hhh    |     |
| .      | pppp  | ccccccccc | dddd   | tttt   | hhh    |     |
| .      | pppp  | ccccccccc | dddd   | tttt   | hhh    |     |
| .      | pppp  | ccccccccc | dddd   | tttt   | hhh    |     |
| .      | pppp  | ccccccccc | dddd   | tttt   | hhh    |     |
| .      | pppp  | ccccccccc | dddd   | tttt   | hhh    |     |
| .      | pppp  | ccccccccc | dddd   | tttt   | hhh    |     |
| [t]def | pppp  | ccccccccc | dddd   | tttt   | hhh    | EOM |

## Hierarchical

**Note:** The following segment applies to a Facility Terminating Module.

```
M hh:mm:ss xy,ww n[vv] UTL QRY ALL NPCS uvmpn-uvmqr <parameter> \
AI aaaaa 6 LN MSG:
```

|            |            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|------------|
| xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx |
| xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx |
| xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx |
| xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx |
| xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | xxxxxxxxxx | EOM        |            |            |

- 
- 
- 

**19-486** Issue 1, Release 8.2.3. February 1999

Output message when the ALL keyword is not used for NPCs.

[O.56092]

```
M hh:mm:ss xy,ww n[vv] UTL QRY NPCS <parameter> e LN MSG:
AI aaaaa [LV llllllllll][MONDAT dddd][MONTIM tttt]
 NPC PARAM COUNT MONDAT MONTIM THMODE
 uvmnp pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 edhfg pppp ccccccccc dddd tttt hhh EOM
```

.  
.  
.

```
M hh:mm:ss xy,ww n[vv] UTL QRY NPCS <parameter> e LN MSG:
AI aaaaa [LV llllllllll][MONDAT dddd][MONTIM tttt]
 NPC PARAM COUNT MONDAT MONTIM THMODE
 opjst pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 . pppp ccccccccc dddd tttt hhh
 wxkqr pppp ccccccccc dddd tttt hhh EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY NPCS uvmnp[-wxkqr] <parameter> 2 LN MSG:
AI aaaaa [LV llllllllll][MONDAT dddd][MONTIM tttt]COMPL
```

## Denial Message

## Nonhierarchical

[O.56091.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {NPC [s]abc[-[t]def]|ALL} <parameter> 2 LN MSG:
AI aaaaa [LV llllllllll][MONDAT dddd][MONTIM tttt]COND cc DNY
```

## Hierarchical

[O.56091.01]

M hh:mm:ss xy,ww n[vv] UTL QRY {NPC uvmnp[-wxkqr]|ALL} <parameter> 2 LN MSG:  
AI aaaaa[ LV llllllllll][ MONDAT dddd][ MONTIM tttt] COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit  
**NPCS** - Network processing circuits

If an NPC range is specified in the input command, the following rules apply:

- Unequipped NPCs within the requested range will be skipped.
- A range across a unit boundary between a FTU and a DS3U(or HDS3U) will be denied.
- A range across a FTU (or IFTU) boundary is allowed, but if the range starts with a DA type NPC then the PA type NPCs will be skipped. Similiarly, a range that starts with a PA type NPC will skip DA type NPCs.

[s]abc - The 3- or 4-digit nonhierarchical NPC number  
[v]ghi - The 3- or 4-digit nonhierarchical NPC number  
[u]jkl - The 3- or 4-digit nonhierarchical NPC number  
[t]def - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1 | Unit<br>2 | Unit<br>3 | Unit<br>4 | Unit<br>5 | Unit<br>6 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| NPC       | NPC       | NPC       | NPC       | NPC       | NPC       |
| 001-032   | 161-192   | 321-352   | 481-512   | 641-672   | 801-832   |
| 041-072   | 201-232   | 361-392   | 521-552   | 681-712   | 841-872   |
| 081-112   | 241-272   | 401-432   | 561-592   | 721-752   | 881-912   |
| 121-152   | 281-312   | 441-472   | 601-632   | 761-792   | 921-952   |



If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number  
**uvmqr** - Hierarchical NPC number  
**edhfg** - Hierarchical NPC number  
**opjst** - Hierarchical NPC number  
**wxkqr** - Hierarchical NPC number

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**e** - Number of lines in the message

**ALL** - All

**PARAM** - Parameter

**parameter**

- Parameter name

**pppp** - Parameter value

For PA type NPCs:

The parameter whose value is requested and/or reported. The parameters ALLPM, ALLE and ALLF are input parameters only. If ALLPM, ALLE, or ALLF is specified on input then the following restrictions apply to the input command:

- 1) The command must specify only a single NPC; ranges, including the ALL option, are not allowed.
- 2) The MONTIM input parameter may not have a value of ALL.
- 3) The MONDAT input parameter may not have a value of ALL.
- 4) The optional LV input parameter must not be present in the command; it defaults to a value of 1-Up and parameter counts of zero are not shown.

| <b>parameter</b> | <i>Explanation</i>                                |
|------------------|---------------------------------------------------|
| <b>CRC</b>       | CRC Block Errors                                  |
| <b>FRER</b>      | Framing Errors                                    |
| <b>OFS</b>       | Out of Frame Seconds                              |
| <b>ES</b>        | Errored Seconds                                   |
| <b>SES</b>       | Severely Errored Seconds                          |
| <b>CSS</b>       | Controlled Slip Seconds                           |
| <b>CV</b>        | Coding Violations                                 |
| <b>UAS</b>       | Unavailable Seconds                               |
| <b>UATC</b>      | Unavailable Time Count                            |
| <b>MER</b>       | Multiframe Errors                                 |
| <b>FEBE</b>      | Far End Block Errors*                             |
| <b>FES</b>       | Far End Errored Seconds*                          |
| <b>FSES</b>      | Far End Severely Errored Seconds*                 |
| <b>FUAS</b>      | Far End Unavailable Seconds*                      |
| <b>ALLPM</b>     | All parameters listed above                       |
| <b>ALLE</b>      | All Near-end parameters listed above              |
| <b>ALLF</b>      | All Far-end parameters (marked by *) listed above |

**LV** - Level

**11111111**

- The discriminating level for the requested parameter

If 11111111 is not specified in the input command, it defaults to a value of 1-Up.

If "ALL" is specified in the input command a default value of 0-Up is applied. This provides the current counts (zero included, unfiltered) of the specified parameter for all NPCs on the frame.

Keywords LV and ALL are mutually exclusive.

| <b>11111111</b>               | <i>Explanation</i>                  |
|-------------------------------|-------------------------------------|
| <b>{000000000-345600000}U</b> | Discriminating Level-Up Direction   |
| <b>{000000000-345600000}D</b> | Discriminating Level-Down Direction |

**Up** - Parameters with values equal to or greater than the specified "discriminating level" are reported.

**Down** - Parameters with values equal to or less than the specified "discriminating level" are reported.

**AI** - Accumulation interval

**aaaaa** - The accumulation time period for the specified parameter

**aaaaa** *Explanation*

**15MIN** Parameter count from a 15-minute accumulator

**DAILY** Parameter count from a daily accumulator

**COUNT** - Count

**cccccccc**

- The accumulated value of a monitored parameter (nine digits)

All leading 0's will be output.

**cccccccc**

*Explanation*

**{000000000-345600000}**

Range of parameter counts

**COND** - Condition

**AI** - Accumulation interval

**aaaaa** - The accumulation time period for the specified parameter

**aaaaa** *Explanation*

**15MIN** Parameter count from a 15-minute accumulator

**DAILY** Parameter count from a daily accumulator

**hxxxxxxxxx**

- Threshold mode and parameter value

**h** - PA NPC thresholding mode

**xxxxxxxxxx**

- Accumulated value of a monitored parameter.

Nine digit field. All leading 0's will be output. (000000000-345600000)

**h** *Explanation*

**I** Inhibited

**A** Allowed

**MONDAT** - Monitored date

**dddd** - Performance monitoring period (24 hour)

This parameter specifies the requested 24-hour performance monitoring period. If this optional input parameter is not present in the command, it defaults to a value of CURD.

The value ALL is an option only for input commands. Selecting the value ALL retrieves both previous and current 24-hour accumulation registers of the selected NPC. If the value ALL is selected, only a single NPC can be specified in the input command. This parameter must not appear in input commands which specify 15-minute accumulation intervals (AI = 15MIN). When the parameter ALLPM, ALLE or ALLF is specified, MONTIM and MONDAT cannot be ALL.

**dddd** *Explanation*

**HIST** Previous 24-hour accumulators

**CURD** Current 24-hour accumulators

**ALL** ALL Current and previous daily accumulators

**MONTIM** - Monitored Time

**tttt** - Performance monitoring period (15 minute)

This parameter specifies the requested 15-minute performance monitoring period. If this optional input parameter is not present in the command, it defaults to a value of CURT.

The value ALL is an option only for input commands. Selecting the value ALL retrieves both previous and current 15-minute accumulation registers of the selected NPC. If the value ALL is selected, only a single NPC can be specified in the input command. This parameter must not appear in input commands which specify daily accumulation intervals (AI = DAILY). When the parameter ALLPAR, ALLE or ALLF is specified, MONTIM and MONDAT cannot be ALL.

**tttt** *Explanation*

**HIST** Previous 15-minute accumulators

**CURT** Current 15-minute accumulators

**ALL** All Current and previous 15-minute accumulators

**THMODE** - Thresholding Mode

**hhh** - This output keyword indicates the thresholding mode of the PA NPC.

**hhh** *Explanation*

**INH** Inhibited

**ALW** Allowed

**cc** - Hexadecimal condition code

**cc** *Explanation*

**04** Subject entity is out of service

**11** UC is out of service

**12** UC is in service but failed

**14** FTMI is out of service

**15** NPC is unequipped

**1F** FTMI is in service but failed

**26** NPC type error

**0B** Invalid CEPT NPC

**0C** The MONDAT and MONTIM parameters can not both be specified

**A0** The selected MXR associated with the NPC is Out-Of-Service

**A1** The selected MXR associated with the NPC is In-Service but failed

**B7** The associated MXR is In-Service but pested

**A1** The parameter specified does not match with the NPC type

**0E** Only one parameter is allowed

**1B** Historical data can not be specified

**1D** Level field is not allowed

**1E** Monitored Date field is not allowed

**20** Only DAILY for accumulation interval is allowed

**21** Only 15MIN for accumulation interval is allowed

**22** FTMI is PESTED

**23** No PM data available

**24** Monitored Time field is not allowed

**89** Interval is not valid/not available

**9E** MONDAT set to ALL is not allowed

**9F** MONTIM set to ALL is not allowed

---

## **UTL, QRY, NPC, CBTIMER**

---

### **Explanation Of Command**

---

This message retrieves the current setting of the C-bit message timer for an NPC or range of NPCs. NPCs with type CB10z or cept NPCs cross-connected to NPCs with CB10z type can be specified. The timeout value return for an NPC value applies to all the timeslots served by the NPC. Valid settings for the timer 0,1,2,3,4,5,6,7,8,9 and 10 seconds

### **Command**

---

#### **Nonhierarchical**

---

[I.53171]

UTL:FRM xy,SEQ ww:QRY,NPC [s]abc[-[t]def],CBTIMER!

#### **Hierarchical**

---

[I.53171]

UTL:FRM xy,SEQ ww:QRY,NPC uvmnp[-uvkqr],CBTIMER!

### **Completion Message**

---

#### **Nonhierarchical**

---

[O.53171]

M hh:mm:ss xy,ww UTL QRY NPC [s]abc CBTIMER [t]v EOM

.  
.  
.

M hh:mm:ss xy,ww UTL QRY NPC [t]def CBTIMER [t]v EOM

### **Hierarchical**

---

[O.53171]

M hh:mm:ss xy,ww UTL QRY NPC uvmnp CBTIMER [t]v COMPL

.  
.  
.

M hh:mm:ss xy,ww UTL QRY NPC uvkqr CBTIMER [t]v COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.53171.01]

M hh:mm:ss xy,ww UTL QRY NPC [s]abc[-[t]def] CBTIMER COND cc DNY

### **Hierarchical**

---

[O.53171.01]

M hh:mm:ss xy,ww UTL QRY NPC uvmnp[-uvkqr] CBTIMER COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**NPC** - Network Processing Number

**[s]abc** - NPC number non-Hierarchical

**[t]def** - NPC number non-Hierarchical

**uvmnp** - NPC number Hierarchical

**uvkqr** - NPC number Hierarchical

#### **CBTIMER**

- C-Bit Message Filter Timer

**[t]v** - Values (0-10) of CBTIMER for all channels of NPC



**cc** - Hexadecimal condition code

**cc** *Explanation*

**15** NPC is unequipped

**54** Cross-connect to CPR is required

**F1** Parameter only valid with PA, PB, or PC type NPCs

## **UTL,QRY,NPC,MAP,USER**

### **UTILITY QUERY NPC MAP**

#### **Explanation Of Command**

This message lists all network processing circuits (NPCs) added to the alternate map except for the two-point, two-way cross-connect circuits (TCONS).

A user can query their own maps or macros but only the frame administrator can query maps or macros owned by another user.

#### **Command**

[I.54111]

**UTL:FRM xy,SEQ ww:QRY,NPC,MAP <name>[,USER <user id>]!**

## Completion Message

---

### Nonhierarchical

---

[O.54111]

```
M hh:mm:ss xy,ww n[vv] UTL QRY NPC MAP <name>\
[USER <user id>] e LN MSG:
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx
.
.
.
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY NPC MAP <name>\
[USER <user id>] e LN MSG:
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx
.
.
.
[x]xxx [x]xxx [x]xxx [x]xxx [x]xxx [x]xxx EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY NPC MAP <name>\
[USER <user id>] COMPL
```

[O.54112]

```
M hh:mm:ss xy,ww n[vv] UTL QRY NPC MAP <name>\
[USER <user id>] NONE COMPL
```

## **Hierarchical**

---

[O.54111]

M hh:mm:ss xy,ww n[vv] UTL QRY NPC MAP <name>\  
[ USER <user id>] e LN MSG:  
uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp

.  
.  
.

uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp EOM

M hh:mm:ss xy,ww n[vv] UTL QRY NPC MAP <name>\  
[ USER <user id>] e LN MSG:  
uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp

.  
.  
.

uvmnp uvmnp uvmnp uvmnp uvmnp uvmnp EOM

M hh:mm:ss xy,ww n[vv] UTL QRY NPC MAP <name>\  
[ USER <user id>] COMPL

[O.54112]

M hh:mm:ss xy,ww n[vv] UTL QRY NPC MAP <name>\  
[ USER <user id>] NONE COMPL

## **Denial Message**

---

[O.54111.01]

M hh:mm:ss xy,ww n[vv] UTL QRY NPC MAP <name>\  
[ USER <user id>] COND cc DNY

## **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**NPC** - Network processing circuit

**MAP** - Alternate Map

**name** - The alternate map name which is a string of uppercase alphanumeric characters from one to seven characters long. The first character must be an alphabetic character.

**USER** - User

**user id**

- User login identification is two to eight alphabetic characters.

A user can query his or her own maps but only the frame administrator can use the command to query maps owned by other users. To do so, the optional USER field must be entered.

**[x]xxx** - The 3- or 4-digit nonhierarchical NPC Number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC Number

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 62** File is being accessed
- 64** File doesn't exist/can't be accessed
- D0** Command is Frame administrator (DAX) only.
- D3** User does not exist
- D5** No user is logged in on the link/vc

## **UTL, QRY, NPCTG**

### **UTILITY QUERY TEST-ACCESS GROUP NPC**

#### **Explanation Of Command**

This command is used to request information regarding one or more network processing circuits used for test-access groups (NPCTGs). the following information will be provided for each designated NPCTG:

1. All test-access groups (TGs)
2. TG width
3. The bundle being supported (east or west)
4. the channel assignment on the NPCTG

The TGs are listed in the order of bandwidth assignment.

#### **Command**

[I.53091]

**UTL:FRM xy,SEQ ww:QRY,NPCTG rrr[-sss]!**

## Completion Message

---

### Nonhierarchical

---

[O.53091]

M hh:mm:ss xy,ww n[vv] UTL QRY NPCTG rrr NPC [s]abc p LN MSG:  
TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]  
[TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]]  
[TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]]  
..... {EOM|COMPL}

M hh:mm:ss xy,ww n[vv] UTL QRY NPCTG rrr[-sss] UEQD {EOM|COMPL}

M hh:mm:ss xy,ww n[vv] UTL QRY NPCTG rrr NPC [s]abc UASGN {EOM|COMPL}

M hh:mm:ss xy,ww n[vv] UTL QRY NPCTG sss NPC [t]def p LN MSG:  
TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]  
[TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]]  
[TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]]  
..... {EOM|COMPL}

### Hierarchical

---

[O.53091]

M hh:mm:ss xy,ww n[vv] UTL QRY NPCTG rrr NPC uvmnp p LN MSG:  
TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]  
[TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]]  
[TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]]  
..... {EOM|COMPL}

M hh:mm:ss xy,ww n[vv] UTL QRY NPCTG rrr[-sss] UEQD {EOM|COMPL}

M hh:mm:ss xy,ww n[vv] UTL QRY NPCTG rrr NPC uvmnp UASGN {EOM|COMPL}

M hh:mm:ss xy,ww n[vv] UTL QRY NPCTG sss NPC wxkqr p LN MSG:  
TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]  
[TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]]  
[TG mmm NN {E|W} aa-bb[ TG mmm NN {E|W} aa-bb][ TG mmm NN {E|W} aa-bb]]  
..... {EOM|COMPL}



### Denial Message

[O.53091.01]

M hh:mm:ss xy,ww n[vv] UTL QRY NPCTG rrr[-sss] COND cc DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

**TG** - Test (access) group

**mmm** - TG number (001 through 400)

**NPCTG** - NPC (for) test group

**rrr** - TG number (001 through 400)

**sss** - TG number (001 through 400, must be greater than rrr)

Variable sss is used to specify the end of an NPCTG range

**[s]abc** - 3- or 4-digit non-hierarchical NPC number designated as NPCTG rrr

**[t]def** - 3- or 4-digit non-hierarchical NPC number designated as NPCTG sss

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:  
PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| <br>Unit<br>5    | <br>Unit<br>6    | <br>Unit<br>7    | <br>Unit<br>8    |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number designated as NPCTG rrr  
**wxkqr** - Hierarchical NPC number designated as NPCTG sss

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**E** - East  
East bundle of the TG

**W** - West  
West bundle of the TG

**UEQD** - Unequipped

**UASGN** - Unassigned  
No TG assigned to this NPCTG

**NN** - TG width (01 through 31)

**aa** - Starting channel for the bundle (01 through 31)

**bb** - Ending channel for the bundle (02 through 31);  
for NN = 1, bb is '--'

**cc** - Hexadecimal condition code

**cc** *Explanation*

**62** None of the designated NPCTG(s) are equipped

## **UTL, QRY, OPT, TYPE, ALL, NPCS**

### **UTILITY QUERY OPTIONS NPCS**

#### **Explanation Of Command**

This message requests a printout of the parameter threshold values for NPC types stored in the DACS II threshold data base.

If an NPC type is specified, the output message shows the threshold values for all parameters associated with the designated NPC type. If the ALL keyword is entered, the output message shows the threshold values for the parameters and all NPC types.

#### **Command**

[I.53051]

**UTL:FRM xy,SEQ ww:QRY,OPT[, {TYPE mn|ALL}],NPCS!**

### **Completion Message**

Usage: PB or PC type

[O.53051]

M hh:mm:ss xy,ww n[vv] UTL QRY OPT TYPE mn 5 LN MSG:  
OPT 31 00060 bbbbbb ccccc dddddd DM, 1 hour  
OPT 32 01440 bbbbbb ccccc dddddd DM, 24 hours  
OPT 33 00900 bbbbbb ccccc dddddd SERS, 15 Min.  
OPT 34 65535 bbbbbb ccccc dddddd SERS, 24 Hrs.

M hh:mm:ss xy,ww n[vv] UTL QRY OPT TYPE mn 5 LN MSG:  
OPT 35 00900 bbbbbb ccccc dddddd ERS, 15 Min.  
OPT 36 65535 bbbbbb ccccc dddddd ERS, 24 Hrs.  
OPT 37 00900 bbbbbb ccccc dddddd US, 15 Min.  
OPT 38 65535 bbbbbb ccccc dddddd US, 24 Hrs.

M hh:mm:ss xy,ww n[vv] UTL QRY OPT TYPE mn 3 LN MSG:  
OPT 39 00900 bbbbbb ccccc dddddd SLIPS, 15 Min.  
OPT 40 65535 bbbbbb ccccc dddddd SLIPS, 24 Hrs. COMPL

Usage: PA type

[O.53051]

```
M hh:mm:ss xy,ww n[vv] UTL QRY OPT TYPE mn 8 LN MSG:
OPT 11 000176947 bbbbbbbbbb cccccccc dddddddd CRC, DAILY
OPT 12 000176947 bbbbbbbbbb cccccccc dddddddd FRER, DAILY
OPT 13 000000004 bbbbbbbbbb cccccccc dddddddd OFS, DAILY
OPT 14 000004320 bbbbbbbbbb cccccccc dddddddd ES, DAILY
OPT 15 000000090 bbbbbbbbbb cccccccc dddddddd SES, DAILY
OPT 16 000000004 bbbbbbbbbb cccccccc dddddddd CSS, DAILY
OPT 17 000176947 bbbbbbbbbb cccccccc dddddddd CV, DAILY EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY OPT TYPE mn 8 LN MSG:
OPT 18 000000090 bbbbbbbbbb cccccccc dddddddd UAS, DAILY
OPT 19 000000009 bbbbbbbbbb cccccccc dddddddd UATC, DAILY
OPT 20 000004095 bbbbbbbbbb cccccccc dddddddd MER, DAILY
OPT 21 000176947 bbbbbbbbbb cccccccc dddddddd FEBE, DAILY
OPT 22 000004320 bbbbbbbbbb cccccccc dddddddd FES, DAILY
OPT 23 000000090 bbbbbbbbbb cccccccc dddddddd FSES, DAILY
OPT 24 000000090 bbbbbbbbbb cccccccc dddddddd FUAS, DAILY EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY OPT TYPE mn 8 LN MSG:
OPT 81 0018432 bbbbbbbb ccccccc ddddddd CRC, 15MIN
OPT 82 0018432 bbbbbbbb ccccccc ddddddd FRER, 15MIN
OPT 83 0000004 bbbbbbbb ccccccc ddddddd OFS, 15MIN
OPT 84 0000300 bbbbbbbb ccccccc ddddddd ES, 15MIN
OPT 85 0000030 bbbbbbbb ccccccc ddddddd SES, 15MIN
OPT 86 0000001 bbbbbbbb ccccccc ddddddd CSS, 15MIN
OPT 87 0018432 bbbbbbbb ccccccc ddddddd CV, 15MIN EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY OPT TYPE mn 8 LN MSG:
OPT 88 0000030 bbbbbbbb ccccccc ddddddd UAS, 15MIN
OPT 89 0000003 bbbbbbbb ccccccc ddddddd UATC, 15MIN
OPT 90 0000255 bbbbbbbb ccccccc ddddddd MER, 15MIN
OPT 91 0018432 bbbbbbbb ccccccc ddddddd FEBE, 15MIN
OPT 92 0000300 bbbbbbbb ccccccc ddddddd FES, 15MIN
OPT 93 0000030 bbbbbbbb ccccccc ddddddd FSES, 15MIN
OPT 94 0000030 bbbbbbbb ccccccc ddddddd FUAS, 15MIN COMPL
```

## Denial Message

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**OPT** - Option

In the output messages the first value shown following the keyword OPT is the option number. The value immediately following the option number is the default alarm threshold value. The next three fields show user-programmed values. Any user-programmed values that have not been initialized in the DACS II data base will be shown as "-----[----]". Until they are initialized, user-programmable values cannot be used as valid alarm thresholds.

**TYPE** - Type

**mn** - NPC type

| <i>mn</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |                                                 |
|----|-------------------------------------------------|
| PA | Enhanced CEPT NPC type for 120/75 ohm impedance |
|----|-------------------------------------------------|

|    |                                     |
|----|-------------------------------------|
| PB | CEPT NPC type for 120 ohm impedance |
|----|-------------------------------------|

|    |                                    |
|----|------------------------------------|
| PC | CEPT NPC type for 75 ohm impedance |
|----|------------------------------------|

**ALL** - Indicates all NPC types associated with the features being turned on in the frame

If neither an NPC type nor the ALL keyword are specified, the default NPC type is PB.

**NPCS** - Network processing circuits

**MJ** - Major

**MN** - Minor

Threshold parameters for PB/PC type NPCs

**DM** - Degraded minutes

**SERS** - Severely Errored Seconds

**ERS** - Errored Seconds

**US** - Unavailable Seconds

**SLIPS** - Slips

Threshold parameters for PA type NPCs

**DAILY** - Daily  
**CRC** - CRC Block Errors  
**FRER** - Framing Errors  
**OFS** - Out of Frame Seconds  
**ES** - Errored Seconds  
**SES** - Severely Errored Seconds  
**CSS** - Controlled Slip Seconds  
**CV** - Coding Violations  
**UAS** - Unavailable Seconds  
**UATC** - Unavailable Time Count  
**MER** - Multiframe Errors  
**FEBE** - Far End Block Errors  
**FES** - Far End Errored Seconds  
**FSES** - Far End Severely Errored Seconds  
**FUAS** - Far End Unavailable Seconds

**15MIN** - Fifteen minute  
**CRC** - CRC Block Errors  
**FRER** - Framing Errors  
**OFS** - Out of Frame Seconds  
**ES** - Errored Seconds  
**SES** - Severely Errored Seconds  
**CSS** - Controlled Slip Seconds  
**CV** - Coding Violations  
**UAS** - Unavailable Seconds  
**UATC** - Unavailable Time Count  
**MER** - Multiframe Errors  
**FEBE** - Far End Block Errors  
**FES** - Far End Errored Seconds  
**FSES** - Far End Severely Errored Seconds  
**FUAS** - Far End Unavailable Seconds

User-programmed PA NPC daily alarm threshold values

**bbbbbbbb**  
- First  
**cccccccc**  
- Second  
**dddddddd**  
- Third  
**bbbbbb**  
- First  
**cccccc**  
- Second  
**dddddd**  
- Third



## **UTL, QRY, PEST, FAIL, OOS, COMMON**

### **UTILITY QUERY STATUS COMMON EQUIPMENT**

#### **Explanation Of Command**

This message is used to request reports on one of the following parameters:

PEST   Pest states  
FAIL   Failed components  
OOS   Out-of-service components

The output message reports the status of the requested parameter on common equipment of the frame.

#### **Command**

[I.53105]

**UTL:FRM xy,SEQ ww:QRY,{PEST|FAIL|OOS},COMMON!**

### **Completion Message**

---

[O.53105]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} \  
g h i j k l m n o p EOM

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} 3 LN MSG:  
SYNC x x CRO x  
TLI x x x x x x x x x x x x \  
x x x x EOM

For DACS II Non-CEF frames, the next segment describes the CCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} TOTAL \  
TSIS tt nn 5 LN MSG:  
11 x x 12 x x 13 x x 14 x x 15 x x 16 x x  
21 x x 22 x x 23 x x 24 x x 25 x x 26 x x  
31 x x 32 x x 33 x x 34 x x 35 x x 36 x x  
41 x x 42 x x 43 x x 44 x x 45 x x 46 x x EOP

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} TOTAL \  
TSIS tt nn 3 LN MSG:  
51 x x 52 x x 53 x x 54 x x 55 x x 56 x x  
61 x x 62 x x 63 x x 64 x x 65 x x 66 x x EOM

For DACS II CEF frames, the segment describes the ECCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} TOTAL \  
ETSIS tt nn 3 LN MSG:  
01 x x 02 x x 03 x x 04 x x 05 x x 06 x x \  
07 x x 08 x x  
09 x x 10 x x 11 x x 12 x x 13 x x 14 x x \  
15 x x 16 x x EOM

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} COMMON COMPL

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**PEST** - Pested

**FAIL** - Failed

**OOS** - Out of service

For the PEST, FAIL and OOS indications, each entity in the DACS II frame is represented by a single character variable. This variable can have the value of 1, 0 or "-" indicating the following status:

| <i>Value</i> | <i>OOS</i>     | <i>FAIL</i>    | <i>PEST</i>    |
|--------------|----------------|----------------|----------------|
| 1            | out of service | failed         | pested         |
| 0            | in service     | not failed     | unpested       |
| -            | not applicable | not applicable | not applicable |

A hyphen (-) indicates the parameter is not applicable to the particular entity. For example, an unequipped circuit displays a "-" for its OOS, FAIL and PEST indicators.

The DACS II entities and their status fields are as follows:

- g** - Link 1
- h** - Link 2
- i** - Link 3
- j** - Link 4
- k** - Link 5
- l** - Link 6
- m** - XC0 (cross-connect 0)
- n** - XC1 (cross-connect 1)
- o** - CCNI/CCI 0 (cross-connect network interface 0 for non-CEF frame)  
(clock and control interface 0 for CEF frame)
- p** - CCNI/CCI 1 (cross-connect network interface 1 for non-CEF frame)  
(clock and control interface 1 for CEF frame)

**SYNC** - Synchronizer

**CRO** - Clock reference oscillator

**TLI** - Timing link interface

**x** - TLI status, side 0

**x** - TLI status, side 1

TLI information is listed in the message from left to right, starting with status information for TLI 1, SSP 0, Side 0 in the first position and ending with status information for TLI 4, SSP1, Side 1 in the last position. The entities for which status is reported are listed below in the order they appear in the output message.

The status is represented by the variable x or x. The value of the variable is interpreted as follows.

*x* Explanation (PEST, FAIL, or OOS will be indicated in message)

0 Unpested, in-service, or not failed

1 Pested, out-of-service, or failed

Side 0

**TLI 1, SSP 0**

**TLI 1, SSP 1**

**TLI 2, SSP 0**

**TLI 2, SSP 1**

**TLI 3, SSP 0**

**TLI 3, SSP 1**

**TLI 4, SSP 0**

**TLI 4, SSP 1**

Side 1

**TLI 1, SSP 0**

**TLI 1, SSP 1**

**TLI 2, SSP 0**

**TLI 2, SSP 1**

**TLI 3, SSP 0**

**TLI 3, SSP 1**

**TLI 4, SSP 0**

**TLI 4, SSP 1**

**TSI** - Time slot interchange

**f** - FROM unit (1 through 6)

**t** - TO Unit (1 through 6)

**ETSI** - Expanded time slot interchanger

- x** - Status indication for the entity or for the side 0 entity if duplicated.
- x** - Status indication for side 1 entity.
- tt** - Total number of equipped TSIs/ETSIs.
- nn** - Total number of equipped TSIs/ETSIs having the requested status.

## **UTL, QRY, PEST, FAIL, OOS, UNIT**

### **UTILITY QUERY STATUS OF ENTITIES/EQUIPMENT**

#### **Explanation Of Command**

This message requests reports on any one of the following parameters:

|      |                           |
|------|---------------------------|
| PEST | Pested components         |
| FAIL | Failed components         |
| OOS  | Out-of-service components |

These reports may be generated for the entire DACS II frame or for a particular unit. The UNIT parameter must be specified in the command to query for a particular unit. The UNIT parameter must be omitted to generate a report for the entire frame.

#### **Command**

[I.53103]

**UTL:FRM xy,SEQ ww:QRY,{PEST|FAIL|OOS}[ ,UNIT [q]q]!**

## **Completion Message**

### **Nonhierarchical**

If the optional unit number is not entered, the following output segments will be generated:

The output starts out with:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} \  
g h i j k l m n o p EOM

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} 3 LN MSG:  
SYNC x x CRO x  
TLI x x x x x x x x y y y y y y y y EOM

For DACS II Non-CEF frames, the next segment describes the CCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} TOTAL \  
TSIS tt nn 5 LN MSG:  
11 x y 12 x y 13 x y 14 x y 15 x y 16 x y  
21 x y 22 x y 23 x y 24 x y 25 x y 26 x y  
31 x y 32 x y 33 x y 34 x y 35 x y 36 x y  
41 x y 42 x y 43 x y 44 x y 45 x y 46 x y EOM

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} TOTAL \  
TSIS tt nn 3 LN MSG:  
51 x y 52 x y 53 x y 54 x y 55 x y 56 x y  
61 x y 62 x y 63 x y 64 x y 65 x y 66 x y EOM

For DACS II CEF frames, the segment describes the ECCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} TOTAL \  
ETSIS tt nn 3 LN MSG:  
01 x y 02 x y 03 x y 04 x y 05 x y 06 x y 07 x y 08 x y  
09 x y 10 x y 11 x y 12 x y 13 x y 14 x y 15 x y 16 x y EOM

The output then continues with information about the common equipment in the units. The data line will only appear for units that are equipped. If more than four units are equipped, the output for the equipage of the units will be divided into multiple segments.

[O.53103]

```
[M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNITS e LN MSG:]
[<data line for the common equipment in the first equipped unit>]
[<data line for the common equipment in the second equipped unit>]
[<data line for the common equipment in the third equipped unit>]
[<data line for the common equipment in the fourth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNITS e LN MSG:]
[<data line for the common equipment in the fifth equipped unit>]
[<data line for the common equipment in the sixth equipped unit>]
[<data line for the common equipment in the seventh equipped unit>]
[<data line for the common equipment in the eighth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNITS e LN MSG:]
[<data line for the common equipment in the ninth equipped unit>]
[<data line for the common equipment in the tenth equipped unit>]
[<data line for the common equipment in the eleventh equipped unit>]
[<data line for the common equipment in the twelfth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNITS e LN MSG:]
[<data line for the common equipment in the thirteenth equipped unit>]
[<data line for the common equipment in the fourteenth equipped unit>]
[<data line for the common equipment in the fifteenth equipped unit>]
[<data line for the common equipment in the sixteenth equipped unit> EOM]
```

Data line for a unit equipped as an FTU:

```
UNIT [q]q UC a FTMI b c d e FC f g h j k m p q[CCB r s]
```

Data line for a unit equipped as a DSPU:

```
UNIT [q]q UC a DSPI b[CCB r s]
```



Then the output message continues with information about individual NPCs. For each FTM or DSPU, one output message will be printed.

Output message for PEST, FAIL, or OOS status of NPCs on an equipped CEPT FTM:

Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and a dash will be shown in its place:

[O.53103]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} FTU \
NPCS [a]aaa-[b]bbb tt 5 LN MSG:
x x x x x x x x {PEST|FAIL|OOS} nn
x x x x x x x x
x x x x x x x x
x x x x x x x x EOM
```

Output message for PEST, FAIL, or OOS status of NPCs on an equipped DSP Unit:

[O.53103]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} DSPU \
NPCS [a]aaa-[b]bbb tt 3 LN MSG:
[z]zzz x y [z]zzz x y [z]zzz x y [z]zzz x y
[z]zzz x y [z]zzz x y [z]zzz x y [z]zzz x y \
{PEST|FAIL|OOS} nn EOM
```

Output message for NPCs on an equipped FTM/DSPU with no NPC in PEST, FAIL, or OOS state:

[O.53103]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} {FTU|DSPU} \
NPCS [a]aaa-[b]bbb tt 2 LN MSG:
{PEST|FAIL|OOS} 00 EOM
```

After the above information is output, the following message will be generated to complete the response:

[O.53103]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} COMPL
```

If the unit number is specified, the following output segments will be generated:

For entities in an FTU:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} 2 LN MSG:  
UNIT [q]q UC a FTMI b c d e FC f g h j k m p q[ CCB r s] EOM

The output then continues with up to four of the following segment depending on the FTM equipage:

Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and a dash will be shown in its place:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNIT [q]q FTU \\  
NPCS [a]aaa-[b]bbb tt 5 LN MSG:  
x x x x x x x x {PEST|FAIL|OOS} nn  
x x x x x x x x  
x x x x x x x x  
x x x x x x x x EOM

For entities in a DSPU:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNIT [q]q UC a \\  
DSPU b[ CCB r s] EOM

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNIT [q]q \\  
DSPU NPCS [a]aaa-[b]bbb tt 3 LN MSG:  
[z]zzz x y [z]zzz x y [z]zzz x y [z]zzz x y  
[z]zzz x y [z]zzz x y [z]zzz x y [z]zzz x y \\  
{PEST|FAIL|OOS} EOM

Output message for NPCs on an equipped FTM/DSPU with no NPC in PEST, FAIL, or OOS state:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} {FTU|DSPU} \\  
NPCS [a]aaa-[b]bbb tt 2 LN MSG:  
{PEST|FAIL|OOS} 00 EOM

After the above information is output, the following message will be generated to complete the response:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNIT [q]q COMPL

## Hierarchical

If the unit number is not entered, the following output segments will be generated:

The output starts out with:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} \  
g h i j k l m n o p EOM

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} 3 LN MSG:  
SYNC x x CRO x  
TLI x x x x x x x x x x x x x x EOM

For DACS II Non-CEF frames, the next segment describes the CCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} TOTAL \  
TSIS tt nn 5 LN MSG:  
11 x y 12 x y 13 x y 14 x y 15 x y 16 x y  
21 x y 22 x y 23 x y 24 x y 25 x y 26 x y  
31 x y 32 x y 33 x y 34 x y 35 x y 36 x y  
41 x y 42 x y 43 x y 44 x y 45 x y 46 x y EOP

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} TOTAL \  
TSIS tt nn 3 LN MSG:  
51 x y 52 x y 53 x y 54 x y 55 x y 56 x y  
61 x y 62 x y 63 x y 64 x y 65 x y 66 x y EOM

For DACS II CEF frames, the segment describes the ECCN hardware:

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} TOTAL \  
ETSIS tt nn 3 LN MSG:  
01 x y 02 x y 03 x y 04 x y 05 x y 06 x y 07 x y 08 x y  
09 x y 10 x y 11 x y 12 x y 13 x y 14 x y 15 x y 16 x y EOM

The output then continues with information about the common equipment in the units. The data line will only appear for units that are equipped. If more than four units are equipped, the output for the equipage of the units will be divided into multiple messages.

[O.53103]

```
[M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNITS e LN MSG:]
[<data line for the common equipment in the first equipped unit>]
[<data line for the common equipment in the second equipped unit>]
[<data line for the common equipment in the third equipped unit>]
[<data line for the common equipment in the fourth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNITS e LN MSG:]
[<data line for the common equipment in the fifth equipped unit>]
[<data line for the common equipment in the sixth equipped unit>]
[<data line for the common equipment in the seventh equipped unit>]
[<data line for the common equipment in the eighth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNITS e LN MSG:]
[<data line for the common equipment in the ninth equipped unit>]
[<data line for the common equipment in the tenth equipped unit>]
[<data line for the common equipment in the eleventh equipped unit>]
[<data line for the common equipment in the twelfth equipped unit> EOM]
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNITS e LN MSG:]
[<data line for the common equipment in the thirteenth equipped unit>]
[<data line for the common equipment in the fourteenth equipped unit>]
[<data line for the common equipment in the fifteenth equipped unit>]
[<data line for the common equipment in the sixteenth equipped unit> EOM]
```

Data line for a unit equipped as an FTU:

```
UNIT [q]q UC a FTMI b c d e FC f g h j k m p q[CCB r s]
```

Data line for a unit equipped as a DSPU:

```
UNIT [q]q UC a DSPI b[CCB r s]
```

Then the output message continues with information about individual NPCs. For each FTM or DSPU, one output message will be printed.

For PEST, FAIL, or OOS status of NPCs on an equipped CEPT FTM:

Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and a dash will be shown in its place:

[O.53103]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} FTU \
NPCS uvmnp-uxkqr tt 5 LN MSG:
x x x x x x x x {PEST|FAIL|OOS} nn
x x x x x x x x
x x x x x x x x
x x x x x x x x EOM
```

For PEST, FAIL, or OOS status of NPCs on an equipped DSP unit:

[O.53103]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} DSPU \
NPCS uvmnp-uxkqr tt 3 LN MSG:
uvmnp x y uvmnp x y uvmnp x y uvmnp x y
uvmnp x y uvmnp x y uvmnp x y uvmnp x y {PEST|FAIL|OOS} nn EOM
```

Output message for an equipped FTM/DSPU with no NPC having the PEST, FAIL, or OOS status:

[O.53103]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} {FTU|DS3U|DSPU} \
NPCS uvmnp-uxkqr tt 2 LN MSG:
{PEST|FAIL|OOS} 00 EOM
```

After the above information is output, the following message will be generated to complete the response:

[O.53103]

```
M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} COMPL
```

If the unit number is specified, the following output segments will be generated:

For entities in an FTU:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} 2 LN MSG:  
UNIT [q]q UC a FTMI b c d e FC f g h j k m p q[ CCB r s] EOM

The output then continues with up to four of the following segment for NPCs in an FTM. If an FTM is not equipped, the segment for this FTM will not be output:

Please note, if any of the odd NPCs has been provisioned with a Digital Signal Processing Platform (DSPP) application (TG193), then the even NPC following it does not exist and a dash will be shown in its place:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNIT [q]q \  
FTU NPCS uvmnp-uxkqr tt 5 LN MSG:  
x x x x x x x x {PEST|FAIL|OOS} nn  
x x x x x x x x  
x x x x x x x x  
x x x x x x x x EOM

For entities in a DSPU:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNIT [q]q UC a \  
DSPI b[ CCB r s] EOM

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNIT [q]q DSPU \  
NPCS uvmnp-uxkqr tt 3 LN MSG:  
uvmnp x y uvmnp x y uvmnp x y uvmnp x y  
uvmnp x y uvmnp x y uvmnp x y uvmnp x y {PEST|FAIL|OOS} nn EOM

Output message for an equipped FTM/DSPU with no NPC having the PEST, FAIL, or OOS status:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} {FTU|DS3U|DSPU} \  
NPCS uvmnp-uxkqr tt 2 LN MSG:  
{PEST|FAIL|OOS} 00 EOM

After the above information is output, the following message will be generated to complete the response:

[O.53103]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNIT [q]q COMPL

### Denial Message

---

[O.53103.01]

M hh:mm:ss xy,ww n[vv] UTL QRY {PEST|FAIL|OOS} UNIT [q]q COND cc DNY

### Autonomous Message

---

Not applicable.

### Explanation Of Parameters

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

The UNIT option must be specified to query a particular unit. The UNIT option must be omitted to query the entire frame. If the UNIT option is specified, only the information related to the equipment in that unit will be generated.

**OOS** - Out of service

Out of Service Components

**FAIL** - Failed

Failed Components

**PEST** - Pested

Pest States

For the OOS, FAIL and PEST indications, each entity in the DACS II frame is represented by a single character variable. This variable can have the value of 1, 0 or "-" indicating the following status:

| <i>Value</i> | <i>OOS</i>     | <i>FAIL</i>    | <i>PEST</i>    |
|--------------|----------------|----------------|----------------|
| 1            | out of service | failed         | pested         |
| 0            | in service     | not failed     | unpested       |
| -            | not applicable | not applicable | not applicable |

A hyphen (-) indicates the parameter is not applicable to the particular entity. For example, an unequipped circuit displays a "-" for its OOS, FAIL and PEST indicators.

The DACS II entities and their status fields are as follows:

- g** - Link 1
- h** - Link 2
- i** - Link 3
- j** - Link 4
- k** - Link 5
- l** - Link 6
- m** - XC0 (cross-connect 0)
- n** - XC1 (cross-connect 1)
- o** - CCNI/CCI 0 (cross-connect network interface 0 for non-CEF frame)  
(clock and control interface 0 for CEF frame)
- p** - CCNI/CCI 1 (cross-connect network interface 1 for non-CEF frame)  
(clock and control interface 1 for CEF frame)

**SYNC** - Synchronizer

**CRO** - Clock reference oscillator



**TLI** - Timing link interface

The order of the TLI presented in the output is shown below:

TLI 1, SSP 0, Side 0  
TLI 1, SSP 1, Side 0  
TLI 2, SSP 0, Side 0  
TLI 2, SSP 1, Side 0  
TLI 3, SSP 0, Side 0  
TLI 3, SSP 1, Side 0  
TLI 4, SSP 0, Side 0  
TLI 4, SSP 1, Side 0

TLI 1, SSP 0, Side 1  
TLI 1, SSP 1, Side 1  
TLI 2, SSP 0, Side 1  
TLI 2, SSP 1, Side 1  
TLI 3, SSP 0, Side 1  
TLI 3, SSP 1, Side 1  
TLI 4, SSP 0, Side 1  
TLI 4, SSP 1, Side 1

**TSIS** - Time slot interchanges NonCEF

**f** - FROM unit (1 through 6) NonCEF  
**t** - TO Unit (1 through 6) NonCEF

**ETSIS** - Expanded time slot interchangers

**x** - Status of the entity or the side 0 entity if the entity is duplicated

**y** - Status of the side 1 entity

**tt** - Total number of equipped entities

**nn** - Total number of entities having the requested status

**UC** - Unit controller

**FTMI** - Facility terminating module interface

**FC** - Format converter

**CCB** - Cross-connect buffer

For an FTU equipment output, the definition of each character is given below:

- a - status of UC
- b - status of FTMI 1
- c - status of FTMI 2
- d - status of FTMI 3
- e - status of FTMI 4
- f - status of FC 01
- g - status of FC 11
- h - status of FC 02
- j - status of FC 12
- k - status of FC 03
- m - status of FC 13
- p - status of FC 04
- q - status of FC 14
- r - status of side 0 CCB
- s - status of side 1 CCB

**FMT** - Formatter or Hybrid Formatter

**DSPI** - Digital signal processing interface

For a DSPU equipment output, the definition of each character is as below:

- a - status of UC
- b - status of DSPI
- r - status of side 0 CCB
- s - status of side 1 CCB

**[a]aaa** - The first 3- or 4-digit nonhierarchical NPC number of an FTM/DSPU.

**[b]bbb** - The last 3- or 4-digit nonhierarchical NPC number of an FTM/DSPU.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |
| <br>Unit<br>9    | <br>Unit<br>10   | <br>Unit<br>11   | <br>Unit<br>12   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| <br>Unit<br>13   | <br>Unit<br>14   | <br>Unit<br>15   | <br>Unit<br>16   |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

If NPC numbers are expressed in three digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1  | Unit<br>2  | Unit<br>3  | Unit<br>4  | Unit<br>5  | Unit<br>6  |
|------------|------------|------------|------------|------------|------------|
| <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> | <b>NPC</b> |
| <b>001</b> | <b>161</b> | <b>321</b> | <b>481</b> | <b>641</b> | <b>801</b> |
| <b>021</b> | <b>181</b> | <b>341</b> | <b>501</b> | <b>661</b> | <b>821</b> |
| <b>041</b> | <b>201</b> | <b>361</b> | <b>521</b> | <b>681</b> | <b>841</b> |
| <b>061</b> | <b>221</b> | <b>381</b> | <b>541</b> | <b>701</b> | <b>861</b> |
| <b>081</b> | <b>241</b> | <b>401</b> | <b>561</b> | <b>721</b> | <b>881</b> |
| <b>101</b> | <b>261</b> | <b>421</b> | <b>581</b> | <b>741</b> | <b>901</b> |
| <b>121</b> | <b>281</b> | <b>441</b> | <b>601</b> | <b>761</b> | <b>921</b> |
| <b>141</b> | <b>301</b> | <b>461</b> | <b>621</b> | <b>781</b> | <b>941</b> |

If NPC numbers are expressed in four digits, the valid values are:

CB type NPC numbers listed by unit number, Unit Type DP (DSPU)

| Unit<br>1   | Unit<br>2   | Unit<br>3   | Unit<br>4   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0001</b> | <b>0161</b> | <b>0321</b> | <b>0481</b> |
| <b>0021</b> | <b>0181</b> | <b>0341</b> | <b>0501</b> |
| <b>0041</b> | <b>0201</b> | <b>0361</b> | <b>0521</b> |
| <b>0061</b> | <b>0221</b> | <b>0381</b> | <b>0541</b> |
| <b>0081</b> | <b>0241</b> | <b>0401</b> | <b>0561</b> |
| <b>0101</b> | <b>0261</b> | <b>0421</b> | <b>0581</b> |
| <b>0121</b> | <b>0281</b> | <b>0441</b> | <b>0601</b> |
| <b>0141</b> | <b>0301</b> | <b>0461</b> | <b>0621</b> |

| Unit<br>5   | Unit<br>6   | Unit<br>7   | Unit<br>8   |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>0641</b> | <b>0801</b> | <b>0961</b> | <b>1121</b> |
| <b>0661</b> | <b>0821</b> | <b>0981</b> | <b>1141</b> |
| <b>0681</b> | <b>0841</b> | <b>1001</b> | <b>1161</b> |
| <b>0701</b> | <b>0861</b> | <b>1021</b> | <b>1181</b> |
| <b>0721</b> | <b>0881</b> | <b>1041</b> | <b>1201</b> |
| <b>0741</b> | <b>0901</b> | <b>1061</b> | <b>1221</b> |
| <b>0761</b> | <b>0921</b> | <b>1081</b> | <b>1241</b> |
| <b>0781</b> | <b>0941</b> | <b>1101</b> | <b>1261</b> |

| Unit<br>9   | Unit<br>10  | Unit<br>11  | Unit<br>12  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1281</b> | <b>1441</b> | <b>1601</b> | <b>1761</b> |
| <b>1301</b> | <b>1461</b> | <b>1621</b> | <b>1781</b> |
| <b>1321</b> | <b>1481</b> | <b>1641</b> | <b>1801</b> |
| <b>1341</b> | <b>1501</b> | <b>1661</b> | <b>1821</b> |
| <b>1361</b> | <b>1521</b> | <b>1681</b> | <b>1841</b> |
| <b>1381</b> | <b>1541</b> | <b>1701</b> | <b>1861</b> |
| <b>1401</b> | <b>1561</b> | <b>1721</b> | <b>1881</b> |
| <b>1421</b> | <b>1581</b> | <b>1741</b> | <b>1901</b> |

| Unit<br>13  | Unit<br>14  | Unit<br>15  | Unit<br>16  |
|-------------|-------------|-------------|-------------|
| <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  | <b>NPC</b>  |
| <b>1921</b> | <b>2081</b> | <b>2241</b> | <b>2401</b> |
| <b>1941</b> | <b>2101</b> | <b>2261</b> | <b>2421</b> |
| <b>1961</b> | <b>2121</b> | <b>2281</b> | <b>2441</b> |
| <b>1981</b> | <b>2141</b> | <b>2301</b> | <b>2461</b> |
| <b>2001</b> | <b>2161</b> | <b>2321</b> | <b>2481</b> |
| <b>2021</b> | <b>2181</b> | <b>2341</b> | <b>2501</b> |
| <b>2041</b> | <b>2201</b> | <b>2361</b> | <b>2521</b> |
| <b>2061</b> | <b>2221</b> | <b>2381</b> | <b>2541</b> |

**[z]zzz** - The 3- or 4-digit nonhierarchical DSPU NPC number.

**uvmnp** - The first hierarchical NPC number of an FTM or a hierarchical DSPU NPC number.

**uxkqr** - The last hierarchical NPC number of an FTM or a hierarchical DSPU NPC number.

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

CB type NPC numbers listed by unit, module, and NPC Number  
Unit Type DP (DSPU)

| Unit         | Module     | NPC       |
|--------------|------------|-----------|
| <b>01-16</b> | <b>1-8</b> | <b>01</b> |



**cc** - Hexadecimal condition code

**cc** *Explanation*

**02** Subject entity is not equipped

## **UTL, QRY, ROLL, DS0, NPC, ALL, UNIT**

### **UTILITY QUERY ROLL DS0**

#### **Explanation Of Command**

This command is used to request a report on the roll status of all of the channels in a network processing circuit (NPC). The roll status request may be for a single NPC, a range of NPCs, all NPCs in a unit, or all NPCs in the DACS II frame.

The output message shows the correspondence between the bridge and service legs of the Roll procedure. Original Service and Original Bridged leg refer to the service and bridged leg designations created by the Bridge step of the Roll procedure. New Service and New Bridged leg refer to the service and bridged leg designations created by the Roll step of the Roll procedure.

The output message displays the roll status of each of the 32 channels of an NPC.

The top left position corresponds to telephone channel 0 of the NPC and the last item corresponds to telephone channel 31 of the NPC. Note that telephone channel 0 (Channel Timeslot 0) and telephone channel 31 (Channel Timeslot 16) in the Channel Associated Signaling mode cannot be rolled.

All dashes are displayed if there is neither a Service leg nor a Bridged leg associated with a channel. Telephone channel 0 and telephone channel 31 in the Channel Associated Signaling mode will have all dashes.

The display is repeated for each NPC in the range.  
If there are no rolled channels on an NPC within a range, then no roll status output will be generated for that NPC.

**Note:** The processing time to query the roll status of a fully equipped frame could exceed 9 minutes.

The specified NPC range can cross a unit boundary.

### **Command**

---

#### **Nonhierarchical**

---

[I.52081]

UTL:FRM xy,SEQ ww:QRY,ROLL,DS0,{NPC [s]abc[-[t]def]|ALL[,UNIT [q]q]}!

#### **Hierarchical**

---

[I.52081]

UTL:FRM xy,SEQ ww:QRY,ROLL,DS0,{NPC uvmnp[-wxkqr]|ALL[,UNIT [q]q]}!

### **Completion Message**

---

#### **Nonhierarchical**

---

The output message in nonhierarchical PDS form will span one output segment per NPC.

If the 3- or 4-digit nonhierarchical NPC number is used, the output will be six channels per line (except for the last line) as shown below:

[O.52081]

```
M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS0 NPC [s]abc 7 LN MSG:
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj EOM
```

.  
.  
.

```
[M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS0 NPC [t]def 7 LN MSG:
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj rr[u]ghijjj
rr[u]ghijjj rr[u]ghijjj EOM]
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS0 {NPC [s]abc[-[t]def]}|\
ALL[UNIT [q]q]} COMPL
```

## Hierarchical

The output message in hierarchical PDS form will span one output segment per NPC.

If a hierarchical NPC number is used, the output will be six channels per line (except for the last line) as shown below:

[O.52081]

M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS0 NPC uvmnp 7 LN MSG:  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj EOM

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS0 NPC wxkqr 6 LN MSG:  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj rrghikljjj  
rrghikljjj rrghikljjj EOM]

M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS0 {NPC uvmnp[-wxkqr]}|\  
ALL[ UNIT [q]q]} COMPL

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**[s]abc** - 3- or 4-digit nonhierarchical NPC number, the first number of a range or a single NPC number.

**[t]def** - 3- or 4-digit nonhierarchical NPC number, the last number of a range.

**ALL** - All  
Keyword indicating that all NPCs in the frame are being queried for Roll status.

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

Keyword used to limit query to all NPCs in a Unit.

**[u]ghi** - The 3- or 4-digit nonhierarchical NPC number of the Service or Bridged channel associated with the queried NPC.

**ghikl** - Hierarchical NPC number of the Service or Bridged leg associated with the queried NPC

**jjj** - Channel number of the Service or Bridged leg associated with the queried NPC

**rr** - The Roll status of a channel interpreted as follows:

*rr*      *Type of Leg*

OS      Indicates that channel [u]ghijjj or ghikljjj is the Original Service leg and the corresponding channel is the Original Bridged leg.

NS      Indicates that channel [u]ghijjj or ghikljjj is the New Service leg and the corresponding channel is the New Bridged leg.

OB      Indicates that channel [u]ghijjj or ghikljjj is the Original Bridged leg and the corresponding channel is the Original Service leg.

NB      Indicates that channel [u]ghijjj or ghikljjj is the New Bridged leg and the corresponding channel is the New Service leg.

--      Indicates that the channel is not a Service or Bridged leg

**uvmnp** - Hierarchical NPC number, the first number of a range or a single NPC number

**wxkqr** - Hierarchical NPC number, the last number of a range

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

**Note:** Valid NPC types for 64kbps Roll are PAxyz, PBxyz and PCxyz, except for the following conditions:

- Either NPC is of type PAxyz where y=C or y=D
- The old NPC supports Channel Associated Signaling (CAS) and the new NPC does not.
- The old NPC supports Non-Signaling Associated, the new NPC supports CAS, and CTS16 is being rolled to CTS16.

Because CTS0 and CTS16 (when Channel Associated Signaling is used) are not rolled at the 64kbps level, the status for these channels will be displayed with "-". If NSA (Non-Signaling Associated) mode is used, CTS16 can be rolled. The appropriate roll status will be displayed for this channel.

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in hierarchical form, the valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |



## **UTL, QRY, ROLL, DS1, NPC, ALL, UNIT**

### **UTILITY QUERY ROLL DS1**

#### **Explanation Of Command**

This command is used to request a report on the roll status of 2Mbit/s facilities.

The roll status request may be for a single network processing circuit (NPC), a range of NPCs, all NPCs in a unit, or all NPCs in the DACS II frame. The output message shows the correspondence between the bridge and service facilities of the Roll procedure.

Original Service and Original Bridged facility refer to the service and bridged facility designations created by the Bridge step of the Roll procedure.

New Service and New Bridged facility refer to the service and bridged facility designations created by the Roll step of the Roll procedure.

The output message displays the roll status of each of the NPCs in a Facility Terminating Module (FTM).

The top left position corresponds to the first NPC in the FTM and the bottom right position corresponds to the last NPC in that FTM. All dashes are displayed if there is neither a Service facility nor a Bridged facility associated with an NPC.

The display is repeated for each FTM in the range.

If the range queried in the input message is a subset of a FTM, all NPCs of that FTM will still be displayed.

If there are no rolled channels in a FTM, then no roll status output will be generated for that FTM.

The specified NPC range can cross a unit boundary and is applicable to facility terminating unit (FTU) types.

If only one NPC is queried, then the output display will be one line with the roll status information for the requested NPC.

## Command

---

### Nonhierarchical

---

[I.52091]

UTL:FRM xy, SEQ ww:QRY, ROLL, DS1, {NPC [s]abc[-[t]def]|ALL[, UNIT [q]q]}!

### Hierarchical

---

[I.52091]

UTL:FRM xy, SEQ ww:QRY, ROLL, DS1, {NPC uvmnp[-wxkqr]|ALL[, UNIT [q]q]}!

## Completion Message

---

### Nonhierarchical

---

The output message in nonhierarchical PDS form will span one output segment per FTM for FTU NPC ranges, and one line for a single FTU NPC.

If the 3- or 4-digit nonhierarchical NPC number in an FTU range is used, the output will be eight NPCs per line as shown below:

[O.52091]

```
M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS1 FTU NPC [a]aaa-[b]bbb 5 LN MSG:
rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi
rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi
rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi
rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi rr[u]ghi \
EOM
```

```

 .
 .
 .

```

M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS1 {NPC [s]abc-[t]def|\  
ALL[ UNIT [q]q]} COMPL

If a single 3- or 4-digit nonhierarchical NPC number in a FTU used,  
the output will be one line as shown below:

[O.52091]

M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS1 NPC [s]abc rr[u]ghi COMPL

### **Hierarchical**

The output message in hierarchical PDS form will span  
two output segments per FTM for FTU NPC ranges, and one  
line for a single FTU NPC.

If the hierarchical NPC number in a FTU range is used, each output  
segment will display four NPCs per line as shown below:

[O.52091]

M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS1 FTU NPC bcdef-edhfg 5 LN MSG:  
rrghikl rrghikl rrghikl rrghikl  
rrghikl rrghikl rrghikl rrghikl  
rrghikl rrghikl rrghikl rrghikl  
rrghikl rrghikl rrghikl rrghikl EOM

M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS1 FTU NPC fhjrk-stxyz 5 LN MSG:  
rrghikl rrghikl rrghikl rrghikl  
rrghikl rrghikl rrghikl rrghikl  
rrghikl rrghikl rrghikl rrghikl  
rrghikl rrghikl rrghikl rrghikl EOM

```

 .
 .
 .

```

M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS1 {NPC uvmnp-wxkqr|\  
ALL[ UNIT [q]q]} COMPL

If a single 3- or 4-digit hierarchical NPC number in a FTU is used, the output will be one line as shown below:

[O.52091]

M hh:mm:ss xy,ww n[vv] UTL QRY ROLL DS1 NPC uvmpn rrgghikl COMPL

### **Denial Message**

---

Not applicable.

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**[s]abc** - 3- or 4-digit nonhierarchical NPC number, the first number of a range or a single NPC number.

**[t]def** - 3- or 4-digit nonhierarchical NPC number, the last number of a range.

**ALL** - All

Keyword indicating that all NPCs in the frame are being queried for Roll status.

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

Keyword used to limit query to all NPCs in a Unit.

**[q]q** - The 1- or 2-digit Unit number

**[a]aaa** - 3- or 4-digit nonhierarchical NPC number, the first NPC number of a FTM.

**[b]bbb** - 3- or 4-digit nonhierarchical NPC number, the last NPC number of a FTM.

**[u]ghi** - The 3- or 4-digit nonhierarchical NPC number of the Service or Bridged facility associated with the queried NPC.

**ghikl** - Hierarchical NPC number of the Service or Bridged facility associated with the queried NPC.

**rr** - NPC Roll status interpreted as follows:

*rr*      *Type of Facility*

**OS**      Indicates that NPC [u]ghi or ghikl is the Original Service facility and the corresponding NPC is the Original Bridged facility.

**NS**      Indicates that NPC [u]ghi or ghikl is the New Service facility and the corresponding NPC is the New Bridged facility.

**OB**      Indicates that NPC [u]ghi or ghikl is the Original Bridged facility and the corresponding NPC is the Original Service facility.

**NB**      Indicates that NPC [u]ghi or ghikl is the New Bridged facility and the corresponding NPC is the New Service facility.

**--**      Indicates that the NPC is not a Service or Bridged facility.

**bcdef** - Hierarchical NPC number, the first NPC number of a FTM.

**edhfg** - Hierarchical NPC number, the last NPC number of an FTM output segment.

**fhjrk** - Hierarchical NPC number, the first NPC number of an FTM output segment.

**stxyz** - Hierarchical NPC number, the last NPC number of a FTM.

**uvmnp** - Hierarchical NPC number, the first NPC number of a range or a single NPC number.

**wxkqr** - Hierarchical NPC number, the last NPC number of a range.

**uv,wx,bc,st,fh,ed**

- Unit number

**m,k,d,x,j,h**

- Module number

**np,qr,ef,yz,rk,fg**

- NPC number within the module

**Note:** Valid NPC types for 2Mbit/s Roll are PAXyz, PBxyz,PCxyz. However, Roll is denied when rolling from a PAXyz type FTU NPC to a PBxyz/PCxyz type FTU NPC. Also, the xyz values between the old and the new NPCs have to be the same or equivalent (in the case of rolling from PBxyz/PCxyz to PAXyz).

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in hierarchical form, the valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

---

## UTL, QRY, RPSFI

---

### RETRIEVE E1 NPCs WITH RPSFI CONDITION

#### Explanation Of Command

---

This message retrieves all the E1 NPCs that have the RPSFI (Remote Power Supply Failure Indication) condition active.

#### Command

---

[I.56326]

UTL: [FRM xy, SEQ ww]: QRY, RPSFI!

#### Completion Message

---

#### Nonhierarchical

---

[O.56326]

M hh:mm:ss xy, ww n[vv] UTL QRY NPC [s]abc RPSFI COMPL

.  
.  
.

M hh:mm:ss xy, ww n[vv] UTL QRY NPC [s]abc RPSFI COMPL

M hh:mm:ss xy, ww n[vv] UTL QRY RPSFI COMPL



### **Hierarchical**

[O.56326]

M hh:mm:ss xy,ww n[vv] UTL QRY NPC uvmnp RPSFI COMPL

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY NPC uvmnp RPSFI COMPL

M hh:mm:ss xy,ww n[vv] UTL QRY RPSFI COMPL

### **Denial Message**

[O.56326.01]

M hh:mm:ss xy,ww n[vv] UTL QRY RPSFI COND cc DNY

### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The values are listed below:

**RPSFI** - Remote Power Supply Failure Indicator

---

## UTL, QRY, SALMS, ALL

---

### QUERY SHELF ALARMS SEVERITY

#### Explanation Of Command

---

This command retrieves the current system alarm severity for a single shelf alarm or for all the shelf alarms. This command is only executable if the Alarm Severity feature is turned ON via the I.38355 command.

#### Command

---

[I.53301]

UTL: [FRM xy, SEQ ww]: QRY, SALMS, {sa|lm|ALL}!

#### Completion Message

---

[O.53301]

If a single shelf alarm is requested:

M hh:mm:ss xy, ww n[vv] UTL QRY SALMS, sa|lm sev COMPL

If ALL shelf alarms are requested:

M hh:mm:ss xy, ww n[vv] UTL QRY SALMS 6 lines

|          |          |           |               |
|----------|----------|-----------|---------------|
| PFF sev  | SYNC sev | DSPC sev  | CCN sev       |
| LTF sev  | TREF sev | STREF sev | TLI sev       |
| CRO sev  | SMEM sev | MCE sev   | CCNI sev      |
| TSI sev  | FC sev   | FTMI sev  | DSPI sev      |
| FTUC sev | CCB sev  | DSPUC sev | SDT sev COMPL |

### Denial Message

---

[O.53301.01]

M hh:mm:ss xy,ww n[vv] UTL QRY SALMS {salm|ALL} COND cc DNY

### Autonomous Message

---

Not applicable.

### Explanation Of Parameters

---

**salm** - Shelf Alarms

*salm Explanation*

**PFF** Power Failure  
**SYNC** Failure of one SYNC  
**CCN** CCN autonomously removed  
**LTF** NPC Hardware Failure  
**TREF** Failure of one SSP  
**STREF** Failure of last SSP  
**TLI** TLI removed from service  
**CRO** Failure of Clock Reference Oscillator  
**SMEM** Failure of SMEM memory card  
**MCE** MC removed from service  
**CCNI** CCI/CCNI autonomously removed  
**TSI** TSI/ETSI autonomously removed  
**FC** FC autonomously removed  
**FTMI** FTMI autonomously removed  
**DSPI** DSPI autonomously removed  
**FTUC** FTU UC autonomously removed  
**CCB** CCB autonomously removed  
**DSPUC** DSP UC autonomously removed  
**SDT** System date and time not set  
**DSPUC** DSPU NPC autonomously removed  
**ALL** All Shelf Alarms

**sev** - Severity

*sev Explanation*

**PMACR** - Prompt Maintenance Action CRITICAL alarm severity  
**PMAMJ** - Prompt Maintenance Action MAJOR alarm severity  
**DMAMN** - Deferred Maintenance Action MINOR alarm severity  
**MI** - MESSAGE INFORMATION alarm severity

**cc** - Hexadecimal condition code

**cc Explanation**

**00 No conditions**

**F7 Alarm Severity Feature (already) OFF**

## UTL, QRY, SCR, LINK, USER, LINKS, USERS

### QUERY USER|LINK SCREENING OPTION

#### Explanation Of Command

This command is used to query the user/administrative link for screening options, command category, and the restricted maintenance privilege. These items are set when the user accesses the link.

The frame administrator may query any one or all users and may query the screening options for any one or all administrative links.

The RMON/RMOFF option indicates that the user/administrative link is assigned the privilege or not assigned the privilege of issuing the commands restricted to the frame administrator. Default is RMOFF.

The restricted commands are:

```
I.37301 DLT::FPKG
I.34001 RST::MC:CLR[,ALL];
I.34001 RST::MC:TAPE;
I.34211 RST::DISK[,CLR];
I.34211 RST::[,CLR]|TAPE;
I.58001 UTL::BOOT,FRAME[, {TAPE|CLR}];
I.55701 UTL::BMTR, FROM {RAM|DISK|TAPE}[, {EXCT|INCL}];
I.51051 UTL::CLR, BMTR;
I.38471 CHG::MSGLOG {ON|OFF}
I.57031 UTL::CLR, MSGLOG[, RSTNUM]
I.38355 CHG::ALMS, {ON|OFF}
I.38451 CHG::INTV, {ON|OFF}
```

Output from this command is sent only to the link on which the command was input.

Also, for the Message Logging feature, the logged messages will be sent to the link on which the command was input and the links with screening option 5.

## Command

[I.54001]

UTL:FRM xy,SEQ ww:QRY,SCR,{LINK j[mm[-jnn]]|USER <user id>|\  
LINKS|USERS}!

## Completion Message

For a single link/user

[O.54001]

M hh:mm:ss xy,ww n[vv] UTL QRY SCR {LINK j[mm]}|\  
USER <user id>} 3 LN MSG:  
LANG {P|M} NPCAD {E|X|H} LEV a b c d e f {RMON|RMOFF}  
SCR n[ GR a b c d e f] {MCON|MCOFF} RLK {A|I} {CONVON|CONVOFF} COMPL

For a range of links or all links/users

[O.54001]

M hh:mm:ss xy,ww n[vv] UTL QRY SCR {LINK j[mm]-p[nn]|LINKS|\  
USERS} 5 LN MSG:  
{LINK j[mm]|USER <user id>} LANG {P|M} NPCAD {E|X|H} LEV a b \  
c d e f {RMON|RMOFF}  
SCR n[ GR a b c d e f] {MCON|MCOFF} RLK {A|I} {CONVON|CONVOFF}  
{LINK h[ii]|USER <user id>} LANG {P|M} NPCAD {E|X|H} LEV a b \  
c d e f {RMON|RMOFF}  
SCR n[ GR a b c d e f] {MCON|MCOFF} RLK {A|I} {CONVON|CONVOFF} {EOM|COMPL}

[M hh:mm:ss xy,ww n[vv] UTL QRY SCR {LINK j[mm]-p[nn]|LINKS|\  
USERS} e LN MSG:  
[{LINK j[kk]|USER <user id>} LANG {P|M} NPCAD {E|X|H} LEV a \  
b c d e f {RMON|RMOFF}  
SCR n[ GR a b c d e f] {MCON|MCOFF} RLK {A|I} {CONVON|CONVOFF}[ {EOM|COMPL}]]  
{LINK p[nn]|USER <user id>} LANG {P|M} NPCAD {E|X|H} LEV a \  
b c d e f {RMON|RMOFF}  
SCR n[ GR a b c d e f] {MCON|MCOFF} RLK {A|I} {CONVON|CONVOFF} {EOM|COMPL}]

For a range of virtual circuits on an X.25 link

[O.54001]

```
M hh:mm:ss xy,ww n[vv] UTL QRY SCR LINK jmm[-lnn] 5 LN MSG:
LINK jmm LANG {P|M} NPCAD {E|X|H} LEV a b \
c d e f {RMON|RMOFF}
SCR n[GR a b c d e f] {MCON|MCOFF} RLK {A|I} {CONVON|CONVOFF}
LINK jii LANG {P|M} NPCAD {E|X|H} LEV a b \
c d e f {RMON|RMOFF}
SCR n[GR a b c d e f] {MCON|MCOFF} RLK {A|I} {CONVON|CONVOFF} {EOM|COMPL}
```

```
[M hh:mm:ss xy,ww n[vv] UTL QRY SCR LINK jmm[-lnn] e LN MSG:
[LINK jkk LANG {P|M} NPCAD {E|X|H} LEV a \
b c d e f {RMON|RMOFF}
SCR n[GR a b c d e f] {MCON|MCOFF} RLK {A|I} {CONVON|CONVOFF}[COMPL]]
LINK jnn LANG {P|M} NPCAD {E|X|H} LEV a \
b c d e f {RMON|RMOFF}
SCR n[GR a b c d e f] {MCON|MCOFF} RLK {A|I} {CONVON|CONVOFF}[COMPL]
```

### Denial Message

---

[O.54001.01]

```
M hh:mm:ss xy,ww n[vv] UTL QRY SCR {LINK j[mm][-jnn]} \
USER <user id>|LINKS|USERS} COND cc DNY
```

### Autonomous Message

---

Not applicable.

### Explanation Of Parameters

---

**SCR** - Screening

**n** - Screening option number (1 - 5)

| <i>n</i> | <i>Explanation</i>                                                                                                                       |
|----------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | Responses to input at the same link.                                                                                                     |
| 2        | Responses to input at the same link and autonomous messages.                                                                             |
| 3        | Responses to messages input at the same link and some specified sets of action verbs.                                                    |
| 4        | Responses to messages input at the same link and some specified sets of action verbs including autonomous messages.                      |
| 5        | Responses to input messages on all links and autonomous messages and message log replay if link is in MML and log retrieval is requested |

#### **LINK** - Link

**j[mm]** - Administrative link number

**j** - Physical link number (1 through 6)  
**mm** - Virtual circuit number (01 through 16) for j = 5 or 6

Variable j[mm] when used in combination with p[nn] denotes a range of administrative link numbers beginning with j[mm] and ending with p[nn]. In the general case j is the same value as p; that is, there is no link range. A range of links may only be specified by the Frame Administrator and may only be used for synchronous links, not the asynchronous links 1 through 4.

**o[uu]** - Next administrative link number in command range  
**g[vv]** - Next administrative link number in command range  
**h[ii]** - Next administrative link number in command range  
**j[kk]** - Next administrative link number in command range  
**r[tt]** - Next administrative link number in command range  
**s[yy]** - Next administrative link number in command range  
**p[nn]** - Administrative link number at end of command range

o,g,h,j,r,s,p                      Physical link numbers (1 through 6)  
uu,vv,ii,kk,tt,yy,nn              Virtual circuit numbers (01 through 16)  
for o, g, h, j, r, s, or p = 5 or 6

#### **USER** - User

**user id**

- User identifier

The user's login identifier (two to eight alphabetic characters). The frame administrator may use specify any user\_id but an individual user is restricted to their own user\_id.

#### **LINKS** - Links

All administrative links (frame administrator only)



**USERS** - Users

All users (frame administrator only)

**LANG** - Language

**P** - Program Documentation Standards (PDS)

**M** - HuMan-Machine Language (MML)

**NPCAD** - NPC Addressing scheme

**E** - Extended 3-digit nonhierarchical NPC addressing

**X** - Extended 4-digit nonhierarchical NPC addressing

**H** - Hierarchical NPC addressing

**LEV** - Level

- a** - Execution priority level for circuit provisioning commands
- b** - Execution priority level for equipment provisioning commands
- c** - Execution priority level for maintenance commands
- d** - Execution priority level for test access commands
- e** - Execution priority level for monitoring commands
- f** - Execution priority level for common commands

A table giving the command verbs associated with each of the above command sets is given below.

LEV is used in combination with the command set identifiers a through f to set the execution priority level for each command set. A priority level applies to a user or link as appropriate. Priority levels range from 0 through 3. A list of these levels and their meaning is given below for a. The list for b through f is similar to the a list.

- a Explanation*
- 0 Commands in the command set assigned this execution priority level cannot be executed.
  - 1 Highest execution priority level. Commands in the command set assigned this execution priority level will be executed before commands with priority level 2 or 3.
  - 2 Middle execution priority level. Commands in the command set assigned this execution priority level will be executed before commands with priority level 3
  - 3 Lowest execution priority level. Commands in the command set assigned this execution priority level will be executed after all priority level 1 and 2 commands have been executed. Level 3 is the default priority level.
  - The execution priority level of the command set assigned this execution priority level is not to be changed.

**Note:** The commands used to login, logoff, cross-connect, stop, and abort always have the highest priority.

A single queue is used for DACS II commands. When multiple commands arrive at the same time, they will be queued for execution according to the priority assigned to their command set. Commands with the same priority will be executed in the order of arrival, that is, first come first served. A timeout feature insures that no command will wait in the queue forever. When the timeout period has expired for a given command that command will be executed regardless of its priority level.

| <b>a</b><br><b>Circuit</b><br><b>Prov.</b> | <b>b</b><br><b>Equipment</b><br><b>Prov.</b> | <b>c</b><br><b>Maint.</b> | <b>d</b><br><b>Test</b><br><b>Access</b> | <b>e</b><br><b>Monitoring</b> | <b>f</b><br><b>Common</b> |
|--------------------------------------------|----------------------------------------------|---------------------------|------------------------------------------|-------------------------------|---------------------------|
| BCON                                       | COPY                                         | CFR                       | CTST                                     | AUD                           | ACT                       |
| BDIS                                       | DGRTH                                        | DGN                       | STST                                     | UTL                           | ADD                       |
| CONF                                       | DLT                                          | RMV                       | TTST                                     |                               | ALW                       |
| OCNT                                       | GRTH                                         | RST                       |                                          |                               | CHG                       |
| OCON                                       |                                              |                           |                                          |                               | ED                        |
| ODIS                                       |                                              |                           |                                          |                               | EXC                       |
| OPR                                        |                                              |                           |                                          |                               | INH                       |
| RLS                                        |                                              |                           |                                          |                               |                           |
| TCNT                                       |                                              |                           |                                          |                               |                           |
| TCON                                       |                                              |                           |                                          |                               |                           |
| TDIS                                       |                                              |                           |                                          |                               |                           |

**RMON** - Restricted maintenance privilege on  
**RMOFF** - Restricted maintenance privilege off (default)

**GR** - Group

- a** - Screening level for circuit provisioning commands
- b** - Screening level for equipment provisioning commands
- c** - Screening level for maintenance commands
- d** - Screening level for test access commands
- e** - Screening level for monitoring commands
- f** - Screening level for common commands

A table giving the command verbs associated with each of the above command sets is given in the Explanation of Message section.

The command set identifiers a through f are used to set the group screening level for each command set. Screening levels range from 0 through 1. A list of these levels and their meaning is given below for a. The list for b through f is similar to the a list.

| a | Explanation                                                                                                                                             |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Output messages from other links are allowed,                                                                                                           |
| 0 | Output messages from other links are not allowed (the screening option for commands LOGIN, LOGOFF, STOP and ABT is not changeable, and it is set to 1). |

Note: Group information applies only to screening options 3 or 4; it does not appear for options 1, 2, and 5.

**MCON** - Macro component completion messages screening on  
**MCOFF** - Macro component completion messages screening off

**RLK** - Remove link

**A** - Allowed

**I** - Inhibited

A and I are used to assign to a user or link the privilege of removing a link. There is a relationship between the link privilege and the execution priority level. If c (see previous Command Sets table) in the LEV field is set to zero then the command to remove a link cannot be executed hence the remove link privilege is inhibited even if the RLK option is set to A or I.

**CONVON**

- Mixed Addressing Conversion ON

**CONVOFF**

- Mixed Addressing Conversion OFF

This mixed addressing conversion feature is only applicable to PDS commands in an environment that uses 4-digit sequential NPC numbers. This conversion feature is useful when a DACS II frame is converted from 3-digit sequential NPC addressing to 4-digit sequential NPC addressing for growth reasons. In that case this conversion feature allows certain Operational Support Systems to use 3-digit NPC numbers, even though the frame has been changed to normally accept only 4-digit NPC numbers.

Assuming sequential NPC number usage, DACS II normally accepts only fixed length NPC numbers in its input commands. This conversion feature transfers the fixed length requirement from NPC number to channel number on a link basis. This allows the DACS II parser to accept 3- or 4-digit NPC numbers assuming that the channel number is interpreted to be of 2-digit fixed length. If a 3-digit NPC number is entered with CONVON in effect, then DACS II will internally expand 3-digit NPC numbers to 4-digit NPC numbers.

For some feature configurations this conversion feature is not available, and the CONVOFF keyword will not appear in the output of this command.

- cc**     - Hexadecimal condition code

**cc**     *Explanation*

- D0**    Command is Frame administrator (DAX) only.
- D3**    User does not exist
- D7**    Cannot execute privileged command
- DF**    Command and protocol are inconsistent
- E1**    Virtual circuit is not specified for X.25 link
- E2**    Invalid link number specified

## **UTL,QRY,SIGST**

---

### **QUERY TRUNK SIGNALING CONVERSION STATE**

#### **Explanation Of Command**

---

This command is used to query the signaling state of a trunk which is using the E1/T1 signaling conversion feature. This feature is implemented on the Digital Signal Processing Platform (DSPP) circuit pack.

The signaling state on any given trunk will change rapidly with respect to time. This command will only take a snapshot of the state of the specified trunk. This snapshot will only be useful if the circuit is stuck in one given state. Thus it will give field personnel a way of tracking down the real problem.

#### **Command**

---

##### **Nonhierarchical**

---

[1.52601]

**UTL:[FRM xy,SEQ ww]:QRY,SIGST abcd**

##### **Hierarchical**

---

[1.52601]

**UTL:[FRM xy,SEQ ww]:QRY,SIGST uvmpddd**

## **Completion Message**

---

### **Nonhierarchical**

---

[O.52601]

M hh:mm:ss xy,ww n[vv] UTL QRY SIGST abcdde TYPE mnxyz 4 LN MSG:  
TRUNK E1-TRN E1-RCV T1-TRN T1-RCV SIG  
DIR AB AB A A STATE  
tdir ab cd e g <sigst> COMPL

### **Hierarchical**

---

[O.52601]

M hh:mm:ss xy,ww n[vv] UTL QRY SIGST uvmpddd TYPE mnxyz 4 LN MSG:  
TRUNK E1-TRN E1-RCV T1-TRN T1-RCV SIG  
DIR AB AB A A STATE  
tdir ab cd e g <sigst> COMPL

## **Denial Message**

---

### **Nonhierarchical**

---

[O.52601.01]

M hh:mm:ss xy,ww n[vv] QRY SIGST abcdde COND cc DNY

### **Hierarchical**

---

[O.52601.01]

M hh:mm:ss xy,ww n[vv] QRY SIGST uvmpddd COND cc DNY

## **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**SIGST** - Signaling state

**abcd** - E1/T1 trunk termination  
**abc** - NPC number  
**ddd** - Channel number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

#### uvmnpddd

- E1/T1 trunk termination

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module  
**ddd** - Channel number

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

Valid values are listed below:

| <b>ddd</b>     | <i>Explanation</i>   |
|----------------|----------------------|
| <b>001-024</b> | T1 NPC channel range |
| <b>001-030</b> | E1 NPC channel range |

**TYPE** - Type

**mnxyz** - NPC Type and provisioning options



**tdir** - Trunk direction

The direction of the trunk as viewed from this channel. A trunk will have a direction specified in the circuit provisioning command which established the cross-connection. That direction will be either "from T1 to E1" or "from E1 to T1". This represents the direction in which a call is being established on the trunk between two switches. Valid values are listed below:

| <b>tdir</b> | <i>Explanation</i>                                             |
|-------------|----------------------------------------------------------------|
| <b>T1IC</b> | T1 Incoming, Channel belongs to a T1 NPC receiving the call    |
| <b>T1OG</b> | T1 Outgoing, Channel belongs to a T1 NPC originating the call  |
| <b>E1IC</b> | E1 Incoming, Channel belongs to an E1 NPC receiving the call   |
| <b>E1OG</b> | E1 Outgoing, Channel belongs to an E1 NPC originating the call |

**ab** - E1 Transmitting AB signaling bits associated with this channel

**cd** - E1 Receiving AB signaling bits associated with this channel

**e** - T1 Transmitting A signaling bit associated with this channel

**g** - T1 Receiving A signaling bit associated with this channel

Valid values for each bit are zero or one.

**sigst** - Signaling state value

| <b>sigst</b> | <i>Explanation</i>    |
|--------------|-----------------------|
| <b>ANS</b>   | Answer                |
| <b>BLK</b>   | Blocking              |
| <b>CLB</b>   | Clear Backward        |
| <b>CLF1</b>  | Clear Forward 1       |
| <b>CLF2</b>  | Clear Forward 2       |
| <b>DIL0</b>  | Dial 0                |
| <b>DIL1</b>  | Dial 1                |
| <b>IDL</b>   | Idle                  |
| <b>SEI</b>   | Seizure               |
| <b>SEA</b>   | Seize Acknowledgement |

**Note:** An asterisk (\*) may be appended to any of the above states. This means that the current received signaling bit value(s) do not correspond to the current signaling state.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                                       |
|-----------|-------------------------------------------------------|
| <b>04</b> | Subject entity is out of service                      |
| <b>11</b> | UC is out of service                                  |
| <b>12</b> | UC is in service but failed                           |
| <b>14</b> | FTMI is out of service                                |
| <b>15</b> | NPC is unequipped                                     |
| <b>1F</b> | FTMI is in service but failed                         |
| <b>26</b> | NPC type error                                        |
| <b>0B</b> | Invalid CEPT NPC                                      |
| <b>39</b> | Signaling state of the trunk failed for the channel   |
| <b>40</b> | Signaling processing is not activated for the channel |
| <b>AA</b> | DSPP pack UC Failed or Out of Service                 |
| <b>AB</b> | DSPP pack FTMI Failed or Out of Service               |
| <b>AC</b> | DSPP pack NPC Failed or Out of Service                |

## **UTL, QRY, SQN**

---

### **UTILITY QUERY SEQUENCE**

#### **Explanation Of Command**

---

This command is used to retrieve the sequence number of the last autonomous message issued by DACS II.

#### **Command**

---

[I.51131]

UTL:FRM xy,SEQ ww:QRY,SQN!

#### **Completion Message**

---

[O.51131]

M hh:mm:ss xy,ww n[vv] UTL QRY SQN nn COMPL

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**SQN** - Sequence Number

**nn** - two digit sequence number of the last autonomous message

## **UTL, QRY, STATE, ACO**

### **UTILITY QUERY STATE ALARM CUT OFF**

#### **Explanation Of Command**

This message queries for the active or inactive status of the alarm cutoff.

#### **Command**

[I.54340]

UTL:FRM xy,SEQ ww:QRY,STATE,ACO!

#### **Completion Message**

[O.54340]

M hh:mm:ss xy ww n[vv] UTL QRY STATE ACO <mode> COMPL

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**STATE** - State

**ACO** - Alarm cut off

**mode** - Alarm mode

Current state of alarm cut off

| <i>mode</i> | <i>Explanation</i>       |
|-------------|--------------------------|
| ACTIVE      | Alarm cutoff is active   |
| INACT       | Alarm cutoff is inactive |

## **UTL, QRY, STATE, NPC**

### **UTILITY QUERY STATE**

#### **Explanation Of Command**

This command requests the provisioning and status information of a single Network Processing Circuit (NPC) or range of NPCs for one or more Facility Terminating Units (FTU) or DS3 Units (DS3U) or Hybrid DS3 units (HDS3U) or for a single Digital Signal Processing Unit (DSPU).

In the output message, the "PREVIOUS SHORT INTERVAL" data should be ignored for the first 15 minutes following the execution of the CHG::SETOP (Message I.38201) or CHG::NPC,OPTS (Message I.38221) command. These CHG commands clear the stored data, which results in a value of zero being printed for the interval count.

**Note:** If the accumulated count of a parameter reaches or exceeds its programmed threshold, an autonomous alarm message is generated.

If an NPC range is specified in the input command, the following floating window rules apply:

- Unequipped NPCs within the requested range will be skipped.
- If a CEPT gap is within the requested range, the NPCs in the gap will be skipped.
- If an endpoint of the requested range is in a CEPT gap, then the NPCs in the portion of the range which is in the gap will be denied.

### **Command**

---

### **Nonhierarchical**

---

[I.56311]

UTL:[FRM xy,SEQ ww]:QRY,STATE,NPC [s]abc[-[t]def]!

### **Hierarchical**

---

[I.56311]

UTL:[FRM xy,SEQ ww]:QRY,STATE,NPC uvmnp[-wxkqr]!



## Completion Message

### Nonhierarchical

**Note:** The following message segments will be output for each PB and PC NPC.

[O.56311]

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [s]abc TYPE mnxyz[RESET] \
IW pqr 5 LN MSG:
24 HOUR OOS FAIL PEST PBA DM SERS ERS US SLIP CRC FRER LOFA MER
a b c d aaaaa bbbbbb ccccc ddddd eeeee fffff ggggg hhhhh iiii
THRESHOLDS laaaa lbbbbb lcccc ldddd leeee
OPTIONS f g h i j EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [s]abc TYPE mnxyz[RESET] \
IW pqr 5 LN MSG:
PREVIOUS SHORT INTERVAL DM SERS ERS US SLIP
jjjjj kkkkk llll mmmm nnnnn
THRESHOLDS saaaa sbbbb scccc sdddd seeee
OPTIONS k l n p q EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [s]abc TYPE mnxyz[RESET] \
IW pqr 5 LN MSG:
CURRENT SHORT INTERVAL DM SERS ERS US SLIP
ooooo ppppp qqqqq rrrrr sssss
THRESHOLDS saaaa sbbbb scccc sdddd seeee
OPTIONS k l n p q EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY TS0 abcdefgh TS0M abcdefgh TS0MBOFL v COND cc COMPL
```

**Note:** The following message will be output for each MB and CB NPC.

[O.56312]

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [s]abc TYPE mnxyz 2 LN MSG:
OOS a a FAIL b b PEST c c[BOFL o] COMPL
```

**Note:** The following message segment will be output for each SD NPC.

[O.56313]

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [s]abc TYPE SDxyz 2 LN MSG:
OOS a FAIL b PEST c COMPL
```

## Hierarchical

**Note:** The following message segments will be output for each PB and PC NPC.

[O.56311]

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC uvmnp TYPE mnxyz[RESET] \
IW pqr 5 LN MSG:
24 HOUR OOS FAIL PEST PBA DM SERS ERS US SLIP CRC FRER LOFA MER
a b c d aaaaa bbbbbb ccccc ddddd eeeee fffff ggggg hhhh iiii
THRESHOLDS laaaa lbbbb lcccc ldddd leeee
OPTIONS f g h i j EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC uvmnp TYPE mnxyz[RESET] \
IW pqr 5 LN MSG:
PREVIOUS SHORT INTERVAL DM SERS ERS US SLIP
jjjjj kkkkk llll mmmm nnnnn
THRESHOLDS saaaa sbbbb scccc sdddd seeee
OPTIONS k l n p q EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC uvmnp TYPE mnxyz[RESET] IW pqr 5 LN MSG:
CURRENT SHORT INTERVAL DM SERS ERS US SLIP
ooooo ppppp qqqqq rrrrr sssss
THRESHOLDS saaaa sbbbb scccc sdddd seeee
OPTIONS k l n p q EOM
```

```
M hh:mm:ss xy,ww n[vv] UTL QRY TS0 abcdefgh TS0M abcdefgh TS0MBOFL v COND cc COMPL
```

**Note:** The following message will be output for each MB and CB NPC.

[O.56312]

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC uvmnp TYPE mnxyz 2 LN MSG:
OOS a a FAIL b b PEST c c[BOFL o] COMPL
```

**Note:** The following message segment will be output for each SD NPC.

[O.56313]

```
M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC uvmnp TYPE SDxyz 2 LN MSG:
OOS a FAIL b PEST c COMPL
```

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.56311.01]

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [s]abc UEQD DNY

[O.56311.02]

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [s]abc[-[t]def] COND cc DNY

#### **Hierarchical**

---

[O.56311.01]

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC uvmnp UEQD DNY

[O.56311.02]

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC uvmnp[-wxkqr] COND cc DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit starting nonhierarchical NPC number

**[t]def** - The 3- or 4-digit ending nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Starting hierarchical NPC number  
**wxkqr** - Ending hierarchical NPC number defined for uvmnp  
**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**[t]ghi** - The 3- or 4-digit nonhierarchical NPC number (**[s]abc** through **[t]def**)

**edfgh** - Hierarchical NPC number (**uvmnp** through **wxkqr**)

**ed** - Unit number  
**f** - Module number  
**gh** - NPC number

**TYPE** - Type

**mnxyz** - NPC-type identifier

*mn*      *Explanation*

|    |                                 |
|----|---------------------------------|
| PA | CEPT NPC (75- or 120-ohm)       |
| PB | CEPT NPC (120-ohm twisted pair) |
| PC | CEPT NPC (75-ohm coaxial)       |
| CB | C-bit processor (CPR) NPC       |

#### SD-type xyz fields (Digital Signal Processing Platform (DSPP) Applications)

**SD111** X.50/X.57 International substrate application  
**SD311** Digital Multipoint Bridge application  
**SD411** North American DDS Substrate and MJU application  
**SDxyz** Possible future applications with specific values for xyz



**PB- and PC-type xyz fields**

**Table 19-29. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                               |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                                 |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                         |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                          |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA,<br>NFW bit 4=RBER, RAI set in < 2 ms, for c=1<br>(SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                      |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA,<br>NFW bit 4=disabled, RAI set in < 2 ms, for c=1<br>(SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8, in time 144ms (TRANSMIC 1G)                                                                                                    |
|              |            | 111          | Unassigned                                                                                                                                   |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                                |
|              |            | 1            |                                                                                                                                              |

#### Table Notes:

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496 ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway cross-connection* the insertion word always defaults to AIS.

mnxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option  $c=0$  is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the **jkl** options. Also see note [jkl].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when** *jkl=011* or *jkl=101*. **For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option *g* has meaning only if the NPC is provisioned for CAS; that is, option *d=1*, otherwise it is ignored. If option *g=0* is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option *g=1* is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and *h=1*, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option *h* was selected as either 0 or 1, unless it is later set to 0 by setting parameter *e=0* in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of *xyz* the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option *h=1*.

If both *b=1* and *h=1* and the NPC (used as synchronization source) receives NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure**. If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

**[jkl'] minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

c=0 hardware timing

c=1 firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

#### **PA-Type xyz fields**

The provisioning values of x, y, and z for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (x, y or z) provisioning value):

**Table 19-30. Provisioning values for  $x$** 

| $x$<br>value | CRC-4<br>Mode | Automatic<br>CRC-4 | Far-End<br>PM | NPC used as<br>Sync Source | TS0 Bit 5<br>used for SFI |
|--------------|---------------|--------------------|---------------|----------------------------|---------------------------|
| 0            | Y             |                    |               |                            |                           |
| 1            | Y             |                    | Y             |                            | Y                         |
| 2            | Y             |                    |               |                            | Y                         |
| 3            | Y             |                    | Y             |                            |                           |
| 4            | Y             |                    |               | Y                          |                           |
| 5            | Y             |                    | Y             | Y                          | Y                         |
| 6            | Y             |                    |               | Y                          | Y                         |
| 7            | Y             |                    | Y             | Y                          |                           |
| 8            |               | Y                  | Y             |                            |                           |
| 9            |               | Y                  | Y             |                            | Y                         |
| A            |               |                    |               |                            | Y                         |
| B            |               |                    |               |                            |                           |
| C            |               | Y                  | Y             | Y                          |                           |
| D            |               | Y                  | Y             | Y                          | Y                         |
| E            |               |                    |               | Y                          | Y                         |
| F            |               |                    |               | Y                          |                           |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.

\* Automatic CRC-4 is also known as CRC-4 Interworking.

4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 19-31. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the  $abcd$  bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the  $abcd$  bits will be transmitted transparently.

If the "AIS in TS16" option is selected (y value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (y values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For y values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (y=8) or Timeslot Channel Numbering (y=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (y=C) or as an unframed clear 2Mbit/s interface (y=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 19-32. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )



3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B**. **However**, for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for **z = 4 and 8**) or 480 ms (for **z = 5 and 9**) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

8. *z* values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options (*z* = 6-7 or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms

- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

***z*=6 or A** hardware timing

***z*=7 or B** firmware timing (SFDT=2496 ms, CACT=624 ms)

- [iv] BER alarm level = DMA

**Specific Options for *z*= 6 or 7**

- [v] RBER alarm level = MI

- [vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for *z*= A or B**

- [vii] RBER unalarmed

- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

9. To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of *xyz* for the PA type NPC.

**Table 19-33. Combinations of *x* and *y* Values**

| Invalid<br><i>xyz</i><br>Combinations | Explanation                                                                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                                   | Framed clear 2Mbit/s ( <i>y</i> value C) is valid for all <i>x</i> options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                                   |                                                                                                                                                                                                                                              |
| CCz                                   |                                                                                                                                                                                                                                              |
| DCz                                   |                                                                                                                                                                                                                                              |
| 0Dz                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) is only valid for <i>x</i> values B and F. These are the only <i>x</i> options which do not require decoding of TS0 content.                                                                      |
| 1Dz                                   |                                                                                                                                                                                                                                              |
| 2Dz                                   |                                                                                                                                                                                                                                              |
| 3Dz                                   |                                                                                                                                                                                                                                              |
| 4Dz                                   |                                                                                                                                                                                                                                              |
| 5Dz                                   |                                                                                                                                                                                                                                              |
| 6Dz                                   |                                                                                                                                                                                                                                              |
| 7Dz                                   |                                                                                                                                                                                                                                              |
| 8Dz                                   |                                                                                                                                                                                                                                              |
| 9Dz                                   |                                                                                                                                                                                                                                              |
| ADz                                   |                                                                                                                                                                                                                                              |
| CDz                                   |                                                                                                                                                                                                                                              |
| DDz                                   |                                                                                                                                                                                                                                              |
| EDz                                   |                                                                                                                                                                                                                                              |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled *z* values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables (*x* values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 19-34. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z* = value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 19-35. Combinations of *x* and *z* Values**

| Invalid<br>xyz<br>Combinations                       | Explanation                                                                                                                                                                                                                                                       |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC<br>5yC<br>6yC<br>7yC<br>CyC<br>DyC<br>EyC<br>FyC | Use of NPC as Sync Source ( <i>x</i> 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( <i>z</i> value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |

**CB-type xyz fields**

- x** - Fixed at 1
- y** - Fixed at 0
- z** - Network timer value
- z**      *Value in milliseconds*
- 0**      600 to 750
- 1**      1500 to 1650
- 2**      2400 to 2550
- 3**      4650 to 4800

- IW** - Insertion word
- pq** - Insertion word value (Hexadecimal)

Also referred to as the Disconnect Code (DCC) or idle code. This value is inserted in the transmit direction on unassigned channels. DCC is not applicable to clear-DS1 NPCs, and is not printed. Some common disconnect codes are:

- pq**      *Explanation*
- D5**      Unassigned Channel code (UAC), the default value

**r** - Transmitted signaling information

**r** *Explanation*

**D** Unassigned Channel code (UAC), the default value for CEPT

**00S** - Out-of-Service

**a** - Out of Service flag, applies to FTU NPCs and DSP NPCs on Side 0

**a** - Out of Service flag, applies to DSP NPCs on Side 1

**a, a** *Explanation*

**1** Out-of-service

**0** Not Out-of-service

**FAIL** - Fail

**b** - Failed flag, applies to FTU NPCs and DSP NPCs on Side 0

**b** - Failed flag, applies to DSP NPCs on Side 1

**b, b** *Explanation*

**1** Failed

**0** Not failed

**PEST** - Pest

**c** - Pested flag, applies to FTU NPCs and DSP NPCs on Side 0

**c** - Pested flag, applies to DSP NPCs on Side 1

**c, c** *Explanation*

**1** Pested

**0** Not pested

**PBA** - Primary block alarm

**d** - PBA flag

d      *Explanation*

**1**      PBA

**0**      No PBA

**Note:** The PBA flag indicates the presence of one or more of the following conditions:

|             |                                                          |
|-------------|----------------------------------------------------------|
| <b>A16</b>  | AIS received in CAS time slot 16.                        |
| <b>AIS</b>  | Alarm Indication Signal received in all 32 time slots.   |
| <b>BER</b>  | Bit Error Rate detected in received signal.              |
| <b>EER</b>  | Excessive Error Rate                                     |
| <b>LMA</b>  | Loss of Multiframe Alignment in CAS time slot 16.        |
| <b>LOFA</b> | Loss of Frame Alignment                                  |
| <b>LOS</b>  | Loss of Signal                                           |
| <b>R16</b>  | RAI received in bit 6 of frame 0 of TS16.                |
| <b>RAI</b>  | Remote Alarm Indication received in bit 3 of NFW of TS0. |
| <b>RAIS</b> | Remote AIS detected in bit 4 of TS0.                     |
| <b>RBER</b> | Remote Bit Error Rate detected in bit 4 of TS0.          |
| <b>SFI</b>  | Synchronization Failure Indication in bit 5 of TS0.      |

**Note:** The facility monitoring parameters accumulated by the NPC are described below. If the queried NPC cannot be accessed for some reason, for example because the Facility Terminating Module is not equipped or the FTMI or Unit Controller is out of service, then the NPC's parameter count fields are printed as a string of dashes to indicate that the counts are not available. The parameter thresholds and options are still correctly output in this case.

In addition, some parameters are not applicable to all NPCs. Certain parameters may or may not be collected based on NPC type and whether the NPC carries a Clear or Channelized facility. In the cases where specific parameters do not apply to the queried NPC, the respective parameter count fields, threshold values and threshold options are all displayed as a string of dashes.

**DM** - Degraded minutes

Degraded minutes are accumulated on an hourly interval and not a 15-minute interval as with SERS, ERS, US, and SLIP.

**aaaaa** - DM long interval count

**laaaa** - DM long interval threshold (1 through 1440)

**f** - DM long interval option selection (0 through C)

**jjjjj** - DM previous short interval count

**saaaa** - DM short interval threshold (1 through 60)

**k** - DM short interval option selection (0 through C)

**ooooo** - DM current short interval count

**SERS** - Severely errored seconds

**bbbbbb** - SERS long interval count (CEPT)

**lbbbb** - SERS long interval threshold (1 through 65535)

**g** - SERS long interval option selection (0 through C)

**kkkkk** - SERS previous short interval count

**sbbbb** - SERS short interval threshold (1 through 900)

**ppppp** - SERS current short interval count

**l** - SERS short interval option selection (0 through C)

**ERS** - Errored seconds

**ccccc** - ERS long interval count (CEPT)



**lcccc** - ERS long interval threshold (1 through 65535)  
**h** - ERS long interval option selection (0 through C)  
**l1111** - ERS previous short interval count  
**scccc** - ERS short interval threshold (1 through 900)  
**n** - ERS short interval option selection (0 through C)  
**qqqqq** - ERS current short interval count  
**US** - Unavailable seconds  
**ddddd** - US long interval count  
**ldddd** - US long interval threshold (1 through 65535)  
**i** - US long interval option selection (0 through C)  
**mmmm** - US previous short interval count  
**sdddd** - US short interval threshold (1 through 900)  
**p** - US short interval option selection (0 through C)  
**rrrrr** - US current short interval count  
**SLIP** - Slip  
**eeee** - Slip long interval count  
**leeee** - Slip long interval threshold (1 through 65535)  
**j** - Slip long interval option selection (0 through C)  
**nnnn** - Slip previous short interval count  
**seeee** - Slip short interval threshold (1 through 900)  
**q** - Slip short interval option selection (0 through C)  
**sssss** - Slip current short interval count

- CRC** - Cyclic redundancy code
- fffff** - CRC-4 check block error count
- FRER** - Framing error
- ggggg** - FRER count
- LOFA** - Loss of frame alignment
- hhhhh** - LOFA count
- MER** - Multiframe alignment error (time slot 16)
- iiiii** - MER count
- TS0** - Time slot 0 bits transmitted by the NPC

**abcdefgh**  
- Spare bits in TS0

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

Valid values for a through h are described below:

| <i>Bit value</i> | <i>Explanation</i>                                                |
|------------------|-------------------------------------------------------------------|
| <b>0</b>         | Transmitted bit set to binary "0"                                 |
| <b>1</b>         | Transmitted bit set to binary "1"                                 |
| <b>P</b>         | Pass-through: the received bit will be cross-connected unchanged. |

**Note:** A bit provisioned for pass-through may be cross-connected to a bit from another TS0.

The values displayed for 'abcdefgh' are those that the NPC is provisioned to transmit. The actually transmitted values may be different, depending on alarm states (see Message 56321).

**TS0M** - Time slot 0 bits monitored by NPC

**abcdefgh**

- Spare bits in TS0M

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

Valid values for bits **a** through **h** are described below:

| <i>Bit value</i> | <i>Explanation</i>                                                           |
|------------------|------------------------------------------------------------------------------|
| <b>0</b>         | Do not monitor and therefore do not send a message if this bit changes state |
| <b>1</b>         | Monitor and therefore send a message if this bit changes state               |

**TS0MBOFL**

- TS0M buffer overflow keyword

**v** - TS0M buffer overflow condition indicator

|   |                                              |
|---|----------------------------------------------|
| 0 | NPC is not in TS0M buffer overflow condition |
| 1 | NPC is in TS0M buffer overflow condition     |

**BOFL** - Buffer overflow

CB type NPC buffer overflow keyword

**o** - State of the buffer

**o** *State*

**1** C-bit buffer overflow

**0** No C-bit overflow

**cc** - Hexadecimal condition code

**cc** *Explanation*

**00** No conditions

**04** Subject entity is out of service

**11** UC is out of service

**12** UC is in service but failed

**14** FTMI is out of service

**1F** FTMI is in service but failed

**0B** Invalid CEPT NPC

**46** NPC Failed or Out of Service

## **UTL,QRY,STATE,NPC**

### **UTILITY QUERY NPC STATE**

#### **Explanation Of Command**

This command requests the provisioning and status information of a single Network Processing Circuit (NPC) or a range of NPCs. The output format shown in this message applies to PA type NPCs in one or more Facility Terminating Unit(s) (FTUs).

**NOTE:** Similar information for other NPC types are given by message 56311.

#### **Command**

##### **Nonhierarchical**

[I.56314]

**UTL:FRM xy,SEQ ww:QRY,STATE,NPC [s]abc[-[t]def]!**

##### **Hierarchical**

[I.56314]

**UTL:FRM xy,SEQ ww:QRY,STATE,NPC uvmnp[-wxkqr]!**

## Completion Message

### Nonhierarchical

[O.56314]

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [t]ghi TYPE mnxyz[ IW pqr] 5 LN MSG:  
OOS FAIL PEST CRCST FEPM SYNSRC CAS LPBK THMOD AISPROV ERB  
q r s u v w x df z ttt ccc  
PBA LOS LOF AIS EER RAI LMA LCMA BER A16 RAIS RBER RMA SFI PFWOOF FLCMA  
p y y y y y y y y y y y y y y  
PBA RPSFI  
p y EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [t]ghi TYPE mnxyz[ IW pqr] 5 LN MSG:  
DAILY CRC FRER OFS ES SES CSS CV  
COUNTS aaaaaaa bbbbbbbb ccccc dddd eeee ffff gggggggg  
THRESHOLDS aaaaaaa bbbbbbbb ccccc dddd eeee ffff gggggggg  
OPTIONS a b c d e f g EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [t]ghi TYPE mnxyz[ IW pqr] 5 LN MSG:  
DAILY UAS UATC MER FEBE FES FSES FUAS  
COUNTS hhhh ii j j j kkkkkkk llll mmmm nnnn  
THRESHOLDS hhhh ii j j j kkkkkkk llll mmmm nnnn  
OPTIONS h i j k l m n EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [t]ghi TYPE mnxyz[ IW pqr] 5 LN MSG:  
15MIN CRC FRER OFS ES SES CSS CV  
COUNTS aaaaaa bbbbbbb ccc ddd eee fff ggggggg  
THRESHOLDS aaaaaa bbbbbbb ccc ddd eee fff ggggggg  
OPTIONS a b c d e f g EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [t]ghi TYPE mnxyz[ IW pqr] 5 LN MSG:  
15MIN UAS UATC MER FEBE FES FSES FUAS  
COUNTS hhh ii j j j kkkkkk lll mmm nnn  
THRESHOLDS hhh ii j j j kkkkkk lll mmm nnn  
OPTIONS h i j k l m n EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [t]ghi TYPE mnxyz[ IW pqr] 2 LN MSG:  
TS0 abcdefgh TS0M abcdefgh TS0MBOFL v COND kk COMPL

## Hierarchical

[O.56314]

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC edhfg TYPE mnxyz[ IW pqr] 5 LN MSG:  
OOS FAIL PEST CRCST FEPM SYNSRC CAS LPBK THMOD AISPROV ERB  
q r s u v w x df z ttt ccc  
PBA LOS LOF AIS EER RAI LMA LCMA BER A16 RAIS RBER RMA SFI PFWOOF FLCMA  
p y y y y y y y y y y y y y y  
PBA RPSFI  
p y EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC edhfg TYPE mnxyz[ IW pqr] 5 LN MSG:  
DAILY CRC FRER OFS ES SES CSS CV  
COUNTS aaaaaaaa bbbbbbbbb ccccc ddddd eeeee fffff gggggggg  
THRESHOLDS aaaaaaaa bbbbbbbbb ccccc ddddd eeeee fffff gggggggg  
OPTIONS a b c d e f g EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC edhfg TYPE mnxyz[ IW pqr] 5 LN MSG:  
DAILY UAS UATC MER FEBE FES FSES FUAS  
COUNTS hhhhh iiiii jjjjj kkkkkkkk lllll mmmmm nnnnn  
THRESHOLDS hhhhh iiiii jjjjj kkkkkkkk lllll mmmmm nnnnn  
OPTIONS h i j k l m n EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC edhfg TYPE mnxyz[ IW pqr] 5 LN MSG:  
15MIN CRC FRER OFS ES SES CSS CV  
COUNTS aaaaaa bbbbbbb ccc ddd eee fff gggggg  
THRESHOLDS aaaaaa bbbbbbb ccc ddd eee fff gggggg  
OPTIONS a b c d e f g EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC edhfg TYPE mnxyz IW pqr 5 LN MSG:  
15MIN UAS UATC MER FEBE FES FSES FUAS  
COUNTS hhh ii jjj kkkkkk lll mmm nnn  
THRESHOLDS hhh ii jjj kkkkkk lll mmm nnn  
OPTIONS h i j k l m n EOM

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC edhfg TYPE mnxyz[ IW pqr] 2 LN MSG:  
TS0 abcdefgh TS0M abcdefgh TS0MBOFL v COND kk COMPL

## Denial Message

## Nonhierarchical

[O.56314.01]

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC [t]ghi COND cc DNY

## Hierarchical

[O.56314.01]

M hh:mm:ss xy,ww n[vv] UTL QRY STATE NPC edhfg COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**NPC** - Network Processing Circuit

If an NPC range is specified in the input command, unequipped NPCs within the requested range will be skipped.

**[s]abc** - The first 3- or 4-digit nonhierarchical NPC Number of a range.

**[t]def** - The last 3- or 4-digit nonhierarchical NPC Number of a range.

**[t]ghi** - A 3- or 4-digit nonhierarchical NPC number, where  
 $([s]abc \leq [t]ghi \leq [t]def)$

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |



| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - The first hierarchical NPC number of a range.  
**wxkqr** - The last hierarchical NPC number of a range.  
**edhfg** - A 3- or 4-digit hierarchical NPC number, where  
 $(uvmnp \leq edhfg \leq wxkqr)$

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**mnxyz** - NPC type

**PAxyz** - Enhanced 2Mbit/s Interface NPC type (120-ohm or 75-ohm)

#### PA-Type xyz fields

The provisioning values of *x*, *y*, and *z* for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (*x*, *y* or *z*) provisioning value):

**Table 19-36. Provisioning values for  $x$** 

| $x$<br>value | CRC-4<br>Mode | Automatic<br>CRC-4 | Far-End<br>PM | NPC used as<br>Sync Source | TS0 Bit 5<br>used for SFI |
|--------------|---------------|--------------------|---------------|----------------------------|---------------------------|
| 0            | Y             |                    |               |                            |                           |
| 1            | Y             |                    | Y             |                            | Y                         |
| 2            | Y             |                    |               |                            | Y                         |
| 3            | Y             |                    | Y             |                            |                           |
| 4            | Y             |                    |               | Y                          |                           |
| 5            | Y             |                    | Y             | Y                          | Y                         |
| 6            | Y             |                    |               | Y                          | Y                         |
| 7            | Y             |                    | Y             | Y                          |                           |
| 8            |               | Y                  | Y             |                            |                           |
| 9            |               | Y                  | Y             |                            | Y                         |
| A            |               |                    |               |                            | Y                         |
| B            |               |                    |               |                            |                           |
| C            |               | Y                  | Y             | Y                          |                           |
| D            |               | Y                  | Y             | Y                          | Y                         |
| E            |               |                    |               | Y                          | Y                         |
| F            |               |                    |               | Y                          |                           |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.
4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.

\* Automatic CRC-4 is also known as CRC-4 Interworking.

5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 19-37. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the *abcd* bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the *abcd* bits will be transmitted transparently.

If the "AIS in TS16" option is selected (y value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (y values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For y values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (y=8) or Timeslot Channel Numbering (y=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (y=C) or as an unframed clear 2Mbit/s interface (y=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 19-38. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )

3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B**. **However**, for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for **z = 4 and 8**) or 480 ms (for **z = 5 and 9**) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

8. z values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options (z = 6-7 or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.
- [ii] RAI set in 2 ms
- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:
  - z=6 or A** hardware timing
  - z=7 or B** firmware timing (SFDT=2496 ms, CACT=624 ms)
- [iv] BER alarm level = DMA

**Specific Options for z= 6 or 7**

- [v] RBER alarm level = MI
- [vi] NFW bit 4=RBER:
  - DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.
  - DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

- [vii] RBER unalarmed
- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

[ix] To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of  $xyz$  for the PA type NPC.

**Table 19-39. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations | Explanation                                                                                                                                                                                                                        |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                              | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                              |                                                                                                                                                                                                                                    |
| CCz                              |                                                                                                                                                                                                                                    |
| DCz                              |                                                                                                                                                                                                                                    |
| 0Dz                              | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                           |
| 1Dz                              |                                                                                                                                                                                                                                    |
| 2Dz                              |                                                                                                                                                                                                                                    |
| 3Dz                              |                                                                                                                                                                                                                                    |
| 4Dz                              |                                                                                                                                                                                                                                    |
| 5Dz                              |                                                                                                                                                                                                                                    |
| 6Dz                              |                                                                                                                                                                                                                                    |
| 7Dz                              |                                                                                                                                                                                                                                    |
| 8Dz                              |                                                                                                                                                                                                                                    |
| 9Dz                              |                                                                                                                                                                                                                                    |
| ADz                              |                                                                                                                                                                                                                                    |
| CDz                              |                                                                                                                                                                                                                                    |
| DDz                              |                                                                                                                                                                                                                                    |
| EDz                              |                                                                                                                                                                                                                                    |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 19-40. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>xD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z*= value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.



**Table 19-41. Combinations of *x* and *z* Values**

| Invalid<br>xyz<br>Combinations | Explanation                                                                                                                                                                                                                                                       |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC                            | Use of NPC as Sync Source ( <i>x</i> 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( <i>z</i> value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |
| 5yC                            |                                                                                                                                                                                                                                                                   |
| 6yC                            |                                                                                                                                                                                                                                                                   |
| 7yC                            |                                                                                                                                                                                                                                                                   |
| CyC                            |                                                                                                                                                                                                                                                                   |
| DyC                            |                                                                                                                                                                                                                                                                   |
| EyC                            |                                                                                                                                                                                                                                                                   |
| FyC                            |                                                                                                                                                                                                                                                                   |

**IW** - Insertion Word

**pq** - Hexadecimal value of the DCC (disconnect code).

This value is inserted in the transmit direction on unassigned channels. DCC is not applicable to Clear-2Mbit NPCs, and is not printed. Although any 2-digit hexadecimal code may be specified, the following are the default codes:

*pq*      *Explanation*

D5      Unassigned Channel code (UAC), the default value for CEPT

**r** - Transmitted signaling information

*r*      *Explanation*

D      Unassigned Channel code (UAC), the default value for CEPT

**OOS** - Out-of-Service

**q** - Out-of-service indicator

*q*      *Explanation*

1      NPC is out-of-service

0      NPC is not out-of-service

**FAIL** - Failed

**r** - Failed indicator

*r*      *Explanation*

1      NPC is failed

0      NPC is not failed

**PEST** - Pested  
**s** - Pested indicator

*s*      *Explanation*

1      NPC is pested

0      NPC is not pested

**CRCST** - CRC Multiframe Status for NPCs with the automatic CRC mode  
**u** - CRC Multiframe status flag

*u*      *Explanation*

1      CRC Multiframe active

0      CRC Multiframe inactive

-      Not applicable, i.e., automatic CRC mode not provisioned

**FEPM** - Far End Performance Monitoring  
**v** - Far End Performance Monitoring provisioning flag

*v*      *Explanation*

1      FEPM provisioned

0      FEPM not provisioned

**SYNSRC** - Synchronization source  
**w** - SYNC source provisioning flag

*w*      *Explanation*

1      NPC used as SYNC source

0      NPC not used as SYNC source

-      Not applicable, i.e., the NPC cannot be SYNC source

**CAS** - Channel Associated Signaling  
**x** - CAS provisioning flag

*x*      *Explanation*

1      NPC with CAS

0      NPC with NSA

-      Not applicable, i.e., NPC is non-channelized

**LPBK** - Loopback status

**d** - Loopback direction flag

**t** - Loopback NPC state flag

*d Explanation*

F Facility loopback

E Equipment loopback

- Not applicable, i.e., no loopback

*t Explanation*

A AIS downstream/upstream with performance monitoring off

B AIS downstream/upstream with performance monitoring on

C Pass-through with performance monitoring off

T Pass-through with performance monitoring on

- Not applicable, i.e., no loopback

**THMOD** - Thresholding Mode

**z** - Thresholding mode flag

*z Explanation*

1 Thresholding is inhibited

0 Thresholding is allowed

**AISPROV**

- AIS provisioning

**ttt** - Provisioned AIS alarm level

The AIS PBA alarm is not provisioned for unframed clear (unchannelized) 2.048Mbit/s PAXDz type NPCs. Therefore, disregard the value of "ttt" for these NPCs, since the AIS alarm with the "ttt" alarm level will not be detected.

*ttt Explanation*

PMC Prompt maintenance alarm - critical

PMA Prompt maintenance alarm - major

DMA Deferred maintenance alarm - minor

MI Maintenance information

**ERB** - Errored block

**ee** - Percentage of errored blocks (1% through 91%, default is 81%)

The number of errored blocks, expressed as a percentage, used to declare a severely errored second (SES) or far-end SES (FSES).

**PBA** - Primary block alarm

**p** - PBA flag

| <i>p</i> | <i>Explanation</i> |
|----------|--------------------|
| 1        | PBA                |
| 0        | No PBA             |

The PBA flag indicates the presence of one or more of the failure conditions output in the same data line.

**LOS** - Loss of Signal

**LOF** - Loss of Frame

**AIS** - Alarm Indication Signal received in all 32 time slots.

**EER** - Excessive Error Rate

**RAI** - Remote Alarm Indication received in bit 3 of NFW of TS0.

**LMA** - Loss of Multiframe Alignment in CAS time slot 16.

**LCMA** - Loss of CRC4 Multiframe Alignment

**BER** - Bit Error Rate detected in received signal.

**A16** - AIS received in CAS time slot 16.

**RAIS** - Remote AIS detected in bit 4 of NFW of TS0.

**RBER** - Remote Bit Error Rate detected in bit 4 of NFW of TS0.

**RMA** - Remote Multiframe Alarm received in bit 6 of frame 0 of TS16.

**SFI** - Synchronization Failure Indication in bit 5 of NFW of TS0.

**PFW00F** - Pseudo Frame Word Out-Of-Frame for TS0 to non-TS0 cross-connect.

**FLCMA** - Far-end loss of CRC-4 Multiframe Alignment.

**RPSFI** - Remote Power Supply Failure Indicator

**y** - failure flag

*y*      *Explanation*

1      The failure condition exists

0      The failure condition does not exist

-      The detection of the failure condition is not provisioned

**Note:** The facility monitoring parameters accumulated by the NPC are described below. If the queried NPC cannot be accessed for some reason, for example because the Unit Controller is out of service, then the NPC's parameter count fields are printed as a string of dashes to indicate that the counts are not available. The parameter thresholds and options are still correctly output in this case.

In addition, some parameters are not applicable to all NPCs. Certain parameters may or may not be collected based on NPC type and whether the NPC carries a Clear or Channelized facility. In the cases where specific parameters do not apply to the queried NPC, the respective parameter count fields, threshold values and threshold options are all displayed as a string of dashes.

PA NPC performance monitoring parameters:

**CRC** - CRC Block Errors

**FRER** - Framing Errors

**OFS** - Out of Frame Seconds

**ES** - Errored Seconds

**SES** - Severely Errored Seconds

**CSS** - Controlled Slip Seconds

**CV** - Coding Violations

**UAS** - Unavailable Seconds

**UATC** - Unavailable Time Count

**MER** - Multiframe Errors

**FEBE** - Far End Block Errors

**FES** - Far End Errored Seconds

**FSES** - Far End Severely Errored Seconds

**FUAS** - Far End Unavailable Seconds

**Note that parameters FEBE, FES, FSES and FUAS are not applicable for the TH type NPCs.**

**aaaaaaaa**

- Daily CRC block error current counts.

**bbbbbbbb**

- Daily framing error current counts.

**cccc** - Daily out of frame seconds current counts.

**dddd** - Daily errored second current counts.

**eeee** - Daily severely errored second current counts.

**ffff** - Daily controlled slip second current counts.

**gggggggg**

- Daily coding violation current counts.

**hhhh** - Daily unavailable second current counts.

**iiii** - Daily unavailable time count current counts.

**jjjj** - Daily multiframe alignment error current counts.

**kkkkkk**

- Daily far-end block error current counts.

**llll** - Daily far-end errored second current counts.

**mmmm** - Daily far-end severely errored second threshold value.

**nnnn** - Daily far-end unavailable second current counts.

**aaaaaaaa**

- Daily CRC block error threshold value.

**bbbbbbbb**

- Daily framing error threshold value.

**cccc** - Daily out of frame seconds threshold value.

**dddd** - Daily errored second threshold value.

**eeee** - Daily severely errored second threshold value.

**ffff** - Daily controlled slip second threshold value.

**gggggggg**

- Daily coding violation threshold value.

**hhhh** - Daily unavailable second threshold value.

**iiii** - Daily unavailable time count threshold value.

**jjjj** - Daily multiframe alignment error threshold value.

**kkkkkk**

- Daily far-end block error threshold value.

**llll** - Daily far-end errored second threshold value.

**mmmm** - Daily far-end severely errored second threshold value.

**nnnn** - Daily far-end unavailable second threshold value.

- a** - Daily CRC block error threshold selection,
- b** - Daily framing error threshold selection,
- c** - Daily out of frame seconds threshold selection,
- d** - Daily errored second threshold selection,
- e** - Daily severely errored second threshold selection,
- f** - Daily controlled slip second threshold selection,
- g** - Daily coding violation threshold selection,
- h** - Daily unavailable second threshold selection,
- i** - Daily unavailable time count threshold selection,
- j** - Daily multiframe alignment error threshold selection,
- k** - Daily far-end path block error selection,
- l** - Daily far-end path second threshold selection,
- m** - Daily far-end severely errored second threshold selection,
- n** - Daily far-end unavailable second threshold selection,

**aaaaaa**

- 15-minute CRC block error current counts.

**bbbbbbb**

- 15-minute framing error current counts.

**ccc**

- 15-minute out of frame seconds current counts.

**ddd**

- 15-minute errored second current counts.

**eee**

- 15-minute severely errored second current counts.

**fff**

- 15-minute controlled slip second current counts.

**ggggggg**

- 15-minute coding violation current counts.

**hhh**

- 15-minute unavailable second current counts.

**ii**

- 15-minute unavailable time count current counts.

**jjj**

- 15-minute multiframe alignment error current counts.

**kkkkkk**

- 15-minute far-end block error current counts.

**lll**

- 15-minute far-end errored second current counts.

**mmm**

- 15-minute far-end severely errored second current counts.

**nnn**

- 15-minute far-end unavailable second current counts.

|                |                                                                  |
|----------------|------------------------------------------------------------------|
| <b>aaaaaa</b>  | - 15-minute CRC block error threshold value.                     |
| <b>bbbbbbb</b> | - 15-minute framing error threshold value.                       |
| <b>ccc</b>     | - 15-minute out of frame seconds threshold value.                |
| <b>ddd</b>     | - 15-minute errored second threshold value.                      |
| <b>eee</b>     | - 15-minute severely errored second threshold value.             |
| <b>fff</b>     | - 15-minute controlled slip second threshold value.              |
| <b>ggggggg</b> | - 15-minute coding violation threshold value.                    |
| <b>hhh</b>     | - 15-minute unavailable second threshold value.                  |
| <b>ii</b>      | - 15-minute unavailable time count threshold value.              |
| <b>jjj</b>     | - 15-minute multiframe alignment error threshold value.          |
| <b>kkkkkk</b>  | - 15-minute far-end block error threshold value.                 |
| <b>lll</b>     | - 15-minute far-end errored second threshold value.              |
| <b>mmm</b>     | - 15-minute far-end severely errored second threshold value.     |
| <b>nnn</b>     | - 15-minute far-end unavailable second threshold value.          |
| <b>a</b>       | - 15-minute CRC block error threshold selection,                 |
| <b>b</b>       | - 15-minute framing error threshold selection,                   |
| <b>c</b>       | - 15-minute out of frame seconds threshold selection,            |
| <b>d</b>       | - 15-minute errored second threshold selection,                  |
| <b>e</b>       | - 15-minute severely errored second threshold selection,         |
| <b>f</b>       | - 15-minute controlled slip second threshold selection,          |
| <b>g</b>       | - 15-minute coding violation threshold selection,                |
| <b>h</b>       | - 15-minute unavailable second threshold selection,              |
| <b>i</b>       | - 15-minute unavailable time count threshold selection,          |
| <b>j</b>       | - 15-minute multiframe alignment error threshold selection,      |
| <b>k</b>       | - 15-minute far-end path block error selection,                  |
| <b>l</b>       | - 15-minute far-end path second threshold selection,             |
| <b>m</b>       | - 15-minute far-end severely errored second threshold selection, |
| <b>n</b>       | - 15-minute far-end unavailable second threshold selection,      |

#### For PA type NPCs:

Depending on which interface functions are enabled by the provisioning values of xyz, some parameters may not be applicable. In this case the threshold value, the parameter count (if present in the message) and the selection value will appear as dashes ("-"). In the table below "N/A" indicates that a parameter is not applicable for the given value of x or y.

Also, if the selection value m=c has been chosen for a parameter, the threshold value and the parameter count (if present in the message) will appear as dashes.



| For PA Type NPCs |                                    |                                            |                             |                                 |
|------------------|------------------------------------|--------------------------------------------|-----------------------------|---------------------------------|
| Parameter        | CRC-4 Mode Disabled<br>(x=A,B,E,F) | Far-End PM Disabled<br>(x=0,2,4,6,A,B,E,F) | CAS Disabled<br>(y=8,9,C,D) | Unframed Clear 2Mbit/s<br>(y=D) |
| CRC              | N/A                                |                                            |                             | N/A                             |
| FRER             |                                    |                                            |                             | N/A                             |
| OFS              |                                    |                                            |                             | N/A                             |
| ES               |                                    |                                            |                             | N/A                             |
| SES              |                                    |                                            |                             | N/A                             |
| CSS              |                                    |                                            |                             |                                 |
| CV               |                                    |                                            |                             |                                 |
| UAS              |                                    |                                            |                             | N/A                             |
| UATC             |                                    |                                            |                             | N/A                             |
| MER              |                                    |                                            | N/A                         | N/A                             |
| FEBE             |                                    | N/A                                        |                             | N/A                             |
| FES              |                                    | N/A                                        |                             | N/A                             |
| FSES             |                                    | N/A                                        |                             | N/A                             |
| FUAS             |                                    | N/A                                        |                             | N/A                             |

**TS0** - Time Slot 0

Note that the TS0 output data field will be populated with dashes ("-") if the NPC is provisioned as a non-channelized NPC, that is, clear 2Mbit/s NPC.

**abcdefgh**

- Spare bits in TS0

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW  
if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

Valid values for a through h are described below:

| <i>Bit<br/>value</i> | <i>Explanation</i>                                                |
|----------------------|-------------------------------------------------------------------|
| <b>0</b>             | Transmitted bit set to binary "0"                                 |
| <b>1</b>             | Transmitted bit set to binary "1"                                 |
| <b>P</b>             | Pass-through: the received bit will be cross-connected unchanged. |

**Note:** A bit provisioned for pass-through may be cross-connected to a bit from another TS0.

The values displayed for 'abcdefgh' are those that the NPC is provisioned to transmit. The actually transmitted values may be different, depending on alarm states (see UTL::QRY,TS0,NPC).

**TS0M** - Time slot 0 bits monitored by NPC

The TS0 output data field will be populated with dashes ("-") if the NPC is provisioned as a non-channelized NPC, i.e., clear 2Mbit/s NPC.

**abcdefgh**

- Spare bits in TS0M

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

Valid values for bits **a** through **h** are described below:

| <i>Bit<br/>value</i> | <i>Explanation</i>                                                           |
|----------------------|------------------------------------------------------------------------------|
| <b>0</b>             | Do not monitor and therefore do not send a message if this bit changes state |
| <b>1</b>             | Monitor and therefore send a message if this bit changes state               |

**TS0MBOFL**

- TS0M buffer overflow

**v** - TS0M buffer overflow condition indicator

| <i>v</i> | <i>Explanation</i>                           |
|----------|----------------------------------------------|
| <b>0</b> | NPC is not in TS0M buffer overflow condition |
| <b>1</b> | NPC is in TS0M buffer overflow condition     |

**COND** - Condition

**kk** - Hexadecimal completion condition code

**cc** - Hexadecimal denial condition code

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b>                      |
|-----------|-----------------------------------------|
| <b>00</b> | <b>No conditions</b>                    |
| <b>04</b> | <b>Subject entity is out of service</b> |
| <b>11</b> | <b>UC is out of service</b>             |
| <b>12</b> | <b>UC is in service but failed</b>      |
| <b>14</b> | <b>FTMI is out of service</b>           |
| <b>0B</b> | <b>Invalid CEPT NPC</b>                 |
| <b>46</b> | <b>NPC Failed or Out of Service</b>     |

## **UTL, QRY, STATE, SYNC**

### **UTILITY QUERY**

#### **Explanation Of Command**

This message requests the state of the synchronizer.

#### **Command**

[I.56301]

UTL:FRM xy,SEQ ww:QRY,STATE,SYNC!

#### **Completion Message**

[O.56301]

M hh:mm:ss xy,ww n UTL QRY STATE SYNC 4 LN MSG:  
CFR <arch> STRATUM <stratum> MODE <pllop0>,<pllop1> \  
SOURCE <source0>,<source1>  
IN SERVICE DPLL a b TB c d SOURCE e f  
ACTIVE LINK gh ij PLL TIMING ERROR k l COMPL

#### **Denial Message**

[O.56301.01]

M hh:mm:ss xy,ww n UTL QRY STATE SYNC COND cc DNY

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

|                |                                            |
|----------------|--------------------------------------------|
| <b>SYNC</b>    | - Synchronizer                             |
| <b>CFR</b>     | - Configure                                |
| <b>arch</b>    | - {MASTER   SLAVED}                        |
| <b>STRATUM</b> | - Stratum                                  |
| <b>stratum</b> | - {STR2   STR3   CEPT TOLL   CEPT LOCAL}   |
| <b>MODE</b>    | - Mode                                     |
| <b>pllop0</b>  | - {HOLDOVER   FAST   NORMAL} for side 0    |
| <b>pllop1</b>  | - {HOLDOVER   FAST   NORMAL} for side 1    |
| <b>SOURCE</b>  | - Source                                   |
| <b>source0</b> | - {HOLDOVER   TLI   MATE   CRO} for side 0 |
| <b>source1</b> | - {HOLDOVER   TLI   MATE   CRO} for side 1 |
| <b>DPLL</b>    | - Digital phase-locked loop                |
| <b>a</b>       | - Digital Phase-Locked Loop, side 0        |
| <b>b</b>       | - Digital Phase-Locked Loop, side 1        |
| <b>a</b>       |                                            |
| <b>b</b>       | <i>Explanation</i>                         |
| 0              | Out of service                             |
| 1              | In service                                 |
| <b>TB</b>      | - Time base                                |
| <b>c</b>       | - Time Base, side 0                        |
| <b>d</b>       | - Time Base, side 1                        |
| <b>c</b>       |                                            |
| <b>d</b>       | <i>Explanation</i>                         |
| 0              | Out of service                             |
| 1              | In service                                 |

**SOURCE** - Timing source

**e** - Timing Source status, side 0

**f** - Timing Source status, side 1

**e**

**f** *Explanation*

0 No SSP on side 1 is in service

1 At least one SSP on side 1 is in service

**gh,**

**ij** - Active SSP number

These variables will be output as "--" if no active SSP is present for SYNC 0 and SYNC 1, respectively

**g, i** - Timing link interface number of active SSP

**h, j** - Synchronizer synchronization port (SSP) number

**PLL** - Phase locked loop

**k** - Phase-locked loop timing error, side 0

**l** - Phase-locked loop timing error, side 1

**k**

**l** *Explanation*

0 No errors

1 PLL error exists

**cc** - Hexadecimal condition code

**cc** *Explanation*

**16** SYNC TB is not equipped

---

## UTL, QRY, STR, LINK

---

### QUERY LINK STATUS AND PROTOCOL

#### Explanation Of Command

---

This message queries the status and protocol parameters of an administrative link, including all virtual circuits of a X.25 link.

#### Command

---

[I.55113]

UTL:FRM xy,SEQ ww:QRY,STR,LINK j[mm] [-jnn]!

#### Completion Message

---

[O.55113]

M hh:mm:ss xy,ww n[vv] UTL QRY STR LINK j PTCOL S 2 LN MSG:  
STATUS bb e k q x m s hh COMPL

**Note:** The above message applies to the Snider protocol.

[O.55113]

M hh:mm:ss xy,ww n[vv] UTL QRY STR LINK j PTCOL X 4 LN MSG:  
STATUS bb - k - - m xxxx hh  
LNKL b eee ggg aa {A|B}  
PKTL iii nn v ppss gghh COMPL

**Note:** The above message applies to the X.25 protocol when virtual circuit is not specified.

[O.55113]

M hh:mm:ss xy,ww n[vv] UTL QRY STR LINK jmm PTCOL X 4 LN MSG:  
STATUS bb - k - - m s hh  
LNKL b eee ggg aa {A|B}  
PKTL c ddd iii jjj kkk lll mmm nn p q r v ppss gghh COMPL

**Note:** The above message applies to the X.25 protocol when a single virtual circuit is specified.

[O.55113]

M hh:mm:ss xy,ww n[vv] UTL QRY STR LINK jmm PTCOL X 4 LN MSG:  
STATUS bb - k - - m s hh  
LNKL b eee ggg aa {A|B}  
PKTL c ddd iii jjj kkk lll mmm nn p q r v ppss gghh {EOM|COMPL}

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY STR LINK jnn PTCOL X 4 LN MSG:  
STATUS bb - k - - m s hh  
LNKL b eee ggg aa {A|B}  
PKTL c ddd iii jjj kkk lll mmm nn p q r v ppss gghh COMPL

**Note:** The above message applies to the X.25 protocol when a range of virtual circuits is specified.

[O.55113]

M hh:mm:ss xy,ww n[vv] UTL QRY STR LINK j PTCOL M 2 LN MSG:  
STATUS bb - k - - m s hh COMPL

**Note:** The above message applies to the Modified Snider protocol.

[O.55113]

M hh:mm:ss xy,ww n[vv] UTL QRY STR LINK j PTCOL T e LN MSG:  
STATUS bb - k - - m s hh [COMPL]  
[APPL {ASCS|ASCD} aa ttt [COMPL]]  
[APPL PM aa ttt [COMPL]]

**Note:** The above message applies to the TABS protocol.

## Denial Message

---

[O.55113.01]

M hh:mm:ss xy,ww n[vv] UTL QRY STR LINK j[mm][-jnn] COND cc DNY



## Autonomous Message

Not applicable.

## Explanation Of Parameters

|               |                                                                                             |
|---------------|---------------------------------------------------------------------------------------------|
| <b>STR</b>    | - Status register                                                                           |
| <b>LINK</b>   | - Link                                                                                      |
| <b>j [mm]</b> | - Administrative link number                                                                |
| <b>j nn</b>   | - Administrative link number                                                                |
| <b>j</b>      | - Physical link number (1 through 6)                                                        |
| <b>mm</b>     | - First virtual circuit (VC) number of the VC range mm-nn (01 through 16, j must be 5 or 6) |
| <b>nn</b>     | - Last virtual circuit (VC) number of the VC range mm-nn (01 through 16, j must be 5 or 6)  |
| <b>PTCOL</b>  | - Protocol                                                                                  |
| <b>S</b>      | - Snider                                                                                    |
| <b>X</b>      | - X.25                                                                                      |
| <b>M</b>      | - Modified Snider                                                                           |
| <b>T</b>      | - TABS                                                                                      |
| <b>e</b>      | - Number of lines in the message (2, 3, or 4)                                               |
| <b>STATUS</b> | - Status                                                                                    |
| <b>bb</b>     | - Baud rate. For the physical link j alarm class.                                           |
| <b>bb</b>     | <i>Baud rate</i>                                                                            |
| 03            | 300 b/s                                                                                     |
| 06            | 600 b/s                                                                                     |
| 12            | 1200 b/s (default for CIU link)                                                             |
| 24            | 2400 b/s                                                                                    |
| 48            | 4800 b/s                                                                                    |
| 96            | 9600 b/s                                                                                    |
| 00            | X.25 links                                                                                  |

**Note:** X.25 links are set up to receive external timing only.

|          |                               |
|----------|-------------------------------|
| <b>e</b> | - Backspace character echo    |
| <b>e</b> | <i>Explanation</i>            |
| 0        | Backspace is echoed (default) |
| 1        | Backspace is not echoed       |

|          |                                                 |
|----------|-------------------------------------------------|
| <b>k</b> | - Failure of the X.25 link                      |
| <b>k</b> | <i>Explanation</i>                              |
| 1        | Minor alarm (default)                           |
| 2        | Major alarm                                     |
| <b>q</b> | - ENQ/ACK Protocol Enable/Disable Control       |
| <b>q</b> | <i>ENQ/ACK Protocol State</i>                   |
| 0        | Disabled                                        |
| 1        | Enabled (default)                               |
| <b>x</b> | - XON/XOFF Protocol Enable/Disable Control      |
| <b>x</b> | <i>XON/XOFF Protocol State</i>                  |
| 0        | Disabled (default)                              |
| 1        | Enabled                                         |
| <b>m</b> | - Mode                                          |
| <b>m</b> | <i>Status</i>                                   |
| 0        | Idle                                            |
| 1        | Input message in progress                       |
| 2        | Output message in progress                      |
| <b>s</b> | - Status                                        |
|          | This status applies to the following protocols: |
|          | Snider                                          |
|          | Modified Snider                                 |
|          | X.25 (Single or Range of Virtual Circuits)      |
|          | TABS                                            |
| <b>s</b> | <i>Explanation</i>                              |
| 0        | In service                                      |
| 1        | Out-of-service (OOS)                            |

**xxxx** - Virtual circuit (VC) status (hexadecimal). Range 0000 through FFFF.

This status applies to the X.25 protocol. A four-digit hexadecimal number will be output in the protocol field whenever a specific VC number is not entered. Each digit represents four bits and each bit is associated with a particular VC. The four hexadecimal digits therefore represent 16 VCs. The bits are assigned to VCs from right to left in increasing order of VC number. That is, bit 1 represents VC 1 and bit 16 represents virtual circuit 16. See below where VC16 marks the position of the bit representing virtual circuit 16 and VC01 similarly marks the position of the bit representing VC 1.

|             |                               |
|-------------|-------------------------------|
| <b>hex</b>  | <b>binary</b>                 |
| <b>xxxx</b> | <b>bbbbbbbbbbbbbbbb</b>       |
|             | ^ ^                           |
|             | <b>VC16</b> <b>&lt;--VC01</b> |

The interpretation of the value of a particular bit is given in the explanation of variable s above. Some specific examples of the output are interpreted below.

| xxxx | binary expansion | Explanation                             |
|------|------------------|-----------------------------------------|
| 0000 | 0000000000000000 | All 16 VCs in service                   |
| 0001 | 0000000000000001 | VC 1 OOS, all others in service         |
| 0002 | 0000000000000010 | VC 2 OOS, all others in service         |
| 8004 | 1000000000000100 | VCs 16 and 3 OOS, all others in service |
| FFFF | 1111111111111111 | All VCs are OOS                         |

**hh** - Hardware status

| <b>hh</b> | <i>Explanation</i>                           |
|-----------|----------------------------------------------|
| 03        | Link hardware in service                     |
| 04        | Link hardware out of service                 |
| 05        | Link hardware pested for autonomous restoral |

|             |                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------|
| <b>LNKL</b> | - Link Layer                                                                                           |
| <b>b</b>    | - Maximum number of outstanding I frames (1 through 7). Default is 7                                   |
| <b>eee</b>  | - Acknowledgment timer (2 through 20 seconds). Default is 3 seconds                                    |
| <b>ggg</b>  | - Disconnect (or Idle channel) timer (4 through 120 seconds). Default is 26 seconds                    |
| <b>aa</b>   | - Maximum number of frame transmissions (2 through 16) (including original transmission). Default is 7 |
| <b>A</b>    | - Data link layer frame address A                                                                      |
| <b>B</b>    | - Data link layer frame address B                                                                      |
| <b>PKTL</b> | - Packet layer                                                                                         |
| <b>c</b>    | - Window size (1 through 7). Default is 2                                                              |
| <b>ddd</b>  | - Packet size P (ddd) can be 128, 256, or 512 octets. Default is 128 octets                            |
| <b>iii</b>  | - Restart request response timer (10 through 180 seconds). Default is 180 seconds                      |
| <b>jjj</b>  | - Reset request response timer (10 through 180 seconds). Default is 180 seconds                        |
| <b>kkk</b>  | - Disconnect (or Idle channel) timer (10 through 180 seconds). Default is 180 seconds                  |
| <b>lll</b>  | - Data packet acknowledgement timer (10 through 200 seconds). Default is 200 seconds                   |
| <b>mmm</b>  | - Interrupt response timer (10 through 180 seconds). Default is 180 seconds                            |
| <b>nn</b>   | - Restart request retransmission counter (1 through 10). Default is 1                                  |
| <b>p</b>    | - Reset request retransmission counter (1 through 3). Default is 1                                     |
| <b>q</b>    | - Clear request retransmission counter (1 through 10). Default is 1                                    |
| <b>r</b>    | - Data packet retransmission counter (0 through 3). Default is 0                                       |

**ppss** - Virtual circuit range

**pp** - Range of permanent virtual circuits (PVCs).

**ss** - Range of switched virtual circuits (SVCs).

The sum of the number of PVCs and SVCs must be equal to 16.

Table 1 shows the default values for these fields.

Table 1 and Table 2 show the acceptable values for these fields, allowing for an LCN numbering scheme of 00-255.

TABLE 1

| "pp" | "ss" | Number<br>of PVCs | Number<br>of SVCs | Starting LCN for first<br>PVC Channel | Starting LCN for first<br>SVC Channel |
|------|------|-------------------|-------------------|---------------------------------------|---------------------------------------|
| 00   | 16   | 00                | 16                | --                                    | 01                                    |
| 01   | 15   | 01                | 15                | 01                                    | 02                                    |
| 02   | 14   | 02                | 14                | 01                                    | 03                                    |
| 03   | 13   | 03                | 13                | 01                                    | 04                                    |
| 04   | 12   | 04                | 12                | 01                                    | 05                                    |
| 05   | 11   | 05                | 11                | 01                                    | 06                                    |
| 06   | 10   | 06                | 10                | 01                                    | 07                                    |
| 07   | 09   | 07                | 09                | 01                                    | 08                                    |
| 08   | 08   | 08                | 08                | 01                                    | 09                                    |
| 09   | 07   | 09                | 07                | 01                                    | 10                                    |
| 10   | 06   | 10                | 06                | 01                                    | 11                                    |
| 11   | 05   | 11                | 05                | 01                                    | 12                                    |
| 12   | 04   | 12                | 04                | 01                                    | 13                                    |
| 13   | 03   | 13                | 03                | 01                                    | 14                                    |
| 14   | 02   | 14                | 02                | 01                                    | 15                                    |
| 15   | 01   | 15                | 01                | 01                                    | 16                                    |
| 16   | 00   | 16                | 00                | 01                                    | --                                    |

TABLE 2

| "pp"                | "ss" | Number<br>of PVCs | Number<br>of SVCs | Starting LCN for first<br>PVC Channel | Starting LCN for first<br>SVC Channel |
|---------------------|------|-------------------|-------------------|---------------------------------------|---------------------------------------|
| $0 \leq nn \leq 48$ |      |                   |                   |                                       |                                       |
| 20                  | nn   | 00                | 16                | --                                    | nn                                    |
| 21                  | nn   | 01                | 15                | nn                                    | nn+1                                  |
| 22                  | nn   | 02                | 14                | nn                                    | nn+2                                  |
| 23                  | nn   | 03                | 13                | nn                                    | nn+3                                  |
| 24                  | nn   | 04                | 12                | nn                                    | nn+4                                  |
| 25                  | nn   | 05                | 11                | nn                                    | nn+5                                  |
| 26                  | nn   | 06                | 10                | nn                                    | nn+6                                  |
| 27                  | nn   | 07                | 09                | nn                                    | nn+7                                  |
| 28                  | nn   | 08                | 08                | nn                                    | nn+8                                  |
| 29                  | nn   | 09                | 07                | nn                                    | nn+9                                  |
| 30                  | nn   | 10                | 06                | nn                                    | nn+10                                 |
| 31                  | nn   | 11                | 05                | nn                                    | nn+11                                 |
| 32                  | nn   | 12                | 04                | nn                                    | nn+12                                 |
| 33                  | nn   | 13                | 03                | nn                                    | nn+13                                 |
| 34                  | nn   | 14                | 02                | nn                                    | nn+14                                 |
| 35                  | nn   | 15                | 01                | nn                                    | nn+15                                 |
| 36                  | nn   | 16                | 00                | nn                                    | --                                    |
| 40                  | nn   | 00                | 16                | --                                    | nn+64                                 |
| 41                  | nn   | 01                | 15                | nn+64                                 | nn+65                                 |
| 42                  | nn   | 02                | 14                | nn+64                                 | nn+66                                 |
| 43                  | nn   | 03                | 13                | nn+64                                 | nn+67                                 |
| 44                  | nn   | 04                | 12                | nn+64                                 | nn+68                                 |
| 45                  | nn   | 05                | 11                | nn+64                                 | nn+69                                 |
| 46                  | nn   | 06                | 10                | nn+64                                 | nn+70                                 |
| 47                  | nn   | 07                | 09                | nn+64                                 | nn+71                                 |
| 48                  | nn   | 08                | 08                | nn+64                                 | nn+72                                 |
| 49                  | nn   | 09                | 07                | nn+64                                 | nn+73                                 |
| 50                  | nn   | 10                | 06                | nn+64                                 | nn+74                                 |
| 51                  | nn   | 11                | 05                | nn+64                                 | nn+75                                 |
| 52                  | nn   | 12                | 04                | nn+64                                 | nn+76                                 |
| 53                  | nn   | 13                | 03                | nn+64                                 | nn+77                                 |
| 54                  | nn   | 14                | 02                | nn+64                                 | nn+78                                 |
| 55                  | nn   | 15                | 01                | nn+64                                 | nn+79                                 |
| 56                  | nn   | 16                | 00                | nn+64                                 | --                                    |

TABLE 2 (continued)

| "pp"                | "ss" | Number<br>of PVCs | Number<br>of SVCs | Starting LCN for first<br>PVC Channel | Starting LCN for first<br>SVC Channel |
|---------------------|------|-------------------|-------------------|---------------------------------------|---------------------------------------|
| $0 \leq nn \leq 48$ |      |                   |                   |                                       |                                       |
| 60                  | nn   | 00                | 16                | --                                    | nn+128                                |
| 61                  | nn   | 01                | 15                | nn+128                                | nn+129                                |
| 62                  | nn   | 02                | 14                | nn+128                                | nn+130                                |
| 63                  | nn   | 03                | 13                | nn+128                                | nn+131                                |
| 64                  | nn   | 04                | 12                | nn+128                                | nn+132                                |
| 65                  | nn   | 05                | 11                | nn+128                                | nn+133                                |
| 66                  | nn   | 06                | 10                | nn+128                                | nn+134                                |
| 67                  | nn   | 07                | 09                | nn+128                                | nn+135                                |
| 68                  | nn   | 08                | 08                | nn+128                                | nn+136                                |
| 69                  | nn   | 09                | 07                | nn+128                                | nn+137                                |
| 70                  | nn   | 10                | 06                | nn+128                                | nn+138                                |
| 71                  | nn   | 11                | 05                | nn+128                                | nn+139                                |
| 72                  | nn   | 12                | 04                | nn+128                                | nn+140                                |
| 73                  | nn   | 13                | 03                | nn+128                                | nn+141                                |
| 74                  | nn   | 14                | 02                | nn+128                                | nn+142                                |
| 75                  | nn   | 15                | 01                | nn+128                                | nn+143                                |
| 76                  | nn   | 16                | 00                | nn+128                                | --                                    |
| 80                  | nn   | 00                | 16                | --                                    | nn+192                                |
| 81                  | nn   | 01                | 15                | nn+192                                | nn+193                                |
| 82                  | nn   | 02                | 14                | nn+192                                | nn+194                                |
| 83                  | nn   | 03                | 13                | nn+192                                | nn+195                                |
| 84                  | nn   | 04                | 12                | nn+192                                | nn+196                                |
| 85                  | nn   | 05                | 11                | nn+192                                | nn+197                                |
| 86                  | nn   | 06                | 10                | nn+192                                | nn+198                                |
| 87                  | nn   | 07                | 09                | nn+192                                | nn+199                                |
| 88                  | nn   | 08                | 08                | nn+192                                | nn+200                                |
| 89                  | nn   | 09                | 07                | nn+192                                | nn+201                                |
| 90                  | nn   | 10                | 06                | nn+192                                | nn+202                                |
| 91                  | nn   | 11                | 05                | nn+192                                | nn+203                                |
| 92                  | nn   | 12                | 04                | nn+192                                | nn+204                                |
| 93                  | nn   | 13                | 03                | nn+192                                | nn+205                                |
| 94                  | nn   | 14                | 02                | nn+192                                | nn+206                                |
| 95                  | nn   | 15                | 01                | nn+192                                | nn+207                                |
| 96                  | nn   | 16                | 00                | nn+192                                | --                                    |

**gghh** - Virtual circuit group number

**gg** - Group number of all PVCs

**hh** - Group number for all SVCs (00 through 15)

**APPL** - Application layer

**ASCS** - Alarm surveillance and control, summary

**ASCD** - Alarm surveillance and control, detailed

**PM** - Performance monitoring

**aa** - Layer 2 address

**ttt** - Polling time

**DBIT** - D-bit

**v** - X.25 d-bit setting

**v**      *Explanation*

0      Off (unset) (acknowledgement done from local DTE). Default

1      On (set) (acknowledgement done from remote DTE)

DBIT is valid only on a per link basis and will be denied on an individual virtual circuit.

**COND** - Condition

**cc** - Hexadecimal condition code

**cc**      *Explanation*

**E1**      Virtual circuit is not specified for X.25 link

**E2**      Invalid link number specified



## **UTL,QRY,STR,SYNC**

### **UTILITY QUERY, SYNCHRONIZER**

#### **Explanation Of Command**

This message requests a printout on the 12-byte status register and configuration of a synchronizer.

#### **Command**

[I.55201]

UTL:FRM xy,SEQ ww:QRY,STR,SYNC a!

#### **Completion Message**

[O.55201]

M hh:mm:ss xy,ww n[vv] UTL QRY STR SYNC a 3 LN MSG:  
<byte01> <byte02> <byte03> <byte04> <byte05> <byte06>  
<byte07> <byte08> <byte09> <byte10> <byte11> <byte12> COMPL

#### **Denial Message**

[O.55201.01]

M hh:mm:ss xy,ww n[vv] UTL QRY STR SYNC a COND cc DNY

#### **Autonomous Message**

Not applicable.

## **Explanation Of Parameters**

---

**STR** - Status register

**SYNC** - Synchronizer

**a** - Synchronizer number (0 or 1)

**byte01,**

...,

**byte12** - Status register data bytes

Each data byte contains eight bits. These bits are labeled, in the order they appear in the output, as abcdefgh. These bits are set for the following conditions:

byte01

- a** - Unused by craft
- b** - Sync core hardware fault
- c** - Mate sync is bad or declared out of service
- d** - Time base is bad or missing
- e** - TLI 1 in service without errors
- f** - TLI 2 in service without errors
- g** - TLI 3 in service without errors
- h** - TLI 4 in service without errors

byte02

- a** - Timing Extractor Timing link 1 is in service and good
- b** - Timing Extractor Timing link 2 is in service and good
- c** - Timing Extractor Timing link 3 is in service and good
- d** - Timing Extractor Timing link 4 is in service and good
- e** - Timing Extractor Timing link 5 is in service and good
- f** - Timing Extractor Timing link 6 is in service and good
- g** - Timing Extractor Timing link 7 is in service and good
- h** - Timing Extractor Timing link 8 is in service and good

byte03

- a** - Sync has been reset and awaits configuration
- b** - Hardware error on DPLL pack. See byte06 and byte07
- c** - Time base has an error, see byte09
- d** - PLL symmetry error, see byte08
- e** - Problem with cross-couple timing. See byte10 and byte11
- f** - Problem with CRO timing. See byte12
- g** - Unused bit
- h** - Unused bit

**byte04** - Sync configuration data

**ab** - Sync architecture:

| <i>ab</i> | <i>Explanation</i>                    |
|-----------|---------------------------------------|
| 00        | Sync is slave in master-slave system  |
| 01        | Sync is master in master-slave system |

**cde** - Operational stratum

| <i>cde</i> | <i>Explanation</i>  |
|------------|---------------------|
| 000        | Domestic stratum 3  |
| 001        | CEPT local exchange |
| 010        | CEPT toll exchange  |
| 011        | Domestic stratum 2  |

**fg** - PLL locking mode

| <i>fg</i> | <i>Explanation</i> |
|-----------|--------------------|
| 00        | Normal             |
| 01        | Fast               |
| 10        | Holdover           |

**h** - Unused by craft

- byte05** - Sync configuration data
- ab** - Source of timing to which Sync is presently locking
- | <i>ab</i> | <i>Explanation</i>               |
|-----------|----------------------------------|
| 00        | Holdover (Not locking)           |
| 01        | Timing link(s)                   |
| 10        | Cross couple                     |
| 11        | CRO (Clock Reference Oscillator) |
- cde** - Active Link: Which timing link the Sync is locking to (This field is meaningful only if byte04 ab = 00 and byte05 ab = 01)
- | <i>cde</i> | <i>Explanation</i> |
|------------|--------------------|
| 000        | TLI 1, Link 0      |
| 001        | TLI 1, Link 1      |
| 010        | TLI 2, Link 0      |
| 011        | TLI 2, Link 1      |
| 100        | TLI 3, Link 0      |
| 101        | TLI 3, Link 1      |
| 110        | TLI 4, Link 0      |
| 111        | TLI 4, Link 1      |
- f** - Unused by craft
- g** - Unused by craft
- h** - Unused by craft
- byte06** - DPLL Hardware status. If any bit equals 1, a DPLL hardware failure is indicated
- a** - ROM error
- b** - RAM error
- c** - Phase/Frequency latch error
- d** - Loss of energy on 2.048 MHz output of frequency synthesizer
- e** - Loss of energy on 2.048 MHz output of phase shifter
- f** - Loss of energy on generated sync pulse
- g** - Loss of energy on time base strobe signal
- h** - Unused by craft
- byte07** - DPLL Hardware status. If any bit equals 1, a DPLL hardware failure is indicated
- a** - Interrupt controller error
- b** - Interrupt holding register error
- c** - UART error
- d** - Control data readable output latch error
- e-h** - Unused bits

- byte08** - PLL status
- a** - PLL end of range indicator
  - b** - PLL excessive range error
  - c** - PLL real time violation
  - d** - Fast start timeout
  - e-h** - Unused bits
- byte09** - Time base status
- a** - Loss of energy for time base signal
  - b** - Time base I/O error
  - c** - Time base oscillator has drifted beyond its specified accuracy limit. (This condition is monitored only when the sync is the master timing source)
  - d** - Time base oven is cold. It must warm up for accurate holdover
  - e** - Unused bit
  - fgh** - Stratum of oscillator:
- | <i>fgh</i> | <i>Explanation</i>        |
|------------|---------------------------|
| 000        | TBS3, Domestic stratum 3  |
| 001        | TBCL, CEPT local exchange |
| 010        | TBCT, CEPT toll exchange  |
| 011        | TBS2, Domestic stratum 2  |
- byte10** - Cross Couple Status
- a** - Mate sync declared out-of-service by MC
  - b** - Mate sync hardware error
  - c** - Loss of energy on the 1 ms cross couple interrupt flag
  - d** - Loss of energy on the 30 ms cross couple interrupt flag
  - e** - Cross couple fast lock not working
  - f** - Sync's time base drifting with respect to CRO in master mode
  - g** - Cross couple timing problem
  - h** - Cross couple timing problem - mate sync's timing suspected
- byte11** - Cross couple status
- a** - Sync clocks not aligned, cross couple network may alarm
  - b-h** - Unused bits

**byte12** - CRO status

The following bits are important only when the sync is a master timing source:

- a** - Timing from CRO bad or declared out of service by MC
- b** - CRO declared out of service by the MC
- c** - Loss of energy on the CRO input signal flag
- d** - In master mode, CRO drifting with respect to sync time bases
- e-h** - Unused bits

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 02** Subject entity is not equipped
- 04** Subject entity is out of service
- 05** Subject entity is pested
- 16** SYNC TB is not equipped
- 17** SYNC is out of service
- C8** Sync pack denied command

## **UTL,QRY,STR,SYNC,TLI**

### **UTILITY QUERY, TIMING LINK INTERFACE**

#### **Explanation Of Command**

This message requests a printout of the 3-byte status register of a timing link interface (TLI) for a specific synchronizer.

#### **Command**

[I.55311]

UTL:FRM xy,SEQ ww:QRY,STR,SYNC a,TLI m!

#### **Completion Message**

[O.55311]

M hh:mm:ss xy,ww n[vv] UTL QRY STR SYNC a TLI m <byte01> \  
<byte02> <byte03> COMPL

#### **Denial Message**

[O.55311.01]

M hh:mm:ss xy,ww n[vv] UTL QRY STR SYNC a TLI m COND cc DNY

#### **Autonomous Message**

Not applicable.

### **Explanation Of Parameters**

---

**STR** - Status register

**SYNC** - Synchronizer

**a** - Synchronizer number (0 or 1)

**TLI** - Timing link interface

**m** - Timing link interface number (1 through 4)

**byte01,**

...,

**byte03** - Status register data bytes

Each data byte contains eight bits: abcdefgh. These bits are set for the following conditions:

**byte01** - Overall TLI type and configuration

abcd TLI type

0000 TXB1, 1.544 Mb/s DS1 Extractor

0001 TXB2, 2.048 Mb/s Primary Block (120 OHM) Extractor

0010 TXCC, Composite Clock Extractor

0011 TXUC, High Level Unipolar Clock Extractor

0100 TXRF, Basic System Reference Frequency and  
CEPT 2.048 MHz Sine (75 OHM) Extractor

0101 TDCC, 64 kb/s Composite Clock Distributor

0110 TDS2, 2.048 MHz Sine Distributor

0111 TXCP, CEPT 2.048 MHz Sine (120 Ohm) Extractor

**e** - TLI is grown

**f** - TLI out-of-service

**g** - TLI hardware error

**h** - Unused bit



**byte02** - TLI phase detector and timing monitor circuitry status

- a** - Hardware energy detector on the time base strobe signal has failed
- b** - Loss of timebase strobe signal coming from the DPLL
- c** - Hardware energy detector on the CRO signal has failed
- d** - Loss of reference clock signal coming from the CRO

**Note:** Bits c and d have meaning only for TDCC and TDS2 TLIs and when the SYNC is a master timing source.

For TXB1 or TXB2 TLIs:

- e** - Framer chip on side 0 has failed
- f** - Framer chip on side 1 has failed

For TXCC TLIs:

- e** - Out-of-lock detector on side 0 has failed
- f** - Out-of-lock detector on side 1 has failed

**Note:** Bits e and f have meaning only for TE TLIs

**byte03** - Hardware status and diagnostic results for Timing Distributor (TD) type TLI only

**cc** - Hexadecimal condition code

**cc** *Explanation*

- 05** Subject entity is pested
- 16** SYNC TB is not equipped
- 17** SYNC is out of service
- A5** (Timing Distributor) TLI is not equipped
- C8** Sync pack denied command

## **UTL,QRY,STR,SYNC,TLI,SSP**

### **UTILITY QUERY SSP**

#### **Explanation Of Command**

This message requests a printout of the 5-byte status register for a select synchronizer port (SSP). The port is located on a timing link interface (TLI) circuit pack of a synchronizer.

#### **Command**

[I.55321]

UTL:FRM xy,SEQ ww:QRY,STR,SYNC a,TLI m,SSP b!

#### **Completion Message**

#### **Nonhierarchical**

[O.55321]

M hh:mm:ss xy,ww n[vv] UTL QRY STR SYNC a TLI m SSP b \  
[NPC abc] 2 LN MSG:  
<byte1> <byte2> <byte3> <byte4> <byte5> COMPL

#### **Hierarchical**

[O.55321]

M hh:mm:ss xy,ww n[vv] UTL QRY STR SYNC a TLI m SSP b \  
[NPC uvmnp] 2 LN MSG  
<byte1> <byte2> <byte3> <byte4> <byte5> COMPL

### Denial Message

[O.55321.01]

M hh:mm:ss xy,ww n[vv] UTL QRY STR SYNC a TLI m SSP b \\  
COND cc DNY

### Autonomous Message

Not applicable.

### Explanation Of Parameters

**STR** - Status register

**SYNC** - Synchronizer

**a** - Synchronizer number (0 or 1)

**TLI** - Timing link interface

**m** - Timing link interface number (1 through 4)

**SSP** - Synchronization Sync Port

**b** - Synchronization Sync Port number (0 or 1)

**NPC** - Network processing circuit

**abc** - Nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PB and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1  | Unit<br>2  |
|------------|------------|
| <b>NPC</b> | <b>NPC</b> |
| <b>030</b> | <b>190</b> |
| <b>032</b> | <b>192</b> |
| <b>070</b> | <b>230</b> |
| <b>072</b> | <b>232</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1 | Unit<br>2 |
|-----------|-----------|
| NPC       | NPC       |
| 0030      | 0190      |
| 0032      | 0192      |
| 0070      | 0230      |
| 0072      | 0232      |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

PB and PC NPC numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit   | Module | NPC    |
|--------|--------|--------|
| 01, 02 | 1, 2   | 30, 32 |

**byte1, ... byte5**  
- Status register data bytes

Each data byte contains eight bits: abcdefgh. These bits are set for the following conditions:

**byte1** - Overall status and configuration

- a** - Timing link is grown
- b** - Timing link out-of-service
- c** - Timing link out-of-service; Timing signal from the link has serious enough errors that it will not be accepted as a source of reference clock
- d** - TE TLI hardware problem; link will not be accepted as a source of reference clock
- e-h** - Undefined

**byte2** - Timing link priority field. This field ranges from a value of 1 (highest) to 8 (lowest) for master/slave synchronization networks and affects the choice of a link as the active timing source.

- byte3** - Characteristics of the timing source
- abc** - Framing format (TXB1 or TXB2 TE TLIs only)
    - For TXB1 TE TLIs:
      - 000 D4
      - 001 ESF
      - 010 DDS
    - For TXB2 TE TLIs:
      - 000 CCS
      - 001 ERSM
      - 010 CAS0
      - 011 CAS1
  - de** - Line format (TXB1 or TXB2 TE TLIs only)
    - For TXB1 TE TLIs:
      - 00 Bipolar
      - 01 B8ZS
    - For TXB2 TE TLIs:
      - 00 AMI
      - 01 HDB3
  - fgh** - Frequency (TXUC TLIs only)
    - 000 512 kHz
    - 001 1.000 MHz
    - 010 1.544 MHz
    - 011 2.048 MHz
    - 100 5.000 MHz
- byte4** - Timing and line error information on the reference signal
- a** - (TXB1, TXB2, or TXCC TE TLIs only) Carrier failure alarm/loss of signal flag
  - b** - Timing signal loss of energy
  - c** - (TXUC TE TLIs only) Autobaud failure flag: the frequency of the incoming unipolar clock is not one of the possible frequencies specified in <byte3, ghi>
  - d** - Not used
  - e** - Excessive jitter flag
  - f** - Phase step flag
  - g-h** - Not used
- byte5** - Timing and line error information on the reference signal (TXB1 and TXB2 only)
- a** - Out of frame flag
  - b** - Major framing error rate flag
  - c** - Minor framing error rate flag
  - d-h** - Not used

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                          |
|-----------|------------------------------------------|
| <b>05</b> | Subject entity is pested                 |
| <b>16</b> | SYNC TB is not equipped                  |
| <b>17</b> | SYNC is out of service                   |
| <b>A2</b> | SSP number is illegal                    |
| <b>A5</b> | (Timing Distributor) TLI is not equipped |
| <b>C8</b> | Sync pack denied command                 |

## **UTL, QRY, STR, XC**

### **UTILITY QUERY, STATUS REGISTER**

#### **Explanation Of Command**

This message requests a printout of a status register for side 0 or side 1 of a cross-connect network.

#### **Command**

[I.55191]

UTL:FRM xy,SEQ ww:QRY,STR,XC a!

#### **Completion Message**

[O.55191]

M hh:mm:ss xy,ww n[vv] UTL QRY STR XC a pq rs COMPL

#### **Denial Message**

[O.55191.01]

M hh:mm:ss xy,ww n[vv] UTL QRY STR XC a DNY

#### **Autonomous Message**

Not applicable.

### Explanation Of Parameters

---

- STR** - Status register
- XC** - Cross-connect network
- a** - Cross-connect network side (0 through 1).
- pq** - Cross connect status register byte 1 (hexadecimal, all bits = 0)
- rs** - Cross connect status register byte 0 (hexadecimal)

| <i>rs</i> | <i>Explanation</i>            |
|-----------|-------------------------------|
| 01        | In service                    |
| 05        | Active, in service            |
| 08        | Pested                        |
| 09        | Pested and in service         |
| 0A        | Pested and Failed             |
| 0D        | Pested, active and in service |



---

## UTL, QRY, SYNC, TYPE

---

### UTILITY QUERY, SYNCHRONIZER

#### Explanation Of Command

---

This message is used to query the priority status and types of the equipped timing link interfaces.

#### Command

---

[I.53001]

UTL:FRM xy,SEQ ww:QRY,SYNC,TYPE!

#### Completion Message

---

[O.53001]

|        |          |       |       |       |       |       |       |       |             |
|--------|----------|-------|-------|-------|-------|-------|-------|-------|-------------|
| M      | hh:mm:ss | xy,ww | n[vv] | QRY   | SYNC  | TYPE  | 5     | LN    | MSG:        |
| TB     | TYPE     | mnxyz | mnxyz |       |       |       |       |       |             |
| TLI    | TYPE     | pqxyz | rsxyz | pqxyz | rsxyz | pqxyz | rsxyz | pqxyz | rsxyz       |
| SRC    | VALUE    | p     | p     | p     | p     | p     | p     | p     | p           |
| SOURCE | NPC      | <xxx> | <xxx> | <xxx> | <xxx> | <xxx> | <xxx> | <xxx> | <xxx> COMPL |

#### Denial Message

---

Not applicable.

#### Autonomous Message

---

Not applicable.

## Explanation Of Parameters

**SYNC** - Synchronizer

**TYPE** - Type  
Request for provisioning information

**TB** - Time base

**mnxyz** - SYNC time base type

| <i>mnxyz</i> | <i>Explanation</i> |
|--------------|--------------------|
| -----        | Not equipped       |
| TB1yz        | CEPT Local         |
| TB2yz        | CEPT Toll          |

**TLI** - Timing link interface

**pqxyz** - TLI type provisioned on synchronizer synchronization port (SSP) 0  
**rsxyz** - TLI type provisioned on SSP 1

| <i>pqxyz</i><br><i>rsxyz</i> | <i>Explanation</i>                                                                        |
|------------------------------|-------------------------------------------------------------------------------------------|
| -----                        | Not equipped                                                                              |
| TCxyz                        | 64 kb/s composite clock timing extractor                                                  |
| TD1yz                        | 64 kb/s composite clock timing distributor                                                |
| TD2yz                        | Sinusoidal 2.048 MHz timing distributor                                                   |
| TPxyz                        | 2.048 Mb/s primary block timing extractor<br>(xyz should be same as for PBxyz/PCxyz NPCs) |
| TUxyz                        | Unipolar clock timing extractor                                                           |
| TRxyz                        | Basic system reference frequency timing extractor                                         |

For CRO applications in MASTER mode, TLI 3 is equipped with a Time Base circuit pack. In this case, "pqxyz" = "mnxyz", showing the Time Base type in the TLI 3 and TLI 4 positions.

**SRC** - Source

**p** - Source for priority for the given TLI/SSP

| <i>p</i> | <i>Explanation</i>                                  |
|----------|-----------------------------------------------------|
| -        | Not equipped.                                       |
| 1-8      | 1 is the HIGHEST priority, 8 is the LOWEST priority |

**VALUE** - Value

**SOURCE** - Source

**NPC** - Network processing circuit

**cc** - Hexadecimal condition code

**cc** *Explanation*

**00** No conditions

---

## UTL, QRY, TGS

---

### UTILITY QUERY TEST-ACCESS GROUP

#### Explanation Of Command

---

This message is used to get a listing of one or a range of Nx64Kbit/s test-access groups (TGs). To retrieve a listing of ALL test-access groups specify the maximum range (1-400).

#### Command

---

[I.53081]

UTL:FRM xy,SEQ ww:QRY,TGS mmm[-nnn]!

#### Completion Message

---

#### Nonhierarchical

---

[O.53081]

M hh:mm:ss xy,ww n[vv] UTL QRY TGS mmm[-nnn] p LN MSG:  
TG mmm, rrr, [s]abceee, sss, [t]defwww, NN, <mode>  
TG mmm, rrr, [s]abceee, sss, [t]defwww, NN, <mode>  
TG mmm, rrr, [s]abceee, sss, [t]defwww, NN, <mode>  
TG nnn, rrr, [s]abceee, sss, [t]defwww, NN, <mode> {EOM|COMPL}

or

M hh:mm:ss xy,ww n[vv] UTL QRY TGS mmm[-kkk] UEQD {EOM|COMPL}

## **Hierarchical**

---

[O.53081]

M hh:mm:ss xy,ww n[vv] UTL QRY TGS mmm[-nnn] p LN MSG:  
TG mmm, rrr, uvmnpjee, sss, wxkqrwww, NN, <mode>  
TG mmm, rrr, uvmnpjee, sss, wxkqrwww, NN, <mode>  
TG mmm, rrr, uvmnpjee, sss, wxkqrwww, NN, <mode>  
TG nnn, rrr, uvmnpjee, sss, wxkqrwww, NN, <mode> {EOM|COMPL}

or

M hh:mm:ss xy,ww n[vv] UTL QRY TGS mmm[-kkk] UEQD {EOM|COMPL}

## **Denial Message**

---

[O.53081.01]

M hh:mm:ss xy,ww n[vv] UTL QRY TGS mmm[-nnn] COND cc DNY

## **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

|               |                                                                               |
|---------------|-------------------------------------------------------------------------------|
| <b>TG</b>     | - Test-access group                                                           |
| <b>mmm</b>    | - Test-access group number (001 through 400)                                  |
| <b>nnn</b>    | - Test-access group number specifying the end of a TG range (002 through 400) |
| <b>NPCTG</b>  | - NPC (for) test group                                                        |
| <b>rrr</b>    | - NPCTG number supporting the east bundle (001 through 400)                   |
| <b>sss</b>    | - NPCTG number supporting the west bundle, may be same as rrr                 |
| <b>[s]abc</b> | - 3- or 4-digit non-hierarchical NPC number designated as NPCTG rrr           |
| <b>[t]def</b> | - 3- or 4-digit non-hierarchical NPC number designated as NPCTG sss           |

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13 | Unit<br>14 | Unit<br>15 | Unit<br>16 |
|------------|------------|------------|------------|
| NPC        | NPC        | NPC        | NPC        |
| 1921-1952  | 2081-2112  | 2241-2272  | 2401-2432  |
| 1961-1992  | 2121-2152  | 2281-2312  | 2441-2472  |
| 2001-2032  | 2161-2192  | 2321-2352  | 2481-2512  |
| 2041-2072  | 2201-2232  | 2361-2392  | 2521-2552  |

**uvmnp** - Hierarchical NPC number designated as NPCTG rrr  
**wxkqr** - Hierarchical NPC number designated as NPCTG sss

**uv, wx** - Unit number  
**m, k** - Module number  
**np, qr** - NPC number within the module

The valid values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit  | Module | NPC   |
|-------|--------|-------|
| 01-16 | 1-4    | 01-32 |

**eee** - Starting channel for east bundle

**www** - Starting channel for west bundle

**mode** - Test access mode

*mode Explanation*

|        |                                               |
|--------|-----------------------------------------------|
| MON    | Monitor                                       |
| SPL    | Split                                         |
| HUB    | Hub                                           |
| LPD    | Looped                                        |
| IDLE   | Idle                                          |
| SPLNOY | Split with yellow alarm transmission disabled |

**UEQD** - Unequipped

**NN** - TG width (01 through 31)

**cc** - Hexadecimal condition code

**cc** *Explanation*

**63** None of the designated TG(s) are equipped



## **UTL, QRY, TO**

---

### **QUERY DESTINATION CROSS-CONNECT**

#### **Explanation Of Command**

---

This command requests circuit provisioning information associated with the specified To-direction termination(s). The output messages generated depend upon:

- Whether or not the termination is assigned,
- Whether or not the termination is a test port termination,
- The type of network processing circuit for this termination,
- The far-end to which the termination is mapped (if any).

For this utility command, DACS II terminations can be divided into two categories:

- Multipoint termination, which is a multipoint circuit on a real digital multipoint bridge (DMB) in the digital signaling processing unit (DSPU), or in virtual network processing circuits.
- All other terminations.

If the network processing circuit (NPC) number specified in the command is the number of a remote terminal (DL) digroup currently under protection by the protection digroup (DGP), the execution of the command will be completed and DGP with its associated NPC number appears on the output message.

For a SLC® carrier denial message, the following appears on output: the bank identification number, operation mode, and digroup A NPC number for that remote terminal.

---

## Command

---

### Nonhierarchical

---

[I.52041]

UTL:[FRM xy,SEQ ww]:QRY,TO [s]abcddd[-eee]!

### Hierarchical

---

[I.52041]

UTL:[FRM xy,SEQ ww]:QRY,TO uvmnpddd[-eee]!

---

## Completion Message

---

### Nonhierarchical

---

[O.52041]

M hh:mm:ss xy,ww n[vv] UTL QRY TO [s]abckkk TYPE mnxyz e LN MSG:

[<nonhierarchical\_PDS\_data\_line>]

[<nonhierarchical\_PDS\_data\_line>]

[<nonhierarchical\_PDS\_data\_line>]

<nonhierarchical\_PDS\_data\_line> {EOM|COMPL}

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY TO [s]abclll TYPE mnxyz e LN MSG:

[<nonhierarchical\_PDS\_data\_line>]

[<nonhierarchical\_PDS\_data\_line>]

[<nonhierarchical\_PDS\_data\_line>]

<nonhierarchical\_PDS\_data\_line> COMPL]

**nonhierarchical\_PDS\_data\_line** may take on the following forms:

Format 1 Data Line: For One-Way, Two-Way, and Broadcast Cross-Connections

[t]defiii ppqqq[ <tc>[ <sc>]][ NAM]

[CUS][ RDC][ {UTST {TP kk|TG mmm}|ROLL}][ {ONEWAY|BCAST}][ TLA s]

Format 2 Data Line: For DMB to non-DMB Cross-Connections

```
[t]defiii ppqqq fmd,tmd snn,smm nn ee <tc>[NAM]
[CUS][RDC][{UTST TP kk|ROLL}][ONEWAY][NTR r][TLA s]
```

Format 2a Data Line: For VI to non-VI Cross-Connections

```
[t]defiii ppqqq fmd,tmd <tc>[NAM]
[CUS][RDC][{UTST TP kk|ROLL}][ONEWAY][TLA s]
```

Format 3 Data Line: For DMB to DMB Cross-Connections

```
[t]defiii ppqqq fmd,tmd snn,smm vv ww spp,sqq tt uu <tc>
[CUS][RDC][UTST TP kk][NTR r][TLA s]
```

Format 4 Data Line: Test Access to a Cross-Connection or Unmapped Termination

```
{TP kk|TG mmm} <tsm> l[vv] <tc>[<sc>][NAM] p [t]ghijj q [t]jklenn
[CUS][RDC][{ONEWAY|BCAST}][NTR r][TLA s]
```

Format 5 Data Line: For Subrate Cross-Connections

Not applicable.

Format 6 Data Line: For Subrate Cross-Connections involving test access

Not applicable.

Format 7 Data Line: For TS0 to non-TS0 Cross-Connections

```
[t]defiii ppqqq {PFW(abcdefg,ijklmno)|NFW}[<tc>][NAM]
[BCAST][{UTST {TP kk|TG mmm}|ROLL}][TLA s]
```

Format 8 Data Line: For E1 or T1 to SDxyz Cross-Connections

```
[t]defiii ppqqq [{UTST {TP kk|TG mmm}|ROLL}]
```

**Note:** Formats 1 through 4 data lines are output as either one or two lines. The second line is output only if any of its optional fields are present.

[O.52042]

M hh:mm:ss xy,ww n[vv] UTL QRY TO [s]abchhh TYPE mnxyz 2 LN MSG:  
UASGN[ <tc> DCC][ CUS][ UTST {TP kk|TG mmm}][ cc] {EOM|COMPL}

## Hierarchical

---

[O.52041]

M hh:mm:ss xy,ww n[vv] UTL QRY TO uvmnpkkk TYPE mnxyz e LN MSG:  
[<hierarchical\_PDS\_data\_line>]  
[<hierarchical\_PDS\_data\_line>]  
[<hierarchical\_PDS\_data\_line>]  
<hierarchical\_PDS\_data\_line> {EOM|COMPL}

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY TO uvmnplll TYPE mnxyz e LN MSG:  
[<hierarchical\_PDS\_data\_line>]  
[<hierarchical\_PDS\_data\_line>]  
[<hierarchical\_PDS\_data\_line>]  
<hierarchical\_PDS\_data\_line> COMPL]

**hierarchical\_PDS\_data\_line** may take on the following forms:

Format 1 Data Line: For One-Way, Two-Way, and Broadcast Cross-Connections

wxkqriii ppqqq[ <tc>[ <sc>]][ NAM]  
[CUS][ RDC][ {UTST {TP kk|TG mmm}|ROLL}][ {ONEWAY|BCAST}][ TLA s]

Format 2 Data Line: For DMB to non-DMB Cross-Connections

wxkqriii ppqqq fmd,tmd snn,smm nn ee <tc>[ NAM]  
[CUS][ RDC][ {UTST TP kk|ROLL}][ ONEWAY][ NTR r][ TLA s]

Format 2a Data Line: For VI to non-VI Cross-Connections

wxkqriii ppqqq fmd,tmd <tc>[ NAM]  
[CUS][ RDC][ {UTST TP kk|ROLL}][ ONEWAY][ TLA s]

Format 3 Data Line: For DMB to DMB Cross-Connections

wxkqriii ppqqq fmd, tmd snn, smm vv ww spp, sqq tt uu <tc>  
[CUS][ RDC][ UTST TP kk][ NTR r][ TLA s]

Format 4 Data Line: Test Access to a Cross-Connection or Unmapped Termination

{TP kk|TG mmm} <tsm> l[vv] <tc>[ <sc>][ NAM] p edhfgjjj q opjstnnn  
[CUS][ RDC][ {ONEWAY|BCAST}][ NTR r][ TLA s]

Format 5 Data Line: For Subrate Cross-Connections

Not applicable.

Format 6 Data Line: For Subrate Cross-Connections involving test access

Not applicable.

Format 7 Data Line: For TS0 to non-TS0 Cross-Connections

wxkqriii ppqqq {PFW(abcdefg,ijklmno)|NFW}[ <tc>][ NAM]  
[BCAST ][ {UTST {TP kk|TG mmm}|ROLL}][ TLA s]

Format 8 Data Line: For E1 or T1 to SDxyz Cross-Connections

wxkqriii ppqqq [{UTST {TP kk|TG mmm}|ROLL}]

**Note:** Formats 1 through 4 data lines are output as either one or two lines. The second line is output only if any of its optional fields are present.

[O.52042]

M hh:mm:ss xy, ww n[vv] UTL QRY TO uvmnphhh TYPE mnxyz 2 LN MSG:  
UASGN[ <tc> DCC][ CUS][ UTST {TP kk|TG mmm}][ cc] {EOM|COMPL}

### **Denial Message**

---

#### **Nonhierarchical**

---

[O.52041.01]

M hh:mm:ss xy,ww n[vv] UTL QRY TO [s]abcddd[-eee] \  
TYPE ----- UEQD DNY

[O.52041.02]

M hh:mm:ss xy,ww n[vv] UTL QRY TO [s]abcddd[-eee] \  
TYPE mnxyz RNGIE DNY

#### **Hierarchical**

---

[O.52041.01]

M hh:mm:ss xy,ww n[vv] UTL QRY TO uvmnpddd[-eee] \  
TYPE ----- UEQD DNY

[O.52041.02]

M hh:mm:ss xy,ww n[vv] UTL QRY TO uvmnpddd[-eee] \  
TYPE mnxyz RNGIE DNY

### **Autonomous Message**

---

Not applicable.

### **Explanation Of Parameters**

---

TO - To

[s]abc - The 3- or 4-digit nonhierarchical NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-031</b> | <b>161-191</b> | <b>321-351</b> | <b>481-511</b> | <b>641-671</b> | <b>801-831</b> |
| <b>041-071</b> | <b>201-231</b> | <b>361-391</b> | <b>521-551</b> | <b>681-711</b> | <b>841-871</b> |
| <b>081-111</b> | <b>241-271</b> | <b>401-431</b> | <b>561-591</b> | <b>721-751</b> | <b>881-911</b> |
| <b>121-151</b> | <b>281-311</b> | <b>441-471</b> | <b>601-631</b> | <b>761-791</b> | <b>921-951</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within an **International module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0031</b> | <b>0161-0191</b> | <b>0321-0351</b> | <b>0481-0511</b> |
| <b>0041-0071</b> | <b>0201-0231</b> | <b>0361-0391</b> | <b>0521-0551</b> |
| <b>0081-0111</b> | <b>0241-0271</b> | <b>0401-0431</b> | <b>0561-0591</b> |
| <b>0121-0151</b> | <b>0281-0311</b> | <b>0441-0471</b> | <b>0601-0631</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0671</b> | <b>0801-0831</b> | <b>0961-0991</b> | <b>1121-1151</b> |
| <b>0681-0711</b> | <b>0841-0871</b> | <b>1001-1031</b> | <b>1161-1191</b> |
| <b>0721-0751</b> | <b>0881-0911</b> | <b>1041-1071</b> | <b>1201-1231</b> |
| <b>0761-0791</b> | <b>0921-0951</b> | <b>1081-1111</b> | <b>1241-1271</b> |



| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1311</b> | <b>1441-1471</b> | <b>1601-1631</b> | <b>1761-1791</b> |
| <b>1321-1351</b> | <b>1481-1511</b> | <b>1641-1671</b> | <b>1801-1831</b> |
| <b>1361-1391</b> | <b>1521-1551</b> | <b>1681-1711</b> | <b>1841-1871</b> |
| <b>1401-1431</b> | <b>1561-1591</b> | <b>1721-1751</b> | <b>1881-1911</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1951</b> | <b>2081-2111</b> | <b>2241-2271</b> | <b>2401-2431</b> |
| <b>1961-1991</b> | <b>2121-2151</b> | <b>2281-2311</b> | <b>2441-2471</b> |
| <b>2001-2031</b> | <b>2161-2191</b> | <b>2321-2351</b> | <b>2481-2511</b> |
| <b>2041-2071</b> | <b>2201-2231</b> | <b>2361-2391</b> | <b>2521-2551</b> |

If NPC numbers are expressed in three digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-039</b> | <b>161-199</b> | <b>321-359</b> | <b>481-519</b> | <b>641-679</b> | <b>801-839</b> |
| <b>041-079</b> | <b>201-239</b> | <b>361-399</b> | <b>521-559</b> | <b>681-719</b> | <b>841-879</b> |
| <b>081-119</b> | <b>241-279</b> | <b>401-439</b> | <b>561-599</b> | <b>721-759</b> | <b>881-919</b> |
| <b>121-159</b> | <b>281-319</b> | <b>441-479</b> | <b>601-639</b> | <b>761-799</b> | <b>921-959</b> |

If NPC numbers are expressed in four digits, the valid values are:

SD type NPC numbers listed by unit number, within a **North American module** in Unit Type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0039</b> | <b>0161-0199</b> | <b>0321-0359</b> | <b>0481-0519</b> |
| <b>0041-0079</b> | <b>0201-0239</b> | <b>0361-0399</b> | <b>0521-0559</b> |
| <b>0081-0119</b> | <b>0241-0279</b> | <b>0401-0439</b> | <b>0561-0599</b> |
| <b>0121-0159</b> | <b>0281-0319</b> | <b>0441-0479</b> | <b>0601-0639</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0679</b> | <b>0801-0839</b> | <b>0961-0999</b> | <b>1121-1159</b> |
| <b>0681-0719</b> | <b>0841-0879</b> | <b>1001-1039</b> | <b>1161-1199</b> |
| <b>0721-0759</b> | <b>0881-0919</b> | <b>1041-1079</b> | <b>1201-1239</b> |
| <b>0761-0799</b> | <b>0921-0959</b> | <b>1081-1119</b> | <b>1241-1279</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1319</b> | <b>1441-1479</b> | <b>1601-1639</b> | <b>1761-1799</b> |
| <b>1321-1359</b> | <b>1481-1519</b> | <b>1641-1679</b> | <b>1801-1839</b> |
| <b>1361-1399</b> | <b>1521-1559</b> | <b>1681-1719</b> | <b>1841-1879</b> |
| <b>1401-1439</b> | <b>1561-1599</b> | <b>1721-1759</b> | <b>1881-1919</b> |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1959</b> | <b>2081-2119</b> | <b>2241-2279</b> | <b>2401-2439</b> |
| <b>1961-1999</b> | <b>2121-2159</b> | <b>2281-2319</b> | <b>2441-2479</b> |
| <b>2001-2039</b> | <b>2161-2199</b> | <b>2321-2359</b> | <b>2481-2519</b> |
| <b>2041-2079</b> | <b>2201-2239</b> | <b>2361-2399</b> | <b>2521-2559</b> |

**uvmnp** - Hierarchical NPC number

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **North American modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-39</b> |

SD type NPC numbers listed by unit, module, and NPC Number for **International modules** in Unit type FT (FTU/IFTU/IFTU2). Only odd NPC numbers are valid for SD type NPCs. The even numbered NPCs immediately following an odd SD type NPC are not available for any other NPC type.

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-31</b> |

**ddd** - Beginning range channel or conference number  
**eee** - End range channel or conference number  
**kkk** - Mid-range channel or conference number  
**lll** - Mid-range channel or conference number  
**hhh** - Typical midrange channel or conference number

Valid values are given below

Channel numbers

000-031          CEPT

000-127          (C-bit processing)

Conference numbers

001-500          (Virtual NPC)

001-085          (MB NPC)

**UASGN** - Unassigned

**DCC** - Disconnect code

**tc** - Trunk conditioning

Represents the desired cross-connected signaling and insertion word applied when a failure occurs. A trunk conditioning specification consists of a combination of a signaling specification followed by an insertion word (IW) specification.

Valid values are listed below:

*tc*

**TC(ijkl,mnop) IW pq**

**TC(----,mnop) IW pq**

**TC(ab,cd) IW pq**

**TC(--,cd) IW pq**

**TRSP IW pq**

**TRSP**

*signaling modes*

**2-way 4-state**

**1-way 4-state**

**2-way 16-state**

**1-way 16-state**

**(DMB to DMB)**

**Note:** For CEPT to CEPT connections, the insertion word may be specified by the USER if the NPC is provisioned for firmware control. Otherwise, the insertion word defaults to X'FF.

**Note:** For connection of Channel Time Slot 16 (CTS 16) to the CPR pack, the tc field is not output. Also the only optional keywords that can be output are [ **CUS**][ **RDC**].

**sc** - Signaling control

This variable represents the optional signaling bit control specification and is used only in the Channel Associated Signaling (CAS) to CAS application with CAS signaling.

If this option is not used, all four cross-connected time slot 16 (**abcd**) signaling bits in each direction will be cross-connected unchanged.

Signaling control is specified as follows:

**SC(abcd,efgh)**

**abcd** - Time slot 16 signalling bits, From direction

**efgh** - Time slot 16 signalling bits, To direction

All 8 bits can be controlled independently. Control is applied by replacing each character in variable **abcd** or **efgh** with the appropriate control character.

The allowable control characters are:

*Bit*

*Setting Explanation*

**P** Pass through unchanged

**V** Pass through inverted

**0** Set output to 0

**1** Set output to 1

The effect of the **V** control character depends upon whether the connection is international or gateway.

International: Inversion takes place on both the From and To-direction sides. The net effect is to cancel out the inversion. Hence it will appear that no inversion took place.

Gateway: Inversion takes place only on the international side of the connection. The effect is an inversion.

**MD** - Mode

**g[g]** - Mode of operation of the RT or DCLU

*g[g] Explanation*

**1** SLC 96 Carrier Mode 1

**3** SLC 96 Carrier Mode 3

**C** SLC Series 5 Carrier Feature Package C (FPC)

**NAM** - No A to Mu (conversion)

In all cases where the NAM keyword is output, the A law to  $\mu$  law and  $\mu$  law to A law code translators on the PA, PB and PC type NPCs are disabled.

Presence of the NAM keyword in the output reports on the conversion mode of the circuit, not necessarily on the input keyword used to create it, since NAM is the default case for CEPT to CEPT two — point connections.

For multipoint connections the conference mode is established as NAM or A law to  $\mu$  law when the first CEPT leg is connected.

The NAM keyword is output only in the following cases:

*two—point:*

- CEPT to CEPT
- CEPT to North American

*multi—point:*

- CEPT only or GATEWAY conference:  
NAM keyword is output **ONLY** if conference mode is NAM  
  
This applies to both the CEPT and North American legs of a GATEWAY conference.

The NAM keyword is *NOT* output in the following cases:

*two—point:*

- North American to North American

*multi—point:*

- CEPT only or GATEWAY conference:  
NAM keyword is **NOT** output if conference mode is A law to  $\mu$  law.
- North American only conference:  
Here the conference mode is NAM.

**Note:** For purposes of this utility, a CEPT only multipoint conference created without the NAM keyword is considered a conversion type conference, *even though all data is externally transmitted in A law*, because canceling A law to  $\mu$  law and  $\mu$  law to A law conversions are done. This type of conference has more quantization noise than a true NAM connection such as a CEPT to CEPT two — point.

**[t]defiii**

- Nonhierarchical FROM termination

**[t]def** - The 3- or 4-digit nonhierarchical NPC number

Valid values are identical to those for [s]abc

**iii** - Channel number

Valid values are identical to those for ddd

**ppqqq** - NPC type of the FROM termination

To interpret values of ppqqq see the table following mnxyz below.

**Note:** If ppqqq = MB100 or VI100,  
then FROM is a multipoint termination and TO is not.

If ppqqq = PAxyz, PBxyz, or PCxyz, then TO is a multipoint termination,  
FROM is not.

**TYPE** - Type

**mnxyz** - NPC Type

| <b>mn</b> | <i>Explanation</i>                                      |
|-----------|---------------------------------------------------------|
| CB        | C-Bit processing NPC                                    |
| MB        | Digital multipoint bridge NPC                           |
| PA        | Primary block NPC (120- or 75-Ohm)                      |
| PB        | Primary block NPC (120-Ohm twisted pair)                |
| PC        | Primary block NPC (75-Ohm coaxial)                      |
| SD        | Digital Signal Processing Application NPC on TG193 pack |
| VI        | Virtual NPC                                             |

**xyz** - Multiframe, line and signaling, and channel numbering formats

**CB-type xyz fields**

**x** - Fixed at 1

**y** - Fixed at 0

**z** - Network timer value

| <b>z</b> | <i>Value in milliseconds</i> |
|----------|------------------------------|
| <b>0</b> | 600 to 750                   |
| <b>1</b> | 1500 to 1650                 |
| <b>2</b> | 2400 to 2550                 |
| <b>3</b> | 4650 to 4800                 |

**PA-Type xyz fields**

The provisioning values of *x*, *y*, and *z* for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (*x*, *y* or *z*) provisioning value):

**Table 19-42. Provisioning values for *x***

| <b>x<br/>value</b> | <b>CRC-4<br/>Mode</b> | <b>Automatic<br/>CRC-4</b> | <b>Far-End<br/>PM</b> | <b>NPC used as<br/>Sync Source</b> | <b>TS0 Bit 5<br/>used for SFI</b> |
|--------------------|-----------------------|----------------------------|-----------------------|------------------------------------|-----------------------------------|
| <b>0</b>           | Y                     |                            |                       |                                    |                                   |
| <b>1</b>           | Y                     |                            | Y                     |                                    | Y                                 |
| <b>2</b>           | Y                     |                            |                       |                                    | Y                                 |
| <b>3</b>           | Y                     |                            | Y                     |                                    |                                   |
| <b>4</b>           | Y                     |                            |                       | Y                                  |                                   |
| <b>5</b>           | Y                     |                            | Y                     | Y                                  | Y                                 |
| <b>6</b>           | Y                     |                            |                       | Y                                  | Y                                 |
| <b>7</b>           | Y                     |                            | Y                     | Y                                  |                                   |
| <b>8</b>           |                       | Y                          | Y                     |                                    |                                   |
| <b>9</b>           |                       | Y                          | Y                     |                                    | Y                                 |
| <b>A</b>           |                       |                            |                       |                                    | Y                                 |
| <b>B</b>           |                       |                            |                       |                                    |                                   |
| <b>C</b>           |                       | Y                          | Y                     | Y                                  |                                   |
| <b>D</b>           |                       | Y                          | Y                     | Y                                  | Y                                 |
| <b>E</b>           |                       |                            |                       | Y                                  | Y                                 |
| <b>F</b>           |                       |                            |                       | Y                                  |                                   |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled (*x* values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

---

\* Automatic CRC-4 is also known as CRC-4 Interworking.



If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.
4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 19-43. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.

2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the *abcd* bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the *abcd* bits will be transmitted transparently.

If the "AIS in TS16" option is selected ( $y$  value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected ( $y$  values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For  $y$  values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering ( $y=8$ ) or Timeslot Channel Numbering ( $y=9$ ) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface ( $y=C$ ) or as an unframed clear 2Mbit/s interface ( $y=D$ ). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 19-44. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )
3. z values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For z values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For z values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS

in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:\*
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when z = 0, 1, 4, 5, 6, 7, A or B. **However**, for z values 2 and 8 the set time is 144 ms and for z values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for z = 4 and 8) or 480 ms (for z = 5 and 9) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.
8. z values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options (z = 6-7 or A-B)**

- [i] Enable BER calculations, and when in the BER state:
  - DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.
  - When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.
- [ii] RAI set in 2 ms
- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:
  - z=6 or A** hardware timing
  - z=7 or B** firmware timing (SFDT=2496 ms, CACT=624 ms)

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

[iv] BER alarm level = DMA

**Specific Options for z= 6 or 7**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

9. To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of  $xyz$  for the PA type NPC.

**Table 19-45. Combinations of  $x$  and  $y$  Values**

| Invalid<br>$xyz$<br>Combinations | Explanation                                                                                                                                                                                                                        |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                              | Framed clear 2Mbit/s ( $y$ value C) is valid for all $x$ options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                              |                                                                                                                                                                                                                                    |
| CCz                              |                                                                                                                                                                                                                                    |
| DCz                              |                                                                                                                                                                                                                                    |
| 0Dz                              | Unframed clear 2Mbit/s ( $y$ value D) is only valid for $x$ values B and F. These are the only $x$ options which do not require decoding of TS0 content.                                                                           |
| 1Dz                              |                                                                                                                                                                                                                                    |
| 2Dz                              |                                                                                                                                                                                                                                    |
| 3Dz                              |                                                                                                                                                                                                                                    |
| 4Dz                              |                                                                                                                                                                                                                                    |
| 5Dz                              |                                                                                                                                                                                                                                    |
| 6Dz                              |                                                                                                                                                                                                                                    |
| 7Dz                              |                                                                                                                                                                                                                                    |
| 8Dz                              |                                                                                                                                                                                                                                    |
| 9Dz                              |                                                                                                                                                                                                                                    |
| ADz                              |                                                                                                                                                                                                                                    |
| CDz                              |                                                                                                                                                                                                                                    |
| DDz                              |                                                                                                                                                                                                                                    |
| EDz                              |                                                                                                                                                                                                                                    |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled  $z$  values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables ( $x$  values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 19-46. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z* = value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 19-47. Combinations of  $x$  and  $z$  Values**

| Invalid<br>xyz<br>Combinations | Explanation                                                                                                                                                                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC                            | Use of NPC as Sync Source ( $x$ 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( $z$ value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |
| 5yC                            |                                                                                                                                                                                                                                                         |
| 6yC                            |                                                                                                                                                                                                                                                         |
| 7yC                            |                                                                                                                                                                                                                                                         |
| CyC                            |                                                                                                                                                                                                                                                         |
| DyC                            |                                                                                                                                                                                                                                                         |
| EyC                            |                                                                                                                                                                                                                                                         |
| FyC                            |                                                                                                                                                                                                                                                         |

**PB- and PC-type xyz fields**
**Table 19-48. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |



| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                         |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                           |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                   |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                    |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8, in time 144ms (TRANSMIC 1G)                                                                                              |
|              |            | 111          | Unassigned                                                                                                                             |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                          |
|              |            | 1            |                                                                                                                                        |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:
- in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496 ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].

The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway cross-connection* the insertion word always defaults to AIS.

mnxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option c=0 is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the jkl options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared:\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when jkl=011 or jkl=101. For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option g has meaning only if the NPC is provisioned for CAS; that is, option d=1, otherwise it is ignored. If option g=0 is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option g=1 is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and h=1, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option h was selected as either 0 or 1, unless it is later set to 0 by setting parameter e=0 in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of xyz the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option h=1.

If both b=1 and h=1 and the NPC (used as synchronization source) receives

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure.** If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

[jkl'] **minor bit error rate and signaling freeze delay time features:**

**jkl=011 or jkl=101**

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

**c=0** hardware timing

**c=1** firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

**jkl=011**

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

**VI-type xyz fields**

**x** - Fixed at 1  
**y** - Fixed at 0  
**z** - Fixed at 0

**SD-type xyz fields (Digital Signal Processing Platform (DSPP) Applications)**

**SD111** X.50/X.57 International subrate application  
**SD311** Digital Multipoint Bridge application  
**SD411** North American DDS Subrate and MJU application  
**SDxyz** Possible future applications with specific values for xyz

**e** - Number of lines in the message segment

**SECH** - Subrate establish channel

**CUS** - Customer  
The circuit is a customer controlled circuit

**RDC** - Red circuit  
The circuit is a red circuit

**UTST** - Under test  
The circuit is under test

**ONEWAY** - One-way  
The circuit is a one-way connection

**BCAST** - Broadcast  
The circuit is a broadcast-type connection

**ROLL** - Roll  
Bridged leg from Roll procedure

**TLA** - Terminate and leave active

**s** - Terminate and leave state

**s** *state*

**F** FROM terminated

**T** TO terminated

**B** BOTH terminated

**fmd** - FROM multipoint circuit mode of the connection

**tmd** - TO multipoint circuit mode of the connection

For DMB circuits, there are four possible values for fmd and tmd:

**fmd,**

**tmd** *Explanation*

**SYM** For legs of a symmetrical multipoint circuit (must be a DMB channel)

**BRD** For nonbackbone (tributary) legs of a broadcast multipoint circuit (must be a DMB channel)

**BBL** For the backbone leg of a broadcast multipoint circuit (must be a DMB channel)

**LEG** For the end that does not terminate on the multipoint circuit (must be an FTU/DS3U channel)

For virtual NPC circuits, there are three possible values for fmd and tmd:

**fmd,**

**tmd** *Explanation*

**BRD** For nonbackbone legs of a broadcast multipoint circuit (must be a virtual NPC channel)

**BBL** For the backbone leg of a broadcast multipoint circuit (must be a virtual NPC channel)

**LEG** For the end that does not terminate on the multipoint circuit (must be FTU/DS3U channels)

**snn** - Incoming gain adjust parameters for the DMB NPC  
**smm** - Outgoing gain adjust parameters for the DMB NPC

**s** - Sign (+ or -)  
**nn** - Incoming gain adjust value (-90 through +88)  
**mm** - Outgoing gain adjust value (-90 through +88)

These are the parameters requested for the TO termination. Values are given in steps of two and the units are tenths of a db.

For type VI100 NPCs snn and smm will be output as "---"

The special value --- (three dashes) can be used for either snn or smm (but not both) when no change is to be made to that parameter. This feature allows changing only one of the two parameters if desired. Also, if the cross-connection was provisioned with the NTR (no transmit) option, the gain adjustment in the direction for which transmission is shut off MUST be ---.

**nn** - Noise guard setting (in dB) for the FROM/TO NPC

The following default values apply:

For Symmetrical bridges Default: nn = -18 db  
For Polling circuits Default: nn = 0 db

Valid values are listed below:

**nn**  
00 db  
06 db  
12 db  
18 db  
-- (For VI100 NPCs)

**ee** - Echo suppression setting (in dB) for the FROM/TO NPC

The following default values apply:

For Symmetrical bridges Default: ee = -18 db  
For Polling circuits Default: ee = 0 db

Valid values are listed below:

**ee**  
00 db  
06 db  
12 db  
18 db  
-- (For VI100 NPCs)

**spp** - Incoming gain adjust parameters for the TO DMB NPC  
**sqq** - Outgoing gain adjust parameters for the FROM DMB NPC

See **snn** and **smm** above for explanation and values.

**vv** - Noise guard setting (in dB) for the FROM DMB NPC  
**tt** - Noise guard setting (in dB) for the TO DMB NPC

See **nn** above for default values.

**vv, tt**

00 db  
06 db  
12 db  
18 db

**ww** - Echo suppression setting (in dB) for the FROM DMB NPC  
**uu** - Echo suppression setting (in dB) for the TO DMB NPC

See **ee** above for default values.

**ww, uu**

00 db  
06 db  
12 db  
18 db

**NTR** - No transmit

**r** - Direction which has no transmission

*r*      *Explanation*

**F**      FROM

**T**      TO

**TP** - Test port

**kk** - Test port number (01 through 96)

**TG** - Test (access) group

**mmm** - Test group number (001 through 400)



**t sm** - Test mode

Values are listed below:

| <i>t sm</i>   | <i>Mode</i>                                   |
|---------------|-----------------------------------------------|
| <b>HUB</b>    | Hubbed                                        |
| <b>LPD</b>    | Looped                                        |
| <b>MON</b>    | Monitor                                       |
| <b>SPL</b>    | Split                                         |
| <b>TPR</b>    | Test Port Released                            |
| <b>TGR</b>    | Test Group Released                           |
| <b>SPLNOY</b> | Split with yellow alarm transmission disabled |

**l** - Link used to access this test port (0 if mode is released)

**vv** - Virtual circuit number of an X.25 link used to access this test port  
(01 through 16)

**p** - Channel assignment

Valid values are listed below:

| <i>p</i> | <i>Explanation</i>                                        |
|----------|-----------------------------------------------------------|
| <b>F</b> | FROM side of circuit under test                           |
| <b>H</b> | HIGH channel of hubbed test port (only for HUB test mode) |

**q** - Channel assignment

Valid values are listed below:

| <i>q</i> | <i>Explanation</i>                                       |
|----------|----------------------------------------------------------|
| <b>T</b> | TO side of circuit under test                            |
| <b>L</b> | LOW channel of hubbed Test Port (only for HUB test mode) |

**[s]ghijj**

- Nonhierarchical FROM, HIGH, or DSPP NPC number

If test access is made to a digital signal processing platform (used for signaling conversion between an E1 and a T1 NPC) then [s]ghijj is the SP100 NPC.

**[t]jklenn**

- Nonhierarchical TO, LOW, E1, or T1 NPC number

If test access is made to a digital signal processing platform (used for signaling conversion between an E1 and a T1 NPC) then [t]jklenn is the E1 or T1 NPC.

**edhfg** - Hierarchical FROM/HIGH

**opjst** - Hierarchical TO/LOW

**ed, op** - Unit number

**h, j** - Module number

**fg, st** - NPC number within module

Valid values are identical to those for uvmnp

**[s]ghi, [t]jhk**

- The 3- or 4-digit nonhierarchical NPC number

Valid values are identical to those for [s]abc.

**jjj, nnn**

- Channel or time slot number

Valid values are identical to those for ddd above.

**PFW** - Pseudo frame word

**abcdefg**

- Pseudo frame word value (TO to FROM direction)

**ijklmno**

- Pseudo frame word value (FROM to TO direction)

The PFW keyword is used to select Mode 1 of TS0 Cross-Connect. In both directions of transmission the Frame Word is replaced by a Pseudo Frame Word. The pseudo frame word value replaces the Frame Alignment Signal (Bits 2 - 8) of the transmitted Frame Word. The bit assignments for abcdefg and ijklmno are shown below:

|         |               |
|---------|---------------|
| 2345678 | - bit numbers |
| abcdefg |               |
| ijklmno |               |

Variables a through g and i through o may each be set to 0 or 1.

0 - Sets the corresponding bit to 0

1 - Sets the corresponding bit to 1

**NFW** - Non frame word

The NFW keyword is used to select Mode 2 of TS0 Cross-Connect. In both directions of transmission the Frame Word is replaced by the Non Frame Word, thus repeating the content of the Non Frame Word in consecutive frames.

**UEQD** - Unequipped

**RNGIE** - Range input error

**COND** - Condition

**cc** - Hexadecimal condition code

| <b>cc</b> | <b>Explanation</b> |
|-----------|--------------------|
|-----------|--------------------|

|           |                          |
|-----------|--------------------------|
| <b>15</b> | <b>NPC is unequipped</b> |
|-----------|--------------------------|

|           |                                                 |
|-----------|-------------------------------------------------|
| <b>E3</b> | <b>One way unassigned channel/NPC in QRY,TO</b> |
|-----------|-------------------------------------------------|

|           |                               |
|-----------|-------------------------------|
| <b>62</b> | <b>Invalid channel number</b> |
|-----------|-------------------------------|

|           |                         |
|-----------|-------------------------|
| <b>7F</b> | <b>NPC is not added</b> |
|-----------|-------------------------|

|           |                                           |
|-----------|-------------------------------------------|
| <b>91</b> | <b>SR NPC was specified - not allowed</b> |
|-----------|-------------------------------------------|

|           |                                                                 |
|-----------|-----------------------------------------------------------------|
| <b>F7</b> | <b>Corresponding NPC for virtual channel is not provisioned</b> |
|-----------|-----------------------------------------------------------------|

|           |                                |
|-----------|--------------------------------|
| <b>B4</b> | <b>NPC is channelized type</b> |
|-----------|--------------------------------|

---

## UTL, QRY, TO

---

### NON-CANNELIZED UTILITY QUERY TO

#### Explanation Of Command

---

This command requests provisioning information for a specific TO non-channelized network processing circuit.

#### Command

---

##### Nonhierarchical

---

[I.52061]

UTL:FRM xy,SEQ ww:QRY,TO [s]abc!

##### Hierarchical

---

[I.52061]

UTL:FRM xy,SEQ ww:QRY,TO uvmnp!

#### Completion Message

---

##### Nonhierarchical

---

[O.52061]

M hh:mm:ss xy,ww n[vv] UTL QRY TO [s]abc TYPE mnxyz 2 LN MSG:  
[[t]ghi mnxyz][ AIS][ CUS][ RDC][ {UTST jj|ROLL}}\  
[ {ONEWAY|BCAST|UASGN[ kk}}][ TLA s] COMPL

Usage: If the NPC is involved in test access,

[O.52061]

M hh:mm:ss xy,ww n[vv] UTL QRY TO [s]abc TYPE mnxyz 2 LN MSG:  
[t]ghi [u]klm FAD <tmode> <link number> COMPL

### **Hierarchical**

---

[O.52061]

M hh:mm:ss xy,ww n[vv] UTL QRY TO uvmnp TYPE mnxyz 2 LN MSG:  
[wxkqr mnxyz][ AIS][ CUS][ RDC][ {UTST jj|ROLL}]\  
[ {ONEWAY|BCAST|UASGN[ kk]}][ TLA s] COMPL

Usage: If the NPC is involved in test access,

[O.52061]

M hh:mm:ss xy,ww n[vv] UTL QRY TO uvmnp TYPE mnxyz 2 LN MSG:  
wxkqr ghijk FAD <tmode> <link number> COMPL

### **Denial Message**

---

### **Nonhierarchical**

---

[O.52061.01]

M hh:mm:ss xy,ww n[vv] UTL QRY TO [s]abc TYPE mnxyz COND cc DNY

### **Hierarchical**

---

[O.52061.01]

M hh:mm:ss xy,ww n[vv] UTL QRY TO uvmnp TYPE mnxyz COND cc DNY

### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

If NPC numbers are expressed in three digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA type NPC numbers listed by unit number, Unit Type FT (FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number of TO non-channelized NPC

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are:

PA type numbers listed by unit, module, and NPC Number  
Unit Type FT (FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**[t]ghi** - The 3- or 4-digit nonhierarchical number of FROM NPC mapped to TO NPC, or FROM NPC in the test access connection (--- for unassigned NPC)

**[u]klm** - The 3- or 4-digit nonhierarchical number of TO NPC in the test access connection

----- or ----- for unassigned NPC

**wxkqr** - Hierarchical number of FROM NPC mapped to TO NPC

**ghijk** - FROM NPC in the test access connection.

**mnxyz** - NPC type of TO or FROM NPCs

| <b>mn</b> | <b>Explanation</b>              |
|-----------|---------------------------------|
| PA        | CEPT NPC (75- or 120-ohm)       |
| PB        | CEPT NPC (120-ohm twisted pair) |
| PC        | CEPT NPC (75-ohm coaxial)       |
| --        | - Unequipped or unassigned NPC  |

#### PA-Type xyz fields

The provisioning values of x, y, and z for the PA type are shown in the following tables (a 'Y' in a column of the Table indicates that the feature at the top of the column is enabled by the corresponding (x, y or z) provisioning value):

**Table 19-49. Provisioning values for  $x$** 

| $x$<br>value | CRC-4<br>Mode | Automatic<br>CRC-4 | Far-End<br>PM | NPC used as<br>Sync Source | TS0 Bit 5<br>used for SFI |
|--------------|---------------|--------------------|---------------|----------------------------|---------------------------|
| 0            | Y             |                    |               |                            |                           |
| 1            | Y             |                    | Y             |                            | Y                         |
| 2            | Y             |                    |               |                            | Y                         |
| 3            | Y             |                    | Y             |                            |                           |
| 4            | Y             |                    |               | Y                          |                           |
| 5            | Y             |                    | Y             | Y                          | Y                         |
| 6            | Y             |                    |               | Y                          | Y                         |
| 7            | Y             |                    | Y             | Y                          |                           |
| 8            |               | Y                  | Y             |                            |                           |
| 9            |               | Y                  | Y             |                            | Y                         |
| A            |               |                    |               |                            | Y                         |
| B            |               |                    |               |                            |                           |
| C            |               | Y                  | Y             | Y                          |                           |
| D            |               | Y                  | Y             | Y                          | Y                         |
| E            |               |                    |               | Y                          | Y                         |
| F            |               |                    |               | Y                          |                           |

**Table Notes:**

1. The columns "Automatic CRC-4\*" and "Far-End PM" are new functions which were not available on the PB or PC types.
2. If the CRC-4 mode is enabled ( $x$  values 0-7) the NPC will compute checksums over the transmitted data and transmit the checksum as part of the CRC-4 multiframe pattern in TS0. The NPC will also monitor the incoming CRC-4 multiframe and verify the CRC checksum. If the CRC-4 multiframe can not be found as per the CRC-4 reframe algorithm, the NPC will declare an alarm.

If the automatic CRC-4 option is selected ( $x$  values 8-9 and C-D), the NPC will perform all the functions of the CRC-4 mode. However, if the CRC-4 multiframe is lost, the NPC will not declare an alarm or apply consequent actions.

3. If the Far-End PM (Performance Monitoring) option is selected ( $x$  values 1, 3, 5, 7-9, and C-D), the E-bits contained within the CRC-4 multiframe are used to compute Far-End performance monitoring parameters.

---

\* Automatic CRC-4 is also known as CRC-4 Interworking.



4. If the NPC is to be used as a Sync Source ( $x$  values 4-7 and C-F), the clock from the NPC to the synchronizer will be enabled.
5. When the SFI (Synchronization Failure Indication) option is selected ( $x$  values 1-2, 5-6, 9-A and D-E), bit 5 of the TS0 Non Frame Word (NFW) is controlled by DACS II software. It will force the NPC to invert Bit 5 (or set to an alarm state) when the Synchronizer enters the holdover mode. The idle state of NFW bit 5 will default to a '1' when the NPC is grown. The idle state can be changed to a '0' with a subsequent CHG::NPC,TS0 command.

If the NPC is also used as a synchronization source and NFW bit 5 is received in the alarm state, that NPC will squelch the clock it puts out. If the DACS II is using this clock as a sync source, the sync pack terminating this clock will recognize that it is receiving a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

6.  $x$  value B does not enable any of the features shown in the Table; this is a valid option.

**Table 19-50. Provisioning values for  $y$**

| $y$<br>value | CAS<br>Mode | NSA<br>Mode | Telephone<br>Numbering | Timeslot<br>Numbering | Convert<br>CTS 16 | AIS in<br>CTS 16 | Framed<br>Clear | Unframed<br>Clear |
|--------------|-------------|-------------|------------------------|-----------------------|-------------------|------------------|-----------------|-------------------|
| 0            | Y           |             | Y                      |                       | Y                 | Y                |                 |                   |
| 2            | Y           |             | Y                      |                       | Y                 |                  |                 |                   |
| 4            | Y           |             | Y                      |                       |                   | Y                |                 |                   |
| 6            | Y           |             | Y                      |                       |                   |                  |                 |                   |
| 8            |             | Y           | Y                      |                       |                   |                  |                 |                   |
| 9            |             | Y           |                        | Y                     |                   |                  |                 |                   |
| C            |             |             |                        |                       |                   |                  | Y               |                   |
| D            |             |             |                        |                       |                   |                  |                 | Y                 |

**Table Notes:**

1. The columns "Framed Clear" and "Unframed Clear" are new functions which were not available on the PB or PC types.
2.  $y$  values 1, 3, 5, 7, A-B and E-F are unassigned (that is, invalid).
3. For  $y$  values 0, 2, 4 and 6 Channel Associated Signaling (CAS) is enabled. In this mode the Telephone Channel Numbering system is always used.

If the "Convert TS16" option is selected ( $y$  values 0 and 2), the  $abcd$  bits of TS16 will be converted to '1111' if they are received as '0000'. This is to prevent false framing in the TS16 multiframe. If this option is not selected ( $y$  values 4 and 6), a value of '0000' in the  $abcd$  bits will be transmitted transparently.

If the "AIS in TS16" option is selected (y value 0 and 4), AIS will always be applied to received TS16 signaling channels on detection of RAI (Remote Alarm Indication, Bit 3 of TS0 NFW), RAIS (Remote AIS Indication, Bit 4 of TS0 NFW, if provisioned) or R16 (Remote Alarm Indication received in TS16). If this option is not selected (y values 2 and 6), AIS will not be applied on detection of RAI, RAIS, or R16.

4. For y values 8 and 9 the NPC will be Non Signaling Associated (NSA). In this mode, Telephone Channel Numbering (y=8) or Timeslot Channel Numbering (y=9) may be selected).
5. The NPC can be set up as a framed clear 2Mbit/s interface (y=C) or as an unframed clear 2Mbit/s interface (y=D). When provisioned as a clear 2 Mbit/s interface, an NPC does not modify the cross-connected data in any way. This means that the following functions are not performed in the clear 2 Mbit/s mode:
  - Outgoing CRC4 checksum generation (applies to framed clear 2 Mbit/s interfaces with CRC4 option enabled).
  - Remote alarm indications (line format errors are reported locally, but no alarm indicators are sent in TS0 to the remote end).

**Table 19-51. Provisioning values for z**

| z<br>value | C.A. Timing |    | RAI Set Time |       |       | NFW Bit 4 Use |      | RAIS Set Time |       | MBER    | RPSFI   |
|------------|-------------|----|--------------|-------|-------|---------------|------|---------------|-------|---------|---------|
|            | HW          | FW | 2ms          | 144ms | 480ms | RAIS          | RBER | 144ms         | 480ms | Enabled | Enabled |
| 0          | Y           |    | Y            |       |       |               |      |               |       |         |         |
| 1          |             | Y  | Y            |       |       |               |      |               |       |         |         |
| 2          | Y           |    |              | Y     |       |               |      |               |       |         |         |
| 3          |             | Y  |              |       | Y     |               |      |               |       |         |         |
| 4          | Y           |    | Y            |       |       | Y             |      | Y             |       |         |         |
| 5          |             | Y  | Y            |       |       | Y             |      |               | Y     |         |         |
| 6          | Y           |    | Y            |       |       |               | Y    |               | Y     |         |         |
| 7          |             | Y  | Y            |       |       |               | Y    |               | Y     |         |         |
| 8          | Y           |    |              | Y     |       | Y             |      | Y             |       |         |         |
| 9          |             | Y  |              |       | Y     | Y             |      |               | Y     |         |         |
| A          | Y           |    | Y            |       |       |               |      |               |       | Y       |         |
| B          |             | Y  | Y            |       |       |               |      |               |       | Y       |         |
| C          | Y           |    |              |       |       |               |      |               |       |         |         |
| D          | Y           |    | Y            |       |       | Y             |      | Y             |       |         | Y       |

**Table Notes:**

1. z value **F** and **E** are unassigned (i.e. not valid).
2. z value **C** selects TRANSMIC 1G. (see Section 6.2.1 of )

3. **z** values **8, 9** select TRANSMIC 2G. (see Section 6.2.2 of )
4. For **z** values **1, 3, 5, 7, 9**, and **B** the Consequent Action (C. A.) timing is under Firmware control. For **z** values **0, 2, 4, 6, 8, A, C** and **D** the Consequent Action timing is under Hardware control.

The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether the timing is under HW control or FW control, but when under FW control, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if **z = 1, 3, 5, or 9**  
in **2496 ms**  
if **z = 7 or B**

The Insertion Word pattern can be specified in the cross-connect command; on 2Mbit/s NPCs in a *gateway* **cross-connection** the Insertion Word always defaults to AIS.

The selection of HW or FW control is also used to provision the consequent actions on signaling bits. On detection of loss of frame alignment (LOFA) or multiframe alignment (MFA) error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When HW control is used, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When FW control is used, the trunk conditioning pattern from the AMS overrides the signaling freeze once the 2Mbit/s NPC goes into the alarm state.

5. The Consequent Action timing also selects the time after which the **local** alarms are declared and cleared:
  - HW Control: **Both** remote and local alarms are declared and cleared in 144 ms.
  - FW Control: Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms, **except when z = 7 or B**.
6. NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 (**that is, within 2 ms after detecting the failure**) when **z = 0, 1, 4, 5, 6, 7, A or B**. **However**, for **z** values 2 and 8 the set time is 144 ms and for **z** values 3 and 9 the set time is 480 ms. NFW bit 3 is always set to 0 for non-alarm condition and is set to 1 for alarm conditions.
7. When NFW bit 4 is used as RAIS (Remote AIS) indicator, NFW bit 4 will be set in 144 ms (for **z = 4 and 8**) or 480 ms (for **z = 5 and 9**) after AIS is detected in the received signal. The default idle state for Bit 4 is a '1'. The idle state can be changed to a '0' with the CHG::NPC,TS0 command. The bit is put into the active state by inverting the value of the idle state. Similarly, if NFW bit 4 is in the active state in the received signal, consequent actions are taken 144 ms after detecting this condition.

---

\* Local alarms are those generated for the events: PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the events: RAI, RAIS, RBER, and R16.

8. z values 6-7 and A-B enable the Minor Bit Error Rate and Signaling Freeze Delay Time Features.

**Common Options (z = 6-7 or A-B)**

- [i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

- [ii] RAI set in 2 ms

- [iii] Signaling Freeze Delay Timing, Consequent Action Clear Timing:

z=6 or A hardware timing

z=7 or B firmware timing (SFDT=2496 ms, CACT=624 ms)

- [iv] BER alarm level = DMA

**Specific Options for z= 6 or 7**

- [v] RBER alarm level = MI

- [vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the time slot 0 Not Frame Word (NFW) upstream to the far end 144 ms after detecting the Minor Bit Error Rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**Specific Options for z= A or B**

- [vii] RBER unalarmed

- [viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local Minor Bit Error Rate (BER) condition is detected and cleared with the alarm state consequent actions.

9. To provision RPSFI, TS0 bit 5 used for SFI and CAS must be provisioned.

The following tables provide a summary of invalid combinations of *xyz* for the PA type NPC.

**Table 19-52. Combinations of *x* and *y* Values**

| Invalid<br><i>xyz</i><br>Combinations | Explanation                                                                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8Cz                                   | Framed clear 2Mbit/s ( <i>y</i> value C) is valid for all <i>x</i> options except those invoking automatic CRC-4 interworking.<br>The interworking algorithm requires setting of outgoing E-bits, which is not permitted for a clear signal. |
| 9Cz                                   |                                                                                                                                                                                                                                              |
| CCz                                   |                                                                                                                                                                                                                                              |
| DCz                                   |                                                                                                                                                                                                                                              |
| 0Dz                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) is only valid for <i>x</i> values B and F. These are the only <i>x</i> options which do not require decoding of TS0 content.                                                                      |
| 1Dz                                   |                                                                                                                                                                                                                                              |
| 2Dz                                   |                                                                                                                                                                                                                                              |
| 3Dz                                   |                                                                                                                                                                                                                                              |
| 4Dz                                   |                                                                                                                                                                                                                                              |
| 5Dz                                   |                                                                                                                                                                                                                                              |
| 6Dz                                   |                                                                                                                                                                                                                                              |
| 7Dz                                   |                                                                                                                                                                                                                                              |
| 8Dz                                   |                                                                                                                                                                                                                                              |
| 9Dz                                   |                                                                                                                                                                                                                                              |
| ADz                                   |                                                                                                                                                                                                                                              |
| CDz                                   |                                                                                                                                                                                                                                              |
| DDz                                   |                                                                                                                                                                                                                                              |
| EDz                                   |                                                                                                                                                                                                                                              |

**Table Notes:**

1. If framed clear 2Mbit/s is selected with Far-End PM enabled *z* values 1, 3, 5 and 7) only the receive side of the feature shall be turned on. No outgoing E-bits may be transmitted during clear signal operation.
2. If framed clear 2Mbit/s is selected with Synchronization Failure Indication (SFI) enables (*x* values 1, 2, 5, 6, A and E) only the receive side of the feature shall be turned on. No outgoing SFI may be transmitted in Bit 5 during clear signal operation.

**Table 19-53. Combinations of *y* and *z* Values**

| Invalid<br>xyz<br>Combinations                                                                               | Explanation                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xC1<br>xC3<br>xC5<br>xC7<br>xC8<br>xC9<br>xCB<br>xCC<br>XD1<br>xD3<br>xD5<br>xD7<br>xD8<br>xD9<br>xDB<br>xDC | Clear 2Mbit/s ( <i>y</i> value C or D) cannot be used with Firmware controlled Consequent Action ( <i>z</i> values 1, 3, 5, 7, 9 or B), TRANSMIC 1G ( <i>z</i> value C) or TRANSMIC 2G ( <i>z</i> value 8).            |
| xD4<br>xD6                                                                                                   | Unframed clear 2Mbit/s ( <i>y</i> value D) cannot be used with <i>z</i> value 4 (NFW Bit 4 used for RAIS) or with <i>z</i> value 6 (NFW Bit 4 used for RBER) because unframed clear signals cannot obtain TS0 framing. |
| x0C<br>x2C<br>x4C<br>x6C                                                                                     | Channel Associated Signaling ( <i>y</i> values 0, 2, 4 and 6) is not valid for TRANSMIC 1G ( <i>z</i> value C).                                                                                                        |

**Table Notes:**

1. If framed clear 2Mbit/s (*y* value C) is selected with *z* value 4 (NFW Bit 4 used for RAIS) only the receive side of this function will be enabled. Outgoing RAIS indicators cannot be transmitted during clear signal operation.
2. If framed clear 2Mbit/s (*y* value C) is selected with *z* = value 6 (NFW Bit 4 used for RBER) only the receive side of this function will be enabled. Outgoing RBER indicators cannot be transmitted during clear signal operation.

**Table 19-54. Combinations of *x* and *z* Values**

| Invalid<br>xyz<br>Combinations                       | Explanation                                                                                                                                                                                                                                                       |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4yC<br>5yC<br>6yC<br>7yC<br>CyC<br>DyC<br>EyC<br>FyC | Use of NPC as Sync Source ( <i>x</i> 4, 5, 6, 7, C, D, E and F) is not valid for TRANSMIC 1G ( <i>z</i> value C). This is because the TSO Monitoring scheme used in TRANSMIC 1G prevents incoming SFI indicators from cutting off the signal to the Synchronizer. |

**PB- and PC-type xyz fields**

**Table 19-55. NPC Provisioning Options**

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                         |
|--------------|------------|--------------|------------------------------------------------------------------------|
| x            | a          | 0            | CRC multiframe in TS0                                                  |
|              |            | 1            | Non-CRC framing in TS0                                                 |
|              | b          | 0            | NPC is not used as a synchronization source                            |
|              |            | 1            | NPC is used as a synchronization source                                |
|              | c          | 0            | CCITT G.732 (hardware controlled) Consequent Actions, AIS in signaling |
|              |            | 1            | Firmware controlled Consequent <i>Actions</i> <sup>[c]</sup>           |
|              | d          | 0            | Non-signaling associated (NSA)                                         |
|              |            | 1            | 16-state channel associated signaling (CAS)                            |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                              |
|--------------|------------|--------------|---------------------------------------------------------------------------------------------|
| y            | e          | 0            | Telephone channel numbering                                                                 |
|              |            | 1            | Channel timeslot numbering                                                                  |
|              | f          | 0            | Convert the <i>abcd</i> bits of TS16 to 1111 if 0000                                        |
|              |            | 1            | Transmit the 0000 in the <i>abcd</i> bits transparently                                     |
|              | g          | 0            | AIS applied to received TS16 on detection of RAI, RAIS, or R16                              |
|              |            | 1            | AIS not applied to received TS16 on detection of RAI, RAIS, or R16                          |
|              | h          | 0            | NFW bit 5=Synchronization Failure Indication (SFI) unaffected by Synchronizer Holdover (SH) |
|              |            | 1            | NFW bit 5=SFI inverted on SH on output and detected on input                                |

| <i>Digit</i> | <i>Bit</i> | <i>Value</i> | <i>Meaning</i>                                                                                                                         |
|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| z            | jkl        | 000          | NFW bit 3=RAI set in < 2 ms,                                                                                                           |
|              |            | 001          | NFW bit 3=RAI set in time $T^{[c']}$                                                                                                   |
|              |            | 010          | NFW bit 4=RAIS in time $T^{[c']}$ and RAI in < 2 ms                                                                                    |
|              |            | 011          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=RBER, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ),     |
|              |            | 100          | NFW bit 4=RAIS and RAI in time $T^{[c']}$ (TRANSMIC 2G)                                                                                |
|              |            | 101          | Enable BER calculations, BER alarm level = DMA, NFW bit 4=disabled, RAI set in < 2 ms, for c=1 (SFDT=2496 ms, CACT=624 $ms^{[jkl]}$ ), |
|              |            | 110          | NFW bits 3-8, in time 144ms (TRANSMIC 1G)                                                                                              |
|              |            | 111          | Unassigned                                                                                                                             |
|              | m          | 0            | Unassigned, only m=0 is valid                                                                                                          |
|              |            | 1            |                                                                                                                                        |

**Table Notes:**

- [b] Clock from NPC to synchronizer shall be enabled if this option bit is set to 1, otherwise it is disabled.
- [c] The G.732 Consequent Action of inserting the AIS in data channels is applied within 2 ms whether mnxyz bit c=0 or c=1; but when c=1, the AIS in data channels is overridden by the Insertion Word sourced from the Alternate Message Store (AMS) after detection of the local alarm:

in **480 ms**  
if  $jkl \neq 011$  and  $jkl \neq 101$   
in **2496 ms**  
if  $jkl = 011$  or  $jkl = 101$ . See note [jkl].



The insertion word pattern can be specified in the cross-connect command; on CEPT NPCs in a *gateway cross-connection* the insertion word always defaults to AIS.

mnxyz bit c is also used to provision the consequent actions on signaling bits. On detection of any single framing error or multiframe error, the hardware immediately applies a signaling freeze by using the last good frame's signaling information. The signaling freeze remains in effect until two multiframes without errors are received. When c=0, the AIS in signaling bits is applied within 2 ms, overriding the signaling freeze. When c=1 if the primary goes into the alarm state then the trunk conditioning pattern from the AMS overrides the signaling freeze.

In basic CEPT only, option c=0 is supported and both the AIS and RAI will be applied in less than 2 ms. NFW bit 3 of TS0 in enhanced CEPT is controlled by selecting the jkl options. Also see note [jkl'].

[c'] Option c also selects the time after which the **local** alarms are declared and cleared.\*

c=0      **Both** remote and local alarms are declared and cleared in 144 ms.

c=1      Only remote alarms are declared and cleared in 144 ms. The **local** alarms are declared and cleared in 480 ms **except when jkl=011 or jkl=101. For that case, see note [jkl']**.

[c''] Time T will be 144 ms when option c=0 and 480 ms when option c=1.

[g] Option g has meaning only if the NPC is provisioned for CAS; that is, option d=1, otherwise it is ignored. If option g=0 is selected, the AIS will always be applied to received TS16 on detection of RAI and will also be applied on detection of RAIS if the NPC is provisioned for RAIS.

If option g=1 is selected, the AIS will not be applied on detection of RAI, RAIS, or R16.

[h] NFW bit 5 when used as SFI, and h=1, is controlled by DACS II software that will force the NPC to invert (or set to an alarm state) when the synchronizer enters the holdover mode.

NFW bit 5 will default to 1 when the NPC is grown, without regard of whether option h was selected as either 0 or 1, unless it is later set to 0 by setting parameter e=0 in the TS0 field of the CHG::NPC (O.38321) command.

For Transmic 1G the information message REPT STATE EQPT (O.65201) is output. For all other combinations of xyz the alarm message REPT ALARM EQPT (O.65011) is output on detection of change of state of NFW spare bit 5 when option h=1.

If both b=1 and h=1 and the NPC (used as synchronization source) receives

---

\* Local alarms are those generated for the table entries PWR, PBF, BER, AIS, LMA, and A16. Remote alarms are those generated for the table entries RAI, RAIS, RBER, and R16.

NFW bit 5 in the alarm state, that NPC will squelch the clock it outputs. If the DACS II is using this clock as a sync source the sync pack terminating this clock will recognize that it receives a faulty clock and it will take appropriate actions which are the same as when the external sync source is detected to be faulty.

[jkl]

[000] NFW bit 3, the remote alarm indication (RAI), will be processed as specified in CCITT Recommendation G.704 Section 2.3.2 and is the same as in Basic CEPT when option *c* is selected as 0; **that is, within 2 ms after detecting the failure.** If this option is not specified as 000, use of NFW bit 3 as RAI will remain unchanged except the time when NFW bit 3 is set can be changed to 144 ms as opposed to 2 ms after detecting the failure. NFW bit 3 is always set to 0 for nonalarm conditions and is set to 1 for alarm conditions.

[010 or 100]

NFW bit 4 when used as RAIS, and AIS is detected in the received signal, can only be set 144 ms after detecting this condition. Similarly, when the received NFW bit 4 is in the active state, consequent actions are taken 144 ms after detecting this condition.

NFW bit 4 use as REER is not supported in G4.0.

[111] The jkl=111 option will be denied.

[jkl'] minor bit error rate and signaling freeze delay time features:

jkl=011 or jkl=101

[i] Enable BER calculations, and when in the BER state:

DACS takes the alarm state consequent actions: sending a message, and activating appropriate alarm relays and summary LEDs.

When out of the BER state, DACS retires the alarm state consequent actions: sends a retirement message, and deactivates appropriate alarm relays and summary LEDs.

[ii] RAI set in 2 ms

[iii] Signaling freeze Delay timing, consequent action clear timing:

*c*=0 hardware timing

*c*=1 firmware timing (SFDT=2496 ms, CACT=624 ms)

[iv] BER alarm level = DMA

jkl=011

[v] RBER alarm level = MI

[vi] NFW bit 4=RBER:

- DACS II sends a remote indicator in bit 4 (RBER) of the timeslot 0 not frame word (NFW) upstream to the far end 144 ms after detecting the minor bit error rate (BER) condition.

DACS II sets the RBER bit to its idle state, on clearing of the BER condition.

- DACS II detects the remote setting of the received bit 4 as an RBER condition and generates an appropriate message. Consequent actions are taken 144 ms after detecting this condition.

DACS II generates an appropriate retirement message when the received bit 4 returns to the idle state.

**jkl=101**

[vii] RBER unalarmed

[viii] NFW bit 4=disabled

NFW bit 4 is NOT used as RBER, although the local minor bit error rate (BER) condition is detected and cleared with the alarm state consequent actions.

For the MBER/SFDT features, the required xyz options are **ab1d efgh 0110** or **ab1d efgh 1010**. For MBER *with hardware consequent action timing*, the required xyz options are **ab0d efgh 0110** or **ab0d efgh 1010**.

NFW bit 4 will default to 1 when the NPC is grown. It may later be set to 0 by setting parameter **d=0** in the TS0 field of the CHG::NPC (O.38321) command.

[m] The option bit "m" is unassigned. Its default value is "0". The equipage command must deny "m" specified as "1".

The default values for TS0 parameters are **abcdefgh=11011111** (as per CCITT recommendations when crossing the international borders), unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=11000000.

The default values for TS0M parameters are **abcdefgh=00000000**, unless the xyz parameters set them differently, that is, for Transmic 1G the abcdefgh=00111111.

**Note:** xyz values for non-channelized NPC are xCz and xDz only.

**AIS** - Alarm indication signal

The idle code for non-channelized cross-connection

**CUS** - Customer-controlled circuit

**RDC** - Red circuit

**UTST** - Circuit is under test

**jj** - is the FAD NPC number.

If MONEF is in use and there are two FADS, then  
jj reports the lower FAD NPC number.

**tmode** - Test access mode

**FAD** - Facility access digroup

**TERM** - Termination

**F** - From termination

**T** - To termination

**B** - Both terminations

**ONEWAY** - One-way connection

**BCAST** - Circuit is part of a broadcast connection

**UASGN** - Unassigned

**TLA s** - Connection is terminated in direction s (F-From, T-To, B-Both)

**ROLL** - Bridged facility from Roll procedure

**kk** - Hexadecimal completion condition code

*kk Explanation*

**E3** One way circuit. This means that although the receive side of the NPC is unassigned, the transmit side of the NPC is one-way connected. Thus, this NPC cannot be subsequently two-way connected.

**E4** Broadcast circuit. This means that although the receive side of the NPC is unassigned, the NPC is the backbone leg of a NTR type broadcast circuit. Thus, this NPC cannot be subsequently cross-connected, either one-way or two-way.

**cc** - Hexadecimal condition code

**cc** *Explanation*

**15** NPC is unequipped

**B4** NPC is channelized type

**E4** Broadcast unassigned channel/NPC in QRY,TO

## **UTL, QRY, TOD, CFA, MONDAT**

### **RETRIEVE PERFORMANCE MONITORING REPORT SCHEDULE**

#### **Explanation Of Command**

This command is used to query the scheduled time for the daily report of facility performance parameter threshold alarms (FAC) and carrier failure alarms (CFA). This command is used to query the scheduled time for the daily report of primary rate performance parameter threshold alarms (PRIM) and carrier failure alarms (CFA). On a frame with the GATEWAY feature enabled, the normal output response message format includes both the North American and International parameters.

#### **Command**

[I.51071]

**UTL:FRM xy,SEQ ww:QRY,TOD[,CFA][,MONDAT]!**

#### **Completion Message**

[O.51071]

**M hh:mm:ss xy,ww n[vv] QRY TOD PRIM ghij[ MDNT hrmsc][ MONDAT hrmsc] COMPL**

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

Not applicable.

## Explanation Of Parameters

**TOD** - Time of day

**CFA** - Carrier Failure Alarm

Used to request the time of day for the daily CFA and FAC/PRIM report for non-PA and non-ANSI type NPCs.

**MONDAT** - Daily monitor interval starting time

Used to request the time of day for the daily report for PA NPCs.

**FAC** - Facility

Facility performance alarm report keyword.

**PRIM** - Primary Alarm/Parameter - count report keyword

Request that reporting of alarms specified by efgh be enabled. This will cause only a subset of the daily facility report to be output.

**ghij** - Primary Alarm/Parameter-count reports enable.

This field is a 4-digit, hexadecimal number. To enable alarm/parameter-count reports for a particular facility parameter, set the appropriate bit of efgh to 1. A bit set to 0 will disable the alarm report.

| <i>hex<br/>digit</i> | <i>bit</i> | <i>PB/PC NPC parameters</i>                            |
|----------------------|------------|--------------------------------------------------------|
| j                    | 0          | PBA (Primary Block Alarm)                              |
|                      | 1          | LOFA (Loss of Frame Alignment)                         |
|                      | 2          | SLIP                                                   |
|                      | 3          | US (Unavailable Seconds)                               |
| i                    | 4          | ERS (Errored Seconds)                                  |
|                      | 5          | SERS (Severely Errored Seconds)                        |
|                      | 6          | DM (Degraded Minutes)                                  |
|                      | 7          | CRC (Cyclic Redundancy Checksum)                       |
| h                    | 8          | MER (Multiframe Alignment Error)                       |
|                      | 9          | FRER (Frame Errors)                                    |
|                      | 10         | BER (Minor Bit Error Rate; for NPCs with MBER feature) |
|                      | 11         | Not assigned                                           |
| g                    | 12         | Not assigned                                           |
|                      | 13         | Not assigned                                           |
|                      | 14         | Not assigned                                           |
|                      | 15         | Not assigned                                           |

| <i>hex<br/>digit</i> | <i>bit</i> | <i>PA NPC parameters</i>                             |
|----------------------|------------|------------------------------------------------------|
| j                    | 0          | PBA (Primary Block Alarms; Default)                  |
|                      | 1          | OFS (Out-of-Frame Seconds)                           |
|                      | 2          | CSS (Controlled Slip Seconds)                        |
|                      | 3          | UAS (Unavailable Seconds)                            |
| i                    | 4          | ES (Errored Seconds)                                 |
|                      | 5          | SES (Severely Errored Seconds)                       |
|                      | 6          | CV (Code Violations)                                 |
|                      | 7          | CRC (CRC4 Block Errors)                              |
| h                    | 8          | MER (Multiframe Errors)                              |
|                      | 9          | FRER (Framing Errors)                                |
|                      | 10         | BER (Minor Bit Error Rate; for NPCs w/ MBER feature) |
|                      | 11         | UATC (Unavailable Time Count)                        |
| g                    | 12         | FUAS (Far End Unavailable Seconds)                   |
|                      | 13         | FSES (Far End Severely Errored Seconds)              |
|                      | 14         | FES (Far End Errored Seconds)                        |
|                      | 15         | FEBE (Far End Block Error)                           |

If CFA is specified, the PBA and ERS/ES bits are enabled.

**MDNT** - Midnight

The MDNT will be shown in the output when the CFA option is entered.

**hrmns** - Time of the scheduled performance parameter report



## **UTL,QRY,TPS**

### **UTILITY QUERY, TEST PORTS**

#### **Explanation Of Command**

This command reports the network processing circuits (NPCs) designated for test ports, their designation **n**, and the test modes of each equipped test port. There cannot be any unequipped test ports with numbers less than that of the highest equipped test port **within** an NPCTP since in each NPC they must be grown in numerical order starting with the lowest numbered test port within each NPCTP (01, 13, 25, etc.).

All non-channelized test NPCs or Facility Access Digroups (FADs) will be listed together in one or more segments. Each FAD number is the same as the NPC number, and is given with its test mode.

Even though test ports that are established to a Digital Signal Processing Platform (DSPP) application (such as the DDS Substrate and MJU application, the X.50 International substrate application, or the DMB application) are put into monitor or split mode within the application, this command will always display a Test Port as a split connection as long as it is connected to an application.

#### **Command**

[I.53061]

**UTL:FRM xy,SEQ ww:QRY,TPS!**

## Completion Message

---

### Nonhierarchical

---

[O.53061]

M hh:mm:ss xy,ww n[vv] UTL QRY TPS kk e LN MSG:  
NPCTP n NPC [s]abc <md01> <md02> ... <md12>  
NPCTP n NPC [s]abc <md13> <md14> ... <md24>  
NPCTP n NPC [s]abc <md25> <md26> ... <md36>  
NPCTP n NPC [s]abc <md37> <md38> ... <md48> <EOM|COMPL>

M hh:mm:ss xy,ww n[vv] UTL QRY TPS kk e LN MSG:  
NPCTP n NPC [s]abc <md49> <md50> ... <md60>  
NPCTP n NPC [s]abc <md61> <md62> ... <md72>  
NPCTP n NPC [s]abc <md73> <md74> ... <md84>  
NPCTP n NPC [s]abc <md85> <md86> ... <md96> <EOM|COMPL>

[O.53061]

M hh:mm:ss xy,ww n[vv] UTL QRY FAD kk e LN MSG:  
[s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode>  
[s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode>  
[s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode>  
[s]abc,<tmode> [s]abc,<tmode> EOM  
.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY FAD kk e LN MSG:  
[s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode>  
[s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode>  
[s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode> [s]abc,<tmode>  
[s]abc,<tmode> [s]abc,<tmode> EOM

M hh:mm:ss xy,ww n[vv] UTL QRY TPS COMPL

[O.53062]

M hh:mm:ss xy,ww n[vv] UTL QRY TPS 00 NPC [0]000 COMPL

---

### Hierarchical

[O.53061]

M hh:mm:ss xy,ww n[vv] UTL QRY TPS kk p LN MSG:  
NPCTP n NPC uvmnp <md01> <md02> ... <md12>  
NPCTP n NPC uvmnp <md13> <md14> ... <md24>  
NPCTP n NPC uvmnp <md25> <md26> ... <md36>  
NPCTP n NPC uvmnp <md37> <md38> ... <md48> <EOM|COMPL>

M hh:mm:ss xy,ww n[vv] UTL QRY TPS kk p LN MSG:  
NPCTP n NPC uvmnp <md49> <md50> ... <md60>  
NPCTP n NPC uvmnp <md61> <md62> ... <md72>  
NPCTP n NPC uvmnp <md73> <md74> ... <md84>  
NPCTP n NPC uvmnp <md85> <md86> ... <md96> <EOM|COMPL>

[O.53061]

M hh:mm:ss xy,ww n[vv] UTL QRY FAD kk p LN MSG:  
uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode>  
uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode>  
uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode>  
uvmnp,<tmode> EOM

.  
.  
.

M hh:mm:ss xy,ww n[vv] UTL QRY FAD kk p LN MSG:  
uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode>  
uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode>  
uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode> uvmnp,<tmode>  
uvmnp,<tmode> EOM

M hh:mm:ss xy,ww n[vv] UTL QRY TPS COMPL

[O.53062]

M hh:mm:ss xy,ww n[vv] UTL QRY TPS 00 NPC 00000 COMPL

---

### Denial Message

Not applicable.

---

### Autonomous Message

Not applicable.

## Explanation Of Parameters

**TPS** - Test ports

**kk** - Total number of test ports equipped or total number of equipped non-channelized test NPCs in segment

**NPC** - Network processing circuit

**[s]abc** - The 3- or 4-digit nonhierarchical NPC number of test NPC

The valid values are:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |
| <br>             |                  |                  |                  |
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical NPC number of test NPC

**uv** - Unit number  
**m** - Module number  
**np** - NPC number within the module

The valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**NPCTP** - NPC for test ports

**FAD** - Facility access digroup  
Non-channelized test NPC

**n** - 64Kbit/s NPCTP number (1 through 8)

**md01-md96**

- Mode of 64Kbit/s Test Port number nn (01 through 96)

*mdnn Definition*

|     |                    |
|-----|--------------------|
| TPR | Test Port Released |
| MON | Monitor            |
| SPL | Split              |
| HUB | Hubbed             |
| LPD | Looped             |
| --- | Not equipped       |

**tmode** - Test mode of non-channelized test NPC

*tmode Definition*

|       |                  |
|-------|------------------|
| MONE  | Monitor E (FROM) |
| MONF  | Monitor F (TO)   |
| MONEF | Monitor E and F  |

|        |               |
|--------|---------------|
| SPLTA  | Split A       |
| SPLTB  | Split B       |
| SPLTAB | Split A and B |
| SPLTE  | Split E       |
| SPLTF  | Split F       |
| SPLTEF | Split E and F |

|       |               |
|-------|---------------|
| LOOPE | Loop E        |
| LOOPF | Loop F        |
| LPBKT | Loopback Test |
| HUB   | Hub           |

**e** - Number of lines in message (2 through 5)

## **UTL, QRY, TS0, NPC**

### **QUERY NPC TIME SLOT ZERO**

#### **Explanation Of Command**

This message prints out the status of the provisioned transmit or of the actual received spare International, National, and Remote Alarm Indication (A) Bits in time slot 0 of a specified network processing circuit (NPC) or range of NPCs. If an NPC range was specified in the input command, the following floating window rules apply:

- Unequipped NPCs within the requested range will be skipped.
- If a CEPT gap is within the requested range, the NPCs in the gap will be skipped.
- If an endpoint of the requested range is in a CEPT gap, then the NPCs in the portion of the range which is in the gap will be denied.

#### **Command**

##### **Nonhierarchical**

[I.56321]

**UTL:FRM xy,SEQ ww:QRY,TS0 s,NPC [s]abc[-[t]def]!**

##### **Hierarchical**

[I.56321]

**UTL:FRM xy,SEQ ww:QRY,TS0 s,NPC uvmnp[-wxkqr]!**

---

## Completion Message

---

### Nonhierarchical

---

[O.56321]

M hh:mm:ss xy,ww n[vv] UTL QRY TS0 s NPC [s]abc abcdefgh COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY TS0 s NPC [t]def abcdefgh COMPL]

[M hh:mm:ss xy,ww n[vv] UTL QRY TS0 s NPC [s]abc-[t]def COMPL]

### Hierarchical

---

[O.56321]

M hh:mm:ss xy,ww n[vv] UTL QRY TS0 s NPC uvmnp abcdefgh COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY TS0 s NPC wxkqr abcdefgh COMPL]

[M hh:mm:ss xy,ww n[vv] UTL QRY TS0 s NPC uvmnp-wxkqr COMPL]

---

## Denial Message

---

### Nonhierarchical

---

[O.56321.01]

M hh:mm:ss xy,ww n[vv] UTL QRY TS0 s NPC [t]ghi COND cc DNY

### Hierarchical

---

[O.56321.01]

M hh:mm:ss xy,ww n[vv] UTL QRY TS0 s NPC edhfg COND cc DNY

---

## Autonomous Message

---

Not applicable.



## Explanation Of Parameters

**NPC** - Network processing circuit

**[s]abc** - Nonhierarchical NPC number  
Values are listed below:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**[t]def** - Nonhierarchical NPC number

Values are identical to those for [s]abc.

**uvmnp** - Hierarchical NPC number

**wxkqr** - Hierarchical NPC number

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**uv, wx** - Unit number

**m, k** - Module number

**np, qr** - NPC number

**TS0** - Time slot 0

**s** - Direction of transmission for time slot 0 bits

*s* Explanation

T Provisioned time slot 0 values

R Received time slot 0 values

**[t]ghi** - The 3- or 4-digit nonhierarchical NPC number (abc through def)

**[t]jkl** - The 3- or 4-digit nonhierarchical NPC number (abc through def)

**edhfg** - Hierarchical NPC number (uvmnp through wxkqr)

**opjst** - Hierarchical NPC number (uvmnp through wxkqr)

**ed, op** - Unit number (uv through wx)  
**h, j** - Module number (m through k)  
**fg, st** - NPC number (np through qr)

**abcdefgh**

- Eight individual variables.

These represent the provisioned or received state of the time slot 0 bits.

For Clear-2Mbit/s NPCs, dashes ("-----") will be shown in place of TS0 bits.

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW  
if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

**cc** - Hexadecimal condition code

**cc** *Explanation*

|           |                                  |
|-----------|----------------------------------|
| <b>04</b> | Subject entity is out of service |
| <b>10</b> | Unit is not equipped             |
| <b>11</b> | UC is out of service             |
| <b>13</b> | FTMI is not equipped             |
| <b>14</b> | FTMI is out of service           |
| <b>15</b> | NPC is unequipped                |
| <b>25</b> | FTMI type error                  |
| <b>26</b> | NPC type error                   |
| <b>0B</b> | Invalid CEPT NPC                 |
| <b>46</b> | NPC Failed or Out of Service     |

## **UTL, QRY, TS0M, NPC**

### **QUERY TIME SLOT ZERO MONITOR**

#### **Explanation Of Command**

This message checks whether the received spare national and international bits in time slot 0 are provisioned for monitoring. This information may be requested for a single network processing circuit (NPC) or a range of circuits. If an NPC range was specified in the input command, the following floating window rules apply:

- Unequipped NPCs within the requested range will be skipped.
- If a CEPT gap is within the requested range, the NPCs in the gap will be skipped.
- If an endpoint of the requested range is in a CEPT gap, then the NPCs in the portion of the range which is in the gap will be denied.

#### **Command**

##### **Nonhierarchical**

[I.56323]

**UTL:FRM xy,SEQ ww:QRY,TS0M,NPC [s]abc[-[t]def]!**

##### **Hierarchical**

[I.56323]

**UTL:FRM xy,SEQ ww:QRY,TS0M,NPC uvmnp[-wxkqr]!**

---

## Completion Message

---

### Nonhierarchical

---

[O.56323]

M hh:mm:ss xy,ww n[vv] UTL QRY TS0M NPC [s]abc abcdefgh TS0MBOFL v \  
COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY TS0M NPC [t]def abcdefgh TS0MBOFL v \  
COMPL]

[M hh:mm:ss xy,ww n[vv] UTL QRY TS0M NPC [s]abc-[t]def COMPL]

### Hierarchical

---

[O.56323]

M hh:mm:ss xy,ww n[vv] UTL QRY TS0M NPC uvmnp abcdefgh TS0MBOFL v \  
COMPL

.  
.  
.

[M hh:mm:ss xy,ww n[vv] UTL QRY TS0M NPC wxkqr abcdefgh TS0MBOFL v \  
COMPL]

[M hh:mm:ss xy,ww n[vv] UTL QRY TS0M NPC uvmnp-wxkqr COMPL]

---

## Denial Message

---

### Nonhierarchical

---

[O.56323.01]

M hh:mm:ss xy,ww n[vv] UTL QRY TS0M NPC [v]ghi[-[u]jkl] COND cc DNY

### Hierarchical

---

[O.56323.01]

M hh:mm:ss xy,ww n[vv] UTL QRY TS0M NPC edhfg[-opjst] COND cc DNY

## Autonomous Message

Not applicable.

## Explanation Of Parameters

**[s]abc** - The 3 or 4 digit nonhierarchical starting NPC number

**[t]def** - The 3 or 4 digit nonhierarchical ending NPC number

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |
| <br>             |                  |                  |                  |
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical starting NPC number  
**wxkqr** - Hierarchical ending NPC number

**uv,wx** - Unit number  
**m,k** - Module number  
**np,qr** - NPC number within the module

The values are listed below:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit         | Module     | NPC          |
|--------------|------------|--------------|
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**[v]ghi** - The 3- or 4-digit nonhierarchical NPC number ([s]abc through [u]jkl)

**[u]jkl** - The 3- or 4-digit nonhierarchical NPC number ([v]ghi through [t]def)

**edhfg** - Hierarchical NPC number (uvmnp through opjst)

**opjst** - Hierarchical NPC number (edhfg through wxkqr)

**ed,op** - Unit number (uv through wx)

**h,j** - Module number

**fg,st** - NPC number

**TS0M** - Time slot 0 monitor

**abcdefgh**

- Time slot 0 monitor bits

**ab** - Spare international bits  $S_i$

If the NPC is not provisioned for the CRC multiframe format, bits **a** and **b** shall represent the  $S_i$  bits in the Frame Word (FW) and the Non Frame Word (NFW), respectively.

If the NPC is provisioned for the CRC multiframe format, **a** and **b** shall represent the  $S_i$  bits in frames 13 and 15 of the CRC multiframe in the NFW, respectively.

**c** - Remote Alarm Indication

**de** - Two spare national bits  $S_4$  through  $S_5$  in the NFW.

**f** - RPSFI (Remote Power Supply Failure Indicator) bit in the NFW if provisioned for RPSFI otherwise spare national bit.

**gh** - Two spare national bits  $S_7$  through  $S_8$  in the NFW

Valid values for bits **a** through **h** are described below:

| <i>Bit value</i> | <i>Explanation</i>                                                           |
|------------------|------------------------------------------------------------------------------|
| <b>0</b>         | Do not monitor and therefore do not send a message if this bit changes state |
| <b>1</b>         | Monitor and therefore send a message if this bit changes state               |

#### **TS0MBOFL**

- Time slot 0 monitor buffer overflow keyword

**v** - TS0M condition indicator

|   |                                              |
|---|----------------------------------------------|
| 0 | NPC is not in TS0M buffer overflow condition |
| 1 | NPC is in TS0M buffer overflow condition     |

**cc** - Hexadecimal condition code

| <b>cc</b> | <i>Explanation</i>                                |
|-----------|---------------------------------------------------|
| <b>10</b> | Unit is not equipped                              |
| <b>15</b> | NPC is unequipped                                 |
| <b>0B</b> | Invalid CEPT NPC                                  |
| <b>F1</b> | Parameter only valid with PA, PB, or PC type NPCs |



## **UTL, QRY, UNIT, FTMI, IMP**

### **UTILITY QUERY EQUALIZATION, IMPEDANCE**

#### **Explanation Of Command**

This message requests the system to display the network processing circuit impedance values for a facility terminating module interface (FTMI) in a facility terminating unit (FTU).

#### **Command**

[I.53071]

UTL:FRM xy,SEQ ww:QRY,UNIT [q]q,FTMI b[,IMP]!

#### **Completion Message**

[O.53071]

M hh:mm:ss xy,ww n[vv] UTL QRY UNIT [q]q FTMI b IMP zzz COMPL

#### **Denial Message**

[O.53071.01]

M hh:mm:ss xy,ww n[vv] UTL QRY UNIT [q]q FTMI b IMP COND cc DNY

#### **Autonomous Message**

Not applicable.

### Explanation Of Parameters

---

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**FTMI** - Facility terminating module interface

**b** - FTMI number (1 through 4)

**IMP** - Impedance

**zzz** - Optional impedance value

| <i>zzz</i> | <i>Explanation</i> |
|------------|--------------------|
|------------|--------------------|

|     |                                        |
|-----|----------------------------------------|
| 075 | CEPT termination with 75-ohm impedance |
|-----|----------------------------------------|

|     |                                         |
|-----|-----------------------------------------|
| 120 | CEPT termination with 120-ohm impedance |
|-----|-----------------------------------------|

**cc** - Hexadecimal condition code

| <i>cc</i> | <i>Explanation</i> |
|-----------|--------------------|
|-----------|--------------------|

|    |                                |
|----|--------------------------------|
| 02 | Subject entity is not equipped |
|----|--------------------------------|

|    |                      |
|----|----------------------|
| 10 | Unit is not equipped |
|----|----------------------|

## **UTL, QRY, WHO**

---

### **UTILITY QUERY WHO**

#### **Explanation Of Command**

---

This message requests a display of the unique frame identifier (UFI) of the DACS frame, the software version identifier, and the feature package identification code.

#### **Command**

---

[I.51041]

UTL:FRM xy,SEQ ww:QRY,WHO!

#### **Completion Message**

---

[O.51041]

M hh:mm:ss xy,ww n[vv] UTL QRY WHO <uid> 2 LN MSG:  
RELEASE DACSIgg POINT pp VERSION r FPKG kkttuuvv COMPL

#### **Denial Message**

---

Not applicable.

#### **Autonomous Message**

---

Not applicable.

## Explanation Of Parameters

**WHO** - Who

With reference to the frame "Who are you?"

**uid** - Unique (frame) identifier (1 to 20 alphanumeric characters)

The uid is initialized by GRTH::FRAME.

If the uid is not initialized, no characters will appear.

**VERSN** - Version

**DACSII** - DACS II

**gg** - DACS II software release number

**pp** - DACS II software release point number

**r** - Version number of the release point

**FPKG** - Feature package

**kkt tuuvv**

- Feature package identifier

|          |                                               |
|----------|-----------------------------------------------|
| 00000001 | DS1                                           |
| 00000002 | CEPT                                          |
| 00000004 | Subrate                                       |
| 00000008 | Direct SLC® 96 and Series 5 Carrier Interface |
| 00000010 | DS3 Terminations                              |
| 00000020 | Enhanced CEPT                                 |
|          | C-bit                                         |
|          | C-bit filtering                               |
|          | RPSFI                                         |
| 00000040 | Switched Teleconferencing                     |
| 00000080 | CEF                                           |
| 00000100 | Enhanced DS1 Performance Monitoring           |
| 00000200 | DS0/DS1 Roll                                  |
| 00000400 | Security Warning Message                      |
| 00000800 | Nx64kbit Test Access                          |
| 00001000 | Clear 2MB/s Interface                         |
| 00002000 | TS0 to Non-TS0 Cross-connection               |
| 00004000 | 2MB/S Roll                                    |
| 00008000 | SPARE                                         |
| 00010000 | TRT/FT Features                               |
|          | Intervention Level                            |
| 00020000 | DS3 Hybrid                                    |

In general a feature package identification code is a combination of several individual feature package numbers. To determine the individual features that make up a feature package it is necessary to decode the feature package identification code. This code is an eight digit hexadecimal number. Each hexadecimal number represents a four-bit binary number. Within this binary number each feature is associated with one particular bit. Consequently to determine the feature list from a feature package identification code it is necessary to convert each hexadecimal digit to its binary equivalent and look up the features in the list above. For example the feature package identification code 0000000F can be converted to the following binary number working from left to right one hex digit at a time.

0000 0000 0000 0000 0000 0000 0000 1111

This number contains eight binary numbers each representing one of the hexadecimal numbers in the feature package identification code 0000000F. The rightmost number of the code contains four features since there are four bits set to one. This would be decoded as follows using the table of features above.

|       | binary | hex | Feature                      |
|-------|--------|-----|------------------------------|
|       | 0001   | 1   | DS1                          |
|       | 0010   | 2   | CEPT                         |
|       | 0100   | 4   | Subrate                      |
|       | 1000   | 8   | Direct SLC                   |
| Total | 1111   | F   | (DS1 + CEPT + Subrate + SLC) |

## UTL, QRY, XCSB, UNIT

### QUERY CROSS-CONNECT STATUS BUS

#### Explanation Of Command

This command requests a check of the side switch consistency between the hardware entities and the data base. Depending on the result of the cross-connect consistency check, DACS II will respond with different outputs as specified in the following sections.

If the entities of a unit are either all consistent or all inconsistent with the data base, a single line output will be generated. The field "DB s", which indicates the active side recorded in the data base (DB), will always be shown, while the keyword "UM" (Unmatch) will be shown only if all entities of the unit are inconsistent with the data base.

**Note:** For an FTU, if some but not all of its DDCs are consistent with the data base, four output message segments will be generated. Each segment will report the side status for NPCs in one Facility Terminating Module (FTM). If all NPCs in an FTM have the same status, the segment for the FTM will have only one line; otherwise, it will be a five-line segment.

When this command is entered, the side selection configuration register on each dual digroup circuit of the facility terminating units and each multiplexer or hybrid multiplexer of the DS3 units or Hybrid DS3 units is compared with the information stored in the data base. In addition, the configuration register on each cross-connect network interface or clock and control interface (CCNI/CCI) is also checked against the status of the data base.

This command can be entered to request the status of the whole frame or of a particular unit. If the status of the whole frame is requested, DACS II will output the result for each unit in ascending order from units 01 through 16. Unequipped units or digital signal processing units will not be checked and reported. If the unit number is specified on input, it must be an FTU or DS3U or HDS3U ; otherwise, the command will be denied.

After the unit-related results are reported, DACS II will output the result for the CCNI/CCI.

If all DDCs/MXR/HMXRs of an FTU/DS3U/HDS3U are marked pass, DACS II will generate the completion output (O.55181) showing the active side indicated in the data base, that is, showing "DB s". If all of them are marked fail, the "UM" keyword will also be shown to indicate that the side selected by the entities does not match the side recorded in the data base.

For a DS3U/HDS3U, if all its MXRs/HMXRs do not have the same marking, output message O.55182 will be generated. This message will give the MXR/HMXR number of the MXR(s)/HMXR(s) marked fail. MXR(s)/HMXR(s) that is (are) pested, out-of-service, or marked pass will show a dash (-) in place of the MXR/HMXR number.

For an FTU, if all its DDCs do not have the same marking, output message O.55183 will be generated. This message will give the NPC number of the NPC(s) marked fail. NPCs that are pested, out-of-service, or marked pass will show dashes (---) in place of the NPC number. Since the two NPCs of a DDC will always have the same status, the two NPC numbers will either both be shown or both be represented by dashes. For the CCNIs/CCIs, if the side status for one or both packs does not agree with the data base, the key word "UM" will be output in the output message O.55184. A pack that has failed is identified by its side number whereas a pack that has passed is identified by a dash "-".

The execution of this command and the output of messages in response to its execution can be aborted by use of the ABT command.

### Command

[I.55181]

UTL:FRM xy,SEQ ww:QRY,XCSB[,UNIT [q]q]!

### Completion Message

### Nonhierarchical

[O.55183]

```
M hh:mm:ss xy,ww n[vv] UTL QRY XCSB UNIT [q]q UM BD s NPCS [s]abc-[t]def 5 LN MSG:
[s]ghi-[t]jkl [s]ghi-[t]jkl [s]ghi-[t]jkl [s]ghi-[t]jkl
[s]ghi-[t]jkl [s]ghi-[t]jkl [s]ghi-[t]jkl [s]ghi-[t]jkl
[s]ghi-[t]jkl [s]ghi-[t]jkl [s]ghi-[t]jkl [s]ghi-[t]jkl
[s]ghi-[t]jkl [s]ghi-[t]jkl [s]ghi-[t]jkl [s]ghi-[t]jkl {EOM|COMPL}
```

[O.55183]

```
M hh:mm:ss xy,ww n[vv] UTL QRY XCSB UNIT [q]q[UM] DB s \
NPCS [s]abc-[t]def COND kk {EOM|COMPL}
```

## Hierarchical

---

[O.55183]

pahh:mm:ss xy,ww n[vv] UTL QRY XCSB UNIT [q]q UM DB s NPCS uvmnp-uvmqr 5 LN MSG:  
uvmhi-uvmk1 uvmhi-uvmk1 uvmhi-uvmk1 uvmhi-uvmk1  
uvmhi-uvmk1 uvmhi-uvmk1 uvmhi-uvmk1 uvmhi-uvmk1  
uvmhi-uvmk1 uvmhi-uvmk1 uvmhi-uvmk1 uvmhi-uvmk1  
uvmhi-uvmk1 uvmhi-uvmk1 uvmhi-uvmk1 uvmhi-uvmk1 {EOM|COMPL}

[O.55183]

M hh:mm:ss xy,ww n[vv] UTL QRY XCSB UNIT [q]q[ UM] DB s \  
NPCS uvmnp-uvmqr COND kk {EOM|COMPL}

## Common

---

[O.55181]

M hh:mm:ss xy,ww n[vv] UTL QRY XCSB UNIT [q]q[ UM] DB s ALL COND kk COMPL

**Note:** For a DS3U/HDS3U, if some but not all of its MXRs/HMXRs are consistent with the database, the MXR/HMXR number will be shown for the ones that are inconsistent.

[O.55182]

M hh:mm:ss xy,ww n[vv] UTL QRY XCSB UNIT [q]q UM DS s MXR a b c d e f g COMPL

[O.55184]

M hh:mm:ss xy,ww n[vv] UTL QRY XCSB {CCNI|CCI} h j[ UM] DB s COMPL

## Denial Message

---

[O.55181.01]

M hh:mm:ss xy,ww n[vv] UTL QRY XCSB[ UNIT [q]q] COND cc DNY

## Autonomous Message

---

Not applicable.



## Explanation Of Parameters

**XCSB** - Cross-Connect Status Bus

**UNIT** - Unit

**[q]q** - Unit number (1 through 16)

**[s]abc** - The 3- or 4-digit nonhierarchical FTU NPC number of the first NPC in an FTM

**[t]def** - The 3- or 4-digit nonhierarchical FTU NPC number of the last NPC in an FTM

**[s]ghi** - The 3- or 4-digit nonhierarchical odd FTU NPC number ([s]abc through [t]def)

**[t]jkl** - The 3- or 4-digit nonhierarchical even FTU NPC number ([t]jkl = [s]ghi + 1)

The valid values are:

If NPC numbers are expressed in three digits, the valid values are:

PA, PB, and PC type NPC numbers listed by unit number,  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1      | Unit<br>2      | Unit<br>3      | Unit<br>4      | Unit<br>5      | Unit<br>6      |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     | <b>NPC</b>     |
| <b>001-032</b> | <b>161-192</b> | <b>321-352</b> | <b>481-512</b> | <b>641-672</b> | <b>801-832</b> |
| <b>041-072</b> | <b>201-232</b> | <b>361-392</b> | <b>521-552</b> | <b>681-712</b> | <b>841-872</b> |
| <b>081-112</b> | <b>241-272</b> | <b>401-432</b> | <b>561-592</b> | <b>721-752</b> | <b>881-912</b> |
| <b>121-152</b> | <b>281-312</b> | <b>441-472</b> | <b>601-632</b> | <b>761-792</b> | <b>921-952</b> |

If NPC numbers are expressed in four digits, the valid values are:

PA, PB and PC type NPC numbers listed by unit number  
Unit Type FT (IFTU2/IFTU/FTU)

| Unit<br>1        | Unit<br>2        | Unit<br>3        | Unit<br>4        |
|------------------|------------------|------------------|------------------|
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0001-0032</b> | <b>0161-0192</b> | <b>0321-0352</b> | <b>0481-0512</b> |
| <b>0041-0072</b> | <b>0201-0232</b> | <b>0361-0392</b> | <b>0521-0552</b> |
| <b>0081-0112</b> | <b>0241-0272</b> | <b>0401-0432</b> | <b>0561-0592</b> |
| <b>0121-0152</b> | <b>0281-0312</b> | <b>0441-0472</b> | <b>0601-0632</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>5        | Unit<br>6        | Unit<br>7        | Unit<br>8        |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>0641-0672</b> | <b>0801-0832</b> | <b>0961-0992</b> | <b>1121-1152</b> |
| <b>0681-0712</b> | <b>0841-0872</b> | <b>1001-1032</b> | <b>1161-1192</b> |
| <b>0721-0752</b> | <b>0881-0912</b> | <b>1041-1072</b> | <b>1201-1232</b> |
| <b>0761-0792</b> | <b>0921-0952</b> | <b>1081-1112</b> | <b>1241-1272</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>9        | Unit<br>10       | Unit<br>11       | Unit<br>12       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1281-1312</b> | <b>1441-1472</b> | <b>1601-1632</b> | <b>1761-1792</b> |
| <b>1321-1352</b> | <b>1481-1512</b> | <b>1641-1672</b> | <b>1801-1832</b> |
| <b>1361-1392</b> | <b>1521-1552</b> | <b>1681-1712</b> | <b>1841-1872</b> |
| <b>1401-1432</b> | <b>1561-1592</b> | <b>1721-1752</b> | <b>1881-1912</b> |

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| Unit<br>13       | Unit<br>14       | Unit<br>15       | Unit<br>16       |
| <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       | <b>NPC</b>       |
| <b>1921-1952</b> | <b>2081-2112</b> | <b>2241-2272</b> | <b>2401-2432</b> |
| <b>1961-1992</b> | <b>2121-2152</b> | <b>2281-2312</b> | <b>2441-2472</b> |
| <b>2001-2032</b> | <b>2161-2192</b> | <b>2321-2352</b> | <b>2481-2512</b> |
| <b>2041-2072</b> | <b>2201-2232</b> | <b>2361-2392</b> | <b>2521-2552</b> |

**uvmnp** - Hierarchical FTU NPC number of the first NPC in an FTM  
**uvmqr** - Hierarchical FTU NPC number of the last NPC in an FTM  
**uvmhi** - Hierarchical odd FTU NPC number (uvmnp through uvmkl)  
**uvmkl** - Hierarchical even FTU NPC number (uvmkl = uvmhi + 1)

**uv** - Unit number  
**m** - Module number  
**np, qr, hi, kl**  
- NPC number

The valid values are:

PA, PB, and PC type numbers listed by unit, module, and NPC Number  
Unit Type FT (IFTU2/IFTU/FTU)

|              |            |              |
|--------------|------------|--------------|
| Unit         | Module     | NPC          |
| <b>01-16</b> | <b>1-4</b> | <b>01-32</b> |

**UM** - Unmatched

This keyword indicates there are entities selecting a side different from the side recorded in the database.

**DB** - Database

**s** - Cross-connect side (0 or 1)

**MXR** - Multiplexer or Hybrid Multiplexer

**a,**

**...,**

**g** - Multiplexer/Hybrid Multiplexer status

The assignment of MXRs/HMXRs to variables a through g is shown below.

| a | b | c | d | e | f | g | Variable                |
|---|---|---|---|---|---|---|-------------------------|
| P | 1 | 2 | 3 | 4 | 5 | 6 | MXR/HMXR identification |

The MXR/HMXR identification appears if the MXR/HMXR has failed.  
The appearance of a dash (-) in place of a MXR/HMXR identification indicates that the particular MXR/HMXR passed.

**CCNI** - Cross-connect network interface (NonCEF)

**CCI** - Clock and control interface (CEF)

**h** - CCNI/CCI 0 status

**j** - CCNI/CCI 1 status

The assignment of CCNIs/CCIs to variables h and j is shown below.

| h | j | Variable                |
|---|---|-------------------------|
| 0 | 1 | CCNI/CCI identification |

The CCNI/CCI identification appears if the CCI has failed. The appearance of a dash in place of a CCNI/CCI identification indicates that the particular CCNI/CCI passed.

**kk** - Completion condition code (hexadecimal)

To interpret values of kk use the table of cc values below.

**cc** - Hexadecimal condition code

**cc**    *Explanation*

|           |                               |
|-----------|-------------------------------|
| <b>00</b> | No conditions                 |
| <b>05</b> | Subject entity is pested      |
| <b>10</b> | Unit is not equipped          |
| <b>11</b> | UC is out of service          |
| <b>12</b> | UC is in service but failed   |
| <b>13</b> | FTMI is not equipped          |
| <b>14</b> | FTMI is out of service        |
| <b>1F</b> | FTMI is in service but failed |
| <b>24</b> | Unit type error               |

## **UTL,RCY,COND,IN,PROGRESS**

### **UTILITY QUERY, ERROR RECOVERY**

#### **Explanation Of Command**

This message reports that an autonomous error recovery action has been taken to an entity. An in-progress message will be output every 20 seconds until the action is completed or denied.

#### **Command**

Not applicable.

#### **Completion Message**

Not applicable.

#### **Denial Message**

Not applicable.

#### **Autonomous Message**

[O.55021]

**I hh:mm:ss xy,ww    UTL RCY <entity> <action> COND cc COMPL**

[O.55022]

**I hh:mm:ss xy,ww    UTL RCY IN PROGRESS**

[O.55021.01]

**I hh:mm:ss xy,ww    UTL RCY <entity> <action> COND cc DNY**

## **Explanation Of Parameters**

---

**RCY** - Internal recovery error

**entity** - DACS II entity involved

| <i>entity</i> | <i>Explanation</i>                     |
|---------------|----------------------------------------|
| MC            | Action on Main Controller              |
| MP            | Action on Main Processor               |
| CI            | Action on Communication Interface      |
| DISK          | Action on DISK unit                    |
| TAPE          | Action on TAPE unit                    |
| UNIT [q]q     | Action on specific unit (1 through 16) |
| FRAME         | Frame wide action                      |

**action** - Action that the error recovery takes to the entity

| <i>action</i> | <i>Explanation</i>                                        |
|---------------|-----------------------------------------------------------|
| REMOVE        | Remove processor from service                             |
| HWBOOT        | Hardware boot (boot of processor with existing data base) |
| WMBOOT        | Warm boot (boot of processor with disk data base)         |
| CDBOOT        | Cold boot (boot of processor programs and data base)      |
| MCOND         | Put frame into maintenance condition                      |

**cc** - Hexadecimal condition code

### **cc Explanation**

|           |                                                                         |
|-----------|-------------------------------------------------------------------------|
| <b>00</b> | <b>No conditions</b>                                                    |
| <b>04</b> | <b>Subject entity is out of service</b>                                 |
| <b>0B</b> | <b>BOOT on subject entity failed</b>                                    |
| <b>46</b> | <b>Failed to boot CONF file</b>                                         |
| <b>47</b> | <b>Failed to boot DB</b>                                                |
| <b>48</b> | <b>Failed to boot journal--recurrence indicates database corruption</b> |
| <b>49</b> | <b>Failed to boot unit</b>                                              |
| <b>4C</b> | <b>Failed to boot CI</b>                                                |
| <b>51</b> | <b>General boot failure (vanilla flavor)</b>                            |
| <b>18</b> | <b>DSPI not equipped, not in service, or failed</b>                     |
| <b>4D</b> | <b>MP database not consistent with Configuration file</b>               |

**cc Explanation**

**52 Database is empty**  
**3F G4 to G4.1 retrofit failed**  
**92 Can't mount or unmount PMEM**  
**FA SSC software out of date**  
**2B Database corrupt**

## **UTL,RCY,PASSWD**

### **UTILITY, RECOVERY,PASSWORD**

#### **Explanation Of Command**

This command is used to recover the frame administrator password with the password recovery card. Upon successful completion of this command, DACS II will have copied the original frame administrator's password from the password recovery card to the data base in the RAM. To ensure proper security, the administrator should immediately change his or her password using message I.38301. See Operations and Maintenance manual for procedures.

#### **Command**

[I.51081]

**UTL:FRM xy,SEQ ww:RCY,PASSWD!**

#### **Completion Message**

[O.51081]

**M hh:mm:ss xy,ww n[vv] UTL RCY PASSWD COMPL**

#### **Denial Message**

[O.51081.01]

**M hh:mm:ss xy,ww n[vv] UTL RCY PASSWD COND cc DNY**

#### **Autonomous Message**

Not applicable.



### **Explanation Of Parameters**

---

**RCY** - Recovery

**PASSWD** - Password

**cc** - Hexadecimal condition code

**cc** *Explanation*

**64** File doesn't exist/can't be accessed

**8D** DB PMEM error OP-CL-RD-WR-SK

**DD** Password recovery card is not READ-only

**91** Can't mount or unmount password recovery card

## **UTL,TOD,CFA,PRIM,X,MONDAT**

### **SET DAILY FACILITY ALARM REPORTING TIME**

#### **Explanation Of Command**

This command is used for the following purposes:

- To set the DACS II System clock
- To set the time for the daily facility alarms report.
- To set the parameters to be reported in the daily facility alarms report.

### **SETTING THE DACS II SYSTEM CLOCK**

To set the DACS II System clock specify only the time to which the clock is to be set (TOD).

### **SETTING THE TIME FOR THE DAILY FACILITY ALARMS REPORT**

The facility alarms report is output daily at the default time of midnight. To output the report at a different time the user must redefine midnight. This redefined midnight is sometimes referred to as "local midnight". The "local midnight" is set by jointly specifying the time of day and the parameters to be reported. Once a "local midnight" has been set the facility alarms report will be output daily at the new "midnight".

### **SETTING THE PARAMETERS TO BE REPORTED**

The parameters are set by use of the PRIM keyword using the appropriate value of ghij from the tables below.

**Note:** There are two sets of ghij values; one for NPCs provisioned as PA/TH type NPCs and the other for NPCs provisioned as PB or PC type NPCs.

To disable all reports specify zeros for each digit in the variable abcdef.

To disable all reports specify zeros for each digit in the variable ghij.

The CGA alarms report defaults to midnight if this command is not used to alter the report time or parameters.

The PBA alarms report defaults to midnight if this command is not used to alter the report time or parameters.

### **Command**

---

[I.51011]

**UTL:FRM xy,SEQ ww:[TOD hrmnsc][,{CFA|PRIM X'ghij|MONDAT}}]!**

### **Completion Message**

---

[O.51011]

**M hh:mm:ss xy,ww n[vv] UTL[ TOD[ MDNT] hrmnsc]\  
[ {CFA|PRIM ghij|MONDAT}}] COMPL**

### **Denial Message**

---

[O.51011.01]

**M hh:mm:ss xy,ww n[vv] UTL[ TOD[ MDNT] hrmnsc \  
[{CFA|PRIM ghij|MONDAT}}] COND cc DNY**

### **Autonomous Message**

---

Not applicable.

## **Explanation Of Parameters**

---

**TOD** - Time of day

**hrmns** - Time specification

**hr** - hours (00 through 23)

**mn** - minutes (00 through 59)

**sc** - seconds (00 through 59)

When the time of day is used with the MONDAT keyword mn and sc are restricted to certain values listed in the explanation of MONDAT.

**MONDAT** - Daily Monitor Starting Time

When the MONDAT keyword is entered, "hrmns" is used to specify the starting time for the daily accumulation interval for PA/TH type NPCs. In this case, "mn" is limited to 00, 15, 30 or 45, and "sc" is limited to 00. The default daily monitor starting time is midnight. At the daily monitor starting time DACS II will report the facility alarms and the counts for all selected daily parameters for the daily interval just ended and clear all current counts and threshold crossing alarms to start a new daily interval. The report time specified with the MONDAT keyword is not applicable to other NPC types. Likewise, the midnight report time entered without the MONDAT keyword is not applicable to PA/TH type NPCs.

**MDNT** - Midnight

This keyword is output to indicate that midnight, the default time to output facility alarm reports, has been reset to be the time indicated by TOD hrmns.

**Note:** If the MONDAT keyword is entered, the MDNT keyword will not be output.

**CFA** - Carrier failure alarm

This keyword, when specified with the time of day field, indicates that the daily facility report time rather than the system time of day is being reprogrammed. The daily facility report will be output at the specified time, which defaults to midnight. See below the complete description of facility monitoring alarms that may be included in the daily facility report.

**FAC** - Facility

Request that the reporting of alarms specified by abcdef be enabled. This will cause only a subset of the daily facility report to be output.

**abcdef** - Facility performance alarm reports enable (hexadecimal)

This variable represents a six-digit hexadecimal number. Each hexadecimal digit represents 4 bits and each bit corresponds to a particular facility parameter. To enable alarm reports for a facility parameter the bit corresponding to that parameter is set to 1 using the tables below. To disable the alarm report the bit is set to 0.

The following tables should be used to set or interpret the hexadecimal values of digit identifiers a through f.

**a** - Digit identifier (Unassigned)

**b** - Digit identifier

**b** *Facility parameter alarm report enabled*

|          |                                            |
|----------|--------------------------------------------|
| <b>F</b> | DS3 ALM, SAFE, SANE                        |
| <b>E</b> | DS3 ALM, SAFE                              |
| <b>D</b> | DS3 ALM, SANE                              |
| <b>C</b> | DS3 ALM                                    |
| <b>B</b> | SAFE, SANE                                 |
| <b>A</b> | SAFE                                       |
| <b>9</b> | SANE                                       |
| <b>8</b> | Not assigned                               |
| <b>7</b> | DS3 ALM, SAFE, SANE                        |
| <b>6</b> | DS3 ALM, SAFE                              |
| <b>5</b> | DS3 ALM, SANE                              |
| <b>4</b> | DS3 ALM                                    |
| <b>3</b> | SAFE, SANE                                 |
| <b>2</b> | SAFE                                       |
| <b>1</b> | SANE                                       |
| <b>0</b> | DS3 ALM, SAFE, SANE alarm reports disabled |

DS3 ALM - DS3 or Hybrid DS3 alarm

SAFE - Shelf alarm far end

SANE - Shelf alarm near end

**c** - Digit identifier (Unassigned)

**d** - Digit identifier

**d** *Facility parameter alarm report enabled*

**F** FRER, BPV

**E** FRER

**D** BPV

**C** Not assigned

**B** FRER, BPV

**A** FRER

**9** BPV

**8** Not assigned

**7** FRER, BPV

**6** FRER

**5** BPV

**4** Not assigned

**3** FRER, BPV

**2** FRER

**1** BPV

**0** FRER, BPV alarm reports disabled

FRER - Frame errors

BPV - Bipolar violations

**e** - Digit identifier

**e** *Facility parameter alarm report enabled*

**F** CRC, COFA, SERS, ERS

**E** CRC, COFA, SERS

**D** CRC, COFA, ERS

**C** CRC, COFA

**B** CRC, SERS, ERS

**A** CRC, SERS

**9** CRC, ERS

**8** CRC

**7** COFA, SERS, ERS

**6** COFA, SERS

**5** COFA, ERS

**4** COFA

**3** SERS, ERS

**2** SERS

**1** ERS

**0** CRC, COFA, SERS, ERS alarm reports disabled

CRC - Cyclic redundancy code

COFA - Change of frame alignment

SERS - Severely errored seconds

ERS - Errored seconds

**f** - Digit identifier

**f** *Facility parameter alarm report enabled*

**F** BER, SLIP, OOF, CGA, LOS

**E** BER, SLIP, OOF

**D** BER, SLIP, CGA, LOS

**C** BER, SLIP

**B** BER, OOF, CGA, LOS

**A** BER, OOF

**9** BER, CGA, LOS

**8** BER

**7** SLIP, OOF, CGA, LOS

**6** SLIP, OOF

**5** SLIP, CGA, LOS

**4** SLIP

**3** OOF, CGA, LOS

**2** OOF

**1** CGA, LOS

**0** BER, SLIP, OOF, CGA, LOS alarm reports disabled

BER - Bit error rate

SLIP - Slip

OOF - Out of frame

CGA - Carrier group alarm

LOS - Loss of signal

Some examples of the available choices for X'abcdef are shown below:

X'00000A BER and OOF alarm reporting enabled

X'000000 alarm reports disabled for all parameters

X'000001 CGA and LOS alarm reporting enabled

X'0C0511 DS3, BPV, ERS, CGA, and LOS alarm reporting enabled

## PA/TH NPC parameters

The following tables should be used to set or interpret the hexadecimal values of digit identifiers g through j.



**g** - Digit identifier

**g** *Facility parameter alarm report enabled*

**F** FEBE, FES, FSES, FUAS

**E** FEBE, FES, FSES

**D** FEBE, FES, FUAS

**C** FEBE, FES

**B** FEBE, FSES, FUAS

**A** FEBE, FSES

**9** FEBE, FUAS

**8** FEBE

**7** FES, FSES, FUAS

**6** FES, FSES

**5** FES, FUAS

**4** FES

**3** FSES, FUAS

**2** FSES

**1** FUAS

**0** FEBE, FES, FSES, FUAS alarm reports disabled

FEBE - Far end block error

FES - Far end errored seconds

FSES - Far end severley errored seconds

FUAS - Far end unavailable seconds

**Note that parameters FEBE, FES, FSES and FUAS are not applicable for the TH type NPCs.**

**h** - Digit identifier

**h** *Facility parameter alarm report enabled*

**F** UATC, BER, FRER, MER

**E** UATC, BER, FRER

**D** UATC, BER, MER

**C** UATC, BER

**B** UATC, FRER, MER

**A** UATC, FRER

**9** UATC, MER

**8** UATC

**7** BER, FRER, MER

**6** BER, FRER

**5** BER, MER

**4** BER

**3** FRER, MER

**2** FRER

**1** MER

**0** UATC, BER, FRER, MER alarm reports disabled

UATC - Unavailable time count

BER - Minor bit error rate; for NPCs with MBER feature

FRER - Framing errors

MER - Multiframe errors

**i** - Digit identifier

**i** *Facility parameter alarm report enabled*

**F** CRC, CV, SES, ES

**E** CRC, CV, SES

**D** CRC, CV, ES

**C** CRC, CV

**B** CRC, SES, ES

**A** CRC, SES

**9** CRC, ES

**8** CRC

**7** CV, SES, ES

**6** CV, SES

**5** CV, ES

**4** CV

**3** SES, ES

**2** SES

**1** ES

**0** CV, SES, ES alarm reports disabled

CRC - CRC4 check block errors

CV - Degraded minutes

SES - Severely errored seconds

ES - Errored seconds

|          |                                                |
|----------|------------------------------------------------|
| <b>j</b> | - Digit identifier                             |
| <b>j</b> | <i>Facility parameter alarm report enabled</i> |
| <b>F</b> | UAS, CSS, OFS, PBA                             |
| <b>E</b> | UAS, CSS, OFS                                  |
| <b>D</b> | UAS, CSS, PBA                                  |
| <b>C</b> | UAS, CSS                                       |
| <b>B</b> | UAS, OFS, PBA                                  |
| <b>A</b> | UAS, OFS                                       |
| <b>9</b> | UAS, PBA                                       |
| <b>8</b> | UAS                                            |
| <b>7</b> | CSS, OFS, PBA                                  |
| <b>6</b> | CSS, OFS                                       |
| <b>5</b> | CSS, PBA                                       |
| <b>4</b> | CSS                                            |
| <b>3</b> | OFS, PBA                                       |
| <b>2</b> | OFS                                            |
| <b>1</b> | PBA                                            |
| <b>0</b> | UAS, CSS, OFS, PBA alarm reports disabled      |
|          | UAS - Unavailable seconds                      |
|          | CSS - Controlled slip seconds                  |
|          | OFS - Out-of-frame seconds                     |
|          | PBA - Primary block alarms; default            |

**Note:** Enter 0 for an unassigned digit identifier

**PB or PC NPC parameters**

The following tables should be used to set or interpret the hexadecimal values of digit identifiers g through j.

- g** - Digit identifier (unassigned)
  - h** - Digit identifier
    - h** *Facility parameter alarm report enabled*
    - F** BER, FRER, MER
    - E** BER, FRER
    - D** BER, MER
    - C** BER
    - B** FRER, MER
    - A** FRER
    - 9** MER
    - 8** unassigned
    - 7** BER, FRER, MER
    - 6** BER, FRER
    - 5** BER, MER
    - 4** BER
    - 3** FRER, MER
    - 2** FRER
    - 1** MER
    - 0** BER, FRER, MER alarm reports disabled
- BER - Bit error rate  
FRER - Frame errors  
MER - Multiframe alignment errors

- i** - Digit identifier
- i** *Facility parameter alarm report enabled*
  - F** CRC, DM, SERS, ERS
  - E** CRC, DM, SERS
  - D** CRC, DM, ERS
  - C** CRC, DM
  - B** CRC, SERS, ERS
  - A** CRC, SERS
  - 9** CRC, ERS
  - 8** CRC
  - 7** DM, SERS, ERS
  - 6** DM, SERS
  - 5** DM, ERS
  - 4** DM
  - 3** SERS, ERS
  - 2** SERS
  - 1** ERS
  - 0** CRC, DM, SERS, ERS alarm reports disabled
- CRC - Cyclic redundancy code  
DM - Degraded minutes  
SERS - Severely errored seconds  
ERS - Errored seconds

**j** - Digit identifier

**j** *Facility parameter alarm report enabled*

**F** US, SLIP, LOFA, PBA

**E** US, SLIP, LOFA

**D** US, SLIP, PBA

**C** US, SLIP

**B** US, LOFA, PBA

**A** US, LOFA

**9** US, PBA

**8** US

**7** SLIP, LOFA, PBA

**6** SLIP, LOFA

**5** SLIP, PBA

**4** SLIP

**3** LOFA, PBA

**2** LOFA

**1** PBA

**0** US, SLIP, LOFA, PBA alarm reports disabled

US - Unavailable seconds

SLIP - Slip

LOFA - Loss of frame alignment

PBA - Primary block alarms

**cc** - Hexadecimal condition code

**cc** *Explanation*

**48** Bad PRIM X'efgh values

**49** FAC keyword is invalid for this feature

**D5** Boot in progress, can't service request





---

# Glossary

---

## Glossary

---

### A

**AAC**

ACCULINK Access Controller

**ABT**

Abort

**ACO**

Alarm Cutoff

**Active**

For duplicated entities, the entity is providing service rather than operating in hot standby.

**AI**

Alarm Interface

**AIS**

Alarm Indication Signal (also known as all 1s signal)

**Alarm Delay**

The alarm delay (in seconds) for software-detected alarm conditions. Initial value is 20 seconds.

**Alarm Indication Signal (AIS)**

A signal transmitted downstream to indicate that network transmission line failures were detected upstream.

**All Ones Signal**

Another name for DS1 Alarm Indication Signal (AIS). It is defined to contain all ones in the terminal-to-terminal mode.

**ALM**

Alarm

**Alphanumeric Characters**

Letters and digits.

**Alternate Mark Inversion (AMI)**

A DS1 line code in which alternate one bits are positive and negative, but zero substitution is not used.

---

**AMI**

Alternate Mark Inversion

**ANSI**

American National Standards Institute

**AS&C**

Alarm Surveillance and Control

**ASCII Character**

Letters, digits, and symbols used in the American Standard Code for Information Interchange.

**ATAG**

Autonomous Message Tag

**ATP**

All Tests Passed

**Attribute**

Alarm indication level: major, minor, or no alarm.

**AUD**

Audit

**Autolock**

When the system autolocks and entity, it switches to protection and forbids return to the working entity even if the trouble clears. This is usually caused by multiple protection switches on that entity in a short time period.

**Autolock Number of Switches**

This parameter is the number of times that the system restores an entity to service (after intermittent failures) in a given autolock switching interval before the entity is autolocked.

**Autolock Release Time**

The number of hours between times when the system automatically releases autolock.

**Autolock Switching Interval**

An interval in minutes (see Autolock Number of Switches).

**Autonomous**

Done automatically by the system without any manual intervention from the user.

**Autoprovisioned**

Put in the provisioned state automatically by the system.

---

## **B**

### **B3Zs**

Bipolar with 3-zero substitution, a DS3 line code.

### **B8ZS**

Bipolar Eight Zero Substitution

### **Baud Rate**

Transmission data rate (bits per second) on an administrative link.

### **BBL**

Backbone Leg

### **BC**

Bus Controller

### **BCON**

Broadcast Cross-Connect

### **BDIS**

Broadcast Disconnect

### **BER**

Bit Error Rate

### **BER Metric**

Specifies the metric for calculating bit error rate at a DS3 interface port. Options are bipolar variations (BPV) or parity (PTY). (Initial value is BPV).

### **Bipolar Violation**

A violation of the alternating +1, -1 pattern in a 3-level code.

### **Bit Error Rate Threshold**

3 stands for 0.001, 6 stands for 0.000001.

### **Blue Code**

Same as AIS

### **BMTR**

Back-up Memory Transfer

### **Boot**

To transfer contents of a Memory Card into the system's working memory and system hardware. The contents of a Memory Card can include both system software and database.

### **BOS**

Bit Oriented Signaling

### **BPV**

Bipolar Violation

---

**BRD**

Broadcast Leg

**Broadcast**

Form a bridge connection.

**BSRF**

Basic Synchronization Reference Facility

**BT**

Bus Terminator

**BX**

Bus Extender

**Byte**

Usually refers to a group of eight consecutive binary digits, but sometimes used for bit groups of other sizes.

---

**C**

**CAS**

Channel Associated Signaling

**CATP**

Conditional All Tests Passed

**CBIT**

A DS3 line code in which parity checks on blocks of data are used to detect bits in error.

**CCB**

Cross-Connect Buffer

**CCI**

Clock and Control Interface

**CCIS**

Common Channel Interoffice Signaling

**CCITT**

International Telephone and Telegraph Consultative Committee

**CCN**

Cross-Connect Network

**CCNI**

Cross-Connect Network Interface

**CEF**

Capacity Expansion Frame

---

**CFA**  
Carrier Failure Alarm

**CFR**  
Synchronizer Configuration

**CGA**  
Carrier Group Alarm

**CHG**  
Change

**CI**  
Communications Interface

**CIU**  
Craft Interface Unit

**Clear (CL)**  
An alarm condition no longer exists.

**CLF**  
Carrier Line Failure

**CMAP**  
Channel Map

**COFA**  
Change-Of-Frame-Alignment

**Condition**  
The type of alarm indication.

**CP**  
Circuit Pack

**CPR**  
C-Bit Processor

**CPU**  
Central Processing Unit

**CRC**  
Cyclic Redundancy Checking

**CRO**  
Clock Reference Oscillator

**Cross-Connect**  
A piece of hardware used to interconnect line-terminating equipment, multiplexers, and other equipment.

**Cross-Connection**  
An interconnection between two specified NPC channels.

**Crosstalk**  
A signal induced into one transmission line from another transmission line.

---

**CRT**

Cathode Ray Tube

**CSS**

Controlled Slip Seconds

**CTAG**

Correlation Tag

**Current Value**

In the dialog mode, it indicates that the current value of a parameter is used by the system unless you direct otherwise.

**CV**

Coding Violations

---

**D****DACS**

Digital Access and Cross-Connect System

**Database**

A record of the system configuration and status. It contains cross-connections, status of entities and transmission lines, performance monitoring threshold values and collected data.

**DATS**

Digital Access Test Set

**DC**

Digroup Circuit or Direct Current

**DCC**

Disconnect Code

**DCLU**

Digital Carrier Line Unit

**DDC**

Dual Digroup Circuit

**DDS**

Digital Data System

**Default**

A value the system automatically uses for a parameter if you do not specify a value.

**Delimiter**

A colon, comma, or space used to separate two parameters in a command or message.

**Demultiplexer**

A device used with a multiplexed signal for recovering signals contained within it and restoring the distinct individual channels of these signals.

---

**DFB**

Dual Fuse Board

**Diagnose**

Test an entity.

**DIF**

DACS Interface Module

**DL**

Data Link

**DLC**

Digital Loop Carrier

**DM**

Dual Multiplexer

**DMA**

Deferred Maintenance Alarm

**DMAP**

Digroup Map

**DMB**

Digital Multipoint Bridge

**DMI**

Digital Multiplex Interface

**DMM**

Digital Multimeter

**DOTS**

Digital Office Timing Supply

**DPC**

Dual Primary Circuit

**DPLL**

Digital-Phase Locked Loop

**Driven**

A driven port is being monitored, and a good signal is expected.

**DS0**

Digital Signal Level 0 (64-kb/s)

**DS1**

Digital Signal Level 1 (1.544-Mb/s)

**DS1 Data Rate**

The DS1 Data Rate is calculated as follows:

$DS1 = (24 \text{ Channels} \times 8 \text{ bit/sample} + 1 \text{ frame bit}) \times 8000 \text{ samples/sec}$

$DS1 = 193 \times 8000 = 1.544 \text{ Mb/s}$

---

**DS1 Port**

A DS1 port in either a DS1 interface module or a DS3 interface module.

**DS3**

Digital Signal Level 3

**DS3U**

DS3 Unit

**DSP**

Digital Signal Processor

**DSPC**

Digital Signal Processor Circuit

**DSPI**

Digital Signal Processor Interface

**DSPU**

Digital Signal Processor Unit

**DSU**

Data Service Unit

**DSX**

Digital Signal Cross-Connect

**DTAC**

Digital Test Access Connector

**Duplex Entity**

A pair of entities in which one is active and the other is in hot standby (clock generators).

**Duplicated Entity**

A pair of entities in which one is active and the other is in hot standby (for example, the Synchronizer Cross-Connect (SXC) circuit packs).

---

**E****E1 Data Rate**

The E1 Data Rate is calculated as follows:

$$E1 = (32 \text{ Channels} \times 8 \text{ bit/sample}) \times 8000 \text{ samples/sec}$$

$$E1 = 256 \times 8000 = 2.048 \text{ Mb/s}$$

**NOTE:**

With this data rate, 30 channels carry traffic and two channels are reserved; one channel contains framing information and the other channel contains signaling information.



---

**E2A**

Type of Alarm Telemetry

**EBX**

Expanded Bus Extender

**ECCN**

Expanded Cross-Connect Network

**Echo**

Display of keystrokes entered from a terminal (passwords are not echoed).

**ECI**

Enhanced Communications Interface

**EDDC**

Enhanced Dual Digroup Circuit

**EDPC**

Enhanced Dual Primary Circuit

**EER**

Excessive Error Rate

**EFC**

Extended Frame Controller

**EIA**

Electronic Industries Association

**EID**

Entity Identification

**EMC**

Electromagnetic Compatibility

**EMIU**

Expanded Multiple Interface Unit

**EMTC**

Expanded Maintenance Circuit

**Enter**

Provision an entity by a command, not automatically by the system.

**Entity**

A specific piece of hardware (such as the Main Controller (MC) or Network Processing Circuit (NPC)) that has been assigned a name and is recognized by the system.

**Entity Identifier**

The name used by the system to refer to an entity.

**Equalizer**

A circuit adjustment used to maintain signal strength between desired limits.

**Equipped**

The entity is entered in the system database via a user provisioning command.

---

**ER**  
Error Rate

**ERS**  
Errored Seconds

**ES**  
Errored Seconds

**ESD**  
Electrostatic Discharge

**ESF**  
Extended Superframe

**ESR**  
Error Source Register

**ESR1**  
Error Source Register 1

**ESR2**  
Error Source Register 2

**ETSI**  
European Telecommunication Standardization Institute

---

## **F**

**FAL**  
Fuse Alarm Lamp

**FAS**  
Frame Alignment Signal

**FC**  
Format Converter

**FDL**  
Facility Data Link

**Fe**  
Extended Superframe Format

**FEBE**  
Far-End Block Error

**FELP**  
Far End Loopback

**FES**  
Far-End Errored Seconds

---

**FLI**

Facility-Line Interface

**FMAC**

Facility Maintenance and Administration Center

**FMT**

Formatter

**Forced**

A traffic-carrying entity (either service or protection) has been deliberately locked into a service providing state by manual command despite being bad.

**FPA**

Feature Package A

**FPB**

Feature Package B

**FPC**

Feature Package C

**FRADT**

Frame Audit

**FRER**

Framing Bit Error

**Fs**

Fx Framing Format

**FSES**

Far-End Severely Errored Seconds

**FTM**

Facility Terminating Module

**FTU**

Facility Terminating Unit

**FUAS**

Far-End Unavailable Seconds"

**FW**

Framing Word

---

**G****Grooming**

Rearrangement of DS1 signals in DS3 signals.

---

## **H**

### **HDB3**

High Density Bipolar 3 Zero Substitution

### **Header**

The first line of a message.

### **Header Date**

Specifies the current date as YYMMDD, where YY is the last two digits of the year, MM is the month, and DD is the day of the month.

### **Header Time**

Specifies the current time of day as HHMMSS, where HH is the hour (00 to 23), MM is the minutes, and SS is the seconds.

### **HECI**

High-Speed Enhanced Communications Interface

### **Hierarchy**

An orderly ranking or sequence of elements, such as that of menus presented at a terminal.

### **Hit**

A disruption of service that lasts for less than 1 second. See Outage.

### **Hot Standby**

An entity ready for fast, automatic placement into operation to replace an active entity.

### **HUBID**

Hub Identifier

---

## **I**

### **ICLD**

Idled

### **Idle**

An output port is idle if it is not cross-connected to an input port.

### **Idle Channel**

A channel on an NPC that has not been cross-connected.

### **IFTU**

Integrated Facility Terminating Unit

### **In Service**

The entity is performing normal service functions, either active or standby.

---

**ISX**

Integral Shelf Cross-Connect

**ITU-TSS**

International Telecommunication Union-Telecommunication Standardization Sector

---

**J****Jitter**

Short term variations in the phase of a digital signal.

---

**K****kb/s**

Kilobit Per Second

**kHz**

Kilohertz

---

**L****LAN**

Local Area Network

**LBO**

Line Build-Out

**LED**

Light-Emitting Diode

**LFA**

Loss of Frame Alignment

**LILB**

Line Interface Loopback

**Link ID**

The location and type of a user interface link.

**LLB**

Line Loopback

---

**LMA**

Loss of Multiframe Alignment

**Location**

The specific entity involved.

**Loopback**

A circuit arrangement that causes a received signal to be returned to its source.

**LOS**

Loss of Signal

---

**M****M13**

A standard format used for DS3 signals

**Maintenance**

The entity has been locked into a non-service providing state by a manual command.

**Maintenance Condition (MCOND)**

MCOND is a condition in which the Main Controller (MC) is isolated from system hardware in order for the user to perform memory transfer operations. Placing the MC in MCOND is non-service affecting. When the MC is in the MCOND service state, the system software and database are not transferred to the Memory Cards. The Maintenance Condition enables the user to transfer database and/or system software among the Memory Cards and the MC's Random Access Memory (RAM) in a controlled manner via user commands. The MCOND service state is also used to perform system software upgrades.

**Mapped**

Cross-Connected

**Mapped**

Cross-connected.

**Mb**

Megabit

**Mb/s**

Megabit Per Second

**MBER**

Minor Bit Error Rate

**MC**

Main Controller

**MCOND**

Maintenance Condition

---

**MCP**

Main Controller Peripheral

**MEMA**

Memory Card Slot A

**MEMB**

Memory Card Slot B

**Memory Location**

Specifies the equipment, DS1 interface port, or DS3 MUX port location associated with a memory type.

**MER**

Multiframe Error

**MI**

Maintenance Information

**MIU**

Multipoint Interface Unit

**MJU**

Multipoint Junction Unit

**MMFG**

Multiplexer-MIU Function Group

**MML**

HuMan-Machine Language

**MP**

Main Processor

**MPDIS**

Multipoint Disconnect

**MPM**

Multipoint Mode

**MTC**

Maintenance Circuit

**MXR**

Multiplexer

---

**N**

**NA**

No Acknowledgement

---

**NDL**

No Data Link

**NEBS**

Network Equipment Building Systems

**Network Element**

A DACS II ISX system is a network element.

**Network Element**

A DACS II frame is a network element.

**NFW**

Not Framing Word

**NG**

No Good

**NOBBL**

No Backbone Leg

**Notification Code**

The notification code for alarm and status conditions, which include: MJ - major alarm; MN - minor alarm.

**Notification Code**

The notification code for alarm and status condition which include: MJ - major alarm; MN - minor alarm; NA - no alarm (status only); or CL - cleared alarm.

**NPC**

Network Processing Circuit

**NPCTG**

Network Processing Circuit Test Group

**NPCTP**

Network Processing Circuit Test Port

**NSA**

Nonsignaling Associated

**NZCS**

No Zero Code Suppression

---

**O**

**OA&M**

Operation, Administration and Maintenance

**OCNT**

One-Way Cross-Connect, Terminated



---

**ODIS**

One-Way Disconnect

**OFS**

Out-Of-Frame Seconds

**One-Way Cross-Connect****OOS**

Out-of-service

**OS**

Operations System

**Out Of Service (OOS)**

The entity is not providing its normal service function (removed from service) either because of a system problem or because it has been removed from service manually.

**Out-of-Service (OOS)**

The entity is not providing its normal service function (removed from service or protected) either because of a system problem or because it has been removed from service manually.

**Outage**

A disruption of service that lasts for more than one second. See Hit.

---

**P****Parity Check**

To determine whether a block of digital data has been corrupted in transmission, you can use an even-parity format in which an extra bit is added to the block at the transmitter if necessary so that the block always contains an even number of one bits. A parity-checking circuit at the receiving end can determine whether an error has occurred in transmission. An odd-parity format can also be used for the same purpose.

**Parity Check**

To determine whether a block of digital data has been corrupted in transmission, you can use an even- or odd-parity format in which an extra bit is added to the block at the transmitter if necessary so that the block always contains an even number of one bits. A parity-checking circuit at the receiving end can determine whether an error has occurred in transmission.

**PBA**

Primary Block Alarm

**PBC**

Primary Block Circuit

**PBF**

Primary Block Failure

---

**PBX**

Private Branch Exchange

**PCM**

Pulse Code Modulation

**PCMCIA**

Personal Computer Memory Card International Association

**PDS**

Program Documentation Standards (Language)

**PF**

Printout Follows

**PFW**

Pseudo-Frame Word

**PLL**

Phase-Locked Loop

**PMA**

Prompt Maintenance Alarm

**PNI**

Packet Network Interface

**POTS**

Plain Old Telephone Service

**Primary Line**

The second line in an output message.

**Program**

The software that directs the operation of the main controller and other frame elements.

**Protocol**

Detailed format and procedure used for transmitting data.

**Protocol**

Detailed format and procedures used for transmitting digital data.

**Protocol Type**

Indicates the protocol supported on the interface link.

**Provisioned**

The entity has been configured by the user and entered into the system database and is ready to be restored to service.

**Provisioned**

The entity is ready to perform its intended function"

**PU**

Power Unit

**Pulse Code Modulation (PCM)**

The process by which analog signals are sampled, quantized, and coded into a digital bit stream.

---

**Pulse Code Modulation (PCM)**

The process by which analog signals are sampled, quantized, and coded into a digital bit stream.

**PVC**

Permanent Virtual Circuit

---

**R**

**R16**

Remote Alarm Indication in TS16

**RAI**

Remote Alarm Indication

**RAIS**

Remote Alarm Indication Signal

**RAM**

Random Access Memory

**RBER**

Remote Bit Error Rate

**RDC**

Red Circuit

**REER**

Remote Bit Error

**Released**

If an input port, it is not under test access; if an output port, it is not cross-connected to an input port under test access.

**Released**

If an input port, not under test access; if an output port, not cross-connected to an input port under test access.

**RL**

Retry later

**RMS-D**

Remote Measurement System - Digital

**RMS-I**

Remote Measurement System - International

**Rollover**

Operation used when the transmission facility between the system and an upstream system is to be replaced.

---

**RT**

Remote Terminal

**RTS**

Remote Test System

**RTS-5A**

Remote Test System 5a

---

**S****SAP**

Status and Alarm Panel

**SARTS**

Switched Access Remote Test System

**SCC**

Subrate Cross-Connect

**SCCSAI Switching Control Center System Asynchronous Interface****SECH**

Subrate Establish Command

**SERS**

Severely Errored Seconds

**SID**

Source Identifier

**SNIDER**

Protocol (message format) used on administrative links.

**SNIDER**

Protocol (message format) used on asynchronous administrative links.

**Software ID**

Gives the software version information for a system: g - is a one-digit number giving the software release; i - is a two-digit number giving the issue; r - is a one-digit number giving the point release.

**Software ID**

The software version information for the system.

**SPU**

Synchronizer Power Unit

**SRM**

Subrate Multiplexer

---

**SSC**

Secondary Storage Controller

**SSP**

Select Synchronization Port

**Standby**

Entity is one of a duplicated pair, but not providing service. It is ready to be used to replace a similar entity either by protection or by duplex switching.

**Standby**

The entity is in service, but is not providing service functions. It is ready to be used to replace a similar entity either by protection or by duplex switching.



---

# Index

The following keys are used in this index to indicate the appropriate volume:

**VL-1** Volume 1

**VL-2** Volume 2

**VL-3** Volume 3

---

## A

ABT, 6-2  
ACO, ACTIVE, 6-5  
ACT, MAP, CLR, INCL, 6-7  
ADD, LINK, K, T1, T3, N2, A, B, 6-14  
ADD, LINK, PTCOL, S, X, T, M, BAUD, ALM, BS, ENQ, 6-16  
ADD, LINK, W, P, T20, T22, T23, T25, T26, R20, 6-21  
ADD, NPC, 6-28  
ADD, USER, LINK, INCL, ALL, LANG, M, P, F, 6-31  
ADD, USER, NEW, PASSWD, 6-38  
ALM, IDLD, AI, NPC, 6-41  
ALM, NPC, 6-45  
ALM, NPC, AI, COUNT, THLEV, 6-49  
ALM, PMC, PMA, DMA, MI, CCN, OOS, 6-53  
ALM, PMC, PMA, DMA, MI, ECCN, OOS, 6-55  
ALM, PMC, PMA, DMA, MI, NPC, RPSFI, IDLD, 6-57  
ALM, PMC, PMA, DMA, MI, SMEM, 6-60  
ALM, RESET, DATE, TOD, FORMAT, MDY, DMY, PMC, 6-62  
ALWSW, UNIT, MMFG, TOPRTN, TOSRVC, 6-64  
APPEND, END, 6-66  
APPL, RESET, IN, PROGRESS, 6-68  
AR01, MISC, ALM, IDLD, PBA, 6-70  
AR01, MISC, ALM, PBA, 6-74  
AUD, PARAMS, 6-79  
AUD, QRY, BER, ALL, NPCS, TOT, 6-81  
AUD, QRY, BER, ALL, NPCS, TOT, EOM, 6-83  
AUD, QRY, CFA, CGA, LOS, 6-89, 6-97, 6-107

---

## B

BADVERB, BAD, SYNTAX, STOPPED, 7-2  
BADVERB, CMD, INERR, STOPPED, 7-4  
BC, R, TO, X, ZO, NA, 7-7  
BCON, FROM, TO, NTR, LPD, CONV, NAM, CUS, INCL, 7-9  
BCON, FROM, TO, RDC, CUS, INCL, NTR, LPD, CONV, 7-20  
BCON, FROM, TOX, 7-26  
BCON, FROM, TOX, NTR, LPD, CONV, NAM, CUS, 7-33  
BCON, FROM, TOX, RDC, CUS, INCL, NTR, LPD, 7-45  
BDIS, FROM, TO, CONV, OOS, DCC, INCL, 7-51  
BDIS, FROM, TO, OOS, INCL, CONV, 7-58  
BDIS, FROM, TOX, CONV, OOS, DCC, INCL, 7-63  
BDIS, FROM, TOX, OOS, INCL, CONV, 7-70  
BOOT, FAILED, BAD, DEVICE, 7-76  
BOOT, FROM, PMEM, FAILED, ATTEMPTING, TO, 7-78  
BOOT, FROM, PMEM, SMEM, 7-80  
BX2, STF, ATP, 7-82

---

## C

CBOFL, SIDE, EOM, 8-2  
CFR, FRAME, 8-9  
CFR, SYNC, FPLL, 8-11  
CFR, SYNC, MASTER, SLAVED, 8-13  
CFR, SYNC, STRATUM, STR2, STR3, TOLL, LOCAL, 8-15  
CFR, XC, INCL, 8-17  
CHG, ALMS, ON, OFF, 8-19  
CHG, BC, X, TO, 8-21  
CHG, BCOFF, TO, 8-26  
CHG, DD, TO, 8-31  
CHG, ERB, TYPE, 8-36  
CHG, FALMS, TYPE, PMACR, PMAMJ, DMAMN, MI, 8-38  
CHG, FROM, TO, NOT, TLA, TLR, F, T, B, A, INCL, 8-54  
CHG, FROM, TO, NOT, TLA, TLR, F, T, B, L, G, A, 8-60  
CHG, FROM, TO, TLP, NG, ES, INCL, 8-68  
CHG, INTV, ON, OFF, 8-75  
CHG, MACRO, MAP, SPACE, 8-77  
CHG, MSGLOG, ON, OFF, 8-79  
CHG, NPC, ALL, TLI, SYNC, CCN, LEV, 8-81  
CHG, NPC, ALMOPT, AIS, MI, PMA, PMC, DMA, 8-86  
CHG, NPC, CBTIMER, 8-92  
CHG, NPC, LPBK, 8-95  
CHG, NPC, NFS, 8-102  
CHG, NPC, OPTS, THMODE, 8-108  
CHG, NPC, TS0, 8-136  
CHG, NPC, TS0M, 8-142  
CHG, NPC, TYPE, IW, X, 8-148

CHG,NPC,TYPE,IW,X,INCL, 8-166  
CHG,PASSWD,OLD,NEW, 8-171  
CHG,SALMS,PMACR,PMAMJ,DMAMN,MI,RESET, 8-174  
CHG,SETOP,TYPE,ALL,NPCOP, 8-176  
CHG,SWCH,TOX,INCL, 8-186, 8-192  
CHG,SYNC,TLI,SSP,TYPE,NPC,SRC, 8-197  
CHG,TYPE,OPTS,THMODE, 8-204  
CHG,TYPE,THMODE, 8-230  
CHG,UNIT,CONN, 8-233  
CHG,USER,LINK,INCL,SCR,GR,MCON,MCOFF, 8-236  
CI,ECI,RESET, 8-240  
CI,ECI,STARTUP,STF,ATP, 8-242  
CMD,MC,OOS,MCOND,INSERVICE,MPDBASE, 8-244  
COPY,NPC,TO, 8-246  
CTST,FAD,AIS,INCL, 8-276  
CTST,FAD,EMODE,FMODE,INCL, 8-284  
CTST,FAD,FROM,TO,AIS,INCL, 8-291  
CTST,HUB,FAD,TO,INCL, 8-299  
CTST,LPBKT,FAD,INCL, 8-304  
CTST,TNR,ALL,OOS, 8-308  
CTST,TNR,FAD,OOS, 8-310

---

## D

DDIS,FROM,TO, 9-2  
DELETE,END, 9-6  
DGN,CCB,CFT,X, 9-8  
DGN,CCI,CFT,X, 9-15  
DGN,CCNI,CFT,X, 9-19  
DGN,CI,CFT,X, 9-25  
DGN,ETSI,CFT,X, 9-29  
DGN,ETSI,ECCN,ALL, 9-33  
DGN,IN,PROGRESS, 9-36  
DGN,LINK,CFT,X, 9-38  
DGN,MC,CFT,X, 9-41  
DGN,MP,CFT,X, 9-45  
DGN,NPC, 9-48  
DGN,NPC,SIDE,CFT,X, 9-54  
DGN,PMEM,SMEM,CFT,X,EXCT,DBASE,VERIFY, 9-74  
DGN,SYNC, 9-79  
DGN,SYNC,TLI,CRO, 9-82  
DGN,SYNC,TLI,SSP, 9-85  
DGN,TSI,CFT,X, 9-88  
DGN,TSIS,CCN,ALL, 9-96  
DGN,TSIS,CCN,UNIT,CONN, 9-99  
DGN,UNIT,DSPI,CFT,X, 9-102  
DGN,UNIT,FC,CFT,X, 9-105  
DGN,UNIT,FTMI,CFT,X, 9-110  
DGN,UNIT,UC,CFT,X, 9-113

DGRTH,NPC, 10-2  
DGRTH,NPC,NPCTG,TGR, 10-14  
DGRTH,NPC,NPCTP,TPR, 10-19  
DGRTH,SYNC,TB, 10-24  
DGRTH,SYNC,TLI,SSP, 10-26  
DGRTH,TG, 10-31  
DGRTH,TP, 10-33  
DGRTH,UNIT, 10-35  
DGRTH,UNIT,FTMI, 10-40  
DGRTH,UNIT,MXR, 10-42  
DLT,FPKG, 10-44  
DLT,MACRO,MAP,USER, 10-48  
DLT,NPC, 10-50  
DLT,USER, 10-54  
DSPC, 10-56

---

## E

EBX,STARTUP,STF,ATP, 11-2  
ED,CRET,MAP,PIC, 11-4  
ED,MACRO,MAP, 11-8  
EMTC,STARTUP,STF,ATP, 11-14  
ERR,CMD,ABT,TN,STOPPED, 11-16  
ERR,ESR,ANALYSIS,REPORT,EVENT, 11-18  
ERR,ESR,CCB,TN,EVENT,COND, 11-21  
ERR,ESR,CCI,TN,EVENT,COND, 11-23  
ERR,ESR,CCNI,TN,EVENT,COND, 11-26  
ERR,ESR,ETSI,TN,EVENT,COND, 11-33  
ERR,ESR,MC,MP,CI,TN, 11-36  
ERR,ESR,MC,MP,TN,EVENT,COND,CI,BX,EBX, 11-38  
ERR,ESR,NPC,SIDE,TN,EVENT,COND, 11-42  
ERR,ESR,NPC,TN,EVENT,COND, 11-48  
ERR,ESR,SYNC,TLI,SSP,TN,EVENT,NPC,COND, 11-53  
ERR,ESR,SYNC,TLI,TN,EVENT,COND, 11-59  
ERR,ESR,SYNC,TN,EVENT,COND, 11-63  
ERR,ESR,TSI,TN,EVENT,COND, 11-68  
ERR,ESR,UNIT,DSPI,TN,EVENT,COND, 11-72  
ERR,ESR,UNIT,FC,TN,EVENT,COND, 11-75  
ERR,ESR,UNIT,FTMI,TN,EVENT,COND, 11-78  
ERR,ESR,UNIT,UC,UBX,TN,EVENT,COND, 11-81  
ERR,HARDWARE,TN,COND,EVENT,ACTION, 11-84  
ERR,LINK,TN,STATUS, 11-88  
ERR,MSG,TO,LOG,DISCARDED, 11-91  
ERR,PMEM,SMEM,TN,EVENT,COND, 11-93  
ERR,PWR,PMC,PMA,DMA,MI,TN, 11-95  
ERR,SOFTWARE,MC,ERROR,MID,TN,RC,ACTION, 11-98  
ERR,SYNC,MODE,FAST,HOLDOVER,NORMAL, 11-102  
ERR,SYNC,TLI,SSP,NPC,TN,ALM,LOS,LEN, 11-107,  
11-112



EXC,MACRO, 11-117

---

## F

FRADTS,BMCMP, 12-2  
FRADTS,DGN, 12-4  
FRADTS,FRCMP, 12-7  
FRADTS,MC,DGN, 12-107

---

## G

GRTH,FRAME,CHAR,UID, 12-109  
GRTH,NPC,NPCTG, 12-112  
GRTH,NPC,NPCTP, 12-116  
GRTH,NPC,TYPE, 12-120  
GRTH,NPC,TYPE,CBTIMER, 12-127  
GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,DMA, 12-132  
GRTH,NPC,TYPE,OPTS,IW,X,AIS,MI,PMA,PMC, 12-157  
GRTH,SYNC,TB,TYPE, 12-177  
GRTH,SYNC,TLI,TYPE, 12-179  
GRTH,SYNC,TLI,TYPE,SSP,SRC,NPC, 12-181  
GRTH,TG,NPCTG, 12-187  
GRTH,TP, 12-190  
GRTH,UNIT,FTMI,IMP, 12-194  
GRTH,UNIT,MXR,TYPE,BERM,BERT,LBO, 12-196  
GRTH,UNIT,TYPE,CONN, 12-199

---

## I

IN,PROGRESS, 12-204  
INHSW,UNIT,MMFG,TOPRTN,TOSRVC, 12-206  
INSTALL, 12-208  
INVALID,SFW,ID,BLOCK,COND, 12-216

---

## L

LINE, 12-218  
LIST,END, 12-220  
LOGIN,USER,PASSWD, 12-223  
LOGOFF,USER,LINK,INCL, 12-226

---

## M

MC,MCOND, 13-2  
MC,RESET,RELEASE,ISSUE,FPKG,COND, 13-4  
MOVE,FROM,END,TO, 13-8  
MP,STARTUP,STF,ATP, 13-10  
MTC,STF,ATP, 13-12

---

## O

OCNT,FROM,TO,MPM,NAM,CUS,INCL,RDC, 14-2  
OCNT,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT, 14-11  
OCNT,FROM,TO,RDC,CUS,INCL,PRIOUT, 14-21  
OCON,FROM,TO,MPM,CUS,INCL,RDC,NAM, 14-26  
OCON,FROM,TO,NAM,RDC,CUS,INCL,PRIOUT, 14-35  
OCON,FROM,TO,RDC,CUS,INCL,PRIOUT, 14-45  
ODIS,FROM,TO,INCL,OOS,DCC, 14-50  
ODIS,FROM,TO,INCL,OOS,DCC,PRIOUT, 14-57  
ODIS,FROM,TO,OOS,INCL,PRIOUT, 14-63  
OVERLOAD,MP,CI,UNIT,UC,TN,PROCESSOR, 14-68

---

## R

RESET,DATE,TOD,FORMAT,MDY,DMY, 15-2  
RESET,STOPPED, 15-4  
RMV,CCB, 15-5  
RMV,CCI, 15-7  
RMV,CCNI, 15-10  
RMV,ETSI, 15-12  
RMV,ETSI,ECCN,ALL, 15-14  
RMV,LINK, 15-16  
RMV,MC, 15-18  
RMV,NPC,SIDE,INCL, 15-20  
RMV,SMEM,PMEM, 15-46  
RMV,SYNC, 15-49  
RMV,SYNC,TLI,CRO, 15-51  
RMV,SYNC,TLI,PMC,PMA,DMA,MI,COND, 15-53  
RMV,SYNC,TLI,SSP, 15-55  
RMV,TSI, 15-58  
RMV,TSIS,CCN,ALL, 15-60  
RMV,TSIS,CCN,UNIT,CONN, 15-63  
RMV,UNIT,FC, 15-66  
RMV,UNIT,FLI, 15-69  
RMV,UNIT,FMT, 15-71

RMV,UNIT,FTMI,DSPI, 15-73  
RMV,UNIT,MMFG,FRC,INCL, 15-76  
RMV,UNIT,UC, 15-79  
RST,CCB, 16-2  
RST,CCI, 16-4  
RST,CCNI, 16-6  
RST,ETSI, 16-8  
RST,ETSI,ECCN,ALL, 16-10  
RST,LINK, 16-13  
RST,MC,MCOND,NOJRN,CLR,ALL, 16-15  
RST,NPC,MON, 16-20  
RST,NPC,SIDE, 16-25  
RST,NPC,TSOM, 16-49  
RST,PMEM,SMEM,CLR,FRC,BKGRND, 16-53  
RST,SYNC, 16-59  
RST,SYNC,TLI,CRO, 16-61  
RST,SYNC,TLI,SSP, 16-63  
RST,TSI, 16-65  
RST,TSIS,CCN,ALL, 16-67  
RST,TSIS,CCN,UNIT,CONN, 16-70  
RST,UNIT,FC, 16-73  
RST,UNIT,FLI, 16-75  
RST,UNIT,FMT, 16-77  
RST,UNIT,FTMI,DSPI, 16-79  
RST,UNIT,UC, 16-81

---

## S

SAVE, 17-2  
STOP,MACRO,LINK, 17-4  
SW,BCAST,OLD,NEW,INCL, 17-6, 17-13  
SW,DISC,OOS, 17-21, 17-26  
SW,ROLL,OLD,NEW,INCL,FRC,OOS, 17-33  
SW,ROLL,OLD,NEW,INCL,FRC,OOS,TWAY, 17-39  
SW,UNIT,FLI,TOPRTN, 17-45  
SW,UNIT,FLI,TOSRVC, 17-47  
SW,UNIT,MMFG,TOPRTN,FRC, 17-49  
SW,UNIT,MMFG,TOSRVC, 17-52

---

## T

TCNT,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL, 18-2  
TCNT,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT, 18-13  
TCNT,FROM,TO,PFW,NFW, 18-25  
TCNT,FROM,TO,RDC,CUS,INCL,PRIOUT, 18-32  
TCON,FROM,CB,CUS,RDC,INCL, 18-37

TCON,FROM,TO,MPM,NAM,NTR,RDC,CUS,INCL, 18-43  
TCON,FROM,TO,NAM,CUS,INCL,RDC,PRIOUT, 18-54  
TCON,FROM,TO,PFW,NFW, 18-66  
TCON,FROM,TO,RDC,CUS,INCL,PRIOUT, 18-73  
TDIS,FROM,CB,INCL,OOS, 18-78  
TDIS,FROM,TO,INCL,OOS,DCC, 18-83  
TDIS,FROM,TO,INCL,OOS,DCC,PRIOUT, 18-90  
TDIS,FROM,TO,OOS,INCL,PRIOUT, 18-96  
TSO,R,NPC,OLD,NEW, 18-101  
TSOMBOFL, 18-105  
TTST,HUB,TO,TG, 18-108  
TTST,HUB,TO,TP,NAM, 18-115  
TTST,LPD,TG, 18-122  
TTST,LPD,TP, 18-124  
TTST,MON,TG, 18-128  
TTST,MON,TO,NAM,TP, 18-134  
TTST,MON,TO,TG, 18-145  
TTST,SPL,TG, 18-153  
TTST,SPL,TP, 18-159  
TTST,TGR,TG,OOS, 18-164  
TTST,TLA,NOT,TP, 18-172  
TTST,TLA,TG, 18-179  
TTST,TLR,NOT,TP, 18-184  
TTST,TLR,TG, 18-191  
TTST,TPR,ALL,OOS, 18-196  
TTST,TPR,TP,OOS,FRC, 18-198

---

## U

UTL,ACO, 19-2  
UTL,BMTR,FROM,TO,EXCT,INCL,UPGRD, 19-4  
UTL,BOOT,FRAME,CLR, 19-10  
UTL,CLR,ALL, 19-12  
UTL,CLR,ERR,HWER,SWER, 19-14  
UTL,CLR,NPC, 19-16  
UTL,CLR,NPC,ALL,AI,MONDAT,MONTIM, 19-22  
UTL,CLR,NPC,PARAMS, 19-30  
UTL,CLR,PWR, 19-34  
UTL,DATE,FORMAT,INT, 19-36  
UTL,INIT,ALM, 19-39  
UTL,LOC, 19-41  
UTL,QRY,ALL, 19-53  
UTL,QRY,ALL,COMMON, 19-60  
UTL,QRY,ALL,UNIT, 19-66  
UTL,QRY,ALM,INTV, 19-86  
UTL,QRY,ALMOPT,NPC,AIS, 19-88  
UTL,QRY,ALMS, 19-97  
UTL,QRY,ALMS,DBASE, 19-124  
UTL,QRY,APPL,NPC,ALL, 19-137

UTL, QRY, BC, NPC, ALL, 19-143  
UTL, QRY, BC, TO, 19-152  
UTL, QRY, BCAST, ALL, 19-157  
UTL, QRY, BCAST, FROM, 19-161, 19-167  
UTL, QRY, CMAP, 19-172  
UTL, QRY, CNFGR, 19-204  
UTL, QRY, DATE, 19-207  
UTL, QRY, DD, 19-209  
UTL, QRY, DD, NPC, DDCT, ALL, 19-214  
UTL, QRY, DMAP, 19-220  
UTL, QRY, DS3, BERMT, UNIT, 19-249  
UTL, QRY, DS3, LBO, 19-251  
UTL, QRY, EQD, COMMON, 19-253  
UTL, QRY, EQD, CONN, 19-257  
UTL, QRY, EQD, ETSIS, 19-259  
UTL, QRY, EQD, MXRS, 19-261  
UTL, QRY, EQD, NPC, TOTAL, UNIT, 19-263  
UTL, QRY, EQD, TSIS, 19-276  
UTL, QRY, EQD, UNIT, 19-278  
UTL, QRY, EQD, UNITS, 19-297  
UTL, QRY, ERR, SWER, HWER, INT, DATE, TOD, TN, 19-299  
UTL, QRY, ESR, CCN, 19-309  
UTL, QRY, ESR, ECCN, 19-312  
UTL, QRY, ESR, MP, 19-316  
UTL, QRY, ESR, NPC, SIDE, 19-321  
UTL, QRY, ESR, UNIT, 19-329  
UTL, QRY, ESR, UNIT, DSPI, 19-333  
UTL, QRY, ESR, UNIT, FC, 19-335  
UTL, QRY, ESR, UNIT, FLI, 19-338  
UTL, QRY, ESR, UNIT, FTMI, 19-341  
UTL, QRY, ESR, UNIT, MXR, 19-345  
UTL, QRY, FALMS, TYPE, ALL, 19-350  
UTL, QRY, FPKG, 19-368  
UTL, QRY, FROM, 19-372, 19-393  
UTL, QRY, INTV, NPC, ALL, TLI, CCN, SYNC, 19-398  
UTL, QRY, LIST, MACRO, USER, 19-408  
UTL, QRY, LIST, MAP, USER, 19-411  
UTL, QRY, LOG, ALL, 19-414  
UTL, QRY, LPBK, NPC, 19-418  
UTL, QRY, MACRO, ATTR, USER, ALL, 19-425  
UTL, QRY, MACRO, MAP, SPACE, USER, ALL, 19-429  
UTL, QRY, MACRO, USER, 19-432  
UTL, QRY, MAP, ATTR, ALL, USER, MAPNM, 19-435  
UTL, QRY, MARK, 19-438, 19-448  
UTL, QRY, MEMSTAT, 19-458  
UTL, QRY, NFS, NPC, 19-466  
UTL, QRY, NPC, 19-471  
UTL, QRY, NPC, ALL, AI, LV, MONDAT, MONTIM, 19-483  
UTL, QRY, NPC, CBTIMER, 19-495  
UTL, QRY, NPC, MAP, USER, 19-498  
UTL, QRY, NPCTG, 19-503  
UTL, QRY, OPT, TYPE, ALL, NPC, 19-508  
UTL, QRY, PEST, FAIL, OOS, COMMON, 19-513  
UTL, QRY, PEST, FAIL, OOS, UNIT, 19-518  
UTL, QRY, ROLL, DS0, NPC, ALL, UNIT, 19-538  
UTL, QRY, ROLL, DS1, NPC, ALL, UNIT, 19-545  
UTL, QRY, RPSFI, 19-552  
UTL, QRY, SALMS, ALL, 19-554  
UTL, QRY, SCR, LINK, USER, LINKS, USERS, 19-557  
UTL, QRY, SIGST, 19-565  
UTL, QRY, SQN, 19-571  
UTL, QRY, STATE, ACO, 19-573  
UTL, QRY, STATE, NPC, 19-575, 19-605  
UTL, QRY, STATE, SYNC, 19-628  
UTL, QRY, STR, LINK, 19-631  
UTL, QRY, STR, SYNC, 19-641  
UTL, QRY, STR, SYNC, TLI, 19-647  
UTL, QRY, STR, SYNC, TLI, SSP, 19-650  
UTL, QRY, STR, XC, 19-655  
UTL, QRY, SYNC, TYPE, 19-657  
UTL, QRY, TGS, 19-660  
UTL, QRY, TO, 19-665, 19-700  
UTL, QRY, TOD, CFA, MONDAT, 19-718  
UTL, QRY, TPS, 19-721  
UTL, QRY, TS0, NPC, 19-727  
UTL, QRY, TS0M, NPC, 19-732  
UTL, QRY, UNIT, FTMI, IMP, 19-737  
UTL, QRY, WHO, 19-739  
UTL, QRY, XCSB, UNIT, 19-742  
UTL, RCY, COND, IN, PROGRESS, 19-749  
UTL, RCY, PASSWD, 19-752  
UTL, TOD, CFA, PRIM, X, MONDAT, 19-754

