INTERNATIONAL DIRECT DISTANCE DIALING (IDDD) FOR NO. 1 CROSSBAR

CONTENTS

1. GENERAL INFORMATION
2. TOOL REQUIREMENTS
3. SEQUENCE OF OPERATIONS
4. SENDER MODIFICATIONS
5. TRANSITION FROM AUX SENDER TO MF APPLIQUE CIRCUIT
6. TEST OF IDDD FEATURES
7. FINGER TESTS FS SENDERS

1. GENERAL INFORMATION

1.1 This section contains information for installing and testing the modifications and new equipment required for the International Direct Distance Dialing (IDDD) Feature in No. 1 Crossbar.

1.2 The circuits requiring modification and the associated modification drawings are:

STD. SD	MOD. SCHEMAT.	WRG. DRWG.	TITLE
25012-01	ES-28135-01	T-520726	SUBS SDR(FS)
27810-01	ES-28136-01	T-520725	SUBS SDR(WS)
25221-01	ES-28137-01	T-520727	ORIG SUB SDR TST
25016-01	ES-28139-01	T-520728	ORIG MARKER

1.3 The new circuit, IDDD APPLIQUE FOR SUBSCRIBER SENDERS, is added per the following drawings:

EQUIP.	SCHEMATIC	WIRING
NJ03016A1	NS03016-01	NT03016-11

1.4 In order to implement this new feature in the No. 1 Crossbar Office each sender, both wire spring and flat spring, must be equipped with a commercial converter capable of receiving and storing sixteen (16) digits.

2. TOOL REQUIREMENTS

2.1 Connecting on the backplane of the new units requires the use of a 26 gauge bit (R-4660) and sleeve (R4184).

WARNING: NO WIRE WRAP CONNECTIONS ON THE BACKPLANE PINS SHOULD EVER BE SOLDERED. RESKIN THE WIRE AND RECONNECT.

3. SEQUENCE OF OPERATIONS

3.1 Modify all Originating Subscriber Senders. Refer to Paragraph 4 for specific details.

3.2 Modify the Originating Markers per T-520728 and cross-connect per Telco information for IDDD routes.

3.21 At the OTI, to verify the 01 and 011 prefix codes, set any ABC code with necessary Frame and Class of Service information etc., and oper key CC5. Start test and verify lamps OT, SO, CR-, CL2 and CL4 are lighted and lamps SD and SD1 are not lighted.

3.22 To verify the 010 prefix code set key A0 (zero operator) and key CC5. Verify call completes and that lamps A1, A4, A5, OT, SO, CR-, CL2 and CL4 are lighted and lamps SD and SD1 are not lighted.

3.3 Modify the Originating Sender Test Frame per T520727. Run a 7 and 10 digit MF test call to verify that the frame functions the same as prior to modification.

3.4 Connect cable at the new IDDD Applique units per NT03016-11. Before connecting verify that, 1) cables are not connected at senders 2) new units are not fused 3) circuit packs are not seated in connectors.

3.5 The operations of paragraphs 3.1 through 3.4 may be done in any order or simultaneously dependent on man power availability and agreement with the Operating Company.

3.6 Connect switchboard cable at the senders and test for MF functions. Refer to Paragraph 5 for specific details.

3.7 Test the IDDD feature per Paragraph 6.

4. SENDER MODIFICATIONS

4.1 To permit the F.S. sender to be modified for IDDD, and returned to service and still work with the AUX sender, several cut-dead and add operations must be deferred until such time as it is desired to work with the IDDD MF Applique circuit. These operations shown on T520726 are as follows:

1. Do not cut dead 7Bot(DPT) to 1 Bot(L5) relays.
2. Do not cut dead 8Bot(DPT) to 1 Bot(RA1) relays.
3. Do not cut dead 10Top(DPT) to 4 Bot(SR) relays.
4. Do not cut dead 9Top(DPT) to Contact 4/5(L) relay or 9Top(DPT) to 2T(SR1) relays.
5. Do not disconnect "ST" SWBD cable lead from (MISC) T.S. 19.
6. Do not add lead from (MISC) T.S. 09 to 19.
7. Do not add local cable lead from 1Bot(L5) to 1Bot(RA1) relays.
8. Do not add local cable lead from 4Bot(SR) to contact 4(L) relays or from 4Bot(SR) to 2T(SR1) relays.
9. Do not wire the (CL 3) Fix.
10. Do not disconnect 22 from 7 Top (SA) to 12 Top (LR).

4.2 After F.S. Subsender has been modified for IDDD, and w/o SWBD cabling to to IDDD circuit, perform the following (3) steps before returning F.S. sender to service.

1. Block Normal (MF), (MF1), (DKP) and (LR2) relays.
2. Insulate contacts 5B and 5F of (DKP) relay.
3. To insure existing F.S. sender circuitry has not been disrupted by the modification, and the F.S. sender will still work with the Aux. sender on MF calls, perform the following tests from sender test frame.
   a) Seven digit MF call - no skip
   b) Ten digit MF recycle call
   c) Zero operator call
   d) Basic RP call

4.3 After W.S. sender has been modified for IDDD, and w/o SWBD cabling to IDDD circuit, perform the following tests from the sender test frame to insure existing W.S. sender circuitry has not been disrupted. Preparation: Block (IDDD) relay normal.
Perform following tests from sender test frame:
a) Seven digit MF call - no skip
b) Ten digit MF recycle call
c) Zero operator call
d) Basic RP call

5. TRANSITION FROM AUX SENDER TO MF APPLIQUE CIRCUIT

5.1 To make the transition from the Flat Spring (FS) Sender working with the Auxiliary Sender for MF calls to working with the IDDD MF Applique Circuit the operations of the following paragraphs must be followed sequentially.

5.2 At the Miscellaneous Relay Rack location of the new IDDD units verify the following:
a) The -48 signal and Talk Battery fuses are not installed.
b) The Circuit Packs are disengaged from their connectors. (Do not remove from housing)
c) The switchboard cable leads to the associated Sender are connected to the backplane terminal strips.

5.3 At Associated FS sender:

1. Connect the FS sender end of SWBD cable to associated FS sender.
2. Remove blocks from (MF), (MF1) and (DKP) relays.
3. Remove insulator from 5B and 5FIX(DKP) relay.
4. Disconnect "ST" SWBD cable lead from (MISC)T.S.09.
5. Add strap from (MISC)T.S.09 to (MISC)T.S.19.
6. Cut dead 7Bot(DPT) to 1Bot(L5) relays.
7. Cut dead 8Bot(DPT) to 1Bot(RA1) relays.
8. Cut dead 10top(DPT) to 4Bot(SR) relays.

9. Cut dead 9top(DPT) to Contact 4 or 5(L) relays or 9top(DPT) to 2top(SR1) relays.
10. Add local cable lead from 1Bot (L5) to 1Bot(RA1) relays.
11. Add local cable lead from 4Bot (SR) to contact 4(L) relays or from 4Bot(SR) to 2T(SR1) relays.

5.31 At the Associated W.S. Sender:
1. Connect the W.S. Sender end of switchboard cable.
2. Remove block from IDDD relay.

5.4 At the IDDD Units insert circuit packs into their associated connectors. CAUTION: BEFORE ATTEMPTING TO REMOVE OR REINSERT CIRCUIT PACKS VERIFY THAT THE ASSOCIATED SENDER IS MADE BUSY AND IN A NORMAL STATE (ON1 relay normal and LED(ON) on circuit pack extinguished).

5.5 At the Miscellaneous Fuse Panels insert the -48V TALK Battery Fuse and verify that the associated Power Supply LED (GREEN) is lighted. Then insert the -48V SIGNAL Battery Fuse and verify the presence of the proper voltage at the associated -48V B terminal on the rear of the unit. Verify that none of the Progress LED's are lighted.

5.6 Tests to be performed from Sub Sender test frame:

BSP TEST	TEST NO.	TITLE
BB	211	7 Digit MF Call - No Skip
BB	213	7 Digit MF Call - Skip 2
BB	214	7 Digit MF Call - Skip 3
BA	200	10 Digit MF Call-No Skip-Prefix 0
BM	230	10 Digit Recycle Call-7 Digit MF
BU	248	10 Dig Recycle Call-Outpulse 5 Dig
BC	215	MF 10 Digit Call Abandoned (WO)
BC	216	MF 10 Digit Call Abandoned (WO1)
BC	217	MF 10 Digit Call Abandoned (WO2)
A	1	Full Selector Call Zero Operator

5.61 To verify all digits (0-9) are registered and outpulsed correctly, on a 10 digit call set keys to include all digits 0-9 e.g. 201-345-6789.

5.62 LED Progress lamps on each sender circuit and their functional meaning:

DESIGNATION	FUNCTIONAL MEANING
ON	Sender seized (Sender Off Normal)
DC	Registration Complete (Dialing Complete)
SP	Trunk Test and Wink Complete (Start Pulsing)
AVA	Outpulsing complete (Sender Advance)
LR*	Trouble Timeout (Link Release)

* FLAT SPRING SDR ONLY.

5.63 In the event of a outpulsing test failure (after SP LED is lighted) an additional trouble locating aid is available. This is the SN98 Circuit Board containing 15 seven segment displays to verify the outpulsed number. This test board is capable of testing two senders (odd and even) simultaneously by inserting in the proper position on the unit.

6. TEST OF IDDD FEATURES

6.1 The tests of this paragraph are intended to test the IDDD prefix and timing functions of the new Applique Circuit.

6.2 The attached Test Chart shows examples of all IDDD calls. However, since the Registration and Outpulsing circuitry has been tested in Paragraph 5, the installer is required to only perform test numbered 6, 12, 13, 14 and 15.

7. FINGER TESTS FS SENDERS

7.1 Preliminaries:
a. Remove SL46 CKT PACK from associated MF Applique.
b. Block (TM1) N.O.
c. Insul. 7 & 8 Top (DST)

7.11 Section A: Finger Tests

TEST I	VERIFY
1. Block (ON1)	-
2. Mom oper. (AS)	(SA) & (MF) oper & lock
3. Mom oper. (DST)	(DST) locks
4. Block (CL2) oper	(DKP) oper & locks
5. Mom Oper. (AS)	(AS) & (SWF) oper & lock
6. Mom oper and hold (OF). Contacts 4 & 9 (LEFT)	(ROF) oper & locks, check (DKP) holds
7. Mom oper and hold (OF) to right	(DKP) releases
8. Remove Blocks (ON1) & (CL2)	ALL
TEST II	
1. Block (ON1) & CL3) oper	-
2. Mom oper (AS)	(SA) & (MF) should not oper.
3. Remove Blocks (ON1) & (CL3)	ALL
TEST III	
1. Block (ON1)	-
2. Mom oper (AS)	(SA) & (MF) oper & lock.
3. Block TG	(TG1) & (TS2) oper & lock.
4. Mom oper (CL2) (CL4) & (S6)	(MF1) oper & locks
5. Remove blocks (ON1) & (TG)	ALL
TEST IV	
1. Block (ON1) oper.	-
2. Mom oper (MF1)	(MF1) locks.
3. Mom oper (TG)	(TG1) does not oper.
4. Mom oper (AV1)	(MF1) releases
5. Remove Block (ON1)	ALL
TEST V	
1. Mom oper (DKP) & (MF1)	(TG2) mom oper
TEST VI	
1. Block (DRL)	-
2. Mom oper (ET3)	(AS) mom oper
3. Mom oper (7DG)	(AS) mom oper
4. Remove Block (DRL)	ALL
TEST VII	
1. Block (ON1)	-
2. Mom oper (LR)	(LR) (LR1) (LR2) oper & lock
3. Remove Block (ON1)	ALL
TEST VIII	
1. Block (ON1) oper	-
2. Mom oper (LR2)	(LR), (LR1) (LR2) oper & lock
3. Remove Block (ON1)	ALL
TEST IX	
1. Block (ON1) oper	(DS) oper and lock
2. Remove block (ON1)	ALL

TEST X	VERIFY
1. Block ONT	-
2. Mom oper (AO)	(AO), (AOA), (AOB) oper & lock
3. Close crosspoints Level 0, Vert. (A)	(AOB) releases.
4. Remove Block (ONT)	ALL
TEST XI	
1. Block (ONT)	-
2. Mom oper. (AO)	(AO), (AOA), (AOB) oper & lock.
3. Mom oper. (ETT)	(ETT), (ET3) oper & lock
4. Remove Block (ONT)	ALL

7.12 Section B: Check for Potentials.

TEST I	VERIFY
1. Mom Block oper (SK2)	Chk for Ground 4Bot (SK2)
2. Mom Block oper (SK3)	Chk for Ground 4Bot (SK3)
TEST II	
1. Block (ONT) oper.	Chk for Grd 3Bot (RCY)
2. Block (RCY) oper	Chk for no Grd 3Bot (RCY)
3. Remove Blocks (ONT), (RCY)	ALL
TEST III	
1. Block (ONT) & (DRL) oper	Chk for Grd 2Bot (SD)
2. Block (SD) oper	Chk for No Grd 2Bot (SD)
3. Remove Blocks (ONT), (DRL), (SD)	ALL
TEST IV	
1. Block (MFT) & ROF) oper	Chk for Grd 4Break (DKP).
2. Block (DKP) oper	Chk for No Grd 4Breat (DKP).
3. Remove Blocks (MFT), (DKP), (ROF)	ALL
TEST V	
1. Block (ET2) oper	Chk for Grd 2Break (ET3).
2. Block (ET3) oper	Chk for No Grd 2Break (ET3).
3. Remove blocks (ET2), (ET3)	

7.13 Section C: Two Man Test - Check P- Leads
Preliminaries: Make sure SL46 CKT Pack is removed from associated sender.

AT MF APPLIQUE	VERIFY AT ASSOC. SENDER
Mom Ground PeltG 000	(P1) relay mom oper.
Mom Ground PeltG 100	(P2) relay mom oper.
Mom Ground PeltG 001	(P3) relay mom oper.
Mom Ground PeltG 101	(P4) relay mom oper.
Mom Ground PeltG 002	(P5) relay mom oper.
Mom Ground PeltG 102	(P6) relay mom oper.

ATTACHMENT 1
Test Chart on Page 6.

Manager, Product Engineering
Control Center

TEST CHART
IDDD SENDER TESTS

TEST NO.	TITLE	IDDD NUMBER															TEST CLASS	MISCELLANEOUS
		AREA CODE			OFFICE CODE			D	E	F	G	H	J	K	L	M		
		A	B	C	A	B	C	TH	H	T	U							
	(EX) ATHENS GREECE	N	N	N	3	0	1	3	6	3	4	4	9	5				7 DG-DL, 1-1, 0-1-1, 11 DG SWITCH
1	7 DIGIT DIRECT	N	N	N	1	2	3	4	5	6	7						17	7 DG-DL, 1-1, 0-1-1, 7 DG SWITCH
2	8 DIGIT DIRECT	N	N	N	1	2	3	4	5	6	7	8					17	7 DG-DL, 1-1, 0-1-1, 8 DG SWITCH
3	9 DIGIT DIRECT	N	N	N	1	2	3	4	5	6	7	8	9				17	7 DG-DL, 1-1, 0-1-1, 9 DG SWITCH
4	10 DIGIT DIRECT	N	N	N	1	2	3	4	5	6	7	8	9	0			17	7 DG-DL, 1-1, 0-1-1, 10 DG SWITCH
5	11 DIGIT DIRECT	N	N	N	1	2	3	4	5	6	7	8	9	0	1		17	7 DG-DL, 1-1, 0-1-1, 11 DG SWITCH
6	12 DIGIT DIRECT	N	N	N	1	2	3	4	5	6	7	8	9	0	1	2	17	7 DG-DL, 1-1, 0-1-1, 12 DG SWITCH
7	7 DIGIT OPR ASSIST	N	N	N	1	2	3	4	5	6	7						17	7 DG-DL, 1-1, 0-1, 7 DG SWITCH
8	8 DIGIT OPR ASSIST	N	N	N	1	2	3	4	5	6	7	8					17	7 DG-DL, 1-1, 0-1, 8 DG SWITCH
9	9 DIGIT OPR ASSIST	N	N	N	1	2	3	4	5	6	7	8	9				17	7 DG-DL, 1-1, 0-1, 9 DG SWITCH
10	10 DIGIT OPR ASSIST	N	N	N	1	2	3	4	5	6	7	8	9	0			17	7 DG-DL, 1-1, 0-1, 10 DG SWITCH
11	11 DIGIT OPR ASSIST	N	N	N	1	2	3	4	5	6	7	8	9	0	1		17	7 DG-DL, 1-1, 0-1, 11 DG SWITCH
12	12 DIGIT OPR ASSIST	N	N	N	1	2	3	4	5	6	7	8	9	0	1	2	17	7 DG-DL, 1-1, 0-1, 12 DG SWITCH
13	INTERNATIONAL SPECIAL OPERATOR	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	17	7 DG-DL, 1-1, 0-1-0 SWITCH
14	11X (SPECIAL SVCR (CODES)	N	N	N	1	1	X	N	N	N	N	N	N	N	N	N	9	1-1 KEY 11X (NEW KEY)
15	10 (INVALID CODE)	N	N	N	0	0	0	N	N	N	N	N	N	N	N	N	9	PDG1 10 (NEW KEY)

N = Nothing
NOTE: On IDDD Calls, after registration complete, a 5 second timer is activated in the sender and checked by the test frame. This is indicated by the (5 Second) lamp. When the (5 Second) lamp is extinguished the Applique circuit MF outpulses into the test frame.