



Installation, Upgrades and Additions for Avaya CMC1 Media Gateways

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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.

Warranty

Avaya Inc. provides a limited warranty on this product. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya's standard warranty language as well as information regarding support for this product, while under warranty, is available through the following Web site: <http://www.avaya.com/support>.

Preventing Toll Fraud

"Toll fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there may be a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

Avaya Fraud Intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, in the United States and Canada, call the Technical Service Center's Toll Fraud Intervention Hotline at 1-800-643-2353.

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How to Get Help

For additional support telephone numbers, go to the Avaya support Web site: <http://www.avaya.com/support>. If you are:

- Within the United States, click the *Escalation Management* link. Then click the appropriate link for the type of support you need.
- Outside the United States, click the *Escalation Management* link. Then click the *International Services* link that includes telephone numbers for the international Centers of Excellence.

Providing Telecommunications Security

Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's "telecommunications equipment" includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, "networked equipment").

An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based), or asynchronous (character-, message-, or packet-based) equipment, or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

Responsibility for Your Company's Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you - Avaya's customer system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products

TCP/IP Facilities

Customers may experience differences in product performance, reliability and security depending upon network configurations/design and topologies, even when the product performs as warranted.

Standards Compliance

Avaya Inc. is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Avaya Inc. The correction of interference caused by such unauthorized modifications, substitution or attachment will be the responsibility of the user. Pursuant to Part 15 of the Federal Communications Commission (FCC) Rules, the user is cautioned that changes or modifications not expressly approved by Avaya Inc. could void the user's authority to operate this equipment.

Product Safety Standards

This product complies with and conforms to the following international Product Safety standards as applicable:

Safety of Information Technology Equipment, IEC 60950, 3rd Edition, or IEC 60950-1, 1st Edition, including all relevant national deviations as listed in Compliance with IEC for Electrical Equipment (IECEE) CB-96A.

Safety of Information Technology Equipment, CAN/CSA-C22.2 No. 60950-00 / UL 60950, 3rd Edition, or CAN/CSA-C22.2 No. 60950-1-03 / UL 60950-1.

Safety Requirements for Customer Equipment, ACA Technical Standard (TS) 001 - 1997.

One or more of the following Mexican national standards, as applicable: NOM 001 SCFI 1993, NOM SCFI 016 1993, NOM 019 SCFI 1998.

The equipment described in this document may contain Class 1 LASER Device(s). These devices comply with the following standards:

- EN 60825-1, Edition 1.1, 1998-01
- 21 CFR 1040.10 and CFR 1040.11.

The LASER devices used in Avaya equipment typically operate within the following parameters:

Typical Center Wavelength	Maximum Output Power
830 nm - 860 nm	-1.5 dBm
1270 nm - 1360 nm	-3.0 dBm
1540 nm - 1570 nm	5.0 dBm

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Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposures. Contact your Avaya representative for more laser product information.

Electromagnetic Compatibility (EMC) Standards

This product complies with and conforms to the following international EMC standards and all relevant national deviations:

Limits and Methods of Measurement of Radio Interference of Information Technology Equipment, CISPR 22:1997 and EN55022:1998.

Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement, CISPR 24:1997 and EN55024:1998, including:

- Electrostatic Discharge (ESD) IEC 61000-4-2
- Radiated Immunity IEC 61000-4-3
- Electrical Fast Transient IEC 61000-4-4
- Lightning Effects IEC 61000-4-5
- Conducted Immunity IEC 61000-4-6
- Mains Frequency Magnetic Field IEC 61000-4-8
- Voltage Dips and Variations IEC 61000-4-11

Power Line Emissions, IEC 61000-3-2: Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions.

Power Line Emissions, IEC 61000-3-3: Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems.

Federal Communications Commission Statement

Part 15:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Part 68: Answer-Supervision Signaling

Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 rules. This equipment returns answer-supervision signals to the public switched network when:

- answered by the called station,
- answered by the attendant, or
- routed to a recorded announcement that can be administered by the customer premises equipment (CPE) user.

This equipment returns answer-supervision signals on all direct inward dialed (DID) calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered.
- A busy tone is received.
- A reorder tone is received.

Avaya attests that this registered equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

REN Number

For MCC1, SCC1, CMC1, G600, and G650 Media Gateways:

This equipment complies with Part 68 of the FCC rules. On either the rear or inside the front cover of this equipment is a label that contains, among other information, the FCC registration number, and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

For G350 and G700 Media Gateways:

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the rear of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. The digits represented by ## are the ringer equivalence number (REN) without a decimal point (for example, 03 is a REN of 0.3). If requested, this number must be provided to the telephone company.

For all media gateways:

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed 5.0. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

REN is not required for some types of analog or digital facilities.

Means of Connection

Connection of this equipment to the telephone network is shown in the following tables.

For MCC1, SCC1, CMC1, G600, and G650 Media Gateways:

Manufacturer's Port Identifier	FIC Code	SOC/REN/ A.S. Code	Network Jacks
Off premises station	OL13C	9.0F	RJ2GX, RJ21X, RJ11C
DID trunk	02RV2-T	0.0B	RJ2GX, RJ21X
CO trunk	02GS2	0.3A	RJ21X
	02LS2	0.3A	RJ21X
Tie trunk	TL31M	9.0F	RJ2GX
Basic Rate Interface	02IS5	6.0F, 6.0Y	RJ49C
1.544 digital interface	04DU9-BN	6.0F	RJ48C, RJ48M
	04DU9-IKN	6.0F	RJ48C, RJ48M
	04DU9-ISN	6.0F	RJ48C, RJ48M
120A4 channel service unit	04DU9-DN	6.0Y	RJ48C

For G350 and G700 Media Gateways:

Manufacturer's Port Identifier	FIC Code	SOC/REN/A.S. Code	Network Jacks
Ground Start CO trunk	02GS2	1.0A	RJ11C
DID trunk	02RV2-T	AS.0	RJ11C
Loop Start CO trunk	02LS2	0.5A	RJ11C
1.544 digital interface	04DU9-BN	6.0Y	RJ48C
	04DU9-DN	6.0Y	RJ48C
	04DU9-IKN	6.0Y	RJ48C
	04DU9-ISN	6.0Y	RJ48C
Basic Rate Interface	02IS5	6.0F	RJ49C

For all media gateways:

If the terminal equipment (for example, the media server or media gateway) causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Technical Service Center at 1-800-242-2121 or contact your local Avaya representative. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. It is recommended that repairs be performed by Avaya certified technicians.

The equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

This equipment, if it uses a telephone receiver, is hearing aid compatible.

Canadian Department of Communications (DOC) Interference Information

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

Installation and Repairs

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Declarations of Conformity

United States FCC Part 68 Supplier's Declaration of Conformity (SDoC)

Avaya Inc. in the United States of America hereby certifies that the equipment described in this document and bearing a TIA TSB-168 label identification number complies with the FCC's Rules and Regulations 47 CFR Part 68, and the Administrative Council on Terminal Attachments (ACTA) adopted technical criteria.

Avaya further asserts that Avaya handset-equipped terminal equipment described in this document complies with Paragraph 68.316 of the FCC Rules and Regulations defining Hearing Aid Compatibility and is deemed compatible with hearing aids.

Copies of SDoCs signed by the Responsible Party in the U. S. can be obtained by contacting your local sales representative and are available on the following Web site: <http://www.avaya.com/support>.

All Avaya media servers and media gateways are compliant with FCC Part 68, but many have been registered with the FCC before the SDoC process was available. A list of all Avaya registered products may be found at: <http://www.part68.org> by conducting a search using "Avaya" as manufacturer.

European Union Declarations of Conformity



Avaya Inc. declares that the equipment specified in this document bearing the "CE" (*Conformité Européenne*) mark conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (1999/5/EC), including the Electromagnetic Compatibility Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC).

Copies of these Declarations of Conformity (DoCs) can be obtained by contacting your local sales representative and are available on the following Web site: <http://www.avaya.com/support>.

Japan

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

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About This Book

This document provides procedures to install, upgrade, or make additions to an Avaya CMC1 Media Gateway, which is housed in the Compact Modular Cabinet (CMC1).

Conventions used in this book

General

The following conventions apply to the Avaya DEFINITY Server CSI:

- The word “system” is a general term encompassing all references to the Avaya DEFINITY Server CSI running Avaya Communication Manager.
- The term “cabinet” generally refers to the Compact Modular Cabinet (CMC1).
- “UUCSS” refers to a circuit pack address in cabinet-carrier-slot order.

Typographic

Other terms and conventions might help you use this book with your Avaya Communication Manager system.

- Commands are printed in bold face as follows: **command**.

We show complete commands in this book, but you can usually type an abbreviated version of the command. For example, **list configuration station** can be typed as **list config sta**.

- Screen displays and names of fields are printed in constant width as follows: `screen display`.

A screen is any form displayed on your computer or terminal monitor.

- Variables are printed in italics as follows: *variable*.
- Keys and buttons are printed as follows: **KEY**.
- To move to a certain field, you can use the **TAB** key, arrows, or the **ENTER** key (the **ENTER** key may appear as the **RETURN** key on your keyboard).
- If you use terminal emulation software, you need to determine what keys correspond to **ENTER**, **RETURN**, **CANCEL**, **HELP**, **NEXT PAGE**, etc.
- In this book we use the terms “telephone” and “voice terminal” to refer to phones.
- We show commands and screens from the newest Avaya Communication Manager system and refer to the most current books. Please substitute the appropriate commands for your system and refer to the manuals you have available.

- If you need help constructing a command or completing a field entry, remember to use **HELP**.
 - When you press **HELP** at any point on the command line, a list of available commands appears.
 - When you press **HELP** with your cursor in a field on a screen, a list of valid entries for that field appears.
- The status line or message line can be found near the bottom of your monitor display. This is where the system displays messages for you. Check the message line to see how the system responds to your input. Write down the message if you need to call our helpline.
- When a procedure requires you to press **ENTER** to save your changes, the screen you were working on clears and the cursor returns to the command prompt.

The message line shows “command successfully completed” to indicate that the system accepted your changes.

Admonishments

Admonishments in this book have the following meanings:



CAUTION:

Denotes possible harm to software, possible loss of data, or possible service interruptions.



WARNING:

Denotes possible harm to hardware or equipment.



DANGER:

Denotes possible harm or injury to your body.

Physical dimensions

- Physical dimensions in this book are in inches (in.) followed by metric centimeters (cm) in parentheses.
- Wire gauge measurements are in AWG followed by the cross-sectional area in millimeters squared (mm²) in parentheses.

Trademarks

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How to get this book

On the Web

If you have internet access, you can view and download the latest version of this book. To view the book, you must have a copy of Acrobat Reader.

To access the latest version:

- 1 At your browser, go to the Avaya web site:
<http://www.avaya.com>
- 2 Select **Support**.
- 3 Select **Online Services**.
- 4 Select **Documentation**.
- 5 Select **Recent Documents**.
- 6 Scroll down to find the latest release of DEFINITY/Avaya Communication Manager documents.
- 7 Search for the document number to view the latest version of the book.

Non-Web

This book and related books can be ordered directly from:

Globalware Solutions
200 Ward Hill Avenue
Haverhill, MA 01835 USA

+1-800-457-1235 (phone)
+1-800-457-1764 (fax)

Non-800 numbers:
+1 207-866-6701 (phone)
+1 207-626-7269 (phone)

Where to get additional help

For additional support and trouble escalation:

- 1 At your browser, go to the Avaya web site:
<http://www.avaya.com>
- 2 Click on *Support*.

3 If you are:

- Within the United States, click *Escalation Lists*, which includes escalation phone numbers within the USA.
- Outside the United States, click *Escalation Lists* then click *Global Escalation List*, which includes phone numbers for the regional Centers of Excellence.

If you do not have Web access, use the phone numbers below ([Table 1](#)).

NOTE:

You may need to purchase an extended service agreement to use some of these resources. See your Avaya representative for more information.

Table 1: Avaya support

Support	Number
<ul style="list-style-type: none">• DEFINITY Helpline (for help with feature administration and system applications)	+1-800-225-7585
<ul style="list-style-type: none">• Avaya National Customer Care Center Support Line (for help with maintenance and repair)	+1-800-242-2121
<ul style="list-style-type: none">• Avaya Toll Fraud Intervention	+1-800-643-2353
<ul style="list-style-type: none">• Avaya Corporate Security	+1-800-822-9009 +1-925-224-3401
<ul style="list-style-type: none">• International Technical Assistance Center (ITAC)	+905-943-8801
For all international resources, contact your local Avaya authorized dealer for any additional help and questions.	

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Let us know what you like or don't like about this book. Although we can't respond personally to all your feedback, we promise we will read each response we receive.

Write to us at: Avaya Inc.
Product Documentation Group
1300 W. 120th Ave.
Westminster, CO 80234 USA

Fax to: 303-538-1741

Send email to: document@avaya.com

Security Issues

To ensure the greatest security possible for customers, Avaya Inc. offers services that can reduce toll-fraud liabilities. Contact your Avaya Inc. representative for more security information.

Login security is an attribute of the Avaya Communication Manager. Existing passwords expire 24 hours after installation.

For Access Security Gateway (ASG), see [Appendix B, “Access Security Gateway”](#).

Antistatic Protection



CAUTION:

When handling circuit packs or any components of a DEFINITY System, always wear an antistatic wrist ground strap. Connect the strap to an approved ground such as an unpainted metal surface on the DEFINITY System.

Remove/Install circuit packs



CAUTION:

When the power is on:

- *The control circuit packs cannot be removed or installed.*
- *The port circuit packs can be removed or installed.*

1 Installing and Cabling the Cabinets

Read This First

License File

Remote Feature Activation (RFA) is a Web-based application that enables the creation and deployment of License Files for all switches. The License File enables the Avaya™ Communication Manager category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. *Without a license file, the switch does not provide normal call processing.*

Pre-installation checklist

In order to be properly prepared for the installation, have the items listed in [Table 2](#) ready.

Table 2: Pre-installation checklist

Item No.	Item	✓
1	Software Release Letter	
2	Avaya Communication Manager on removable media	
3	Extra formatted removable media	
4	Authorized wrist grounding strap	
5	Documentation (book or PDF file): <ul style="list-style-type: none"> • <i>Maintenance for Avaya DEFINITY Server CSI</i> • <i>Administrator's Guide for Avaya Communication Manager</i> 	
6	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7	SAP order number with RTUs	
8	Processor faceplate serial number(s)	
9	Transaction Record number	
10	System Identification (SID) number	
11	Switch telephone number or IP address	
		1 of 2

Table 2: Pre-installation checklist

Item No.	Item	✓
12	Access to the RFA Information page for these items (if not already installed on your PC): <ul style="list-style-type: none"> • License Installation Tool (LIT) application • LIT documentation 	
13	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	
14	Internet Explorer 5.0 or higher installed on your laptop/PC	
15	Intranet access to your designated RFA portal (see Go to the RFA website).	
		2 of 2

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

- 1 At your laptop/PC browser, go to the appropriate website:
 - *Associates*: <http://associate2.avaya.com/> or the services portal: <http://usservices.avaya.com/>
 - *Business Partners* go to the appropriate regional Business Partner portal:
 - United States: <http://www.avaya.com/businesspartner/>
 - Canada: <https://www.avaya.ca/BusinessPartner>
 - Brazil: <http://www.avaya.com.br/Home.asp>
 - CALA: <https://cala-businesspartner.avaya.com/mnc/index.html>
 - EMEA: <https://emea-businesspartner.avaya.com/>
 - APAC: <http://www.avaya-apac.com/bp>
 - *Contractors* go to <http://www.avaya.com/services/rfa/>
 - If you are unable to access RFA using your recommended portal, try: <http://rfa.avaya.com>
- 2 Using your SSO, log in to the RFA website.
- 3 Follow the links to the RFA Information page.
- 4 Complete the information necessary to create a License File.

NOTE:

If you have problems with a hardware serial number that is not in the SAP database, go to the [If you have problems with RFA](#) section.

Have direct connection

If you have a direct connection between RFA and the switch:

- 1 Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
- 2 When prompted, type in the Transaction ID number.
- 3 The FET creates and uploads the Switch Configuration File automatically.
- 4 Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

No direction connection

If you do not have a direct connection between RFA and the switch:

- 1 Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
- 2 When prompted, type in the Transaction ID number.
- 3 Use the FET instructions to create a new switch connection profile.
- 4 Create the Switch Configuration File.
- 5 Upload the Switch Configuration File to the RFA website.
- 6 Deliver the License File to your laptop/PC for installation later in this procedure.

If you have problems with RFA

If you get an error message that a hardware serial number is not in the SAP database, you must call the RFA Helpdesk ([Table 3](#)) to have them correct the SAP information.

Table 3: RFA Helpdesk contact numbers

Where	Who	Phone number/URL	Prompt or selection
Channel: <ul style="list-style-type: none"> • U.S. and Canada • Variable Workforce Group • Avaya contractors 	Avaya Associates Members Contractors	877-615-4174	Prompt 8
U.S. and Canada	Business Partners	866-800-5194	Prompt 8
EMEA	Direct and Business Partners	+31-70-414-8720 <i>or</i> http://www.avayaneetwork.com	Prompt 3 Select GSO; select EMEA
			1 of 2

Table 3: RFA Helpdesk contact numbers

Where	Who	Phone number/URL	Prompt or selection
APAC RTAC	Direct and Business Partners	+65-6872-8686	
CALA <ul style="list-style-type: none">• Mexico TAC• Brazil TAC• Columbia TAC• Argentina TAC• Mexico Call Receipt	Direct and Business Partners	+525-278-7878 +5511-5185-6655 +571-616-6077 +5411-4114-4440 +1-720-444-9998	
			2 of 2

Check Customer's Order

Check the customer's order and the shipping packing lists to confirm that all equipment is present. If any equipment is missing, report this to your Avaya Inc. representative. Check the system adjuncts for damage and report all damage according to local shipping instructions.

Correcting Shipping Errors

- 1 Red-tag all defective equipment and over-shipped equipment and return according to the nearest Material Stocking Location (MSL) instructions. For international customers, contact your order service agent.
- 2 Direct all short-shipped reports to the nearest MSL. Contact the appropriate location for specific instructions. For Streamlined Implementation in the United States, call 1-800-772-5409.

Unpack and Inspect



CAUTION:

A fully loaded system weighs 58 lbs (26.3 kg). Use lifting precautions. If the doors, power unit, and circuit packs are removed, the unit weighs only 29 lbs (13.1 kg).

- 1 Verify the equipment received. See [Figure 1, Equipment Packed with the Compact Modular Cabinet](#), on page 25. Actual equipment may vary in appearance and may ship in separate packages.
- 2 Equipment comcodes are listed in [Table 4, Comcodes for CMC1](#), on page 26.

- 3 Before mounting the cabinets, remove the cabinet doors by opening them and lifting them straight up and off of the hinge pins.

Figure 1: Equipment Packed with the Compact Modular Cabinet

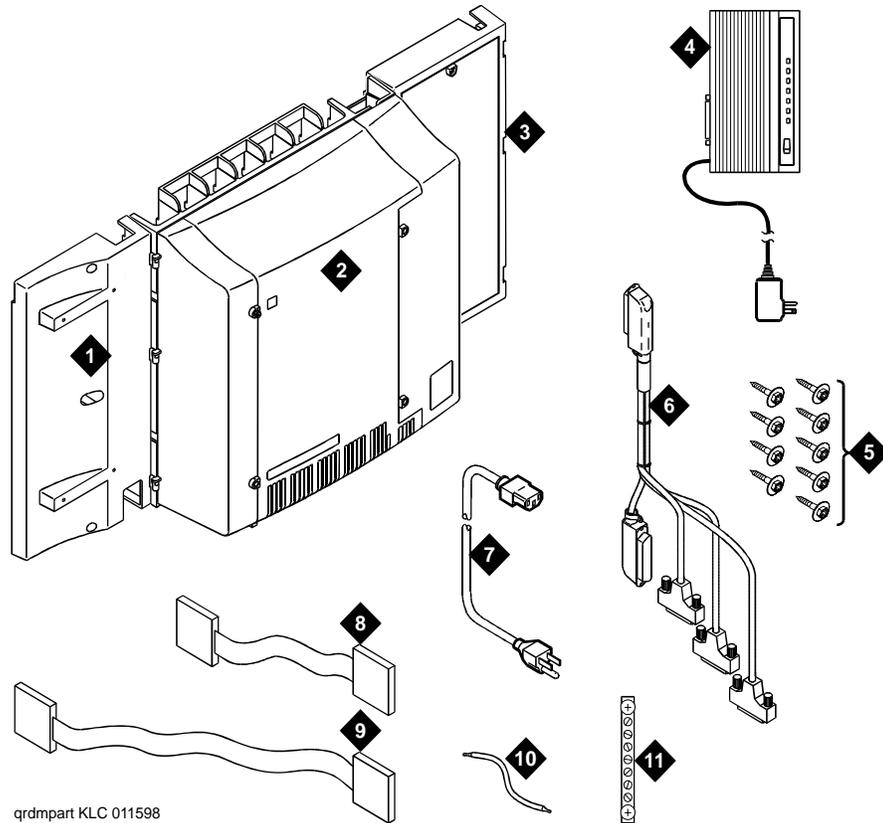


Figure notes

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1 Left panel (also acts as a wall-mount <u>template</u> and as a floor mount pedestal) 2 Compact modular cabinet 3 Right panel 4 U.S. Robotics external modem (not shipped with all systems) 5 #12 x 1-inch shoulder screws 6 Processor interface cable (not shipped with all cabinets) | <ol style="list-style-type: none"> 7 AC power cord (NEMA 5-15P or IEC 320) 8 Vertical TDM/LAN bus cable (not shipped with all systems) 9 Horizontal TDM/LAN bus cable (not shipped with all systems) 10 14-in. (35.5 cm) 6 AWG (#40) (16 mm²) ground wire 11 Single-point ground block |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Comcodes for CMC1

[Table 4](#) lists the comcodes for equipment used with the CMC1.

Table 4: Comcodes for CMC1

Comcode	Description
700225758	Left Panel
847951670	Right Panel
700225360	Right Door
700225766	Left Door
847960002	Processor Interface Cable
108516683	TN2402 Processor Circuit Pack
107784019	TN2182C Tone-Clock — Tone Detector and Call Classifier Circuit Pack
407633999	U.S. Robotics Sportster Model USR 33.6 EXT External Modem
105631527	TDM/LAN Bus Terminator (AHF110)
407772870	Vertical TDM/LAN Bus Cable (WP-91716 List 8)
407772888	Horizontal TDM/LAN Bus Cable (WP-91716 List 9)
706827717	Single-Point Ground Block
H600-487	14-inch (35.5 cm) 6 AWG (#40) (16 mm ²) Green Ground Wire
847987187	CMC 110 Cross-Connect Assembly (Main Distribution Frame)
407676691	120 VAC Power Distribution Unit (145D 6-AC)
107949364	650A Power Supply
700225782	Fan Assembly
407745009	Fan Air Filter
405362641	120 VAC Power Cord (U.S.)
407786623	120 VAC Power Cord (Europe)
407786599	120 VAC Power Cord (United Kingdom)
407786631	120 VAC Power Cord (Australia)
407790591	120 VAC Power Cord (India)
106278062	Apparatus Blank (Circuit Pack Blank) (158P)
108724907	8-Mbyte Mass-Storage Translation Card (White Card)
108724915	16-Mbyte Mass-Storage Translation Card (White Card)
1 of 3	

Table 4: Comcodes for CMC1

Comcode	Description
108724923	48-Mbyte Mass-Storage Translation Card (White Card)
106606536	Integrated Channel Service Unit (ICSU) (120A2)
107988867	DS1 Loopback Jack (T1 Only) (700A)
107152969	75-ohm DS1 Coaxial Adapter (888B)
403613003	157B Connecting Block
406948976	6SCP-110 Protector
107435091	507B Sneak Current Fuse Panel
407216316	220029 Sneak Current Fuse
403613003	157B Connecting Block
103970000	Main Distribution Frame Label (Code 220A)
104307327	C6C cable — 50-ft (15.2 m) shielded DS1 cable with 50-pin male to 15-pin male
104307376	C6D cable — 50-ft (15.2 m) shielded DS1 cable with 50-pin male on each end
104307434	C6E cable — 100-ft (30.5 m) shielded DS1 cable with 50-pin male to 50-pin female
104307475	C6F cable — 50-ft (15.2 m) shielded DS1 cable with 50-pin male to 3 in. (7.6 cm) stub
102381779	3B1A Carbon Block
104410147	3B1E-W Wide Gap Gas Tube
105514756	3C1S Solid State
102904893	4B1C Carbon Block with Heat Coil
104401856	4B1E-W Wide Gap Gas Tube with Heat Coil
104386545	4C1S Solid State with Heat Coil
406948976	SCP-110 Sneak Current Protector
407216316	220029 Fuse Sneak Current Protector
105581086	4C3S-75 Solid State with Heat Coil
406144907	ITW LINX Gas Tube, Avalanche Suppress
901007120	ITW Linx Ground Bar (used with above)
406304816	ITW Linx Replacement Fuse
103972758	Data Link Protector (1 circuit)
103972733	Data Link Protector (8 circuits)
2 of 3	

Table 4: Comcodes for CMC1

Comcode	Description
407063478	Electrostatic Discharge (ESD) Wrist Strap
107731853	Single-Mode Fiber Optic Transceiver (300A)
106455348	Multi-Mode Fiber Optic Transceiver (9823A)
106455363	Multi-Mode Fiber Optic Transceiver (9823B)
407439975	Multi-mode Fiber Interconnect Cable — 20 ft (6.1 m)
407598325	Single-mode Fiber Interconnect Cable — 20 ft (6.1 m)
105357727	Single-mode Fiber Optic Patch Cord — 2 ft (0.6 m)
106060718	Single-mode 5-dB Attenuator
106060734	Single-mode 10-dB Attenuator
3 of 3	

Install the System Cabinets

Set the Carrier Address ID — All Cabinets

Figure 2: Setting Carrier Address ID (Right Side)

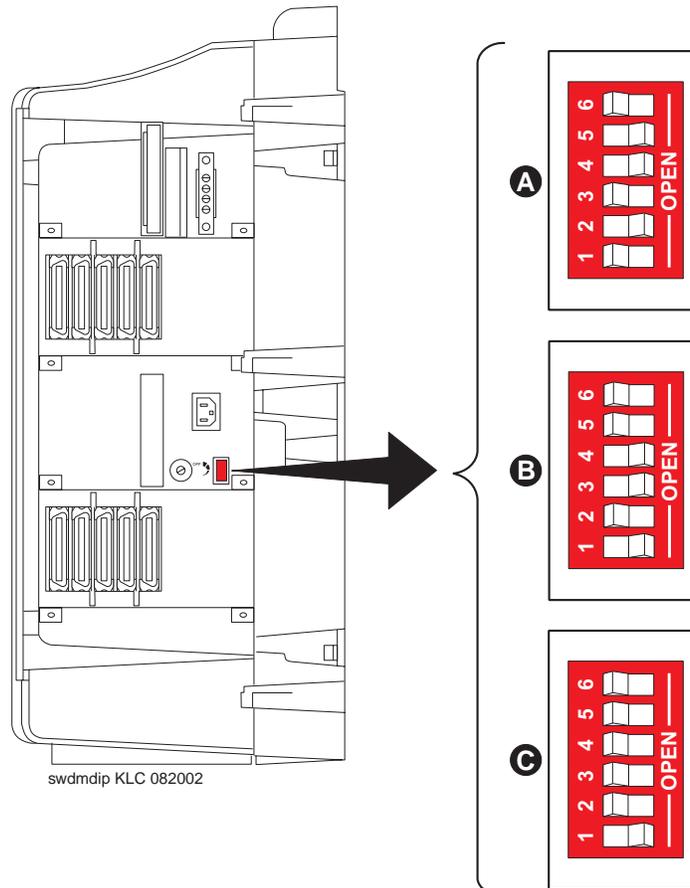


Figure notes

- A** Carrier A switch settings
- B** Carrier B switch settings
- C** Carrier C switch settings

- 1** Proceed to either [Floor-Mount the Cabinet](#) on page 30 or to [Wall-Mount the Cabinets](#) on page 31.

Floor-Mount the Cabinet

The cabinet dimensions (with floor pedestal) are 28.5 in. (72.4 cm) high, 24.5 in. (62.2 cm) wide, and 12 in. (30.5 cm) deep. Maintain a service clearance of 12 in. (30.5 cm) on the left, right, and front of the cabinet.

Figure 3: Typical Floor Mount Installation

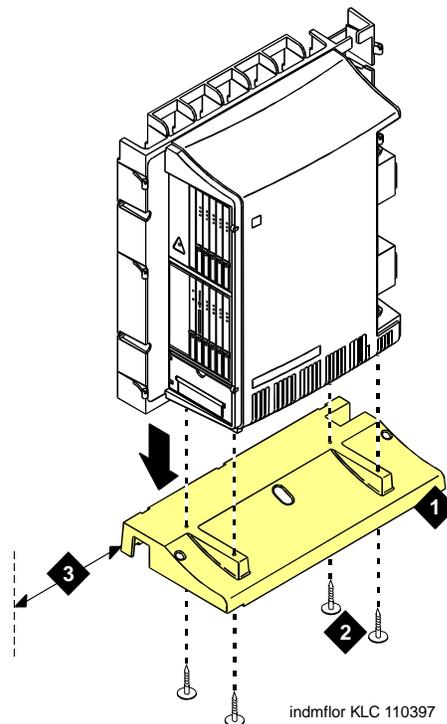


Figure notes

- | | |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------|
| 1 Left panel (floor-mount pedestal) | 3 12 in. (30.5 cm) minimum from nearest object (required to service the circuit packs) |
| 2 #12 x 1-in. (2.5 cm) shoulder screws | |

- 1** Proceed to [Cable the System](#) on page 44.

Wall-Mount the Cabinets



CAUTION:

A fully loaded system weighs 58 lb (26.3 kg). Use lifting precautions. If the doors, power unit, and circuit packs are removed, the unit weighs only 29 lb (13.1 kg).

Install Plywood Backing onto Wall

The plywood and the hardware to mount the plywood are installer-provided.

NOTE:

The following plywood dimensions account for the extra space needed to install the panels on each side of the cabinet. The cabinet is 24 in. (0.6 m) wide and each panel is 12 in. (0.3 m) wide.

Single-Cabinet Installation

- 1 Install a 3/4-in. (2 cm) thick sheet of 2 x 4-ft (0.6 x 1.2 m) plywood horizontally onto the wall. See [Figure 4, Left Panel Used as Mounting Template](#), on page 32.

The top of the plywood must be at least 54 in. (137 cm) from the floor.

2 or 3 Vertically Mounted Cabinets

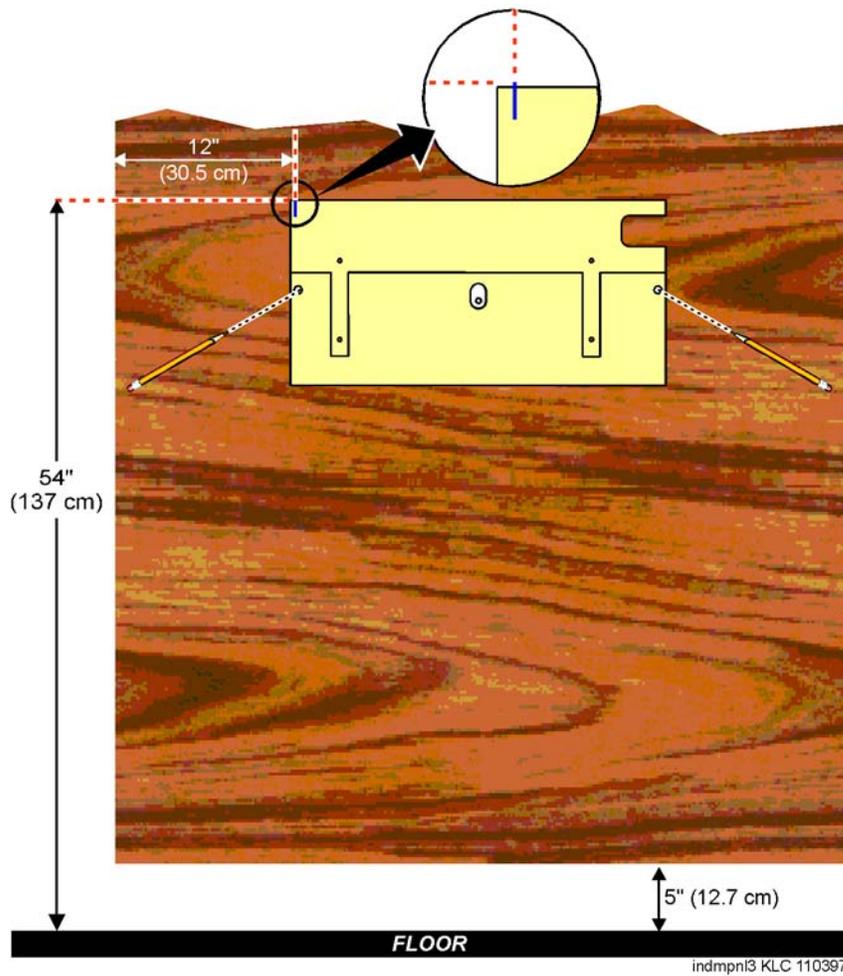
- 1 Install a 3/4-in. (2 cm) thick sheet of 4 x 8-ft (1.2 x 2.4 m) plywood vertically onto the wall. See [Figure 6, Typical Vertical Multicabinet Installation](#), on page 34.

2 Cabinets Vertically Mounted and 1 Cabinet Horizontally Mounted

- 1 Install a 3/4-in. (2 cm) thick sheet of 4 x 8-ft (1.2 x 2.4 m) plywood vertically onto the wall. See [Figure 6, Typical Vertical Multicabinet Installation](#), on page 34.
- 2 Install a 3/4-in. (2 cm) thick sheet of 2 x 4-ft (0.6 x 1.2 m) sheet of plywood horizontally onto the wall. Position the plywood to the right of the first sheet, across from Cabinet A.

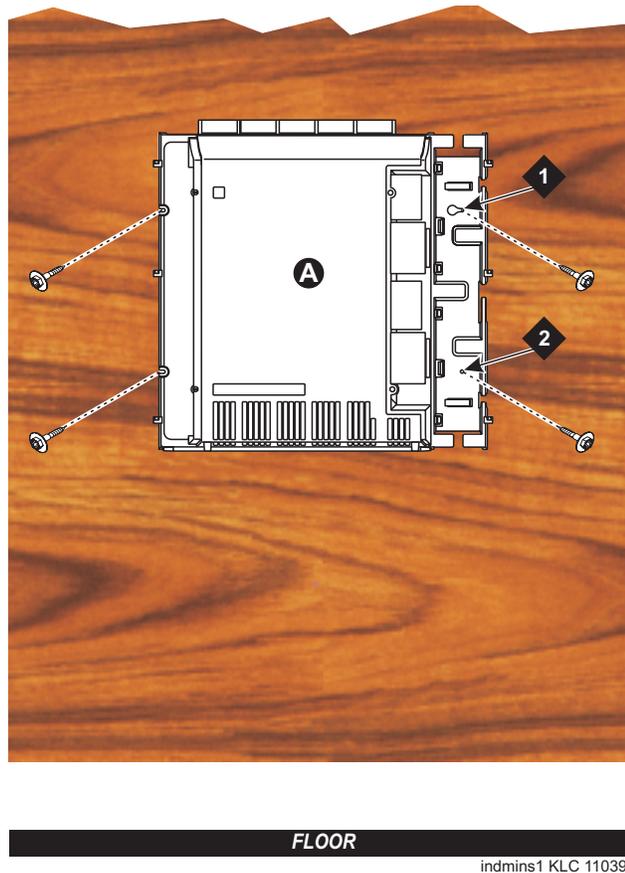
Install Cabinet A — Wall-Mount

Figure 4: Left Panel Used as Mounting Template



- 1 Place the template on the wall ensuring that the top surface is level.
- 2 Mark two 1/8-in. (0.3 cm) pilot holes in the mounting hole locations.
- 3 Remove the template from the wall.
- 4 Drill the two pilot holes.
- 5 Thread two #12 x 1-in. shoulder screws partially into the holes.
- 6 Set the cabinet onto the wall and align the slots with the shoulder screws. See [Figure 5, Typical Wall-Mount Installation](#), on page 33. Slide the cabinet to the left to hold it in place. Tighten the screws securely.

Figure 5: Typical Wall-Mount Installation



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Figure notes

- 1 #12 x 1-in. shoulder screws 2 #12 x 1-inch safety screw

- 7 Drill two lower mounting holes using the cabinet as a template.
8 Thread the 2 lower screws and tighten.



CAUTION:

Be sure the right bottom safety screw is in place and tight.

Install 2 or 3 Vertically Mounted Cabinets

Figure 6: Typical Vertical Multicabinet Installation

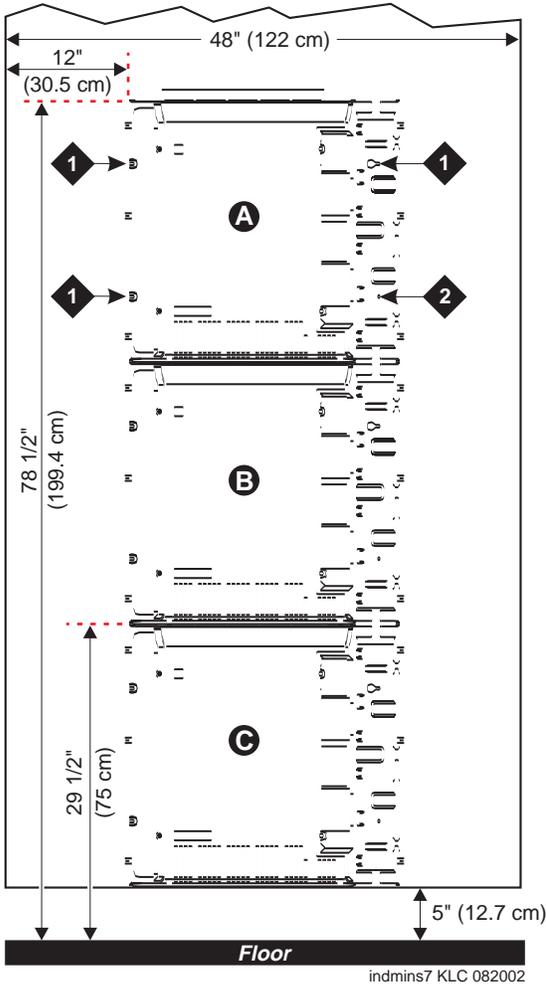


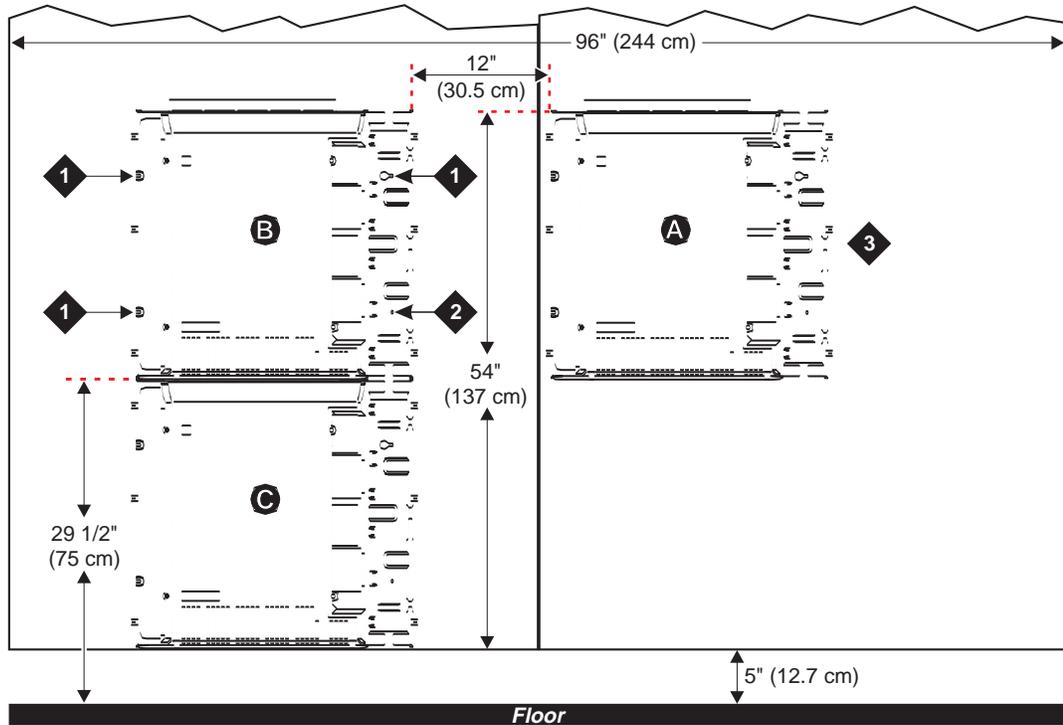
Figure notes

- 1** #12 x 1-inch shoulder screws
- 2** #12 x 1-inch safety screw

1 Securely tighten the shoulder screws and safety screws.

Install 2 Cabinets Vertically and 1 Cabinet Horizontally

Figure 7: Typical 3-Cabinet Installation



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Figure notes

- | | | | |
|---|------------------------------|---|-------------------------|
| 1 | #12 x 1-inch shoulder screws | 3 | Second sheet of plywood |
| 2 | #12 x 1-inch safety screw | | |

- 1 Securely tighten the shoulder screws and safety screws.

Install Left and Right Panels — Wall-Mount

Figure 8: Left and Right Panel Installation

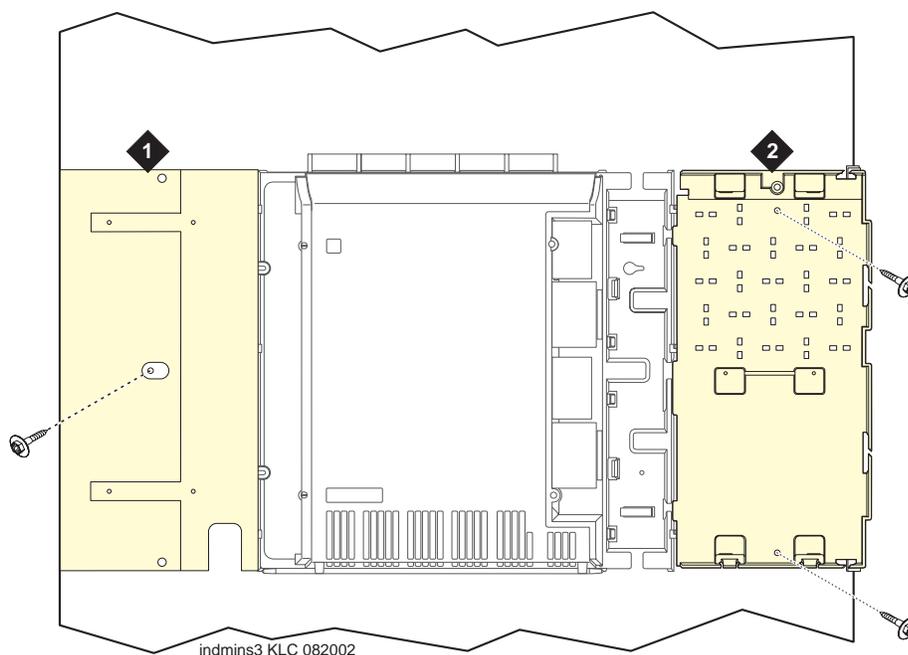


Figure notes

- | | | | |
|----------|------------|----------|-------------|
| 1 | Left panel | 2 | Right panel |
|----------|------------|----------|-------------|

- 1** Align the cutouts in the panels with the cabinet hinges.
- 2** Drill a 1/8-inch (0.3 cm) pilot hole into the wall and secure the panels with the #12 x 1-inch shoulder screws.

AC Power and Ground



CAUTION:

The system requires a dedicated AC power circuit that is not shared with other equipment and is not controlled by a wall switch. The AC receptacle must not be located under the Main Distribution Frame and must be easily accessible.



CAUTION:

The latch only removes DC power from the cabinet. Unseating the power supply removes AC power from the power supply, but not from the cabinet. To remove AC power from the cabinet, pull the AC power cord from the AC appliance connector on the rear of the cabinet.



CAUTION:

System grounding must comply with the general rules for grounding provided in Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable electric code in the country of installation.



CAUTION:

AC mains wiring and testing must be performed by a qualified electrician and must conform to Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable electric code in the country of installation.

Check AC Power

Each CMC uses an auto-ranging 85 to 264 VAC power supply, 47 to 63 Hz, 330 W, 4.5 amps (100-120 VAC) or 2.3 amps (200 to 240 VAC), at 500 VA. The AC power source can be 1 phase of 120 VAC with neutral (100 VAC for Japan) with 15 amp circuit breaker, or 1 phase of 220 or 240 VAC (200 VAC for Japan) with 10 amp circuit breaker. The AC cord uses a NEMA 5-15P plug or an IEC 320 plug.

Before powering up the system, check the AC power in the equipment room using a KS-20599 digital voltmeter (DVM) (or equivalent).

- 1 Measure the AC voltage between the hot and neutral side of the receptacle.
- 2 Depending on the AC power source, verify that the meter reads 90 to 132 VAC or 180 to 264 VAC. If not, have a qualified electrician correct the problem.
- 3 Measure the voltage between the neutral and ground side of the receptacle.
- 4 Verify that the meter reads 0 VAC. If not, have a qualified electrician correct the problem.
- 5 When finished, set the AC mains circuit breakers to **OFF**.

Approved Grounds

An approved ground is the closest acceptable medium for grounding the building entrance protector, entrance cable shield, or single-point ground of electronic telephony equipment. If more than 1 type of approved ground is available on the premises, the grounds must be bonded together as required in Section 250-81 of the National Electrical Code.

Grounded Building Steel — The metal frame of the building where it is effectively grounded by 1 of the following grounds: acceptable metallic water pipe, concrete encased ground, or a ground ring.

Acceptable Water Pipe — A metal underground water pipe, at least 1/2-in. (1.3 cm) in diameter, in direct contact with the earth for at least 10 ft (3 m). The pipe must be electrically continuous (or made electrically continuous by bonding around insulated joints, plastic pipe, or plastic water meters) to the point where the protector ground wire connects. A metallic underground water pipe must be supplemented by the metal frame of the building, a concrete-encased ground, or a ground ring. If these grounds are not available, the water pipe ground can be supplemented by 1 of the following types of grounds:

- Other local metal underground systems or structures — Local underground structures such as tanks and piping systems
- Rod and pipe electrodes — A 5/8-in. (1.6 cm) solid rod or 3/4-in. (2 cm) conduit or pipe electrode driven to a minimum depth of 8 ft (2.4 m)

- Plate electrodes — Must have a minimum of 2 ft² (0.185 m²) of metallic surface exposed to the exterior soil

Concrete Encased Ground — An electrode encased by at least 2 in. (5.1 cm) of concrete and located within and near the bottom of a concrete foundation or footing in direct contact with the earth. The electrode must be at least 20 feet (6.1 m) of 1 or more steel reinforcing bars or rods 1/2-in. (1.3 cm) in diameter, or at least 20 ft (6.1 m) of bare, solid copper, 4 AWG (26 mm²) wire.

Ground Ring — A buried ground that encircles a building or structure at a depth of at least 2.5 ft (0.76 m) below the earth's surface. The ground ring must be at least 20 ft (6.1 m) of 2 AWG (35 mm²), bare, copper wire.

Approved Floor Grounds



CAUTION:

If the approved ground is inside a dedicated equipment room, then these connections must be made by a qualified electrician.

Floor grounds are those grounds on each floor of a high-rise building that are suitable for connection to the ground terminal in the riser closet and to the cabinet single-point ground terminal. Approved floor grounds may include:

- Building steel
- The grounding conductor for the secondary side of the power transformer feeding the floor
- Metallic water pipes
- Power-feed metallic conduit supplying panel boards on the floor
- A grounding point specifically provided in the building for the purpose

Uninterruptible Power Supply

An optional UPS (Uninterruptible Power Supply) may be used for power holdover. The type of UPS depends on the holdover requirements. Holdover times vary from less than 10 minutes to up to 8 hours. The UPS must provide surge protection for all connected cabinets.

- 1** Connect the UPS to an electrical outlet capable of handling the power requirements of all cabinets:
 - a** For 100 VAC, multiply 4.5 amps times the number of cabinets.
 - b** For 120 VAC, multiply 3.8 amps times the number of cabinets.
 - c** For 200 VAC, multiply 2.3 amps times the number of cabinets.
 - d** For 220-240 VAC, multiply 2.0 amps times the number of cabinets.
- 2** Be sure that Cabinet A (control carrier) is connected to an “unswitched” or “always on” electrical outlet on the UPS.

CMC Power Switch



CAUTION:

The latch only removes DC power from the cabinet. Unseating the power supply removes AC power from the power supply, but not from the cabinet. To remove AC power from the cabinet, pull the AC power cord from the AC appliance connector on the rear of the cabinet. See [Figure 9](#).

Figure 9: CMC Power Supply

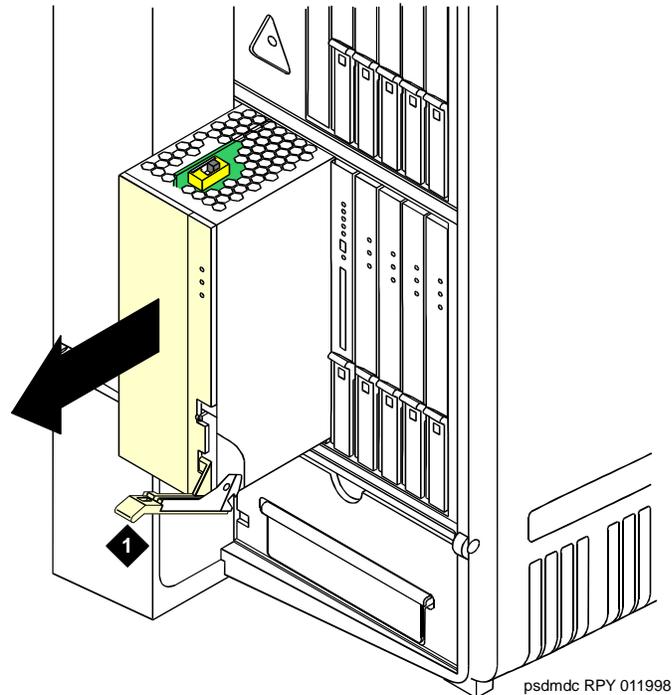


Figure notes

- 1 Latch

Connect Cabinet Grounds and Other Grounds

The following additional grounding requirements must be met:

- The approved ground wire must be green, 6 AWG (#40) (16 mm²), copper, stranded wire (this is in addition to the ground wire in the AC power cord)
- Bond all approved grounds at the single-point ground to form a single grounding electrode system

Install the Ground Block

- 1 Mount the ground block as shown in [Figure 10](#).
- 2 Make the cable connections as shown in [Figure 11](#).

Figure 10: Ground Block Installation to Right Panel

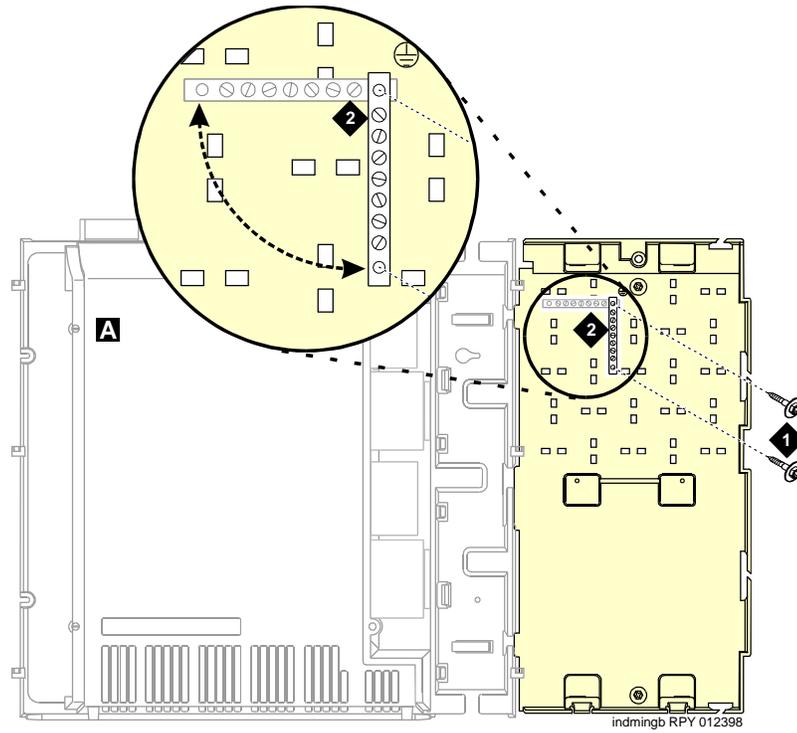


Figure notes

1 #12 x 1-inch shoulder screws

2 Single-point ground block

Install Coupled Bonding Conductor

The Coupled Bonding Conductor (CBC) provides for mutual inductance coupling between the CBC and the telephone cables that are exposed to lightning. The conductor can be a 10 AWG (#25) (6 mm²) wire tie wrapped to the exposed cables, a metal cable shield around the exposed cables, or 6 spare pairs from the exposed cable.

In a high rise building, connect the CBC to an approved building ground on each floor. To provide the coupled bonding protection:

- 1 Connect 1 end of the conductor to a telephone cable building entrance protector ground that is connected to an approved ground.
- 2 Route the rest of the conductor next to the exposed telephone cables being protected until they reach the cross-connect nearest to the telephone system.
- 3 Position the non-exposed telephone cables at least 12 inches (30.5 cm) away from exposed telephone cables whenever possible.
- 4 Terminate the other end to the single-point ground block provided for the telephone system.

Connect and Route Cabinet AC Power Cords



CAUTION:

The AC power cords may connect to a properly rated power distribution unit, individual AC power receptacles, or to a UPS. See [Figure 12, Routing AC Power Cords to a Power Distribution Unit](#), on page 43.

- 1 Be sure the circuit breakers at the AC load center are **OFF**.
- 2 Connect Cabinet A to an “unswitched” or “always on” electrical outlet.

Figure 12: Routing AC Power Cords to a Power Distribution Unit

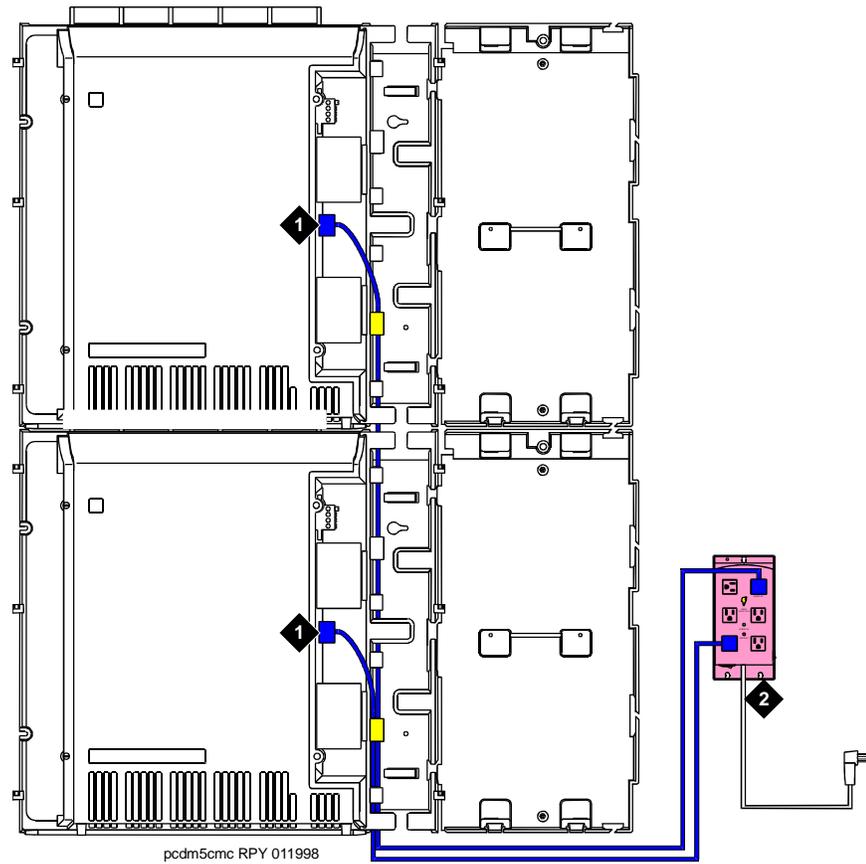


Figure notes

- | | | | |
|---|-----------------------|---|----------------------------------------------------------------------------|
| 1 | Cabinet AC power cord | 2 | Surge-protected AC power distribution unit
(120 VAC systems) (optional) |
|---|-----------------------|---|----------------------------------------------------------------------------|

Cable the System

If there is more than one cabinet, you need to interconnect all the cabinets in the system.

Install Processor Interface Cable — Cabinet A Only and TDM/LAN Bus Terminator

Figure 13: System Cable Connections

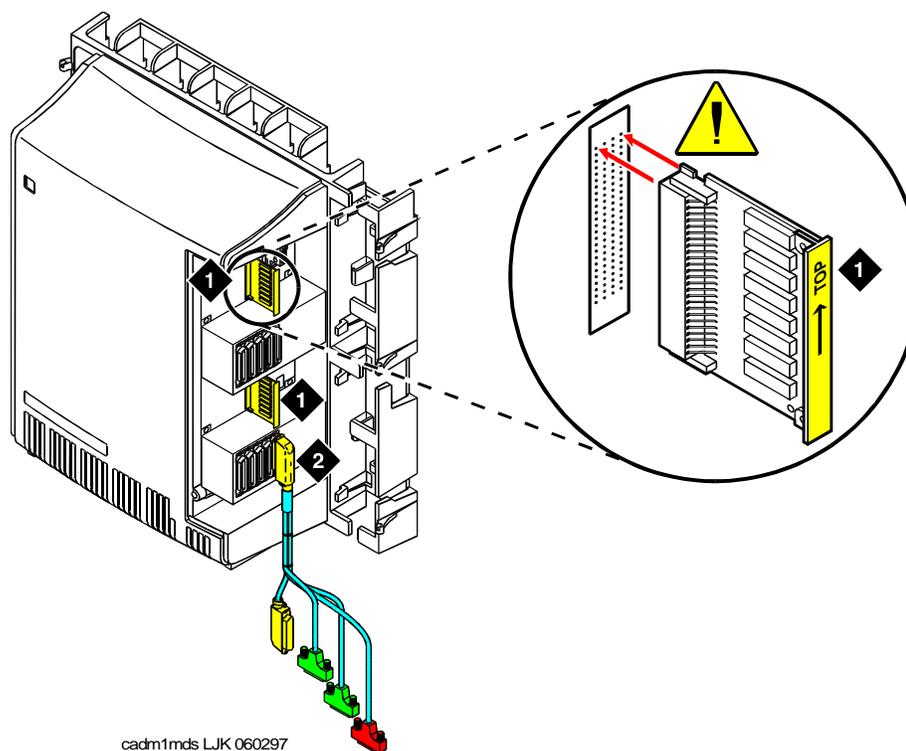


Figure notes

- | | |
|---------------------------------|-----------------------------------------------------|
| 1 TDM/LAN bus terminator | 2 Processor interface cable (cabinet A only) |
|---------------------------------|-----------------------------------------------------|

-
- 1** Connect the Processor Interface Cable to slot 1 of Cabinet A. See [Figure 13](#).
 - 2** Install the TDM/LAN bus terminators.

Cable the Multi-Cabinet System — Wall-Mount

Vertically Mounted System

- 1 Route the TDM/LAN bus cables through the cable trough.
See [Figure 14](#).

Figure 14: TDM/LAN Bus Cables and Terminators

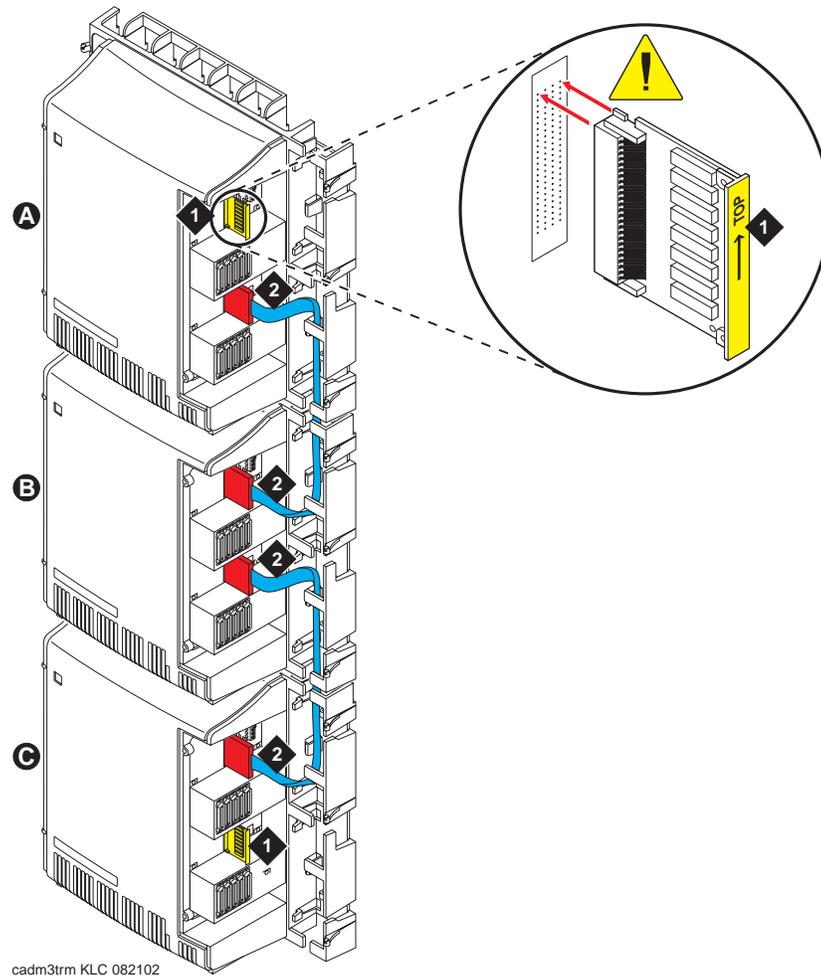


Figure notes

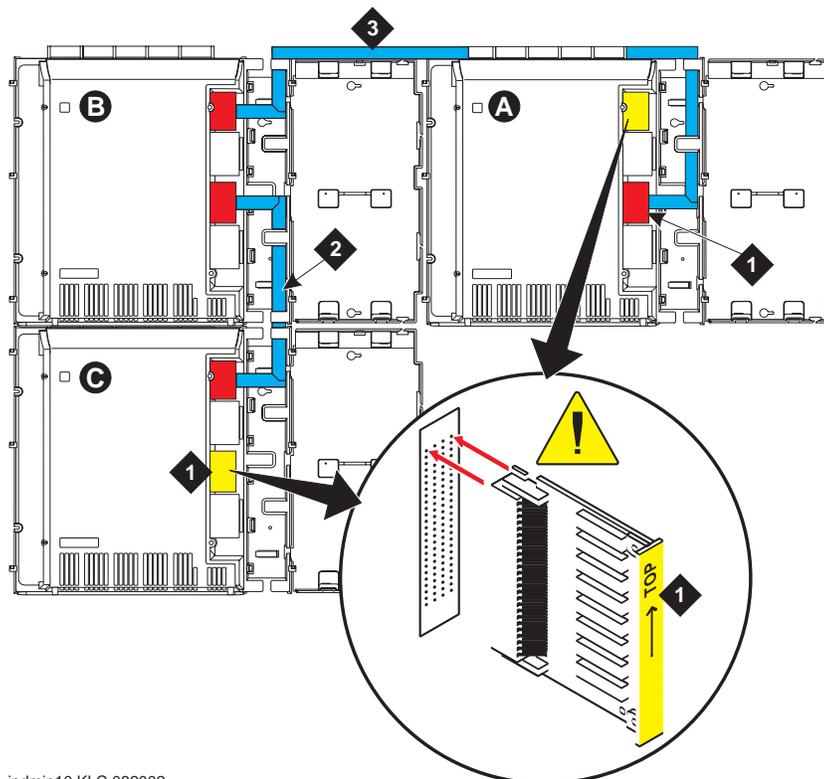
- 1 TDM/LAN bus terminator (at each end of the TDM/LAN bus)
- 2 Vertical TDM/LAN bus cable (List 8)

Vertically and Horizontally Mounted System

Only 1 horizontal TDM/LAN Bus cable is allowed per system. See [Figure 15](#).

- 1 Route the TDM/LAN bus cables through the cable trough.

Figure 15: System Cable Connections



indmin10 KLC 082002

Figure notes

- | | | | |
|---|---------------------------------------------------------|---|---------------------------------------|
| 1 | TDM/LAN bus terminator (at each end of the TDM/LAN bus) | 3 | Horizontal TDM/LAN bus cable (List 9) |
| 2 | Vertical TDM/LAN bus cable (List 8) | | |

Install Main Distribution Frame (MDF) and External Modem

Install the MDF



CAUTION:

The optional MDF is a special 110 cross-connect field and is smaller than standard 110 cross-connect hardware. Do not install standard 110 hardware inside the right panel.

NOTE:

The depth of any equipment installed inside the right panel must not exceed 2.5 inches (6.3 cm), otherwise the right cover panel cannot fit over the right panel.

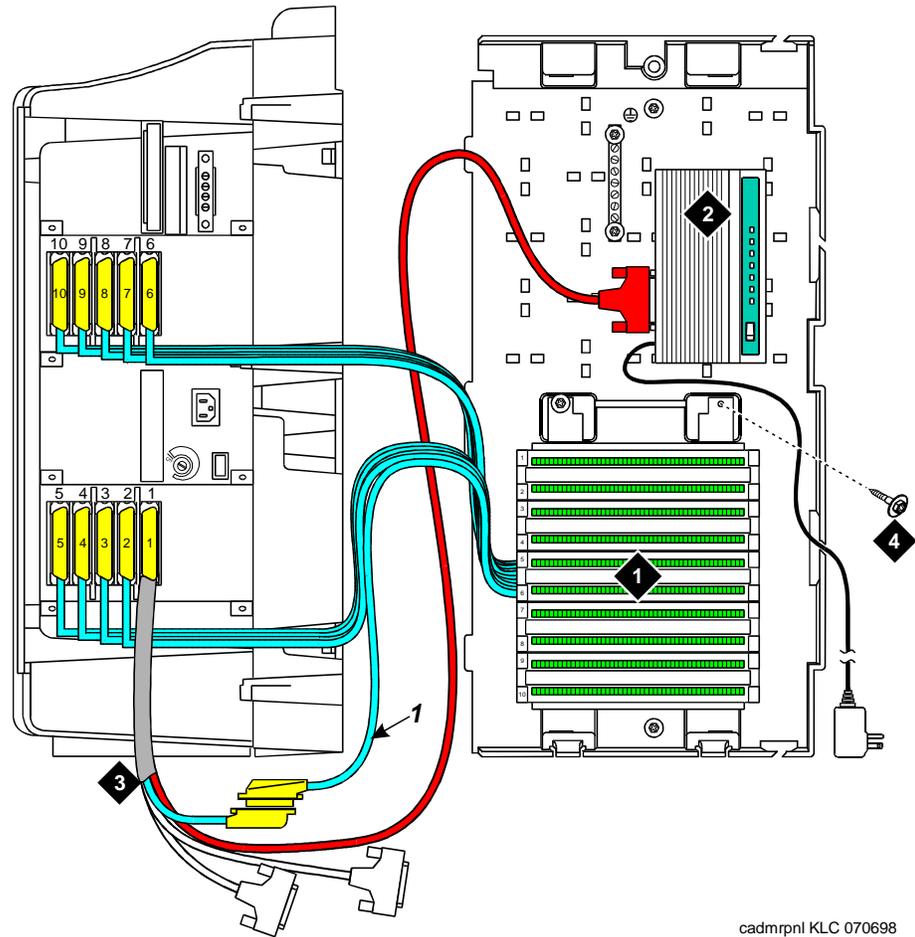
The optional MDF represents the trunk/auxiliary field.

- 1 Mount the optional MDF to the right panel using one of the following:
 - For bottom-mount MDFs, refer to [Bottom-mounted MDF with Modem](#) on page 47.
 - For top-mount MDFs (in cabinets other than cabinet A), refer to [Top-Mounted MDF](#) on page 49.
 - For dual-mount MDFs, refer to [Dual MDFs](#) on page 50.

Bottom-mounted MDF with Modem

- 1 On the rear of the MDF, cut the cable tie securing the top 5 cables to the MDF mounting frame.
- 2 Mount the MDF to the right panel. See [Figure 16, Typical Bottom-Mount MDF and Modem Cable Routing](#), on page 48.
- 3 Secure all 10 cables to the bottom left bracket on the MDF with a cable tie.

Figure 16: Typical Bottom-Mount MDF and Modem Cable Routing



cadmrpnl KLC 070698

Figure notes

- | | | | |
|---|-------------------------------|---|-------------------------------------------------------------------------------|
| 1 | Main distribution frame (MDF) | 3 | Processor interface cable (connect P2 to modem, connect J1 to cable 1 on MDF) |
| 2 | External modem | 4 | #12 x 1-inch shoulder screw |

Top-Mounted MDF

Use this configuration when the cabinet is wall-mounted, and is near the floor. Do not use this configuration for cabinet A.

Figure 17: Typical Top-Mount MDF Cable Routing

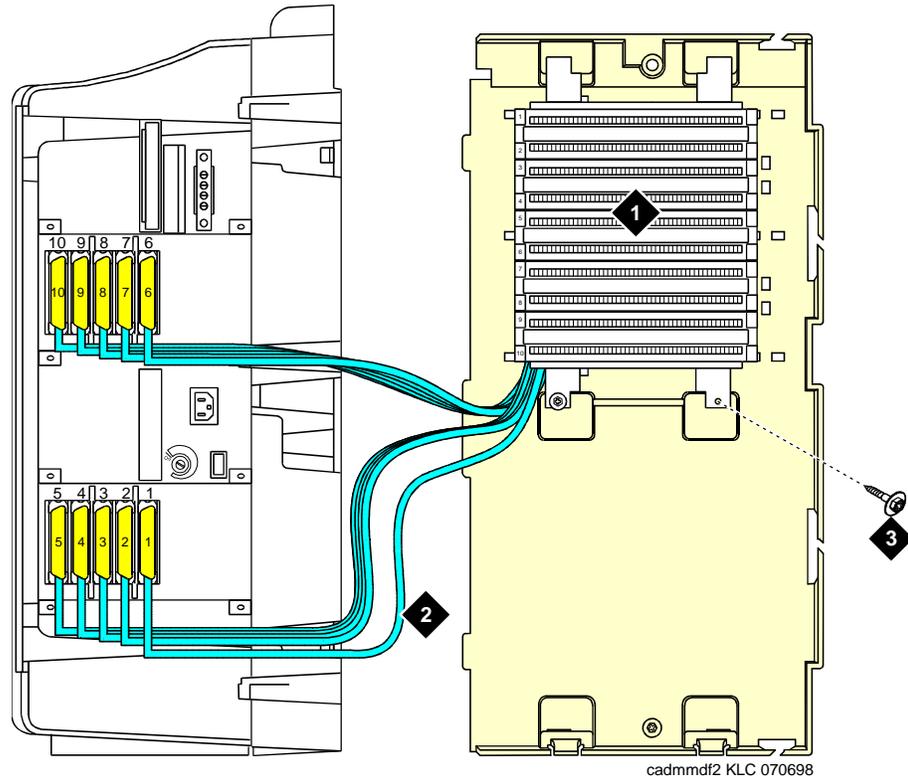


Figure notes

- | | | | |
|---|-------------------------------|---|-----------------------------|
| 1 | Main distribution frame (MDF) | 3 | #12 x 1-inch shoulder screw |
| 2 | Connect cable 1 to slot 1 | | |

- 1 On the rear of the MDF, cut the cable tie securing the top 5 cables to the MDF mounting frame.
- 2 Mount the MDF to the right panel. See [Figure 17](#).
- 3 Secure all 10 cables to the bottom left bracket on the MDF with a cable tie.

Dual MDFs

Use this configuration when mounting two MDFs.

Figure 18: Preliminary Dual-Mount MDF Cable Routing

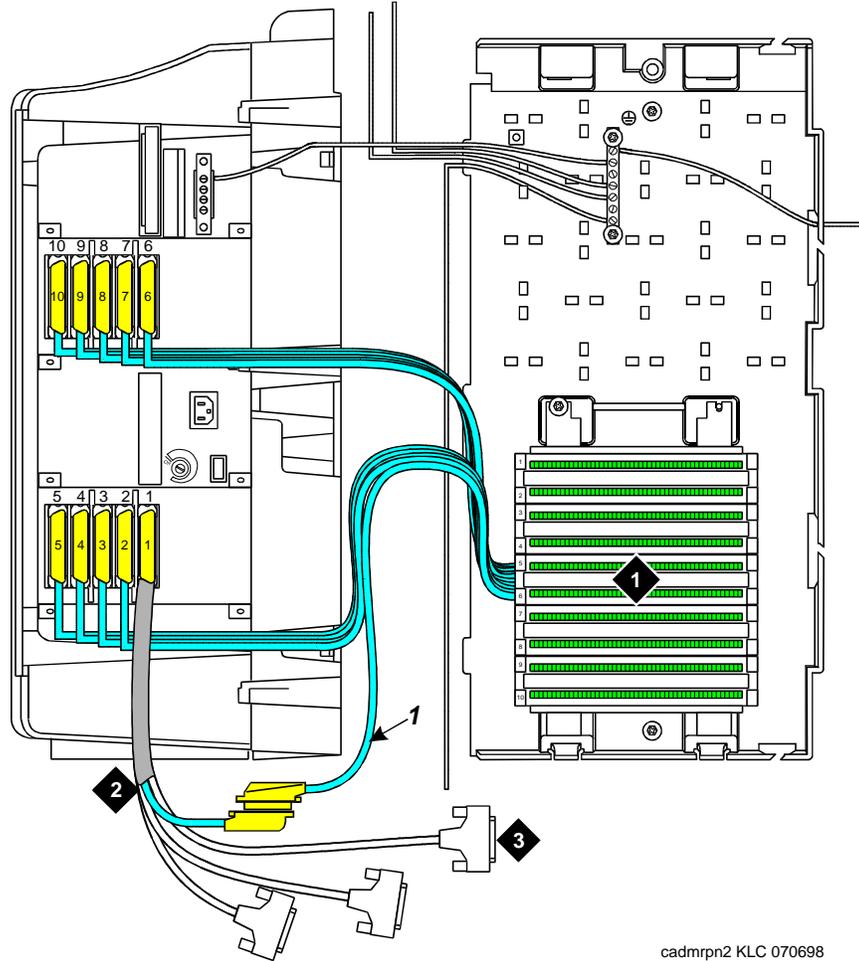


Figure notes

- | | | | |
|---|-------------------------------|---|-------------------|
| 1 | Main distribution frame (MDF) | 3 | To external modem |
| 2 | Connect cable 1 to slot 1 | | |

- 1 On the rear of the MDF, cut the cable tie securing the top 5 cables to the MDF mounting frame.
- 2 Mount the MDF to the bottom position on the right panel. See [Figure 18, Preliminary Dual-Mount MDF Cable Routing](#), on page 50.
- 3 Secure all 10 cables to the bottom left bracket on the MDF with a cable tie.
- 4 Mount the second MDF to the top position on the right panel. See [Figure 19](#).

Figure 19: Typical Dual-Mount MDF Cable Routing

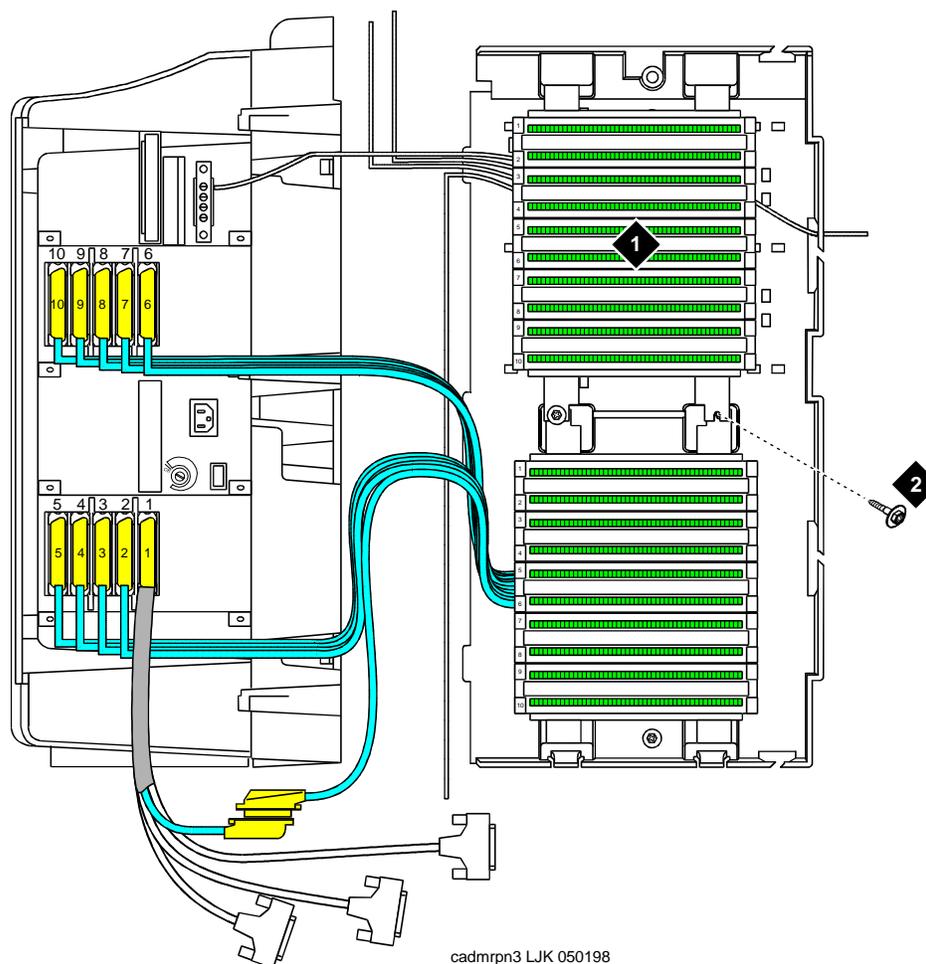


Figure notes

- 1 Main distribution frame (MDF) 2 #12 x 1-inch shoulder screw

Install the External Modem

The U.S. Robotics Sportster Model USR 33.6 EXT external modem is the recommended external modem. Avaya CMC1 Media Gateways operate with this modem set to the factory default settings.

NOTE:

You may use a locally obtained, type-approved external modem (33.6 kbps and V.34 protocol). Contact your Avaya Inc. representative for more information.

- 1 Use installer-provided hardware to mount the modem. See [Figure 16, Typical Bottom-Mount MDF and Modem Cable Routing](#), on page 48. If top-mounting MDFs or dual-mounting MDFs, mount the external modem to the plywood in a location which allows the standard connection to the interconnect cable.

- 2 Route the MODEM cable (P2) from the Processor Interface Cable through the cable trough and to the modem.
- 3 Connect the cable to the modem. Refer to [Processor Interface Cable Pinout](#) on page 144 for the pinout of the modem cable.
- 4 Plug the modem power cord into an electrical outlet and turn on the modem.
- 5 Modem setup and administration is performed in [External Modem Option Settings](#) on page 129.

Install Equipment Room Hardware

Refer to *DEFINITY Communications System Generic 1 and Generic 3 Main Distribution Field Design*, 555-230-630, for more information.

Cross-Connect the Cabinets to the MDF

- 1 Cross-connect the ports on the trunk and line circuit packs to the MDF as required. See [Figure 21, Example MDF Connections](#), on page 55.

Circuit Pack Installation



CAUTION:

When handling circuit packs or any components of a DEFINITY System, always wear an authorized wrist ground strap. Connect the strap to the ground connector provided on the system cabinet.

NOTE:

Unlike previous releases of DEFINITY, the circuit pack slots in the CMC are not purple or white. This is because all of the circuit pack slots in the CMC are “universal slots.” That is, any slot can contain any type of *port* circuit pack.

Circuit Pack Slot Loading

In general, load the circuit packs so that the number of packs in each cabinet is about equal and the trunks and lines are evenly distributed among the cabinets. See [Figure 20, Control Carrier Slot Layout](#), on page 53.

- 1 Install the TN2402 Processor circuit pack in slot 1 of Cabinet A.
- 2 Install the TN2182C Tone-Clock circuit pack in slot 2 of Cabinet A.

Load all port circuit packs starting with Cabinet A first, Cabinet B next, and so forth. Return to Cabinet A and repeat.

- 3 A TN744E Call Classifier/Tone Detector circuit pack may be required in systems with heavy traffic. Install the TN744E into any port slot. Slot 1 of Cabinet B is preferred.
- 4 See [Table 5, Circuit Pack Installation Order \(Loading\)](#), on page 53 for the recommended circuit pack layout for the control carrier and the port carriers.

Figure 20: Control Carrier Slot Layout

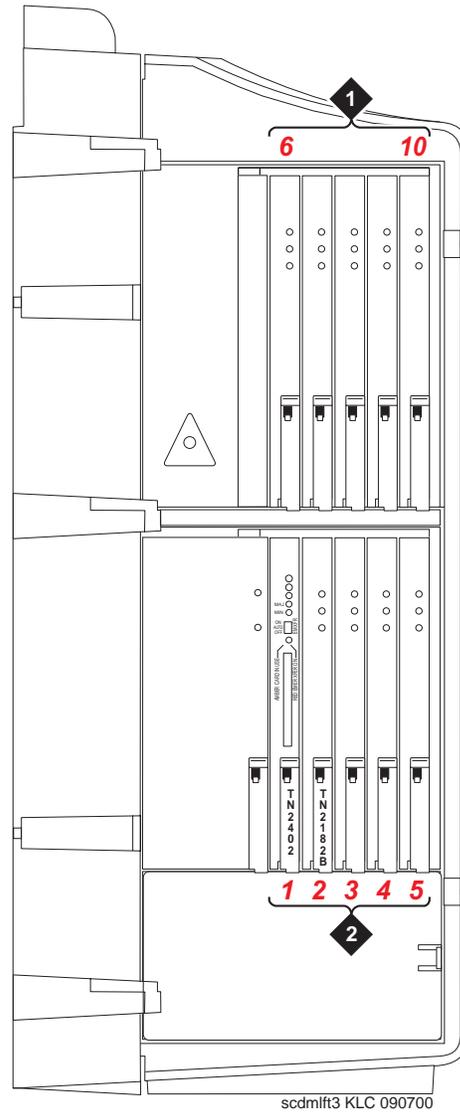


Figure notes

- 1 Line circuit pack slots 2 Trunk circuit pack slots

Table 5: Circuit Pack Installation Order (Loading)

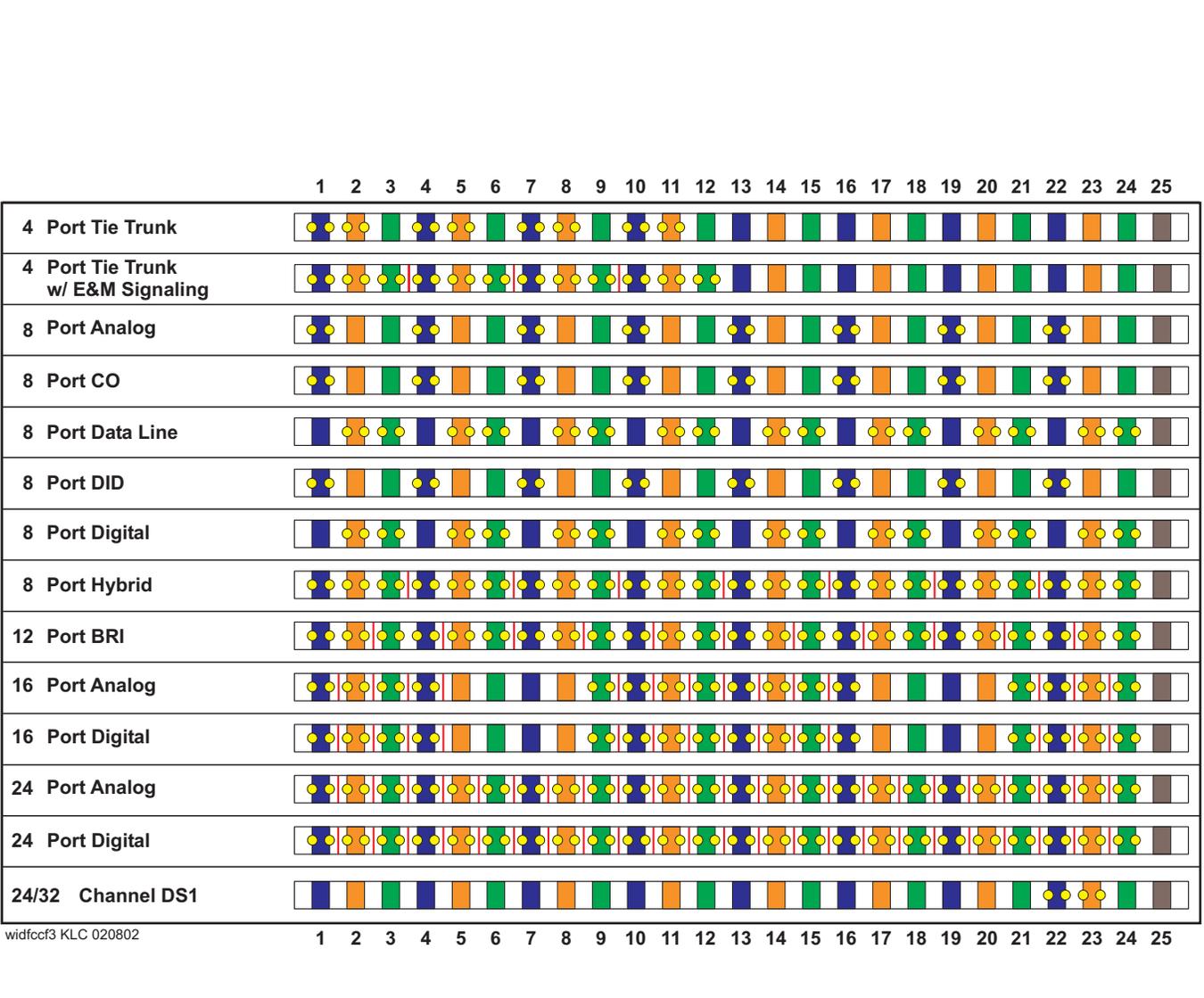
Function	Apparatus Code	Load From	Notes
Processor	TN2402	Slot 1 in Cabinet A	
Tone Clock	TN2182C	Slot 2 in Cabinet A	
Call Classifier/ Tone Detector	TN744E	Slot 1 of Cabinet B	If slot is not available, load in first available slot from slot 1.
			1 of 2

Table 5: Circuit Pack Installation Order (Loading)

Function	Apparatus Code	Load From	Notes
DEFINITY AUDIX	ED-1E546 (TN566/TN567)	Slots 6-9	TN566 and TN567 require 4 slots with overlap into area to the left of slot 6. In any other position, 5 slots are required.
DEFINITY AUDIX Slim	TN568	Slot 6	TN568 requires 2 slots. If there is a fiber-optic interface and slot 6 is occupied, use slots 7 and 8.
Announcement	TN750C	Lower Left	
Speech Synthesizer	TN725B	Lower Left	
DS1/E1, ISDN PRI	TN464GP, TN767E, TN2242, TN2464BP (Guestworks and BCS only)	Lower Left	Maximum of 8 ISDN-PRI. Total number of ISDN-PRI plus number of ISDN-BRI circuit packs must not exceed 8.
ISDN-BRI Trunk	TN2185B	Lower Left	Maximum of 4
CO Trunk	TN747B, TN465C, TN2199, TN2147C, TN2138, TN438B	Lower Left	
DID Trunk	TN753B, TN2139, TN2146, TN436B, TN459B	Lower Left	
Tie Trunk	TN760E, TN497, TN2140B	Lower Left	
Auxiliary Trunk	TN763D	Lower Left	
Modem Pool	TN758	Lower Left	
Data Line	TN726B	Upper Left	
Digital Line	TN754C, TN2181, TN2224CP, TN2214CP	Upper Left	
Analog Line	TN746B, TN2183, TN2215, TN468B, TN791, TN2214CP	Upper Left	
Hybrid Line	TN762B	Upper Left	
Radio Controller	TN789B	Upper Left	
ISDN-BRI 4-Wire S/T-NT Line (A-Law)	TN556D	Upper Left	
2 of 2			

1 Cross-connect the port circuit packs to the MDF. See [Figure 21](#).

Figure 21 : Example MDF Connections



Off-Premises Circuit Protection

Protection from hazardous voltages and currents is required for all off-premises (out of building) trunks, lines, and terminal installations. Both over-voltage protection (lightning, power induction, and so forth), and sneak current protection are required. Sneak current protectors must be either UL listed/CSA certified, or must comply with local safety standards.

Sneak current protectors must have a maximum rating of 350 mA, and a minimum voltage rating of 600V, or as required by local regulations. The following devices protect the system from over-voltages:

- Analog trunks use the 507B sneak protector or equivalent. Over-voltage protection is normally provided by the local telephone company.
- Analog voice terminals use one of the following types of combined over-voltage and sneak current protection, or equivalent:
 - Carbon block with heat coil for UL code 4B1C
 - Gas tube with heat coil for UL code 4B1E-W
 - Solid state with heat coil for UL code 4C1S
- DCP and ISDN-BRI terminals use the solid state 4C3S-75 with heat coil protector, or equivalent
- DS1/E1/T1 circuits require isolation from exposed facilities. This isolation may be provided by a CSU (T1), LIU (E1), or other equipment that provides equivalent protection

Install Sneak Fuse Panels

Sneak current protection is required between the incoming RJ21X or RJ2GX network interface and the system for both trunk and off-premises circuit packs. The model 507B sneak current fuse panel, or equivalent, is recommended for sneak current protection. See [Figure 22](#).

Figure 22: Model 507B Sneak Fuse Panel

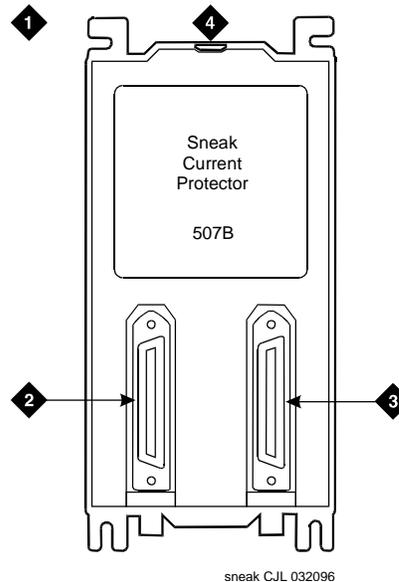


Figure notes

- | | | | |
|---|-------------------------------------|---|---------------------------------------------------------------------------|
| 1 | Sneak current protector (PEC 63210) | 3 | 25-pair female connector (Out) |
| 2 | 25-pair male connector (In) | 4 | 220029 fuses (inside panel). Use a small screwdriver to pry top cover off |

Approximately 8 inches (20 cm) of horizontal wall space is required for each column of sneak fuse panels. Connector cables connect the network interface to the sneak fuse panel. Also, use 157B connecting blocks equipped with SCP-110 protectors for sneak current protection.

NOTE:

Sneak current protectors with a rating of 350 mA at 600 V must be UL listed for United States installations and CSA certified for Canadian installations. The panel contains two 25-pair connectors, fuse removal tool, and fifty 220029 Sneak Fuses (and 2 spares). Use the SCP-110 protectors with 110-type hardware and on the 507B Sneak Fuse Panel. The SCP-110 Protectors can be ordered separately and installed on the 157B connecting block. Fifty protectors are required per block.

- 1 Install the 507B near the network interface or MDF with locally-obtained #12 x 3/4-inch screws (or equivalent).

[Table 6](#) is a pinout of the cable wiring and associated fuse numbers.

Table 6: Sneak Fuse Connector Pinout

Connector Pin Numbers	Pair/Fuse Number
26/1	1
27/2	2
28/3	3
29/4	4
30/5	5
31/6	6
32/7	7
33/8	8
34/9	9
35/10	10
36/11	11
37/12	12
38/13	13
39/14	14
40/15	15
41/16	16
42/17	17
43/18	18
44/19	19
45/20	20
46/21	21
47/22	22
48/23	23
49/34	24
50/25	25

Label the Main Distribution Frame

[Figure 23](#) shows the graphic symbols used on the supplied labels for the system, cross-connections, information outlets, and cables.

- 1 Write the floor and building identification on each label as required.
- 2 Insert the labels into the plastic holders.
- 3 Snap the holders into the appropriate locations on the MDF.

Figure 23: Label Graphic Symbols and Nomenclature

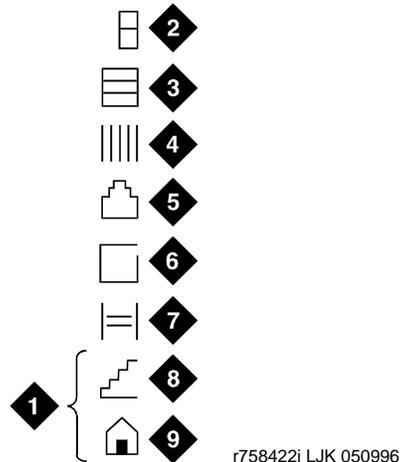


Figure notes

- | | | | |
|---|-----------------------------------|---|-----------------------|
| 1 | Floor and building identification | 6 | Site/satellite closet |
| 2 | Cabinet | 7 | Tie circuit |
| 3 | Carrier | 8 | Floor |
| 4 | Slot | 9 | Building |
| 5 | Information outlet | | |

- 1 Label the cables as required using the supplied labels. Label code number 220A (Comcode 103970000) contains all required labels.

Set Up System Access

For SAT commands, use a terminal emulation application, such as Avaya Native Configuration Manager or HyperTerminal. You can also use Avaya Site Administration, part of Avaya Integrated Management.

Starting Terminal Emulation

NOTE:

Avaya™ Native Configuration Manager and HyperTerminal are supported terminal emulation applications.

- 1 On the services laptop open a VT-100 terminal emulation session using an application such as Avaya Terminal Emulation.
- 2 Administer the terminal emulation port settings:
 - 9600 baud
 - No parity
 - 8 data bits
 - 1 stop bit
 - No flow control
- 3 Log into the media server as **craft** or **dadmin**.

Connecting a PC

You can connect your PC/laptop either directly (50 ft [15 m] or less) or remotely through a data module or a modem.

Direct connection

You can connect directly from the PC if it is 50 ft (15 m) or less from the Avaya CMC1 Media Gateway.

- 1 Connect the equipment as shown in [Figure 24](#).



CAUTION:

For a DC-powered system, install an EIA 116A Isolator (comcode 106005242) in series between the cable and the TERM, DOT, or Terminal Active connector.

Figure 24: A typical direct connection

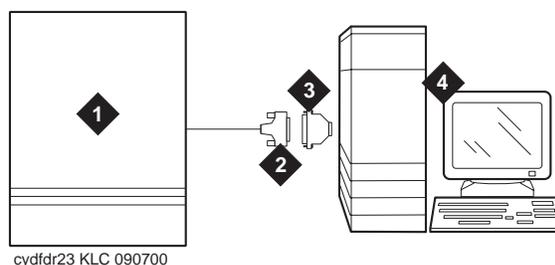


Figure notes

- | | | | |
|---|----------------------------------|---|-------------------------------------------|
| 1 | Avaya CMC1 Media Gateway (PPN) | 3 | 9-to-25 pin adapter if needed |
| 2 | 50-ft (15-m) M25A cable (RS-232) | 4 | Computer with Avaya Integrated Management |
-

Remote connection

You can remotely access the Avaya CMC1 Media Gateway by:

- [Connecting through a data module](#)
- [Connecting by analog modem](#)

Connecting through a data module

If more than 50 ft (15 m) from the Avaya CMC1 Media Gateway, you can connect the PC through a data module.

- 1 Connect the equipment as shown in [Figure 25](#).

Figure 25: A typical remote connection using an 8400B (top) or 7400B (bottom) data module

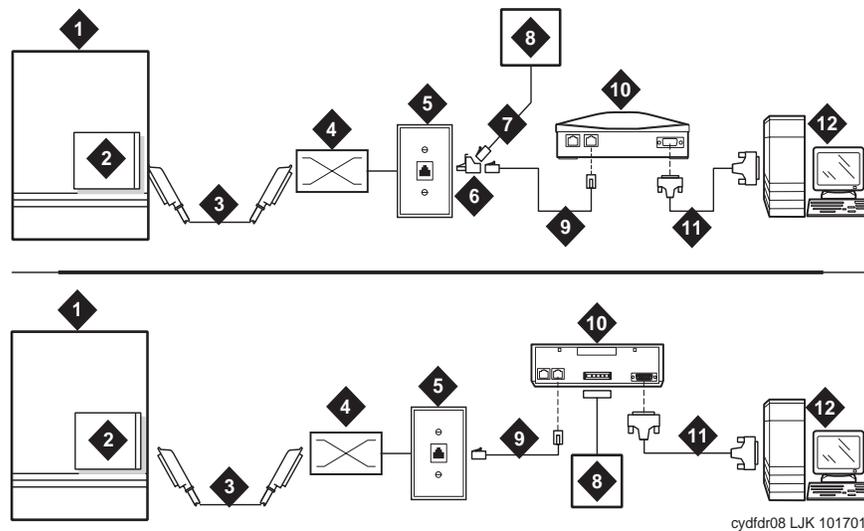


Figure notes

- | | | | |
|---|-------------------------------|----|-----------------------------------------------|
| 1 | Avaya CMC1 Media Gateway | 8 | Data module power supply |
| 2 | Digital line circuit pack | 9 | 7-ft (2-m) D8W modular cord |
| 3 | B25A 25-pair cable | 10 | Data module (8400B+ [top] or 7400B+ [bottom]) |
| 4 | Main distribution frame (MDF) | 11 | 50-ft (15-m) M25A cable (RS-232) |
| 5 | 103A or modular wall jack | 12 | Computer with Avaya Site Administration |
| 6 | 400B2 adapter | | |
| 7 | D6AP power cord (8400B+ only) | | |

NOTE:

With a 7400B+ data module, use a 4-wire digital line circuit pack. With the 8400B+ data module, use a 2-wire digital line circuit pack.

- 2 Wire the digital line circuit pack to the wall jack as follows:
 - For a 7400B+, wire to the second and third pair of the wall jack.
 - For an 8400B+, wire to the first pair of the wall jack.

Data module settings

- 1 Cycle the power to the data module. The unit performs a self test and displays its operating mode.
- 2 Observe the display.
 - a If the display reads DCE mode, proceed to the next section.
 - b If the display reads DTE mode, complete the following steps:
 - 1 Remove the power cord from the unit.
 - 2 Remove the cover from the top rear of the unit.
 - 3 Remove the mode select circuit board and turn it around.
 - 4 Replace the cover.
 - 5 Connect the power cord. The unit performs a self test.

NOTE:

The power LED must be steady on. If the power LED is blinking, the data module is not communicating with the Avaya CMC1 Media Gateway. Check the wiring at the MDF, wall jacks, and data module.

Adding a data module

- 1 Type **add data-module *number* or add data-module next**.
- 2 In the **Type** field, type **pdm** and press **Enter**.
- 3 In the **Port** field, type the location of the digital line circuit pack connected to the data module (for example 01A1503).
- 4 If system access ports and hunt groups have not been set up, set them up. Refer to *Administrator's Guide for Avaya Communication Manager*.

Testing hardware connections

In the following table, find your data module and follow the instructions for testing and troubleshooting it.

Type of Data Module	How to Test and Troubleshoot
8400B+	The red LED should be steady on. If the red and green LEDs are blinking, the unit is not communicating with the Avaya CMC1 Media Gateway. Check the wiring at the MDF, wall jack, and the 8400B+.

Type of Data Module	How to Test and Troubleshoot
7400B+	The Power and TR LEDs should be steady on. If the Power and Data LEDs are blinking, the unit is not communicating with the Avaya CMC1 Media Gateway. Check the wiring at the MDF, wall jack, and the 7400B+.
7400A	Set the 7400A to DCE mode. The Power LED must be steady on. The DTR, DSR, DCD, RTS, and CTS settings must be highlighted in the display. If the Power LED is blinking, the data module is not communicating with the Avaya CMC1 Media Gateway. Check the wiring at the MDF, wall jack, and 7400A.

Setting the operating mode

- 1 Connect an RS-232 cable from the DSA/DNA computer to the data module. If you are using an 8400B+, connect the DSA/DNA computer to the data module using the supplied adapter cable.
- 2 Using a terminal emulator, connect to the serial port to which the data module is connected, and set the emulation to *vt100* mode.
- 3 Type **AT** at the prompt and press **Enter**. The data module should return an OK. If it does not, be sure that a standard RS-232 or EIA-232 cable is connected (not a null modem cable).
- 4 Set the operating mode as described in the following table.

Type of Data Module	How to set the operating mode
8400B+	Type AT&F and press Enter . Type ATS24=1 and press Enter . Type AT&W0 and press Enter to save the operating mode into non-volatile RAM.
7400A 7400B+	Type AT&F and press Enter . Type AT&W0 and press Enter to save the operating mode into non-volatile RAM.

- 5 Disconnect the terminal from the data module and reconnect the data module to the system cabling.

Setting the 7400B+ options

- 1 Set the DIP switches for the 7400B+ using [Table 7](#). The DIP switches are located inside the unit. To access them
 - a Remove the power cord from the unit.
 - b Remove the cover from the top rear of the unit.
 - c Set the dip switches.
 - d Replace the cover.
 - e Connect the power cord. The unit performs a self test.
- 2 If any switches were set in step 1, cycle the power to the data module so that the firmware can read the new switch settings.

Table 7: DIP Switch Settings (7400B+)

Option	DIP Switch	Setting
No Telephone Connected	1	On
Data Metering	5	Off
Suppress Touch-tone/Dial Tone	6	Off
Speakerphone Disable/Enable	7	Off
Busyout on Local Loop	8	Off
Unused DIP Switches	2, 3, and 4	Off

Connecting by analog modem

You can connect a PC/laptop to the Avaya CMC1 Media Gateway through a modem.

- 1 Connect the equipment as shown in [Figure 26](#).

Figure 26: A typical remote connection through a modem

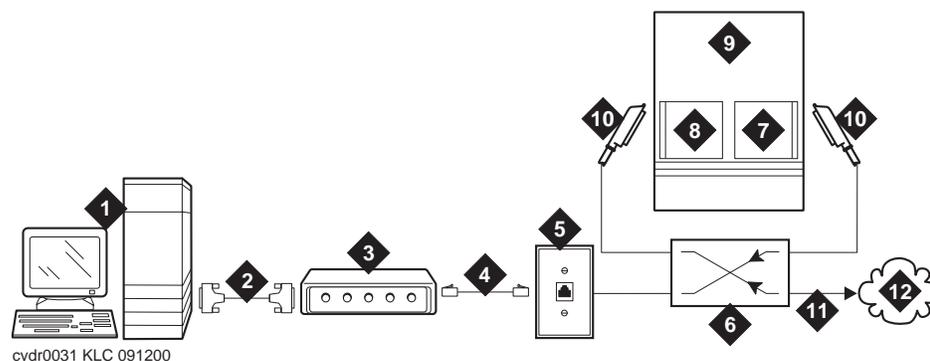


Figure notes

- | | |
|---------------------------------------------------------------|--------------------------------------------------------------|
| 1 Computer with Avaya Site Administration | 8 Analog trunk circuit pack
Packet data line
Data line |
| 2 50-ft (15-m) M25A cable (RS-232—9-25 pin adapter if needed) | 9 Avaya CMC1 Media Gateway |
| 3 Analog modem | 10 B25A cable |
| 4 7-ft (2-m) D2W modular cord | 11 Analog line |
| 5 103A or modular wall jack | 12 Central office |
| 6 Main distribution frame (MDF) | |
| 7 Analog line circuit pack | |

Follow these steps to connect to the Avaya CMC1 Media Gateway through a modem.

- 1** Connect the computer to the modem.
- 2** Connect an analog telephone line to the left most analog-line port on the modem.
- 3** Make sure that the modem's DIP switches are set as shown in [Table 8, U.S. Robotics Modem Dip Switch Settings](#), on page 65.

Table 8: U.S. Robotics Modem Dip Switch Settings

Dip Switch	Setting	Description
1	UP DOWN	Data Terminal Ready normal Data Terminal Ready override
2	UP DOWN	Verbal result codes Numeric result codes
3	UP DOWN	Suppress result codes Display result codes
4	UP DOWN	Echo offline commands No echo, offline commands
5	UP DOWN	Auto answer on first ring or higher if specified in NVRAM Auto answer off
6	UP DOWN	Carrier detect normal Carrier detect override
7	UP DOWN	Load NVRAM defaults Load factory defaults
8	UP DOWN	Dumb mode Smart mode

- 4** Plug the modem into an AC power outlet.
- 5** Turn on the modem.
- 6** Set the following port settings:

Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	hardware

Set Ringing Option

Figure 27: Ringing Option Selection

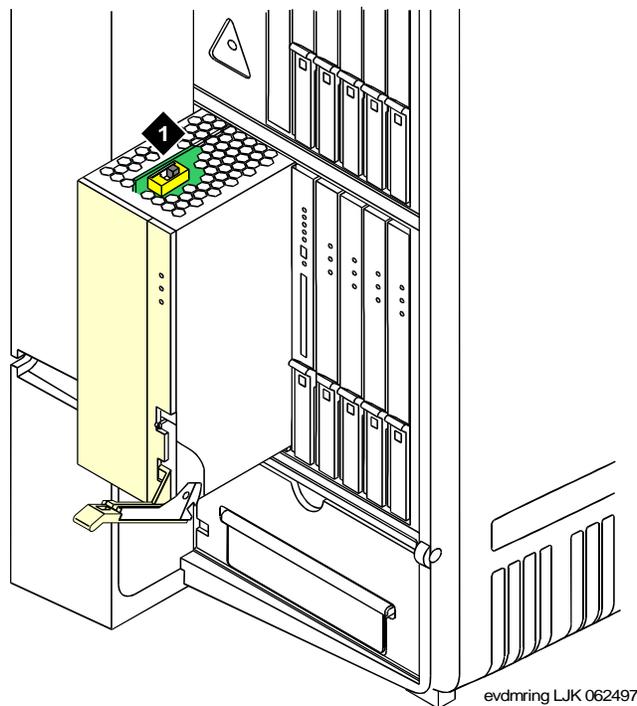


Figure notes

- 1 Ringing option switch

- 1 Check the ringing option for the country of installation (20 Hz, 25 Hz, or 50 Hz). See [Figure 27](#).
- 2 Set the slide switch to the proper setting. Refer to the label on the side of the power unit.

Activate and Administer the System

NOTE:

The Avaya CMC1 Media Gateway is a PPN cabinet only. Cabinet A is the control carrier and Cabinets B and C are port carriers.

Power Up System

Single Cabinet Installations

- 1 Insert the translation card into the slot in the TN2402 Processor circuit pack.
- 2 Fully seat the 650A Power Unit in the cabinet.
- 3 Set the circuit breaker at the AC load center to ON. This starts the system reboot process. In about 2 minutes, verify the screen displays: `Login:`

Multi-Cabinet Installations

- 1 Insert the translation card into the slot in the TN2402 Processor circuit pack.

NOTE:

Power up the port carriers first and the control carrier last.

- 2 Set the circuit breakers at the AC load center to ON.
- 3 Insert the power supplies into the port cabinets.
- 4 Insert the power supply into the control carrier. This starts the system reboot process. In about 2 minutes, verify the terminal screen displays: `Log in:`

Deliver or Install the License File

If you have a direct switch connection:

- 1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

If you do not have a direct connection:

- 1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
- 2 Open the License Installation Tool (LIT) application at your laptop/PC.
- 3 Use the LIT instructions to add a switch connection profile to the tool.
- 4 Use the LIT instructions to install the License File on the Avaya CMC1 Media Gateway.

Administer No-License/Emergency Numbers

- 1 At the SAT type **change system-parameters features** and press **RETURN**.
The Feature-Related System Parameters screen displays.
- 2 In the `Emergency Numbers - Internal` field (optional) type a valid extension.

NOTE:

This number cannot be a hunt group or ACD number.

- 3 In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
- 4 In the `No-License Incoming Call Number` field (optional) type a valid extension.

NOTE:

This number cannot be a hunt group or ACD number.

- 5 Press **ENTER** to save the changes.

System Administration

NOTE:

To use Access Security Gateway (ASG), see [Appendix B, “Access Security Gateway”](#).

Log into the System

- 1 Verify the screen displays: `Login:`
- 2 Login as **craft** and press **Enter**.
- 3 Type the default password and press **Enter**. The password does not display as it is typed. The screen displays the Avaya Communication Manager version and the terminal types.
`Terminal Type (513, 715, 4410, 4425, VT220): [513]`
- 4 Enter the type of management terminal (such as 715) and press **Enter**.

Check System Status

The system status may suggest problem areas. Refer to *Maintenance for Avaya DEFINITY Server CSI*.

- 1 Type **status system all-cabinets** and press **Enter**.
- 2 Verify the screen displays a service state of `in` for all appropriate areas.

Check Customer Options

Refer to *Administrator's Guide for Avaya Communication Manager* to view a sample screen.

Certain features are part of Avaya Communication Manager and do not require activation. They default to **y** (yes) on the Optional Features form.

- ARS/AAR Partitioning
- Emergency Access to Attendant
- Hospitality (Basic)
- Service Observing

- 1 Type **display system-parameters customer-options** and press **Enter**.
- 2 Using the customer order, ensure that the optional features purchased by the customer (as shown by PEC codes on the customer order) are enabled.

NOTE:

For detailed mapping of SAP material codes to DEFINITY features, capacities, release, platform, and offer category, go to the RFA website Information Page, in the **Help Info** section, click on the “Material Code/Feature Job Aid” link.

Set Country Options

Some country options need to be set to turn off the red alarm LEDs.

- 1 Enter **change system-parameters country options** and press **Enter**. A screen similar to [Figure 28](#) displays on the terminal. The cursor is set on the Companding Mode field.

Figure 28: Typical System Parameters Country-Options Screen

```

change system-parameters country-options                               Page 1 of 23
                                SYSTEM PARAMETERS COUNTRY-OPTIONS

                                Companding Mode: Mu-Law                Base Tone Generator Set: 1
                                440Hz PBX-dial Tone? n                440Hz Secondary-dial Tone? n
                                Analog Ringing Cadence: 1              Set Layer 1 timer T1 to 30 seconds? n
                                Analog Line Transmission: 1
                                Display Character Set: Roman
                                Howler Tone After Busy? n              Disconnect on No Answer by Call Type? n

TONE DETECTION PARAMETERS
                                Tone Detection Mode: 6
                                Interdigit Pause: short
  
```

- 2 The default (United States) companding mode is mu-Law. If the country uses A-Law companding, type A-Law. Press **Enter** when finished.

NOTE:

Other items eventually need to be entered on this screen, but this is all that is needed to turn the red alarm LEDs off.

- 3 Set the country codes as needed in the following fields. Refer to [Table 9, Country Codes](#), on page 69 for the country codes. The United States country code (1) is shown in the example above.
 - Digital Loss Plan
 - Analog Ringing Cadence
 - Analog Line Transmission

Table 9: Country Codes

Country	Code	Country	Code
USA	1	Germany	13
Australia	2	Czechoslovakia	14
Japan	3	Russia	15
Italy	4	Argentina	16
The Netherlands	5	Greece	17
Singapore	6	China	18
1 of 2			

Table 9: Country Codes

Country	Code	Country	Code
Mexico	7	Hong Kong	19
Belgium	8	Thailand	20
Saudi Arabia	9	Macedonia	21
United Kingdom	10	Poland	22
Spain	11	Brazil	23
France	12	Nordic	24
		South Africa	25
2 of 2			

- 4 If all red LEDs remain on, reseal any *port* circuit packs displaying red LEDs.
- 5 If the red LEDs remain on, refer to *Maintenance for Avaya DEFINITY Server CSI*.

NOTE:

Ignore the red LED on any TN767 or TN464 DS1 circuit pack until after it is administered. Refer to [Chapter 2, “Completing Installation and Cable Pinouts”](#) to set the switches on these circuit packs.

NOTE:

Alarms appear in the Alarm Log when power is applied to the system before all equipment connecting to port circuit packs is installed. Some alarms are logged when power is applied, but resolve quickly. If no equipment is connected to the port circuit packs, alarms associated with these ports can take up to 4 hours to log, but clear automatically after all equipment is installed and operating correctly.

Change Craft Password

The password for the craft login *must* be changed by the installing technician to prevent unauthorized administration changes.



CAUTION:

After the password is changed, the new password must be safeguarded so no unauthorized administration changes can be made. This password **MUST NOT BE REVEALED** to the customer or to any unauthorized person.

- 1 Login as **craft** using the default password.
- 2 Type **change password craft** and press **Enter**. See [Figure 29](#). The cursor is positioned on Password for Login Making Change:

Figure 29: Typical Change Password Screen

```

change password craft                                     Page 1 of 1
                PASSWORD ADMINISTRATION

Password of Login Making Change:

LOGIN BEING CHANGED                                     Login Name: craft

LOGIN'S PASSWORD INFORMATION
                Login's Password:
                Reenter Login's Password:
  
```

- 3 Type the default password for the craft login and press **Enter**.
- 4 Enter the new password. Valid passwords consist of a combination of 4 to 11 alpha or numeric characters. Use at least 1 letter and 1 number.
- 5 In the Reenter Login's Password: field, type the new password again and press **Enter**.

Set Daylight Savings Rules

You can set up to 15 customized daylight savings time rules. If you have telephone equipment in several different time zones, you can set up rules for each. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.

The default daylight savings rule is 0, no daylight savings.

- 1 Type **change daylight-savings-rules** and press **Enter**.

Figure 30: Daylight Savings Rules screen

```

DAYLIGHT SAVINGS RULES
Rule          Change Day          Month  Date  Time  Increment

0:  No Daylight Savings

1:  Start: first Sunday  on or after April  1  at  2:00  01:00
    Stop: first Sunday  on or after October 25 at  3:00

2:  Start: first _____ on or after _____ at _____
    Stop: first _____ on or after _____ at _____

3:  Start: first _____ on or after _____ at _____
    Stop: first _____ on or after _____ at _____

4:  Start: first _____ on or after _____ at _____
    Stop: first _____ on or after _____ at _____

5:  Start: first _____ on or after _____ at _____
    Stop: first _____ on or after _____ at _____

6:  Start: first _____ on or after _____ at _____
    Stop: first _____ on or after _____ at _____

7:  Start: first _____ on or after _____ at _____
    Stop: first _____ on or after _____ at _____
  
```

- 2 Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment (for example, **1:00** equals one hour) fields for each rule.

NOTE:

You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

- 3 Press **Enter**.

Set Date and Time

- 1 Enter **set time** and press **Enter**.

Figure 31: Date and Time screen

The screenshot shows a terminal window titled "DATE AND TIME". It is divided into two sections: "DATE" and "TIME".

DATE
Day of the Week: Tuesday Month: February
Day of the Month: 8 Year: 2000

TIME
Hour: 20 Minute: 30 Second: XX Type: standard
Daylight Savings Rule: 0

- 2 In the Day of the Week: field, type the day of the week in English (Sunday through Saturday). See [Table 10](#) for English day of the week names.

Table 10: English Day of the Week Names

Day Number	Day Name
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

- 3 In the `Month:` field, type the current month in English (January through December). See [Table 11](#) for English month names.

Table 11: English Month Names

Month Number	Month Name
1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

- 4 In the `Day of the Month:` field, type the day of month (1 through 31).
- 5 In the `Year:` field, type the current year.
- 6 In the `Hour:` field, type the current hour for a 24-hour clock.
- 7 In the `Minute:` field, type current minute (0 through 59). Seconds cannot be set.
- 8 If the area observes daylight savings, set the `Daylight Savings Rule:` field to the appropriate rule.

NOTE:

The default daylight savings rule is **0**, no daylight savings.

- 9 Press **Enter** to effect the changes.

Circuit Pack Administration

After the equipment is installed (including circuit packs), the circuit packs must be administered. Refer to *Administrator's Guide for Avaya Communication Manager* for more information.

The following describes general administration information:

- Use the Circuit Packs form to administer circuit packs to carrier slots. The circuit packs must be installed (or assigned using the Circuit Packs form) before administering voice terminals, attendant consoles, or trunks.
- Each page of the form represents 1 carrier in the cabinet shown on the command line. All carriers and slots appear even if they are not included in the hardware.

- It is not necessary to fill in the Circuit Packs form if the circuit packs are installed at the time of administration.
- For initial installation, assign circuit packs to slots using the hardware configuration layout record from the factory or Customer Services Organization. Do not arbitrarily assign circuit packs to slots.
- When a circuit pack in a slot differs from what has been administered on the form, a “#” displays between the “Sfx” and “Name” fields.

Set System Maintenance Parameters



CAUTION:

To prevent unnecessary trouble tickets, do not enable the system alarms (Alarm Origination feature) until all installation and administration procedures are completed.

- 1 Enter **change system-parameters maintenance** and press **Enter**.
- 2 Enter the alarm notification and scheduled maintenance information into each field on Page 1 of the form.
- 3 Enter the appropriate information on Page 2 of the form.
- 4 Press **Enter** when finished.

Administer the Attendant Console

If no attendant console is installed, proceed to [Save Translations](#).

- 1 Enter **display system-parameters country-options** and press **Enter**. Verify the system's companding mode for its local stations (usually, A-Law for Europe and mu-Law for North America and Japan).
- 2 If necessary, enter **change terminal-parameters 603/302B1** to change the default system-level parameters and audio levels for these terminals.

NOTE:

For information about changing the default parameters and audio levels, refer to *DEFINITY Application Notes* available through the ITAC (International Technical Assistance Center).

- 3 Administer other forms listed under “Attendant Console” in *Administrator's Guide for Avaya Communication Manager*.

To administer an Avaya SoftConsole, see *Administrator's Guide for Avaya Communication Manager*.

Save Translations

- 1 Enter **save translation** and press **Enter**. This copies the current system translations onto the translation card and takes about 10 minutes.
- 2 Remove the original translation card and replace with the backup card.
- 3 Repeat Step 1 for the backup translation card.
- 4 Remove the backup card and replace with the original translation card.
- 5 Label the backup card with the date and time of the backup and store in a secure place.

Add Translations

- 1 Refer to *Administrator's Guide for Avaya Communication Manager* to add new terminals.

Install and Wire Telephones and Trunks

NOTE:

Only 1 pair of wires is available for emergency transfer, and 1 pair of wires is available for attendant console power.

This section provides wiring examples of installation procedures. These are examples only and actual wiring procedures may vary at each site.

The system can connect to all DTE terminals. The system can have RS-232 (or EIA-232) or DCP interfaces.

All wiring pinouts for port circuit packs are in the tables at the end of this chapter.

Refer to [Figure 21, Example MDF Connections](#), on page 55 for punch-down information for common circuit packs. The figure shows the colors of the punch-downs and is best viewed from CD-ROM or on-line.

After installing the hardware, the data for the system and telephone features is administered. These procedures are provided in *Administrator's Guide for Avaya Communication Manager*.

DCP, analog, and ISDN-BRI

The 302D Attendant Console describes a typical telephone connection. This information is typical of the 603E, 84xx (4-wire), and 94xx telephones. The attendant console always requires auxiliary (adjunct) power (-48 VDC). See [Figure 32, 302D to Digital Line Circuit Pack Wiring](#), on page 76. Only 1 console can be powered by the system through the AUX connector. The primary console should be powered from the system so it has the same power failure backup as the system.

The maximum cabling distance for the console powered from the cabinet is 350 feet (100 m) using 24 AWG (#5) (0.26 mm²) wire.

The general steps to connect a telephone are:

- 1 Choose a device to connect such as a 302D Attendant Console.
- 2 Choose the port circuit pack and its carrier and slot number, such as TN754C, Cabinet 1, Carrier A, Slot 06.
- 3 Choose a port circuit on the port circuit pack, such as Port 05.

Figure 32: 302D to Digital Line Circuit Pack Wiring

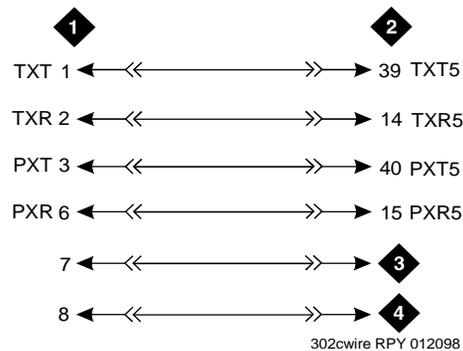


Figure notes

- | | | | |
|---|----------------------------------|---|----------------------------|
| 1 | 302D attendant console | 3 | -48 VDC from adjunct power |
| 2 | 4-wire digital line circuit pack | 4 | Ground from adjunct power |

- 4 Install cross-connect jumpers to wire the terminal to the port circuit pack. See [Figure 32](#). This pinout is for a 4-wire Digital Line circuit pack.

Analog Station or 2-Wire Digital Station Example

This example is typical of the 2-wire digital stations, 2-wire analog stations, analog CO trunks, DID trunks, and external alarms. See [Figure 33](#).

Figure 33: 2500-Type Analog Telephone Wiring



Figure notes

- | | | | |
|---|--------------------------|---|---------------------------------|
| 1 | 2500-type analog station | 2 | 2-wire analog line circuit pack |
|---|--------------------------|---|---------------------------------|

- 1 Choose a peripheral to connect (such as a 2-wire digital station).
- 2 Choose the port circuit pack to use and its carrier and slot number. For example, TN2183 Analog Line, Cabinet 1, Carrier C, Slot 1.
- 3 Choose a port circuit on the port circuit pack, for example port 3.
- 4 Install cross-connect jumpers to connect the pins from the 2-wire station to the appropriate pins on the port circuit pack.
- 5 Administer using *Administrator's Guide for Avaya Communication Manager*.

Analog Tie Trunk Example

Figure 34: Analog Tie Trunk Wiring

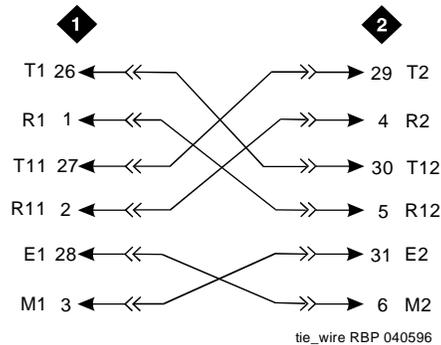


Figure notes

- 1 External trunk or adapter 2 Tie trunk circuit pack

- 1 Before installing the Tie Trunk circuit pack, set the option switches as described in [Chapter 2, “Completing Installation and Cable Pinouts”](#).
- 2 Install cross-connect jumpers to connect the pins from the Tie Trunk circuit pack to the appropriate leads on the external tie trunk. Names of the tie trunk leads must be determined from the manufacturer or supplier of the external trunk circuit. The example in [Figure 34](#) shows a DEFINITY System tie trunk connected to a DEFINITY System tie trunk.
- 3 Administer on the Trunk Group Screen. See *Administrator’s Guide for Avaya Communication Manager*.

Digital Tie Trunk Example

Figure 35: Digital Tie Trunk Wiring

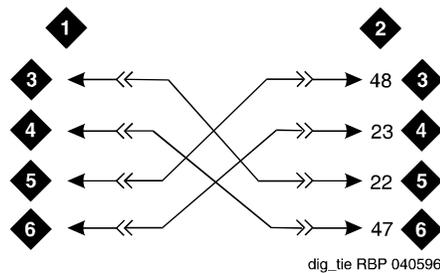


Figure notes

- | | |
|---------------------------------------------|-----------------------------|
| 1 External trunk | 4 LO (Balanced output pair) |
| 2 DS1 interface circuit pack, position 1C06 | 5 LI |
| 3 LO | 6 LI (Balanced input pair) |

- 1 Before installing the DS1 Interface circuit pack, set the option switches according to [Chapter 2, “Completing Installation and Cable Pinouts”](#).
- 2 Install cross-connect jumpers to connect the pins from the digital trunk circuit pack to appropriate pins on the external digital trunk.
- 3 Administer the DS1 Interface circuit pack on the DS1 and Trunk Group Screens. See *Administrator’s Guide for Avaya Communication Manager*.

DS1 Tie Trunk Example

DS1 tie trunks provide a 1.544 Mbps (T1) or 2.048 Mbps (E1) digital data service between 2 collocated systems or between the system and a data network. The following cables can be used:

- **C6C connector cable** — 50-foot (15.2 m) shielded cable with a 50-pin male connector on 1 end and a 15-pin male connector on the other end. Use to connect a DS1 tie trunk circuit pack to a Channel Service Unit.
- **C6D connector cable** — 50-foot (15.2 m) shielded cable with a 50-pin male connector on each end. Use to connect a DS1 tie trunks in collocated cabinets.
- **C6E connector cable** — 100-foot (30.5 m) shielded cable with a 50-pin male connector on 1 end and a 50-pin female connector on the other end. Use as an “extension” cable between the DS1 tie trunk circuit pack and other connector cables.
- **C6F connector cable** — 50-foot (15.2 m) shielded cable with a 50-pin male connector on 1 end and a 3 inch (7.62 cm) stub on the other end. Use to connect the DS1 tie trunk circuit pack to channel multiplexers requiring hardwired connections. See [Table 12](#) for a pinout.

Table 12: Pinout of C6F Cable

Wire Color	Lead Designation	Pin Number
White/Green	LI (High Side)	47
Green	LI	22
White/Brown	LO	48
Brown	LO (High Side)	23
White/Slate	LBACK2	49
Slate	LBACK1	24

Collocated DS1 Tie Trunks

Two DS1 tie trunk circuit packs can be in collocated systems. A DS1 tie trunk circuit pack in 1 system can connect to a DS1 tie trunk in another system. Use a C6D cable if the distance is less than 50 feet (15.24 m). If the distance is greater than 50 feet (15.24 m), use a C6E cable.

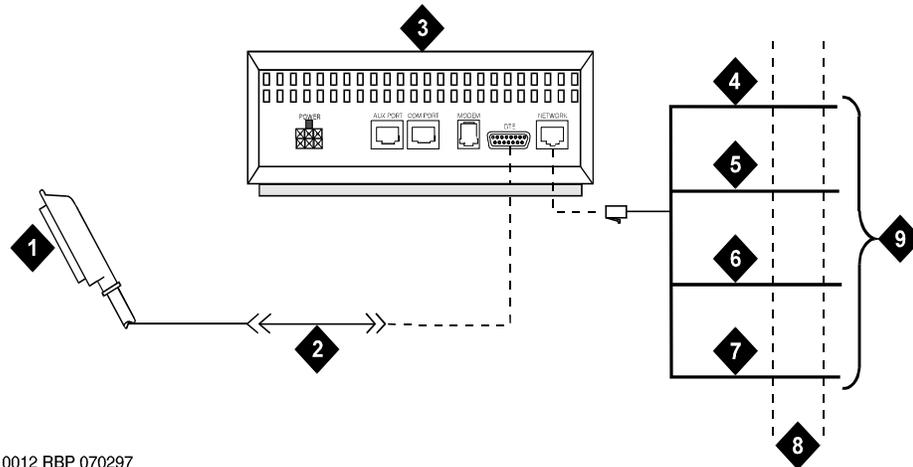
NOTE:

The maximum distance between cabinets is 1310 feet (399.3 m).

DS1 Tie Trunks Using T1 Channel Service Unit

[Figure 36](#) shows a DS1 tie trunk connected to an external T1 Channel Service Unit (CSU). A 120A2 enhanced Integrated Channel Service Unit (ICSU) can be used in place of a T1 external CSU. The CSU or ICSU interfaces the DS1 tie trunks with the 1.544 Mbps digital facility. Contact your Avaya Inc. representative for maximum cabling distances.

Figure 36: Typical Connections to Channel Service Unit



0012 RBP 070297

Figure notes

- | | |
|---------------------------------------------------------------------|---------------------------|
| 1 To DS1 tie trunk circuit pack | 5 Ring (R) |
| 2 C6C cable (If distance is over 50 feet (15.24 m), use C6E cable.) | 6 Tip 1(T1) |
| 3 T1 external CSU or 120A2 ICSU | 7 Ring1 (R1) |
| 4 Tip (T) | 8 1.544 Mbps T1 interface |
| | 9 To T1 carrier |

3-Pair and 4-Pair Modularity

[Figure 37](#) shows 3-pair and 4-pair modularity from the port circuit pack to the voice or data terminal. Most terminals connect to an information outlet (modular jack) installed at the work location.

Figure 37: 3-Pair and 4-Pair Modularity

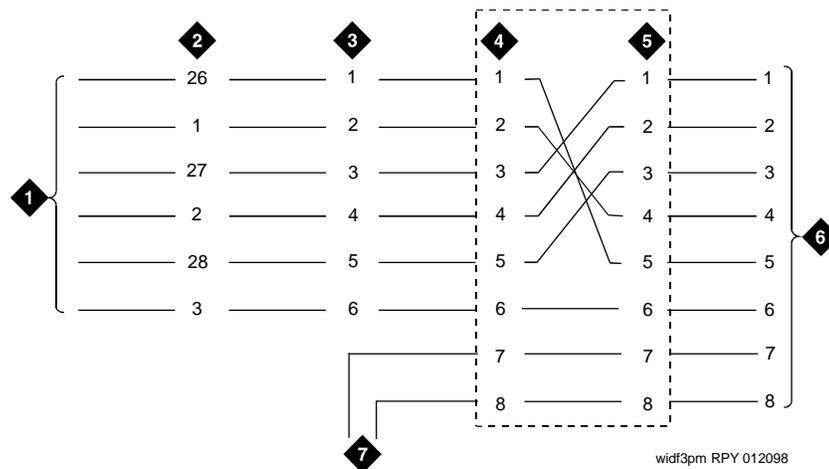


Figure notes

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> 1 Port circuit pack 2 25-pair connector pins (3-pair modularity) 3 MDF pins (3-pair modularity) 4 Input to information outlet (4-pair modularity) | <ul style="list-style-type: none"> 5 Output from information outlet (4-pair modularity) 6 Voice or data terminal pins 7 Adjunct power |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Install Attendant Console — Optional

To install a DCP attendant console:

- 1 Position the attendant console in the desired location and connect the modular cord to the information outlet.
- 2 Install labels per the Attendant Console form and Display Module form assignments.
- 3 Install a Digital Line circuit pack in the assigned carrier slot (if required).
- 4 Administer the Attendant Console forms in *Administrator's Guide for Avaya Communication Manager*.

Hard-Wire Bridging



CAUTION:

Bridging or paralleling these endpoints can cause *electrical damage to the consoles or cause the circuit pack to remove power from the consoles*.

Analog type hard-wire bridging is not allowed for 4-wire (only) DCP endpoints. This is because hard-wire bridging provides no way of combining the digital output of 2 bridged DCP sets. Also, a bridged endpoint causes the added load to degrade the DCP signal.

Dual Wiring of 2-Wire and 4-Wire Endpoints

Do not simultaneously wire a 2-wire and 4-wire endpoint to the same equipment location in an MDF, even though they connect to different colored wire pairs. The system uses separate circuit packs to interface 2- and 4-wire endpoints, and none are capable of interfacing both.

Install 26B1 Selector Console — Optional

- 1 Connect the supplied 3-foot (0.9 m) D8AC cable to the modular jack on the bottom of the 26B1 Selector Console.
- 2 Route the cable to the attendant console and connect to the DXS/BLF jack.
- 3 Attach labels according to the Attendant Console form.
- 4 Administer the console using *Administrator's Guide for Avaya Communication Manager*.

Administer IP Stations and Trunks

For complete information on administering IP stations and trunks, see *Administrator's Guide for Avaya Communication Manager*.

Install and Wire Telephone Power Supplies

This section provides information and wiring examples of installation procedures for various telephone and console power supplies. These are examples only and actual wiring procedures may vary at each site.

The power is provided to telephones or consoles either locally or centrally.

Centrally located power supplies include

- [1145B2 Power Supply](#) on page 84
- [1152A1 Mid-Span Power Distribution Unit](#) on page 93
- [P333T-PWR Power over Ethernet Stackable Switch](#) on page 96

Local power supplies include

- [1151B1 and 1151B2 Power Supplies](#) on page 99

Typical Adjunct Power Connections

The following section describes typical adjunct power connections.

Adjunct Power Adapter

The 400B2 adapter is convenient for connecting local -48 VDC power to a modular plug. See [Figure 38](#).

Figure 38: 400B2 Adapter Connecting to a Modular Plug

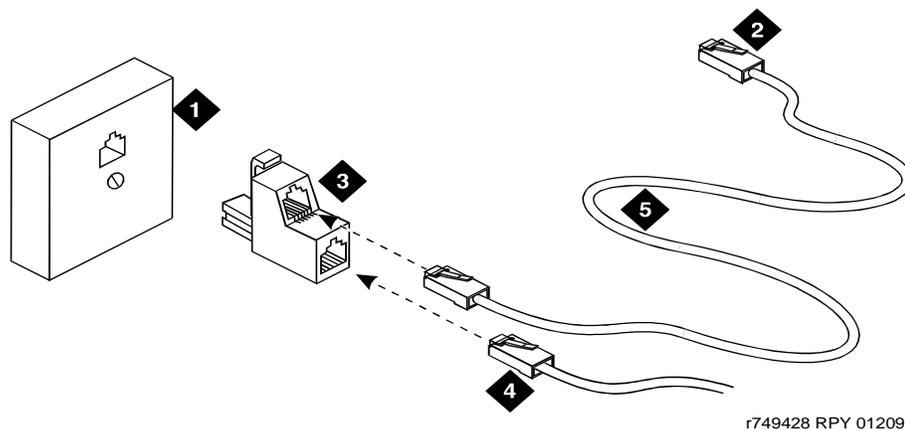


Figure notes

- | | | | |
|---|----------------------------------------------------|---|----------------------------------------------------|
| 1 | Surface-mounted information outlet | 4 | To telephone |
| 2 | To individual power unit (such as 1151B or 1151B2) | 5 | Destination service access point (DSAP) power cord |
| 3 | 400B2 adapter | | |

Adjunct power can be provided from the equipment room or equipment closet with 1145B power unit. The AUX connector (J1) on the processor interface cable can provide power for 1 attendant console. See [Table 36, Processor Interface Cable Pinout](#), on page 144.

Adjunct power can be provided locally at the telephone or console by the 1151B or 1151B2 Power Supply.

Adjunct Power Connections End-to-End

Figure 39 shows typical connection locations for adjunct power.

Figure 39: Example Adjunct Power Connections

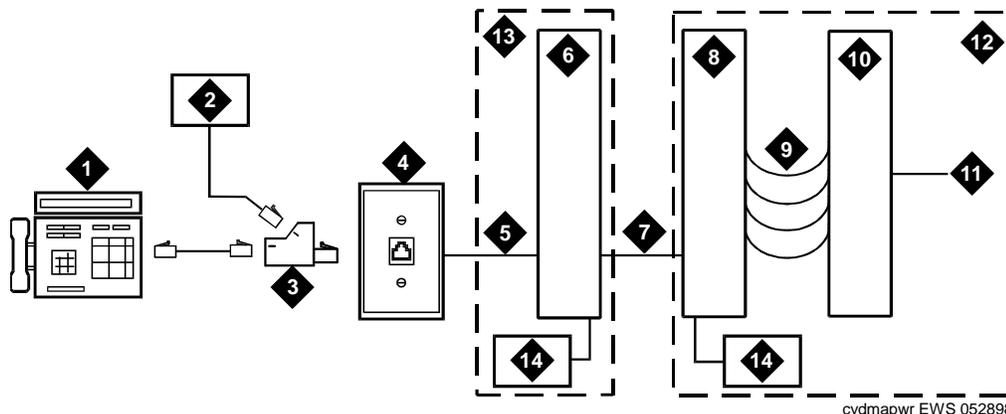


Figure notes

- | | | | |
|---|-----------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------|
| 1 | Typical display telephone | 8 | Station side of MDF |
| 2 | Individual power supply (Such as 1151B) (Not used if item 14 is used) | 9 | 100P6A patch cord or jumpers |
| 3 | 400B2 adapter | 10 | System side of MDF |
| 4 | Information outlet (modular jack) | 11 | 25-pair cable to digital line circuit pack |
| 5 | 4-pair D-Inside Wire (DIW) cable | 12 | Equipment room |
| 6 | Satellite site or adapter location | 13 | Satellite location |
| 7 | 25-pair D-Inside Wire (DIW) cable | 14 | Bulk power supply (Such as 1145B).
Install at satellite location or equipment room (not both). |

Auxiliary Power for an Attendant Console

The nonessential functions of an attendant console and its optional 26A1 or 24A1 selector console derive power from an auxiliary power source. Provide auxiliary power for an attendant console through this cable so the console remains fully operational during short power outages.

NOTE:

Only 1 console can derive auxiliary power from the system and through the auxiliary cable located in the trunk/auxiliary field.

A console's maximum distance from its auxiliary power source is:

- 800 feet (244 m) for a 302A1
- 350 feet (107 m) for a 301B1 and 302D

An attendant console can also derive auxiliary power from:

- Individual 1151B or 1151B2 power supply
- MSP-1 power supply
- 258A-type adapters
- Bulk power supplies such as the 1145A1

Local and Phantom Power

An attendant console's maximum distance from the system is limited. See [Table 13](#).

Table 13: Attendant Console Cabling Distances

Enhanced Attendant Console (302D)	24 AWG Wire (0.26 mm ²)		26 AWG Wire (0.14 mm ²)	
	Feet	Meters	Feet	Meters
With Selector Console				
Phantom powered	800	244	500	152
Locally powered	5000	1524	3400	1037
Without Selector Console				
Phantom powered	1400	427	900	274
Locally powered	5000	1524	3400	1037

1145B2 Power Supply

The 1145B2 closet power arrangement provides an uninterruptible -48 VDC power source with battery and 1146B2 distribution unit for ISDN/DCP, terminal equipment, adjuncts, and other customer-supplied equipment. During AC power interruptions, batteries automatically provide power to the load.

NOTE:

Before you begin, read this [Important Warning for 1145B2 Power Supply](#) on page 85.

Perform these tasks in order:

- 1 [Install the Wall-Mounting Plates](#) on page 89
- 2 [Mount the 1146B2 Power Distribution Unit](#) on page 89
- 3 [Install the Battery Mounting/Wiring](#) on page 89
- 4 [Install the Expanded Power Distribution Unit](#) on page 90
- 5 [Power Up and Test the Power Supply](#) on page 91
- 6 [Wire the 1146B2 Power Distribution Unit](#) on page 91
- 7 [Reset LEDs on Power Distribution Unit](#) on page 92

Important Warning for 1145B2 Power Supply

 **WARNING:**

Important Safety Instructions follow.

When operating this equipment, basic safety precautions must be followed to reduce the risk of fire, electric shock and personal injury, including the following:

- Read and understand all instructions.
- Do not attach the power supply cord to building surfaces.
- For continued back-up protection and battery reliability, replace batteries every four years.
- Follow all warnings and instructions marked on the products.
- Clean products only with a dry rag.
- Do not use this product near water.
- For mounting security, follow all installation instructions when mounting product.
- Openings on top and bottom of power unit are provided for ventilation. Do not block or cover these openings. Do not exceed recommended environmental temperatures.
- Operate these products only from the type of power source indicated on the product labels.
- The power unit is equipped with a 3-wire grounding plug; a plug having a third (grounding) pin. This plug will only fit into a grounding power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the grounding plug.
- Do not allow anything to rest on or spill into the products.
- To reduce risk of fire and electrical shock, do not overload power outlets.
- Never push objects of any kind through the power supply or distribution unit slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.
- To reduce risk of electric shock, do not disassemble these products. Return them for repair when needed. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the products are subsequently used.
- Power down the power unit (see label on power unit on how to do this) and refer servicing under the following conditions:
 - If liquid has been spilled into any of the products
 - If any of the products have been exposed to water
 - If any of the products do not operate normally
 - If any of the products have been dropped or damaged
 - If any of the products exhibits a change in performance
- Do not attempt to recharge batteries on your own. The batteries may leak corrosive electrolyte or explode. The 1145B2 power unit recharges the batteries safely.
- Remove the batteries if the power unit will not be used for a long period of time (several months or more) since during this time the battery may leak.
- Discard discharged batteries as soon as possible. Discharged batteries are more likely to leak.

- Do not store batteries in high temperature areas. Batteries stored in a cold environment should be protected from condensation during storage and warming. Batteries should be stabilized at room temperature prior to use after cold storage. Do not install batteries if the manufacturing date on the label indicates that the batteries are more than six months old.

Mounting the 1145B2/1146B2 Power Supply

[1145B2/1146B2 Mounting Arrangement](#) on page 87 shows how the standard power supply and wall-mounting plates fit together. [Expanded Power Distribution Unit](#) on page 88 shows the expanded power supply components (power distribution unit and “T” cable).

A manual switch on the distribution unit allows the user to redirect reserve power to outputs 1 through 32 so all outputs are provided battery reserve power or to outputs 1 through 8 to provide high power above 6.25 watts.

NOTE:

The switch must be set to the 1-32 position.

The 1145B2/1146B2 is a -48 V power supply with 275 watts total output. Each output circuit is current limited by a Polymer Positive Temperature Coefficient Resistance Device (PTC) that limits the maximum output to 12 watts. Each 1146B2 output has an LED to indicate the status of the PTC. If the LED is on, the PTC has a short on that power pair.

Not all outputs can simultaneously provide 12 watts. The average power per output cannot exceed 8.6 watts ($275/32 = 8.6$). The 1145B2 is designed to power one ISDN terminal or DCP adjunct per output. The maximum number of terminals or adjuncts is 32 at less than or equal to 6.25 watts each. The 1145B2 is required for installations outside the United States.

Auxiliary power (local or bulk) is always required for the following:

- Attendant Console 302D
- PassageWay adapter interface

Figure 40: 1145B2/1146B2 Mounting Arrangement

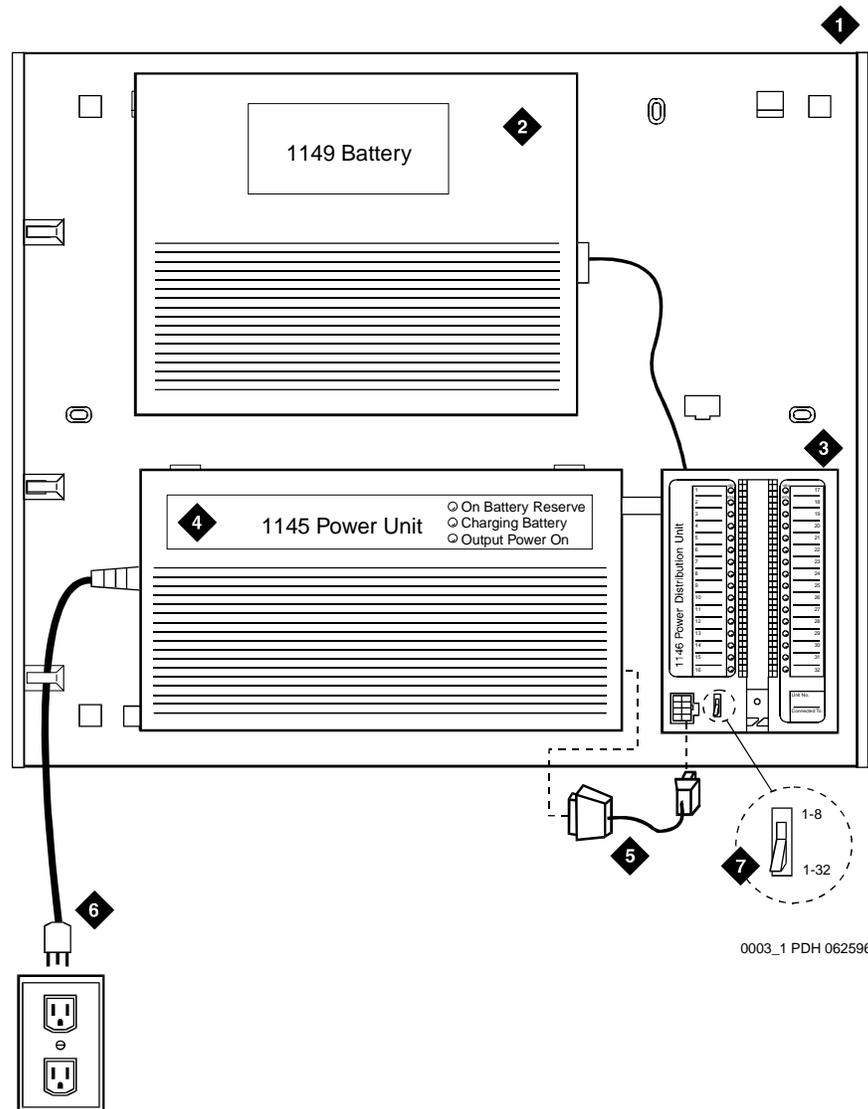
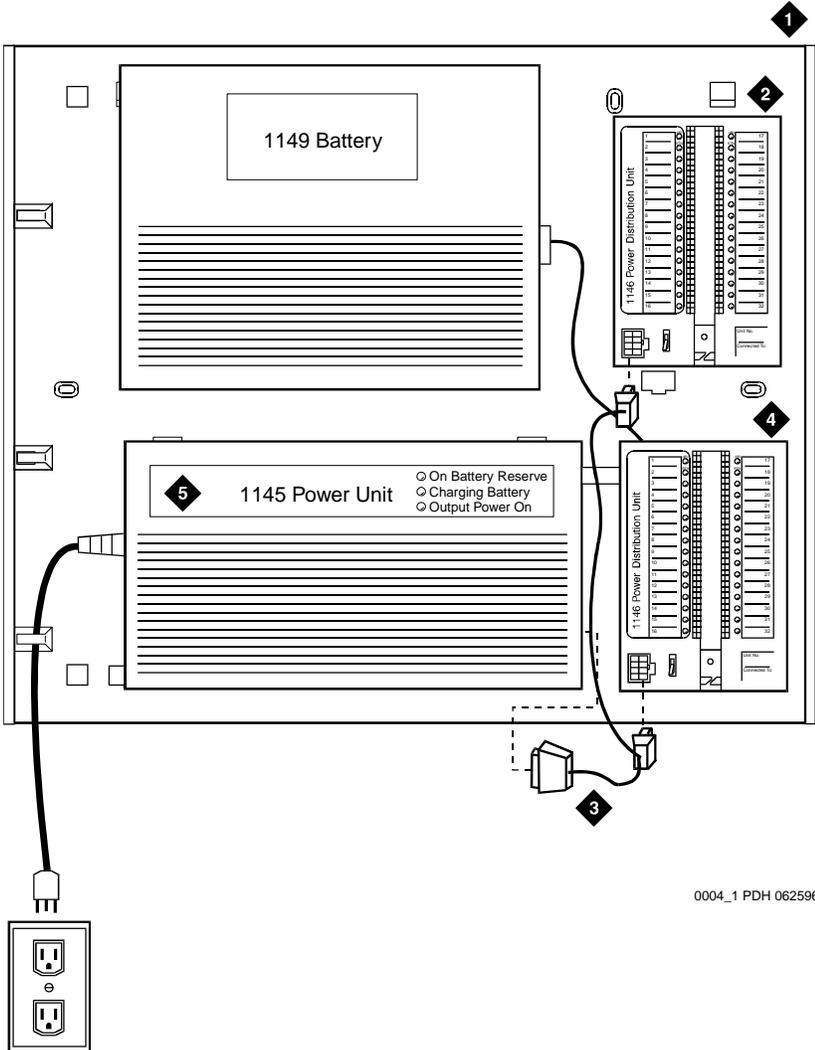


Figure notes

- | | | | |
|---|--------------------------------|---|---------------------------------------------------------|
| 1 | Wall Mounting Plate | 5 | Power Cable |
| 2 | Battery (1149B Shown) | 6 | Nonswitched Outlet (120 VAC, 20 amp or 230 VAC, 15 amp) |
| 3 | 1146B2 Power Distribution Unit | 7 | Battery Backup Switch Setting |
| 4 | 1145B2 Power Unit | | |

Figure 41: Expanded Power Distribution Unit



0004_1 PDH 062596

Figure notes

- | | | | |
|---|---------------------------------------|---|--------------------------------------|
| 1 | Wall Mounting Plate | 4 | First 1146B2 Power Distribution Unit |
| 2 | Second 1146B2 Power Distribution Unit | 5 | 1145B2 Power Unit |
| 3 | “T” Cable (H600-347-G7) | | |

Install the Wall-Mounting Plates

The top plate is used for mounting the back-up battery. The bottom plate is used to mount the power supply and distribution units. The plates can be rack-mounted using standard rack-mounting brackets. See [1145B2/1146B2 Mounting Arrangement](#) on page 87.

- 1 Locate one plate directly below the other one such that the AC power cord (6.5 feet [2 meters]) reaches the electrical outlet from a power supply mounted on the bottom plate. Both plates should be located so the raised letters are right side up.

NOTE:

A maximum of four power supplies can be powered from one dedicated 110 volts AC, 20 amperes (or 230 volts AC, 15 amperes) feeder. Use only nonswitched outlets (outlets not connected to a wall switch).

- 2 Secure the wall mounting plates to a standard 3/4-inch (2 centimeters) thick plywood mounting board. Each mounting plate comes with four #10 x 1/2-inch wood screws.
- 3 The 1145B2 Power Supply is snap-fit onto the bottom wall mounting plate without tools.
- 4 An installer-provided insulated ground wire, 16 AWG (#12) (1.2 square millimeters) or greater, is required to connect the power supply frame ground lug to an approved ground. The frame ground screw is located next to the AC outlet, to the left of the unit.

Mount the 1146B2 Power Distribution Unit

See the 1146B2 Power Distribution Unit in [Expanded Power Distribution Unit](#) on page 88.

- 1 Insert and securely tighten the two supplied #8-32 x 1/2-inch shoulder screws (they have an unthreaded section at the top) into the top holes designated for 1146B2 Power Distribution Unit on the bottom plate. Mount the unit on these two shoulder screws, using the key holes on the back of the unit.
- 2 Secure the unit by inserting the #8-32 x 1-inch screw through the bottom of the unit (just above the wire clips) into the plate and tighten.
- 3 Set the battery back-up switch option to the 1-32 (down) position to provide battery back-up to all outputs.
- 4 Connect the power distribution unit to the power supply with the power cable. Refer to the power supply's right-hand label to locate the output power connection.

Install the Battery Mounting/Wiring

Three types of back-up batteries are used. See [Table 14, Back-Up Battery Rating](#), on page 90 for the battery type and rating.

- 1 Insert two #10-32 x 1/2-inch shoulder screws into the top designated battery holes on the wall mounting plate. Lightly screw in but do not tighten.
- 2 Place the keyhole slots in the battery bracket on these two screws. The battery cord exits from the right of the bracket. Make sure the label on the battery is visible. Tighten the screws securely.
- 3 Plug the battery cord into the power supply's right rear receptacle. The rear receptacle is indicated on the right label.

Table 14: Back-Up Battery Rating

Battery	Rating
1148B	2.5 amp-hours
1149B	5 amp-hours
1147B	8 amp-hours

Install the Expanded Power Distribution Unit

A second power distribution unit can be installed to provide power to additional devices.



CAUTION:

Total power cannot exceed 275 watts. The maximum ISDN terminal mixture is 24, 7500-series and 24, 8500-series terminals.

The maximum DCP terminal mixture is 24, 7400-series and 24, 8400-series or 64, 8400-series terminals.

The expanded power distribution unit kit contains:

- One 1146B2 Power Distribution Unit
- One “T” Cable
- Two #8-32 x 1/2-in. Shoulder Screws
- One #8-32 x 1-in. Screw
- One spacer bracket

Refer to [Expanded Power Distribution Unit](#) on page 88 while installing the power distribution unit.

- 1** Set the spacer bracket onto the mounting plate and secure with the #8-32 x 1/2-inch shoulder screws. The spacer bracket is not shown in the figure but is installed behind the top power distribution unit.
- 2** Slide the keyhole slots in the power distribution unit over the shoulder screws.
- 3** Insert the #8-32 x 1-inch screw through the distribution unit, through the spacer bracket, and into the plate. The mounting hole is located just above the wire clip. Tighten the screw securely.
- 4** Set the battery back-up switch to the 1-32 (down) position.
- 5** Power-down the 1145B2 unit as described on the label on the side of the unit.
- 6** Remove the output power cable between the 1145B2 and the 1146B2 units. The cable will not be reused.
- 7** Connect the P1 connector end of the “T” cable to the bottom power distribution unit. Connect the P2 connector to the top distribution unit. Connect the P3 connector to the 1145B2.
- 8** Power-up the 1145B2 as described on the label on the side of the unit.

Power Up and Test the Power Supply

The following table describes the meaning of the power supply LEDs when lit.

Table 15: Power Supply LEDs

LED Color	Meaning
Green	Power Supply is providing power
Yellow	Battery is charging
Red	Power Supply is on battery reserve

- 1 Connect the AC power cord to the power supply and route the cord to an appropriate AC outlet using the clips provided on the unit.

NOTE:

A maximum of four power supplies can be powered from one dedicated 100–120 V, 50/60 Hz, 20-amp feeder or 200–240 V, 50/60 Hz, 10-amp feeder. Use only nonswitched outlets.

- 2 Plug the cord into the outlet. This powers up the power supply.
- 3 Check AC operation of the 1145B2 Power Supply by monitoring the LEDs:

PASS: Green and yellow LEDs at the front of the unit should be lit together. Green means the power supply is providing power. Yellow means the battery is being charged. After the battery reaches full charge (maximum of 20 hours), the yellow LED should go out.

FAIL: If either green or yellow LED is not lit after powering up, check the connections. Test the AC outlet. If power is available and the AC power cord and connections are good, replace the power unit.
- 4 Disconnect the AC plug on the power supply, this activates the DC supply.
- 5 Check DC (battery back-up) operation of the 1145B2 Power Supply by monitoring the LEDs:

PASS: The red and green LEDs should be lit together. Red means the power supply is on battery back-up.

FAIL: If either green or red LED is not lit after disconnecting AC power, check the connections. If the connections are good, replace the power unit or batteries.
- 6 Reconnect AC power to the power supply.

Wire the 1146B2 Power Distribution Unit

Wire endpoints to the 1146B2 while power from the 1145B2 is on. A red LED lights if its associated circuit is connected to shorted wiring or to a shorted telephone.

- 1 Install cross-connect jumpers to wire from the unit (the label shows polarity) to Pins 7 and 8 of the appropriate information outlet. Route the wires through the clip provided on the unit. If a red LED is on, see [Reset LEDs on Power Distribution Unit](#) on page 92. See [Typical Wiring to a Telephone](#) on page 92.
- 2 Mark lead destinations on the label next to each connector. Also mark the Unit Number and Connectivity information on the label.

Figure 42: Typical Wiring to a Telephone

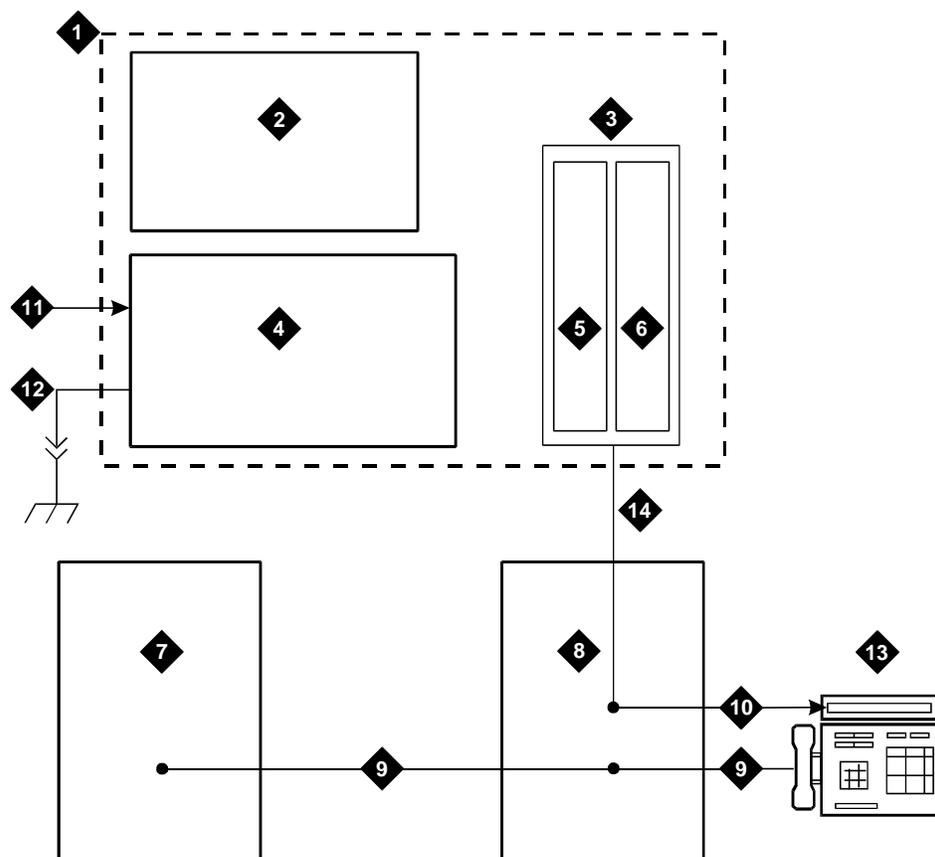


Figure notes

- | | | | |
|---|-----------------------------------|----|----------------------------------------|
| 1 | Power Supply Kit | 8 | Main Distribution Frame |
| 2 | 2.5, 5.0, or 8.0 Amp Hour Battery | 9 | Modular Cord |
| 3 | 1146B2 Distribution Unit | 10 | Pins 7 and 8 (Display Terminal Power) |
| 4 | 1145B2 Power Supply | 11 | AC Input |
| 5 | Circuits 1-16 | 12 | Installer-Provided Ground Wire |
| 6 | Circuits 17-32 | 13 | ISDN/ Display System Protocol Terminal |
| 7 | Port Circuit | 14 | Circuits 1-32 |

Reset LEDs on Power Distribution Unit

A red LED next to any of the 32 power output connectors indicates a short circuit in the building wiring or the terminal equipment. To reset the LED:

- 1 Disconnect the terminal equipment from the wall jack.
- 2 If the LED goes off, the terminal equipment is faulty and must be replaced. If the LED is still lit, find and repair the short circuit in the building wiring.
- 3 Reconnect the terminal equipment to the wall jack and retest terminal equipment operation.

1152A1 Mid-Span Power Distribution Unit

The 1152A1 Mid-Span Power Distribution Unit (PDU) is an Ethernet power supply that provides power to up to 24 46xx-series IP telephones or wireless LAN (WLAN) access points. This unit is used with a 10/100BaseTx standard Ethernet network over a standard TIA/EIA-568 Category 5, 6 or 6e cabling plant. The 1152A1 meets the current requirements of the IEEE802.3af standard for resistive detection.

The 1152A1 PDU complies with the Underwriters Laboratories Inc. (UL) standard UL 1950, second edition.

Table 16: 1152A1 PDU UL 1950 Compliance

Complies	UL 1950
Approved	CSA C22.2 No.950 Std.
Approved	CE Regulatory Compliance
Approved	EN 60950
Approved	TUV EN 60950

For safety instructions, see [Important Safety Instructions](#) on page 93. For installation instructions, see [Connect the Cables](#) on page 94.

Important Safety Instructions

Please read the following helpful tips. Retain these tips for later use.

When using this switch, the following safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons.

- Read and understand all instructions.
- Follow all warnings and instructions marked on this switch.
- This product can be hazardous if immersed in water. To avoid the possibility of electrical shock, do not use it near water.
- The 1152A1 PDU contains components sensitive to electrostatic discharge. Do not touch the circuit boards unless instructed to do so.
- This product should be operated only from the type of AC (and optional DC) power source indicated on the label. If you are not sure of the type of AC power being provided, contact a qualified service person.
- Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
- Do not overload wall outlets and extension cords as this can result in the risk of line or electric shock.
- Disconnect the cords on this product and refer servicing to qualified service personnel under the following conditions:
 - If the power supply cord or plug is damaged or frayed.
 - If liquid has been spilled into it.
 - If it has been exposed to rain or water.

- If it was dropped or the housing has been damaged.
- If it exhibits a distinct change in performance.
- If it does not operate normally when following the operating instructions.

Using the 1152A1 PDU

The 1152A1 PDU is used to power the 46xx series of IP telephones in addition to providing 10/100 megabits per second Ethernet connection.

Generation 1 Avaya IP telephones can receive power from the 1152A1 via an in-line adapter. This adapter provides the resistive signature so that the 1152A1 allows power to flow to the telephone. The generation 2 telephones do not need an adapter.

The 1152A1 PDU has 24, 10/100 Base-T ports, each can supply up to 16.8 watts using the internal power supply and operates on a 100-240 volts AC, 60/50 hertz power source.

The 1152A1 PDU is 1U high and fits in most standard 19-inch racks. It can also be mounted on a shelf. Refer to the user's guide that comes with the unit for complete installation instructions.

Connect the 1152A1 PDU



CAUTION:

The 1152A1 PDU has no ON/OFF switch. To connect or disconnect power to the 1152A1 PDU, simply insert or remove the power cable from the AC power receptacle on the rear of the 1152A1 PDU.

- 1 Plug a power cord into the power socket on the rear of the 1152A1 Power Distribution Unit.
- 2 Plug the other end of the power cord into the power receptacle.

The 1152A1 PDU powers up, and the internal fans begin operating.

The 1152A1 PDU then runs through its Power On Self Test (POST), which takes less than 10 seconds. During the test, all the ports on the unit are disabled and the LEDs light up. For more information on the test, refer to the user's guide that comes with the unit.

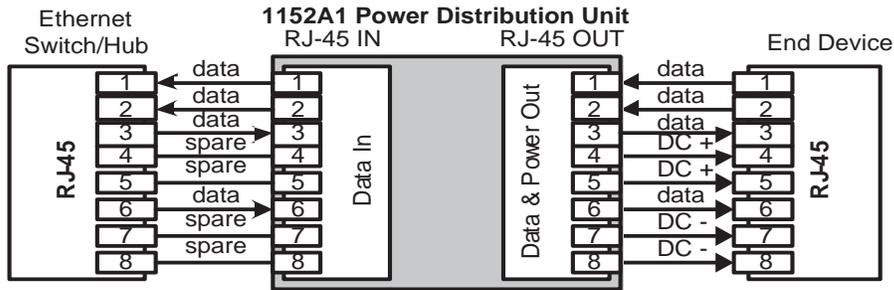
Connect the Cables

All of the ports on the front of the 1152A1 PDU are configured as data route-through ports for all data wires (pins 1, 2, 3 and 6).



Use a standard CAT5, CAT6 or CAT6e straight-through Ethernet cable (not supplied), including all 8 wires (4 pairs) as shown in [Connecting cables to telephones and other end devices](#) on page 95.

Figure 43: Connecting telephones and other end devices to the 1152A1 PDU



For Data-In ports connect the Ethernet cable leading from the Ethernet Switch/Hub to the Data port. For Data & Power Out ports connect the Ethernet cable leading to the telephone or other end device to the corresponding Data & Power port.

NOTE:

Be certain to connect correspondingly numbered Data and Data & Power ports.

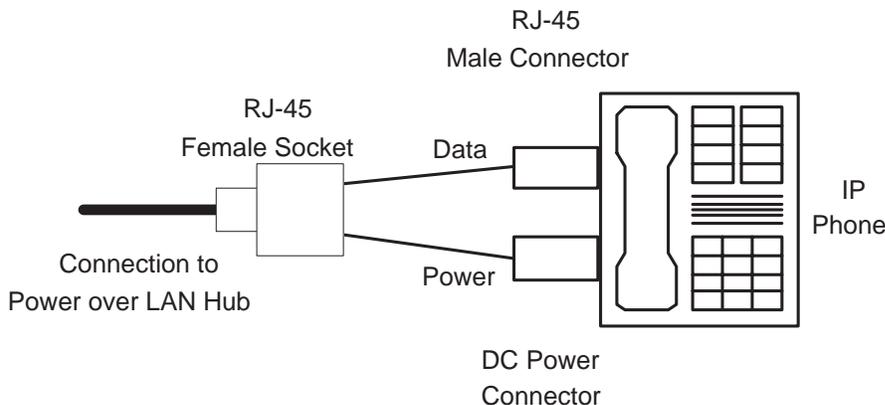
Connecting cables to telephones and other end devices

The 1152A1 PDU contains line-sensing capabilities that enable it to send power only to end devices designed to receive power from the LAN. These end devices, termed Power over LAN Enabled, receive power once they are connected to the 1152A1 PDU.

To safeguard devices that are not enabled, the 1152A1 PDU detects devices that are not enabled so does not send power. Note that data continues to flow via the Ethernet cable regardless of the status of the end device.

End devices that are not enabled to receive power directly may receive power and data through an external splitter. The external splitter separates the power and data prior to connection to the end device (see [Figure 44](#)).

Figure 44: Connecting an IP telephone with an external splitter



Before connecting telephones or other end devices to the 1152A1 PDU, determine if

- It is Power over LAN Enabled or not.

If not, you may safely connect the telephone; however, the port supplies no power and functions as a normal Ethernet data port.

- It requires an external splitter or whether it requires only a single RJ45 connection.

If an external splitter is needed, be certain to use a splitter with the correct connector and polarity.

- It's power requirements are consistent with the 1152A1 PDU voltage and power ratings. Refer to Appendix B in the user's guide that comes with the unit for voltage and power ratings.

To connect telephones and other end devices to the 1152A1 PDU:

- 1** Connect an Ethernet cable to the telephone using an external splitter or directly (if the device is Power over LAN Enabled).
- 2** Connect the opposite end of the same cable to the RJ45 wall outlet.
- 3** On the front panel of the 1152A1 PDU, monitor the response of the corresponding port LED. If it lights up GREEN, the unit has identified your telephone as a Power over LAN

P333T-PWR Power over Ethernet Stackable Switch

The P333T-PWR power supply complies with the Underwriters Laboratories Inc. (UL) standard UL 1950, second edition.

Table 17: P333T-PWR UL 1950 Compliance

Complies	UL 1950
Approved	C22.2 No.950 Std.
Approved	CE

For safety instructions, see [P333T-PWR switch Important Safety Instructions](#) on page 96. For installation instructions, see [Connect the P333T-PWR switch](#) on page 98.

P333T-PWR switch Important Safety Instructions

Please read the following helpful tips. Retain these tips for later use.

When using this switch, the following safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons.

- Read and understand all instructions.
- Follow all warnings and instructions marked on this switch.
- This product can be hazardous if immersed in water. To avoid the possibility of electrical shock, do not use it near water.
- The Avaya P333T-PWR switch and modules contain components sensitive to electrostatic discharge. Do not touch the circuit boards unless instructed to do so.

- This product should be operated only from the type of AC (and optional DC) power source indicated on the label. If you are not sure of the type of AC power being provided, contact a qualified service person.
- Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
- Do not overload wall outlets and extension cords as this can result in the risk of line or electric shock.
- Disconnect the cords on this product and refer servicing to qualified service personnel under the following conditions:
 - If the power supply cord or plug is damaged or frayed.
 - If liquid has been spilled into it.
 - If it has been exposed to rain or water.
 - If it was dropped or the housing has been damaged.
 - If it exhibits a distinct change in performance.
 - If it does not operate normally when following the operating instructions.

Using the P333T-PWR switch

The P333T-PWR Power over Ethernet Stackable Switch can be used to power 46xx series IP telephones in addition to providing a 10/100 megabits per second Ethernet connection. The switch can form part of a stack with the G700 Media Gateway or members of the P330 stackable switching system.



CAUTION:

The Avaya P333T-PWR switch does not contain any user-serviceable components inside. Do not open the case.



CAUTION:

The P333T-PWR switch can be used only indoors and in a controlled environment.

The P333T-PWR switch has 24, 10/100 Base-T ports, each of which can supply up to 16.5 watts using the internal power supply and operates on a 100–240 volts AC, 5.3 amperes, 50/60 hertz power source with the option of using the 44~57 volts DC, 15 amperes to boost the InLine power.

The P333T-PWR switch can be placed in a wiring closet or on a flat, stable surface like a desk. Screws are provided for mounting in a standard 19-inch rack.

Connect the P333T-PWR switch

Power up—AC input

- 1 Insert the power cord into the power connector (BUPS or AC Power Supply) on the rear of the unit. See [Figure 45](#).

Figure 45: Connectors on the P333T-PWR switch

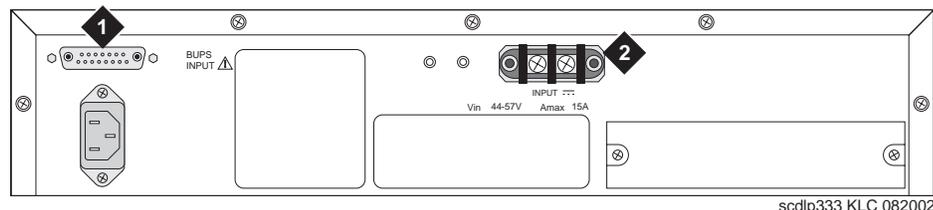


Figure notes

- | | | | |
|----------|----------------|----------|--------------|
| 1 | BUPS connector | 2 | AC connector |
|----------|----------------|----------|--------------|

- 2 Insert the other end of the power cord into a nonswitched electrical outlet or the connector on the BUPS.

The unit powers up and performs a self-test procedure. The LEDs flash at regular intervals after the self-test procedure is completed successfully.

Power up—DC input (optional)

The P333T-PWR switch can operate on the AC input only. However, you may wish to use the optional DC input for the following:

- Backup for the power over Ethernet ports
- To provide more than 200 watts for the power over Ethernet ports

NOTE:

Please refer to the P333T-PWR switch User's Guide for more information.

Connect the Cables

Connect IP telephones, PCs, servers, routers, workstations, and hubs.

- 1 Connect the Ethernet connection cable (not supplied) to a 10/100 megabits per second port on the front panel of the Avaya P333T-PWR switch.

NOTE:

Use standard RJ45 connections and a CAT5 cable for 100 megabits per second operation.

- 2 Connect the other end of the cable to the Ethernet port of the PC, server, router, workstation, IP telephone, switch, or hub.

NOTE:

Use a crossover cable when connecting the Avaya P333T-PWR switch to a switch or hub.

- 3 Check that the appropriate link (LNK) LEDs light up.

1151B1 and 1151B2 Power Supplies

The 1151B1 and 1151B2 power supplies are a local power supply. The telephones or consoles connect directly to them through an RJ45 connector. The 1151B2 has a battery backup.

These power supplies comply with the Underwriters Laboratories Inc. (UL) Standard UL 60950 third edition.

Table 18: 1151B1 and 1151B2 Power Supply UL 60950 Compliance

Complies	UL 60950
Certified	CSA 22.2
Approved	EN6950
Approved	CE

For safety instructions, see [Important Safety Instructions for 1151B1 and 1151B2 Power Supplies](#) on page 99. For installation instructions, see [Connect the 1151B1 or 1151B2 Power Supplies](#) on page 100.

Important Safety Instructions for 1151B1 and 1151B2 Power Supplies

Please read the following helpful tips. Retain these tips for later use.

When using this power supply, the following safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons.

- Read and understand all instructions.
- Follow all warnings and instructions marked on this power supply.
- This product can be hazardous if immersed in water. To avoid the possibility of electrical shock, do not use it near water.
- To reduce the risk of electric shock, do not disassemble this product except to replace the battery.
- This product should be operated only from the type of AC power source indicated on the label. If you are not sure of the type of AC power being provided, contact a qualified service person.
- Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
- Do not overload wall outlets and extension cords as this can result in the risk of line or electric shock.
- Disconnect the cords on this product and refer servicing to qualified service personnel under the following conditions:
 - When the power supply cord or plug is damaged or frayed.
 - If liquid has been spilled into the product.
 - If the product has been exposed to rain or water.
 - If the product was dropped or the housing has been damaged.
 - If the product exhibits a distinct change in performance.
 - If the product does not operate normally by following the operating instructions.

Using 1151B1 and 1151B2 Power Supplies

The 1151B1 and 1151B2 Power Supplies can be used to supply local power to ISDN-T 85xx and 84xx series and 46xx series telephones connected to a media gateway and to the 302D Attendant Console that requires auxiliary power for its display. The unit can supply power to adjunct equipment such as S201A and CS201A speakerphones or a 500A Headset Adapter attached to any currently manufactured analog, DCP, or ISDN-T telephone equipped with an adjunct jack.



CAUTION:

The power supply can be used *only* with telecommunications equipment, indoors, and in a controlled environment.

The power supply has a single output of -48 volts DC, 0.4 amperes and can operate from either a 120 volts AC 60 hertz power source (105 to 129 volts AC) or a 220/230/240 volts AC 50 hertz power source (198 to 264 volts AC). Input voltage selection is automatic. The output capacity is 19.2 watts.

The power supply can be placed on a flat surface such as a desk. For wall-mounting, keyhole slots are provided on the bottom of the chassis.



CAUTION:

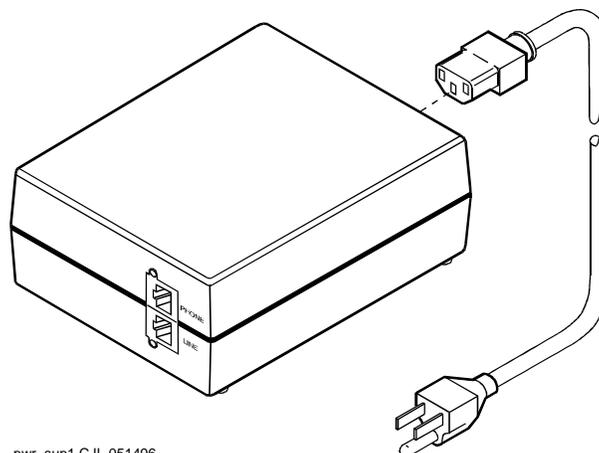
Do not locate the unit within 6 inches (15 centimeters) of the floor.

Connect the 1151B1 or 1151B2 Power Supplies

The 1151B1 is a standard (no battery backup) power supply unit. The 1151B2 is a battery backup version of the 1151B1. Either power supply can support one telephone with or without an adjunct. The maximum loop range is 250 feet (76 meters). Two modular jacks are used. Power is provided on the PHONE jack, pins 7 and 8 (- and +, respectively).

The PHONE and LINE jacks are 8-pin female nonkeyed 657-type jacks that can accept D4, D6, and D8 modular plug cables. See an [Figure 46](#).

Figure 46: 1151B2 Power Supply — Front



pwr_sup1 C.J.L. 051496

Connect External Alarms and Auxiliary Connections

NOTE:

The AUX connector is part of the Processor Interface cable assembly (J1).

Alarm Input

Alarms can be generated on adjunct equipment, sent to the DEFINITY System, and recorded and reported as “external alarms.” A typical major alarm *input* is from a UPS.

- 1 Connect 1 major alarm *input* wire pair and 1 minor alarm *input* wire pair to the auxiliary field from the AUX connector (J1 on Processor Interface Cable). See [Table 19](#).

Table 19: Alarm Inputs at AUX Connector

Alarm Input Type	Color	AUX Connector
Major	White-Blue	AP1 (Pin 26)
	Blue-White	Ground (Pin 1)
Minor	White-Orange	AP2 (Pin 27)
	Orange-White	Ground (Pin 2)

Alarm Output

The system provides a relay contact that can operate a customer-provided alarm, such as a light or bell. The circuitry and power source are customer- provided. The alarm device must not exceed a rating of more than 30 VAC RMS or 60 VDC at 0.75 Amps.

- 1 Connect the external alarm *output*. See [Table 20](#).
- 2 Give this information to your Avaya representative for troubleshooting purposes.

Table 20: Alarm Output at AUX Connector

Alarm Output Type	Color	AUX Connector
EXTALMA	Violet-Green	(Pin 48)
EXTALMB	Green-Violet	Ground (Pin 23)

Emergency Transfer and Auxiliary Power

NOTE:

Only 1 emergency transfer power panel and 1 auxiliary power connection is provided per system.

Connect emergency transfer power and auxiliary power as shown in [Table 21](#). Auxiliary power includes power to an attendant console or adjunct device.

Table 21: Emergency Transfer and Auxiliary Power

Power Type	Color	AUX Connector
Emergency Transfer	Black-Blue	XFER48 (Pin 36)
	Blue-Black	Ground (Pin 11)
Auxiliary (Adjunct) - 48 VDC	Brown-Yellow	ACC48A (Pin 19)
	Yellow-Brown	Ground (Pin 44)

Telephone Pin Designations

[Table 22](#) provides port circuit pack and telephone pin designations.

Table 22: Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire; 302D, 8400-Series, 603E, 9403, 9434	2-wire; 302D, 8400-Series, 603E, 9403, 9410, 9434	8510T BRI (with adjunct speaker phone)	Analog Station, Modem	Z3A1 & Z3A2 ADU, Data Module
1	TXT				TXT
2	TXR			T	TXR
3	PXT		TXT	R	PXT
4		T	PXR		
5		R	PXT		
6	PXR		TXR		PXR
7	-48VDC	(-48VDC)	(-48VDC)		
8	GRD	GRD	GRD		
circuit pack	4-wire digital (8 port)	2-wire digital (16 or 24 port)	4-wire BRI Trunk Side	Analog line (16 or 24 port)	Data Line
					1 of 2

Table 22: Port Circuit Pack and Telephone Pin Designations

PX	PBX transmit	T	Tip (A)
TX	Terminal transmit	R	Ring (B)
2 of 2			

CAMA/E911 Installation

Configuration

The CAMA/E911 feature will only work in conjunction with TN429D CO trunk circuit packs (or later suffix).

Port Networks (PNs) that include TN429D circuit packs used to interface to CAMA trunks may require some CPTR resources to be either TN744E V2 or TN2182C circuit packs, since TTR/CPTR or General Purpose Tone Receiver (GPTR) resources are selected from the pool available in the PN when needed.

Hardware Setup

- 1 Insert the TN429D or later CO trunk circuit pack in any available port slot.
- 2 Be sure the TN744E Call Classifier - Detector circuit pack is Vintage 2 or later.
- 3 Wire the CAMA trunk to the MDF (the trunk from the CO). Refer to the pinouts in [Table 42, Circuit Pack and Auxiliary Equipment Leads \(Pinout Charts\)](#), on page 152.

Administration Setup

- 1 At the prompt, type **add trunk next** and press **Enter**.

Figure 47: CAMA Trunk Group form (page 1)

Page 1 of 11

TRUNK GROUP

```

Group Number: 1                Group Type: cama        CDR Reports: y
Group Name:  cama Trunk Group - E911  COR: 1      TN: 1      TAC: 701
Direction: outgoing            Outgoing Display? y  CESID I Digits Sent: 0
                               Busy Threshold: 99

TRUNK PARAMETERS
Trunk Type: wink-start
Outgoing Dial Type: rlmf
Trunk Termination: rc
    
```

- 2 On the Trunk Group screen (page 1), in the Group Type: field, enter **cama**.
- 3 In the Group Name: field, enter the desired name.
- 4 In the TAC: field, enter the desired trunk access code.
- 5 In the Outgoing Display: field, enter **y**.
- 6 In the CESID I Digits Sent: field, enter the number directed by the Central Office (CO) or the Public Safety Answering Point (PSAP).
- 7 Scroll to page 3 of the form.

Figure 48: Administrable Timers form (page 3)

```
Page 3 of 11

TRUNK GROUP

ADMINISTRABLE TIMERS

Outgoing Disconnect (msec): 400
Cama Outgoing Dial Guard (msec): 75
Outgoing Glare Guard (msec): 1000

Outgoing End of Dial (sec): 1
Cama Wink Start Time (msec): 5000
Outgoing Seizure Response (sec): 4
Disconnect Signal Error (sec): 30
```

- 8 On the Administrable Timers screen (page 3), you may need to adjust these fields according to your CO. Scroll to page 5.

Figure 49: Group Member Assignments form (page 5)

```
Page 5 of 11

TRUNK GROUP

GROUP MEMBER ASSIGNMENTS
Port Code Sfx Name
1: 01C0401 TN429 C
2: 01C0402 TN429 C
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:

Administered Members (min/max): 1/2
Total Administered Members: 2
```

- 9 On the Group Member Assignments screen, in the Port field, add the trunk members and press **Enter** when finished.
- 10 At the prompt, type **change feature-access-code** and press **Enter**.

Figure 50: Feature Access Code (FAC) form (page 1)

```
Page 1 of 5
FEATURE ACCESS CODE (FAC)
Abbreviated Dialing List1 Access Code: ____
Abbreviated Dialing List2 Access Code: ____
Abbreviated Dialing List3 Access Code: ____
Abbreviated Dial - Prgm Group List Access Code: ____
Announcement Access Code: ____
Answer Back Access Code: ____
Auto Alternate Routing (AAR) Access Code: ____
Auto Route Selection (ARS) Access Code 1: 9____ Access Code 2: ____
Automatic Callback Activation: ____ Deactivation: ____
Call Forwarding Activation Busy/DA: ____ All: ____ Deactivation: ____
Call Park Access Code: ____
Call Pickup Access Code: ____
CAS Remote Hold/Answer Hold-Unhold Access Code: ____
CDR Account Code Access Code: ____
Change Coverage: ____
Data Origination Access Code: ____
Data Privacy Access Code: ____
Directed Call Pickup Access Code: ____
Emergency Access To Attendant Access Code: ____
Extended Call Fwd Activate Busy D/A: ____ All: ____ Deactivation: ____
Facility Test Calls Access Code: ____
Flash Access Code: ____
```

- 11 The Feature Access Code (FAC) screen (page 1) appears.
- 12 In the Auto Route Selection (ARS) Access Code 1: field, administer the ARS access code (in the example above, type **9**) and press **Enter** (must match dial plan).
- 13 At the prompt, enter **change ars analysis <9>** and press **Enter**.

Figure 52: Route Pattern form (Page 1)

Page 1 of X

Pattern Number: 11

Grp. No.	FRL	NPA	Pfx Mrk	Hop Lmt	Toll List	No. Digits	Del	Inserted Digits	IXC
1:	1	0							user
2:									user
3:									user
4:									user
5:									user
6:									user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	Numbering LAR						
0	1	2	3	4	W	Request	Format						
1:	Y	Y	Y	Y	Y	n	Y none	both ept	outwats-bnd	BAND: _____	_____	_____	none
2:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	next	
3:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	rehu	
4:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	none	
5:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	none	
6:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	none	

25 On the Route Pattern screen, in Grp. No. field, enter the CAMA trunk group number.

26 In the FRL field, enter 0.

NOTE:

For the following step, if the Central Office (CO) wants KP11ST as the dialed digit string, then leave blank. If the CO wants KP911ST, then insert a “9” in the Inserted Digits field.

27 Administer the Inserted Digits field if needed and press **Enter**.

28 At the prompt, type **change route-pattern <number>** (the route pattern to be changed; in the example below, the route pattern is 12) and press **Enter**.

Figure 53: Route Pattern form (page 1)

Page 1 of X

Pattern Number: 12

Grp. No.	FRL	NPA	Pfx Mrk	Hop Lmt	Toll List	No. Digits	Del	Inserted Digits	IXC
1:	1	0				1			user
2:									user
3:									user
4:									user
5:									user
6:									user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	Numbering LAR						
0	1	2	3	4	W	Request	Format						
1:	Y	Y	Y	Y	Y	n	Y none	both ept	outwats-bnd	BAND: _____	_____	_____	none
2:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	next	
3:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	rehu	
4:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	none	
5:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	none	
6:	Y	Y	Y	Y	Y	n	n	rest	_____	_____	_____	none	

- 29 On the Route Pattern screen, in Grp. No. field, type the CAMA trunk group number and press **Enter**.
- 30 In the FRL field, type 0.

NOTE:

For the following step, if the Central Office (CO) wants KP911ST as the dialed digit string, then leave blank. If the CO wants KP11ST, then delete one digit.

- 31 Administer No. Del Digits field if needed and press **Enter**.
- 32 At the prompt, type **change cama-numbering** and press **Enter**.

Figure 54: CAMA Numbering Format form

Page 1 of 3

CAMA NUMBERING - E911 FORMAT

System CESID Default: 5241100_____

Ext Len	Ext Code	CESID	Total Length	Ext Len	Ext Code	CESID	Total Length
4_	101_	5381234_	7_	—	—	—	—
4_	1_	555_	7_	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
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—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

- 33 In the CAMA Numbering - E911 Format screen (page 1), in System CESID Default: field, enter your own system default and press **Enter**. This is the number outputted when the extension code is not found in the CAMA Numbering table. See [Figure 54](#).
- 34 In the Ext Len, Ext Code, CESID, and Total Length fields, fill out to your own CAMA numbering plan and press **Enter**. Be sure to cover all extensions.
- 35 At the prompt, type **change cor <number>** (the class of restriction (COR) to be changed) and press **Enter**. Change all CORs that are defined for stations in order to remove any calling party restrictions for 911 calls.

Figure 55: Class of Restriction form (page 1)

Page 1 of 3

CLASS OF RESTRICTION

COR Number: 10
COR Description: supervisor

FRL: 0	APLT? y
Can Be Service Observed? n	Calling Party Restriction: none
Can Be A Service Observer? n	Called Party Restriction: none
Time of Day Chart: 1	Forced Entry of Account Codes? n
Priority Queuing? n	Direct Agent Calling? n
Restriction Override: none	Facility Access Trunk Test? n
Restricted Call List? n	Can Change Coverage? n
Unrestricted Call List?	
Access to MCT? y	Fully Restricted Service? n
Category For MFC ANI: 7	Hear VDN of Origin Annc.? n
Send ANI for MFE? n_	Add/Remove Agent Skills? n
Hear System Music on Hold? y	PASTE (Display PBX Data on Phone)? n
Automatic Charge Display? n	
	Can Be Picked Up By Directed Call Pickup? n
	Can Use Directed Call Pickup? n

- 36 On the Class of Restriction screen (page 1), in the Calling Party Restriction: field, type **none** and press **Enter**.
- 37 Type **Save Translation** and press **Enter**.

Install the BRI Terminating Resistor

The resistors balance the cable plant between the receiver and the transmitter on the interface. When using the TN2198 ISDN-BRI 2-Wire U Interface circuit pack, an NT1 is required. A terminating resistor is always required near the terminal when the BRI S-type interface circuit pack (TN556D BRI 4-Wire S-NT Line circuit pack) is used (see #5ESS Switch Integrated Services Digital Network Customer Premises Planning Guide, 533-700-100).

The resistor is built into the NT1 and can be 1 of 3 values, depending on the configuration and the distance from the NT1 to the ISDN terminal. The resistor value is controlled from the NT1. A terminating resistor adapter may be needed near the terminal and can be placed in the satellite closet or work location.



CAUTION:

Observe the following cautions when installing the terminating resistor block (440A4 or 110RA1-12):

- *Never install telephone wiring during a lightning storm.*
- *Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.*
- *Never touch uninsulated wires or terminals unless the telephone line has been disconnected at the network interface.*
- *Use caution when installing or modifying telephone lines.*

Terminating Resistor Adapter

[Figure 56](#) shows an 8-pin 440A4 terminating resistor adapter. The adapter has an 8-wide plug at 1 end, a short cord, and an 8-wide jack at the opposite end.

Figure 56: 8-Wide Terminating Resistor Adapter (440A4)

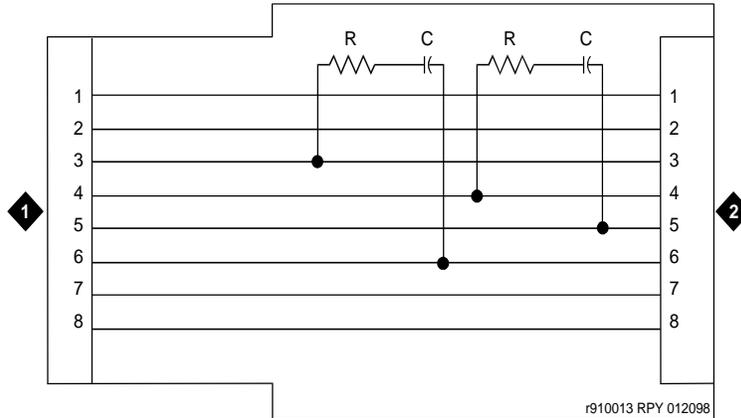


Figure notes

- 1 8-wide plug
- 2 8-wide jack

Closet Mounted (110RA1-12)

The 110RA1-12 terminating resistor block consists of twelve 2-pair circuits and provides the 100 Ohm termination used for ISDN-BRI circuits.

[Figure 57](#) shows the wiring of the 110RA1-12. Three rows of 110D-4 connector blocks contain resistors and capacitors. The bottom row is designated as the input row and the top and middle rows are designated as the output rows. The circuit assembly is mounted on a standard 110A-100 pair mounting base.

Figure 57: Terminating Resistor Block (110RA1-12)

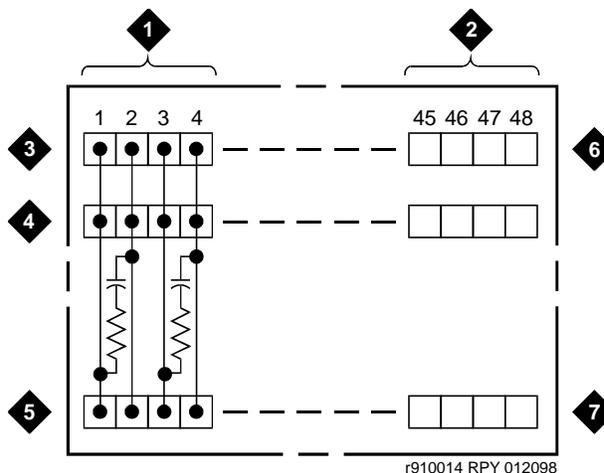


Figure notes

- | | | | |
|---|----------------|---|--------------------------------------------------------------|
| 1 | Circuit 1 | 5 | Input row "C" |
| 2 | Circuit 12 | 6 | Only first circuit shown to all 12 circuits (2APR) per block |
| 3 | Output row "A" | 7 | 110D-4 connector block |
| 4 | Output row "B" | | |

[Figure 58](#) shows the wiring connections for the 110RA1-12 terminal block. The TN556D BRI switch port is terminated to bottom row C.

BR851-B Adapter (T-Adapter)

The BR851-B supports 2 terminals on 1 multi-point BRI at the work station and is used to fanout transmission and power. See [Figure 59](#).

Figure 59: Wiring Diagram of BR851-B

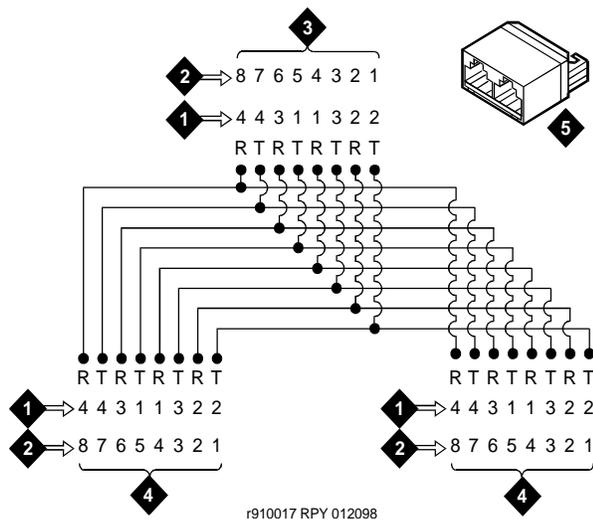


Figure notes

- | | | | |
|---|---------------------|---|--------------------------|
| 1 | Wire pairs | 4 | Female |
| 2 | Pin numbers | 5 | T-Type adapter (BR851-B) |
| 3 | Modular plug (male) | | |

367A Adapter

The 367A adapter provides fanout for up to 7 terminals. See [Figure 60](#).

Figure 60: Wiring Diagram of 367A Adapter

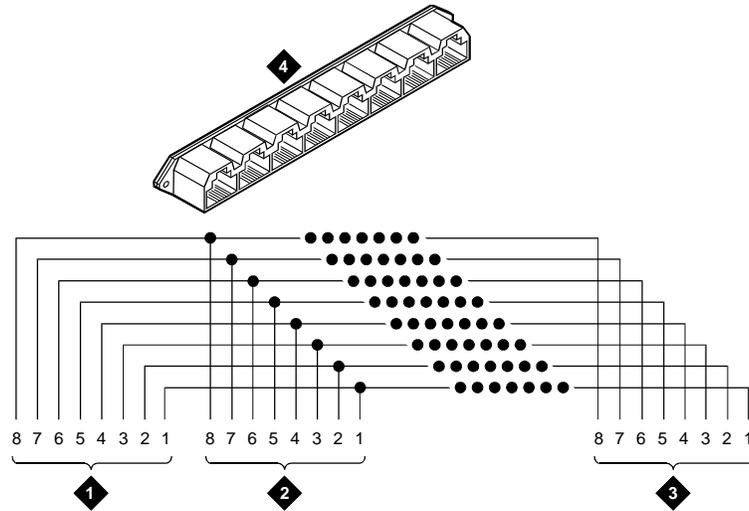


Figure notes

- | | | | |
|---|--------|---|--------------|
| 1 | Jack 1 | 3 | Jack 8 |
| 2 | Jack 2 | 4 | 367A adapter |

Basic Multi-point Installation Distances

[Figure 61](#) provides cabling information for fanout of ISDN-BRI multi-point installations. In [Figure 61](#), the terminating resistor is located in the satellite closet. All distances assume 24 AWG (#5) (0.26 mm²) D-Inside Wire (DIW).

Figure 61: Basic Multi-point with One Work Location

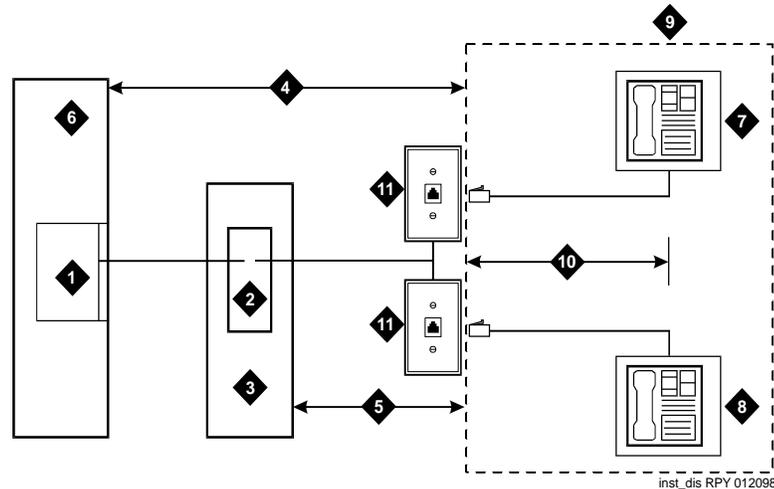


Figure notes

- | | | | |
|---|-------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------|
| 1 | S-interface source (TN556D) | 6 | System cabinet |
| 2 | Terminating resistor | 7 | Terminating endpoint 1 |
| 3 | Satellite closet | 8 | Terminating endpoint 2 |
| 4 | Maximum distance from S-interface source to work location (1600 feet) (488 m) | 9 | Work location |
| 5 | Maximum distance from satellite closet to work location (250 feet) (76 m) | 10 | Maximum distance from information outlet to terminating endpoint (33 feet) (10 m) |
| | | 11 | Information outlet |

Install Off-Premises Station Wiring

The cabling for off-premises stations is provided by the local telephone company. These stations can appear on any of the RJ21X network interfaces provided for the CO trunks.



CAUTION:

Use only an FCC-approved (or equivalent) analog type telephone (such as a 2500-type) as an off-premises station. The TN746B and TN2183 Analog Line circuit packs can be connected to off-premises stations.

- 1 Install an A25D cable between the RJ21X network interface and a sneak fuse panel.
- 2 At the MDF, connect jumper wires between 1 row/connecting block in the green field and up to 3 rows/connecting blocks in the purple field to concentrate the analog line pairs.
- 3 Connect an A25D cable between the sneak fuse panel and the terminal block connector associated with the green row in Step 2.
- 4 Install a green label on the terminal block to identify the remote location.
- 5 Administer per *Administrator's Guide for Avaya Communication Manager*.

Install Off-Premises or Out-of-Building Stations

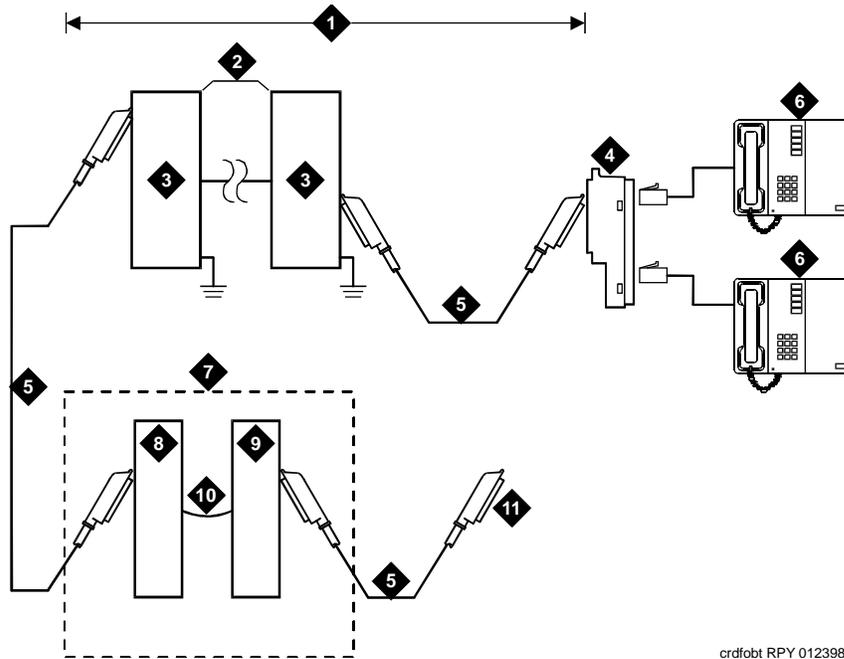
Out-of-building campus stations are those telephones not physically located in the same building as the equipment room but are located on the same property.

Analog Off-Premises Stations

[Figure 62, Connections for 1 to 8 Out-of-Building Analog Telephones](#), on page 117 shows the connections for 1 to 8 off-premises analog telephones. Only analog telephones connected to TN746B, TN2183, or TN769 Analog Line circuit packs can be installed out-of-building.

The maximum distance from the system cabinet to the out-of-building voice terminal is 6000 feet (1828.8 m) using 24 AWG (#5) (0.26 mm²) wire.

Figure 62: Connections for 1 to 8 Out-of-Building Analog Telephones



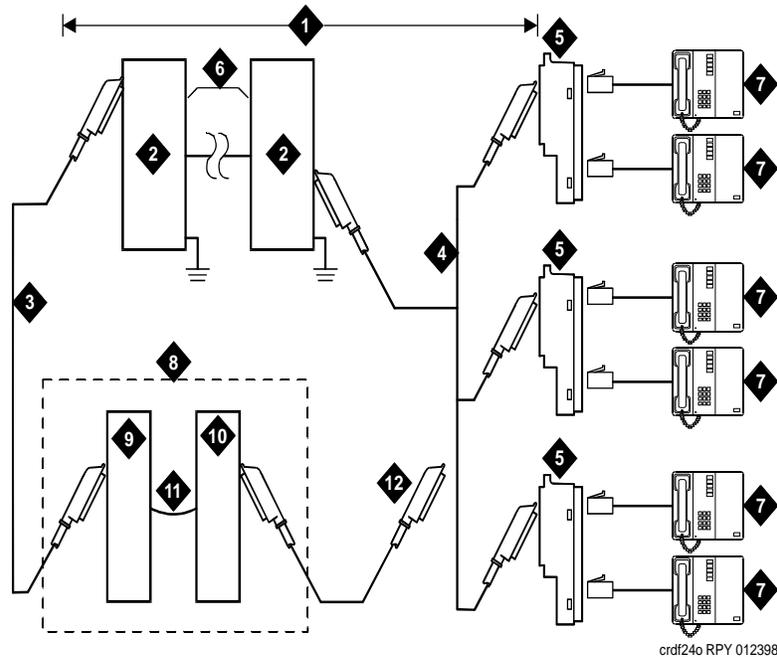
crdfobt RPY 012398

Figure notes

- | | | | |
|---|-------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------|
| 1 | Locally engineered cables | 6 | Out-of-building analog telephones |
| 2 | Out-of-building wiring | 7 | Part of MDF |
| 3 | Multi-pair protector units (primary protectors with heat coils or equivalent with sneak current protection) | 8 | Station side (white field) |
| 4 | 356A adapter | 9 | System side (purple field) |
| 5 | B25A cable | 10 | Cross-connect jumpers |
| | | 11 | To analog line circuit pack (TN2183, TN769, or TN746B) |

Figure 63 shows the connections for up to 24 off-premises analog telephones. Concentrations of analog line pairs are used at both buildings to minimize the off-premises wiring required. At the MDF, jumpers must be connected between 1 row/connecting block in the white field and up to 3 rows/connecting blocks in the purple field. At the station location, a WP-90929, List 1 Concentrator Cable is used. There are 8 station appearances on each of the 3 fingers of the concentrator cable.

Figure 63: Connections to 24 Out-of-Building Telephones



crdf24o RPY 012398

Figure notes

- | | | | |
|---|-------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------|
| 1 | Locally engineered cables | 7 | Out-of-building analog telephones |
| 2 | Multi-pair protector units (primary protectors with heat coils or equivalent with sneak current protection) | 8 | Part of MDF |
| 3 | B25A cable | 9 | Station side (white field) |
| 4 | Concentrator cable (WP90929 List 1) | 10 | System side (purple field) |
| 5 | 356A adapter | 11 | Cross-connect jumpers |
| 6 | Out-of-building wiring | 12 | To TN2183, TN769, or TN746B analog line circuit pack |

Circuit Protectors

Carbon block, or equivalent protection is required at both building entrances. Also sneak current protection is required. Protection can be provided by a 4-type protector or a 3-type protector plus a separate sneak current protector. The 4-type protector is equipped with a heat coil.

The 4-type protector is the preferred device. For installations not using primary protection, 4-type protectors should always be used. When the 3-type protector is already installed, a separate sneak current protector is required. The multi-pair protector units and the off-premises cabling must be locally engineered. Connectorized multi-pair protector units (female 25-pair connector) are recommended. [Table 23](#) shows the recommended protectors.

Table 23: Analog Line Circuit Protectors

Protectors		
Primary ¹	Primary (with heat coil)	Sneak Current Protectors ¹
3B1A (carbon)	4B1C (carbon)	220029 Fuse
3B1E-W (wide gap gas tube)	4B1E-W (wide gap gas tube)	SCP-1
3C1S (solid state)	4C1S (solid state)	

¹ The 3-type protectors should only be used if they are already part of the existing protection system. A sneak current protector is always required when a 3-type primary protector is used.

The maximum range of out-of-building analog telephones (500-, 2500-, or 7100-types) connected to an analog line circuit pack should be such that the maximum loop resistance does not exceed 1300 ohms.

The following voice terminals *cannot* be installed in an exposed environment:

- 7300-type voice terminals connected to TN762B Hybrid Line circuit packs
- Analog telephones connected to TN746B Analog Line circuit packs

1 Refer to [Table 4, Comcodes for CMC1](#), on page 26 for circuit protector ordering information (comcodes).

Digital Out-of-Building Telephones

Protection is required at both building entrances for digital out-of-building voice terminals. There are 2 different types of protectors that can be used to protect digital voice terminals and digital line circuit packs. The 2 protectors to use are the 4C3S-75 Enhanced protector and the ITW Linx Enhanced Protector. These units provide primary and sneak current protection. The 4C3S-75 is equipped with a heat coil for sneak current protection. The ITW Linx is equipped with replaceable fuses for sneak current protection.

The 4C3S-75 is only used with Vintage 14 or newer TN754 circuit packs. The 4C3S-75 can be used on all vintages of the TN754C circuit packs. The ITW Linx may be used on all vintages of the TN754 circuit packs. [Table 24](#) lists the approved protectors.

NOTE:

The TN2181 (2-Wire 16 Port Digital Line circuit pack) may not be approved for some out-of-building uses. Contact your Avaya Inc. representative for more information.

Table 24: Digital Voice Circuit Protectors

Circuit Pack	Enhanced Primary Protector (With Sneak Current Protection)
TN754 V13 or earlier	ITW Linx Only
TN754 V14 or later	4C3S-75 or ITW Linx
TN754C all vintages	4C3S-75 or ITW Linx
TN2181	4C3S-75 or ITW Linx
TN2224CP	4C3S-75 or ITW Linx

When possible, all new and reused wiring installations should use blocks that accept the standard 5-pin plug-in 4C3S-75 protector. However, this may not be cost-effective in some cases. For these installations, the ITW Linx protector may be installed. An example of this is where screw-type carbon block protectors (or other non plug-compatible types) are in place and it is too costly to re-terminate the outside plant cable on a 5-pin mounting block for only a few out-of-building terminals.

The ITW Linx Enhanced Protector may be installed in series with existing primary protection. Note the 4C3S-75 protector cannot be installed in series with other types of primary protection. It must be installed as the only protection on the line entering the building. For the 4C3S-75 protector, various 25-, 50-, and 100-pair protector panels are equipped with 110-type connecting blocks and/or RJ21X connectors. The ITW Linx Enhanced Protector mounts directly on connecting blocks and requires a separate ground bar.

The maximum range for out-of-building digital voice terminals is 3400 feet (1036 m) when using 24 AWG (#5) (0.26 mm²) wire and 2200 feet (670 m) when using 26 AWG (#4) (0.14 mm²) wire. The range can extend to 5000 feet (1524 m) using 24 AWG (#5) (0.26 mm²) wire or 4000 feet (1219 m) using 26 AWG (#4) (0.14 mm²) wire with the use of a data link protector. The protector is an isolating transformer used to remove phantom power on the system side and re-introduce it on the terminal side.

When a protector is used, the voice terminal must be locally powered by an external power supply or through the AC power cord provided with some of the 7400-type voice terminals. The protector is installed on the equipment side of the protection in both buildings.

Refer to [Table 4, Comcodes for CMC1](#), on page 26 for circuit protector and data link protector comcodes.

Install Emergency Transfer Unit and Associated Telephones

NOTE:

Install only 1 emergency transfer power panel per system.

Emergency transfer capability is provided by an 808A Emergency Transfer Panel (or equivalent) mounted next to the trunk/auxiliary field. See [Figure 64, 808A Emergency Transfer Panel](#), on page 122. Also refer to [Table 21, Emergency Transfer and Auxiliary Power](#), on page 102 for the pinout of the AUX (J1) connector.

Use analog telephones for emergency transfer. The 500-and 2500-type telephones can also be used as normal extensions. Emergency transfer capability may be provided on analog CO and Wide Area Telecommunications Service (WATS) trunks.

The transfer panel provides emergency trunk bypass or power-fail transfer for up to 5 incoming CO trunk loops to 5 selected station sets. The 808A equipment's Ringer Equivalency Number (REN) is 1.0 Amp.

At the MDF, the unit is controlled by a connection to a yellow terminal row/connecting block in the trunk/auxiliary field. The unit is controlled by -48 VDC from the EM TRANS RELAY PWR terminals.

Install the Emergency Transfer Panel

The 808A Emergency Transfer Panel is used in the following installation example.

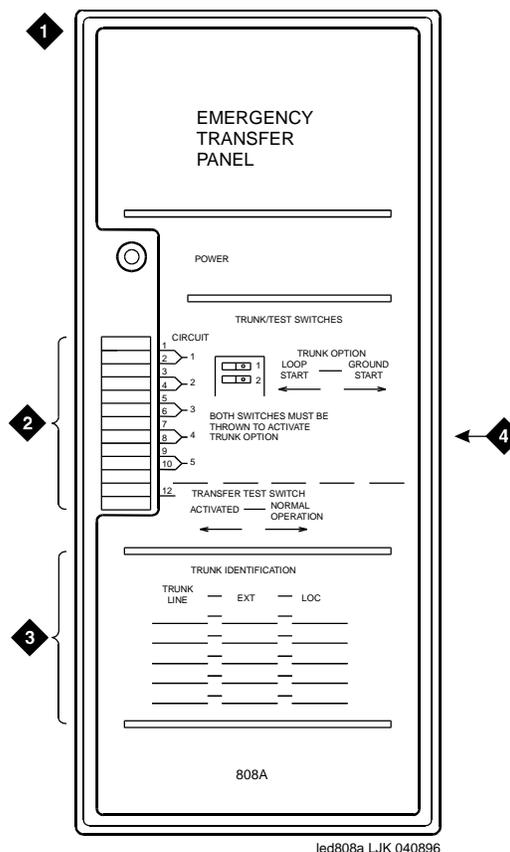
- 1 Install the transfer panel on any mounting frame in either a vertical or horizontal position. The housing has ears for screw-mounting and cutouts for snap-mounting the unit in an 89-type mounting bracket.

NOTE:

Install the panel so it can be accessed only by authorized personnel. The location must meet standard environmental considerations such as temperature, humidity, and so forth.

- 2 Verify dial tone is present at each trunk circuit.

Figure 64: 808A Emergency Transfer Panel



led808a LJK 040896

Figure notes

- | | | | |
|---|----------------------------------|---|----------------------------|
| 1 | 808A emergency transfer panel | 3 | Trunk identification label |
| 2 | Circuit start selection switches | 4 | 25-pair male connector |

- 3 Locate the circuit start selection switches. See [Figure 64, 808A Emergency Transfer Panel](#), on page 122. These are the first 10 two-position switches on the left side of the 808A. The switches set each of the 5 incoming trunk lines to either loop start or ground start. Two switches are used for each of the 5 circuits; switches 1 and 2 are used for circuit 1, switches 3 and 4 are used for circuit 2, and so forth. See [Table 25](#).

For loop start, set the switches to the **left**. For ground start, set the switches to the **right**.

Table 25: Trunk/Test Switches

Switch Number	Circuit Number
1	1
2	1
3	2
4	2
5	3
6	3
7	4
8	4
9	5
10	5
11	Not Used
12	Test Switch

- 4** Connect a 25-pair cable between the male RJ21 25-pair connector on the 808A and the yellow field on the MDF. [Table 26, Pin Assignments for 25-Pair Connector on 808A](#), on page 124 shows the pinouts.
- 5** Make cross-connections for each emergency trunk/emergency station pair. See [Figure 65, Connections for Telephone Used for Emergency Transfer](#), on page 126 and [Figure 66, Connections for Telephone Used for Emergency Transfer and as Normal Extension](#), on page 127.
- 6** On the trunk identification label at the bottom of the panel, record the trunk line, extension, and location for each circuit.
- 7** To each voice terminal designated as an emergency terminal, attach a label identifying it as such. The labels are provided with the unit.
- 8** Check the system for normal operation as follows:
 - a** Place the test switch (switch 12) in NORMAL OPERATION.
 - b** Ensure the power supply is providing -48 VDC at 80 mA maximum. The power LED should be ON.
 - c** Check wiring connections.
 - d** Verify there is dial tone on all emergency transfer sets.

Table 26: Pin Assignments for 25-Pair Connector on 808A

Pin	Color	Designation	Connector/Description
26	W-BL	TTC1	Tip-PBX Trunk Circuit 1
1	BL-W	RTC1	Ring-PBX Trunk Circuit 1
27	W-O	TTK1	Tip-CO Trunk Circuit 1
2	O-W	RTK1	Ring-CO Trunk Circuit 1
28	W-G	TLC1	Tip-PBX Line Port 1
3	G-W	RLC1	Ring-PBX Line Port 1
29	W-BR	TST1	Tip-Emergency Terminal 1
4	BR-W	RST1	Ring-Emergency Terminal 1
30	W-S	TTC2	Tip-PBX Trunk Circuit 2
5	S-W	RTC2	Ring-PBX Trunk Circuit 2
31	R-BL	TTK2	Tip-CO Trunk Circuit 2
6	BL-R	RTK2	Ring-CO Trunk Circuit 2
32	R-O	TLC2	Tip-PBX Line Port 2
7	O-R	RLC2	Ring-PBX Line Port 2
33	R-G	TST2	Tip-Emergency Terminal 2
8	G-R	RST2	Ring-Emergency Terminal 2
34	R-BR	TTC3	Tip-PBX Trunk Circuit 3
9	BR-R	RTC3	Ring-PBX Trunk Circuit 3
35	R-S	TTK3	Tip-CO Trunk Circuit 3
10	S-R	RTK3	Ring-CO Line Port 3
36	BK-BL	TLC3	Tip-PBX Line Port 3
11	BL-BK	RLC3	Ring-PBX Line Port 3
37	BK-O	TST3	Tip-Emergency Terminal 3
12	O-BK	RST3	Ring-Emergency Terminal 3
38	BK-G	TTC4	Tip-PBX Trunk Circuit 4
13	G-BK	RTC4	Ring-PBX Trunk Circuit 4
39	BK-BR	TTK4	Tip-CO Trunk Circuit 4
14	BR-BK	RTK4	Ring-CO Trunk Circuit 4
40	BK-S	TLC4	Tip-PBX Line Port 4

1 of 2

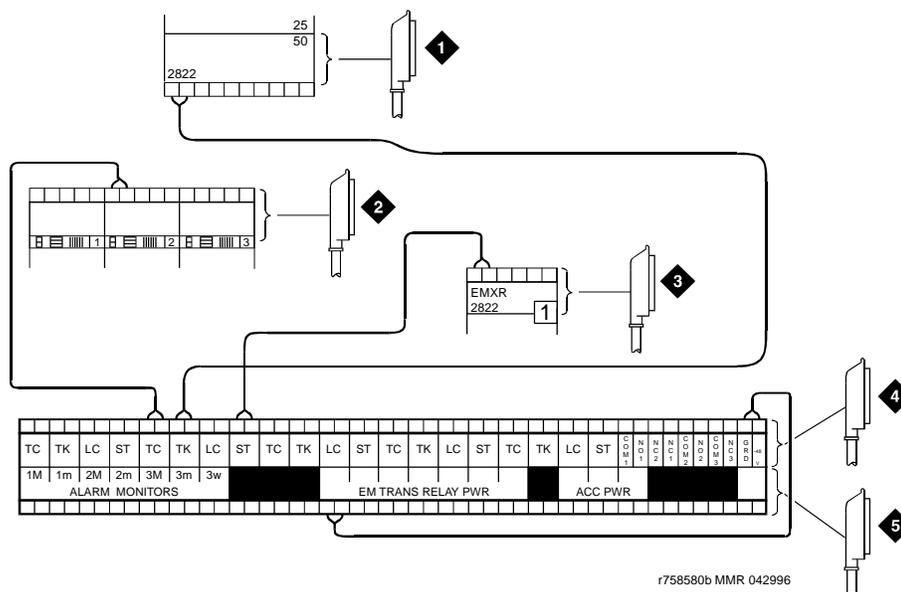
Table 26: Pin Assignments for 25-Pair Connector on 808A

Pin	Color	Designation	Connector/Description
15	S-BK	RLC4	Ring-PBX Line Port 4
41	Y-BL	TST4	Tip-Emergency Terminal 4
16	BL-Y	RST4	Ring-Emergency Terminal 4
42	Y-O	TTC5	Tip-PBX Trunk Circuit 5
17	O-Y	RTC5	Ring-PBX Trunk Circuit 5
43	Y-G	TTK5	Tip-CO Trunk Circuit 5
18	G-Y	RTK5	Ring-CO Trunk Circuit 5
44	Y-BR	TLC5	Tip-PBX Line Port 5
19	BR-Y	RLC5	Ring-PBX Line Port 5
45	Y-S	TST5	Tip-Emergency Terminal 5
20	S-Y	RST5	Ring-Emergency Terminal 5
46	V-BL	COM1	Common 1 Relay Contact
21	BL-V	NO1	Normally Open 1 Contact
47	V-O	NC2	Normally Closed 2 Contact
22	O-V	NC1	Normally Closed 1 Contact
48	V-G	COM2	Common 2 Relay Contact
23	G-V	NO2	Normally Open 2 Contact
49	V-BR		
24	BR-V		
50	V-S	GRD	Ground From PBX
25	S-V	-48PX	-48V from Alarm Panel (AUX Cable)

2 of 2

- 9** Check the system for emergency transfer operation as follows:
 - a** Place the test switch (switch 12) in the ACTIVATED position.
 - b** The power LED should be OFF.
 - c** Verify there is dial tone on all emergency transfer sets.
- 10** Connect the 808A to the MDF with a B25A or A25B cable. [Figure 65](#) shows the connections at the trunk/auxiliary field for a telephone used only for emergency transfer.

Figure 65: Connections for Telephone Used for Emergency Transfer



r758580b MMR 042996

Figure notes

- | | | | |
|----------|---------------------------------------------|----------|----------------------------------|
| 1 | To network interface circuitry | 4 | To power transfer unit |
| 2 | To CO trunk circuit pack | 5 | To control carrier AUX connector |
| 3 | To blue or white station distribution field | | |

[Figure 66](#) shows the connections at the trunk/auxiliary field for a telephone used for emergency transfer and as a normal extension.

Figure 66: Connections for Telephone Used for Emergency Transfer and as Normal Extension

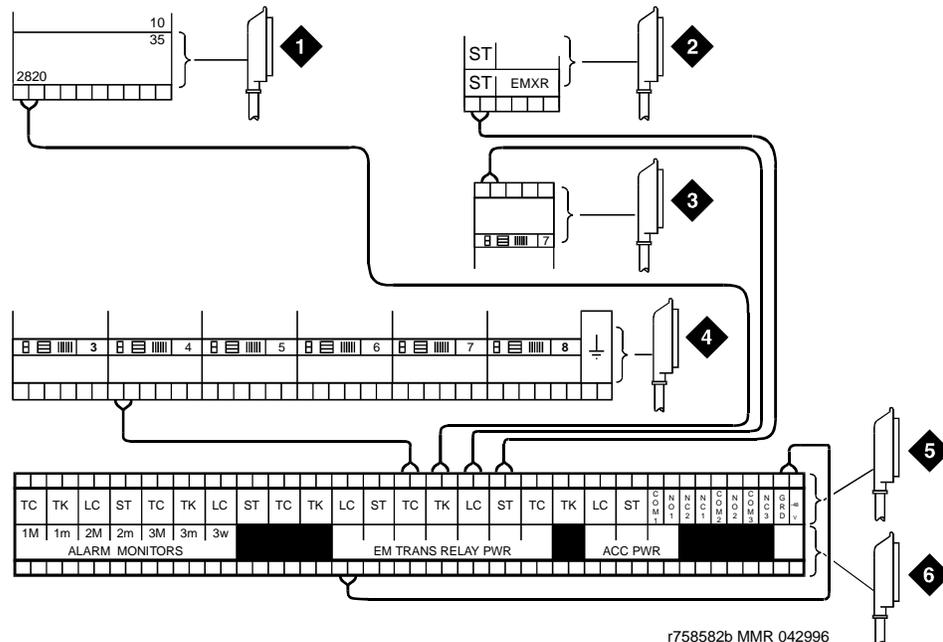


Figure notes

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <p>1 To network interface facility</p> <p>2 To blue or white station field</p> <p>3 To analog line circuit pack</p> | <p>4 To CO trunk circuit pack</p> <p>5 To power transfer unit</p> <p>6 To control carrier AUX connector</p> |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|

Install Telephone for Power Transfer Unit

Trunk/Auxiliary Field: Telephone Used Only for Emergency Transfer

- 1** Connect a pair of wires between the -48V and GRD terminals on the yellow emergency transfer row/connecting block and the EM TRANS RELAY PWR terminal. See [Figure 65, Connections for Telephone Used for Emergency Transfer](#), on page 126.
- 2** Connect CO trunk leads from the purple field to the TC terminals on the yellow emergency transfer row/connecting block for each trunk.
- 3** Connect CO trunk leads from the green field to the TK terminals on the yellow emergency transfer row/connecting block for each trunk.
- 4** Connect the ST leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the ST terminal appearance in the yellow trunk/auxiliary field. The ST terminal leads should be terminated on the following pairs: 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).
- 5** Connect the ST leads from the terminal in Step 4 to the assigned terminal in the blue or white station distribution field.

Trunk/Auxiliary Field: Telephone Used for Emergency Transfer and as Normal Extension

- 1 Connect a pair of wires between the -48V and GRD terminals on the yellow emergency transfer row/connecting block to the EM TRANS RELAY PWR terminal. See [Figure 66, Connections for Telephone Used for Emergency Transfer and as Normal Extension](#), on page 127.
- 2 Connect CO trunk leads from the purple field to the TC terminals on the yellow emergency transfer row/connecting block for each trunk.
- 3 Connect CO trunk leads from the green field to the TK terminals on the yellow emergency transfer row/connecting block for each trunk.
- 4 Connect telephone leads from the purple analog line board row/ connecting block to the LC terminals on the yellow emergency transfer row/connecting block for each telephone.
- 5 Connect ST leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the ST terminal appearance in the purple trunk/auxiliary field.
- 6 Connect the ST leads from the terminal in Step 5 to the assigned terminal in the blue or white station distribution field.

Telephone Installation

- 1 Connect the telephone to the information outlet.
- 2 Install patch cords/jumper wires between the system side and the station side of the station distribution field on the MDF.

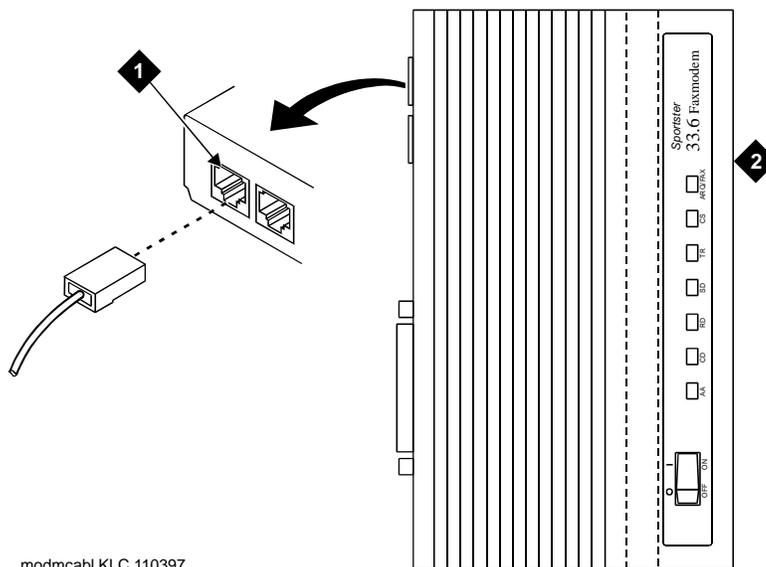
Connect Modem to Telephone Network

- 1 Cross-connect the network jack on the modem to the network interface (via a 103A or modular wall jack). See [Table 27](#) for the pinout.

Table 27: Pinout of Network Jack

Pin Number	Signal
1	Unused
2	Tip
3	Ring
4	Unused

Figure 67: Network Jack on U.S. Robotics Modem



modmcabl KLC 110397

Figure notes

- 1 Pin 1 of network jack
- 2 Modem

External Modem Option Settings

The U.S. Robotics Sportster Model USR 33.6 EXT external modem is the recommended external modem. A locally obtained, type-approved external modem may be used. Contact your Avaya Inc. representative for information.

- 1 If a non-U.S Robotics Model 839 modem is installed, refer to the setup instructions provided with that modem. Refer to [Table 29, Modem Fields](#), on page 130 while setting up the modem. Go to Step 4 to complete the modem administration.
- 2 If no modem is installed, skip to step 5. If a U.S Robotics Model 839 modem is installed, perform the following.
- 3 Use [Table 28](#) to set the 8 option switches on the U.S. Robotics modem

Table 28: U.S. Robotics Model 839 External Modem Dip Switch Settings

Dip Switch	Setting	Description
1	UP DOWN	Data Terminal Ready normal Data Terminal Ready override
2	UP DOWN	Verbal result codes Numeric result codes
3	UP DOWN	Suppress result codes Display result codes
1 of 2		

Table 28: U.S. Robotics Model 839 External Modem Dip Switch Settings

Dip Switch	Setting	Description
4	UP DOWN	Echo offline commands No echo, offline commands
5	UP DOWN	Auto answer on first ring or higher if specified in NVRAM Auto answer off
6	UP DOWN	Carrier detect normal Carrier detect override
7	UP DOWN	Load NVRAM defaults Load factory defaults
8	UP DOWN	Dumb mode Smart mode
2 of 2		

- 4** Type **change system-parameters maintenance** and press **Enter**. Scroll to page 3 of the form.
- 5** Set the **Modem Connection:** field to **external** if a modem is installed. Set the field to **none** if no modem is installed. This field must be administered or alarms will be generated.

NOTE:

The **Modem Connection:** field cannot be set to **none** if Alarm Origination is activated.

- 6** Set the **Data Bits:** field to **8** (default).
- 7** Set the **Parity:** field to **none** (default).
- 8** For non-United States installations, set the remaining modem fields as shown in [Table 29](#).
- 9** Press **Enter** when the modem fields are properly administered.

Table 29: Modem Fields

Field	Description
Modem Connection	Default is none . Set to external if a modem is used.
Modem Name	This field is 20 characters long and permits alphanumeric characters to provide a unique qualifier for a given modem.
RTS/CTS Enabled	Informs modem that communication with the data source UART is driven with RTS/CTS flow control. The default 6-character field name is &H1 . Set the field name to \Q3 for Intel modems. This field is not case-sensitive.
Asynchronous Data Mode	Configures modem as an asynchronous device. This 8-character field name has a default value of &M0 (default). Set the field to &M0&Q0 for Intel modems. This field is not case-sensitive.
1 of 2	

Table 29: Modem Fields

Field	Description
DTE Auto-Data Speed	Adjusts the speed of the data source (DTE) UART to the outgoing (modem-to-modem) data rate. At maximum, this speed is 9600 baud. It is not desirable to have the serial data fill the modem buffer faster than the outgoing data rate, since data compression is disabled. The field name has a 6-character blank default value. The Paradyne products use S90=1 to enable this functionality while the Intel product uses \J1 to enable similar functionality. This field is not case-sensitive.
Disable Data Compression	Turns off the default data compression algorithms used by most modems. The field has a blank field of 6 characters as default. The AT commands that control this are supported by similar commands; however, these commands do not operate in the same manner. The Intel modems require H0%C0 to disable V.42bis & MNP Class 5 data compression algorithms. The Paradyne products only use %C0 to disable both algorithms. This field is not case-sensitive.
Enable Error Control	Turns on the V.42 LAPM and MNP error control protocols. The field has a blank default of 6 characters. The Paradyne products use the command \N5 to enable V.42/MNP/Buffer error control while the Intel product uses \N3 to provide similar functionality.
Misc. Init. Param	This field has a 20-character blank default and supports any initialization parameters not already specified. The AT commands specified in this field are always the last initialization parameters to be sent to the external modem. This field is not case-sensitive.
Auto-Answer Ring Number	This field controls the number of rings required before the modem answers an incoming call. This field should be set to S0=10.
Dial Type	This field controls the type of interregister signaling used between the modem and the CO. This 3-character field is denoted by "T" for tone dialing (default) and "P" for pulse dialing. This setting depends on type of line (tone or pulse) to the modem.
Adjustable Make/Break Ratio	This field controls the make/break ratios of pulses and DTMF dialing. Most modems have support for different make/ break options for pulse dialing only. Paradyne, Intel, and U.S. Robotics use the default &P0 to select a ratio of 39% make and 61% break for communication for the United States and Canada. The option &P1 sets a ratio of 33% make and 67% break for the United Kingdom and Hong Kong. This is a 5-character blank field (default) and is not case-sensitive.
Dial Command	This field has a default of "D" in a 3-character field. This field denotes the standard dialing command of the modem and is not case-sensitive.
No Answer Time-Out	Most modems provide a timer that abandons any outbound data call after a predetermined interval. This is a non-administrable parameter.
2 of 2	

2 Completing Installation and Cable Pinouts

System Administration

NOTE:

Some of the interface units used between the system and other types of equipment require specific configuration settings and administration for each application. Refer to the user's guide for each equipment type for information on how to locate and set the configuration and option switches.

- 1 Administer the system by adding the customer data to match the wiring, telephones, and other equipment. See *Administrator's Guide for Avaya Communication Manager*.
- 2 Return to this section when finished.

NOTE:

Refer to *Installation for Adjuncts and Peripherals for Avaya Communication Manager* for data module and other peripheral installation and configuration requirements.

Alarms and Reporting

Resolve Alarms

- 1 Examine the alarm log. Resolve any alarms using *Maintenance for Avaya DEFINITY Server CSI*.
- 2 Refer to [Power Supply LED Indications](#) on page 138 if power supply faults are suspected.

Enable Alarm Origination to INADS

No External Modem Installed (or No Alarm Origination to INADS)

- 1 Type `change system-parameters maintenance` and press **Enter**.
- 2 Type `n` in the Alarm Origination Activated to OSS Numbers field and press **Enter**.
- 3 For some DEFINITY ECS software releases, enable Cleared Alarm Notification and Restart Notification before the submitting the form.

External Modem Installed

- 1 Type `change system-parameters maintenance` and press **Enter**.
- 2 Type `y` in the Alarm Origination Activated to OSS Numbers field and press **Enter**.
- 3 For some DEFINITY ECS software releases, enable Cleared Alarm Notification and Restart Notification before the submitting the form.

- 4 Be sure the system is part of the INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

As part of the system registration process, the INADS Database Administrator enables Alarm Origination and customer options.

NOTE:

When calling from a remote modem, you may need to disable error correction to allow the modems to connect successfully. For example, the AT&T Paradyne KeepInTouch[®] modem may require the “AT\n0” command.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:

ART is not accessible from the public internet (outside the Avaya intranet firewall).

- 1 At your laptop/PC, direct your browser to this URL:

<http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi>

You can also save this URL in your *Favorites* or *Bookmarks* list.

The ART User Menu displays.

- 2 Click on the *Register a Product* button.

The Enter Network Password dialog box appears.

- 3 Type your ART **User Name** and **Password** in the indicated fields.

NOTE:

ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

- a Go back to the ART User Menu and click on the *Administer My User ID/Password* button.
- b Follow the instructions on the User ID and Password page to create your ART user ID and password.

Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

- 4 Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

NOTE:

Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

- Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
- FL numbers are 10-12 letters or digits.

- 5 In the **Session Type** field, select:

- *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
- *UPGRADE REGISTRATION* for all subsequent product registrations.

- 6 In the **Product Type** field choose *DEFINITY* for the following products:

- 7 Click on the *Start Product Registration* button.

If the data you have entered matches a Maestro database record, the Customer Verification page appears.

- 8 Verify the information in the **Customer Name** and **Customer Address** fields.

NOTE:

If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

- a Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.



CAUTION:

DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

- b Return to the ART User Menu page to begin a new session.

If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

- 9 In the **Customer Type** field, select

- *GOODYEAR, MOTEL 6, STATE FARM*
- *IN CINCINNATI BELL SERVICE AREA*
- *OTHER*

NOTE:

This verification might be done automatically in the future.

- 10 Click on the *Continue Upgrade Registration* button.

The DEFINITY Product List page appears.

- 11 Look in the product table (first column heading is “#”) to find the row for the product that you want to register. Click on the number in the far-left column (“#”) of the correct row.

NOTE:

It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

Four new fields appear.

- 12 In the **Data Lock** field, choose:
 - *YES* for products with ASG enabled
 - *NO* for all others
- 13 In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
 - *DON'T CHANGE* to leave the product's dialing type unchanged
 - *TONE* for DTMF dialing
 - *PULSE* for rotary or pulse dialing
- 14 In the **Alarm Origination** field choose:
 - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
 - *YES* to enable alarm origination.
 - *NO* for no alarm origination.
- 15 In the **Alarm Destination** field, choose
 - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
 - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, “9” or “*9”). The default value in this field is the TSO-Denver number (18005353573).
- 16 Click on the *Continue Registration* button at the bottom of the page.

ART begins automatically registering the product and displays progress messages to indicate the current status.



CAUTION:

DO NOT exit your browser or click on the *Refresh*, *Back*, *Stop*, or *Home* buttons while ART displays these progress messages.

If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.

If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

- 17 Review the information displayed in the report.
If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.
- 18 Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Place a Test Call

- 1 From any telephone connected to a digital line circuit pack, call any nearby telephone connected to an analog line circuit pack.
- 2 Verify that the dial tone, ringing pattern, and talk path are acceptable.
- 3 Place a call through the Central Office (outside call) to any nearby telephone. Verify that the dial tone, ringing pattern, and talk path are acceptable.

Set Neon Voltage – Ring Ping

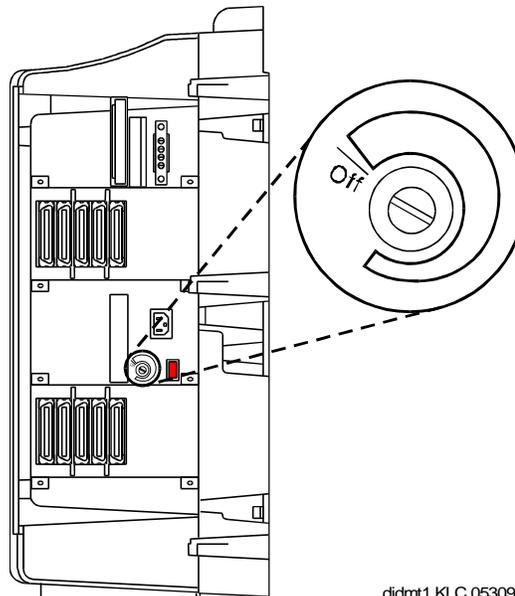
NOTE:

If the ringing option is set to 50 Hz, neon voltage is not available. If 25 Hz is selected, the maximum voltage is 120 volts. Refer to [Set Ringing Option](#) on page 66.

NOTE:

Set the control to OFF if there are no *neon* message waiting lamps or if LED message lamps are used. See [Figure 68](#).

Figure 68: Setting the Neon Voltage



didmt1 KLC 053097

- 1 Call a telephone with a neon message indicator and leave a message.
- 2 Check for “ring ping” (single ring pulse) each time the lamp flashes (approximately every 3 seconds).
- 3 Adjust the control clockwise in small increments until the ring ping stops. Be sure that the message lamp still lights when the adjustment is finished.

Installation Completion

- 1 Type **logoff** and press **Enter** to prevent unauthorized changes to data.
- 2 Set the left and right doors onto the hinge pins and close the doors. The doors must be closed to prevent EMI emissions. Tighten the door screws.
- 3 Set the right cover panel onto the right panel and secure. Do not use force.

Power Supply LED Indications

It is not possible to view the alarm log to determine which power unit in a multi-cabinet system is defective. Use the LEDs on the front of each power unit to determine its state.

[Table 30](#) shows the LED and alarm conditions. Ring voltage and neon bus output do not activate alarm status.

Table 30: LED and Alarm Conditions

Condition	LED Status	Alarm State	Fan Alarm
Normal	Red off Yellow on	open	high
No Input Power	Red off Yellow off	closed	open
Any DC Output not Present	Red on Yellow off	closed	no state
Fan Alarm	Red on Yellow off	closed	low

TN760E Tie Trunk Option Settings

The TN760E Tie Trunk circuit pack interfaces between 4 tie trunks and the TDM bus. Two tip and ring pairs form a 4-wire analog transmission line. An E and M pair are DC signaling leads used for call setup. The E-lead receives signals from the tie trunk and the M-lead transmits signals to the tie trunk.

To choose the preferred signaling format ([Table 31](#) and [Table 32](#)), set the switches on the TN760E and administer the port using [Figure 69, TN760E Tie Trunk Circuit Pack \(Component Side\)](#), on page 139 and [Table 33, TN760E Option Switch Settings and Administration](#), on page 140.

Table 31: Signaling Formats for TN760E

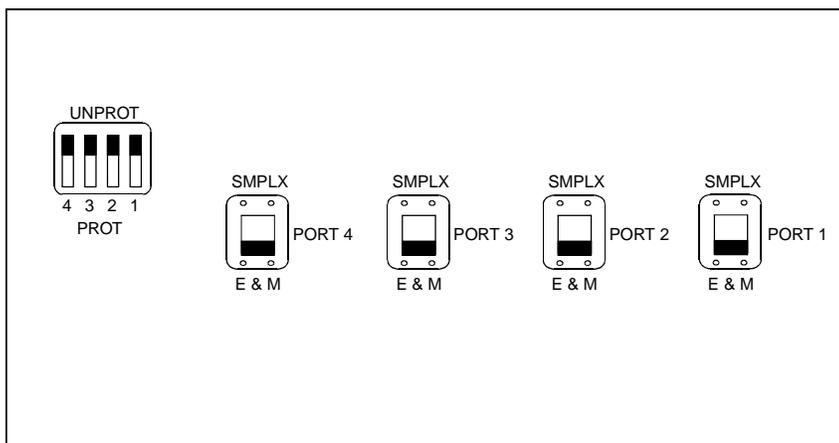
Mode	Type
E & M	Type I Standard (unprotected)
E & M	Type I Compatible (unprotected)
Protected	Type I Compatible, Type I Standard
Simplex	Type V
E & M	Type V
E & M	Type V Revised

Table 32: Signaling Type Summary

Signaling Type	Transmit (M-Lead)		Receive (E-Lead)	
	On-Hook	Off-Hook	On-Hook	Off-Hook
Type I Standard	ground	battery	open ¹ /battery	ground
Type I Compatible	open ¹ /battery	ground	ground	open ¹ /battery
Type V	open ¹ /battery	ground	open	ground
Type V Reversed	ground	open	ground	open

¹ An open circuit is preferred instead of battery voltage.

Figure 69: TN760E Tie Trunk Circuit Pack (Component Side)



r758183 RBP 050896

Table 33: TN760E Option Switch Settings and Administration

Installation Situation		Preferred Signaling Format		E&M/SMPLX Switch	Prot/Unprot Switch	Administered Port
Circumstance	To	System	Far-End			
Collocated	DEFINITY	E&M Type 1 Compatible	E&M Type 1 Standard	E&M	Unprotected	Type 1 Compatible
Inter-Building	DEFINITY	Protected Type 1 Compatible	Protected Type 1 Standard Plus Protection Unit	E&M	Protected	Type 1 Compatible
Collocated	Net Integrated	E&M Type 1 Standard	Any PBX	E&M	Unprotected	Type 1

TN464F/GP and TN2464BP Option Settings

The TN464F/GP DS1/E1 Interface - T1/E1 circuit pack interfaces between a 24- or 32-channel Central Office/ISDN or tie trunk and the TDM bus.

NOTE:

The P designation means the circuit pack's firmware is programmable. Refer to [Upgrade Firmware on Programmable Circuit Packs](#) on page 197 for more information.

Set the switches on the circuit pack to select bit rate and impedance match. See [Table 34](#) and [Figure 70, TN464F/GP and TN2464BP Option Settings](#), on page 141. If the top switch setting is set to 32 channel, then set the lower switch setting to either 120 ohms or 75 ohms.

Table 34: Option Switch Settings on TN464F/GP and TN2464BP

120 ohms	Twisted pair
75 ohms	Coaxial requiring 888B adapter
32 Channel ¹	2.048 Mbps
24 Channel ¹	1.544 Mbps

¹ If the 24/32 channel switch is not set per administration (or vice versa), the circuit pack alarms and will not be present in the list configuration command.

Figure 70: TN464F/GP and TN2464BP Option Settings

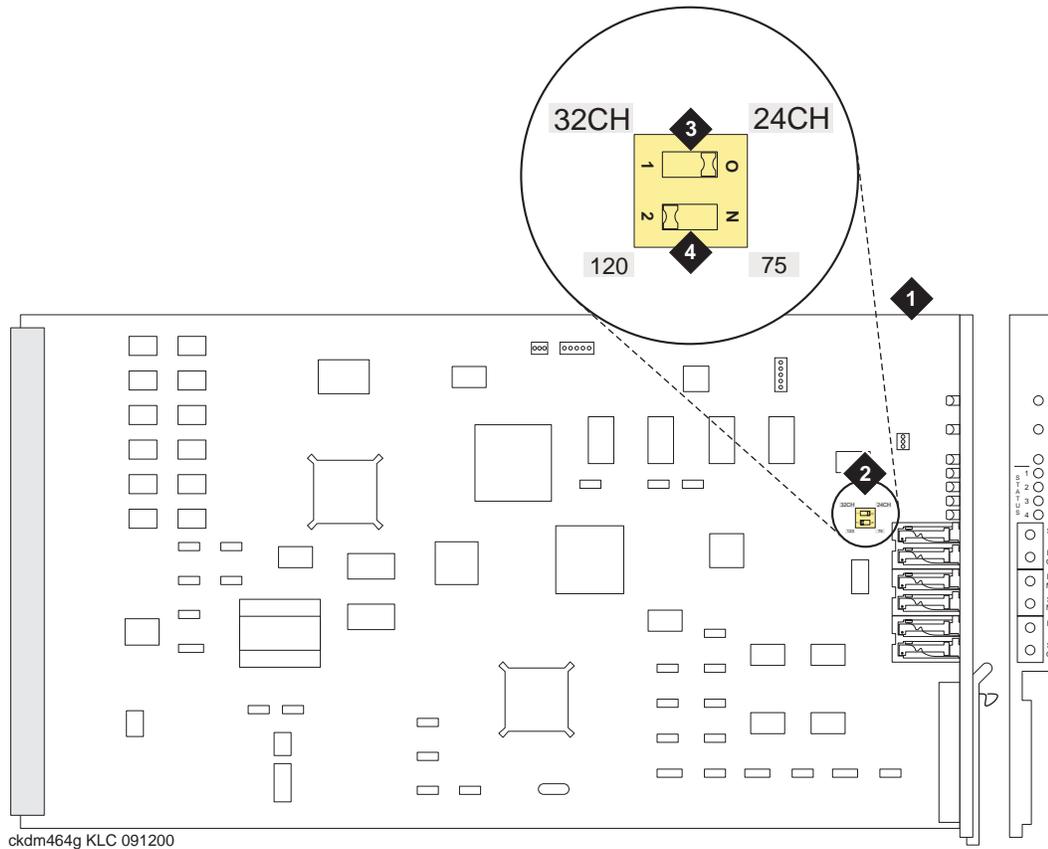


Figure notes

- | | | | |
|---|-------------------------------------------|---|------------------------|
| 1 | TN464F/GP or TN2464BP
DS1/E1 Interface | 3 | 24/32 Channel Selector |
| 2 | Option switch | 4 | 75/120 ohm Selector |

Connector and Cable Diagrams — Pinout Charts

See [Table 35](#) for typical lead designations. The circuit packs and auxiliary equipment are classified as shown in the following tables.

Table 35: Lead and Color Designations

Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	W-BL	26	102
2	BL-W	01	002
3	W-O	27	103
4	O-W	02	003
5	W-G	28	104
6	G-W	03	004
7	W-BR	29	105
8	BR-W	04	005
9	W-SL	30	106
10	SL-W	05	006
11	R-BL	31	107
12	BL-R	06	007
13	R-O	32	108
14	O-R	07	008
15	R-G	33	109
16	G-R	08	009
17	R-BR	34	110
18	BR-R	09	010
19	R-SL	35	111
20	SL-R	10	011
21	BK-BL	36	112
22	BL-BK	11	012
23	BK-O	37	113
24	O-BK	12	013

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Table 35: Lead and Color Designations

Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
25	BK-G	38	302
26	G-BK	13	202
27	BK-BR	39	303
28	BR-BK	14	203
29	BK-SL	40	304
30	SL-BK	15	204
31	Y-BL	41	305
32	BL-Y	16	205
33	Y-O	42	306
34	O-Y	17	206
35	Y-G	43	307
36	G-Y	18	207
37	Y-BR	44	308
38	BR-Y	19	208
39	Y-SL	45	309
40	SL-Y	20	209
41	V-BL	46	310
42	BL-V	21	210
43	V-O	47	311
44	O-V	22	211
45	V-G	48	312
46	G-V	23	212
47	V-BR	49	313
48	BR-V	24	213
49	V-SL	50	300
50	SL-V	25	200

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Processor Interface Cable Pinout

[Table 36](#) shows the pinout for the Processor Interface Cable.

Table 36: Processor Interface Cable Pinout

Signal Name	Processor (P1) (Amphenol Connector)	AUX (J1)	TERM (J3)	DCE (J2)	Modem (P2)
ACC48A	40	19			
AP1 (alarm in)	2	26			
AP2 (alarm in)	27	27			
EXTALMA	5	48			
EXTALMB	30	23			
XFER48	38	36			
MOD-CTS	21				5
MOD-DCD	46				8
MOD-DSR	8				6
MOD-DTR	7				20
MOD-GRD	20				1 & 7
MOD-RTS	34				4
MOD-RXD	33				3
MOD-TXD	45				2
TERM-CTS	9		5		
TERM-DTR	47		20		
TERM-GRD	35		1 & 7		
TERM-RXD	10		3		
TERM-TXD	22		2		
CDR-CTS	49			5	
CDR-DCD	24			8	
CDR-DSR	12			6	
CDR-DTR	37			20	
CDR-GRD	23			1 & 7	
CDR-RXD	36		3	3	

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Table 36: Processor Interface Cable Pinout

Signal Name	Processor (P1) (Amphenol Connector)	AUX (J1)	TERM (J3)	DCE (J2)	Modem (P2)
CDR-TXD	48		2	2	
GRD	25, 50	1-7, 11-17, 44-46	1, 7	1, 7	1, 7

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Table 37: Port Circuit Pack Lead Designations

Cross-Connect Pin	TN742/B TN747B TN753 TN769 TN2147 TN465	TN754C TN726B	TN760/B TN760C TN760E TN2209	TN762/B	TN763 TN763D TN763C	TN735	TN767E TN464GP TN2207	TN746/B TN2183 TN793B TN2793B	TN2224CP
1	T1		T.1	T.1	T.1	T.1	C_5	T.1	T.1
2	R.1		R.1	R.1	R.1	R.1		R.1	R.1
3		TXT.1	T1.1	TXT.1	SZ.1	BT.1	C_ENAB	T.2	T.2
4		TXR.1	R1.1	TXR.1	SZ1.1	BR.1		R.2	R.2
5		PXT.1	E.1	PXT.1	S.1	LT.1	C_SYNC*	T.3	T.3
6		PXR.1	M.1	PXR.1	S1.1	LR.1		R.3	R.3
7	T.2		T.2	T.2	T.2	T.2	C2D-DATA	T.4	T.4
8	R.2		R.2	R.2	R.2	R.2	RDATA*	R.4	R.4
9		TXT.2	T1.2	TXT.2	SZ.2	BT.2	TDATA*		T.5
10		TXR.2	R1.2	TXR.2	SZ1.2	BR.2	TRSYSNC		R.5
11		PXT.2	E.2	PXT.2	S.2	LT.2	GRD		T.6
12		PXR.2	M.2	PXR.2	S1.2	LR.2	SCLK*		R.6
13	T.3		T.3	T.3	T.3	T.3			T.7
14	R.3		R.3	R.3	R.3	R.3			R.7
15		TXT.3	T1.3	TXT.3	SZ.3	BT.3			T.8
16		TXR.3	R1.3	TXR.3	SZ1.3	BR.3	PAHER*		R.8
17		PXT.3	E.3	PXT.3	S.3	LT.3		T.5	T.9
18		PXR.3	M.3	PXR.3	S1.3	LR.3	C_48V	R.5	R.9

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Table 37: Port Circuit Pack Lead Designations

Cross-Connect Pin	TN742/B TN747B TN753 TN769 TN2147 TN465	TN754C TN726B	TN760/B TN760C TN760E TN2209	TN762/B	TN763 TN763D TN763C	TN735	TN767E TN464GP TN2207	TN746/B TN2183 TN793B TN2793B	TN2224CP
19	T.4		T.4	T.4	T.4	T.4		T.6	T.10
20	R.4		R.4	R.4	R.4	R.4		R.6	R.10
21		TXT.4	T1.4	TXT.4	SZ.4	BT.4	C_P2SCLK	T.7	T.11
22		TXR.4	R1.4	TXR.4	SZ1.4	BR.4	LI (RX)	R.7	R.11
23		PXT.4	E.4	PXT.4	S.4	LT.4	LO* (TX)	T.8	T.12
24		PXR.4	M.4	PX4.4	S1.4	LR.4	LBACK1	R.8	R.12
25	T.5		T.5	T.5	T.5	T.5	GND	T.9	T.13
26	R.5		R.5	R.5	R.5	R.5	C_5V	R.9	R.13
27		TXT.5	T1.5	TXT.5	SZ.5	BT.5		T.10	T.14
28		TXR.5	R1.5	TXR.5	SZ1.5	BR.5		R.10	R.14
29		PXT.5	E.5	PXT.5	S.5	LT.5		T.11	T.15
30		PXR.5	M.5	PXR.5	S1.5	LR.5	C_RST	R.11	R.15
31	T.6		T.6	T.6	T.6	T.6		T.12	T.16
32	R.6		R.6	R.6	R.6	R.6		R.12	R.16
33		TXT.6	T1.6	TXT.6	SZ.6	BT.6	RDATA		T.17
34		TXR.6	R1.6	TXR.6	SZ1.6	BR.6	TDATA		R.17
35		PXT.6	E.6	PXT.6	S.6	LT.6	TRSYNC		T.18
36		PXR.6	M.6	PXR.6	S1.6	LR.6	GRD		R.18
37	T.7		T.7	T.7	T.7	T.7	SCLK		T.19
38	R.7		R.7	R.7	R.7	R.7			R.19
39		TXT.7	T1.7	TXT.7	SZ.7	BT.7			T.20
40		TXR.7	R1.7	TXR.7	SZ1.7	BR.7			R.20
41		PXT.7	E.7	PXT.7	S.7	LT.7	GRD	T.13	T.21
42		PXR.7	M.7	PXR.7	S1.7	LR.7		R.13	R.21

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Table 37: Port Circuit Pack Lead Designations

Cross-Connect Pin	TN742/B TN747B TN753 TN769 TN2147 TN465	TN754C TN726B	TN760/B TN760C TN760E TN2209	TN762/B	TN763 TN763D TN763C	TN735	TN767E TN464GP TN2207	TN746/B TN2183 TN793B TN2793B	TN2224CP
43	T.8		T.8	T.8	T.8	T.8	C_PRES*	T.14	T.22
44	R.8		R.8	R.8	R.8	R.8		R.14	R.22
45		TXT.8	T1.8	TXT.8	SZ.8	BT.8		T.15	T.23
46		TXR.8	R1.8	TXR.8	SZ1.8	BR.8	DC2_DATA	R.15	R.23
47		PXT.8	E.8	PXT.8	S.8	LT.8	LI* (RX)	T.16	T.24
48		PXR.8	M.8	PXR.8	S1.8	LR.8	LO (TX)	R.16	R.24
49	GRD	GRD	GRD	GRD	GRD	GRD	LBACK2	GRD	GRD
50	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD

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* Denotes high side of line.

Table 38: DS1Interface Cable H600-307 (and C6C)

50-Pin			15-Pin		
Pin	Color	Designation	Pin	Color	Designation
02	W-BL				
03	BL-W				
47	W-G	LI (High)	11	W-G	LI (High)
22	G-W	LI	03	G-W	LI
48	W-BR	LO	09	W-BR	LO
23	BR-W	LO (High)	01	\BR	LO (High)
49	W-SL	LOOP2	06	W-SL	LOOP2
24	SL-W	LOOP1	05	SL-W	LOOP1

All other pins are empty.

[Table 39](#) shows the pinouts for the TN2185B ISDN-BRI 4-wire S Interface.

Table 39: TN2185B ISDN-BRI — 4-Wire S Interface Pinout

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	TXT.1	1	W-BL	26	102
	TXR.1	2	BL-W	01	002
	PXT.1	3	W-O	27	103
	PXR.1	4	O-W	02	003
2	TXT.2	5	W-G	28	104
	TXR.2	6	G-W	03	004
	PXT.2	7	W-BR	29	105
	PXR.2	8	BR-W	04	005
3	TXT.3	9	W-SL	30	106
	TXR.3	10	SL-W	05	006
	PXT.3	11	R-BL	31	107
	PXR.3	12	BL-R	06	007
4	TXT.4	13	R-O	32	108
	TXR.4	14	O-R	07	008
	PXT.4	15	R-G	33	109
	PXR.4	16	G-R	08	009
5	TXT.5	17	R-BR	34	110
	TXR.5	18	BR-R	09	010
	PXT.5	19	R-SL	35	111
	PXR.5	20	SL-R	10	011
6	TXT.6	21	BK-BL	36	112
	TXR.6	22	BL-BK	11	012
	PXT.6	23	BK-O	37	113
	PXR.6	24	O-BK	12	013
7	TXT.7	25	BK-G	38	302
	TXR.7	26	G-BK	13	202
	PXT.7	27	BK-BR	39	303
	PXR.7	28	BR-BK	14	203
					1 of 2

Table 39: TN2185B ISDN-BRI — 4-Wire S Interface Pinout

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
8	TXT.8	29	BK-SL	40	304
	TXR.8	30	SL-BK	15	204
	PXT.8	31	Y-BL	41	305
	PXR.8	32	BL-Y	16	205
					2 of 2

[Table 40](#) shows the pinout for the TN793B and TN2793B 24-Port Analog Line circuit pack.

Table 40: TN79B3 Analog Line Circuit Pack Pinout

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	T.1	1	W-BL	26	102
	R.1	2	BL-W	01	002
2	T.2	3	W-O	27	103
	R.2	4	O-W	02	003
3	T.3	5	W-G	28	104
	R.3	6	G-W	03	004
4	T.4	7	W-BR	29	105
	R.4	8	BR-W	04	005
5	T.5	9	W-SL	30	106
	R.5	10	SL-W	05	006
6	T.6	11	R-BL	31	107
	R.6	12	BL-R	06	007
7	T.7	13	R-O	32	108
	R.7	14	O-R	07	008
8	T.8	15	R-G	33	109
	R.8	16	G-R	08	009
9	T.9	17	R-BR	34	110
	R.9	18	BR-R	09	010
10	T.10	19	R-SL	35	111
	R.10	20	SL-R	10	011
11	T.11	21	BK-BL	36	112
	R.11	22	BL-BK	11	012
					1 of 2

Table 40: TN9B3 Analog Line Circuit Pack Pinout

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
12	T.12	23	BK-O	37	113
	R.12	24	O-BK	12	013
13	T.13	25	BK-G	38	302
	R.13	26	G-BK	13	202
14	T.14	27	BK-BR	39	303
	R.14	28	BR-BK	14	203
15	T.15	29	BK-SL	40	304
	R.15	30	SL-BK	15	204
16	T.16	31	Y-BL	41	305
	R.16	32	BL-Y	16	205
17	T.17	33	Y-O	42	306
	R.17	34	O-Y	17	206
18	T.18	35	Y-G	43	307
	R.18	36	G-Y	18	207
19	T.19	37	Y-BR	44	308
	R.19	38	BR-Y	19	208
20	T.20	39	Y-SL	45	309
	R.20	40	SL-Y	20	209
21	T.21	41	V-BL	46	310
	R.21	42	BL-V	21	210
22	T.22	43	V-O	47	311
	R.22	44	O-V	22	211
23	T.23	45	V-G	48	312
	R.23	46	G-V	23	212
24	T.24	47	V-BR	49	313
	R.24	48	BR-V	24	213
25		49	V/SL	50	314
50		50	SL/V	25	214

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Table 41: Circuit Pack and Auxiliary Equipment Classifications

Analog Line (8)	2-Wire Digital & Analog Line (16) and (24)	Data Line & Digital Line 4-Wire	2-Wire Digital & Analog 24 Ports	Hybrid Line	AUX Trunk	Central Office Trunk	Central Office Trunk 3-Wire	DID/DIOD ¹ Trunk	Tie Trunk	DS1 Tie Trunk	Four Port DIOD ²
TN467	TN2149	TN726B	TN2224	TN762	TN417	TN429D	TN2199	TN429D	TN478	TN483	TN2184
TN432	TN2135	TN754C	TN2214	TN762B	TN763	TN493		TN2139	TN458	TN722	
TN431	TN468B	TN564B	TN793		TN763D	TN422		TN459B	TN449	TN767E	
TN411B	TN448	TN413	TN2793			TN421		TN436B	TN760E	TN722B	
TN742	TN746		TN2214CP			TN438B		TN753B	TN760C	TN464GP	
TN769	TN746B		TN2224CP			TN447		TN2146	TN434	TN2207	
	TN2181		TN793B			TN465C		TN414	TN415	TN2464BP	
	TN2183		TN2793B			TN747B			TN2209		
	TN793B					TN2138					
	TN2793B					TN2147C					
	TN2215					TN2148					
	TN791										
	TN2214CP										

1 DID/DIOD = Direct Inward Dialing/Direct Inward Outward Dialing

2 DIOD = Direct Inward Outward Dialing

Table 42: Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line & Analog Line 16 ports	Data Line and Digital Line 4-wire	2-Wire Digital Line & Analog Line 24 Ports	Hybrid Line	AUX Trunk	CO Trk	CO Trunk 3-wire	DID/ DIOD Trunk	Tie Trk	DS1 Tie Trunk	Four Port DIOD
W-BL	26	T1	T1		T1	V1T1	T1	T1	A1	T1	T1		T1
BL-W	01	R1	R1		R1	V1R1	R1	R1	B1	R1	R1		R1
W-O	27		T2	TXT1	T2	CT1	SZ1				T11		
O-W	02		R2	TXR1	R2	CR1	SZ11				R11		
W-G	28		T3	PXT1	T3	P-1	S1				E1		
G-W	03		R3	PXR1	R3	P+1	S11		C1		M1		
W-BR	29	T2	T4		T4	V1T2	T2	T2	A2	T2	T2		T2
BR-W	04	R2	R4		R4	V1R2	R2	R2	B2	R2	R2		R2
W-S	30			TXT2	T5	CT2	SZ2				T12		
S-W	05			TXR2	R5	CR2	SZ12				R12		
R-BL	31			PXT2	T6	P-2	S2				E2		
BL-R	06			PXR2	R6	P+2	S12		C2		M2		
R-O	32	T3			T7	V1T3	T3	T3	A3	T3	T3		T3
O-R	07	R3			R7	V1R3	R3	R3	B3	R3	R3		R3
R-G	33			TXT3	T8	CT3	SZ3				T13		
G-R	08			TXR3	R8	CR3	SZ13				R13		
R-BR	34		T5	PXT3	T9	P-3	S3				E3		
BR-R	09		R5	PXR3	R9	P+3	S13		C3		M3		
R-S	35	T4	T6		T10	V1T4	T4	T4	A4	T4	T4		T4
S-R	10	R4	R6		R10	V1R4	R4	R4	B4	R4	R4		R4
BK-BL	36		T7	TXT4	T11	CT4	SZ4				T14		
BL-BK	11		R7	TXR4	R11	CR4	SZ14				R14		

Table 42: Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line & Analog Line 16 ports	Data Line and Digital Line 4-wire	2-Wire Digital Line & Analog Line 24 Ports	Hybrid Line	AUX Trunk	CO Trk	CO Trunk 3-wire	DID/ DIOD Trunk	Tie Trk	DS1 Tie Trunk	Four Port DIOD
BK-O	37		T8	PXT4	T12	P-4	S4				E4		
O-BK	12		R8	PXR4	R12	P+4	S14				M4		
BK-G	38	T5	T9		T13	V1T5		T5		T5			
G-BK	13	R5	R9		R13	V1R5		R5		R5			
BK-BR	39		T10	TXT5	T14	CT4							
BR-BK	14		R10	TXR5	R14	CR4							
BK-S	40		T11	PXT5	T15	P-5							
S-BK	15		R11	PXR5	R15	P+5							
Y-BL	41	T6	T12		T16	V1T6		T6		T6			
BL-Y	16	R6	R12		R16	V1R6		R6		R6			
Y-O	42			TXT6	T17	CT6							
O-Y	17			TXR6	R17	CR6							
Y-G	43			PXT6	T18	P-6							
G-Y	18			PXR6	R18	P+6							
Y-BR	44	T7			T19	V1T7		T7		T7			
BR-Y	19	R7			R19	V1R7		R7		R7			
Y-S	45			TXT7	T20	CT7							
S-Y	20			TXR7	R20	CR7							
V-BL	46		T13	PXT7	T21	P-7							
BL-V	21		R13	PXR7	R21	P+7							
V-O	47	T8	T14		T22	V1T8		T8		T8		LI*	
O-V	22	R8	R14		R22	V1R8		R8		R8		LI	

Table 42: Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line & Analog Line 16 ports	Data Line and Digital Line 4-wire	2-Wire Digital Line & Analog Line 24 Ports	Hybrid Line	AUX Trunk	CO Trk	CO Trunk 3-wire	DID/ DIOD Trunk	Tie Trk	DS1 Tie Trunk	Four Port DIOD
V-G	48		T15	TXT8	T23	CT8						LO	
G-V	23		R15	TXR8	R23	CR8						LO*	
V-BR	49		T16	PXT8	T24	P-8						LBACK2	
BR-V	24		R16	PXR8	R24	P+8						LBACK1	
V-S	50												
S-V	25												

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The wire colors in this chart apply only to B25A and A25B cables. H600-307 cable colors are not shown.

The following abbreviations apply for all circuit packs unless otherwise noted:

T,R	PBX transmit voice	T	Tip (A)	Green
T1,R1	PBX receive voice	R	Ring (B)	Red
M	PBX transmit signal	S	Sleeve	
E	PBX receive signal	PX	PBX transmit	
TX	Terminal transmit			
LI, LI*	Digital Trunk IN	LO, LO*	Digital Trunk OUT	

The following wire colors apply in the above chart:

W	White	S	Slate (Grey)
BL	Blue	R	Red
O	Orange	BK	Black
G	Green	Y	Yellow
BR	Brown	V	Violet

3 Upgrading R6csi/R7csi/R8csi to Avaya Communication Manager on an Avaya DEFINITY Server CSI

This chapter provides the information on upgrading from a DEFINITY® ECS Release 6csi, Release 7csi, or Release 8csi to Avaya™ Communication Manager on an Avaya DEFINITY Server CSI. As part of this upgrade, you must replace the TN798/B Processor with a TN2402 Processor. Refer to the *Maintenance for Avaya DEFINITY Server CSI* book for changing the processor circuit pack.

Administrator's Guide for Avaya Communication Manager lists features and functions and provides the commands, procedures, and forms to initialize and administer the system.

Read This First

License File

Remote Feature Activation (RFA) is a Web-based application that enables the creation and deployment of License Files for all switches. The License File enables the Avaya Communication Manager category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. *Without a license file, the switch does not provide normal call processing.*

7-digit dial plan expansion

The upgrade automatically converts the old Uniform Dial Plan forms to the new forms, which are discussed completely in the *Administrator's Guide for Avaya Communication Manager*.

Customers upgrading to Avaya Communication Manager can migrate to the 6-/7-digit dial plan or not:

- Customers who *want to migrate* to the 6-/7-digit dial plan can
 - freeze their translations and send them to the TSO for conversion. For customers who do not have optical drives, Avaya must migrate those translations to customer-compatible media.
 - re-administer the switch themselves (no translation freeze required).
- Customers who *do not want to migrate* to a 6-/7-digit dial plan (want to keep their current 4-/5-digit dial plan) experience no changes after the upgrade. That is, if they had 4-digit dialing before the upgrade, they have 4-digit dialing afterwards.

Call Management System

The CMS link is dropped and restarted during the upgrade, causing:

- Loss of CMS data. To minimize the measurement data loss, perform the upgrade just after the last CMS measurement interval. If needed, print the reports before starting the upgrade.
- Dropped calls (call processing aborted) if a measured trunk that was part of the conference dropped off the call before the end of the call. Customers experiencing this symptom and who are running R3V4 CMS should update to r3v4ao.e or higher.

Service Interruption

The upgrade process requires a service interruption of about 10 minutes and must be closely coordinated with the customer and the local account team.

Contact Network Technicians

Contact the technician for each public and private network before the update or upgrade begins. Otherwise, it is possible that network access trunk facilities will be busied out at the far end.

Translation Card Upgrade Procedures

Releases 6, 7, and 8 formatted translation cards are compatible for read-only operations. New formatted translation cards are shipped with each upgrade.

Usable Circuit Packs

Every port or control circuit pack used in the upgraded system must conform to the minimum usable vintage requirements. Those circuit packs must meet the usable vintage specifications.

Refer to the *Software Release Letter* for current information about usable vintages. For information about usable vintages of international circuit packs, refer to the *ITAC Technical Alert* from your regional distributor.

Software Upgrade

Even though the Releases 6, 7 and 8 translations upgrade automatically to Avaya Communication Manager, several features require special attention because of screen changes or potential naming conflicts in the update or upgrade procedure.

Between customer confirmation and the actual upgrade, the Software Specialist and Associate should check these forms to ensure the upgraded translations are appropriate for the customer's needs. Enter these translations either locally or remotely. If done remotely, contact the Field Support Administration Center (FSAC), with possible assistance from the upgrade technician, for the remote entry. For more information, refer to *Administrator's Guide for Avaya Communication Manager*.

Make no administration changes during the upgrade procedure. There can be time gaps between steps, and because the system cannot prevent administration changes, make sure that none are attempted during the entire upgrade process.

Task Table

[Table 43](#) provides the high-level tasks to perform the upgrades in this chapter. Refer to the appropriate page for instructions for each step.

Table 43: Tasks List

✓	Task Description	Page
	Pre-upgrade checklist	158
	Check SPE	165
	Verify Software Version	165
	Verify System Status	165
	Disable Scheduled Maintenance and Alarm Origination to INADS	165
	Check Link Status	166
	Save Translations	166
	Save Announcements (if necessary)	166
	Shut Down DEFINITY AUDIX System (if necessary)	167
	Replace Circuit Packs	167
	Install the License File	168
	Display Memory-Configuration	169
	Set Daylight Savings Rules	169
	Verify the Upgrade	170
	Enable Scheduled Maintenance	171
	Enable Alarm Origination to INADS	171
	Register the Switch for Maintenance	171
	Check Customer Options	174
	Check Link Status	174
	Power Up DEFINITY AUDIX System	174
	Resolve Alarms	174
	Restore Announcements (if necessary)	175

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Table 43: Tasks List *Continued*

✓	Task Description	Page
	Check SPE	175
	Install translation card	175
	Save Translations (post-upgrade)	175
	Save Announcements (if necessary— post-upgrade)	175
	Return Equipment	174
		2 of 2

Pre-upgrade checklist

In order to be properly prepared for the installation, have the items listed in [Table 44](#) ready.

Table 44: Pre-installation checklist

Item No.	Item	✓
1	Software Release Letter	
2	Avaya Communication Manager on removable media	
3	Extra formatted removable media	
4	Authorized wrist grounding strap	
5	Documentation (book or PDF file): <ul style="list-style-type: none"> • <i>Maintenance for Avaya DEFINITY Server CSI</i> • <i>Administrator's Guide for Avaya Communication Manager</i> 	
6	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7	SAP order number with RTUs	
8	Processor faceplate serial number(s)	
9	Transaction Record number	
10	System Identification (SID) number	
11	Switch telephone number or IP address	
12	Access to the RFA Information page for these items (if not already installed on your PC): <ul style="list-style-type: none"> • License Installation Tool (LIT) application • LIT documentation 	
		1 of 2

Table 44: Pre-installation checklist

Item No.	Item	✓
13	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	
14	Internet Explorer 5.0 or higher installed on your laptop/PC	
15	Intranet access to your designated RFA portal (see Go to the RFA website).	
16	Pre-upgrade administration changes	

2 of 2

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

- 1 At your laptop/PC browser, go to the appropriate website:
 - *Associates*: <http://associate2.avaya.com/> or the services portal: <http://usservices.avaya.com/>
 - *Business Partners* go to the appropriate regional Business Partner portal:
 - United States: <http://www.avaya.com/businesspartner/>
 - Canada: <https://www.avaya.ca/BusinessPartner>
 - Brazil: <http://www.avaya.com.br/Home.asp>
 - CALA: <https://cala-businesspartner.avaya.com/mnc/index.html>
 - EMEA: <https://emea-businesspartner.avaya.com/>
 - APAC: <http://www.avaya-apac.com/bp>
 - *Contractors* go to <http://www.avaya.com/services/rfa/>
 - If you are unable to access RFA using your recommended portal, try: <http://rfa.avaya.com>
- 2 Using your SSO, log in to the RFA website.
- 3 Follow the links to the RFA Information page.
- 4 Complete the information necessary to create a License File.

NOTE:

If you have problems with a hardware serial number that is not in the SAP database, go to the [If you have problems with RFA](#) section.

Have direct connection

If you have a direct connection between RFA and the switch:

- 1 Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
- 2 When prompted, type in the Transaction ID number.
- 3 The FET creates and uploads the Switch Configuration File automatically.
- 4 Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

No direct connection

If you do not have a direct connection between RFA and the switch:

- 1 Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
- 2 When prompted, type in the Transaction ID number.
- 3 Use the FET instructions to create a new switch connection profile.
- 4 Create the Switch Configuration File.
- 5 Upload the Switch Configuration File to the RFA website.
- 6 Deliver the License File to your laptop/PC for installation later in this procedure.

If you have problems with RFA

If you get an error message that a hardware serial number is not in the SAP database, you must call the RFA Helpdesk ([Table 45](#)) to have them correct the SAP information.

Table 45: RFA Helpdesk contact numbers

Where	Who	Phone number/URL	Prompt or selection
Channel: <ul style="list-style-type: none"> • U.S. and Canada • Variable Workforce Group • Avaya contractors 	Avaya Associates Members Contractors	877-615-4174	Prompt 8
U.S. and Canada	Business Partners	866-800-5194	Prompt 8
EMEA	Direct and Business Partners	+31-70-414-8720 <i>or</i> http://www.avayaneetwork.com	Prompt 3 Select GSO; select EMEA

1 of 2

Table 45: RFA Helpdesk contact numbers

Where	Who	Phone number/URL	Prompt or selection
APAC RTAC	Direct and Business Partners	+65-6872-8686	
CALA <ul style="list-style-type: none"> • Mexico TAC • Brazil TAC • Columbia TAC • Argentina TAC • Mexico Call Receipt 	Direct and Business Partners	+525-278-7878 +5511-5185-6655 +571-616-6077 +5411-4114-4440 +1-720-444-9998	

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Pre-upgrade administration changes

You must make the administration changes listed in [Table 46](#) prior to the upgrade:

Table 46: Pre-upgrade administration changes

✓	Task Description	Page
	Remove Print Messages Feature Access Code	161
	Remove print-msgs buttons	162
	Remove MSA node names	163
	Remove MSA processor channels	163
	Remove MET station administration	164

Remove Print Messages Feature Access Code

Remove the value from the `Print Messages Access Code` field on the Feature Access Code (FAC) form ([Figure 71](#)). This feature access code allows users to print undelivered messages without having to call the message center.

Figure 71: Feature Access Code form

```

change feature-access-codes                                     Page 2 of X
                                FEATURE ACCESS CODE (FAC)
Extended Call Fwd Activate Busy D/A_ All:      Deactivation:
Extended Group Call Pickup Access Code:
Facility Test Calls Access Code:
Flash Access Code:
Group Control Restrict Activation:             Deactivation:
Hunt Group Busy Activation:                   Deactivation:
ISDN Access Code:
Last Number Dialed Access Code:
Leave Word Calling Message Retrieval Lock:
Leave Word Calling Message Retrieval Unlock:
Leave Word Calling Send A Message: #66
Leave Word Calling Cancel A Message: *66
Malicious Call Trace Activation:             Deactivation:
PASTE (Display PBX data on Phone) Access Code:
Personal Station Access (PSA) Associate Code:
Per Call CPN Blocking Code Access Code:
Per Call CPN Unblocking Code Access Code:     Dissociate Code:
Print Messages Access Code:
Priority Calling Access Code:
Program Access Code:
    
```

Remove print-msgs buttons

If any of the Button Assignments are administered as `print-msgs` (print messages) on the Station ([Figure 72](#)) and Attendant ([Figure 73](#)) forms, remove these buttons.

Figure 72: Station form

```

change station 1014                                         Page 3 of X
                                STATION

SITE DATA
Room: _____ Headset? n
Jack: _____ Speaker? n
Cable: _____ Mounting: d
Floor: _____ Cord Length: 0_
Building: _____ Set Color: _____

ABBREVIATED DIALING
List1: _____ List2: _____ List3: _____

BUTTON ASSIGNMENTS
1: call-appr          5: _____
2: call-appr          6: _____
3: call-appr          7: _____
4: print-msgs       8: _____
    
```

Figure 73: Attendant Console form

```

change attendant                                     Page 1 of 3
                                     ATTENDANT CONSOLE 1

      Type: console                               Name: 27 character attd cons name
      Extension: 1000                             Group: 1                               Auto Answer: none
      Console Type: principal                       TN: 1                                 Data Module? n
      Port: 01C1106                               COR: 1                               Disp Client Redir? n
      Security Code:                              COS: 1                               Display Language: english
                                               H.320 Conversion? n

DIRECT TRUNK GROUP SELECT BUTTON ASSIGNMENTS (Trunk Access Codes)
  Local Remote      Local Remote      Local Remote
1: 9                5:                9:
2: 82               6:                10:
3:                 7:                11:
4:                 8:                12:

HUNDREDS SELECT BUTTON ASSIGNMENTS
1: print-msgs5:      9:                13:               17:
2:                 6:                10:               14:               18:
3:                 7:                11:               15:               19:
4:                 8:                12:               16:               20:
    
```

Remove MSA node names

Remove all MSA node names from the MSA Names field on the Audix-MSA Node Names form ([Figure 74](#)).

Figure 74: AUDIX-MSA Node Names form

```

change node-names audix-msa                         Page 1 of
x
                                     AUDIX-MSA NODE NAMES

Audix Name      IP Address      MSA Names      IP Address
audixA_         ___.*.*.*_     _____     ___.*.*.*_
audixB_         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
    
```

Remove MSA processor channels

If the Appl. field on the Processor Channel Assignment form ([Figure 75](#)) is

- msaamwl
- msackl
- msahlwc

- msallwc
- msamcs

you must remove this administration. These processor channel assignments are used in conjunction with a messaging adjunct that is no longer supported.

Figure 75: Processor Channel Assignment form

```

display communication-interface processor-channels                               Page 1 of 16
                                PROCESSOR CHANNEL ASSIGNMENT
Proc                               Gtwy   Interface   Destination   Session   Mach
Chan Enable  Appl.  To Mode Link/Chan   Node       Port  Local/Remote ID
1:   n      audix      s   1   5000 audix      0     1    2    2
2:   n      dcs        c   2   5000 default  5000  1    2    4
3:   n      msaamwl    s   3   5000 msa       0     1    2
4:   n      msahlwc    c   4   5000 msa      5000  1    2
5:   n
6:   n
    
```

Remove MET station administration

If the field value in the `Type` field on the Station form ([Figure 76](#)) is

- 10MET
- 20MET
- 30MET

you must remove these stations from administration. These Multi-Button Electronic Telephone (MET) stations are no longer supported and will not work after the upgrade.

Figure 76: Station form

```

change station xxxx                               Page 1 of X

                                STATION
Extension: 1014                                Lock Messages? n          BCC:
Type: 10MET                                Security Code:           TN:1
Port:                                           Coverage Path 1:        COR: 1
Name:                                           Coverage Path 2:

STATION OPTIONS
    Loss Group: 2                                Personalized Ringing Pattern: 3
    Data Module? n                               Message Lamp Ext: 1014
    Speakerphone: 2-way                          Mute button enabled? y
    Display Language? English                    Media Complex Ext:
                                                IP Softphone? y
                                                Remote Office Station? n
                                                IP Emergency calls:
    
```

Check SPE

Type **status system 1** and press **Enter** to check the health of the system.

Verify Software Version

- 1 Type **list configuration software-version** and press **Enter**. Under the `UPDATE FILE` column, note whether a patch has been applied.

NOTE:

If the system must be restored to the old version, this patch must be downloaded onto the system.

Verify System Status

- 1 Type **display alarms** and press **Enter**. If the system is not alarm-free, take the needed corrective actions.
- 2 Type **display errors** and press **Enter**. Examine the error log and record the error 18s that identify the busy-outs placed by the customer.

Restore the customer-placed busy-outs after you have upgraded the system.

- 3 Execute the following commands and verify that the information is correct:

list station

list trunk-group

list hunt-group

list data-module

list announcements

If any command does not complete successfully, escalate the problem immediately.

Disable Scheduled Maintenance and Alarm Origination to INADS

- 1 Type **change system-parameters maintenance** and press **Enter**.
- 2 If scheduled maintenance has begun, set the `Stop Time` field to 1 minute after the current time.

or

If scheduled maintenance has **not** begun, set the `Start Time` field to a time after the upgrade will be completed. For example, if you start the upgrade at 8:00 p.m. and the upgrade takes 90 minutes, set the `Start Time` field to 21:30.



CAUTION:

If you do not disable Alarm Origination, the system may generate alarms, resulting in unnecessary trouble tickets.

- 3 Type **neither** in the Alarm Origination to OSS Numbers field and press **Enter**.

NOTE:

Disabling alarm origination prevents the system from generating alarms, thus preventing unnecessary trouble tickets.

For some DEFINITY ECS software versions, set the Cleared Alarm Notification and Restart Notification fields to disable before pressing **Enter**.

Check Link Status

- 1 Enter **display communication-interface links** and press **Enter**. Write down all enabled links
- 2 Type **status link number** and press **Enter** for each enabled link.
- 3 Write down which links are in service.

Save Translations

- 1 Type **save translation** and press **Enter** to write all translations from memory to the original translation flashcard, which takes about 10 minutes.

When the save translations is successful, the error code must be a zero; otherwise, the translations are not copied. If the translations were corrupted, the following error message displays when logging in:

 **WARNING:**

Translation corruption detected; call Avaya distributor immediately.

NOTE:

The **save translation** command cannot function if translations are corrupt. Refer to [Translation Corruption Detected](#) on page 334 to clear the problem.

Save Announcements (if necessary)

NOTE:

The TN750C and TN2501AP Integrated Announcement circuit packs store announcements in nonvolatile memory; saving the announcements to a flashcard is optional.

- 1 If the PPN contains a TN750/B Announcement circuit pack, type **display announcements** and press **Enter**.
- 2 If administered recorded announcements are listed, type **save announcements UUCSS** and press **Enter**. For example, 01D03. This takes about 30 minutes.

NOTE:

For some DEFINITY ECS software versions, type **save announcements from UUCSS**. Type **help** and press **Enter** for complete command syntax.

Shut Down DEFINITY AUDIX System (if necessary)

 **WARNING:**

Neglecting to shut down the AUDIX assembly before powering down the system cabinet where it resides can damage the AUDIX disk.

- 1 Shut down the AUDIX assembly and allow the disk to completely spin down. Refer to [DEFINITY AUDIX Power Procedures](#) on page 176.

 **CAUTION:**

If leaving AUDIX System in the carrier, back it out about 2 in. (5 cm) to eliminate the possibility of damage due to power surges.

Replace Circuit Packs

 **CAUTION:**

When working with any cabinet hardware, wear a grounded wrist strap to ground yourself against electrostatic discharge (ESD).

- 1 Pull out the TN798 processor to power down the cabinet.
- 2 Insert the Avaya Communication Manager media (orange card) into the new TN2402 processor circuit pack slot.

NOTE:

In most cases the orange card will not be on-site and the upgrade performed using the pre-loaded Avaya Communication Manager on the TN2402 Processor circuit pack. If this is true, skip to Step 7.

- 3 Place the TN2402 processor circuit pack into the slot vacated by the TN798 processor.
- 4 Lock the TN2402 processor into place to power up the cabinet.
The system reads the Avaya Communication Manager automatically.
- 5 Install the *original* translation card when the system prompts (beeps)
You have 2 minutes to replace the Avaya Communication Manager card with the translation card.
- 6 At the system prompt, log in as craft. Skip to the next section.
- 7 Insert the original translation card into the TN2402 Processor circuit pack slot and place the TN2402 into the slot vacated by the TN798 Processor circuit pack.
- 8 Power up the cabinet.
- 9 Verify that the upgrade was completed to the expected software load.

If it is not the correct load, then the Avaya Communication Manager media must be on-site and you must perform Steps 2-6 above.

Install the License File

Pre-installation

- 1** Type **save translation** and press **Enter**.
After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
- 2** Type **reset system 3** and press **Enter**.
Wait until the system has completely reset before continuing.
- 3** If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.
This disconnects (unregisters) all IP endpoints.
- 4** Type **set time** and press **Enter**.
Ensure that the system date and time are set correctly.

Installation (direct connection)

If you have a direct connection between the RFA and the switch:

- 1** Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

NOTE:

This procedure sends the License File to the switch and installs it.

- 2** If the system has IP endpoints registered and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.
This re-registers the IP endpoints.

Installation (no direct connection)

If you do not have a direct connection between RFA and the switch:

- 1** Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
- 2** Open the License Installation Tool (LIT) application at your laptop/PC.
- 3** Use the LIT instructions to add a switch connection profile to the tool.
- 4** Use the LIT instructions to install the License File on the switch.
- 5** If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.
This re-registers the IP endpoints.

Administer No-License/Emergency Numbers

- 1 At the SAT type **change system-parameters features** and press **RETURN**.
The Feature-Related System Parameters screen displays:
- 2 In the `Emergency Numbers - Internal` field (optional) type a valid extension.

NOTE:

This number cannot be a hunt group or ACD number.

- 3 In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
- 4 In the `No-License Incoming Call Number` field (optional) type a valid extension.

NOTE:

This number cannot be a hunt group or ACD number.

- 5 Press **ENTER** to save the changes.

Display Memory-Configuration

- 1 Log in as **craft**. If the `Translation Corruption Detected` message appears, refer to [Translation Corruption Detected](#) on page 334.
- 2 Type **display memory-configuration** and press **Enter**. Make sure that in the `Total DRAM` field the `SIMM` field in the `SPE-A` column says **16**.

Set Daylight Savings Rules

You can set up to 15 customized daylight savings time rules. If you have switches in several different time zones, you can set up rules for each. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.

NOTE:

The default daylight savings rule is **0**, no daylight savings.

- 1 Type **change daylight-savings-rules** and press **Enter**.

DAYLIGHT SAVINGS RULES						
Rule	Change Day		Month	Date	Time	Increment
0:	No Daylight Savings					
1:	Start: first <u>Sunday</u>	on or after	<u>April</u>	<u>1</u>	at <u>2:00</u>	<u>01:00</u>
	Stop: first <u>Sunday</u>	on or after	<u>October</u>	<u>25</u>	at <u>2:00</u>	
2:	Start: first _____	on or after	_____	_____	at _____	
	Stop: first _____	on or after	_____	_____	at _____	
3:	Start: first _____	on or after	_____	_____	at _____	
	Stop: first _____	on or after	_____	_____	at _____	
4:	Start: first _____	on or after	_____	_____	at _____	
	Stop: first _____	on or after	_____	_____	at _____	
5:	Start: first _____	on or after	_____	_____	at _____	
	Stop: first _____	on or after	_____	_____	at _____	
6:	Start: first _____	on or after	_____	_____	at _____	
	Stop: first _____	on or after	_____	_____	at _____	
7:	Start: first _____	on or after	_____	_____	at _____	
	Stop: first _____	on or after	_____	_____	at _____	

- 2 Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment (for example, **1:00** equals one hour) fields for each rule.

NOTE:

You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

- 3 Press **Enter**.

Verify the Upgrade

- 1 Type **status system 1** and verify that the system is in a normal state.
- 2 Type **display alarms** and press **Enter**.
If the system is not alarm-free, take the needed corrective actions.
- 3 Type **list configuration software-version** and press **Enter**. Verify the Avaya Communication Manager configuration.
- 4 Type **display communication links** and press **Enter**.
Status each of the links.

NOTE:

ISDN-PRI D-channel links no longer appear on this screen. (For Release 7 and later, ISDN-PRI resides on the network packet circuit pack.) For Release 7 and later, the only way to determine if an ISDN-PRI D-Channel is up is to type **status signaling group** and press **Enter**.

- 5 Type **list signal** press **Enter**. For each signal, type **status signal** and press **Enter**.

NOTE:

Check the ISDN-PRI D-channel links here.

- 6 Execute the following commands and verify that the information is correct:

list station

list trunk-group

list hunt-group

list data-module

Enable Scheduled Maintenance

- 1 Type **change system-parameters maintenance** and press **Enter** .
- 2 Check the `Start Time` and `Stop Time` fields.

Enable Alarm Origination to INADS

- 1 Get the DOSS order number of the upgrade from the project manager and ask the regional Customer Software Administration to complete the [Check Customer Options](#) steps. See [Where to get additional help](#) on page 17 for telephone numbers.

NOTE:

As part of the system registration process, the INADS Database Administrator enables Alarm Origination and customer options.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:

ART is not accessible from the public internet (outside the Avaya intranet firewall).

- 1 At your laptop/PC, direct your browser to this URL:
`http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi`

You can also save this URL in your *Favorites* or *Bookmarks* list.

The ART User Menu displays.

- 2 Click on the *Register a Product* button.
The Enter Network Password dialog box appears.

- 3 Type your ART User **Name** and **Password** in the indicated fields.

NOTE:

ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

- a Go back to the ART User Menu and click on the *Administer My User ID/Password* button.
- b Follow the instructions on the User ID and Password page to create your ART user ID and password.

Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

- 4 Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

NOTE:

Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

- Sold-To numbers are typically 7 digits long, sometimes beginning with an uppercase “S” followed by two zeros, for example: **S001234567**.
- FL numbers are 10-12 letters or digits.

- 5 In the **Session Type** field, select:

- *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
- *UPGRADE REGISTRATION* for all subsequent product registrations.

- 6 In the **Product Type** field choose *DEFINITY* for the following products:

- 7 Click on the *Start Product Registration* button.

If the data you have entered matches a Maestro database record, the Customer Verification page appears.

- 8 Verify the information in the **Customer Name** and **Customer Address** fields.

NOTE:

If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

- a Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.



CAUTION:

DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

- b Return to the ART User Menu page to begin a new session.

If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

- 9** In the **Customer Type** field, select
- *GOODYEAR, MOTEL 6, STATE FARM*
 - *IN CINCINNATI BELL SERVICE AREA*
 - *OTHER*

NOTE:

This verification might be done automatically in the future.

- 10** Click on the *Continue Upgrade Registration* button.

The DEFINITY Product List page appears.

- 11** Look in the product table (first column heading is “#”) to find the row for the product that you want to register. Click on the number in the far-left column (“#”) of the correct row.

NOTE:

It might be helpful to identify the product by looking at the *Product Nickname, Product Alarm ID, INADS Number, Serial Number, or IP Address* columns in the table.

If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

Four new fields appear.

- 12** In the **Data Lock** field, choose:
- *YES* for products with ASG enabled
 - *NO* for all others

- 13** In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
- *DON'T CHANGE* to leave the product's dialing type unchanged
 - *TONE* for DTMF dialing
 - *PULSE* for rotary or pulse dialing

- 14** In the **Alarm Origination** field choose:
- *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
 - *YES* to enable alarm origination.
 - *NO* for no alarm origination.

- 15** In the **Alarm Destination** field, choose
- *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
 - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, “9” or “*9”). The default value in this field is the TSO-Denver number (18005353573).

- 16 Click on the *Continue Registration* button at the bottom of the page.
ART begins automatically registering the product and displays progress messages to indicate the current status.



CAUTION:

DO NOT exit your browser or click on the *Refresh*, *Back*, *Stop*, or *Home* buttons while ART displays these progress messages.

If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.

If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

- 17 Review the information displayed in the report.
If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt 2, prompt 6, then prompt 2) immediately for assistance.
- 18 Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Check Customer Options

- 1 Type **display system-parameters customer-options** and press **Enter**.
- 2 Ensure that the `G3 version:` field is `V11`.
- 3 If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade, go to screen 7, QSIG Optional Features, and ensure that the `Basic Call Setup` field is `y`.

Check Link Status

- 1 Type **display communication-interface links** and press **Enter**.
- 2 Type **status link number** and press **Enter**. Repeat this step for each link.
- 3 Check that DS1 trunks and BRI phones are functioning normally.
- 4 Refer to *Maintenance for Avaya DEFINITY Server CSI* to test or restore the out-of-service links.

Power Up DEFINITY AUDIX System

- 1 To power up the AUDIX assembly, refer to [DEFINITY AUDIX Power Procedures](#) on page 176.

Resolve Alarms

- 1 Type **display alarms** and press **Enter** to examine the alarm log. Resolve any alarms using *Maintenance for Avaya DEFINITY Server CSI*.

Restore Announcements (if necessary)

- 1 Type **restore announcements** and press **Enter** to copy announcements from the upgraded translation flashcard to memory, which takes about 40 minutes.

Check SPE

- 1 Type **status system 1** and press **Enter**.

Install translation card

- 1 Replace the *original* translation card with the new ATA flashcard.

Save Translations (post-upgrade)

- 1 Type **save translations** and press **Enter** to copy upgraded translations to the new flashcard, which takes about 20 minutes.

Save Announcements (if necessary— post-upgrade)

- 1 Type **save announcements** and press **Enter** to copy announcements to the new flashcard.

Return Equipment

- 1 Return replaced equipment to Avaya.
- 2 Retain the old translation card for up to 10 business days to verify that the customer is satisfied and that there is no need to reverse the upgrade. Reversing the upgrade also means reinstalling the old TN798/B processor circuit pack.
- 3 Return the old translation card to Avaya.

DEFINITY AUDIX Power Procedures

Power Down the AUDIX System

A yellow caution sticker on the system's power unit notifies technicians to shut down the DEFINITY AUDIX System prior to powering down the system.

- 1 Log into the AUDIX System as **craft**.
- 2 Type **reset system shutdown** and press **Enter**.
- 3 Press **Enter** again to start the shutdown process.
- 4 The **SHUTDOWN Completed** message appears when the AUDIX is successfully shut down. This takes about 2 minutes.
- 5 You can now shut down the carrier or remove the AUDIX System for service.



CAUTION:

If leaving AUDIX System in the carrier, back it out about 2 in. (5 cm) to eliminate the possibility of damage due to power surges.

Power Up the AUDIX System

- If the AUDIX was removed from the cabinet:
 - 1 Re-install the AUDIX and allow it to power up automatically.
 - 2 Check for AUDIX System errors.
- If the AUDIX remained in the cabinet but the cabinet was powered down:
 - 1 Reseat the AUDIX
 - 2 Power up the cabinet. The AUDIX reboots automatically.
 - 3 Check for AUDIX System errors.
- If the AUDIX remained in the cabinet and the cabinet was *not* powered down:
 - 1 At the AUDIX console, hold the **ctrl** key and enter **cc**.
 - 2 Enter **5** at the prompt. In about 2 minutes, the AUDIX boots up.
 - 3 When the system initialization is complete, log in as **craft**.
 - 4 Check for AUDIX System errors.

4 Upgrading R9csi/R10csi to Avaya Communication Manager on an Avaya DEFINITY Server CSI

This chapter provides the information on upgrading from a DEFINITY Enterprise Communication Server (ECS) Release 9csi/10csi to Avaya™ Communication Manager on an Avaya DEFINITY Server CSI.

Administrator's Guide for Avaya Communication Manager lists the features and functions and provides the commands, procedures, and screens to initialize and administer the system.

Read this first

License File

Remote Feature Activation (RFA) is a Web-based application that enables the creation and deployment of License Files for all switches. The License File enables the Avaya Communication Manager category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. *Without a license file, the switch does not provide normal call processing.*

7-digit dial plan expansion

The upgrade automatically converts the old Uniform Dial Plan forms to the new forms. These forms are discussed completely in the *Administrator's Guide for Avaya Communication Manager*.

Customers upgrading to Avaya Communication Manager can migrate to the 6-/7-digit dial plan or not:

- Customers who *want to migrate* to the 6-/7-digit dial plan can
 - freeze their translations and send them to the TSO for conversion. For customers who do not have optical drives, Avaya must migrate those translations to customer-compatible media.
 - re-administer the switch themselves (no translation freeze required).
- Customers who *do not want to migrate* to a 6-/7-digit dial plan (want to keep their current 4-/5-digit dial plan) experience no changes after the upgrade. That is, if they had 4-digit dialing before the upgrade, they have 4-digit dialing afterwards.

Service interruption

The upgrade process requires a non-call-preserving service interruption in a standard reliability system. The service interruption must be closely coordinated with the customer and the local account team. The service outage for standard reliability is 2 to 15 minutes, depending on the size of the installation.

Call Management System (CMS)

The CMS link is dropped and restarted during the upgrade, causing:

- Loss of CMS data. To minimize the measurement data loss, perform the upgrade just after the last CMS measurement interval. If needed, print the reports before starting the upgrade.
- Dropped calls (call processing aborted) if a measured trunk that was part of the conference dropped off the call before the end of the call. Customers experiencing this symptom and who are running R3V4 CMS should update to r3v4ao.e or higher.

Software compatibility

Before starting the upgrade, always check the *Software Release Letter* that accompanies the system removable media. Translation corruption occurs if incompatible software is loaded. Also check the Minimum Vintage Table, which is included with the letter, before starting the upgrade.

Usable circuit packs

Every circuit pack must conform to the minimum usable vintage requirements for that system. At a presale site inspection, the remediation process checks the vintages of existing circuit packs to be reused. Replace all unusable vintage circuit packs with current vintages.

Wireless systems

If the system uses Wireless Business System, you need to re-enable the radio controllers after the upgrade. Refer to Chapter 1, “UTAM Disablement” in the *DEFINITY Wireless Business System Maintenance* book. Refer also to Chapter 2, “Switch Administration” in *DEFINITY Wireless Business System Installation and Test*.

NOTE:

Only the *init* login can perform this activity.

Antistatic protection



CAUTION:

When handling circuit packs or any electronic components, always wear an antistatic wrist ground strap. Connect the strap to an approved ground such as ground jack on the cabinet.

Task table

[Table 47](#) provides the high-level tasks to perform the upgrades in this section. Refer to the appropriate page for instructions for each step.

Table 47: Tasks to upgrade Release 9/10 csi to Avaya Communication Manager

✓	Task Description	Page
	Pre-upgrade checklist	180
	Go to the RFA website	181
	Check SPE	187
	Verify version	187
	Verify system status	187
	Disable scheduled maintenance and alarm origination	188
	Check link status	188
	Save translations	189
	Save announcements (if necessary)	189
	Upgrade the software	189
	Install the License File	190
	Administer no-license/emergency numbers	191
	Set daylight savings rules	191
	Verify the upgrade	191
	Check link status	192
	Enable scheduled maintenance	193
	Register the switch for maintenance	193
	Resolve alarms	196
	Restore busyouts	196
	Restore announcements	196
	Check SPE	196
	Save translations (post-upgrade)	196
	Save announcements (post-upgrade)	196
	Return equipment	196

Pre-upgrade checklist

Before starting the upgrade, have the items listed in [Table 48](#) ready or completed.

Table 48: Pre-upgrade checklist

Item No.	Item	✓
1	Software Release Letter	
2	Avaya Communication Manager on removable media	
3	Extra formatted removable media	
4	Authorized wrist grounding strap	
5	Avaya Communication Manager documentation (book or .PDF file): <ul style="list-style-type: none"> • <i>Maintenance for Avaya DEFINITY Server CSI</i> • <i>Administrator's Guide for Avaya Communication Manager</i> 	
6	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7	SAP order number with RTUs	
8	Look up hardware serial number(s) with the list configuration license (long) SAT command. Duplicated systems require long in the command.	
9	Transaction Record number	
10	System Identification (SID) number	
11	Switch telephone number or IP address	
12	Access to the RFA Information page for these items (depending upon your switch connection method and whether already installed on your PC): <ul style="list-style-type: none"> • Features Extraction Tool (FET) application (from Release 9 only) • FET documentation (from Release 9 only) • License Installation Tool (LIT) application • LIT documentation 	
13	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	
14	Internet Explorer 5.0 or higher installed on your laptop/PC	
15	Intranet access to your designated RFA portal (see Go to the RFA website).	
16	Pre-upgrade administration changes	

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

- 1 At your laptop/PC browser, go to the appropriate website:
 - *Associates*: <http://associate2.avaya.com/> or the services portal:
<http://usservices.avaya.com/>
 - *Business Partners* go to the appropriate regional Business Partner portal:
 - United States: <http://www.avaya.com/businesspartner/>
 - Canada: <https://www.avaya.ca/BusinessPartner>
 - Brazil: <http://www.avaya.com.br/Home.asp>
 - CALA: <https://cala-businesspartner.avaya.com/mnc/index.html>
 - EMEA: <https://emea-businesspartner.avaya.com/>
 - APAC: <http://www.avaya-apac.com/bp>
 - *Contractors* go to <http://www.avaya.com/services/rfa/>
 - If you are unable to access RFA using your recommended portal, try:
<http://rfa.avaya.com>
- 2 Using your SSO, log in to the RFA website.
- 3 Follow the links to the RFA Information page.
- 4 Complete the information necessary to create a License File.

NOTE:

If you have problems with a hardware serial number that is not in the SAP database, go to the [If you have problems with RFA](#) section.

Have direct connection

NOTE:

If you are upgrading from Release 10 to Avaya Communication Manager, omit this section.

If you have a direct connection between RFA and the switch *and* you are upgrading from Release 9 to Avaya Communication Manager:

- 1 Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
- 2 When prompted, type in the Transaction ID number.
- 3 The FET creates and uploads the Switch Configuration File automatically.
- 4 Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

No direct connection

NOTE:

If you are upgrading from Release 10 to Avaya Communication Manager, omit this section.

If you do not have a direct connection between RFA and the switch *and* you are upgrading from Release 9 to Avaya Communication Manager:

- 1 Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
- 2 When prompted, type in the Transaction ID number.
- 3 Use the FET instructions to create a new switch connection profile.
- 4 Create the Switch Configuration File.
- 5 Upload the Switch Configuration File to the RFA website.
- 6 Deliver the License File to your laptop/PC for installation later in this procedure.

If you have problems with RFA

If you get an error message that a hardware serial number is not in the SAP database, you must call the RFA Helpdesk ([Table 49](#)) to have them correct the SAP information.

Table 49: RFA Helpdesk contact numbers

Where	Who	Phone number/URL	Prompt or selection
Channel: <ul style="list-style-type: none"> • U.S. and Canada • Variable Workforce Group • Avaya contractors 	Avaya Associates Members Contractors	877-615-4174	Prompt 8
U.S. and Canada	Business Partners	866-800-5194	Prompt 8
EMEA	Direct and Business Partners	+31-70-414-8720 <i>or</i> http://www.avayantwork.com	Prompt 3 Select GSO; select EMEA
APAC RTAC	Direct and Business Partners	+65-6872-8686	

1 of 2

Table 49: RFA Helpdesk contact numbers

Where	Who	Phone number/URL	Prompt or selection
CALA <ul style="list-style-type: none"> • Mexico TAC • Brazil TAC • Columbia TAC • Argentina TAC • Mexico Call Receipt 	Direct and Business Partners	+525-278-7878 +5511-5185-6655 +571-616-6077 +5411-4114-4440 +1-720-444-9998	2 of 2

Pre-upgrade administration changes

You must make the administration changes listed in [Table 50](#) prior to upgrading to Avaya Communication Manager:

Table 50: Pre-upgrade administration changes

P	Task Description	Page
	Remove Print Messages Feature Access Code	183
	Remove print-msgs buttons	184
	Remove MSA node names	185
	Remove MSA processor channels	186
	Remove MET station administration	186

Remove Print Messages Feature Access Code

Remove the value from the `Print Messages Access Code` field on the Feature Access Code (FAC) form ([Figure 77](#)). This feature access code allows users to print undelivered messages without having to call the message center.

Figure 77: Feature Access Code form

```

change feature-access-codes                                     Page 2 of X
                                FEATURE ACCESS CODE (FAC)
Extended Call Fwd Activate Busy D/A_ All:      Deactivation:
Extended Group Call Pickup Access Code:
Facility Test Calls Access Code:
Flash Access Code:
Group Control Restrict Activation:             Deactivation:
Hunt Group Busy Activation:                   Deactivation:
ISDN Access Code:
Last Number Dialed Access Code:
Leave Word Calling Message Retrieval Lock:
Leave Word Calling Message Retrieval Unlock:
Leave Word Calling Send A Message: #66
Leave Word Calling Cancel A Message: *66
Malicious Call Trace Activation:             Deactivation:
PASTE (Display PBX data on Phone) Access Code:
Personal Station Access (PSA) Associate Code:
Per Call CPN Blocking Code Access Code:
Per Call CPN Unblocking Code Access Code:     Dissociate Code:
Print Messages Access Code:
Priority Calling Access Code:
Program Access Code:
    
```

Remove print-msgs buttons

If any of the Button Assignments are administered as `print-msgs` (print messages) on the Station ([Figure 78](#)) and Attendant ([Figure 79](#)) forms, remove these buttons.

Figure 78: Station form

```

change station 1014                                         Page 3 of X
                                STATION

SITE DATA
Room: _____ Headset? n
Jack: _____ Speaker? n
Cable: _____ Mounting: d
Floor: _____ Cord Length: 0_
Building: _____ Set Color: _____

ABBREVIATED DIALING
List1: _____ List2: _____ List3: _____

BUTTON ASSIGNMENTS
1: call-appr           5: _____
2: call-appr           6: _____
3: call-appr           7: _____
4: print-msgs       8: _____
    
```

Figure 79: Attendant Console form

```

change attendant                                     Page 1 of 3
                                         ATTENDANT CONSOLE 1

      Type: console                               Name: 27 character attd cons name
      Extension: 1000                             Group: 1                               Auto Answer: none
      Console Type: principal                     TN: 1                                 Data Module? n
      Port: 01C1106                              COR: 1                               Disp Client Redir? n
      Security Code:                             COS: 1                               Display Language: english
                                              H.320 Conversion? n

DIRECT TRUNK GROUP SELECT BUTTON ASSIGNMENTS (Trunk Access Codes)
  Local Remote      Local Remote      Local Remote
1: 9                5:                9:
2: 82               6:                10:
3:                 7:                11:
4:                 8:                12:

HUNDREDS SELECT BUTTON ASSIGNMENTS
1: print-msgs5:      9:                13:               17:
2:                 6:                10:               14:               18:
3:                 7:                11:               15:               19:
4:                 8:                12:               16:               20:
    
```

Remove MSA node names

Remove all MSA node names from the MSA Names field on the Audix-MSA Node Names form ([Figure 80](#)).

Figure 80: AUDIX-MSA Node Names form

```

change node-names audix-msa                         Page 1 of
x
                                         AUDIX-MSA NODE NAMES

Audix Name      IP Address      MSA Names      IP Address
audixA_         ___.*.*.*_     _____     ___.*.*.*_
audixB_         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
_____         ___.*.*.*_     _____     ___.*.*.*_
    
```

Remove MSA processor channels

If the Appl. field on the Processor Channel Assignment form ([Figure 81](#)) is

- msaamwl
- msaclk
- msahlwc
- msallwc
- msamcs

you must remove this administration. These processor channel assignments are used in conjunction with a messaging adjunct that is no longer supported.

Figure 81: Processor Channel Assignment form

```

display communication-interface processor-channels                               Page 1 of 16
PROCESSOR CHANNEL ASSIGNMENT
Proc      Gtwy      Interface      Destination      Session      Mach
Chan Enable  Appl.  To  Mode Link/Chan      Node      Port  Local/Remote ID
1:  n  audix      s  1  5000  audix      0      1  2  2
2:  n  dcs        c  2  5000  default    5000   1  2  4
3:  n  msaamwl    s  3  5000  msa        0      1  2
4:  n  msahlwc    c  4  5000  msa        5000   1  2
5:  n
6:  n
    
```

Remove MET station administration

If the field value in the Type field on the Station form ([Figure 82](#)) is

- 10MET
- 20MET
- 30MET

you must remove these stations from administration. These Multi-Button Electronic Telephone (MET) stations are no longer supported and will not work after the upgrade.

Figure 82: Station form

```

change station xxxx                               Page 1 of X

Extension: 1014      Lock Messages? n      BCC:
Type: 10MET          Security Code:      TN:1
Port:               Coverage Path 1:      COR: 1
Name:               Coverage Path 2:

STATION OPTIONS
Loss Group: 2      Personalized Ringing Pattern: 3
Data Module? n      Message Lamp Ext: 1014
Speakerphone: 2-way  Mute button enabled? y
Display Language? English  Media Complex Ext:
IP Softphone? y
Remote Office Station? n
IP Emergency calls:
    
```

Check SPE

- 1 Type **status system 1** and press **RETURN**.
Check these fields for the corresponding values:
 - Maj/Min alarms = 0
 - Service State = in service

Verify version

- 1 Type **list configuration software-version** and press **RETURN**.
The Software Versions screen appears.
- 2 In the UPDATE FILE section, check the `Update State` field for a software patch:
 - If there is a patch number, then a patch has been applied.
 - If the field is `none in memory`, there is no software patch in system memory.

NOTE:

If you need to restore the system to the old version, you must also download a patch onto the system.\

- 3 In the SOFTWARE VERSION section note the current version listed in the `Memory Resident` field.

NOTE:

Ensure that the current version is compatible with this software-only upgrade path from Release 9csi to Avaya Communication Manager.

Verify system status

- 1 Type **status system 1** and press **RETURN**.
Check these fields for the corresponding values:
 - In the SPE ALARMS section, MAJOR and MINOR alarms = 0
 - Service State = in service
- 2 If there are alarms, take the necessary corrective actions (**display alarms**).
- 3 Type **display errors** and press **RETURN**.
- 4 Examine the Hardware Error Log and record any Error Code 18 alarm that identifies existing busyouts. After the upgrade you will restore the busyouts as they were.
- 5 Execute the following commands to see whether the switch has administration:
 - **list station**
 - **list trunk-group**
 - **list hunt-group**
 - **list data-module**
 - **list announcements**

If any command does not complete successfully, escalate the problem immediately. After the upgrade you will check the same administration to ensure that the translations are intact.

Disable scheduled maintenance and alarm origination

To prevent scheduled daily maintenance from interfering with the upgrade:

- 1 Type **change system-parameters maintenance** and press **RETURN**.
- 2 If scheduled maintenance is in progress, set the `Stop Time` field to 1 minute after the current time.

or

If scheduled maintenance is not in progress, set the `Start Time` field to a time after the upgrade will be completed.

For example, if you start the upgrade at 8:00 P.M. and the upgrade takes 90 minutes, set the `Start Time` field to 21:30.



CAUTION:

If you do not disable Alarm Origination, the system can generate alarms, resulting in unnecessary trouble tickets.

- 3 Type **neither** in the `Alarm Origination to OSS Numbers` field and press **ENTER**

NOTE:

Disabling alarm origination prevents the system from generating alarms, thus preventing unnecessary trouble tickets.

Check link status

- 1 Enter **display communication-interface links** and press **RETURN**.
- 2 Note all administered links.
- 3 Type **status link number** and press **RETURN** for each administered link.

Check the following fields for the values listed:

- `Link Status` = connected
- `Service State` = in service

NOTE:

For Release 7 and later, the only way to determine if an ISDN-PRI D-Channel is up is to type **status signaling group** and press **RETURN**.

- 4 If any of the links are not up, take the necessary corrective action to restore the link before continuing with the upgrade.

Save translations

- 1 Type **save translation** and press **RETURN** to write all translations from memory to the translation flashcard (about 10 minutes).
- 2 Ensure that the **save translation** command was successful (error code must be zero). If the value is anything else, the translations were not copied to the flashcard. If the translations are corrupted, the following error message appears when logging in:

 **WARNING:**

Translation corruption detected; call an Avaya distributor immediately.

NOTE:

The **save translation** command does not run if the translations are corrupt or do not match (duplicated systems only).

Save announcements (if necessary)

NOTE:

The TN750C and the TN2501AP Integrated Announcement circuit packs store announcements in nonvolatile memory; saving the announcements to a flashcard is optional.

- 1 If the PPN contains a TN750/B Announcement circuit pack, type **display announcements** and press **RETURN**.
- 2 If administered recorded announcements are listed, type **save announcements UUCSS** and press **RETURN**. For example, **01D03**.

The time necessary for this depends upon the length and number of the announcements on the circuit pack.

NOTE:

For some DEFINITY ECS software versions, type **save announcements from UUCSS**. Type **help** and press **RETURN** for the complete command syntax.

Upgrade the software

- 1 Write down the release string EXACTLY as it appears on the orange card.

NOTE:

Note: The entire string is 16 characters, including 4 periods.

- 2 Insert the media in the processor circuit pack.
- 3 Type **upgrade software <release string>** (case sensitive) and press **Enter**.

This process takes about 10-12 minutes.

- 4 When the system prompts (beeps), insert the original translation (white) card into the processor circuit pack.

NOTE:

You have 2 minutes to replace the Avaya Communication Manager card with the translation card. If you miss this window, the system comes up without translations. Correct this by inserting the original translation card into the processor circuit pack and use the **reset system 3** command at the SAT.

- 5 When the upgrade is complete, log off the system and log in again as craft.

Install the License File

Pre-installation

- 1 Type **save translation** and press **Enter**.
After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
- 2 Type **reset system 3** and press **Enter**.
Wait until the system has completely reset before continuing.
- 3 If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.
This disconnects (unregisters) all IP endpoints.
- 4 Type **set time** and press **Enter**.
Ensure that the system date and time are set correctly.

Installation (direct connection)

If you have a direct connection between the RFA and the switch:

- 1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

NOTE:

This procedure sends the License File to the switch and installs it.

- 2 If the system has IP endpoints registered and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replugin the cable.
This re-registers the IP endpoints.

Installation (no direct connection)

If you do not have a direct connection between RFA and the switch:

- 1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
- 2 Open the License Installation Tool (LIT) application at your laptop/PC.
- 3 Use the LIT instructions to add a switch connection profile to the tool.

- 4 Use the LIT instructions to install the License File on the switch.
- 5 If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

This re-registers the IP endpoints.

Administer no-license/emergency numbers

- 1 At the SAT type **change system-parameters features** and press **RETURN**.
The Feature-Related System Parameters screen displays.
- 2 In the Emergency Numbers - Internal field (optional) type a valid extension.

NOTE:

This number cannot be a hunt group or ACD number.

- 3 In the Emergency Number - External field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
- 4 In the No-License Incoming Call Number field (optional) type a valid extension.

NOTE:

This number cannot be a hunt group or ACD number.

- 5 Press **ENTER** to save the changes.

Set daylight savings rules

You can set up to 15 customized daylight savings time rules. If you have switches in several different time zones, you can set up rules for each. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time and the amount of time offset at the point of transition.

- 1 Type **change daylight-savings-rules** and press **RETURN**.

DAYLIGHT SAVINGS RULES						
Rule	Change	Day	Month	Date	Time	Increment
0:	No	Daylight	Savings			
1:	Start:	first	Sunday	on or after	April 1	at 2:00 01:00
	Stop:	first	Sunday	on or after	October 25	at 2:00
2:	Start:	first	_____	on or after	_____	at ____:
	Stop:	first	_____	on or after	_____	at ____:
3:	Start:	first	_____	on or after	_____	at ____:
	Stop:	first	_____	on or after	_____	at ____:
4:	Start:	first	_____	on or after	_____	at ____:
	Stop:	first	_____	on or after	_____	at ____:
5:	Start:	first	_____	on or after	_____	at ____:
	Stop:	first	_____	on or after	_____	at ____:

NOTE:

The default daylight savings rule is 0, meaning no daylight savings transition.

- 2 Type the appropriate Start and Stop information in the Change Day, Month, Date, Time, and Increment fields for each rule. For example, **1:00** in the Increment field means to move the clock forward or back by one hour at the transition point.

NOTE:

You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

- 3 Press **ENTER**.

Verify the upgrade

- 1 Type **status system 1** and verify that the system is in a normal state.
Check these fields for the corresponding values:
 - In the SPE ALARMS section, MAJOR and MINOR alarms = 0
 - Service State = in service
 - 2 Type **display alarms** and press **RETURN**.
If there are alarms, take the necessary corrective actions.
 - 3 Type **list configuration software-version** and press **RETURN**.
The Software Versions screen appears.
 - 4 In the UPDATE FILE section, check the Update State field for a software patch:
 - If there is a patch number, then a patch has been applied.
 - If the field is none in memory, there is no software patch in system memory.
- NOTE:**
If you need to restore the system to the old version, you must also download a patch onto the system.
- 5 In the SOFTWARE VERSION section note the current version listed in the Memory Resident field.

Check link status

- 1 Type **display communication-links** and press **RETURN**.
Ensure that the link administration is the same as before the upgrade.
- 2 Type **status link number** and press **RETURN** for each administered link.
Check these fields for the corresponding values:
 - Link Status = connected
 - Service State = in service
 If any of the links are not up, take the necessary corrective action to restore the link
- 3 Type **list signaling-group** press **RETURN**.
Check the system to ensure that the signaling group administration is the same as before the upgrade.

- 4 For each signaling group, type **status signal number** and press **RETURN**.
Ensure that the `Group State` field is in-service.
If the system had ISDN-PRI D-channel links administered, check that those links are in-service.
- 5 Execute the following commands to ensure that the administration is the same as before the upgrade:
 - **list station**
 - **list trunk-group**
 - **list hunt-group**
 - **list data-module**

Enable scheduled maintenance

- 1 Type **change system-parameters maintenance** and press **RETURN**.
- 2 Ensure that the `Start Time` and `Stop Time` fields' administration is the same as before the upgrade.

Register the switch for maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:

ART is not accessible from the public internet (outside the Avaya intranet firewall).

- 1 At your laptop/PC, direct your browser to this URL:
`http://spiexpl.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi`
You can also save this URL in your *Favorites* or *Bookmarks* list.
The ART User Menu displays.
- 2 Click on the *Register a Product* button.
The Enter Network Password dialog box appears.
- 3 Type your ART **User Name** and **Password** in the indicated fields.

NOTE:

ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

- a Go back to the ART User Menu and click on the *Administer My User ID/Password* button.
- b Follow the instructions on the User ID and Password page to create your ART user ID and password.

Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

- 4 Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

NOTE:

Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

- Sold-To numbers are typically 7 digits long, sometimes beginning with an uppercase “S” followed by two zeros, for example: **S001234567**.
- FL numbers are 10-12 letters or digits.

- 5 In the **Session Type** field, select:

- *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
- *UPGRADE REGISTRATION* for all subsequent product registrations.

- 6 In the **Product Type** field choose *DEFINITY* for the following products:

- 7 Click on the *Start Product Registration* button.

If the data you have entered matches a Maestro database record, the Customer Verification page appears.

- 8 Verify the information in the **Customer Name** and **Customer Address** fields.

NOTE:

If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

- a Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.



CAUTION:

DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

- b Return to the ART User Menu page to begin a new session.

If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

- 9 In the **Customer Type** field, select

- *GOODYEAR, MOTEL 6, STATE FARM*
- *IN CINCINNATI BELL SERVICE AREA*
- *OTHER*

NOTE:

This verification might be done automatically in the future.

- 10 Click on the *Continue Upgrade Registration* button.
The DEFINITY Product List page appears.
- 11 Look in the product table (first column heading is “#”) to find the row for the product that you want to register. Click on the number in the far-left column (“#”) of the correct row.

NOTE:

It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

Four new fields appear.

- 12 In the **Data Lock** field, choose:
 - *YES* for products with ASG enabled
 - *NO* for all others
- 13 In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
 - *DON'T CHANGE* to leave the product's dialing type unchanged
 - *TONE* for DTMF dialing
 - *PULSE* for rotary or pulse dialing
- 14 In the **Alarm Origination** field choose:
 - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
 - *YES* to enable alarm origination.
 - *NO* for no alarm origination.
- 15 In the **Alarm Destination** field, choose
 - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
 - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, “9” or “*9”). The default value in this field is the TSO-Denver number (18005353573).
- 16 Click on the *Continue Registration* button at the bottom of the page.
ART begins automatically registering the product and displays progress messages to indicate the current status.



CAUTION:

DO NOT exit your browser or click on the *Refresh*, *Back*, *Stop*, or *Home* buttons while ART displays these progress messages.

If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.

If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

- 17 Review the information displayed in the report.
If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.
- 18 Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Resolve alarms

- 1 Type **display alarms** and press **RETURN** to examine the alarm log.
- 2 Resolve any alarms using *Maintenance for Avaya DEFINITY Server CSI*.

Restore busyouts

- 1 Restore any busyouts that you removed in the [Verify system status](#) section prior to the upgrade.

Restore announcements

If the system contains a TN750/B Announcement circuit pack:

- 1 Type **restore announcements** and press **RETURN** to copy announcements from the upgraded translation flashcard to memory, which takes about 40 minutes.

Check SPE

- 1 Type **status system 1** and press **RETURN**.

Check these fields for the corresponding values:

- In the `SPE ALARMS` section, `MAJOR` and `MINOR` alarms = 0
- `Service State = in service`

Save translations (post-upgrade)

- 1 Type **save translations** and press **ENTER** to copy the upgraded translations and the License File to the new flashcard, which takes about 20 minutes.

Save announcements (post-upgrade)

- 1 Type **save announcements** and press **ENTER** to copy announcements to the new flashcard.

Return equipment

- 1 Return replaced equipment to Avaya.
- 2 Retain the old translation card for up to 10 business days to verify that the customer is satisfied and that there is no need to reverse the upgrade.
- 3 Return the old translation card to Avaya.

5 Adding or Removing Hardware

This chapter details the information required to install additional port hardware and other equipment associated with upgrading an existing system.

For more information about installing adjuncts and peripheral devices, refer to *Installation for Adjuncts and Peripherals for Avaya Communication Manager*.

Add Circuit Packs

When installing additional features or equipment, it may be necessary to install additional circuit packs. This is a general procedure to use when adding features or equipment that require adding circuit packs.

- 1 Log onto the system and answer **y** to the *Suppress Alarm Origination* question during login.
- 2 Install the circuit pack into the carrier.
- 3 Type **change circuit-pack**.
- 4 Verify the circuit pack appears in the listing.
- 5 If the circuit pack code is not present, type the code manually in the proper slot.
- 6 Type **test board long** and press **Enter** to test the board.
- 7 Log off the system after the addition (and any required administration) is complete.

For information about administering circuit packs and other equipment, refer to *Administrator's Guide for Avaya Communication Manager*.

Upgrade Firmware on Programmable Circuit Packs

You can download new firmware to specific, programmable circuit packs. Programmable circuit packs have a “P” in their suffix. For example TN799DP is programmable, but TN799C is not. This programmable capability reduces the need to physically remove circuit packs and return them to Avaya for firmware updates.

You can download firmware to one or more programmable circuit packs of the same type residing within the same configuration.

During this firmware download process, a firmware image is installed on a circuit pack in three steps:

- 1 The image is copied from an Avaya server over the Web to a local “staging area” — a PC or server on the customer LAN.
- 2 The image is copied from the local staging area to the *source* circuit pack.

- 3** The image is downloaded from the *source* to the *target* with one of these methods:
- For a *self download*, the image is downloaded directly from RAM (the *source*) to flash memory (the *target*) on the same circuit pack.
 - For a *C-LAN-distributed download*, the image is downloaded from RAM (the *source*) on a C-LAN circuit pack to flash memory (the *target*) on one or more separate circuit packs of the same type.

Although different circuit packs have different potential roles in a firmware download, currently the following circuit packs can participate in a firmware-download procedure. Additional circuit packs will be added in the future.

- TN799C or TN799DP—Control LAN (C-LAN)
- TN2214CP or TN2224CP—2-Wire Digital Line DIG-LINE)
- TN2302AP—IP Media Processor (IPMEDPRO)
- TN771DP—Maintenance/Test (M/T-ANL)
- TN464GP, TN2464BP, and TN2313AP—UDS1
- TN2501AP—Voice Announcements over LAN (VAL)

See [Table 51](#) for each circuit pack’s roles in a firmware download.

Table 51: Programmable Circuit-Pack Roles in Firmware Downloads

Circuit Pack	TN Code	Role in Self Download	Role in C-LAN-distributed Download
C-LAN	TN799C ¹		Source
	TN799DP ²	Source and Target	Source
VAL	TN2501AP	Source and Target	
IP Media Processor	TN2302AP ³		Target
DIG-LINE (2-wire)	TN2214CP		Target
	TN2224CP		Target
Maintenance/Test	TN771DP		Target
UDS1	TN464GP		Target
	TN2464BP		Target
	TN2313AP		Target

- 1 The TN799C C-LAN circuit pack can be the source for a C-LAN-distributed download but cannot be the target circuit pack for either a self or C-LAN-distributed download because it is not a programmable circuit pack (no P suffix).
- 2 The TN799DP can be both source and target for a self download and can be the source for a C-LAN-distributed download.
- 3 For TN2302AP circuit packs with a vintage less than 22, a different download procedure is required that is not described here. Go to the Avaya Support Web site under **Software & Firmware Downloads**, DEFINITY ECS, TN2302AP firmware downloads. On the page titled “Retired - (OLD Do Not Use) DEFINITY Firmware Downloads”, scroll down to the TN2302AP section and click on TFTP_Firmware_download_procedure.pdf.

Self and C-LAN-distributed download procedure

This section describes the procedures for either a self or C-LAN-distributed firmware download. These procedures help you determine which method to use. The main differences between the two methods are:

Table 52: Download Method Differences

C-LAN-distributed download	The source circuit pack is always a C-LAN, either TN799DP or TN799C. Multiple target circuit packs of the same TN code can be scheduled for download at a time.
Self download	The source and target circuit packs are the same. Each circuit pack must be scheduled for download individually.

The high-level steps used to perform a self- or C-LAN-distributed firmware download are

- 1 [Prepare for download](#) on page 199
- 2 [Upload image file from the Web to staging area](#) on page 202
- 3 [FTP the image file to source](#) on page 202
- 4 [Schedule a download to target\(s\)](#) on page 203
- 5 [Monitor download progress](#) on page 207
- 6 [Disable file system](#) on page 208

NOTE:

If you have any trouble with this procedure, refer to [Troubleshooting firmware downloads](#) on page 209.

Prepare for download

The following subsections contain procedures to prepare for the firmware downloads to target circuit packs:

- [Verify hardware/software requirements](#) on page 199
- [Get circuit pack information](#) on page 201
- [Set up source circuit pack's file system](#) on page 202

Verify hardware/software requirements

Make sure you know which download procedure to use and that you have all the hardware and software that is necessary to proceed.

- Given the type of target circuit pack to be upgraded, choose an appropriate source circuit pack from the following table ([Table 53, Download Method by Circuit Pack](#), on page 200). The last column indicates which download method must be used with the target and chosen source.

Table 53: Download Method by Circuit Pack

Target Circuit Pack(s)	Source Circuit Pack	Download Method
TN464GP, TN2464BP, and TN2313AP (UDS1)	TN799C or TN799DP	C-LAN-distributed
TN2214CP or TN2224CP (DIG-LINE)	TN799C or TN799DP	C-LAN-distributed
TN771DP (Maintenance/Test)	TN799C or TN799DP	C-LAN-distributed
TN2302AP (IP Media Processor) ¹	TN799C or TN799DP	C-LAN-distributed
TN799DP (C-LAN)	TN799DP	Self
TN2501AP (VAL)	TN2501AP	Self

1 For TN2302AP circuit packs with a vintage less than 22, a different download procedure is required that is not described here. Go to the Avaya Support Web site under **Software & Firmware Downloads**, DEFINITY ECS, TN2302AP firmware downloads. On the page titled “Retired - (OLD Do Not Use) DEFINITY Firmware Downloads”, scroll down to the TN2302AP section and click on TFTP_Firmware_download_procedure.pdf.

- Make sure you have the following:
 - Superuser or services login and password to the Avaya Communication Manager
 - PC or other server with the following:
 - IP connectivity to the source board
 - Web browser (Internet Explorer 5.0 or higher or Netscape 4.x)
 - IP connectivity to the World Wide Web
 - File transfer protocol (FTP) software program

NOTE:

Some GUI-based FTP applications are incompatible with Avaya Communication Manager. Command-line FTP applications launched from a DOS prompt or UNIX shell work best.

If you need to distribute firmware from a source C-LAN to target boards on a DS1-C (DS1 converter complex) remote port network, then make sure a clear channel exists between the source C-LAN and those target boards:

- 1 Type **list fiber-link** and press **Enter**.
- 2 Find the link between the source C-LAN and the target boards.
- 3 Type **display fiber-link n**, where *n* is the fiber link’s number, and press **Enter** to access the Fiber Link Administration screen.
- 4 Go to the page 2 and verify that the `Line Coding` fields are set to **b8zs** for T1 facilities and **hdb3** for E1 facilities.

If they are not, then escalate before proceeding with the firmware download.

Get circuit pack information

- 1** Type **list configuration all** and press **Enter** to access the System Configuration screen.

```
list configuration all

                                SYSTEM CONFIGURATION

Board                               Assigned Ports
Number Board Type                   Code    Vintage  u=unassigned t=tti p=psa
01A08 IP MEDIA PROCESSOR            TN2302AP HW03 FW044 01 02 03 04 05 06 07 08
01A04 CONTROL-LAN                   TN799DP  HW00 FW005  u  u  u  u  u  u  u  u
                                17
01B04 DS1 Interface                  TN464GP  HW02 FW006 01 02 03 04 05 06 07 08
                                09 10 11 12 13 14 15 16
                                17 18 19 20 21 22 26 24
                                u  u  u  u  u  u  u  u
01B05 DS1 Interface                  TN464GP  HW02 FW006 01 02 03 04 05 06 07 08
                                09 10 11 12 13 14 15 16
                                u  u  u  u  u  u  u  u
                                u  u  u  u  u  u  u  u
01B06 DS1 Interface                  TN464F   000038    01 02 03 04 05 u  u  u
                                u  u  u  u  u  u  u  u
                                u  u  u  u  u  u  u  u
                                u  u  u  u  u  u  u  u
01A10 VAL-ANNOUNCEMENT              TN2501AP HW01 FW004 01 02 03 04 05 06 07 08
                                09 10 11 12 13 14 15 16
                                17 18 19 20 21 22 26 24
                                25 26 27 28 29 30 31 32
                                33
```

- 2** Look for the target circuit pack(s). If the suffix in the `Code` field does not have a “P” (e.g., TN2302AP), a firmware download is not possible.
- 3** Look for the firmware vintage(s) in the `Vintage` field of the target circuit pack(s) to see if a firmware download is needed.
- 4** Record the UUCSS address in the `Board Number` field of each source and target circuit pack. If a C-LAN is the source, make sure port 17 is assigned on that C-LAN. If it is not assigned, administer the port.
- 5** Type **add data-module UUC17** and press **Enter**.
For a self download to a VAL board, make sure that port 33 is assigned on the VAL board. If it is not assigned, administer the port.
- 6** Type **add data-module UUC33** and press **Enter**.
- 7** Determine the IP address of the source circuit pack. You can either ask the data systems administrator or type the following commands:
 - a** Type **display ip-interfaces**. Find the source circuit pack’s `Slot` location and write down its `Node Name`.
 - b** Type **display node-names ip**. Find the source circuit pack’s `Node Name` and write down its `IP Address`.

Set up source circuit pack's file system

Before files can be copied to the source circuit pack, you must set up a file system on the source circuit pack to accept the files.

- 1** Log in using a superuser or services login and password.
- 2** Type **enable filesystem board UUCSS login ftplogin ftppassword**, where:
 - *UUCSS* is the location of the source circuit pack.
 - *ftplogin* is any temporary login ID that you choose for this FTP session (for example, *denver*).
 - *ftppassword* is any password that you choose for this FTP session (for example, *broncos*). The password must be at least 7 characters long.

You use this same *ftplogin* and *ftppassword* in the section, [FTP the image file to source](#) on page 202.

This completes the preparation for a firmware download.

Upload image file from the Web to staging area

To upload files from the Web, you need a temporary staging area to store the firmware images before downloading them to a TN circuit pack. Although the staging area is often on a PC platform, you can also use other platforms such as a UNIX or Linux.

- 1** Go to the Avaya Support Web site (<http://avaya.com/support>). Follow the **Software & Firmware Downloads** link and the subsequent links for your product and the target circuit pack TN code.
- 2** Find the section for the firmware vintage you want. Unless otherwise instructed, choose the highest vintage.
- 3** Be sure to read that vintage's ReadMe file before downloading the image file(s).
- 4** For each image file to be downloaded:
 - a** Click on the image filename.
 - b** Save this file to disk in a local staging area directory.
 - c** Write down the path to the local staging area and the filename of the firmware image. You need this information later.

FTP the image file to source

The following steps are generic to most FTP programs.

- 1** From the computer where the local staging area is, bring up a DOS interface or UNIX/Linux shell.
- 2** Ensure that the new firmware image file is in the local staging area directory:
 - a** Change the directory to the staging area:
cd /your-staging-area
 - b** List the contents of the directory showing the most recent files last using **dir /od** (DOS) or **ls -ltr** (UNIX/Linux).

- 3 Use FTP to copy the firmware image file(s) to the source:
 - a Type **ping ip_address**, where *ip_address* is the IP address of the source board, and press **Enter** to verify a communication link to the source board.
 - b Type **ftp ip_address** and press **Enter** to provide the FTP interface with a link to the source.
 - c Log into the FTP session with the same *ftplogin* and *fppassword* that you set up earlier in [Set up source circuit pack's file system](#) on page 202.
 - d Type **binary** and press **Enter**. This requests that files be transferred in binary format.



CAUTION:

Files are corrupted during transfer if you do not specify **binary**.

- e If you are self downloading to a TN2501AP (VAL) circuit pack, type **cd /**
This command moves you from the announcement directory (default for an FTP session on the VAL board) to the root directory (“/”), where firmware and other files reside. This keeps the firmware image file separate from the announcement files.
- f Type **put filename.ext** and press **Enter** to copy the new firmware image file to the source directory in RAM.
- g Type **ls** and press **Enter** to verify that the new firmware image file is on the circuit pack.
- h Type **bye** and press **Enter** to end the FTP session.

Schedule a download to target(s)

You can schedule the download to occur immediately or at a later date and time. The procedures for self- and C-LAN-distributed download methods differ at this step.

- 1 Type **change firmware download** and press **Enter**.
- 2 Fill in the fields as described in [Table 54](#).

Table 54: Firmware Download fields and descriptions

Field	Description	Notes
Source Board's Location	Type the UUCSS address of the source circuit pack.	For a self download, the same board is the source board and target board. For a C-LAN-distributed download, this is the source C-LAN location.
Firmware Image File Name	Type the complete filename of the new firmware image file. If the list directory board command showed that the file had an extension, such as .bin, include the extension as well.	

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Table 54: Firmware Download fields and descriptions

Field	Description	Notes
Target Board Code	Type the circuit pack ID, for example “TN2501.” Do not type the suffix, such as “AP”, “DP”, or “GP”.	Enter the TN code of the target circuit pack(s). For a self download, this is the same as for the source circuit pack.
Suffix	Examples: <ul style="list-style-type: none"> • For VAL (TN2501AP), type AP. • For C-LAN (TN799DP), type DP. • For DS1 (TN464GP), type GP. 	
Firmware Vintage	This is blank. It shows a value in the Firmware Download form of a display firmware download or a status firmware download .	
Schedule Download	Type y to schedule the firmware download for another time. Type n to start the firmware download immediately after completing the form.	Once the firmware download begins, you cannot make any changes to this form. You can only disable this schedule using disable firmware download and then start a new one. (See Aborting a firmware download on page 209 for instructions.) If you answer n(o) , then the <i>Start Date/Time</i> and <i>Stop Date/Time</i> fields disappear. The download begins as soon as you press Enter .
Remove Image File After Successful Download	Type y if you want the procedure to automatically remove the new firmware image file [default]. Type n if you do not want the new firmware image file removed.	At the completion of a successful download, the procedure automatically removes the new firmware image file from the source file system, freeing up the memory on the source circuit pack. We recommend using the default setting. If field is set to n , you must manually remove the new firmware image file from the source file system after the download has completed. (See Disable file system on page 208 for instructions.)
Start Date/Time	Type the date and time that you want the firmware download to begin.	

Table 54: Firmware Download fields and descriptions

Field	Description	Notes
Stop Date/Time	Type the date and time that you want the firmware download to end.	If the scheduled stop time is reached before the new firmware image file has been downloaded to every circuit pack, the system finishes downloading to the circuit pack in progress before aborting the remainder of the download schedule.
Target Location	Type the UUCSS address of the circuit pack that you are updating.	For a self download, this circuit pack must reside in the same location as the source pack. For a C-LAN-distributed download, enter up to 50 locations — these must all be the same type of circuit pack.

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If you are performing a self download, enter only one target board location; it is the same as the source board location. The following screen provides an example of self download to a VAL circuit pack.

```

change firmware download                               Page 1 of 1
                FIRMWARE DOWNLOAD
Source Board Location: 01A10
Firmware Image File Name: tn2501ap_f05.bin
Target Board Code: TN2501 Suffix: AP Firmware Vintage: _
Schedule Download? y Remove Image File After Successful Download? y
Start Date/Time: 09/12/2002 13:30 Stop Date/Time: 09/12/2002 16:30

Target      Target      Target      Target      Target
Location    Location    Location    Location    Location
1. 01A10    11. _____ 21. _____ 31. _____ 41. _____
2. _____ 12. _____ 22. _____ 32. _____ 42. _____
3. _____ 13. _____ 23. _____ 33. _____ 43. _____
4. _____ 14. _____ 24. _____ 34. _____ 44. _____
5. _____ 15. _____ 25. _____ 35. _____ 45. _____
6. _____ 16. _____ 26. _____ 36. _____ 46. _____
7. _____ 17. _____ 27. _____ 37. _____ 47. _____
8. _____ 18. _____ 28. _____ 38. _____ 48. _____
9. _____ 19. _____ 29. _____ 39. _____ 49. _____
10. _____ 20. _____ 30. _____ 40. _____ 50. _____

Enter 5 character board number; cabinet(1-30):carrier(A-E):slot(0-20

```

If you are performing a C-LAN-distributed download, enter a C-LAN location as the source and 1 to 50 target locations, where the target boards are all of the same type. The following screen provides an example of a C-LAN-distributed download to 2 UDS1 circuit packs.

```

change firmware download                               Page 1 of 1
                FIRMWARE DOWNLOAD
Source Board Location: 01A04
Firmware Image File Name: usdlv22r1
  Target Board Code: TN464 Suffix: GP Firmware Vintage:
Schedule Download? y Remove Image File After Successful Download? y
Start Date/Time: 10/08/2002 22:00 Stop Date/Time: 10/08/2002 22:30

Target      Target      Target      Target      Target
Location    Location    Location    Location    Location
1. 01B04    11. _____ 21. _____ 31. _____ 41. _____
2. 01B05    12. _____ 22. _____ 32. _____ 42. _____
3. _____ 13. _____ 23. _____ 33. _____ 43. _____
4. _____ 14. _____ 24. _____ 34. _____ 44. _____
5. _____ 15. _____ 25. _____ 35. _____ 45. _____
6. _____ 16. _____ 26. _____ 36. _____ 46. _____
7. _____ 17. _____ 27. _____ 37. _____ 47. _____
8. _____ 18. _____ 28. _____ 38. _____ 48. _____
9. _____ 19. _____ 29. _____ 39. _____ 49. _____
10. _____ 20. _____ 30. _____ 40. _____ 50. _____

Enter 5 character board number; cabinet(1-30):carrier(A-E):slot(0-20)
  
```

3 Press **Enter** to submit the schedule.

If you set the Schedule Download field to **n**, the download starts as soon as you submit the schedule.

NOTE:

If you are scheduling firmware downloads for a circuit pack that is designated as primary/secondary sync (timing) source (for example, TN464GP), this procedure automatically redesignates a local timing source during the download. After the download is complete and the circuit pack is returned to service, the procedure designates the original circuit pack as the timing source.

NOTE:

The target circuit packs are automatically removed from service while the firmware is downloaded to them and automatically returned to service after the download is completed. While a circuit pack is removed from service, any active calls through that circuit pack are dropped.

NOTE:

An error message asking you to use the command, **test firmware download**, means that there was a problem with a previous firmware download. Run the test before proceeding. Go to [Testing firmware download](#) on page 209.



CAUTION:

Unless the Remove Image File After Successful Download field is set to **y**, the *ftplogin* and *ftppassword* remain on the TN799DP or TN799C (C-LAN) and TN2501AP (VAL) circuit packs either until they are reset or until you type the **disable filesystem board UUCSS** command.

4 If the download is scheduled for later, ensure that the download will run as you intend by testing the firmware download. Go to [Testing firmware download](#) on page 209.

Monitor download progress

You can check the progress of a firmware download with this procedure.

- 1 Type **status firmware download** and press **Enter** to display the Status Firmware Download screen.

```

status firmware download                                     Page 1 of 1
                                     STATUS FIRMWARE DOWNLOAD
Source Board Location: 01C02
Firmware Image File Name: usdlv22r1
Target Board Code: TN464 Suffix: GP Firmware Vintage: 8
Schedule Download? _ Remove Image File After Successful Download? y
Start Date/Time: 01/12/2001 13:30 Stop Date/Time: 01/14/2001 16:30

Target      Target      Target      Target      Target
Location St Location St Location St Location St Location St
1. 01B04   C  11. _____ 21. _____ 31. _____ 41. _____
2. 01B05   C  12. _____ 22. _____ 32. _____ 42. _____
3. _____ 13. _____ 23. _____ 33. _____ 43. _____
4. _____ 14. _____ 24. _____ 34. _____ 44. _____
5. _____ 15. _____ 25. _____ 35. _____ 45. _____
6. _____ 16. _____ 26. _____ 36. _____ 46. _____
7. _____ 17. _____ 27. _____ 37. _____ 47. _____
8. _____ 18. _____ 28. _____ 38. _____ 48. _____
9. _____ 19. _____ 29. _____ 39. _____ 49. _____
10. _____ 20. _____ 30. _____ 40. _____ 50. _____

Status: Pending(P) Completed(C) Failed(F) Aborted (A)

```

If this form is blank, the download has completed; go to [Step 3](#).

- 2 Check the St (status) field immediately to the right of the Target Location field to view the progress of the firmware update:
 - (P)ending
 - (C)ompleted
 - (F)ailed
 - (A)borted
- 3 Type **status firmware download last** and press Enter to view the progress of the last completed firmware update or the entire schedule if it is completed. Notice in the previous screen that the Start and Stop times now reflect the actual start and stop times of the download schedule and that the Firmware Vintage now reflects the vintage that was downloaded.
- 4 If one or more downloads fail, go to [Testing firmware download](#) on page 209.
- 5 If previously you set the Remove Image File After Successful Download? field on the Firmware Download screen to y, then the download procedure is now complete.

If you previously set it to n, then proceed to the next section, [Disable file system](#) on page 208, to manually remove the firmware image and disable the file system on the source circuit pack.

Reseat VAL circuit pack

For TN2501AP (VAL) circuit packs only, reseat the TN2501AP to reset the board after the download is complete.



CAUTION:

If you do not reseat the TN2501AP, then the pack runs using old firmware.



WARNING:

To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.



CAUTION:

Ensure that the top green and top amber LEDs on the TN2501AP are out.

- 1 Release the latch handle to free the TN2501AP from the carrier.
- 2 Pull the circuit pack out about 1 – 2 inches (3 – 5 cm).
- 3 Re-insert the circuit pack into the media gateway or carrier.
- 4 Close the latch securely.
- 5 Wait until all three of the top LEDs (red, green, and amber) are out.

Disable file system

NOTE:

Performing the following steps on the TN799DP (C-LAN) or TN2501AP (VAL) circuit packs removes only the *ftplogin* and the *ftppassword*. The allocated memory for the file system remains reserved for the session.

To free up resources on the source circuit pack, you must delete the new firmware image files and disable the file system.

- 1 Type **remove file board UUCSS filename.ext** and press **Enter** to remove the image file from the source board.
- 2 Type **list directory board UUCSS** and press **Enter**.
- 3 Check the File/Directory Name field to verify that the new firmware image file is *not* listed.
- 4 Type **disable filesystem board UUCSS** and press **Enter** to disable the file system on the source circuit pack.

NOTE:

This command is successful only if no files remain on the source circuit pack.

This completes the self- and C-LAN-distributed download procedures.

Troubleshooting firmware downloads

This section contains these troubleshooting subsections:

- [Aborting a firmware download](#) on page 209
- [Testing firmware download](#) on page 209
- [Backing out of a firmware download](#) on page 209

Aborting a firmware download

You can only abort (disable/cancel) a scheduled download that has not yet started. Any download currently in progress to a circuit pack finishes. For example, if you had scheduled a C-LAN distributed download to multiple targets and the download was in progress to the first circuit pack when you disabled the download, then the download would stop after the completion of the first circuit pack's download and the remainder of the circuit packs would not receive the download.

To abort a self or C-LAN-distributed firmware download, enter the SAT command **disable firmware download**.

Testing firmware download

You can test a self- or C-LAN-distributed firmware download either before a scheduled download has begun or after an attempted download has reported errors.

- 1 Type **test firmware download** and press **Enter** to display the Test Results screen.

If the download has already begun, the test is denied.

```
test firmware download                               SPE A
                                                    TEST RESULTS
Port      Maintenance Name  Alt. Name  Test No.  Result      Error Code
FW-DWNLD                               1413      PASS
```

- 2 Look in the **Result** field for **FAIL/PASS** conditions.

The **Result** field in the screen shows **PASS**, indicating a successful test of the firmware download circuitry.

If the **Result** field shows **FAIL**, refer to the *Maintenance for Avaya DEFINITY Server R* in the FW-DWNLD maintenance object section, subsection entitled System Technician-Demanded Tests: Descriptions and Error Codes. Resolve every error and rerun the test.

When the test passes, every specified resource is currently available for the scheduled download. Note, however, that this does *not* guarantee the resource will still be available at the time of the download.

Backing out of a firmware download

To back out of a completed firmware download and revert to the previous image, follow the same download procedure you did before, except use the previous firmware vintage instead. The exception is TN799DP (C-LAN) and TN2501AP (VAL), which have a separate procedure.

Reverting to an older TN799DP or TN2501AP vintage

To revert back to the old firmware image file on a TN799DP (C-LAN) or TN2501AP (VAL) only:

- 1** Type **get boot-image UUCSS** and press **Enter** to check the status of the firmware images on the target circuit pack. .

```
get boot-image 1C07

                        DISPLAY FIRMWARE IMAGE(S)

      Image 1      Image 2

Board Type: TN2501      TN2501
FW Vintage: 02         01
HW Signature: 02       02
  Suffix: A           A
  Date: 09/13/02      05/06/02
  Timestamp: 10:30:50  12:42:18
CRC Checksum: Good     Good
Active Image: Yes      No
Reboot Image: Yes      No
```

- 2** Check the `Active Image:` field in the `Image 1` and `Image 2` columns to see where the active image resides.
- 3** Check the `Date` and `Timestamp` fields to determine whether to revert back to a previous image. In the following example, we are reverting back to Image 2, because it has the older date and time stamp.

NOTE:

In most cases, the image with the more recent date and time stamp is the new firmware image file.

- 4** Type **set boot-image board UUCSS image 1 | 2** and press **Enter**.
Example: **set boot-image board 1C07 image 2**
The system responds with `Command Successfully Completed`.
- 5** Type **get boot-image UUCSS** and press **Enter** to check the status of the firmware images on the target circuit pack.

```
get boot-image 1C07

                        DISPLAY FIRMWARE IMAGE(S)

      Image 1      Image 2

Board Type: TN2501      TN2501
FW Vintage: 02         01
HW Signature: 02       02
  Suffix: A           A
  Date: 03/02/02      03/02/01
  Timestamp: 10:30:50  12:42:18
CRC Checksum: Good     Good
Active Image: Yes      No
Reboot Image: No       Yes
```

Note that the values in the `Reboot Image` field have changed.

NOTE:

If a TN799C/DP C-LAN or TN2305 VAL circuit pack, reseal them to activate the new firmware image. Go to [Reseat VAL circuit pack](#) on page 208.

- 6 Type **get boot-image UUCSS** to check the status of the firmware images on the target circuit pack.

```
get boot-image 1C07

                                DISPLAY FIRMWARE IMAGE(S)

                                Image 1          Image 2
Board Type: TN2501              TN2501
FW Vintage: 02                  01
HW Signature: 02                02
Suffix: A                       A
Date: 03/02/02                  03/02/01
Timestamp: 10:30:50             12:42:18
CRC Checksum: Good              Good
Active Image: No                 Yes
Reboot Image: No                 Yes
```

- 7 Ensure that both the `Active Image` and the `Reboot Image` fields are as you expect.

Install TN464GP/TN2464BP with Echo Cancellation

The TN464GP and TN2464BP circuit packs with echo cancellation are intended for customers who are likely to encounter echo over circuits connected to the Direct Distance Dialing (DDD) network. These circuit packs are intended for channels supporting voice; therefore, they support the following trunks: CAS, CO, DID, DIOD, DMI, FX, Tie, WATS. They do not support any data trunk groups.

NOTE:

The P suffix designation means the circuit pack is programmable; new firmware can be downloaded directly to the circuit pack. For more information refer to [Upgrade Firmware on Programmable Circuit Packs](#) on page 197.

The TN464GP and TN2464BP circuit packs are backwards compatible, although the echo cancellation feature can only be used with Release 1.1 or later of Avaya™ Communication Manager and after the feature is enabled.

The echo cancellation feature cancels echoes with delays up to 96 ms. Echo cancellation is disabled automatically when the circuit pack detects a 2100-Hz *phase-reversed* tone put out by high-speed modems (56K baud) but not when it detects a 2100-Hz *straight* tone generated by low-speed modems (9.6K baud).

For information on installing port circuit packs, refer to [Add Circuit Packs](#) on page 197. For information on setting the option switches, refer to [TN464F/GP and TN2464BP Option Settings](#) on page 140. For information on administering the circuit packs, refer to the *Administrator's Guide for Avaya Communication Manager*.

Echo cancellation must first be purchased, then a License File created and installed.

Use the following procedure to modify the settings:

NOTE:

You do not need to busyout the circuit packs to modify the settings. But the modified settings do not take effect until either the port is busyied out or the scheduled maintenance runs.

- 1 Type **display system-parameters customer-options** and press **Enter**. On screen 2 verify that the DS1 Echo Cancellation? field is set to **y**. If not, contact your Avaya representative as this must be set by the license file.
- 2 Type **[add | change] trunk-group [next | number]** and press **Enter**.

```
add trunk-group next                               Page 2 of 11  SPE A
                                         TRUNK FEATURES
          ACA Assignment? n                      Measured: both
          Internal Alert? n                      Maintenance Tests? y
          Data Restriction? n
          Glare Handling: none
          Used for DCS? n
          Suppress # Outpulsing? n
          Seize When Maintenance Busy: neither-end
          Incoming Tone (DTMF) ANI: no          Per Call CPN Blocking Code:
          Connected to CO? n                   Per Call CPN Unblocking Code:
                                         Ds1 Echo Cancellation? y
```

- 3 On Trunk Features, screen 2, set the DS1 Echo Cancellation? field to **y**.
- 4 Type **[add | change] ds1 UUCSS** and press **Enter**.

```
add ds1 2b08                                       Page 1 of 1  SPE B
                                         DS1 CIRCUIT PACK
          Location: 02B08                        Name: Echo Cancel t23
          Bit Rate: 2.048                       Line Coding: hdb3
          Signaling Mode: CAS
          Interconnect: pbx                      Country Protocol: 1
          Interface Companding: mulaw           CRC? n
          Idle Code: 11111111
          Slip Detection? y                      Near-end CSU Type: other
          Echo Cancellation? y
          EC Direction: inward
          EC Configuration: 1
```

- 5** On the DS1 Circuit Pack screen, set the Echo Cancellation? field to **y**.
When set to **y**, 2 new fields display: EC Direction: and EC Configuration:.

 - If you know the echo is coming into the Avaya CMC1 Media Gateway, keep the default setting for the EC Direction: field of **inward**.
 - If you know that the distant party is hearing echo that originates in the Avaya CMC1 Media Gateway or its line side stations or equipment, set the EC Direction: field to **outward**.
 - Keep the default setting for the EC Configuration: field of **4**. This setting minimizes extremely strong echo, very hot signals, or excessive clipping or breakup of speech from a distant party. It reduces speech clipping but may allow slight residual echo or more background noise.
- 6** Test the voice quality on a telephone connected through the TN464GP or TN2464BP circuit packs and known to have echo to see if the echo was eliminated.
- 7** If the echo still exists, set the EC Configuration: field to **1**, **2**, or **3**, then test the voice quality. These settings provide help for the following scenarios:

 - Setting 1 rapidly minimizes echo when first detected, regardless of the loudness of the talker's voice. Settings 1 and 4 have the same EC settings except that Setting 1 introduces 6 dB of loss.
 - Setting 2 minimizes speech clipping, but it takes a fraction of a second longer for the echo to fade.
 - Setting 3 eliminates speech clipping, but a strong echo may take 2 or 3 seconds to fade.
- 8** If after trying all these settings, the echo still exists, contact technical support. Refer to [Where to get additional help](#) on page 17.

Add CO, FX, WATS, and PCOL

Requirements

Each Central Office (CO), Foreign Exchange (FX), Personal Central Office Line (PCOL), or Wide Area Telecommunications Service (WATS) trunk connects to 1 port of either an 8-port TN747B or to 1 of several CO trunk circuit packs.

Installation

- 1 Install a TN747B or a CO Trunk circuit pack in the assigned carrier slot (if an additional circuit pack is required).
- 2 Administer the forms listed under CO, FX, WATS, or PCOL Trunk Group in *Administrator's Guide for Avaya Communication Manager*.
- 3 Determine the port assignment of the trunk from the Trunk Group form.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

Add DID Trunks

Requirements

Two circuit packs presently support Direct Inward Dial (DID) trunks: the TN753 DID trunk circuit pack and the TN797 Combination Circuit pack. Each can support up to 8 DID trunks.

Installation

- 1 Determine the port assignment of the trunk from the Trunk Group form.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

- 2 Install a DID Trunk circuit pack in assigned carrier slot (if an additional circuit pack is required).
- 3 Administer forms listed under "DID Trunk Group" in *Administrator's Guide for Avaya Communication Manager*.

Add Tie Trunks

Requirements

Each tie trunk connects to 1 port of a 4-port tie trunk circuit pack or to an assortment of international tie trunk circuit packs.

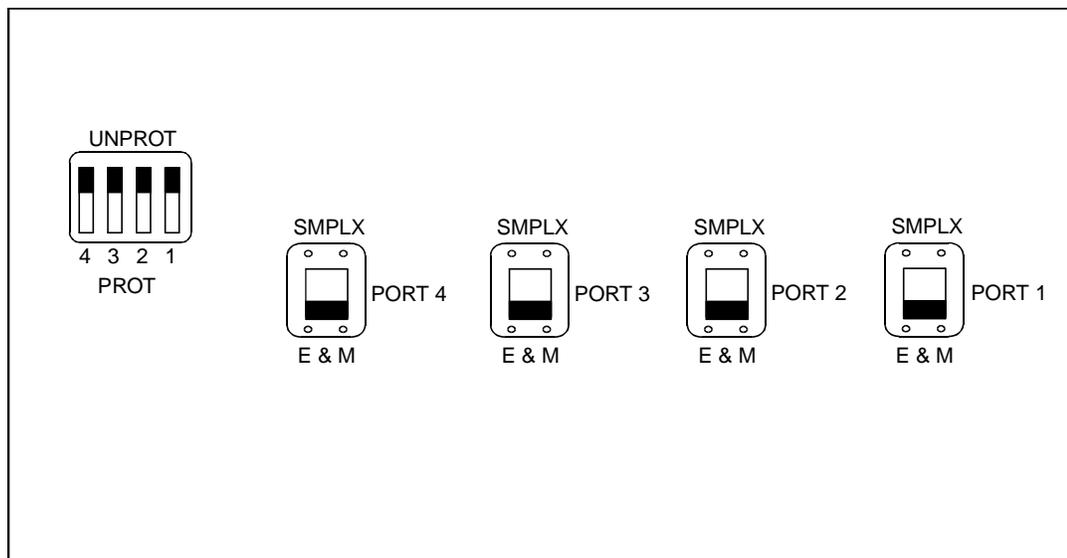
Installation

- 1 Determine the port assignment of the trunk from the trunk group screen.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

- 2 Install the tie trunk or an international tie trunk circuit pack in assigned carrier slot (if an additional circuit pack is required).
- 3 For customer-owned (not leased) tie-trunk facilities (such as campus environments), tie trunk circuit packs provide signaling capabilities beyond those specified by the industry-wide E&M standard. Use [Figure 83, Tie Trunk Circuit Packs \(Component Side\)](#), on page 215 and [Table 55, Tie Trunk Option-Switch Settings and Administration](#), on page 216 to choose the preferred signaling format, set switches on the circuit pack, and administer the port.
- 4 Administer forms listed under “Tie Trunk Group” in the *Administrator’s Guide for Avaya Communication Manager*.

Figure 83: Tie Trunk Circuit Packs (Component Side)



r758183 RBP 050896

Table 55: Tie Trunk Option-Switch Settings and Administration

Installation Situation		Preferred Signaling Format		E&M/SMPLX Switch	Prot/Unprot Switch	Administered Port
Circumstance	To	System	Far-End			
Collocated	Avaya CMC1 Media Gateway	E&M Type 1	E&M Type 1	E&M	Unprotected	Type 1
		Compatible	Standard			Compatible
Inter-Building	Avaya CMC1 Media Gateway	Protected Type 1	Protected Type 1	E&M	Protected	Type 1
		Compatible	Standard Plus Protection Unit			Compatible
Collocated	Net Integrated	E&M Type 1 Standard	Any PBX	E&M	Unprotected	Type 1

Add DS1 Tie and OPS

The TN2313AP DS1 Tie Trunk and TN767B (or later) DS1 Interface circuit packs provide connections to a 1.544 Mbps DS1 facility (T1) as 24 independent 64 Kbps trunks.

The TN2313AP DS1 Tie Trunk, TN767B (or later) DS1 Interface, and TN464C (or later) DS1 Interface circuit packs provide connections to a 2.048 Mbps DS1 facility (E1) as 32 independent 64-kbps trunks.

Service Interruption

- 1** Since the addition of DS1 tie-trunk service may require a service interruption, notify the customer in advance as to when the addition will occur.
- 2** For information about administering DS1 Tie Trunks, refer to *Administrator's Guide for Avaya Communication Manager*.

Add Speech Synthesis

The Speech Synthesizer circuit pack is required when the Voice Message Retrieval, Automatic Wakeup, or Do Not Disturb features are activated. The circuit pack does not require administration.

- 1 Determine the port assignment of the Speech Synthesizer circuit pack being added.
- 2 Install the Speech Synthesizer circuit pack in the designated carrier slot.

Add Code Calling Access

The tones for the Code Calling feature are generated by the Tone-Clock circuit packs in the port networks.

- 1 Install an Auxiliary Trunk circuit pack or a Speech Synthesizer circuit pack and connect for Loudspeaker Paging. The Code Calling Access feature shares the same ports as Loudspeaker Paging. An Auxiliary Trunk circuit pack provides 4 ports for Loudspeaker Paging and Code Calling Access.
- 2 Administer the form listed under “Code Calling Access” in *Administrator’s Guide for Avaya Communication Manager*.

Add Pooled Modem

Modem pooling supports two types of conversion resources: integrated and combined.

An integrated conversion requires a Pooled Modem circuit pack for each 2 conversion resources provided.

A combined conversion requires a port of a TN745B or TN2136 Digital Line circuit pack and a port of either an 8-port TN742, TN769, a 16-port TN746B, or a 24-port TN793/B, TN2793/B Analog Line circuit pack for each conversion resource provided.

The pooled modem requires a WP90110 L7 power supply. Although integrated conversion can use either the L5 or L7, the combined only works with an L7.



CAUTION:

The L5 and L7 power supplies look identical. Check the label to be sure you have the L7 before installing.

Determine the port assignment of the circuit packs to be added (if required).

- 3 Install the appropriate circuit packs in assigned carrier slot (if required).
- 4 For Paradyne 3800 series modems:
 - a Type `AT&F&D2&S4\D3S2=128x7V2S7=60S85=1` and press **Enter**.
 - b Type `ATY0S10=100S78=2M0E0\N1&W` and press **Enter**.
- 5 For other types of modems, refer to the vendor’s documentation.

Settings for Modem Connected to Data Module

- 1 Type **add data-module next** and press **Enter**.
- 2 Type **pdm** in the **Type** field.
- 3 Type **x** in the **Port** field.
- 4 Type **dte** in the **Connected to** field and press **Enter**.
- 5 Type **add station next** and press **Enter**.
- 6 Type **2500** in the **Type** field.
- 7 Type **x** in the **Port** field.
- 8 Type **n** in the **Tests** field and press **Enter**.
- 9 Type **add modem-pool next** and press **Enter**.
- 10 Type **combined** in the **Group Type** field.
- 11 Type **5** in the **Hold Time (min)** field.
- 12 Type **two-way** in the **Direction** field.
- 13 Type **9600** in the **Speed** field.
- 14 Type **Full** in the **Duplex** field.
- 15 Type **async** in the **Synchronization** field.
- 16 Type the port pair assignments in the **Analog** and **Digital** fields and press **Enter**.

Settings for Modem Connected to the Data Terminal Equipment (DTE)

- 1 Type **add station next** and press **Enter**.
- 2 Type **2500** in the **Type** field.
- 3 Type the port assignment in the **Port** field and press **Enter**.

Add Integrated Announcements/TN2501AP

Replacing a TN750/B/C circuit pack

If you are replacing a TN750C announcement circuit pack with the new TN2501AP:

- get a list and description of the announcements stored on the TN750C circuit pack.
- re-record the announcements on a computer or at a professional recording studio as .wav files (CCITT μ -Law or A-Law, 8KHz, 8-bit mono), so that they are ready to transfer to the new announcement circuit pack after it is installed and administered. See [Announcement File Specifications](#).



CAUTION:

Before you remove a TN750A or B circuit pack from its carrier, ensure that you have backed up the announcements that are stored on it. Once you remove the circuit pack from the carrier, power is lost along with the announcements.

Replacing old announcement circuit packs with the new TN2501AP circuit pack requires that you

- remove previous announcement administration
- record new announcements for the TN2501AP
- re-record any announcements currently resident *on the TN750 circuit packs that you are replacing*. You cannot transfer or restore TN750 announcements from flash card, tape, or optical disk to the TN2501AP.

Announcement File Specifications

The TN2501AP circuit pack, Voice Announcement over LAN (VAL), requires that announcement files are in the following .wav formats:

- CCITT A-Law or CCITT μ -Law companding format (do not use PCM)
- 8KHz sample rate
- 8-bit resolution (bits per sample)
- Mono (channels = 1)

All previously-recorded announcements must be converted to these file formats to work on the TN2501AP circuit pack. Announcements recorded through the direct telephone access are automatically recorded in the correct file formats.

Caveats

Remember the following points when using the TN2501AP integrated announcement circuit pack for the first time or when replacing the TN750C circuit pack:

- Despite the feature name, announcements are not played over the LAN but can be transferred to and from the TN2501AP circuit pack over the LAN.
- You cannot save or restore announcements to a TN2501AP circuit pack to/from
 - a TN750C circuit pack.
 - flash cards.
 - tape.
 - magneto optical disks.

Before you start

Ensure that you have the required hardware (see [Hardware specifications](#)).

Configurations

[Figure 84](#) shows the configuration options for the TN2501AP (VAL) circuit pack within a system.

Figure 84: VAL configuration options

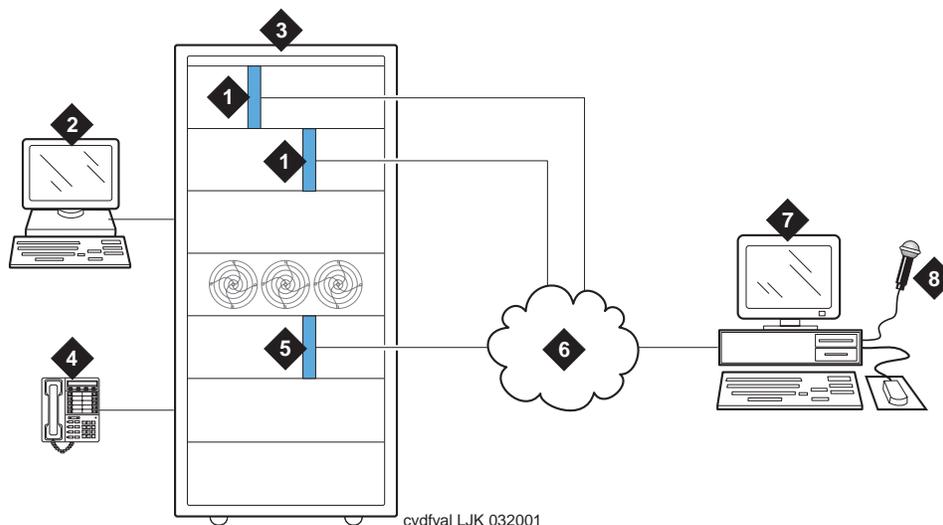


Figure notes

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 TN2501AP VAL announcement circuit pack</p> <p>2 System access terminal (SAT)</p> <p>3 Switch</p> <p>4 Phone for recording announcements</p> <p>5 TN799C (C-LAN) is required when using IP SAT or VAL Manager.</p> | <p>6 Your LAN (See LAN cable)</p> <p>7 Computer or remote recording studio for</p> <ul style="list-style-type: none"> • Recording and storing announcements • FTP client application • VAL Manager application (PC only) <p>8 Microphone</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Hardware specifications

The following table contains a list of the required VAL hardware.

Part	Number	Comcode
TN2501AP	1	108772583
Backplane Adapter	1	848525887
LAN cable varies by network (see also Notes for Figure 85)	N/A	N/A

To establish LAN connections the TN2501AP circuit pack requires a

- [Backplane Adapter](#) that attaches to the Amphenol connector on the back of the cabinet, corresponding to the TN2501AP integrated announcement circuit pack slot.
- [LAN cable](#) that attaches to the Backplane Adapter.

Backplane Adapter

[Figure 85](#) shows the Backplane Adapter.

Figure 85: Backplane Adapter (Comcode 848525887)

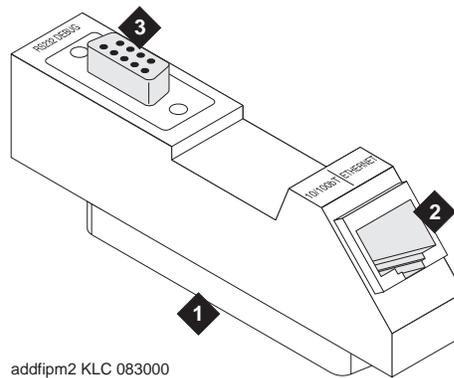


Figure notes

- | | |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Amphenol connector attaches to the back of the switch cabinet, corresponding to the TN2501AP circuit pack slot.</p> | <p>2 RJ-45 LAN cable connection</p> <ul style="list-style-type: none"> • 10 Mbps uses Category 3 cable. • 100 Mbps uses Category 5 cable. |
| | <p>3 This connector is not used for VAL.</p> |

LAN cable

The TN2501AP circuit pack does not include cables to connect the circuit pack to your LAN. The following table lists the cable category and connection port.

Ethernet connection speed	Cable	Connection description
10 Mbps	Category 3	Connects through the RJ45 jack (note #2 in Figure 85),
100 Mbps	Category 5	Connects through the RJ45 jack (note #2 in Figure 85),

Switch administration before hardware installation

Before inserting the circuit pack into a carrier, an Avaya representative must administer the VAL customer options. Before installing the hardware, check your system for the following administration:

- 1 At the SAT, type **display system-parameters customer-options** and press **RETURN**.
The System Parameters Customer Options screen appears.
- 2 Verify that the `G3 Version` field is set to **V11**.
- 3 Verify that `Maximum VAL Boards` field is set to 1 or greater, up to the maximum number allowed in the system.

NOTE:

Any value greater than the default (1) means that you have the Enhanced offer.

- 4 Scroll to page 4.
- 5 Verify that the `VAL Full 1-Hour Capacity?` field is set for the offer that was purchased:
 - **n** for Standard offer (10 minutes storage time) and only 1 circuit pack.
 - **y** for Enhanced offer (1 hour storage time) and multiple circuit packs.

If any of the preceding administration is different, you must get a License File with these customer options enabled and install it on the switch before the TN2501AP circuit pack works.

Hardware installation

 **WARNING:**

To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.

- 1 Remove connector (if any) from the back of the switch cabinet corresponding to the TN2501AP circuit pack slot.
- 2 Insert the circuit pack into any port slot and close the latch securely.

At first, both the red and green LEDs are on steady, then the green LED flashes. If there are announcements on the circuit pack, the amber LED flashes while the announcements are copied from FLASH to RAM. After approximately 3-5 minutes, all of the top 3 LEDs go out, although this time is longer if there are announcements already recorded on the circuit pack.

NOTE:

If the TN2501AP or TN750 circuit packs are at the system limit and you insert a VAL circuit pack, the red LED on that circuit pack stays on, indicating that the system does not accept it.

- 3 Connect the Backplane Adapter ([Figure 85](#)) to the Amphenol connector on the back of the switch cabinet, corresponding to the TN2501AP circuit pack slot.
- 4 Connect the LAN cable to the RJ-45 connector on the Backplane Adapter.

Administer the IP connections

list configuration board

Use this command to ensure that the switch recognizes the TN2501AP circuit pack after it is latched in the carrier slot.

- 1 At the SAT, type **list configuration board *board-location*** and press **RETURN**.

The System Configuration report appears.

Figure 86: System Configuration screen (list configuration board)

```
list configuration board 1c08                                     SPE A
                                                                    SYSTEM CONFIGURATION
Board Number   Board Type           Code   Vintage   Assigned Ports
                u=unassigned t=tti p=psa
01C08         VAL-ANNOUNCEMENT    TN2501AP HW00 FW001 01 02 03 04 05 06 07 08
                09 10 11 12 13 14 15 16
                17 18 19 20 21 22 23 24
                25 26 27 28 29 30 31 32
                U
Command successfully completed
```

- 2 Verify the following field values:
 - Board Type shows **VAL-ANNOUNCEMENT**
 - Code is **TN2501AP**

change node-names ip

Use this command to administer the circuit pack's node name.

- 1 At the SAT, type **change node-names ip** and press **RETURN**.

The IP Node Names screen appears.

Figure 87: IP Node Names screen (change node-names ip)

```
change node-names ip                                     Page 1 of 1  SPE A
                IP NODE NAMES
                Name           IP Address
Tiki            172.22 .22 .79           . . .
cdr_1          192.168.22 .63           . . .
default        0 .0 .0 .0                . . .
iolan          172.22 .22 .68           . . .
lulu_cl1       172.22 .22 .71           . . .
lulu_cl2       172.22 .22 .77           . . .
riki           172.22 .22 .20           . . .
rsat4          172.31 .5 .49            . . .
rsat5          172.23 .23 .40           . . .
st10clan#1    192.168.22 .21           . . .
st12clan      172.22 .22 .67           . . .
st12prowler#1 172.22 .22 .75           . . .
VAL#1         172.22 .22 .120          . . .
                . . .
                . . .
                . . .
                . . .
( 12 of 12 administered node-names are displayed)
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name
```

- 2 Type a unique name in the Name field.

NOTE:

This name is recognized only within the switch, and does not need to match the node name on the local network.

- 3 Enter the IP address in the IP Address field.
You can get this information from the network manager.
- 4 Press **ENTER** to save the changes.

add data-module

Use this command to administer the data module that is associated with the TN2501AP ethernet port.

- 1 At the SAT, type **add data-module *extension/next*** and press **RETURN**.

The Data Module screen appears.

Figure 89: Data Module screen (add data-module *extension*)

```
add data-module 30006                                Page 1 of 1  SPE A
                                                    DATA MODULE

Data Extension: 30006                                Name: VAL#2 Data Module
Type: ethernet
Port: 1b0333
Link: 5

Network uses 1's for Broadcast Addresses? y
```

- 2 Set the **Type** field to **ethernet**.
- 3 Set the **Port** field to correspond to the circuit pack location.
In the example above, 1b0333 means Cabinet 1, Carrier B, Slot 3, Port 33.

NOTE:

The port number (final two digits) is always **33** for the TN2501AP circuit pack.

- 4 Set the **Link** field to an unassigned or next-available link number.
- 5 Set the **Network uses 1's for Broadcast Address?** field according to the your network requirements.
- 6 Type a unique name in the **Name** field.
- 7 Press **ENTER** to save your changes.
- 8 If your system uses IP routing, continue with the [add ip-route](#) section.
- 9 Otherwise, go to the [Test the IP connections](#) section.

add ip-route

Use this command to administer IP routes to the TN2501AP circuit pack. This administration is optional.

Test the IP connections

Use the **ping** and **status link** commands to test the new IP connections that you have administered.

Add ISDN—PRI

North American

- 1 Install a TN767E (or later) DS1 or a TN464GP DS1/E1 circuit pack for a signaling link and up to 23 ISDN — PRI Trunk Group members.
- 2 Install a Tone-Clock circuit pack to provide synchronization for the DS1 circuit pack.

If using a TN464GP, then packet bus support has not been added, requiring more than 8 PRI signaling groups. See [Add Packet Bus Support](#) on page 228 for adding circuit packs for packet bus support.

International

- 1 Install a TN464GP DS1/E1 circuit pack for the assignment of the 2 signaling channels and up to 30 ISDN — PRI Trunk Group members. Each E1 span provides 32 ports.
- 2 Install a Tone-Clock circuit pack to provide synchronization for the DS1/E1 circuit pack.

If using a TN464F, then packet bus support has not been added, requiring more than 8 PRI signaling groups. See [Add Packet Bus Support](#) on page 228 for adding circuit packs for packet bus support.

Add Packet Bus Support

- 1 If packet bus support is not already installed, see [Add Packet Bus Support](#) on page 228 and perform the steps.

Add Circuit Packs

- 1 Determine port assignment of circuit packs to be added.
- 2 Install the DS1 Interface circuit pack in the assigned carrier slot.
- 3 Install a Tone Detector circuit pack if required.

Install Cables

- 1 Install cables from the TN464F to the MDF as required.

Enter Added Translations

- 1 Administer the forms listed under “Integrated Services Digital Network — Primary Rate Interface” in *Administrator’s Guide for Avaya Communication Manager*.

Resolve Alarms

- 1 Examine the alarm log. Resolve any alarms that may exist using *Maintenance for Avaya DEFINITY Server CSI*.

Save Translations

- 1 Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation cards.
- 2 Update backup cards, if necessary.

Add Packet Bus Support

Disable Alarm Origination

- 1 Type **change system-parameters maintenance** and press **Enter**.
- 2 Set the `Alarm Origination Activated` field to **n**.



CAUTION:

If you do not disable Alarm Origination, the system may generate alarms, resulting in unnecessary trouble tickets.

- 3 For some DEFINITY ECS software versions, disable `Cleared Alarm Notification` and `Restart Notification` before submitting the form.

Save Translations

- 1 Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation card.

Install Circuit Packs

- 1 Install the appropriate TN circuit packs. See [Table 56](#).

Table 56: Circuit Pack Locations for Packet Bus in PPN

Circuit Pack	Carrier	Quantity	Slot
TN799DP	Any	1	Any Available Port Slot

Administer the Bus Bridge

- 1 Type **change system-parameters maintenance** and press **Enter**.
- 2 On Page 2, Type **y** in the `PKTINT 2` field.
- 3 Choose the port bandwidths or use the default and submit the form.
- 4 Verify the bus bridge LED is lit on the TN799DP C-LAN circuit pack. This indicates that the packet bus is enabled.

Test the Packet Bus and C-LAN Circuit Pack

- 1 Type **test packet port-network 1 long** and press **Enter**. For more detail about these tests, refer to the test pkt command section in the *Maintenance for Avaya DEFINITY Server CSI*.

Resolve Alarms

- 1 Examine the alarm log. Resolve any alarms using *Maintenance for Avaya DEFINITY Server CSI*.

Enable Alarm Origination to INADS

- 1 Ask the regional Customer Software Administration to complete the [Verify Customer Options](#) steps. See [Where to get additional help](#) on page 17 for telephone numbers.

NOTE:

As part of the system registration process, the INADS Database Administrator enables Alarm Origination and customer options.

Verify Customer Options

- 1 Type **display system-parameters customer-options** and press **Enter**.
Ensure that the `G3 version` field is **V11**.
- 2 If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade, go to the QSIG Optional Features screen and ensure that the `Basic Call Setup` field is **y**.

Add CallVisor ASAI

Enter Added Translations

- 1 On the System-Parameters Customer-Options screen, disable the Calling Party Number/Billing Number (CPN/BN) option, and enable the CallVisor ASAI Interface option.
- 2 Enable the Packet Bus Activated option on the System-Parameters Maintenance screen.
- 3 See *Administrator's Guide for Avaya Communication Manager* for details on disabling and enabling these options.

Save Translations

- 1 Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation cards.
- 2 If administered recorded announcements are displayed, Type **list configuration software-version** and press **Enter**. Go to Page 2 to see when announcements were last saved.
- 3 To save the announcements, Type **save announcements** and press **Enter**.

Add Packet Bus Support

- 1 If packet bus support is not already installed, see [Add Packet Bus Support](#) on page 228 and perform the steps.

Add Circuit Packs

- 1 Determine port assignment of circuit packs to be added.
- 2 Install the appropriate circuit packs in assigned carrier slot (as required).

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

The TN744E Call Classifier circuit pack is required for those customers who want greater call classification capabilities than the TN2182 (Tone-Clock) circuit pack provides.

A vacant port is required on a TN556D ISDN—BRI circuit pack.

Install Cables

- 1 Install cables from TN464GP to the MDF as required.

Enter Added Translations

- 1 Administer the required translation data using the forms listed under “Adjunct/Switch Applications Interface (ASAI)” in *Administrator’s Guide for Avaya Communication Manager*.

Resolve Alarms

- 1 Examine the alarm log. Resolve any alarms that may exist using *Maintenance for Avaya DEFINITY Server CSI*.

Save Translations

- 1 Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation cards.
- 2 Update backup translation cards, if required.

Add TTC Japanese 2-Mbit Trunks

The TN2242 Japan 2-Mbit trunk interconnects to other vendor equipment in Japan as well as to other switches through the Time Division Multiplexor (TDM).

Installing the trunk

- 1 Determine the port assignment of the trunk from the Trunk Group form.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

- 2 Install a TN2242 circuit pack in assigned carrier slot.
- 3 Connect the H600-513 cable from the cabinet to the Time Division Multiplexor device.
- 4 To administer forms, see the following sections in the *Administrator's Guide for Avaya Communication Manager*.
 - For ISDN applications, see ISDN Service.
 - For non-ISDN applications, see Managing Trunks.

Add DCS Interface

Systems in a Distributed Communications System (DCS) network are interconnected by both tie trunks (for voice communications) and data links (for control and transparent feature information). These data links, also called DCS signaling links, support the feature transparency.

DCS requires a special signaling connection to carry the information needed to make the DCS features work. This signaling connection, or link, between two switches in a DCS network is implemented either:

- over an ISDN-PRI D-channel.
- over a TCP/IP connection.

Meanwhile, the data link interface (between the processor and the physical signaling link) is provided by (or through) a TN799DP Control-LAN circuit pack. In some configurations, the TN799DP passes the signaling information over a separate 10BaseT TCP/IP network (usually via a hub). For use with 10BaseT, connect the appropriate pins of the I/O field to the hub, or use a 259A connector and DW8 cable to connect directly to the data-network equipment. For pinouts and diagrams, refer to the installation manual. In other configurations, the TN799DP circuit pack carries signaling over point-to-point protocol (PPP) for subsequent inclusion (via the switching fabric) in the same DS1 bit stream as the DSC voice transmissions.

For further information about DCS, refer to the following documents:

- *AT&T System 75/85 Network and Data Services Reference Manual*
- *System 75 Application Notes Network Services*
- Administration for Network Connectivity for Avaya Communication Manager

Add Circuit Packs

A TN464GP, TN767C, or TN760 DS1 circuit pack is required for PPP connections. A TN799C or higher C-LAN circuit pack is also required.

- 1 Determine the port assignments of the circuit packs to be added.

If a C-LAN circuit pack is already in the system, you do not need a second C-LAN circuit pack for DCS. If your system already has a C-LAN, skip the following [Administer the Bus Bridge](#) section. You do not need to power down the cabinet to install any of these circuit packs.

Administer the Bus Bridge

- 1 Type **change system-parameters maintenance** and press **Enter**.
- 2 On Page 2, Type **y** in the `PKTINT 2` field.
- 3 Choose the port bandwidths or use the default and submit the form.
- 4 Verify the bus bridge LED is lit on the C-LAN circuit pack. This indicates that the packet bus is enabled.

Test the Packet Bus and Control-LAN Circuit Pack

- 1 Type **test packet port-network 1 long** and press **Enter**. For more detail about these tests, refer to the “test pkt command” section in *Maintenance for Avaya DEFINITY Server CSI*.

Install Cables

- 1 Install cable from the cabinet to a hub or 110 (purple) wall field as required. Connect the 259A connector to the port slot containing the C-LAN circuit pack. See [Figure 90](#). For a pinout of TN799C, see [Table 57, TN799C Pinout](#), on page 233.

Figure 90: Cable Connection for C-LAN

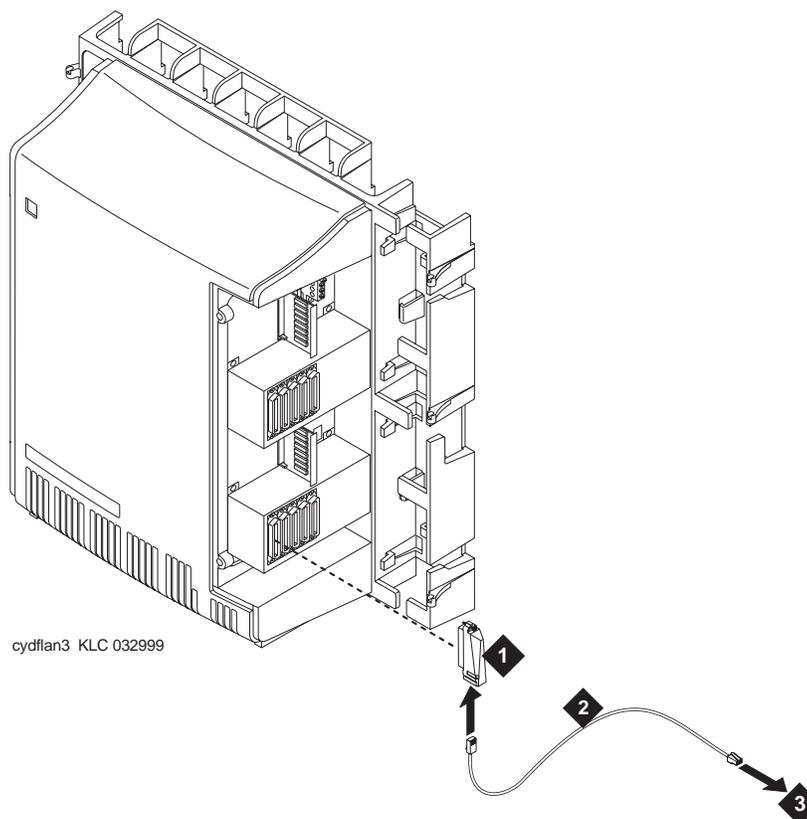


Figure notes

- | | | | |
|---|----------------|---|--------------------------------|
| 1 | 259A Connector | 3 | Hub or 110 (purple) wall field |
| 2 | DW8 Cable | | |

Table 57: TN799C Pinout

Backplane Pin	25-Pair Wire Color	Lead Name	Peripheral Connector Pin
103	White/Orange	TD+	27
003	Orange/White	TD-	2
104	White/Green	RD+	28
004	Green/White	RD-	3

Enter Added Translations

- 1 Type **display system-parameters customer-options** and press **Enter**.
Ensure that the DCS field is **y**.
- 2 Administer the other required translation data using the forms listed under Distributed Communications System (DCS) in *Administration for Network Connectivity for Avaya Communication Manager*.

Save Translations

- 1 Type **save translation** and press **Enter** to instruct the system to copy the translation information to the flashcard.

Add ISDN—BRI

Add the Packet Bus Support

- 1 If packet bus support is not already installed, see [Add Packet Bus Support](#) on page 228 and perform the steps.

Add Circuit Packs

- 1 Determine port assignment of circuit packs to be added.
- 2 Install the appropriate circuit packs in assigned cabinet slot (as required).

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

Install Cables

- 1 Install cables from cabinet to the MDF as required.

NOTE:

BRI requires a 12-port backplane cable terminator (breakout connector). Connect this terminator to the 25-pair cable. This is different from the 8-port connector used for DCP.

Enter Added Translations

- 1 Administer the required translation data using the forms listed under 7500D voice terminals and 8500 voice terminals in *Administrator's Guide for Avaya Communication Manager*.

Resolve Alarms

- 1 Examine the alarm log. Resolve any alarms using *Maintenance for Avaya DEFINITY Server CSI*.

Save Translations

- 1 Type **save translation** and press **Enter** to instruct the system copy translation information to the translation flashcards
- 2 Update backup cards, if required.

Add Radio Controller

For information on installing and administering the TN789B Radio Controller, refer to *DEFINITY Wireless Business System Installation and Test*.

Add IP Solutions

Avaya offers several IP solutions for customers, two of which are Avaya R300 Remote Office Communicator and the IP Media Processor. For information on the Avaya R300, refer to the documentation on the CD or with the Avaya R300 equipment.

The IP Media Processor allows you to send voice and fax from the Avaya CMC1 Media Gateway through an Internet protocol (IP) network to other switches having this feature or to other H.323 compliant endpoints. It is implemented using either the TN802B IP Interface, which is a Windows NT server residing on the IP Interface Assembly or TN2302AP IP Media Processor.

NOTE:

The P board suffix designation means the circuit pack is firmware-downloadable. Refer to [Upgrade Firmware on Programmable Circuit Packs](#) on page 197 for more information.

For information on installing this IP Solution, refer to

- [Add IP Media Processor](#)
- [Add IP Interface Assembly](#)

Add IP Media Processor

Unlike the TN802B IP Interface Assembly, the TN2302AP operates in one mode: Media Processor (MedPro), which is H.323 compatible.

The following sections describe the process for

- [Preparing for Installation and Upgrade](#)
- [Installing the TN2302AP IP Media Processor](#)
- [Upgrading TN802 IP Trunking to TN2302AP IP Media Processor](#)
- [Upgrading a TN802B IP Interface Assembly to TN2302AP IP Media Processor](#)

For administration, refer to the *Administration for Network Connectivity for Avaya Communication Manager*.

Preparing for Installation and Upgrade

In addition to the TN2302AP IP Media Processor, you must also install and administer a C-LAN circuit pack (TN799DP). For C-LAN administration, refer to *Administration for Network Connectivity for Avaya Communication Manager*.

NOTE:

Although the TN2302AP IP Media Processor works with the TN799B C-LAN circuit pack, you need a TN799DP to download new firmware to the TN2302AP circuit pack.

The TN2302AP IP Media Processor can work in the same configuration with the TN802 IP Trunking and the TN802B IP Interface Assembly. When figuring the maximum number of circuit packs, you must include all in your total count.

NOTE:

The TN802 IP Trunking cannot talk directly via Ethernet to the TN2302AP IP Media Processor.

Each TN2302AP can support between 32 and 64 voice channels, depending on the codecs used.

Check your onsite equipment

Have the following items ready before your shipment arrives:

- An unoccupied port slot in the carrier for each TN2302AP IP Media Processor

NOTE:

The TN2302AP consumes 16 W of power per slot compared with an average of 15 W per slot. Do not fill every available slot in a given carrier with them.

- An additional unoccupied port slot for the TN799DP, if needed. If you have an existing C-LAN TN799 circuit pack, replace it with the TN799DP or later if it is to be used for IP solutions registration. Replace it with a TN799DP if you want to be able to download new firmware to the TN2302AP.
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network (LAN) for the TN2302AP.

- A 10 BaseT Ethernet connection into your LAN for the TN799DP.
- Two or more valid, unused IP addresses on your network (one for each TN2302AP or TN802/B and one for each C-LAN) that can be assigned to the IP Media Processor server. You also need the subnet mask and default gateway.

NOTE:

The customer provides the IP address, subnet mask, and gateway address.

Check your shipment

When your shipment arrives, check the contents (see [Table 58, Required Hardware](#), on page 237).

- 1** Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
- 2** If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the items in [Table 58, Required Hardware](#), on page 237 for *each TN2302AP* IP Media Processor ordered.
- 3** Read and follow any directions inserted into the package by the factory.

Table 58: Required Hardware

Comcode/Code	Description	Quantity
108312612	TN2302AP IP Media Processor	1
848525887	TN2302AP Amphenol Adapter ¹	1
108525528	TN799B/C ² C-LAN circuit pack. NOTE: One TN799DP supports more than one TN2302AP.	1
102631413	ADPTR-259A connector	1
¹ The adapter has an Amphenol connector on one side and an RJ45 connector on the other for connecting to the LAN. See Figure 91 . ² You must install a TN799DP to be able to download new firmware to the TN2302AP.		

NOTE:

The customer must provide one CAT5 or better cable for each TN2302AP.

Figure 91: TN2302AP Amphenol Adapter

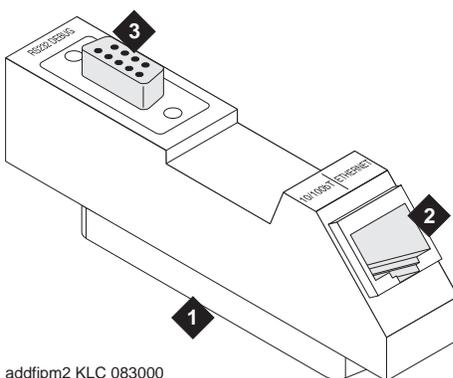


Figure notes

- | | | | |
|----------|--------------------------------------------------------------------------|----------|---------------------------------|
| 1 | Amphenol connector to backplane connector corresponding to TN2302AP slot | 2 | To Ethernet |
| | | 3 | 9-pin connector for maintenance |
-

Installing the TN2302AP IP Media Processor

To install a TN2302AP IP Media Processor, you must install

- One or more TN2302AP circuit pack(s).
- One or more TN799DP circuit pack(s) (a TN799DP can support more than one TN2302AP).
- An IP Media Processor adapter.

Connect the cables for TN799DP

- 1** Determine into which port slots you are putting the TN799DP C-LAN circuit packs.

From the rear of the cabinet:

- 2** Connect a 259A connector to the backplane connector corresponding to each TN799DP slot.
- 3** Connect one end of each DW8 cable to each 259A connector.

Connect the cables for TN2302AP

- 1** Determine into which port slots you are putting the TN2302AP IP Media Processor circuit packs.

From the rear of the cabinet:

- 2** Connect the Amphenol connector on the adapter to the backplane connector corresponding to each TN2302AP slot.

Connect the Ethernet

- 1** Connect the network cable(s) to the Ethernet connector on the TN2302AP Amphenol adapter(s).

NOTE:

You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Packs



CAUTION:

When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

NOTE:

The TN799DP and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier or cabinet to install them.

If you are replacing the existing TN799 circuit pack, remove it first and replace it with the new TN799DP.

NOTE:

To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

- 1** Insert the TN799DP circuit pack into the port slot identified earlier.
- 2** Insert and latch the TN2302AP IP Media Processor into the port slot you reserved for it (see [Figure 92](#)).

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

- 3** Type **list configuration all** and press **Enter** to verify that the system recognizes the TN2302AP circuit packs.

Figure 92: TN2302AP IP Interface faceplate



**Initial Administration Steps for C-LAN and
IP Media Processor**

NOTE:

Refer to the *Administration for Network Connectivity for Avaya Communication Manager* for specific information.

- 1 Log in as **craft**.
- 2 Type **change node-names** and press **Enter**.
- 3 On page 2, type in the node names and IP addresses for the TN799B/C and the TN2302AP.

NOTE:

The customer or design team provides the actual name and address. Suggest a generic name and not one tied to the circuit pack.

```
change node-names                                     Page 2 of 6
                                         NODE NAMES
Name                IP Address                Name                IP Address
clan-a1             192.168.1 .31                . . .
clan-b1            192.168.2 .31                . . .
default             0 .0 .0 .0                    . . .
mrmmedpro1        192.168.1 .81                . . .
. . .
. . .
. . .
```

- 4 Type **display circuit-pack** and press **Enter**. Verify that the TN2302AP shows up in the Code column.
- 5 Type **change ip-interfaces** and press **Enter**.

```
change ip-interfaces                               Page 1 of 2
                                         IP INTERFACES
Inter-region IP connectivity allowed? n
Enable
Eth Pt Type Slot Code Sfx Node Name Subnet Mask Gateway Address Rgn
y C-LAN 01A09 TN799 B clan-a1 255.255.255.0 . . . 1
y MEDPRO 01A13 TN802 B med-a1 255.255.255.0 192.168.10 .21 1
y C-LAN 01B03 ppp10 255.255.255.0 . . . 1
y MEDPRO 01B09 TN2302 AP mrmmedpro1 255.255.255.0 . . . 1
n 255.255.255.0 . . .
```

NOTE:
The customer provides the IP address, subnet mask, and gateway address.

- 6 Type in the following information for the TN2302AP IP Media Processor and TN799B/C C-LAN:

NOTE:
Enable the Ethernet port last, after you have filled in the information in the other fields.

- Set the Slot field to *UUCSS*, where *UUCSS* is the cabinet, carrier, and slot.
- The Code and SFX fields are automatically populated with TN799B/C and TN2302AP.
- In the Node Name field type the same node name entered on the Node Name screen.
- In the Subnet Mask field use the default setting unless you are given a different subnet mask.
- In the Gateway Address field use the address you are given or leave blank.

- Set the `Net Region` field to **1** unless you are given a different number.
- Set the `Enable Eth Pt` field to **y**

7 Press **Enter** to save the information and effect the new settings.

Refer to the *Administration for Network Connectivity for Avaya Communication Manager* for more information on these administration steps and for the steps to administer IP Softphones and H.323 trunks.

NOTE:

The administration of the TN2302AP is the same as that for the TN802B.

Test the External Connection to the LAN

To test the external IP connections, ping the C-LAN or IP Media Processor server and ping a known computer connected to your network. If everything is configured correctly, the `Result` column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1 Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable *nnn.nnn.nnn.nnn* is the IP address of the TN2302AP IP Media Processor and *UUCSS* is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.

```
ping ip-address 192.168.10.21

PING RESULTS

End-pt IP      Port      Port Type  Result  Time(ms)  Error Code
192.168.10.21  01A13    MEDPRO    PASS    10        1124
```

- 2** Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable *nnn.nnn.nnn.nnn* is the IP address of the customer’s gateway and *UUCSS* is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.
- 3** Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable *nnn.nnn.nnn.nnn* is the IP address of another computer beyond the gateway and *UUCSS* is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.

The TN2302AP IP Media Processor is now installed in the carrier and connected to the IP network.

Upgrading TN802 IP Trunking to TN2302AP IP Media Processor

To upgrade IP Trunking to IP Media Processor, you must replace

- The TN802 circuit pack with a TN2302AP circuit pack.
- The TN799 circuit pack with a TN799B/C circuit pack.
- The H600 512, G1 external cable assembly with an IP Media Processor adapter.

Pre-upgrade steps

- 1** Type **list configuration all** and press **Enter** to locate all the TN802 circuit pack ports.
- 2** Type **display port UUCSSppp** and press **Enter** to find the trunk group number associated with the TN802 circuit pack port.
- 3** Type **change trunk-group number** and press **Enter**. Go to screen 4. Delete all the TN802 ports.
- 4** Repeat steps 1 through 3 for each port.
- 5** Type **remove ds1 UUCSS** and press **Enter**.

Remove the Circuit Packs



CAUTION:

When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

NOTE:

The TN799B/C, TN802, and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier to remove or install them.

- 1** Press the recessed Reset button on the TN802 circuit pack until **MSHUT*** starts flashing on the LCD. When **MSHUT*** is in a steady state, it is safe to remove the circuit pack.
- 2** Remove the TN799 and TN802 circuit packs.

Replace the Cables

- 1** Disconnect the network cable from the Ethernet connection.
- 2** If using a monitor, keyboard, and mouse:
 - a** Turn off the monitor and unplug it from the AC outlet.
 - b** Disconnect the monitor, keyboard, and mouse from the H600-512 external cable assembly.
- 3** Turn off the modem and unplug it from the AC outlet.
- 4** Disconnect the modem's RS232 port from the H600-512 external cable assembly.

From the rear of the cabinet:

- 5** Disconnect the Amphenol connector on the existing external cable assembly from the backplane connector corresponding to the TN802 circuit pack.
- 6** Connect the Amphenol connector of the TN2302AP Amphenol adapter to the backplane connector corresponding to the slot selected for the TN2302AP circuit pack.

NOTE:

The TN802 occupied 3 slots, and the cable was connected to the rightmost backplane slot. For convenience use the same rightmost slot vacated by the TN802 circuit pack for the TN2302AP circuit pack.

- 7** Connect the network cable to the Ethernet connector on the TN2302AP Amphenol adapter.

Install the circuit packs

- 1** If replacing the TN799 circuit pack, install the TN799B/C circuit pack in the slot vacated by the TN799 circuit pack.
- 2** For convenience install the TN2302AP circuit pack in the rightmost slot vacated by the TN802 and where the adapter is connected to the corresponding backplane connector. The other 2 slots are now available for other circuit packs.

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

- 3** Type **list configuration all** and press **Enter** to verify that the system recognizes the TN2302AP circuit pack.

Administration

- 1** Administer the TN799B/C C-LAN. Refer to the *Administration for Network Connectivity for Avaya Communication Manager*.
- 2** Administer the IP Media Processor, which is usually done remotely. Call your service representative to start the process.
- 3** Complete the administration and testing. Refer to [Initial Administration Steps for C-LAN and IP Media Processor](#) on page 240 and [Test the External Connection to the LAN](#) on page 242.

Upgrading a TN802B IP Interface Assembly to TN2302AP IP Media Processor

To upgrade an IP Interface Assembly to IP Media Processor, you must replace

- The TN802B circuit pack with a TN2302AP circuit pack
- The TN799 circuit pack with a TN799B/C circuit pack, if necessary
- The H600-512, G1 external cable assembly with an IP Media Processor adapter.

Pre-upgrade steps

- 1 Type **change ip-interfaces** and press **Enter**.

```
change ip-interfaces                                     Page 1 of 2

                                IP INTERFACES
Inter-region IP connectivity allowed? n
Enable
Eth Pt Type Slot Code Sfx Node Name Subnet Mask Gateway Address Rgn
y C-LAN 01A09 TN799 B clan-a1 255.255.255.0 . . . 1
n MEDPRO med-a1 255.255.255.0 192.168.10 .21 1
n 255.255.255.0 . . .
```

- 2 Set the Enable Eth Pt field to **n**
- 3 Press **Enter** to effect the change.
- 4 Type **change ip-interfaces** and press **Enter**.
- 5 Delete the information in the Type, Slot, and Node Name fields for each TN802B you are replacing.
- 6 Press **Enter** to save the information and effect the new settings.

Remove the Circuit Packs



CAUTION:

When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

NOTE:

The TN799B/C, TN802B, and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier to remove or install them.

NOTE:

If replacing the existing TN799 circuit pack, remove it first and replace it with the TN799C. If you have a TN799B, you do not need to replace it for the TN2302AP to work. You do need a TN799C if you want to be able to download new firmware to the TN2302AP.

- 1 Press the recessed Reset button on the TN802B circuit pack until **MSHUT*** starts flashing on the LCD. When **MSHUT*** is in a steady state, it is safe to remove the circuit pack.
- 2 Remove the TN799B and TN802B circuit packs.

Replace the Cables

- 1** Disconnect the network cable from the Ethernet connection.
- 2** Turn off the modem and unplug it from the AC outlet. It is not needed for the TN2302AP.
- 3** Disconnect the modem's RS232 port from the H600-512 external cable assembly.

From the rear of the cabinet:

- 4** Disconnect the Amphenol connector on the external cable assembly from the backplane connector corresponding to the TN802B circuit pack.
- 5** Connect the Amphenol connector on the TN2302AP Amphenol adapter to the backplane connector corresponding to slot selected for the TN2302AP circuit pack.

NOTE:

The TN802 circuit pack occupied 3 slots, and the cable was connected to the rightmost slot. For convenience use the same rightmost slot vacated by the TN802B circuit pack for the TN2302AP circuit pack. The other 2 slots are now available for other circuit packs.

- 6** Connect the network cable to the Ethernet connector on the TN2302AP Amphenol adapter.

Install the circuit packs

- 1** If replacing the TN799 circuit pack, install the TN799B/C circuit pack in the slot vacated by the TN799 circuit pack.
- 2** For convenience install the TN2302AP circuit pack in the rightmost slot vacated by the TN802B and where the adapter is connected to the corresponding backplane connector. The other 2 slots are now available for other circuit packs.

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

- 3** Type **list configuration all** and press **Enter** to verify that the system recognizes the TN2302AP circuit packs.

Administration

- 1** Administer the TN799B/C C-LAN, if necessary. Refer to the *Administration for Network Connectivity for Avaya Communication Manager*.
- 2** Administer the IP Media Processor, which is usually done remotely. Call your service representative to start the process.
- 3** Complete the administration and testing. Refer to [Initial Administration Steps for C-LAN and IP Media Processor](#) on page 240 and [Test the External Connection to the LAN](#) on page 242.

Add IP Interface Assembly

The IP Interface is an assembly composed of a TN802B circuit board, a processor card, and DSP resource card. For ordering purposes, the assembly is identified as a J58890MA-1 L30, but for simplicity, we refer to it as the TN802B IP Interface.

The TN802B IP Interface operates in two modes

- IP Trunk mode is Internet Telephone Server—Enterprise (ITS-E) compatible
- Media Processor (MedPro) mode is H.323 compatible.

The TN802B IP Interface is backwards compatible and defaults to IP Trunk mode. You must administer it to use it in MedPro mode.

The following sections describe the process for

- [Installing in Media Processor Mode](#)
- [Installing in IP Trunk Mode](#)
- [Upgrading a TN802 V3 \(or later\) to a TN802B \(MedPro mode\)](#)

 **WARNING:**

When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

Installing in Media Processor Mode

To operate in MedPro mode, you must install the TN802B IP Interface and, if the system does not have one, you must also install and administer a TN799B C-LAN circuit pack. For C-LAN administration, refer to *Administration for Network Connectivity for Avaya Communication Manager*.

If you have existing TN802 IP Interface circuit packs, you can upgrade them either by replacing the circuit pack with a TN802B or by downloading the TN802B firmware onto the circuit packs (see [Upgrade to TN802B \(R8\)](#) on page 271).

Prepare for Installation

Have the following equipment on site before your shipment arrives:

- AC power outlets for the modem and monitor.
- Three unoccupied and adjoining port slots in the carrier for the TN802B IP Interface, if needed. The TN802B occupies only one slot, but it needs the two slots to its left for clearance.
- An additional unoccupied port slot for the TN799B, if needed. If you have an existing TN799 circuit pack, replace it with the TN799B.
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network for the TN802B.
- A 10 BaseT Ethernet connection into your local area network for the TN799B.
- Two or more valid, unused IP addresses on your network (one for MedPro and one for C-LAN) that can be assigned to the IP Interface server. You also need the subnet mask and default gateway.
- An analog telephone line reserved (DID is okay) for the IP Interface diagnostic modem
- A valid telephone number reserved for the IP Interface diagnostic modem

In addition if non-U.S. customer:

- Modem comparable to a U.S. Robotics Sportster Model USR 33.6 EXT.
- Cable from modem to TN802B external cable assembly.

We recommend that you protect your cabinet with an uninterruptable power system (UPS).

Check your Shipment

When your VAR <ProductNameShort> order arrives at your site, check the contents (see [Table 59](#)).

- 1** Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
- 2** If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the following for each IP Interface ordered:

Table 59: Required Hardware

Comcode/Code	Description	Quantity
108525528	TN799B C-LAN circuit pack. One TN799B supports more than one TN802B.	1
J58890MA-1 L30	TN802B IP Interface Assembly	1 or more
601939804	H600-512,G1 external cable assembly	1 or more
	259A connector	1
	CAT5 or better cable	1
407633999	U.S. Robotics Sportster external modem, Model USR 33.6 EXT (U.S. customers only). Non-U.S. customers must provide a modem comparable to this model.	1
601087091	20-ft DB-25 serial cable from modem to TN802B external cable assembly (U.S. customers only). Non-U.S. customers must provide a serial cable.	1

- 3** Read and follow any directions inserted into the package by the factory.

The TN802B external cable assembly is a bundle of cables with an Amphenol connector at the end of the bundle and various PC-type connectors (VGA, Universal Serial Bus [USB], mouse, keyboard, Ethernet, modem, and COM2) at the ends of the individual cables. See [Figure 93](#). Look for the label where the bundle enters the Amphenol connector.

Figure 93: TN802B IP Interface External Cable Assembly

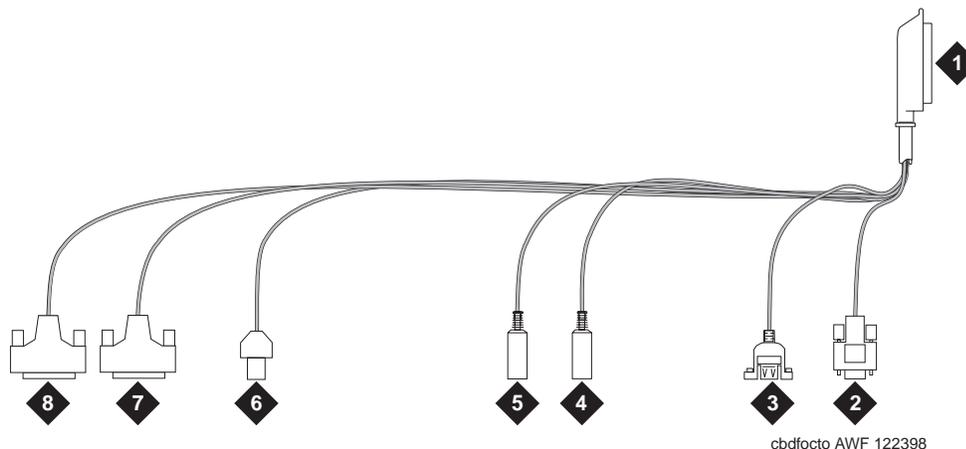


Figure notes

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Amphenol connector to connector corresponding to TN802B slot</p> <p>2 To VGA monitor</p> <p>3 To USB (not used)</p> <p>4 To keyboard</p> | <p>5 To mouse</p> <p>6 To ethernet</p> <p>7 25-pin male connector to modem</p> <p>8 25-pin male connector to COM2</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

Connect the Cables

- 1** Determine into which port slots you are putting the TN799B C-LAN and TN802B IP Interface circuit packs.

NOTE:

Make sure that at least 3 adjacent slots are free for the TN802B.

From the rear of the cabinet:

- 2** If adding a new TN799B, connect the 259A connector to the backplane connector corresponding to the TN799B slot.
- 3** If adding a new TN799B, connect one end of the DW8 cable to the 259A connector. Connect the other end to the customer's network.
- 4** Connect the Amphenol connector on the external cable assembly to the backplane connector corresponding to the TN802B slot (the highest numbered connector of the 3 slots required)

Connect the Modem

NOTE:

These instructions are for connecting the U.S. Robotics modem supplied to U.S. customers only. If using a different modem, follow the manufacturer’s instructions on connecting the modem.

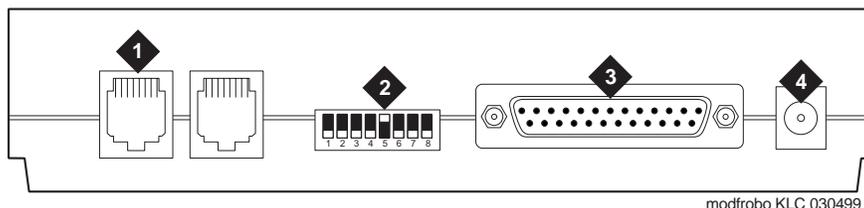
- 1 Connect the RS232 port of the modem to the MODEM connector of the TN802B external cable assembly.

NOTE:

Check the labels near the connectors; the MODEM and COM2 connectors look the same.

- 2 Connect an analog telephone line to the left most analog-line port on the modem as shown in [Figure 94](#).
- 3 Make sure that the modem’s DIP switches are set as shown in [Figure 94, External Modem Connections for U.S. Robotics Modem](#), on page 250 and [Table 60, U.S. Robotics Modem Dip Switch Settings](#), on page 250.
- 4 Plug the modem into an AC power outlet.
- 5 Turn on the modem using the switch on the front of the modem.

Figure 94: External Modem Connections for U.S. Robotics Modem



modfrobo KLC 030499

Figure notes

- | | | | |
|---|---------------------------|---|-------------------------------|
| 1 | Connect analog line here. | 3 | Connect MODEM connector here. |
| 2 | DIP switch 5 must be up. | 4 | Connect power connector here. |

Table 60: U.S. Robotics Modem Dip Switch Settings

Dip Switch	Setting	Description
1	UP DOWN	Data Terminal Ready normal Data Terminal Ready override
2	UP DOWN	Verbal result codes Numeric result codes
3	UP DOWN	Suppress result codes Display result codes
1 of 2		

Table 60: U.S. Robotics Modem Dip Switch Settings

Dip Switch	Setting	Description
4	UP DOWN	Echo offline commands No echo, offline commands
5	UP DOWN	Auto answer on first ring or higher if specified in NVRAM Auto answer off
6	UP DOWN	Carrier detect normal Carrier detect override
7	UP DOWN	Load NVRAM defaults Load factory defaults
8	UP DOWN	Dumb mode Smart mode
		2 of 2

Connect the Ethernet

- 1 Connect the network cable to the ETHERNET connector on the TN802B external cable assembly.

NOTE:

You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Packs



CAUTION:

When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

NOTE:

The TN799B and TN802B circuit packs are hot-swappable, so you do not need to power down the carrier to install them.

If you need to remove the TN802B IP Interface from the carrier at a later time, shut down Windows NT first by pressing the recessed reset button on the faceplate (see [Figure 95](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.

Figure 95: TN802B IP Interface faceplate

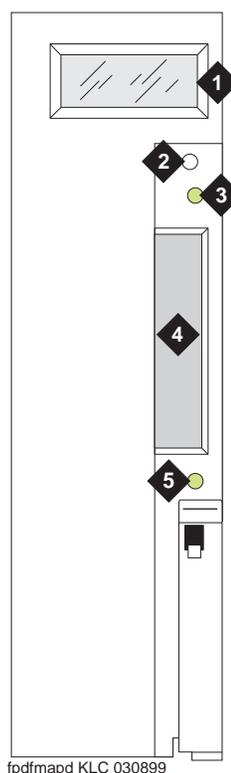


Figure notes

- | | | | |
|---|-------------------------|---|-------------------------------|
| 1 | LCD display | 4 | PCMCIA card slot |
| 2 | Reset button (recessed) | 5 | Yellow PCMCIA disk-in-use LED |
| 3 | Red board status LED | | |

NOTE:

If replacing the existing TN799 circuit pack, remove it first and replace it with the new one.

- 1 Insert the TN799B circuit pack into the port slot identified earlier.

NOTE:

To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

- 2 Insert the TN802B IP Interface into the right most of the three slots you reserved for it (see [Figure 96](#)) and seat it properly.

When you plug in the TN802B IP Interface Assembly, the circuit pack starts to boot and the LCD reads **PC Boot**. The circuit pack reboots automatically, and after about 3 to 4 minutes the LCD changes to **IPTRK***, the default mode, or **MEDPRO***.

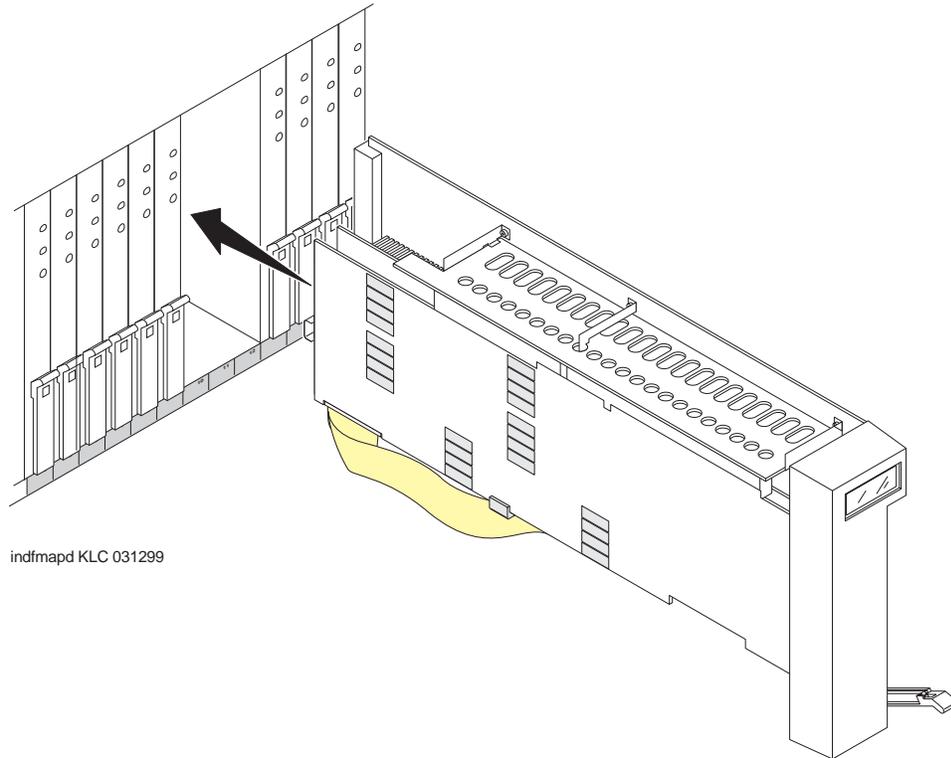
If the TN802B is pre-administered at the factory, it reboots several times to initialize to MedPro mode.

If the TN802B is not pre-administered, go to [Administration](#) on page 253

NOTE:

For an initial installation, the TN802B IP Interface needs to be administered first (see [Administer the IP Interface](#) on page 253).

Figure 96: J58890MA-1 L30 IP Interface Assembly



Administer the TN799B C-LAN

Refer to the *Administration for Network Connectivity for Avaya Communication Manager*.

Administer the IP Interface

Administration is usually done remotely; call your service representative to start the process.

Administration

NOTE:

Refer to the *Administration for Network Connectivity for Avaya Communication Manager* for specific information.

- 1** Log in as **craft**.
- 2** Type **change node-names** and press **Enter**.

- 3** On screen 2, type in the node name and IP address for the TN802B.

```
change node-names                                     Page 2 of 6
                                         NODE NAMES
Name          IP Address          Name          IP Address
clan-a1       192.168.1 .31             . . .
clan-b1       192.168.2 .31             . . .
default       0 .0 .0 .0                   . . .
med-a1        192.168.1 .81             . . .
. . .
. . .
. . .
```

- 4** Type **change circuit-pack** and press **Enter**.
5 Check the Code column to see if the slots above the TN802B say DSMAPD or MEDPRO.

```
change circuit-packs                                 Page 1 of 5
                                         CIRCUIT PACKS
Cabinet: 1                                         Carrier: A
                                                    Carrier Type: processor
Slot Code  Sf Mode  Name                               Slot Code  Sf Mode  Name
01: TN754          DIGITAL LINE                       11: MEDPRO    RESERVED-IP
02: TN758          POOLED MODEM                       12: MEDPRO    RESERVED-IP
03: TN2144         ANALOG LINE                          13: TN802 B   MAPD BOARD
04: TN746 B        ANALOG LINE                          14:
05:                                                         15:
06: TN771 C        MAINTENANCE/TEST                   16:
07: TN464 F        DS1 INTERFACE
08: TN2140         E&M TIE TRUNK
09: TN767 E        DS1 INTERFACE
10: TN799 B        CONTROL-LAN
'#' indicates circuit pack conflict.
```

- 6** If not, type **MEDPRO** in the slot just above TN802B slot and press **Enter**. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:
MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.
- 7** Type **change ip-interfaces** and press **Enter**.
8 Type in the information for the TN802B IP Interface,
9 Set the Enabled field to **y**, and press **Enter**.

NOTE:
The customer provides the IP address, subnet mask, and gateway address.

At this time the TN802B LCD reads **PC BOOT ***, and about 3 to 4 minutes later reads **MEDPRO** * with the asterisk flashing

```
change ip-interfaces                                     Page 1 of 2

Network regions are interconnected? n
En-
abled Type Slot Code Sfx Node Name Subnet Mask Bcast/Gway Net
Addr Rgn
n C-LAN 01A09 TN799 clan-a1 255.255.255.0 192.168.1 .100 1
y MEDPRO 01A13 TN802 B med-a1 255.255.255.0 192.168.1 .21
1
n 255.255.255.0 . . .
```

Test the External Connection to the LAN

To test the external IP connections, ping the IP Interface server, and ping a known computer connected to your network. If everything is configured correctly, the Result column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

- 1 Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable *nnn.nnn.nnn.nnn* is the IP address of the TN802B IP Interface and *UUCSS* is the cabinet, carrier, and slot of the TN802B IP Interface.

```
ping ip-address 192.168.10.21

PING RESULTS

End-pt IP Port Port Type Result Time(ms) Error Code
192.168.10.21 01A13 MEDPRO PASS 10 1124
```

- 2 Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable *nnn.nnn.nnn.nnn* is the IP address of the customer’s gateway and *UUCSS* is the cabinet, carrier, and slot of the TN802B IP Interface.
- 3 Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable *nnn.nnn.nnn.nnn* is the IP address of another computer beyond the gateway and *UUCSS* is the cabinet, carrier, and slot of the TN802B IP Interface.

The TN802B IP Interface is now installed and connected to the IP network.

Installing in IP Trunk Mode

NOTE:

IP Trunk mode should only be used to maintain compatibility with existing IP Trunk or ITS-E installations. We strongly recommend that you use the MedPro mode whenever possible.

Prepare for Installation

Have the following equipment on site before your shipment arrives:

- A mouse, keyboard, and VGA monitor for use during the installation of the server. You also need AC power outlets for the modem and monitor.
- Three adjoining, unoccupied port slots in the carrier
The TN802B IP Interface slides into only 1 slot, but its faceplate occupies 3 slots.
- A 10 BaseT or 10/100 BaseT Ethernet connection into the customer's local area network (LAN)
- A valid, unused IP address on the customer's LAN that can be assigned to the IP Interface server. You also need the subnet mask, default gateway, domain name, and so forth from the customer's network administrator.
- An analog telephone line reserved for the IP Interface diagnostic modem
- A valid telephone number reserved for the IP Interface diagnostic modem

If non-U.S. customer:

- Modem comparable to a U.S. Robotics, Inc. Sportster Model USR 33.6 EXT.
- A cable from the modem to the TN802B external cable assembly.

We recommend that you protect the cabinet where the IP Interface is installed with an uninterruptable power system (UPS).

Check your Shipment

When your shipment arrives, check the contents (see [Table 61, Required Hardware](#), on page 256).

- 1 Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
- 2 If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the following for each IP Interface ordered:

Table 61: Required Hardware

Comcode/Code	Description	Quantity
J58890MA-1 L30	TN802B IP Interface Assembly	1
601939804	H600-512,G1 external cable assembly	1
407633999	U.S. Robotics Sportster external modem, model number USR 33.6 EXT (U.S. customers only) ¹	1
1 of 2		

Table 61: Required Hardware

Comcode/Code	Description	Quantity
601087091	20-ft DB-25 serial cable from modem to TN802B external cable assembly (U.S. customers only) ²	1
		2 of 2

1 For non-U.S. customers, you need a modem comparable to the U.S. Robotics Sportster and a serial cable.

The TN802B external cable assembly is a bundle of cables with an Amphenol connector at the end of the bundle and various PC-type connectors (VGA, Universal Serial Bus [USB], mouse, keyboard, Ethernet, modem, and COM2) at the ends of the individual cables. See [Figure 97](#). Look for the label where the bundle enters the Amphenol connector.

Figure 97: TN802B IP Interface External Cable Assembly

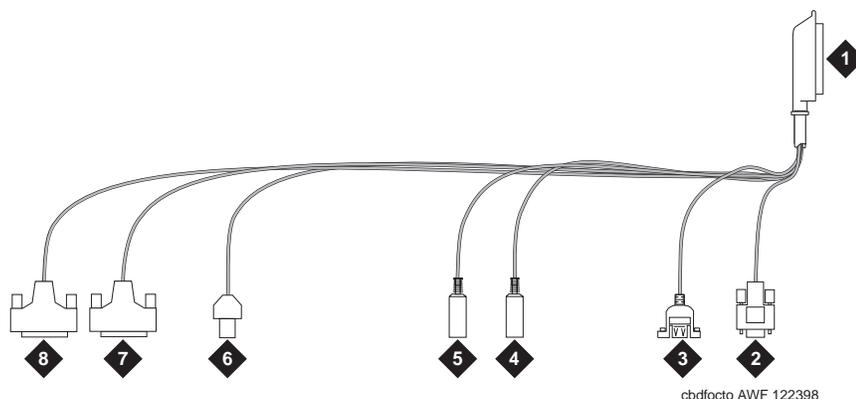


Figure notes

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Amphenol connector to connector corresponding to TN802B slot</p> <p>2 To VGA monitor</p> <p>3 To USB (not used)</p> <p>4 To keyboard</p> | <p>5 To mouse</p> <p>6 To ethernet</p> <p>7 25-pin male connector to modem</p> <p>8 25-pin male connector to COM2</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

3 Read and follow any directions inserted into the package by the factory.

Connect the Cables

- 1 Determine into which port slot you are putting the TN802B IP Interface.

NOTE:

Make sure that at least 3 adjoining slots are free.

- 2 From the rear of the cabinet, connect the Amphenol connector on the external cable assembly to the backplane connector corresponding to that slot (the highest numbered connector of the 3 slots required).

Connect the Modem

NOTE:

These instructions are for connecting the U.S. Robotics modem supplied to U.S. customers only. If using a different modem, follow the manufacturer's instructions on connecting the modem.

- 1 Connect the RS232 port of the modem to the MODEM connector of the TN802B external cable assembly.

NOTE:

Check the labels near the connectors; the MODEM and COM2 connectors look the same.

- 2 Connect an analog telephone line to the leftmost analog-line port on the modem as shown in [Figure 98](#).
- 3 Make sure that the modem's DIP switches are set as shown in [Figure 98](#) and [Table 62, U.S. Robotics Modem Dip Switch Settings](#), on page 259.
- 4 Plug the modem into an AC power outlet.
- 5 Turn on the modem using the switch on the front of the modem.

Figure 98: External Modem Connections for U.S. Robotics Sportster

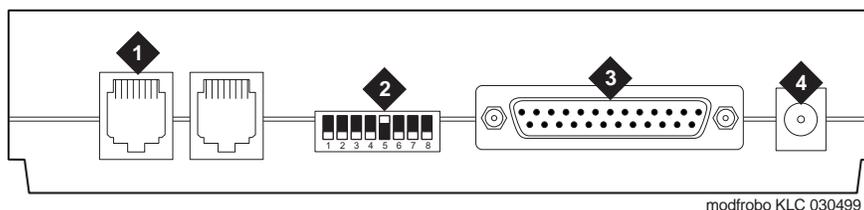


Figure notes

- | | | | |
|---|---------------------------|---|-------------------------------|
| 1 | Connect analog line here. | 3 | Connect MODEM connector here. |
| 2 | DIP switch 5 must be up. | 4 | Connect power connector here. |

Table 62: U.S. Robotics Modem Dip Switch Settings

Dip Switch	Setting	Description
1	UP DOWN	Data Terminal Ready normal Data Terminal Ready override
2	UP DOWN	Verbal result codes Numeric result codes
3	UP DOWN	Suppress result codes Display result codes
4	UP DOWN	Echo offline commands No echo, offline commands
5	UP DOWN	Auto answer on first ring or higher if specified in NVRAM Auto answer off
6	UP DOWN	Carrier detect normal Carrier detect override
7	UP DOWN	Load NVRAM defaults Load factory defaults
8	UP DOWN	Dumb mode Smart mode

Connect the Monitor, Keyboard, and Mouse

NOTE:

Only make these connections if administered locally. Not necessary if administered remotely.

You must connect these before inserting the TN802B IP Interface.

- 1 Attach a VGA monitor to the VGA connector of the TN802B IP Interface external cable assembly.
- 2 Attach the keyboard to the KEYBOARD connector of the external cable assembly.
- 3 Attach the mouse to the MOUSE connector of the external cable assembly.
- 4 Plug the monitor into an AC power receptacle and turn it on.

Connect the Ethernet

- 1 Connect the network cable to the ETHERNET connector on the TN802B external cable assembly.

NOTE:

You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Pack



CAUTION:

When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

NOTE:

The TN802B IP Interface is hot-swappable, so you do not need to power down the carrier to install it.

If you need to remove the TN802B IP Interface from the carrier at a later time, shut down Windows NT first by pressing the recessed reset button on the faceplate (see [Figure 99](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.

Figure 99: TN802B IP Interface faceplate

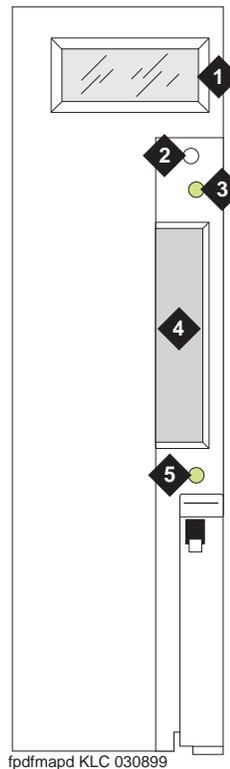


Figure notes

- | | | | |
|---|-------------------------|---|-------------------------------|
| 1 | LCD display | 4 | PCMCIA card slot |
| 2 | Reset button (recessed) | 5 | Yellow PCMCIA disk-in-use LED |
| 3 | Red board status LED | | |

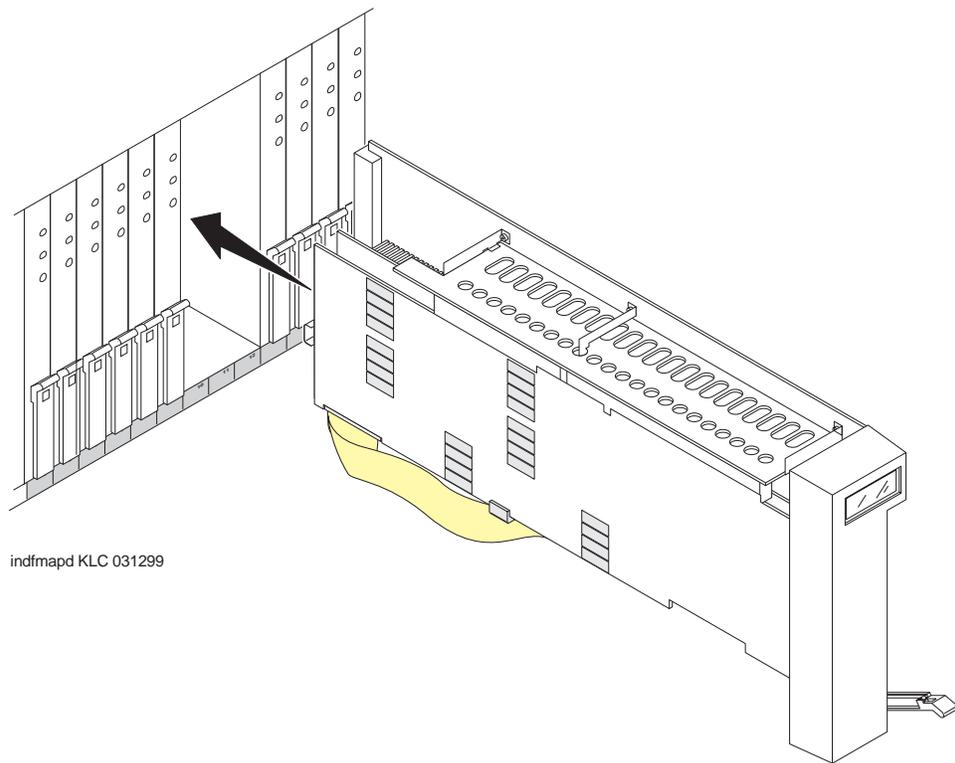
NOTE:

To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

- 1 Insert the TN802B IP Interface into the rightmost of the three slots you reserved for it (see [Figure 100](#)).

When you plug in the TN802B IP Interface, the circuit pack starts to boot and the LCD reads **PC Boot** then after about 3 to 4 minutes it changes to **IP TRK ***, the default mode.

Figure 100: J58890MA-1 L30 IP Interface Assembly



Test the Modem

- 1 Check for dial tone.
- 2 Contact Avaya Customer Support and ask a representative to dial into your IP Interface server.

Administer the IP Interface

Administration is done either locally or remotely. If administered locally, proceed with the following administration steps on the attached keyboard, mouse, and monitor. If administered remotely, call your service representative to start the process.

Administration Steps

- 1 Log in as **craft**.
- 2 Type **change circuit-pack** and press **Enter**.
- 3 Check the Code column to see if the slots above the TN802B say DSMAPD or MEDPRO.

```
change circuit-packs                               Page 1 of 5
                CIRCUIT PACKS
                Cabinet: 1                          Carrier: A
                                                Carrier Type: processor

Slot Code  Sf Mode  Name                               Slot Code  Sf Mode  Name
01: TN754          DIGITAL LINE                               11: DSMAPD      RESERVED-IP
02: TN758          POOLED MODEM                               12: DSMAPD      RESERVED-IP
03: TN2144         ANALOG LINE                                       13: TN802 B     MAPD BOARD
04: TN746 B       ANALOG LINE                                       14:
05:                                                         15:
06: TN771 C       MAINTENANCE/TEST                               16:
07: TN464 F       DS1 INTERFACE
08: TN2140        E&M TIE TRUNK
09: TN767 E       DS1 INTERFACE
10: TN799 B       CONTROL-LAN

'#' indicates circuit pack conflict.
```

- 4 If MEDPRO, go to the entry just above the TN802B that says MEDPRO.
- 5 Type DSMAPD, and press **Enter**. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:

MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.

Log onto the TN802B Interface Server

If administered remotely through pcANYWHERE:

- 1 Dial in to the server through pcANYWHERE using the dialup number supplied.
- 2 Click on the pcANYWHERE Remote Host Computer button on the toolbar to send **CTRL ALT DEL** to the host.
- 3 Type **administrator** in the `User Name` field.
- 4 Type **iptrunk** in the `Password` field and click **OK**.
- 5 After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT server documentation for details.

If administered locally on a monitor, keyboard, and mouse:

- 1 Press **CTRL, ALT, and DEL** simultaneously.
- 2 Type **administrator** in the `User Name` field.
- 3 Type **iptrunk** in the `Password` field and click **OK**.
- 4 After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT server documentation for details.

A-Law versus Mu-Law

For systems using A-Law companding, an additional procedure is necessary.

On the SAT:

- 1 Busyout the trunk group associated with the IP trunk by typing **busyout board UUCSS** and pressing **Enter**.

In the Windows interface to TN802B:

- 1 Click on **Control Panel > Services**.
- 2 Highlight **IP Trunk Service**, then click on **Stop**.
- 3 In the lower left-hand corner, right-click **Start > Explore**.
- 4 Go to the c: drive and click on its, then bin.
- 5 Double-click on the its.ini file to open it in Notepad.
- 6 Under the [MediaLib] section, go to COMPANDING=MLAW. Change **MLAW** to **ALAW**.
- 7 Click on **File > Save** to save the file.
- 8 Click on **File > Exit** to exit Notepad.
- 9 Click on **Control Panel > Services**.
- 10 Highlight **IP Trunk Service**, then click on **Start**.

NOTE:

Do not select Startup.

After service has started, go to the SAT:

- 1 Release the trunk group associated with the IP trunk by typing **release board UUCSS** and pressing **Enter**.

Assign Server and Domain Names

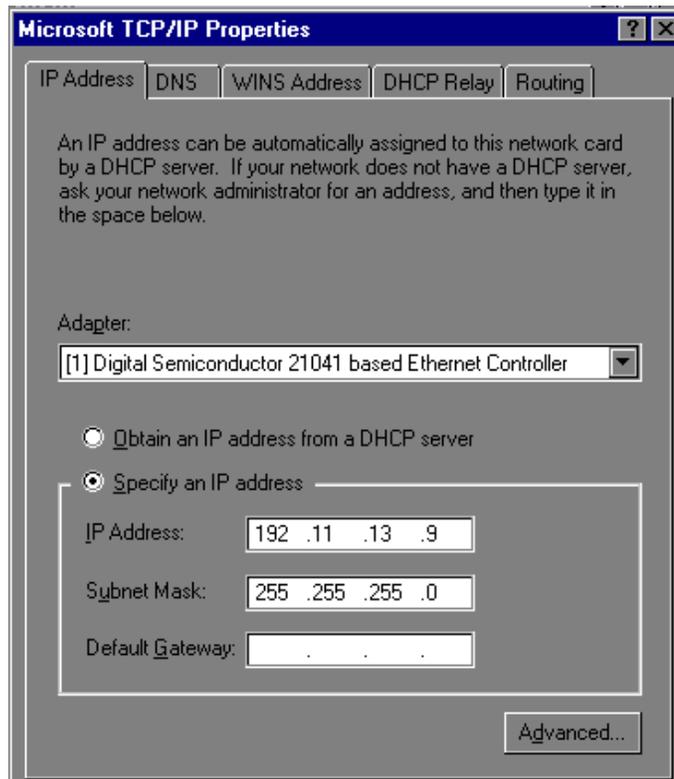
The Windows NT server identifies servers using a server name plus a domain name that locates the named server in a particular part of the network. The TN802B IP Interface is shipped with generic server and domain names. Assign replacement names that are meaningful within your network.

- 1 Click on **My Computer > Control Panel > Network**.
- 2 Select the **Identification** tab, then click **Change**.
- 3 Type the new server name in the `Computer Name` field.
- 4 Type the new domain name in the `Domain` field and click **OK > OK > Close**.
- 5 When prompted to reboot the computer, select one of the following options:
 - **No** if you have not assigned IP addresses then go to [Assign an IP Address](#)
 - **Yes** if you have assigned IP addresses.

Assign an IP Address

- 1 Click on **My Computer > Control Panel > Network**.
- 2 Click the **Protocols** tab.
- 3 Select **TCP/IP Protocol** from the list.

- 4 Click the **Properties** option in the Network window.



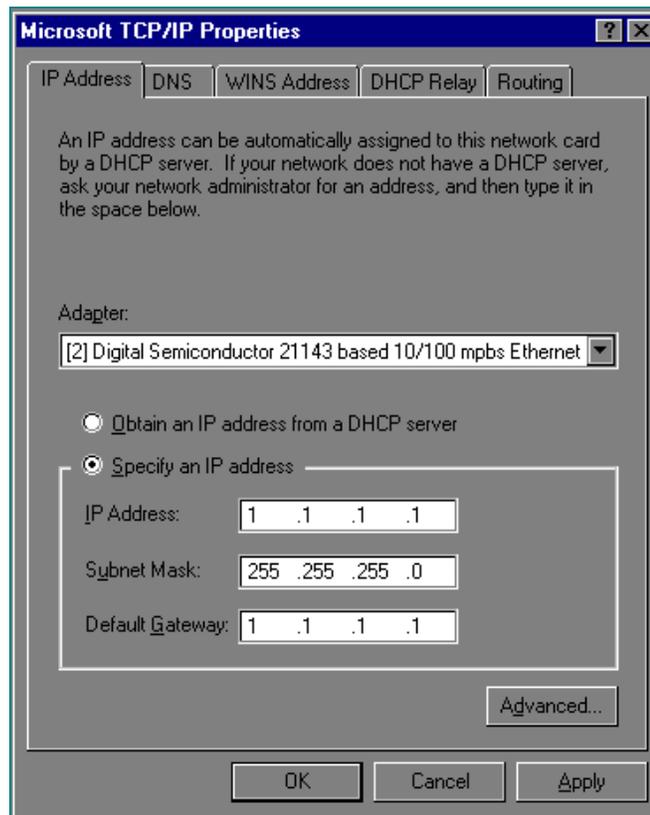
- 5 Verify that the **Adapter** drop down menu lists 2 DEC Ethernet adapters.



CAUTION:

Do not change any settings on the adapter labeled [1] for any reason.

- 6 Select the DEC Ethernet adapter labeled [2].



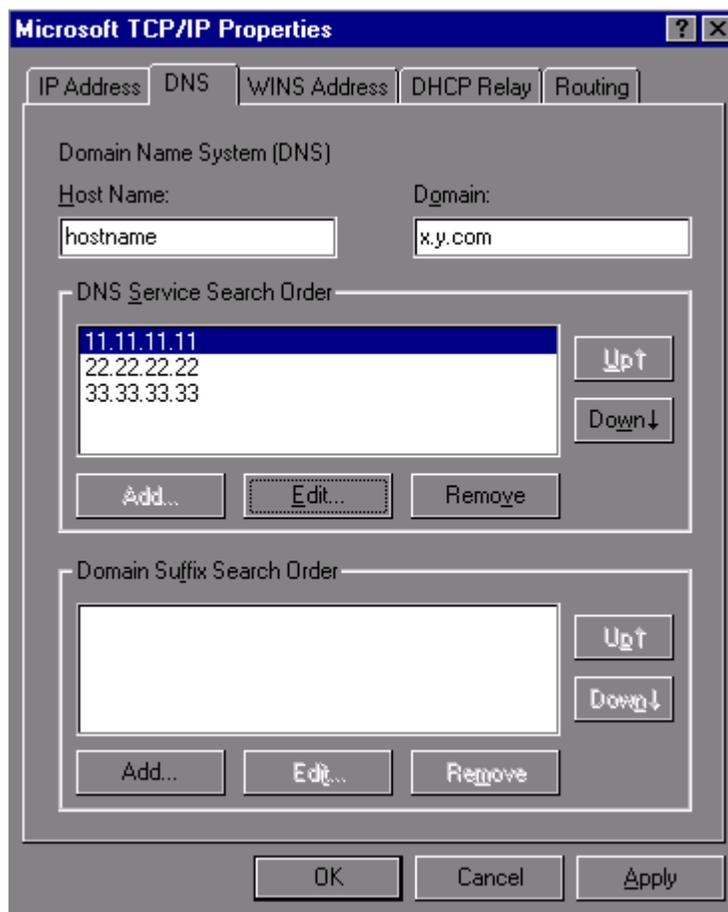
- 7 Type a valid IP address for the IP Interface server in the IP Address: field.
- 8 Type the appropriate subnet mask in the Subnet Mask: field.

NOTE:

Not all networks require steps 9 through 18. Check with the local network administrator to determine which are required.

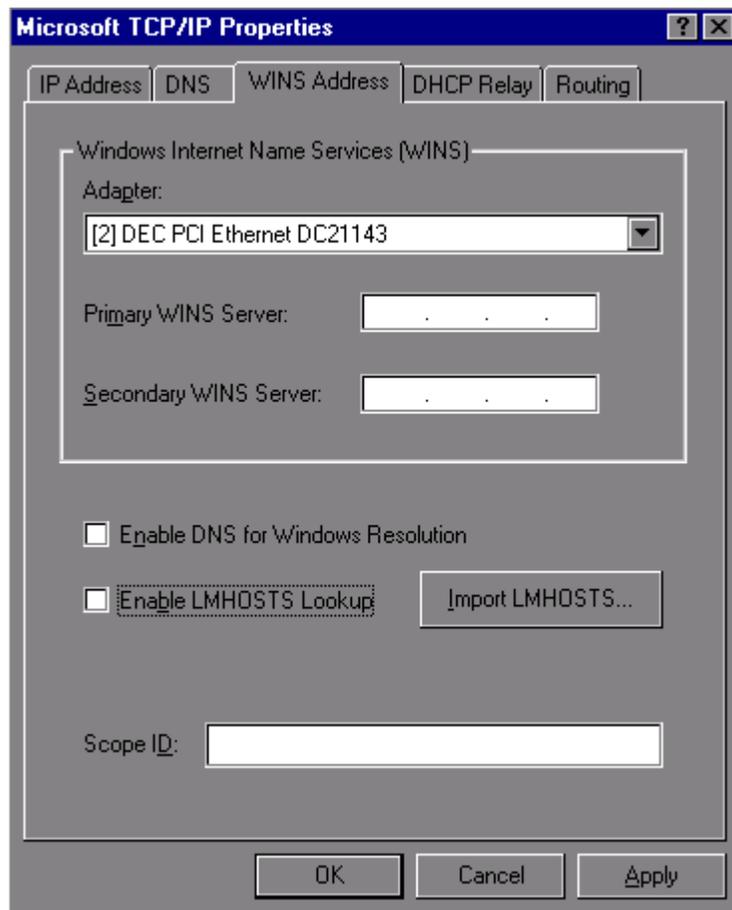
- 9 If you use gateways, type the IP address of the default gateway for the IP Interface server in the Default Gateway: field.

- 10 Click on the DNS tab and verify that the domain DNS server is correct.



- 11 Type domain name in the Domain field.
- 12 If using DNS, click **Add** under the DNS Service Search Order field and type its IP address.

- 13 Click on the WINS Address tab.



- 14 Make sure the [2] DEC shows in the Adapter field.
 - 15 If WINS server is available, type its IP address in the Primary WINS Server field.
 - 16 If DNS is available, select Enable DNS for Windows Resolution.
 - 17 If the network uses an imported LMHOSTS file, select Enable LMHOSTS Lookup and Import LMHOSTS and click **OK**.
 - 18 If the following dialog box opens, click **Yes**:
At least one of the adapter cards has an empty primary WINS address. Do you want to continue?
 - 19 Click the **Bindings** tab to effect the changes.
NetBIOS Interface, Server, and Workstation should now be enabled. If any are disabled (a red circle with a line through it), review the previous network-configuration steps for omissions or errors.
 - 20 Click **Close**.
- If administered remotely through pcANYWHERE:
- 21 Click on the pcANYWHERE Restart Host Computer button on the toolbar to restart the computer.

If administered locally on a monitor, keyboard, and mouse:

- 22 Click **Yes** in the dialog box to restart the computer.

 **WARNING:**

When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

Check Network Services

When the server restarts, make sure that the required network services have started correctly. If you see an error dialog box, then the network services did not start correctly. Also, check the NT Event Log.

- 1 Click on **My Computer > Control Panel > Network > Services**. Make sure that the following services are listed:
 - Computer Browser
 - Microsoft Internet Information Server 2.0
 - NetBIOS Interface
 - RPC Configuration
 - Server
 - Workstation
- 2 Click the **Protocols** tab, and examine the Network Protocols. TCP/IP protocol should be the only one listed.
- 3 Click **OK**.

Test the External Connection to the LAN

To test the external IP connections, ping the IP Interface server and ping a known computer connected to your network.

- 1 Click **Start > Programs > Command Prompt**.
- 2 Type **ping nnn.nnn.nnn.nnn** (which is your IP address).
 - If everything is configured correctly, the system responds with the following message:
`Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms TTL=###`
 - If no response, verify the IP-address information and check the connectivity, including the cabling.
- 3 At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of your gateway).
 - If everything is configured correctly, the system responds with the following message:
`Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms TTL=###`
 - If no response, verify the IP address information and check the connectivity, including the cabling.
 - If all else fails, click on **Start > Settings > Control Panel > Network**. Select the **Adapters** tab and highlight the [2] DEC adapter.
 - Click **Properties > Change**.
 - From the Duplex Mode dropdown menu, select a setting that matches the switch/hub that the TN802B connects to. For example, 10BaseT Full Duplex or 10BaseT No Link Test

- 4 At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of another external computer beyond the gateway).
 - If you have connectivity, the system responds with the following message:

```
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms TTL=###
```
 - If no response, verify the IP address information and check the connectivity, including the cabling. Consult your IP network administrator.
- 5 Type **exit** and press **Enter**.

Test the IP Interface Onboard LAN Connections

To test the onboard LAN connections, ping the IP Interface server and the processor on the TN802B IP Interface.

- 1 Click **Start > Programs > Command Prompt**.
- 2 Type **ping 192.11.13.9** (which is the IP address of the internal IP Interface server).
 - If everything is configured correctly, the system responds with the following message:

```
Reply from 192.11.13.9: bytes=32 time<##ms TTL=###
```
 - If no response, verify the IP address information and check the connectivity, including the cabling.
- 3 At the command prompt, type **ping 192.11.13.8** (which is the IP address of the internal processor).
 - If you have connectivity, the system responds with the following message:

```
Reply from 192.11.13.8: bytes=32 time<##ms TTL=###
```
 - If no response, verify the IP settings for Adapter [1].
- 4 Type **exit** and press **Enter**.

The TN802B IP Interface is now installed and connected to the IP network.

Upgrading a TN802 V3 (or later) to a TN802B (MedPro mode)

If you have a TN802 V3 (or later) IP Interface, you must either replace it with a TN802B circuit pack or upgrade the existing TN802 circuit pack to operate in MedPro mode (DEFINITY ECS Release 8 or later).

NOTE:

The TN802 IP Interface must be V3 or later to upgrade to TN802B.

To upgrade the TN802 to a TN802B, you need the following hardware:

- Monitor, keyboard, and mouse to access the IP Interface's Windows NT environment or pcANYWHERE software.
- 10-Mbyte PCMCIA flashcard loaded with the MedPro NT Application Install Wizard
- TN802B label

The upgrade adds or modifies the following directories or files on your computer's hard drive:

- c:\dolan*
- c:\mapd\dnld\medpro.img
- c:\mapd\dnld\tmp.img

Connect the Monitor, Keyboard, and Mouse

- 1** Attach a VGA monitor to the VGA connector of the TN802 IP Interface external cable assembly.
- 2** Attach the keyboard to the KEYBOARD connector of the external cable assembly.
- 3** Attach the mouse to the MOUSE connector of the external cable assembly.
- 4** Plug the monitor into an AC power receptacle and turn it on.
- 5** If upgrading locally, reboot Windows NT by pressing the recessed reset button on the faceplate (see [Figure 99, TN802B IP Interface faceplate](#), on page 260) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.
- 6** After the TN802B is shut down, reseal the circuit pack to restart the system.
- 7** Log in using **ctrl alt del**

Upgrading IP trunks to H.323 trunks

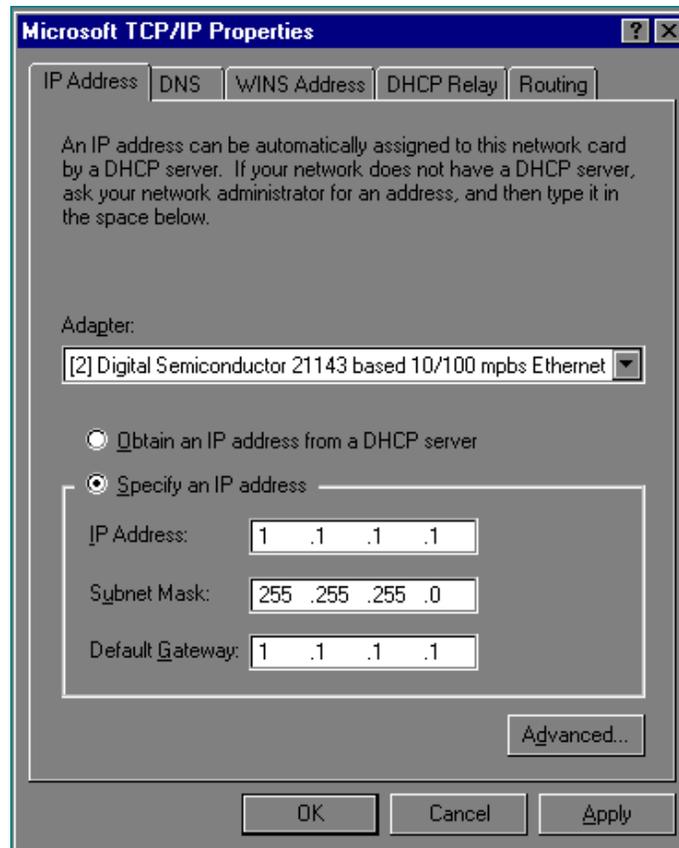
If there are existing IP trunk connections that you want to upgrade to H.323 trunk connections, do the following steps. Otherwise, go to [Upgrade to TN802B \(R8\)](#) on page 271

To upgrade an existing IP trunk to an H.323 trunk requires first getting IP information from the existing TN802 before upgrading the TN802 to TN802B.

- 1** Click on **My Computer > Control Panel > Network**.
- 2** Click the **Protocols** tab.
- 3** Select **TCP/IP Protocol** from the list.
- 4** Click the **Properties** option in the Network window. Write down the IP address, subnet address, and gateway address shown for adaptor [2] (see example below).

NOTE:

Do not use the addresses for adaptor [1].



- 5 When done, click **OK, OK**.

Upgrade to TN802B (R8)

NOTE:

The upgrade takes about 20 minutes.

- 1 Insert the flash disk into the right most slot on the TN802 IP trunk. On the monitor, a dialog box assigns a drive letter with the removable media designation; the default is D:.
- 2 Right click on **Start > Explore** to open the Windows NT Exploring pane and select the drive letter indicated in step 1.
- 3 Double-click on **Medpro** and select the Setup icon.
- 4 Follow the Install Shield procedure to transfer all the necessary files to the TN802 IP Interface.

NOTE:

In the Finish dialog box, select **I will restart later**. Do not select **Restart computer**.

This would be a good time to read the Readme.txt file.

- 5 Click on **Start > Settings > Control Panel > Services**.
- 6 Select **IP Trunk** and click on **Startup**.

NOTE:

Do not click on Start.

- 7 Under Startup Type, select **Disabled** and click **OK** to disable IP Trunk mode.

NOTE:

If IP trunk and MedPro services are both set to automatic, the TN802B defaults to IP Trunk and MedPro features cannot be used.

- 8 Select **MedPro** and click on **Startup**.

NOTE:

Do not click on Start.

- 9 Under Startup Type, select **Automatic** and click **OK** to enable MedPro mode.

- 10 Click **Start > Shut Down** and select `Restart` the computer?

or on the TN802:

Press the recessed reset button on the faceplate (see [Figure 99, TN802B IP Interface faceplate](#), on page 260) until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), reseal the circuit pack to restart the system.

or on the SAT:

- a Type **busyout board UUCSS** and press **Enter**.
- b Type **reset board UUCSS** and press **Enter**.
- c Type **release board UUCSS** and press **Enter**.

Once the system is completely initialized, the LCD reads **MEDPRO ***.

 **WARNING:**

When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

- 11 Affix the new TN802B label to the circuit pack.
- 12 Disconnect the monitor, keyboard, and mouse.

Circuit Pack Verification

- 1 Type **change circuit-pack** and press **Enter**.
- 2 Check the Code column to see if it says DSMAPD or MedPro.

```
change circuit-packs                                Page 1 of 5
                                           CIRCUIT PACKS

      Cabinet: 1                                Carrier: A
                                           Carrier Type: processor

Slot Code  Sf Mode  Name                                Slot Code  Sf Mode  Name
01: TN754                                11: MEDPRO  RESERVED-IP
02: TN758                                12: MEDPRO  RESERVED-IP
03: TN2144                                13: TN802 B  MAPD BOARD
04: TN746 B  ANALOG LINE                    14:
05:                                             15:
06: TN771 C  MAINTENANCE/TEST                16:
07: TN464 F  DS1 INTERFACE
08: TN2140                                E&M TIE TRUNK
09: TN767 E  DS1 INTERFACE
10: TN799 B  CONTROL-LAN

'#' indicates circuit pack conflict.
```

- 3 To correct it, go to the entry just above the TN802B that says DSMAPD.
- 4 Type MEDPRO, and press **Enter**. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:

MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.
- 5 To complete the administration, refer to *Administration for Network Connectivity for Avaya Communication Manager*.

Installing an Integrated Channel Service Unit (ICSU) Module

The integrated channel service unit (ICSU) is a combination of a 120A3A CSU module integrated with a DS1 circuit pack. A 700A DS1 loopback jack must be installed with this device.

Checking for required components

The integrated channel service unit (ICSU) package contains:

- 120A3A CSU module

NOTE:

Re-manufactured/repared ICSU units and any manufactured after May 7, 2002 are marked as “120A3A.”

- 700A DS1 loopback jack

Adding or Removing Hardware

Installing an Integrated Channel Service Unit (ICSU) Module

- Cable H600-383
4-pair modular cord
Group 2, 50-ft (15.2-m) cable (standard)
- Cord DW8A-DE
4-pair modular cord to alarm contacts
- DS1 circuit pack
The basic ICSU requires a TN464E or TN767D or later suffix. The enhanced ICSU requires a TN464F or TN767E or later suffix. The enhanced ICSU can also be used with the TN2464 or TN2313.

Installing the 120A3A CSU

Figure 101: 120A3A Channel Service Unit Module

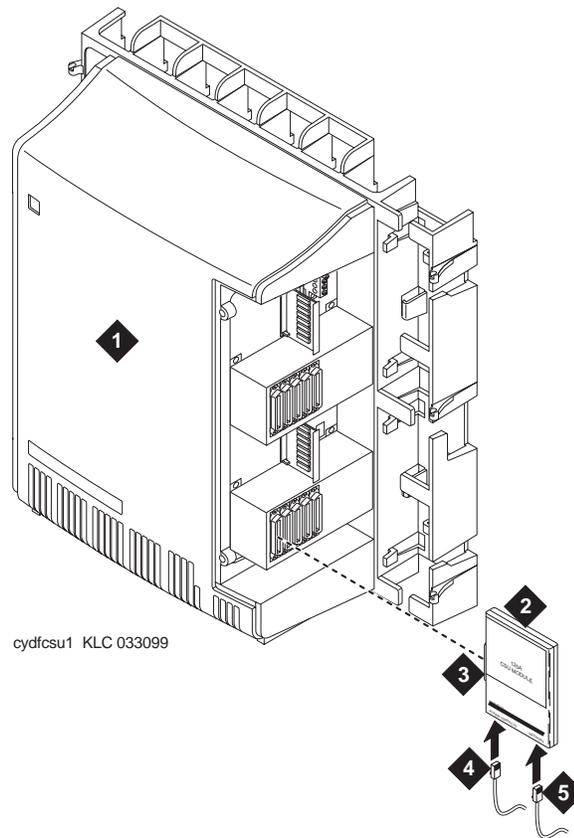


Figure notes

- | | | | |
|---|---------------------------------------------|---|--------------------------------------------------|
| 1 | Rear of carrier containing DS1 circuit pack | 4 | DW8A-DE 4-pair cord to alarm contacts (optional) |
| 2 | 120A3A CSU | 5 | 4-pair cord to network interface (H600-383) |
| 3 | To 25-pair connector on rear of carrier | | |



CAUTION:

Do not plug the 120A3A into any circuit pack other than a TN464F or TN767E or TN2464 or TN2313. Do not connect the 120A3A to any interface other than a 700A DS1 loopback jack.

Be sure the DS1 circuit pack is set for 24-channel operation (1.544 Mbps). The 120A3A does not operate with the 32-channel interface. A switch on the circuit pack or administration sets this option.



CAUTION:

Always wear an antistatic wrist strap when installing a 120A3A module. Do not touch the external alarm cable when it is connected to the 120A3A. Static discharge can damage connector terminals and relays.

- 1 Unplug the DS1 circuit pack from its slot.
- 2 Install a 4C retainer in the 50-pin plug associated with the DS1 circuit pack slot.
- 3 Plug the 120A3A's 25-pair connector directly into the plug associated with the DS1 circuit pack slot.
- 4 Secure the 4C retainer around the 120A3A.
- 5 Attach the supplied H700-383 cable to the 120A3A and to the 700A loopback jack.

This cable is directional. To determine the end that connects to the 120A3A, perform a continuity test between pins 3 and 7. The end with this continuity is the 120A3A end. The shield is grounded only at the 120A3A end.

Use the cable provided. If cabling other than that provided with the 120A3A is used, observe the following guidelines:

- Use 24-gauge wire that provides individually shielded, twisted pairs for transmit and receive signals. Use the cable between the network interface and the 120A3A. Ground the shields of this cable only at the 120A3A end to avoid ground loops.
- Cabling between the network interface and 120A3A can have no bridge taps.
- If using standard house riser cable for connections between the network interface and the 120A3A, maintain a 100-pair separation between the receive and transmit twisted pairs.
- If using standard house riser cable for connections between the network interface and the 120A3A, allow no more than 2 cross connects to 110-type cross connect blocks.
- Never use quad cable (untwisted two pair telephone cable) in a DS1 line.

NOTE:

Avoid mixing wires of different gauges in a DS1 line.

- 6 If using external alarm equipment, attach the supplied DW8 cable to the 120A3A and the external equipment. The maximum length of this cable depends on the alarm equipment.
- 7 If a TN464F or later is used, make sure the circuit pack is set for 24-channel operation. Set the switch on the circuit pack as shown in [Figure 70, TN464F/GP and TN2464BP Option Settings](#), on page 141.
- 8 From the DS1 circuit-pack form of the system administration console, set the line compensation field to 0-133 ft (40.6 m).

Adding or Removing Hardware

Installing an Integrated Channel Service Unit (ICSU) Module

- 9 Reset the 120A3A by reseating the DS1 circuit pack.

When you reinsert the DS1 circuit pack after installing a 120A3A CSU the 120A3A resets. The DS1 circuit pack initializes and tests the 120A3A. When initialization and testing is complete, the green LED goes off. If the RED indicator is OFF after the test, the ICSU is working.

- 10 If the circuits do not pass the self test, troubleshoot the 120A3A as instructed in *Integrated CSU Module Installation and Operation*, 555-230-193.

[Table 63](#) provides the H600-383 cable pinouts. [Table 64, H600-383 Cable Lengths by Group Number](#), on page 276 provides the cable lengths for each cable group number.

Table 63: H600-383 Cable Pin Assignments

Pin	Color	Channel Service Unit Designation	Network Designation	Function
1	BK	Line in 0	R1	RCV
2	Y	Line in 1	T1	
3	Shield			
4	R	Line out 0	R	XMT
5	G	Line out 1	T	
6	Shield			
7				Not assigned
8				Not assigned

Table 64: H600-383 Cable Lengths by Group Number

Group	Length	Group	Length
1	25 feet (7.7 m)	5	125 ft (38.1 m)
2	50 feet (15.2 m)	6	200 ft (71 m)
3	75 feet (22.9 m)	7	400 ft (122 m)
4	100 feet (30.5 m)	8	750 ft (198.1 m)

Installing a J58890CG Power Distribution Unit

Mounting without a backing plate

NOTE:

Note: the J58890CG Power Distribution Unit should be installed to the right of the SCC Cabinet Stack, and mounted approximately 12 inches (30.5 cm) off the floor.

To install the J58890CG Power Distribution Unit on a wall *without a plywood backing plate*, use the following procedure:

- 1 Hold the unit at the desired location (see Note) and mark the 4 (four) holes (slots and keyholes) centers with a pencil.
- 2 Use a level to make sure the unit is straight, set the unit aside and install 4 (four) ZINC drywall “screw in” anchors rated for 50 LBS each minimum.
- 3 Install the TOP 2 (two) screws supplied with the zinc anchors.
- 4 Install the power distribution unit onto the top screws.
- 5 Install the bottom screws through the slots in the power distribution housing.

Mounting with a backing plate

NOTE:

Note: the J58890CG Power Distribution Unit should be installed to the right of the SCC Cabinet Stack, and mounted approximately 12 inches (30.5 cm) off the floor.

To install the J58890CG Power Distribution Unit on a wall *with a plywood backing plate*, use the following procedure:

- 1 Hold the unit at the desired location (see Note) and mark the 4 (four) holes (slots and keyholes) centers with a pencil.
- 2 Use a level to make sure the unit is straight, set the unit aside and install 2 (two) #12 pan head phillips wood screws (rated for 50 LBS each minimum) in the top position.
- 3 Install the power distribution unit onto the top screws.
- 4 Install the bottom screws through the slots in the power distribution housing.

Install terminal server

This chapter provides information on connecting adjunct equipment using a terminal server ([Figure 102](#)). Avaya supports the IOLAN+ 104 terminal server.

Any device that does not support a direct TCP/IP connection, but that does support an RS232 interface, can connect through a terminal server. System printers and some CDR devices use RS232 connections and can connect through a terminal server.

You can connect up to four adjuncts through one terminal server.

Figure 102: Switch-to-adjunct LAN connectivity through a terminal server

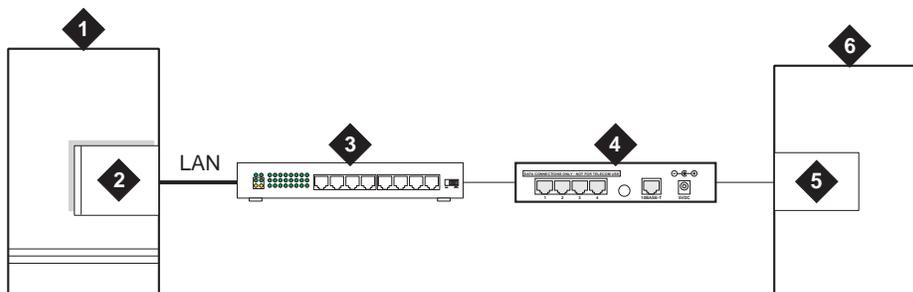


Figure notes

- | | | | |
|---|-----------------------------|---|-----------------|
| 1 | switch | 4 | terminal server |
| 2 | C-LAN circuit pack | 5 | serial port |
| 3 | 10/100Base-T Hub (optional) | 6 | CDR adjunct |

Installing and administering the terminal server

Make sure you have all the equipment on site before the installation. You must have the hardware listed in [Table 65](#).

Table 65: Required equipment

Comcode	Description	Qty	Supplier
700015084	IOLAN+ 104 communications server	1	Avaya
NA	RJ45-to-DB25 connector for IOLAN+ (supplied with 700015084)	4	Avaya
NA	DB25-to-DB9 connector for PC COM port	1	Avaya
NA	RS232 Null modem (if needed for PC or printer connectivity)	1 or more	Avaya
405369042	Male/female adapter (if necessary)	1 or more	Avaya

1 of 2

Table 65: Required equipment

Comcode	Description	Qty	Supplier
846943306 or 104154414	6-inch RJ45 crossover cord, or	1	Avaya
NA	10/100Base-T auto-sensing LAN hub or router	1	Customer
102631413	259A adapter, or	1	Avaya
NA	CAT5 cross connect hardware and connecting blocks		Customer
NA	RJ45 UTP Category 5 modular cords	1–2	Customer
NA	451A in-line RJ45 adapters, as needed to connect modular cords together		
			<i>2 of 2</i>

You also need a computer (laptop) with the HyperTerminal software program for the initial administration of the IOLAN+ and to set up the ports.

The general process is to

- Connect the IOLAN+ to the adjunct and the LAN
- Administer the ports on the IOLAN+ using a PC or laptop at the local site
- Test the connectivity back through the switch

Distance limits

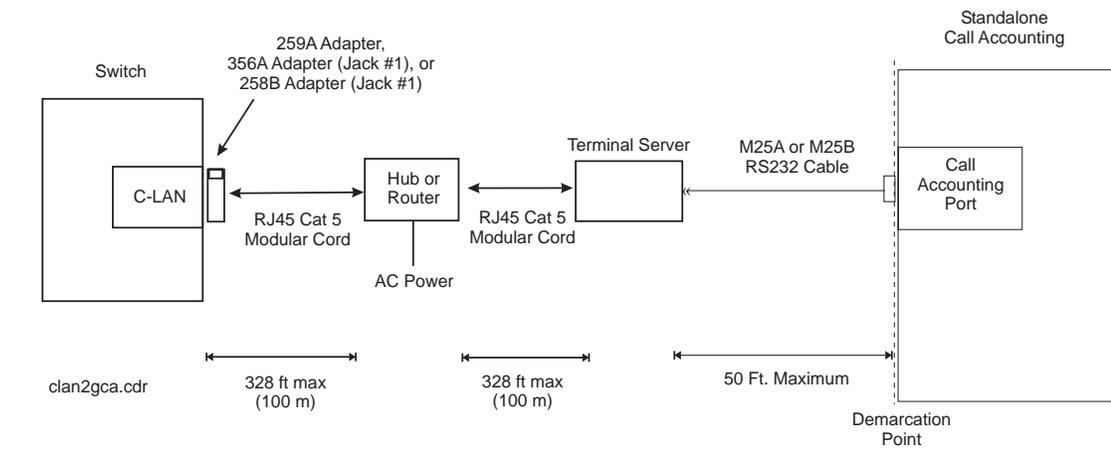
The distance limit from the switch to the LAN hub is 328 feet (100 meters). The distance limit from the LAN hub to the terminal server is 328 feet (100 meters). If installed, the limit from the terminal server to the adjunct is 50 feet (15 meters).

However, to achieve greater distance limits, the switch's LAN hub/router may be connected to a WAN and the hub/router for the terminal server also connected to the same WAN.

Cabling diagram

[Figure 103](#) shows the connection between the terminal server port and a call accounting system.

Figure 103: Stand-alone call accounting system link using a terminal server



NOTE:

You can connect the directly to the terminal server with a data crossover cable. This connection eliminates the need for a hub or router in the middle, but the connection also allows the and the terminal server to communicate only with each other. With this connection, the and the terminal server should be configured with the same subnet.

Making the connections

Connect the adjunct to the IOLAN+, using the RJ45-to-DB25 cable and the null modem. You can use a male/female adapter. See [Figure 104](#).

Figure 104: Connecting an adjunct to the IOLAN+

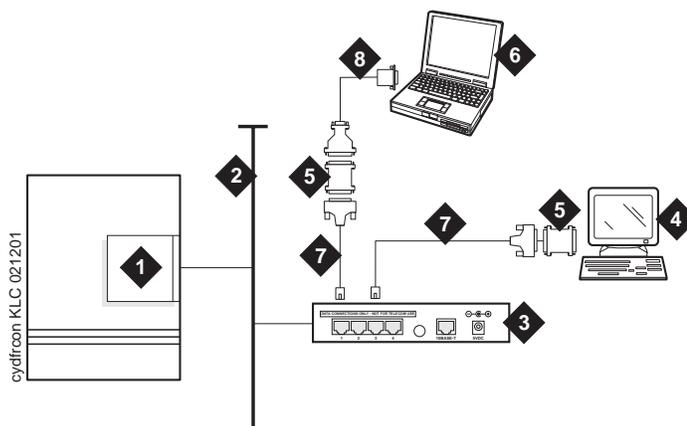


Figure notes

- | | | | |
|---|-----------------------------------------------------------------------|---|-------------------------------------------|
| 1 | C-LAN circuit pack | 5 | Null modem |
| 2 | Local area network (LAN) | 6 | PC or laptop (for initial administration) |
| 3 | IOLAN+ 104 terminal server | 7 | DB25-to-RJ45 cable |
| 4 | Adjunct (system management terminal or a system printer, for example) | 8 | DB25-to-DB9 cable |

Follow these typical steps:

NOTE:

Depending on the adjunct's connections, you may not need all of these pieces.

- 1 Connect the null modem adapter to COM1 port on the adjunct.

NOTE:

The null modem is an important element in this setup. Without it, data may not transfer correctly.

- 2 Connect the other end of the null modem adapter to the DB25 to RJ45 cable.
- 3 Connect the RJ45 end to any port on the IOLAN+.

Administering the IOLAN+

To administer the IOLAN+ the first time, you must connect a PC or laptop to the RS232 Port 1 on the IOLAN+ terminal server. Follow these typical steps:

NOTE:

Depending on the computer's COM port, you may not need all of these pieces.

- 1** Connect the DB9 end of the DB9-to-DB25 cable to the COM port on the PC or laptop.
- 2** Connect the DB25 end to the null modem adapter.
- 3** Connect the other end of the null modem adapter to the DB25 to RJ45 cable.
- 4** Connect the RJ45 end to Port 1 of the IOLAN+.

Before beginning the initial administration, make sure you have the following information:

- New IP address and subnet mask for IOLAN+
- Host name for IOLAN+
- IP address of Ethernet interface
- Port number of Ethernet interface where adjunct connects.

Setting up HyperTerminal on the computer

Use the HyperTerminal software program that comes with Windows 95/98/NT/2000 to administer the IOLAN+.

- 1** Open HyperTerminal.
- 2** Click on **File > Properties > Connect** tab. In the `Connect using:` field, select **COM *n***, where *n* is the communication port your computer is using.
- 3** Click on **CONFIGURE** and set the `bits per second` field to **9600** and the `Flow control` field to **Hardware**.
- 4** Click **OK**.
- 5** Press **ENTER** to get the login prompt.

Navigating the IOLAN+ terminal server

Refer to the IOLAN+ user guide for details. In general,

- Use the arrow keys to move to a menu item
- Use the **TAB** key to move from field to field horizontally.
- Use the **ENTER** key to choose an item.

Administering the IOLAN+ the first time

- 1 At the login prompt type *any text* and press **ENTER**.
- 2 At the second prompt type **set term ansi** and press **ENTER** to view the Connections menu.

```

Name: port 2                                CONNECTIONS MENU                                Terminal: 2

                                     Connection      Host

                                     1              *** FREE **  === Commands ===
                                     2              *** FREE **  | Telnet      ^T|
                                     3              *** FREE **  | Rlogin      ^R|
                                     4              *** FREE **  | Port        ^P|
                                                | Admin mode  ^A|
                                                | CLI        |
                                                | Lock       |
                                                | Logout     ^D|
                                                |=====|

-----

IOLAN PLUS v4.02.00 a CDi                                iolan

```

- 3 Under Connection select Port 1 (the port to which the adjunct is connected) and press **ENTER** to access the Commands menu.
- 4 Select **Admin mode > Password** and press **ENTER**.

```

Name: port 2                                ADMINISTRATION MENU                                Terminal: 2

gateway      Examine/modify gateway table.
host         Examine/modify host table.
line         Terminal configuration organised by line.
password     Specify password to allow modification of menu items.
port         Terminal configuration organised by port.
quit         Return to connections menu.
server       Examine/modify Server parameters.
stats        Examine Server statistics.

Password     [      ]

-----

IOLAN PLUS v4.02.00 a CDi                                iolan-st

```

- 5 Type **iolan**, the default password, and press **ENTER**.
The Administration Menu changes, offering more options.

- 6** Select **server** and press **ENTER** to view the Server Configuration menu.

```
** Administrator **          SERVER CONFIGURATION          Terminal: 2

Name          [iolan      ]          Debug mode    [0      ]
IP address    [123.45.67.89 ]
Subnet mask   [222.222.0.0   ]
Ethernet address [00:80:d4:03:11:cd] Ethernet interface [AUTO  ]
Language      [English      ]
Identification [              ]
Lock          [Disabled]
Password limit [5            ]
CR to initiate [No          ]
SNAP encoding [Disabled]
Boot host     [              ] Boot diagnostics [Enabled ]
Boot file     [              ]
Init file     [              ]
MOTD file     [              ]
Domain name   [              ]
Name server   [              ] NS Port    [53     ]
WINS server   [              ]

-----
Name used for prompts and message on bottom right of screen.

IOLAN PLUS v4.02.00 a CDi                                iolan
```

- 7** Fill in the following fields with information appropriate to your network. Leave the default settings for the other fields.
- Name:
 - IP address: (for IOLAN+)
 - Subnet mask:
- 8** Press **ENTER** and select **Save & Exit** to effect the changes.

Rebooting the IOLAN+

You must reboot the server any time you change an IP address or Local Port value.

- 1 Press **ENTER** to view the Administration Menu.

```
** Administrator **          ADMINISTRATION MENU          Terminal: 2

access      Remote System Access (PPP).
change      Change login and/or admin password.
gateway     Examine/modify gateway table.
host        Examine/modify host table.
kill        Kill TCP connections on serial line.
line        Terminal configuration organised by line.
port        Terminal configuration organised by port.
quit        Return to connections menu.
reboot     Reboot Server.
server      Examine/modify Server parameters.
stats       Examine Server statistics.
trap        Examine/modify SNMP Trap parameters.

Port                [ 2  ]

-----

IOLAN PLUS v4.02.00 a CDi                                iolan
```

NOTE:

The following steps re-initialize the IOLAN+ so it knows it's connected to the LAN through its IP address.

- 2 Select **reboot** and press **ENTER**.
- 3 Press the space bar to restart the IOLAN+.

Administering the gateway

NOTE:

If the and IOLAN+ are in the same subnet, skip this step.

- 1 Select **Admin mode > Password** and press **ENTER**.
- 2 Type **iolan** and press **ENTER**.
- 3 Select **gateway** to access the Gateway menu
- 4 Fill in the following fields for Entry 1:
 - Destination: **IP address**
 - Gateway: **Gateway address**
 - Netmask: **Subnet mask**

NOTE:

The following steps re-initialize the IOLAN+ so it knows it's connected to the LAN through your gateway.

- 5 Select **reboot** and press **ENTER**.
- 6 Press the space bar to restart the IOLAN+.

Administering an IOLAN+ port

Use this procedure when connecting an adjunct or serial COM port on a PC directly (locally) to the IOLAN+ (see [Figure 104](#)).

- 1 Select **Admin mode > Password** and press **ENTER**.
- 2 Type **iolan** and press **ENTER**.
- 3 Select **port** and press **ENTER**.
- 4 Type **port number**, where **port number** is the port that the adjunct connects to, and press **ENTER** to view the Port Setup Menu.

```

** Administrator **          PORT SETUP MENU          Terminal: 2
Hardware                    Flow ctrl          Keys
  Speed      [9600 ]        Flow ctrl  [xon/xoff]  Hot  [^]   Intr  [^C]
  Parity     [None]        Input Flow [Enabled ]  Quit  [^@]  Kill  [^U]
  Bit        [8]          Output Flow [Enabled ]  Del  [^@]   Sess  [^@]
  Stop       [1 ]
  Break      [Disabled]   IP Addresses
  Monitor DSR [Yes ]      Src  [          ]  Mask  [          ]
  Monitor DCD [No ]      Dst  [          ]

User                          Options                Access
  Name  [port 2 ]          Keepalive      [No ]      Access      [Remote ]
  Terminal type [undef ]  Rlogin/Telnet [Telnet]  Authentication [None ]
  TERM      [          ]  Debug options [No ]      Mode        [Raw ]
  Video pages [0]         Map CR to CR LF [No ]   Connection  [None ]
  CLI/Menu   [CLI]        Hex data       [No ]      Host        [          ]
  Reset Term [No ]        Secure         [No ]      Remote Port [0 ]
                                MOTD          [No ]      Local Port  [5101]

-----

IOLAN PLUS v4.02.00 a CDi                                     iolan

```

- 5 Fill in the following fields. Leave the default settings for the other fields.

- Speed: **9600**
- Monitor DSR: **Yes**
- Monitor DCD: **No**
- Name: **port number** or **other descriptive name**
- Terminal type: **undef**
- CLI/Menu: **CLI**
- Reset Term: **No**
- Flow ctrl: **xon/xoff**
- IP addresses: *leave blank*
- Mask: *leave blank*
- Access: **Remote**
- Authentication: **None**
- Mode: **Raw**
- Connection: **None**

- Host: leave blank or enter **IP Address**
 - Remote Port: **0**
 - Local Port: *must match the value of Remote Port on the IP Services screen of the Communication Manager software*
- 6** Press **ENTER** and select **Save & Exit** to effect the changes.
 - 7** Press **ENTER** again to view the Administration Menu.
 - 8** Select **kill** to disable the port connection.
 - 9** Repeat the steps for each additional port you want to administer.
 - 10** When administration is complete, from the Connections Menu, select **logout** (or press **Ctrl D**).
 - 11** Close HyperTerminal.
- At this point, you have established a connection path from the adjunct through the IOLAN+ to the

Testing

- 1** On the system management terminal, press **ENTER** to get the login prompt to the Communication Manager switch.

NOTE:

If you get garbled text, check the baud rate setting on the Port Setup Menu. You can adjust it up or down.

- 2** If no login prompt appears, log back into the IOLAN+ through HyperTerminal.
- 3** Select **Admin mode > stats** and press **ENTER** twice.
- 4** Select **users** and press **ENTER**.
- 5** Look at the port that the adjunct is connected to and see if there is any traffic. If not, check all your connections and administration fields.

```

** Administrator **                SERVER STATISTICS                Terminal: 2
1. port1                            Talking to host 172.22.22.67.5111<DSR+CTS+DCD >DTR+RTS
2. port 2                            SERVER STATISTICS                <DSR+DCD >DTR+RTS
3. port 3                            waiting for DSR or DCD           >DTR+RTS
4. port 4 modem                       waiting for DSR or DCD           >DTR+RTS
REM <unknown>                          logged out
LOG                                      logger not enabled

-----

Press <RETURN> to see list of options.
IOLAN PLUS v4.02.00 a CDi                iolan-st

```

After you have successfully administered and validated the connection between the adjunct and the through the IOLAN+, you can disconnect the laptop or other PC from the IOLAN+. No further IOLAN+ administration is required.

Potential failure scenarios and repair actions

If a link goes down between the terminal server and the switch, you must reboot the terminal server for the link come back up. If you are performing a software upgrade or if a system reset occurs, you must reboot the terminal server to restore the link. See [Rebooting the IOLAN+](#) on page 285 for instructions.

Administering IP node names

You must administer the IP addresses of the C-LAN board, any adjunct that connects directly to the LAN, the terminal server (if appropriate), and the PC running the Reliable Session-Layer Protocol (if appropriate). You use the Node Names screen to do this.

- 1 Type **change node-names ip** and press **RETURN**.
- 2 Enter the name and the IP address of the C-LAN board, as well as any adjunct, terminal server or PC you need to administer.

```
change node-names ip                                     Page 1 of 1

                                NODE NAMES

Name          IP Address      Name          IP Address
1. switch-clan 123.456.7 .89  17. _____ .____.____.____
2. callacctg   123.456.9  .00  18. _____ .____.____.____
3. termserver  123.456.11 .00  19. _____ .____.____.____
4. pmslogpc    123.456.78 .00  20. _____ .____.____.____
5. _____  _____ .____.____.____  21. _____ .____.____.____
6. _____  _____ .____.____.____  22. _____ .____.____.____
7. _____  _____ .____.____.____  23. _____ .____.____.____
8. _____  _____ .____.____.____  24. _____ .____.____.____
9. _____  _____ .____.____.____  25. _____ .____.____.____
10. _____  _____ .____.____.____  26. _____ .____.____.____
11. _____  _____ .____.____.____  27. _____ .____.____.____
12. _____  _____ .____.____.____  28. _____ .____.____.____
13. _____  _____ .____.____.____  29. _____ .____.____.____
14. _____  _____ .____.____.____  30. _____ .____.____.____
15. _____  _____ .____.____.____  31. _____ .____.____.____
16. _____  _____ .____.____.____  32. _____ .____.____.____
```

- 3 Print a copy of this screen, or write down the node names you entered. You need this information for the next administration task.
- 4 Press **ENTER** to save your changes.

Administering IP services

For each adjunct that you connect using TCP/IP, you need to administer IP services to establish the IP address/TCP port pairing. The IP address is associated with the node name that you just administered. In this example, we are administering the primary CDR connection as end-to-end TCP/IP.

- 1 Type **change ip-services** and press **RETURN** to assign the CDR endpoint.
- 2 In the `Service Type` field, enter **CDR1** for the call accounting link.

```
change ip-services Page 1 of 3
```

IP SERVICES						
Service Type	Enabled	Local Node	Local Port	Remote Node	Remote Port	
CDR1		switch-clan	0	callacctg	5101	

- 3 In the `Local Node` field, enter the node name for the switch. In this example, **switch-clan** is the local node.
- 4 The `Local Port` field defaults to **0** for all client applications. You cannot make an entry in this field.
- 5 In the `Remote Node` field, enter the node name for the adjunct, as administered on the `Node Names` screen. For the call accounting application, type **callacctg**. Since the PMS application routes through the terminal server, **termserver** is the remote node for this service type.
- 6 In the `Remote Port` field, enter the TCP listen port assigned to the adjunct. The recommended value for CDR1 is **5101**, and the recommended value for PMS is **5103**.

NOTE:

This number must match the port administered on the end device. If you are using the Downloadable Reliable Session-Layer Protocol tool, this must match the port administered in the Server application. If you are using a terminal server, this number must match the `Local Port` number on the `Port Setup` menu. Consult the documentation for your Call Accounting system to determine the appropriate port for the CDR device.

- 7 Move to Page 3. Type **n** in the `Reliable Protocol` field for the CDR Service Type. You do not use RSP with a terminal server.

```
change ip-services Page 3 of 3
```

SESSION LAYER TIMERS						
Service Type	Reliable Protocol	Packet Resp Timer	Session Connect Message Cntr	SPDU Cntr	Connectivity Timer	
CDR1	n	3	1	1	1	

- 8 Press **ENTER** to save your changes.

Install Call detail recording (CDR)

This section provides information on connecting call detail recording (CDR) equipment.

Connecting CDR Equipment

The interface between a DEFINITYan Avaya media server and CDR equipment is a C-LAN card.

CDR equipment connects to the CLAN board on an MCC1 or G650 Media Gateway through a TCP/IP connection (that is, an Ethernet connection). Any CDR equipment that supports the Reliable Session Protocol will support a direct TCP/IP connection. A CDR application that supports an RS232 interface can also connect to the CLAN through a terminal server (see [Install terminal server](#) on page 278 for more information on connecting through a terminal server).

NOTE:

A printer or customer premises equipment (CPE) can also be used as the output receiving device. Please see [Install terminal server](#) on page 278 of this book for instructions on using a printer.

Administering CDR Data Collection

NOTE:

To send CDR data via CLAN to a device on the LAN/WAN, you have the option to enable/disable RSP.

- 1** Setup the CDR adjunct to be ready to collect CDR data. Record the **IP address** and the **port number** of the CDR adjunct, which could be a terminal server or a CDR application that uses RSP.

If the CDR adjunct is an application that uses RSP, start the application to listen for a client connection at the port.
- 2** Access the Node Names screen in Communication Manager (see [Administering IP node names](#) on page 288), and do the following:
 - a** Enter the CDR adjunct's name from step 1 in the Name field.
 - b** Enter the CDR adjunct's IP address in the IP Address field.
- 3** Access the IP Services screen in Communication Manager (see [Administering IP services](#) on page 289), and do the following:
 - a** In the Service Type field, enter **CDR1** or **CDR2**.
 - b** In the Local Node field, enter **switch-clan**.
 - c** The Local Port field defaults to **0** for all client applications. You cannot make an entry in this field.
 - d** In the Remote Node field, enter the node name you assigned to the CDR adjunct in step 2.
 - e** In the Remote Port field, enter the port number used by the CDR adjunct determined in step 1.

- 4 Go to Page 3 and do the following:
 - a Enter **y** in the `Reliable Protocol` field if you have a CDR application using RSP. Enter **n** if the CDR adjunct is connected through a terminal server.
 - b If RSP is being used, complete the `Packet Resp Timer` and `Connectivity Timer` fields with some reasonable value that matches the network condition (the recommended values are **30** and **60** seconds, respectively).
 - c Leave the defaults in the other fields.
- 5 Administer CDR parameters as described in [Administering CDR parameters](#) on page 291.

Administering CDR parameters

You must administer CDR parameters to let the system know that the adjunct is connected through TCP/IP. For details on all fields on the CDR System Parameters screen, see *Administrator's Guide for Communication Manager, 555-233-506*.

- 1 Type **change system-parameters cdr** and press **RETURN**.

The CDR System Parameters screen appears.

```

change system-parameters cdr                               Page 1 of 1
                                CDR SYSTEM PARAMETERS

Node Number (Local PBX ID):                               CDR Date Format: month/day
  Primary Output Format: unformatted   Primary Output Endpoint: CDR1
  Secondary Output Format: unformatted Secondary Output Endpoint: CDR2
    Use ISDN Layouts? n                               EIA Device Bit Rate: 9600
    Use Enhanced Formats? n   Condition Code 'T' for Redirected Calls? n
Modified Circuit ID Display? n   Remove # From Called Number? n
    Record Outgoing Calls Only? y   Intra-switch CDR? n
  Suppress CDR for Ineffective Call Attempts? y   CDR Call Splitting? y
    Disconnect Information in Place of FRL? n   Attendant Call Recording? y
    Interworking Feat-flag? n
  Force Entry of Acct Code for Calls Marked on Toll Analysis Form? n
    Calls to Hunt Group - Record: member-ext
Record Called Vector Directory Number Instead of Group or Member? n
  Record Called Agent Login ID Instead of Group or Member? n
  Inc Trk Call Splitting? n
Record Non-Call-Assoc TSC? n
  Record Call-Assoc TSC? n   Digits to Record for Outgoing Calls: dialed
  Privacy - Digits to Hide: 0   CDR Account Code Length: 4
  
```

- 2 In the `Primary Output Format` field, enter a format specific to the call accounting system, if necessary. In the example, **unformatted** is used. If you were sending data directly to a printer, you would use **printer**.
- 3 In the `Primary Output Endpoint` field, type **CDR1**.
- 4 If you use a secondary output device, and that device is also connected through TCP/IP, complete the `Secondary Output Format` field. Also, type **CDR2** in the `Secondary Output Endpoint` field.
- 5 Press **ENTER** to save your changes.

Testing the switch-to-adjunct link

You can use the test, status, busyout and release commands to find and correct problems with CDR links. For more information about these commands, see the Maintenance manual for your switch.

```
status cdr-link
                CDR LINK STATUS
                Primary                Secondary
                Link State: up          extension not administered
                Maintenance Busy? no
```

Work with the vendor to test the link from the call accounting adjunct.

If a link does not come up immediately, use the **busyout cdr-link** and **release cdr-link** commands to bring up the link.

Additional administration procedures for CDR equipment are provided in the *Administrator's Guide for Avaya Communication Manager*.

Install Reliable Data Transport Tool (RDTT) Package

Avaya provides this free software application to help vendors and customers develop CDR applications that use the reliable session protocol to collect CDR data from an Avaya Media Server. The Reliable Data Transport Tool (RDTT) is a testing tool and thus is not supported by Avaya.

Contents of the RDTT

The RDTT package consists of the following:

- Specifications for the Reliable Session Protocol
- The Client application (Client.exe)
This application is designed to help you test the reliable session protocol without use of an Avaya Media Server.
- The Server application (Server.exe)
This application is designed to help you understand the reliable session protocol and to start building your products to work with the Avaya media server.
- User Guide
This document contains information about the client and server applications.

Downloading the tool

The RDTT tool is available from the Avaya support Web site as a self-extracting executable. To download the RDTT:

- 1 Go to the Avaya Customer Support Web site at <http://avaya.com/support>.
- 2 In the Search For text box, type `reliable` and click **Go**.
- 3 Select **Reliable Data Transport Client/Server Tool** from the list of found links.
- 4 When asked, save the **RDTT.exe** file to a temporary folder on your computer. It is approximately 1.6 to 2.0-MB.

Installing RDTT

To install the RDTT:

- 1 Double-click the **RDTT.exe** file.
The Install Shield Wizard steps you through the installation.
- 2 When prompted to select Client or Server, select both programs.
- 3 Continue with the installation. Use the default destination folder and program folder.

Administering RDTT

See the instructions in the `user_guide.doc` file to administer the RDTT tool on a PC.

Related Topics

See the following topics related to CDR:

- Chapter 16, “Collecting Billing Information,” in *Administrator’s Guide for Avaya™ Communication Manager*, 555-233-506.
- “Call Detail Recording” in Chapter 21, “Features and Technical Reference” in *Administrator’s Guide for Avaya™ Communication Manager*.
- [Connecting printers using TCP/IP](#) on page 300.

Install wideband endpoints

Wideband endpoints include video equipment or bridges/routers for LANs. Use the running list that accompanies the system to make cable connections.

Nonsignaling configuration

A nonsignaling connection to a wideband endpoint may connect to a channel service unit (CSU). If *not* using a CSU, the distance between the system and the endpoint is limited to a few hundred feet. See [Figure 105](#). The maximum distance depends on the type of cable and type of endpoint.

Figure 105: Typical nonsignaling wideband configuration

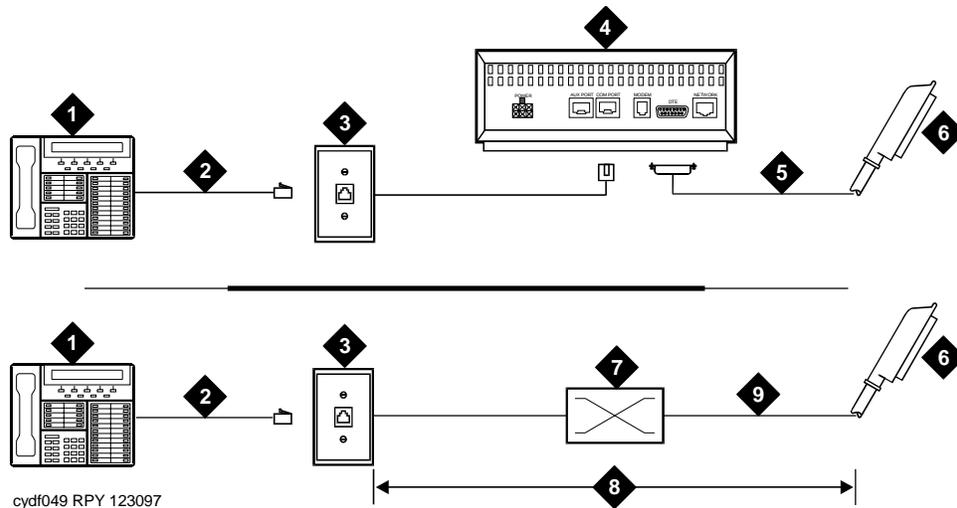


Figure notes

- | | | | |
|---|-------------------------------------------|---|----------------------------------------------------|
| 1 | Wideband endpoint (wire per manufacturer) | 6 | DS1/E1 circuit pack |
| 2 | Modular cord | 7 | Main distribution frame (MDF) |
| 3 | 103A or modular wall jack | 8 | Distance limit depends on cable and endpoint type. |
| 4 | Channel service unit (CSU) | 9 | A25D 25-pair cable (male-to-male) |
| 5 | H600-307 cable to DTE connector on CSU | | |

If using a CSU, the distance between connections may be up to 1300 ft. (397.2 m). The maximum distance to the endpoint depends on the type of cable and the specifications of the endpoint.

Signaling configuration

A signaling connection from the system to a wideband endpoint passes through a bandwidth controller. The distance between the system and the bandwidth controller depends on the type of cable and controller. [Figure 106](#) shows connections with and without a CSU.

Figure 106: Typical signaling wideband configuration

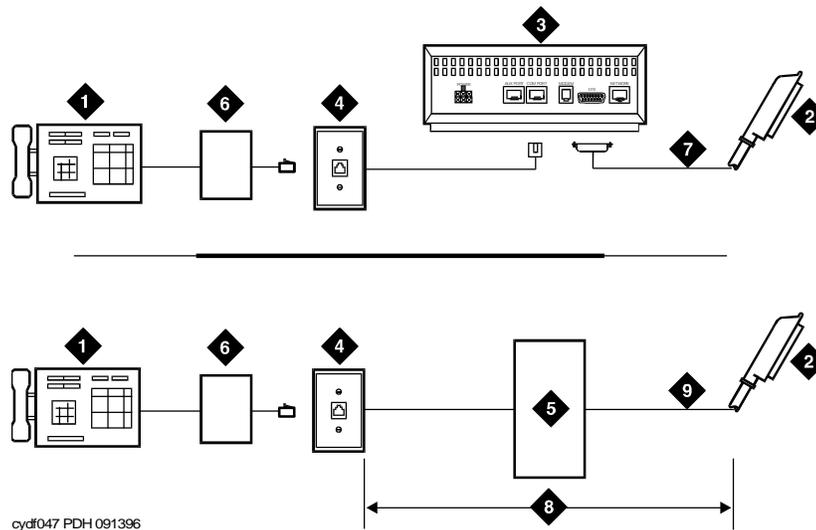


Figure notes

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Wideband endpoint (wire per manufacturer)</p> <p>2 To DS1/E1 circuit pack</p> <p>3 Optional channel service unit (CSU)</p> <p>4 103A or modular wall jack</p> <p>5 Part of main distribution frame</p> | <p>6 Bandwidth controller</p> <p>7 H600-307 cable to DTE connector on CSU</p> <p>8 Distance limit depends on cable type and bandwidth controller type</p> <p>9 A25D 25-pair cable (male-to-male)</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The bandwidth controller connects directly to the wideband endpoint. The controller typically installs near the endpoint where they directly connect (usually within a few feet of each other).

- For non-CSU installations, cross the transmit and receive lines so a transmit signal from the DS1/E1 circuit pack connects to the receive connection on the bandwidth controller and a transmit signal from the bandwidth controller connects to the receive connection on the DS1/E1 circuit pack.
- For CSU installations, cross the transmit and receive lines between the CSU and the bandwidth controller.

[Figure 107](#) shows a remote port module. In this configuration, there can be considerable distance between the bandwidth controller and the wideband endpoint. The maximum distance between elements depends on the quality of the cables and on the specifications of the wideband equipment.

Figure 107: Typical signaling wideband configuration with remote port module

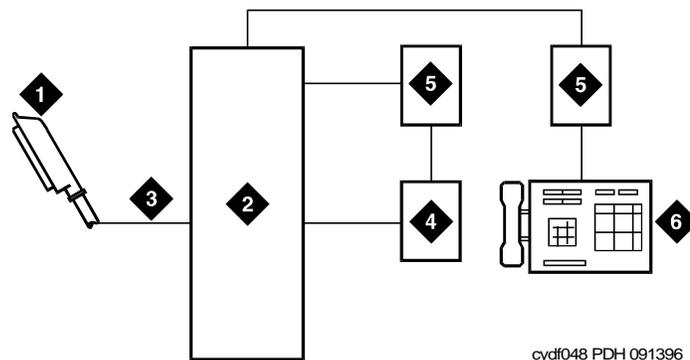


Figure notes

- | | | | |
|----------|---------------------------------------|----------|-------------------------------------------|
| 1 | To TN464GP DS1/E1 circuit pack | 4 | Bandwidth controller |
| 2 | Part of main distribution frame (MDF) | 5 | Remote port module |
| 3 | H600-307 cable | 6 | Wideband endpoint (wire per manufacturer) |

- 1** For non-CSU installations, cross the transmit and receive lines so a transmit signal from the TN464GP connects to the receive connection on the bandwidth controller and a transmit signal from the bandwidth controller connects to the receive connection on the TN464GP.
- 2** For CSU installations, cross the transmit and receive lines between the CSU and the bandwidth controller.

Install multimedia call handling (MMCH)

MMCH provides a single point to point conference call using voice, video, and data from one endpoint to another. The customer must have endpoints and a personal computer with H.320 desktop video installed.

Connect the endpoints

Use the following procedure and [Figure 108](#) to connect the endpoints:

Figure 108: Typical multimedia call handling connections

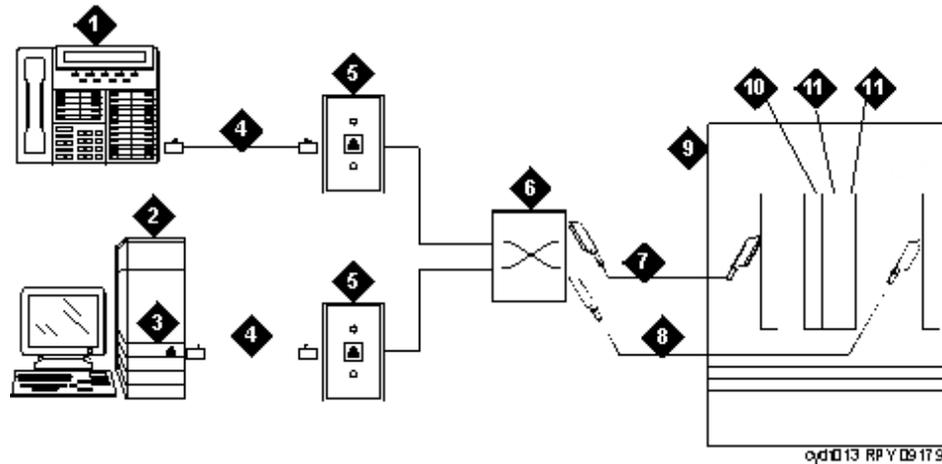


Figure notes

- | | | | |
|---|----------------------------------------------------------|----|---------------------------------------------------------------|
| 1 | DCP telephone, 2 or 4 wire to match type of circuit pack | 7 | 25-pair cable to digital line circuit pack |
| 2 | Personal computer | 8 | 25-pair cable to BRI circuit pack or NT1, 4-to-2 wire adapter |
| 3 | BRI adapter | 9 | Avaya Media Server |
| 4 | D8W cord | 10 | Multimedia-interface circuit pack |
| 5 | 103A or modular wall jack | 11 | Voice conditioner circuit pack |
| 6 | Main distribution frame | | |

- 1 Each PC MMCH endpoint must contain a BRI adapter.
- 2 Connect a DCP telephone to a digital line circuit pack. The DCP telephone must be used in conjunction with the PC. Refer to the tables at the end of this chapter for the pinout of the digital line circuit pack.
- 3 Connect the PC BRI adapter to any BRI port on the Avaya Media Server. Refer to the tables at the end of this chapter for the pinout of an ISDN BRI circuit pack.

Administer the system

- 1 Call INADS and notify the representative that the Multimedia Call Handling (MMCH)? field on page 2 of the customer-options form must be changed to **y**.
- 2 Logoff the terminal and then log back on the terminal to see your changes.

Administer the endpoints

- 1 Log in and enter **add data-next** <or a valid *extension number*>.
- 2 The data module form appears. On page 1 of the form, enter the Data Extension: **xxxx**, Type: **7500**, the Name: **user's name** (such as ProShare), and enter **y** in Multimedia? field.
- 3 On page 2 of the form, enter **n** in the XID? field, and enter **n** in the MIM Support? field and press **Enter**.

Administer one number complex

- 1 Identify the voice telephone (DCP set) to associate with the data endpoint. The station record for this voice station must be changed.
- 2 Type **change station station number** and press **Enter**.
- 3 On screen 1, type the **data extension number** in the MM Complex Data Ext: field.
- 4 On screen 2, type **y** in the H.320 Conversion? field and press **Enter**.
- 5 Type **y** in the Multimedia Early Answer field and press **Enter**.

Expansion services module

The Expansion Services Module (ESM) provides T.120 data sharing capability on a MMCH multipoint H.320 video conference. Each person in the conference must have endpoints and a personal computer with the H.320 video application installed. The Avaya Media Server must have the expansion service module installed.

Figure 109: Typical multimedia call handling ESM connections

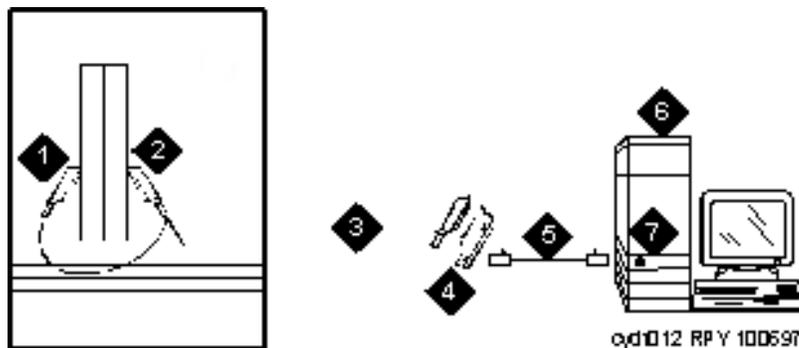


Figure notes

- | | | | |
|---|-----------------------------------------------------------------------------|---|--------------------------------------------------------|
| 1 | Port B Y-cable connector to a TN787 multimedia interface (MMI) circuit pack | 5 | D8W cord connected to 357A adapter S/B port 8 |
| 2 | Port A Y-cable connector to a TN2207 PRI circuit pack | 6 | Expansion service module (ESM) |
| 3 | 25-pair Y-cable | 7 | Port B on compatible primary rate interface (PRI) card |
| 4 | 357A adapter | | |

ESM installation

Use the following procedure and [Figure 109](#) to connect to the ESM equipment:

- 1 Install the TN2207 primary rate interface (PRI) circuit pack and the TN787F/G/H/J/K multimedia interface (MMI) circuit pack in the port carrier.
- 2 Record the circuit pack locations.
- 3 Connect the ESM Y-cable as shown.

Administration

- 1 Enter **list configuration all**, and a list of the installed carriers, circuit packs, and ports appears.
- 2 Record the location (board number) of the new circuit packs and verify that all other required circuit packs (refer to [ESM installation](#)) are present.
- 3 Enter **add DS1 xxxxx**, (where **xxxxx** is the location of the TN2207 PRI circuit pack recorded in step 2), and the DS1 circuit pack administration form appears.
- 4 Set the Name: field to **ESM DS1**
- 5 Set the Bit Rate: field to **2.048**
- 6 Set the Line Coding: field to **hdb3**
- 7 Set the Signaling Mode: field to **isdn-pri**
- 8 Set the Connect: field to **pbx**
- 9 Set the Interface: field to **network**
- 10 Set the Country Protocol: field to **1**
- 11 Set the Protocol Version: field to **a**
- 12 Set the CRC?: field to **y**
- 13 The Idle Code default is **11111111**.
- 14 The DCP/Analog Bearer Capability default is **3.1** kHz.
- 15 Set the MMI Cabling Board: field to **xxxxx** (where **xxxxx** is the location of the TN787F/H/J/K MMI circuit pack recorded in step 2). This must be the slot for port B of the Y-cable.
- 16 The MMI Interface: field **ESM** appears.
- 17 Enter **add signaling-group next** and the signaling-group form appears.
- 18 Change Associated Signaling: field to **y**.
- 19 Change Primary D-Channel Port: field to **xxxx17** (where **xxxx** is the address of the TN2207 PRI circuit pack, for example: **1B0517**).
- 20 The Max Number of NCA TSC: default is **0**.
- 21 The Max Number of GA TSC: default is **0**.
- 22 Trunk Group for NCA TSC: ____ (leave blank)
- 23 Trunk Group for Channel Selection: ____ (leave blank)
- 24 Logoff the terminal and then log back on the terminal to view your changes.

Place test call

Place multimedia data-conference call to an endpoint with known video capability to test the esm function.

Troubleshooting

To determine ESM link status enter the following commands from the system administration terminal:

- 1** **Status esm**
- 2** **Status signaling-group**
- 3** **List MMI**

NOTE:

When you move ESM circuit packs, you **MUST** remove the DS1 and signaling group translations. You cannot use the **change circuit pack** command.

Refer to [Expansion services module](#) on page 298 for further information.

Connect printers

This section provides information on connecting and configuring printers that work with your system and Avaya™ Communication Manager.

Connecting printers using TCP/IP

Printers can be connected to the switch using asynchronous TCP/IP links and a terminal server. This section provides information on connecting adjuncts to the C-LAN and providing the initial administration.

Task list

Whether you use an end-to-end TCP/IP configuration, a terminal server or a PC running RSP, you must complete the following tasks:

- [Administering IP node names](#) on page 288.
- [Administering IP services](#) on page 289.
- [Administering adjunct parameters](#) on page 300.
- If you are using a terminal server, also complete [Installing and administering the terminal server](#) on page 278.
- If you are using a PC with the Downloadable RSP Tool, complete [Using the downloadable reliable session-layer protocol \(RSP\) tool](#) on page 301.

Administering adjunct parameters

You must administer adjunct parameters to let the system know that the adjunct is connected through TCP/IP.

PMS journal and PMS log printers

See *Guestworks® and DEFINITY® Systems Technician Handbook for Hospitality Installations*, 555-231-743.

System printer

- 1 Type **change system-parameters features** and press **RETURN**.
The Feature-Related System Parameters screen appears.
- 2 Move to Page 4.
- 3 In the `System Printer Endpoint` field, type **SYS_PRNT**.
- 4 Press **ENTER** to save your changes.

Testing the switch-to-adjunct link

You can use the test, status, busyout and release commands to find and correct problems with a system printer, PMS log printer, or PMS journal printer. For more information about these commands, see the Maintenance manual for your switch.

If a link does not come up immediately, try using the busyout (`journal-link pms-log` and `wakeup-log`, and `sp-link`) and release (`journal-link pms-log` and `wakeup-log`, and `sp-link`) commands.

NOTE:

Status `sp-link` can show a system printer link as down, when it is actually properly connected. If no data is being transmitted, the switch may not see this link as active.

Using the downloadable reliable session-layer protocol (RSP) tool

The intent of the Reliable Session-Layer Protocol (RSP) is to guarantee delivery of data records from the switch to an output device that connects to the switch over an asynchronous TCP/IP link. The Downloadable RDTT tool allows you to implement this protocol on a PC that collects data records in a file. The protocol assures that the data records arrive safely at the PC. You can then send the output file to a printer. See [Install Reliable Data Transport Tool \(RDTT\) Package](#) on page 292.

Install DS1/T1 CPE loopback jack

This section provides information on how to install and use a DS1 loopback jack to test the DS1 span between the Avaya Media Server or Gateway and the network interface point. *The loopback jack is required when DC power is at the interface to the integrated channel service unit (ICSU).*

NOTE:

Do not remove the loopback jack after installation. It should always be available for remote tests of the DS1 span.

For earlier media gateway systems, the integrated channel service unit (ICSU) — also known as the 120A2 — is a separate device that plugs into the back of the media gateway.

Installing a loopback jack

You can install a loopback jack with or without a smart jack.

With a smart jack

Install the loopback jack at the interface to the smart jack, if possible. This position provides maximum coverage of CPE wiring when remote loopback tests are run.

If the smart jack is not accessible, install the loopback jack at the extended demarcation point.

If there is no extended demarcation point, install the loopback jack directly at the network interface point as shown in [Figure 110](#).

If there is an extended demarcation point and the smart jack is not accessible, install the loopback jack as shown in [Figure 111](#).

If there is an extended demarcation point, but the smart jack is accessible, install the loopback jack as shown in .

- 1** To install the loopback jack, simply disconnect the RJ-48 (8-wide) connector at the appropriate interface point and connect the loopback jack in series with the DS1 span. See [Figure 110](#) through [Figure 114](#).
- 2** Plug the H600-383 cable from the ICSU into the female connector on the loopback jack.
- 3** Plug the male connector on the loopback jack cable into the network interface point.

NOTE:

Do not remove the loopback jack after installation. This is not a test tool and should always be available to remotely test a DS1 span.

Without a smart jack

Install the loopback jack at the point where the cabling from the ICSU plugs into the *dumb* block. If there is more than one *dumb* block, choose the one that is closest to the Interface Termination feed or the fiber MUX to provide maximum coverage for loopback jack tests. Refer to [Figure 113](#) and [Figure 114](#).

- 1** To install the loopback jack, simply disconnect the RJ-48 (8-wide) connector at the appropriate interface point and connect the loopback jack in series with the DS1 span. See [Figure 110](#) through [Figure 114](#).
- 2** Plug the H600-383 cable from the ICSU, or from the MM710, into the female connector on the loopback jack.
- 3** Plug the male connector on the loopback jack cable into the network interface point.

NOTE:

Do not remove the loopback jack after installation. This is not a test tool and should always be available to remotely test a DS1 span.

Administering the loopback jack

- 1 At the management terminal, enter **change ds1 location**, where **location** is the DS1 interface circuit pack corresponding to the loopback jack.
- 2 Be sure the near-end CSU type is set to **integrated**.
- 3 On page 2 of the form, change the **supply CPE loopback jack power** field to **y**.
Setting this field to **y** informs the technician that a loopback jack is present on the facility and allows the technician to determine that the facility is available for remote testing.
- 4 Enter **save translation** to save the new information.

Loopback testing with a smart jack

The loopback jack and smart jack isolate faults by dividing the DS1 span into 3 sections (see [Figure 110](#) through [Figure 112](#)):

- From the 120A2 (or later) ICSU to the loopback jack
- From the loopback jack to the smart jack (network interface point)
- From the smart jack to the CO

The first two sections are your responsibility. The last is the responsibility of the DS1 service provider.

Testing the DS1 span from the ICSU to the loopback jack

The DS1 span test has 2 parts.

- Checking for circuit connectivity
The first part of the test powers-up the loopback jack and sends a signal from the DS1 circuit pack, through the wiring, to the loopback jack. The test allows about 10 seconds for the signal to loop around the loopback jack and return to the DS1 circuit pack. Then it sends the results to the management terminal and proceeds to the second part of the test.
- The second part of the test sends the standard, 3-in-24 DS1 stress-testing pattern from the DS1 board, through the loopback jack, and back to a bit error detector and counter on the DS1 board. A bit-error rate counter displays the results on the management terminal until you terminates the test.

Always perform both parts of the test. Proceed as follows.

Checking the integrity of local equipment

Before you go any further, make sure that the problem is actually on the DS1 span by testing the equipment that connects to the span at the near end. Test the DS1 circuit pack, and perform any needed maintenance or repairs.

Busying out the DS1 circuit pack

Now take the DS1 circuit out of service.

- 1 Once you are sure that the DS1 circuit pack and ICSU are functioning correctly, go to the management terminal and busy out the DS1 circuit pack by typing **busyout board UUCSS**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.

Administering the DS1 for the test

- 1 At the management terminal, open the DS1 administration form. Type **change ds1 UUCSS**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.
- 2 Make sure that the near-end csu type field is set to **integrated**.
- 3 Change to page 2 of the DS1 administration form, and confirm that the value of the TX LBO field is **0dB**.
- 4 If the value of the TX LBO field is not **0dB**, record the current value. Then set the TX LBO field to **0dB** for testing.
- 5 Press **ENTER** to make the changes, **CANCEL** to quit without changes.

Testing the integrity of the loopback circuit

Now perform the first part of the actual loopback test.

- 1 At the management terminal, enter **test ds1-loop UUCSS cpe-loopback-jack**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.
The loopback jack powers up. Active, DS1 facility alarms (if any) clear. After about 20 seconds, the first set of results appears on the terminal.
- 2 If **FAIL** appears on the terminal display, there may be a fault in the wiring between the ICSU and the loopback jack or the loopback jack may itself be faulty. Isolate the problem by replacing the loopback jack and repeating [Step 1](#).
- 3 If **FAIL** still appears after the loopback jack has been replaced, suspect a wiring problem. Replace the cable between the ICSU and the loopback jack. Then repeat [Step 1](#).
- 4 When **PASS** appears on the terminal, proceed with the second part of the test, checking the integrity of transmitted data.

Testing the integrity of data sent over the loop

Now perform the second part of the test, checking for data errors.

NOTE:

The loss of signal (LOS) alarm (demand test #138) is not processed during this test while the 3-in-24 pattern is active.

Clearing the results of previous tests

- 1 Zero out the bit-error counter. At the management terminal, enter **clear meas ds1 loop UUCSS**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.
- 2 Zero out the performance measurement counter. At the management terminal, enter **clear meas ds1 log UUCSS**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.

- 3 Zero out the ESF error count. At the management terminal, enter **clear meas ds1 esf UUCSS**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.

Running the data test

- 1 Display the bit error count. At the management terminal, enter **list meas ds1 sum UUCSS**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.
- 2 Step through [Table 66](#) to troubleshoot.

Table 66: DS1 Troubleshooting

Condition	Solution
The value of the Test : cpe-loopback-jack field is Pattern 3-in-24	The loopback jack test is active.
The value of the Synchronized field is N	Retry the test 5 times.
The value of the Synchronized field remains N after 5 tries.	Excessive bit errors are likely. Check for intermittent connections or broken wires in an SPE receive or transmit pair, and repair as necessary. Then repeat Step 1 .
The value of the Bit-error count field is <i>non-zero</i>	Repeat Step 1 several times.
The value of the Synchronized is Y	The DS1 circuit pack has synchronized to the looped 3-in-24 pattern and is counting bit errors in the pattern.
The value of the Bit-error count field pegs at 75535 or increments by 100s or 1000s each time you repeat Step 1 .	Suspect loose or corroded connections, severe crosstalk, or impedance imbalances between the two conductors of the receive or transmit pair. Wiring may need replacement.
The value of the Bit-error count field is 0	There are no obvious wiring problems. Verify this by repeating Step 1 at 1-minute to 10-minute intervals until you are certain. If the test reports no errors for 1 minute, the error rate is less than 1 in 10 ⁸ . If the test reports no errors for 10 minutes, the error rate is less than 1 in 10 ⁹ .

- 3 Once you are fairly certain that the test is reporting no errors (after at least 1 error-free minute), confirm that the 3-in-24 pattern error detector is operating. Enter **test ds1-loop UUCSS inject-single-bit-error**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.
- 4 Display the bit error count again. At the management terminal, enter **list meas ds1 sum UUCSS**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.

Condition	Solution
The value of the <code>Bit-error count</code> field is greater than 1	Replace the ICSU, and retest.
The value of the <code>Bit-error count</code> field is still greater than 1 after you replace the ICSU.	Replace the DS1 circuit pack, and retest.
The value of the <code>Bit-error count</code> field is 1	The test passed.

- 5 End the test. Enter **test ds1-loop location end cpe-loopback-jack-test**.
- 6 Wait about 30 seconds for the DS1 to reframe on the incoming signal and clear DS1 facility alarms.

Condition	Solution
Loopback termination fails with an error code of 1313.	The span is still looped somewhere, possibly at the loopback jack, at the ICSU, or somewhere in the network.
The red LED on the loopback jack is on.	Replace the ICSU, and re-run the test.
Loopback termination still fails.	Replace the DS1 circuit pack, and repeat the test
The DS1 cannot frame on the incoming span's signal after the loopback jack power down.	There is something wrong with the receive signal into the loopback jack from the dumb block or the smart jack.
The span failed the service provider's loopback test.	The problem is in the service provider's network.
The service provider successfully loop tested the span, up to the smart jack.	The wiring between the loopback jack and the smart jack is suspect. Test, and make repairs, as needed.
You cannot locate and repair the problem in the time available and must terminate the test.	The test will not terminate normally in the absence of a good framing signal. You have to reset the circuit pack. Enter reset board UUCSS , where UU is the cabinet number, C is the carrier letter, and SS is the slot number of the DS1 board.
The test terminated normally.	Proceed with Restoring DS1 administration .

Restoring DS1 administration

- 1 At the management terminal, open the DS1 administration form. Enter **change ds1 UUCSS**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.
- 2 Change to page 2 of the DS1 administration form.
- 3 Change the value of the TX LBO field to the original value that you wrote down when you were [Administering the DS1 for the test](#) on page 304.
- 4 Press **ENTER** to make the changes, **CANCEL** to quit without changes.

Releasing the DS1 circuit pack

- 1 Release the DS1 circuit pack. From the management terminal, enter **release board UUCSS**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.
- 2 Leave the loopback jack in place.

Testing the DS1 span from the smart jack to the network interface termination or fiber multiplexer (MUX)

- 1 Have the service provider run a smart-jack loopback test against the network interface wiring that links the smart jack to the CO (section 3 in [Figure 110](#) through [Figure 112](#)).
- 2 If the tests fails, there is a problem on the network side. Have the service provider correct it.

Testing the DS1 span from the loopback jack to the smart jack

Test the short length of customer premises wiring between the loopback jack and the smart jack (Section 2 in the following 3 figures) using a loopback that overlaps this section of the span.

- Have the DS1 service provider at the CO end run a local ICSU line loopback test.
- Have the DS1 service provider at the CO end run a local DS1 payload loopback test.
- Run a far-end ICSU line loopback, using the procedure below.

NOTE:

This test cannot isolate the problem if there are problems in the wiring between the far-end CO and the far-end ICSU. You must coordinate this test with the DS1 service provider.

- 1 From the management terminal, enter **test ds1-loop UUCSS far-csu-loopback-test-begin**, where **UU** is the cabinet number, **C** is the carrier letter, and **SS** is the slot number of the DS1 board.
 - 2 Examine the bit-error counts, as in [Testing the integrity of data sent over the loop](#) on page 304."
 - 3 Terminate the test. Enter **test ds1-loop location end-loopback/span-test**.
- 3 If the tests fails and the there were no problems [Testing the DS1 span from the ICSU to the loopback jack](#) or [Testing the DS1 span from the smart jack to the network interface termination or fiber multiplexer \(MUX\)](#), there is a problem between the loopback jack to the smart jack. Work with the service provider to isolate the fault.

Figure 110: Network interface at smart jack for a 120A2 (or later) ICSU

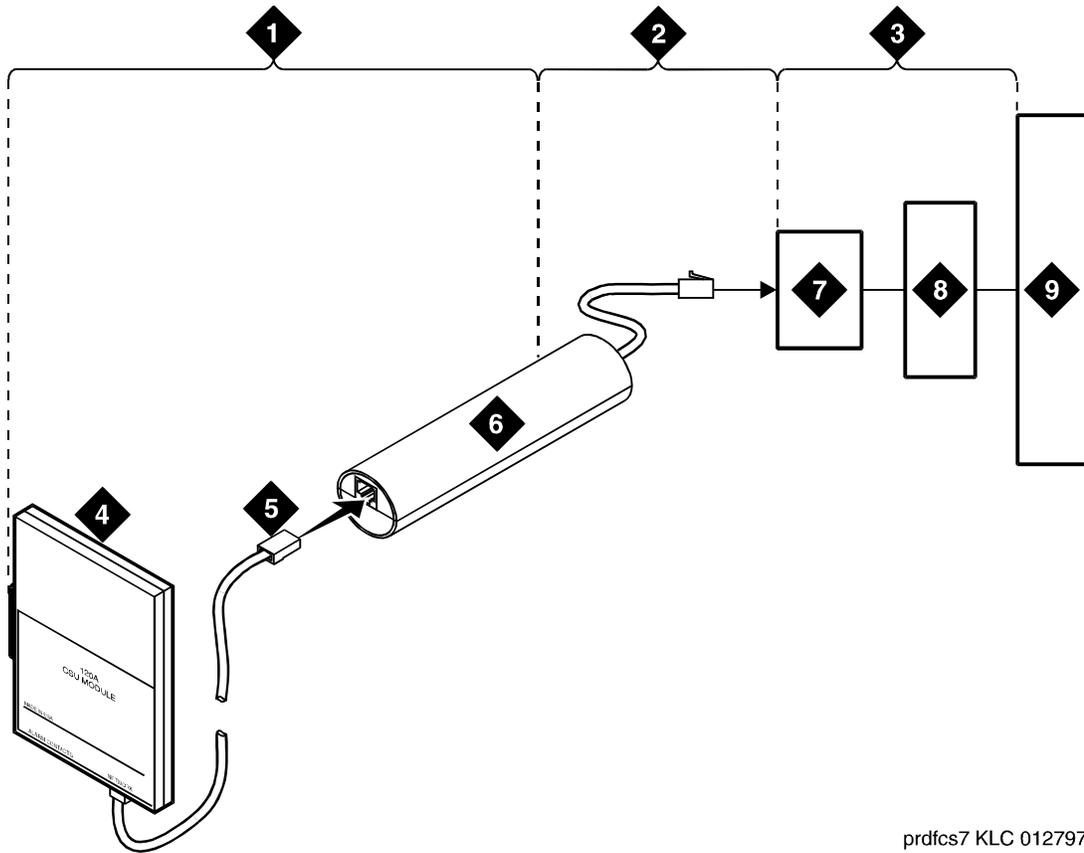


Figure notes

- | | | | |
|---|-----------------------------------------------------|---|--------------------------------------------------|
| 1 | Span section 1 | 6 | Loopback jack |
| 2 | Span section 2 | 7 | Network interface smart jack |
| 3 | Span section 3 | 8 | Interface termination or fiber multiplexer (MUX) |
| 4 | 120A2 (or later) ICSU | 9 | Central office |
| 5 | RJ-48 to network interface (up to 1000 ft. [305 m]) | | |

Figure 111: Network interface at extended demarcation point (smart jack inaccessible) for a 120A2 (or later) ICSU

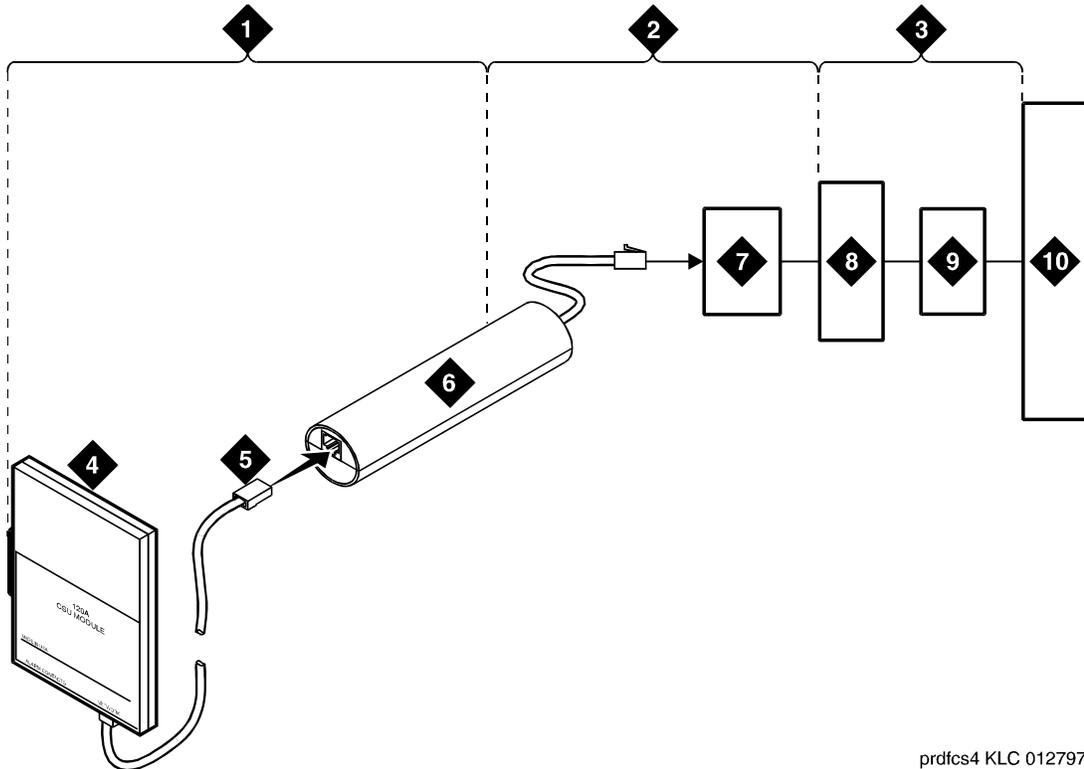
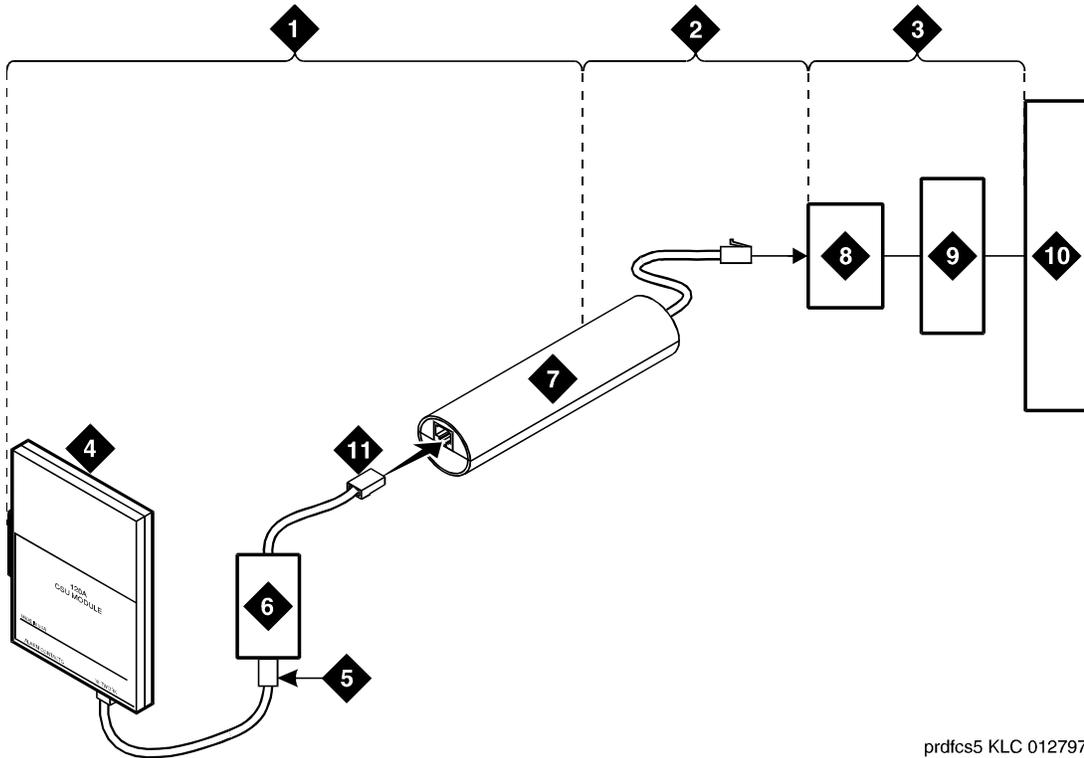


Figure notes

- | | |
|--------------------------------------------------------------|-----------------------------------------------------------|
| 1 Span section 1 | 6 Loopback jack |
| 2 Span section 2 | 7 Dumb block (extended demarcation) |
| 3 Span section 3 | 8 Network interface smart jack |
| 4 120A2 (or later) ICSU | 9 Interface termination or fiber multiplexer (MUX) |
| 5 RJ-48 to network interface (up to 1000 ft. [305 m]) | 10 Central office |

Figure 112: Network interface at extended demarcation point (smart jack accessible) for a 120A2 (or later) ICSU



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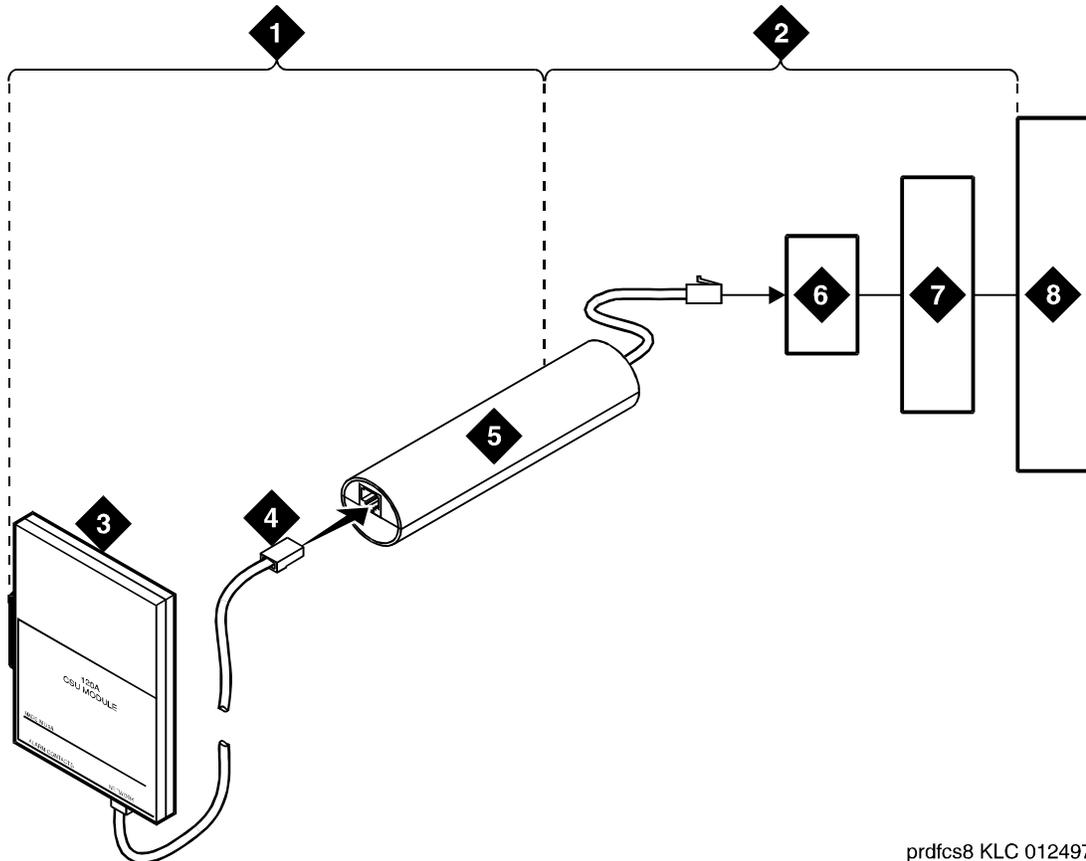
Figure notes

- | | |
|--------------------------------------------------------------|-----------------------------------------------------------|
| 1 Span section 1 | 6 Dumb block (extended demarcation) |
| 2 Span section 2 | 7 Loopback jack |
| 3 Span section 3 | 8 Network interface smart jack |
| 4 120A2 (or later) ICSU | 9 Interface termination or fiber multiplexer (MUX) |
| 5 RJ-48 to network interface (up to 1000 ft. [305 m]) | 10 Central office |
| | 11 Dumb block to smart jack RJ-48 |

Testing a loopback jack without a smart jack

When the loopback jack is added to a span that does not contain a smart jack, the span is divided into 2 sections: from the ICSU to the loopback jack and from the loopback jack to the central office (CO). Section 2 includes the short cable from the loopback jack to the dumb block demarcation point (part of the loopback jack). This cable is the only part of Section 2 that is part of customer premises wiring. It is not covered in the loopback jack's loopback path. See [Figure 113](#) and [Figure 114](#).

Figure 113: Network interface at “dumb” block for a 120A2 (or later) ICSU

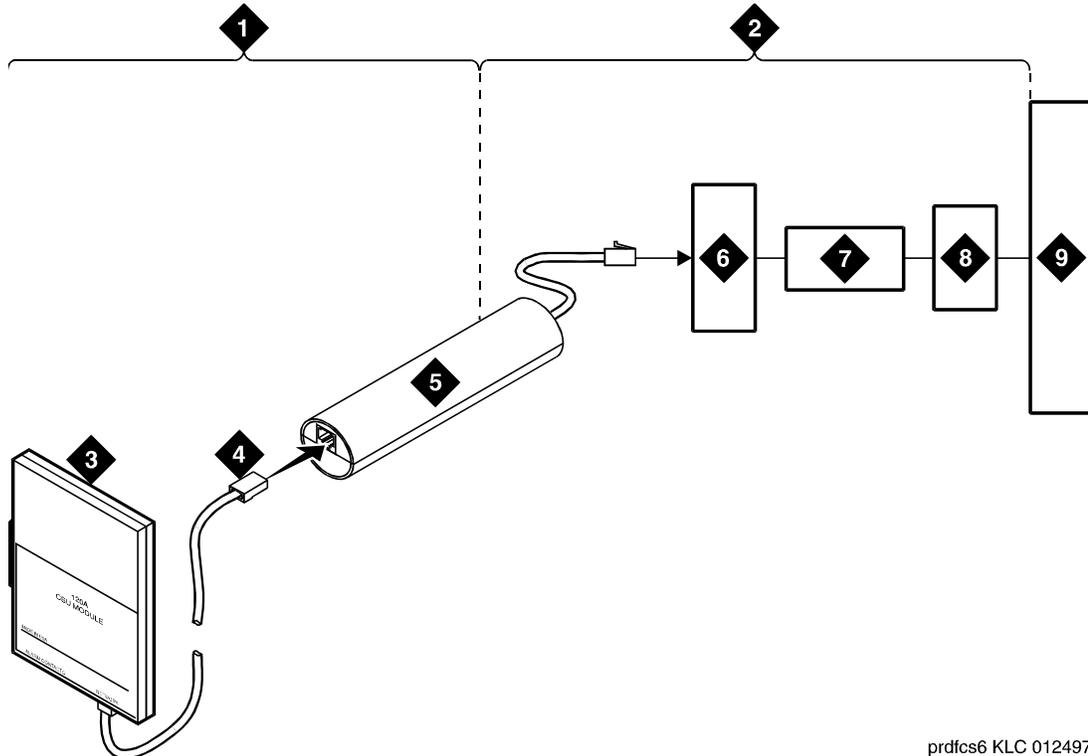


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Figure notes

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|---|-----------------------------------------------------|---|--------------------------------------------------|
| 1 | Span section 1 | 5 | Loopback jack |
| 2 | Span section 2 | 6 | Dumb block (demarcation point) |
| 3 | 120A2 (or later) ICSU | 7 | Interface termination or fiber multiplexer (MUX) |
| 4 | RJ-48 to network interface (up to 1000 ft. [305 m]) | 8 | Central office |

Figure 114: Network interface at “dumb” block with repeater line to fiber MUX for a 120A2 (or later) ICSU



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Figure notes

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|---|-----------------------------------------------------|---|--------------------------------|
| 1 | Span section 1 | 6 | Dumb block (demarcation point) |
| 2 | Span section 2 | 7 | Repeater |
| 3 | 120A2 (or later) ICSU | 8 | Fiber multiplexer (MUX) |
| 4 | RJ-48 to network interface (up to 1000 ft. [305 m]) | 9 | Central office |
| 5 | Loopback jack | | |

Proceed as follows.

- 1 Test customer premises wiring from the ICSU to the loopback jack, as described in the “DS1 Span Test” section.
- 2 Test the loopback jack-to-*dumb* block and *dumb* block-to-CO wiring (section 2 in [Figure 113](#) and [Figure 114](#)). This can be done using a loopback that “overlaps” the section of the span. Any of the following loopbacks can do this:
 - The local ICSU’s line loopback, which the DS1 service provider at the CO end typically activates, tests, and then deactivates.
 - The local DS1 interface’s payload loopback, which the DS1 service provider at the CO end activates and tests.

- The far-end ICSU's line loopback. Activate this test at the management terminal by entering **test ds1-loop *location* far-csu-loopback-test-begin**, where *location* is the DS1 interface circuit pack corresponding to the loopback jack. Terminate this test by entering **test ds1-loop *location* end-loopback/span-test**, where *location* is the DS1 interface circuit pack corresponding to the loopback jack.

Bit error counts are examined as described in the "DS1 Span Test" section. This test only isolates problems to Section 2 wiring if there are no problems in the wiring between the far-end CO and the far-end ICSU. Coordinate this test with the DS1 service provider.

Failure of any of the above tests (a, b, or c) indicate a problem in Section 2. This could mean bad loopback jack -to-"dumb" block cabling, but is more likely to indicate a problem somewhere between the "dumb" block and the CO. This is the responsibility of the DS1 service provider.

If the DS1 Span Test confirms that there are no problems in Section 1, the technician should proceed as follows to avoid unnecessary dispatch.

- 1** Identify and contact the DS1 service provider.
- 2** Inform the DS1 provider that loopback tests of the CPE wiring to the "dumb" block (section 1) showed no problems.
- 3** If the far-end ICSU line loopback test failed, inform the DS1 provider.
- 4** Request that the DS1 provider perform a loopback test of their portion of the Section 2 wiring by sending someone out to loop Section 2 back to the CO at the "dumb" block.

If this test fails, the problem is in the service provider's wiring.

If the test passes, the problem is in the cable between the loopback jack and the "dumb" block. Replace the loopback jack.

Configurations using fiber multiplexers

Use the loopback jack when customer premises DS1 wiring connects to an on-site fiber multiplexer (MUX) and allows wiring to the network interface point on the MUX to be remotely tested.

Fiber MUXs can take the place of Interface termination feeds as shown in [Figure 110](#) through [Figure 113](#). Test these spans using the same procedures as metallic spans. Note the following points:

- 1** Fiber MUXs may have loopback capabilities that can the service provider can activate from the CO end. These may loop the signal back to the CO or back to the DS1 board. If the MUX provides the equivalent of a line loopback on the "problem" DS1 facility, activate it after a successful loopback jack test, and use it to isolate problems to the wiring between the loopback jack and the MUX.
- 2** Be aware that there are installations that use repeatered metallic lines between the MUX and the "dumb" block. These lines require DC power for the repeaters and this DC power is present at the "dumb" block interface to the CPE equipment. *A loopback jack is required in this configuration to properly isolate and terminate the DC power.*

Adding or Removing Hardware

Install ISDN converters and adapters

To check for the presence of DC, make the following 4 measurements at the network interface jack:

- 1 From transmit tip (T, Pin 5) to receive tip (T1, Pin 2)
- 2 From transmit ring (R, Pin 4) to receive ring (R1, Pin 1)
- 3 From transmit tip (T, Pin 5) to transmit ring (R, Pin 4)
- 4 From receive tip (T1, Pin 2) to receive ring (R1, Pin 1)

All measurements should read 0 (zero) volts DC. For pin numbers and pin designations, refer to *Integrated Channel Service Unit (ICSU) Installation and Operation*.

Install ISDN converters and adapters

This section provides information on ISDN converters and adapters that are sometimes necessary when connecting to coaxial facilities in either a multicarrier cabinet or a single carrier cabinet.

Connections include:

- Integrated Services Data Network Primary Rate Interface (ISDN-PRI) to Direct Access Secondary Storage (DASS)
- PRI to Digital Private Network Signaling System (DPNSS)
- PRI to ISDN Basic Rate Interface (ISDN-BRI)

Converter circuit packs known as common channel signaling converter (CCSC), types 1 and 2.

Converters for single-carrier cabinets

PRI-to-DASS and PRI-to-DPNSS converters

[Figure 115](#) shows typical connections from the CCSC-1 PRI-to-DASS converter or the CCSC-2 PRI-to-DPNSS converters to the coaxial facility.

Figure 115: Typical DASS or DPNSS converter cabling

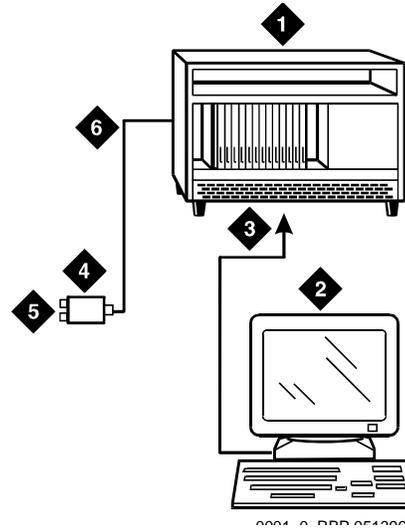


Figure notes

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|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1 To TN464GP DS1 circuit pack and either a CSCC-1 PRI-to-DASS converter or a CSCC-2 PRI-to-DPNSS converter circuit pack | 4 888B coaxial converter |
| 2 Communication Manager administration PC | 5 Coaxial connection to 2-Mbps facility |
| 3 RS-232 cable to front of PRI converter circuit pack | 6 Coaxial cable from PRI converter circuit pack to coaxial converter |

- 1** Plug the PC into the RS-232 connector on the front of the PRI converter circuit pack.
- 2** Connect the coaxial Y-cable from the TN464GP to the PRI converter circuit pack.
- 3** Connect the opposite end of the Y-cable to the 888B coaxial converter.

PRI-to-BRI converter

[Figure 116](#) shows typical connections from the PRI-to-BRI converter to the coaxial facility.

Figure 116: Typical PRI to BRI converter cabling

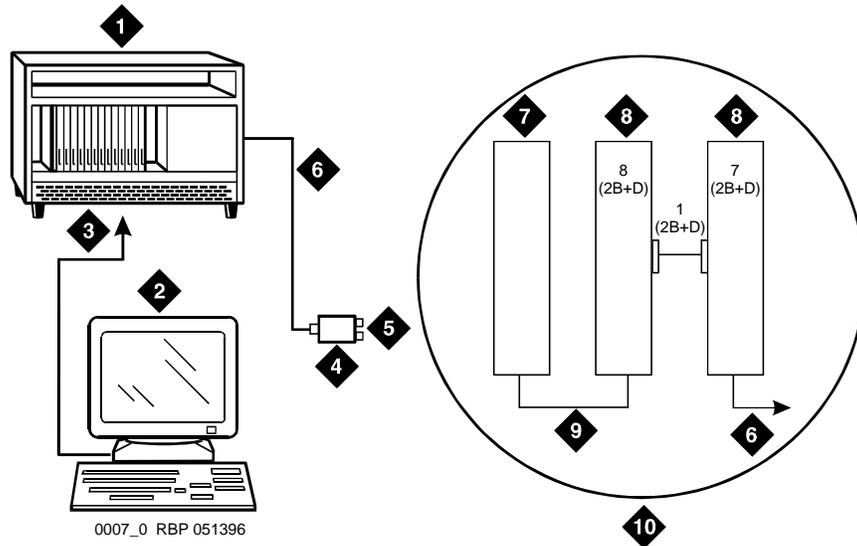


Figure notes

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| <p>1 To TN464GP DS1 circuit pack and PRI-to-BRI converter circuit pack</p> <p>2 Communication Manager administration PC</p> <p>3 RS-232 cable to front of converter circuit pack</p> <p>4 888B coaxial converter</p> <p>5 Coaxial connection to 2-Mbps facility</p> | <p>6 Coaxial cable from PRI converter circuit pack to coaxial converter</p> <p>7 TN464GP circuit pack</p> <p>8 PRI-to-BRI converter circuit pack</p> <p>9 Jumper coaxial cable</p> <p>10 Inset showing connections on rear of carrier</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

NOTE:

The inset shows details of the cable connections between the circuit packs. Connect the Communication Manager administration PC to the RS-232 connector on the front of the PRI converter circuit pack.

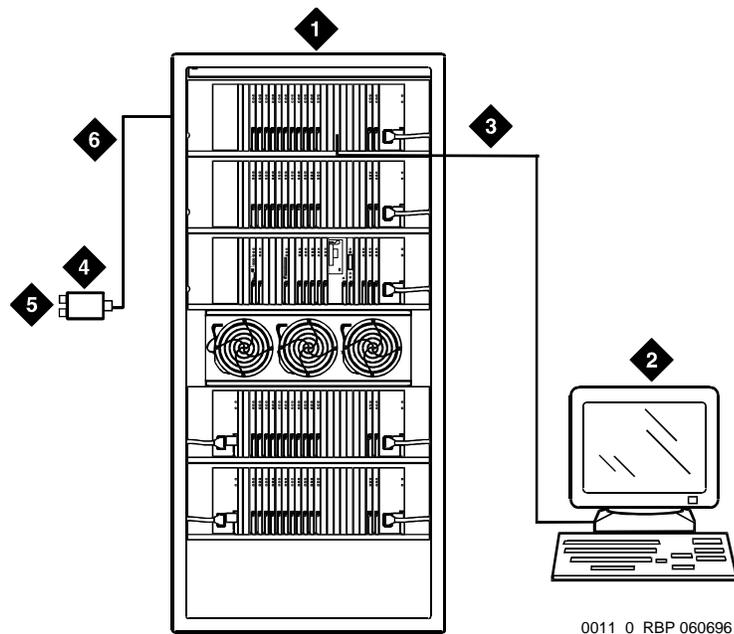
Converters for multi-carrier cabinets

PRI-to-DASS and PRI-to-DPNSS converters

- 1 Connect the Communication Manager administration PC to the RS-232 connector on the front of the PRI converter circuit pack.

[Figure 117](#) shows typical connections from the CCSC-1 PRI-to-DASS converter or the CCSC-2 PRI-to-DPNSS converters to the coaxial facility.

Figure 117: Typical DASS or DPNSS converter cabling



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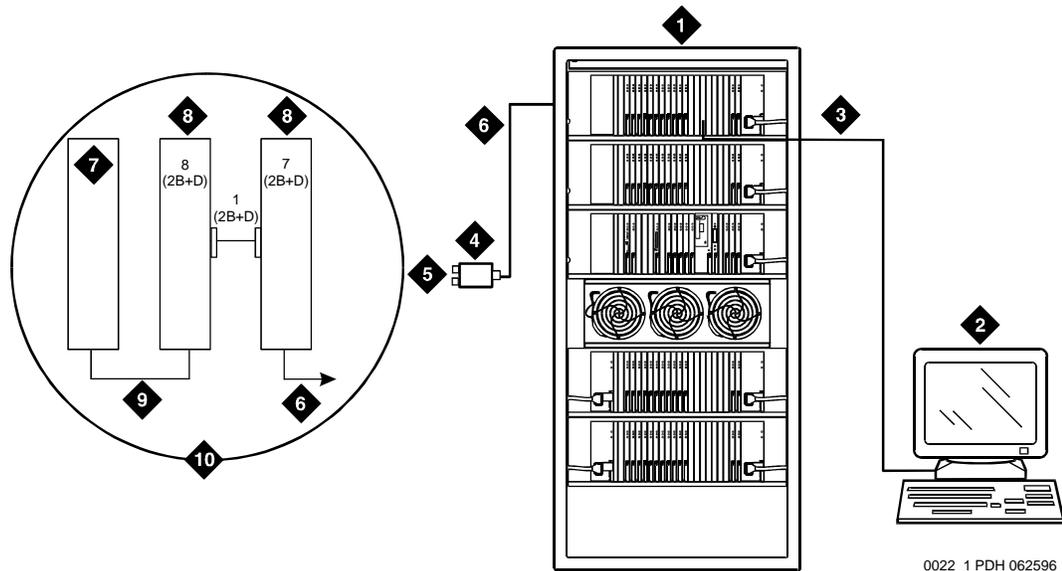
Figure notes

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|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1 To TN464GP DS1 circuit pack and either a CSCC-1 PRI-to-DASS converter or a CSCC-2 PRI-to-DPNSS converter circuit pack | 4 888B coaxial converter |
| 2 Communication Manager administration PC | 5 Coaxial connection to 2-Mbps facility |
| 3 RS-232 cable to front of PRI converter circuit pack | 6 Coaxial cable from PRI converter circuit pack to coaxial converter |

PRI-to-BRI converter

[Figure 118](#) shows typical connections from the PRI-to-BRI converter to the coaxial facility. The Communication Manager administration PC is connected to the RS-232 connector on the front of the PRI converter circuit pack.

Figure 118: Typical PRI to BRI converter cabling



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Figure notes

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 TN464GP DS1 circuit pack and PR-to-BRI converter circuit pack</p> <p>2 Communication Manager administration PC</p> <p>3 RS-232 cable to front of converter circuit pack</p> <p>4 888B 75-ohm coaxial converter</p> <p>5 Coaxial connection to 2-Mbps facility</p> | <p>6 Coaxial cable from PRI converter circuit pack to coaxial converter</p> <p>7 TN464GP circuit pack</p> <p>8 PRI-to-BRI converter circuit pack</p> <p>9 Jumper coaxial cable</p> <p>10 Inset showing connections on rear of carrier</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

NOTE:

The inset shows details of the cable connections between the circuit packs.

Install 909A/B universal coupler

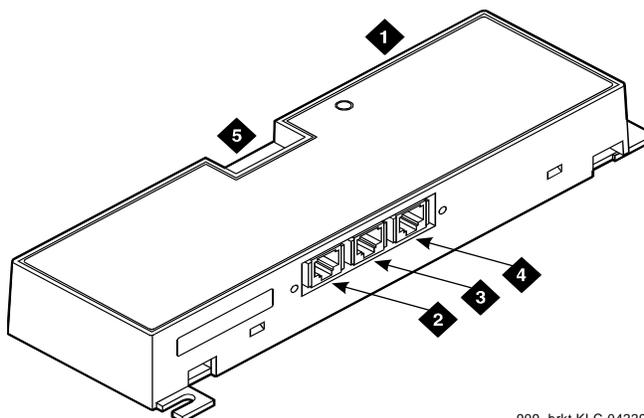
The 909A/B universal coupler is used with paging, malicious call trace, and music-on-hold equipment that is not approved for use with the public network.

[Figure 119](#) shows a typical 909A/B universal coupler. For additional installation and switch setting information, refer to *909A/909B Universal Coupler Installation Instructions*, which is normally shipped with the 909A/909B Universal Coupler.

NOTE:

If the music source is registered by the FCC (in the USA) or an equivalent body, the 909A/B universal coupler is not required.

Figure 119: Typical 909A/B universal coupler



909_brkt KLC 042296

Figure notes

- | | | | |
|---|--------------------------|---|-----------------------|
| 1 | 909A/B universal coupler | 4 | J3 7-pin modular jack |
| 2 | J1 8-pin modular jack | 5 | DIP switch location |
| 3 | J2 8-pin modular jack | | |

The 909A is the direct current (DC) version of the coupler, and cabinet power supplies -48 VDC power. The 909B is the alternating current (AC) version, and power is supplied from a separate power supply (such as the KS-22911L2).

The DIP switches on the unit set:

- Protection/Paging selection — For AUX trunk paging and malicious call trace, set to C2. Set the switch to C1 for all other applications.
- Output attenuation (-9 or -15 dBm) — Setting depends on output level of music source.
- Output impedance (8 ohms, 1.5 k Ω , and 50 k Ω) — This switch only requires setting if the Protection/Paging switch is set to C2 and the coupler is supplying background music to a customer-supplied paging amplifier.

The pinouts for J1, J2, and J3 are provided in [Table 67](#), [Table 68](#), and [Table 69](#). Refer to these tables when connecting music or paging equipment.

Table 67: J1 Pin Assignments (System Connections) 1 of 2

Pin	Color	Designation	Description
1	White-Orange	—	Not Used
2	Orange	PG2/BZ2	Seizure control lead, connected to -48 VDC from the system or from the 909A/B when the protection paging switch is set to C2, or to -48 VDC on the 909A/B when protection/paging switch is set to C1

1 of 2

Table 67: J1 Pin Assignments (System Connections) 2 of 2

Pin	Color	Designation	Description
3	White-Green	PG1/BZ1	Seizure control lead, connected to SZ lead from the AUX trunk when the protection/paging switch is set to C2, or to -48 VDC on the 909A/B when the protection/paging switch is set to C1
4	Blue	R	Ring lead
5	White-Blue	T	Tip lead
7	Green	BSY2/BY2	Busy/busy-out lead, connected to S1 lead from the AUX trunk
7	White-Brown	BSY1/BY1	Busy/busy-out lead, connected to S lead from the AUX trunk
8	Brown	—	Not Used

2 of 2

Table 68: J2 Pin Assignments (Accessory Connections)

Pin	Color	Designation	Description
1	White-Orange	CMS1/M1	Customer-supplied music source
2	Orange	CMS2/M2	Customer-supplied music source
3	White-Green	COS1	Remote busy-out control contact closure from music source
4	Blue	CR	Customer ring lead
5	White-Blue	CT	Customer tip lead
7	Green	COS2	Remote busy-out control contact closure from music source
7	White-Brown	CBS1/C1	Seizure indication provided to music source
8	Brown	CBS2/C2	Seizure indication provided to music source



CAUTION:

Do not plug the cable into J3 before all cross-connects are completed. Damage to the 909A/B universal coupler may occur.

Table 69: J3 Pin Assignments (Power Connections)

Pin	Color	Designation	Description
1, 3, 4, & 7	—	—	Not used
2	Black	GRD	-48 RET or ground lead from system or from positive lead of power supply
5	Yellow	-48 VDC	-48 VDC from system or from negative lead of power supply

[Figure 120](#) shows the physical locations of the pins for J1, J2, and J3.

Figure 120: Typical modular jack pinout

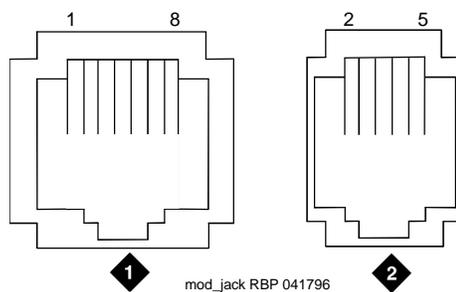


Figure notes

- 1 J1 and J2 8-pin modular jacks
- 2 J3 7-pin modular jack

Install malicious call trace

The malicious call trace (MCT) voice recorder connects directly to the tip and ring connections of a TN763/D auxiliary trunk circuit pack. See [Figure 121](#). The 909A/B universal coupler provides seizure control to the recorder.

Figure 121: Malicious call trace

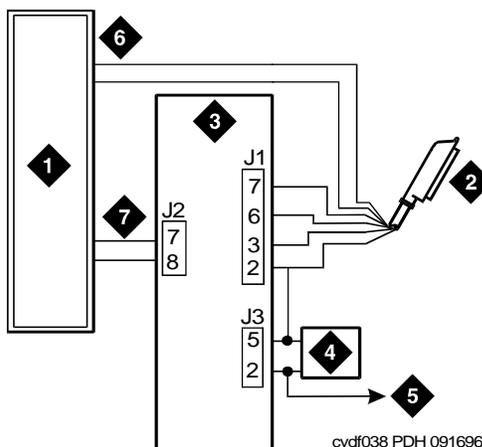


Figure notes

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Malicious call trace voice recorder</p> <p>2 25-pair cable (T, R, S, S1, Sz, SZ1) to TN763/D auxiliary trunk circuit pack</p> <p>3 909A/B universal coupler</p> | <p>4 Power supply for universal coupler</p> <p>5 To SZ1 on TN763/D connector</p> <p>6 Tip and ring wires</p> <p>7 CBS1/C1 and CBS2/C2</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|

NOTE:

A wiring block must be locally engineered.

NOTE:

909A couplers ships with one DW4B-DE cable and two DW8B-SE cables. The 909B ships with one KS-22911L2 power supply, one DW4B-DE cable, and two DW8B-SE cables.

- 1** Determine the port assignment of the recorder from the malicious call tracing form.
- 2** Install the 909A/B universal coupler on a vertical surface.
- 3** Connect the SZ, SZ1, S, and S1 leads from the 909A/B to an auxiliary trunk circuit pack.
 - a** Tip and ring connect from the voice recorder to the auxiliary trunk circuit pack (J1 on the 909A/B).
 - b** CBS1/C1 and CBS2/C2 connect from the voice recorder to J2 on the 909A/B.
- 4** On the 909A/B universal coupler:
 - a** Connect seizure control voltage of from -9 to -70 Volts to the PG2/BZ2 connection (pin 2 of J1). Switching voltage to the PG2/BZ2 connection can be from the 909A/B -48 VDC supply.
 - b** Connect SZ1 to the ground lead of the DC power source used for PG2/BZ2.
 - c** Set S1 to the “C2” position. Set S2 position 7 to “OPEN”.
 - d** Connect an approved -48 VDC power source to the **-48** and **GRD** terminals (pins 5 and 2, respectively, of J3 on the 909A/B).

- Administer the switch for the call trace device.

NOTE:

For additional installation information, refer to *909A/909B Universal Coupler Installation Instructions*, which is normally shipped with the 909A/909B Universal Coupler.

Install music-on-hold

- The music-on-hold (MOH) feature allows a caller to hear music when that caller is placed on hold. Music-on-hold can be provided through a two-wire TN2183 analog line circuit pack (or equivalent) or auxiliary trunk circuit pack to a customer-supplied music source on a Media Gateway.

[Figure 122](#) shows the connections for music-on-hold, dial dictation, or recorded announcement features when the music source is Federal Communications Commission (FCC) registered (or equivalent). [Figure 123](#) shows the connections when the music source is not FCC-registered (or equivalent).

Local music-on-hold allows one music source. However, if you purchase the multiple music-on-hold (tenant partitioning) feature, you can have up to 100 music sources.

NOTE:

Use the following connection instructions when the music source is not located in the equipment room. If the music source is located in the equipment room, do not route the connections through the information outlet.

Figure 122: Typical registered equipment connections (auxiliary access) for an MCC1, SCC1, or CMC1 Media Gateway

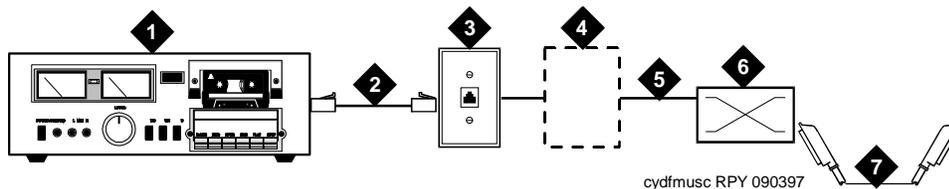


Figure notes

- | | | | |
|---|---------------------------------------------------------------|---|-------------------------------------------------------------------|
| 1 | Music source | 5 | Tip (green) and ring (red) |
| 2 | 4-pair modular cord | 6 | Part of main distribution frame |
| 3 | 103A or modular wall jack | 7 | A25D 25 pair cable (male-to-male) to auxiliary trunk circuit pack |
| 4 | 122A music adapter (if required—primarily required in France) | | |

- If the music source is registered, the system side of the MDF connects directly to the system.
- If the music source is not registered, the system side of the MDF connects to a 909A/B universal coupler (see [Install 909A/B universal coupler](#) on page 318).

Registered music source

Refer to [Figure 122](#) to install a registered music source.

- 1** Determine feature port assignment from Feature-Related System Parameters form.
- 2** Install music source according to the manufacturer's instructions.
- 3** Install patch cord/jumper wires at the main distribution frame.
- 4** Administer the switch for the new equipment.

Nonregistered music source

Refer to [Figure 123](#) and [Figure 124](#) when installing a nonregistered music source.

- 1** Determine feature port assignment from Feature-Related System Parameters Form.
- 2** Install the music source according to the manufacturer's instructions.
- 3** Connect a cable from the assigned port carrier slot to J1 on the 909A/B universal coupler (see [Install 909A/B universal coupler](#) on page 318). A wiring block must be locally engineered.
 - a** Connect the T-lead at pin 5 and the R-lead at pin 4 of J1 on the 909A/B universal coupler to the corresponding leads from the TN2183.
 - b** Connect the CT-lead at pin 5 and the CR-lead at pin 4 of J2 on the 909A/B universal coupler to the MDF.
- 4** Install patch cord/jumper wires at the MDF to connect tip and ring to the information outlet at the music source.
- 5** Set the Protection/Paging switch to C1.
- 6** Connect a modular cord from the information outlet to the music source.
- 7** Connect -48V to pin 5 and -48V RET to pin 2 of J3 on the 909A/B. The power source may be an 1151A, 1151A2, or other approved power supply.
- 8** Administer the switch for the new equipment.

Figure 123: Typical nonregistered equipment connections (auxiliary access) for an MCC1, SCC1, or CMC1Media Gateway

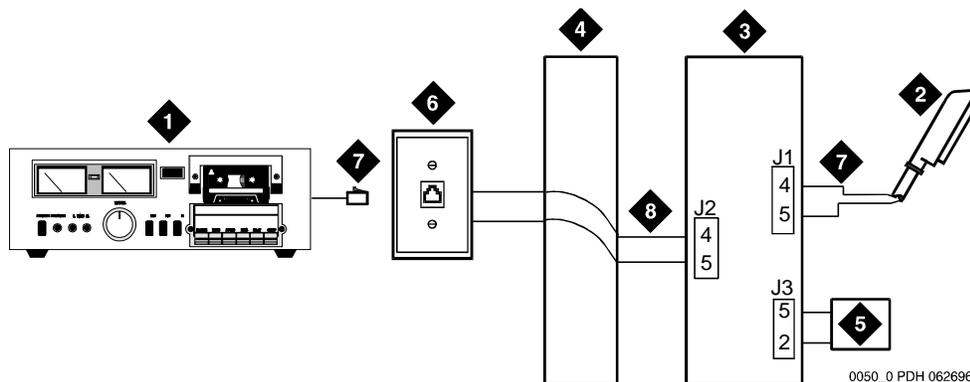


Figure notes

- | | |
|------------------------------------------------------|--------------------------------------|
| 1 Customer-supplied music source | 5 Power supply for universal coupler |
| 2 A25D 25-pair cable to auxiliary trunk circuit pack | 6 103A or modular wall jack |
| 3 909A/B universal coupler | 7 4-pair modular cord |
| 4 Part of main distribution frame | 8 Tip and ring wires |

NOTE:

A wiring block must be locally engineered.

Figure 124: Connections to nonregistered music-on-hold using analog line for an MCC1, SCC1, or CMC1Media Gateway

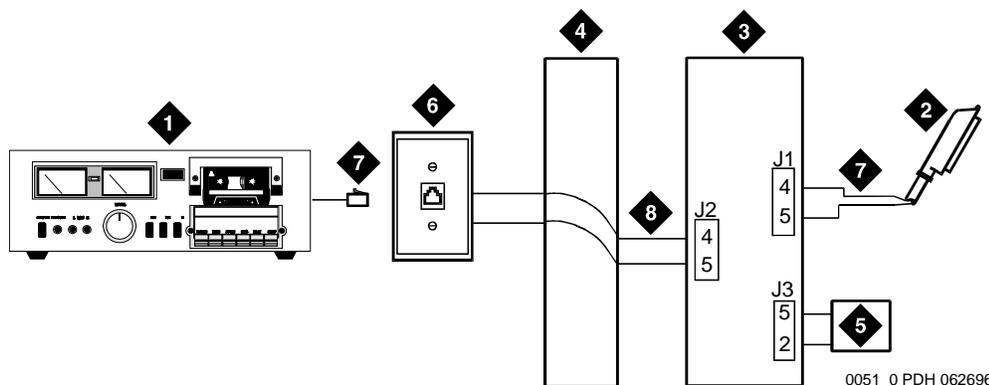


Figure notes

- | | |
|---------------------------------------------|--------------------------------------|
| 1 Customer-supplied music source | 5 Power supply for universal coupler |
| 2 25-pair cable to analog line circuit pack | 6 103A or modular wall jack |
| 3 909A/B universal coupler | 7 4-pair modular cord |
| 4 Part of main distribution frame | 8 Tip and ring wires |

Adding or Removing Hardware

Install paging and announcement equipment

NOTE:

A wiring block must be locally engineered.

NOTE:

For additional installation information, refer to *909A/909B Universal Coupler Installation Instructions*, which is normally shipped with the 909A/909B Universal Coupler.

Install paging and announcement equipment

This section explains the most common system configurations for the paging feature of Avaya Communication Manager. This section provides information on the following features:

- [Loudspeaker paging](#)
- [ESPA radio paging](#)
- [External ringing](#)
- [Queue warning indicator](#)

Loudspeaker paging

In an MCC1, SCC1, or CMC1Media Gateway, the loudspeaker paging feature provides a connection from a TN763B/C/D auxiliary trunk circuit pack (or equivalent) to a customer-supplied paging amplifier.

Loudspeaker paging without paging adapter

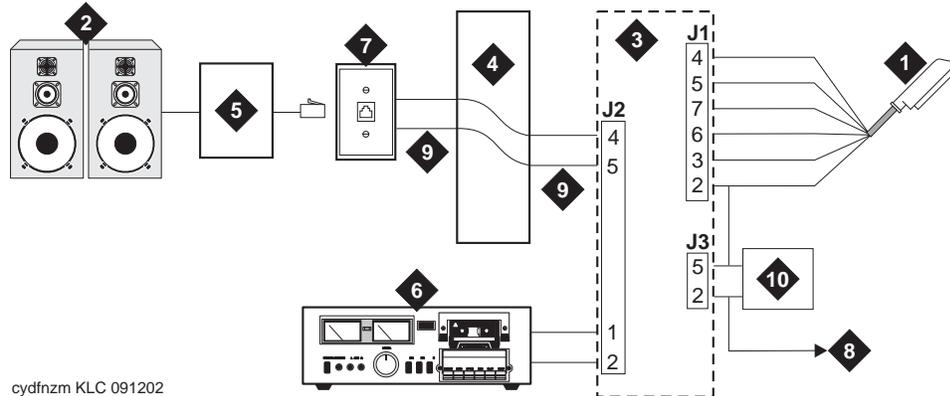
[Figure 125](#) shows the connections for the loudspeaker paging feature. These connections are used when the loudspeaker interface equipment is not located in the equipment room. If the equipment is located in the equipment room, the information outlet is not required. The connections shown are for one zone.

[Figure 125](#) also shows connections from an optional customer-supplied music source to the loudspeaker system through a paging amplifier, as well as connections to the loudspeaker system through a 909A/B universal coupler (see [Install 909A/B universal coupler](#) on page 318).

NOTE:

If the loudspeaker paging system provides a talkback microphone at the speakers, the microphone must be FCC approved (or equivalent), or a 909A/B universal coupler is required.

Figure 125: Connections for loudspeaker paging without paging adapter for an MCC1, SCC1, or CMC1 Media Gateway



cydfnzm KLC 091202

Figure notes

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 25-pair cable to TN763B/C/D auxiliary trunk circuit pack</p> <p>2 Loudspeaker paging system</p> <p>3 909A/B universal coupler (if required)</p> <p>4 Part of main distribution frame (MDF) circuits 1-16</p> <p>5 Paging amplifier</p> | <p>6 Music source for background music over loudspeakers (optional)</p> <p>7 103A or modular wall jack</p> <p>8 To SZ1 on TN763 connector</p> <p>9 Tip and ring wires</p> <p>10 -48 VDC power supply for 909B</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

NOTE:

On the 25-pair cable to TN763B/C/D auxiliary trunk circuit pack, SZ1 connects to GRD on key 10. The 50 points amphenol is connected to the back of a G600 or G650 Media Gateway.

Loudspeaker paging access without universal coupler

- 1 Determine port assignment of paging zone(s) from loudspeaker paging form.
- 2 At the main distribution frame, locate the connecting block and terminals assigned to the selected port.
- 3 On the locally engineered wiring block, place a strap between terminals S and SZ. Place a strap between terminals S1 and SZ1.
- 4 Install patch cord/jumper wires at the main distribution frame.
- 5 Connect a 2-pair line cord (modular plug at one end) from the information outlet to the paging amplifier (to the loudspeaker system).
- 6 Install loudspeaker equipment according to the manufacturer's instructions.
- 7 Administer the switch for the new equipment.

Loudspeaker paging with universal coupler

An information outlet provides access to loudspeaker paging. The system side of the main distribution frame connects to a 909A/B universal coupler. Make provisions for the DC power that the 909A/B universal coupler requires, such as a 1151A, 1151A2, or other approved -48VDC power supply.

Six leads (T, R, SZ, SZ1, S, and S1) connect the adapter to an auxiliary trunk circuit pack located in a port carrier.

- 1 Determine port assignment of paging zone(s) from loudspeaker Paging form.
- 2 Identify carrier slot and label both ends of an A25D (male to male) cable.
- 3 Connect a cable from the 909A/B to the system side of the main distribution frame. A wiring block must be locally engineered.
- 4 [Install 909A/B universal coupler](#) on page 318 provides details of the connections between the 909A/B universal coupler and the wiring blocks.



CAUTION:

Damage to the 909A/B may occur if the cable is plugged into J3 *before* all cross-connects are completed.

- 5 On the 909A/B universal coupler:
 - Connect seizure control voltage of from -9 to -70 volts to the PG2/BZ2 connection (pin 2 of J1). Switching voltage to the PG2/BZ2 connection can be from the 909's -48-volt supply.
 - Connect a -48 VDC power source to the -48 and GRD terminals on the 909A/B.
- 6 Install patch cord/jumper wires at the main distribution frame.
- 7 Connect a 2-pair line cord (modular plug at one end) from the information outlet to the loudspeaker system.
- 8 Install loudspeaker equipment according to the manufacturer's instructions.
- 9 Connect an approved -48 VDC power source to the **-48** and **GRD** terminals (pins 5 and 2, respectively, of J3).
- 10 Administer the switch for the new equipment.

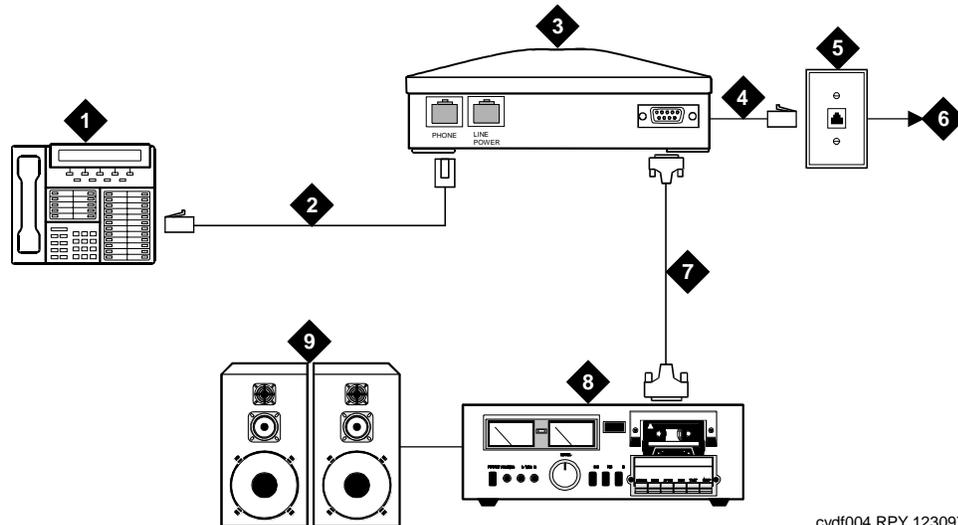
NOTE:

For additional installation information, refer to *909A/909B Universal Coupler Installation Instructions*, which is normally shipped with the 909A/909B Universal Coupler.

ESPA radio paging

Figure 126 shows typical connections to European Standard Paging Access (ESPA) equipment. Connect the LINE jack on the PassageWay interface to a digital line 4-wire DCP circuit pack through the MDF.

Figure 126: Typical ESPA radio paging connections



cydf004 RPY 123097

Figure notes

- | | | | |
|---|---------------------------|---|------------------------------|
| 1 | DCP telephone | 6 | To digital line circuit pack |
| 2 | 4-pair modular cord | 7 | RS-232 connector |
| 3 | PassageWay interface | 8 | ESPA radio paging equipment |
| 4 | 4-pair modular cord | 9 | Loudspeaker paging system |
| 5 | 103A or modular wall jack | | |

External ringing

Connections for external ringing are at an information outlet. The system side of the main distribution frame (MDF) is connected to a TN2183 (or equivalent) analog line circuit pack in an MCC1, SCC1, or CMC1 Media Gateway.

NOTE:

Up to three devices can be connected to one analog line circuit pack port.

- 1 Wire the ringing device to the information outlet.
- 2 Administer the switch for the new equipment.

Queue warning indicator

The connections for the queue warning indicator are the same as external ringing. An AC indicator (light) such as a 21C49 can be used in a Uniform Call Distribution/Direct Departmental Calling (UCD/DDC) queue. The light is connected to an information outlet. The system side of the MDF is connected to an analog line circuit pack located in a port carrier.

- 1 Wire the queue warning indicator to the information outlet.
- 2 Administer the switch for the new equipment.

Other adjunct installation information sources

This section lists documents you can use for installation of some of the key adjunct systems that you can connect.

Call Management System

For information on installing Call Management System R3V11, see the following:

- *Avaya Call Management System (CMS) R3V11 Software Installation, Maintenance, and Troubleshooting Guide*, 585-215-117
- *Avaya Call Management System (CMS) Sun® Enterprise™ 3000 and SPARCserver Computers Hardware Maintenance and Troubleshooting*, 585-214-016
- *Avaya Call Management System (CMS) Sun Enterprise 3500 Computer Hardware Installation, Maintenance, and Troubleshooting*, 585-215-873
- *Avaya Call Management System (CMS) Sun Ultra™ 5 Hardware Installation, Maintenance and Troubleshooting*, 585-215-871

INTUITY AUDIX Messaging Systems

For information on installing INTUITY™ AUDIX® Messaging systems, see one of the following:

- For INTUITY AUDIX Release 5.1 Messaging, see *INTUITY Messaging Solutions Release 5 Installation for New Systems* on the *INTUITY Messaging Solutions Release 5 Documentation CD-ROM*, 585-313-803.
- For INTUITY AUDIX LX Messaging, see *INTUITY AUDIX LX Installation Checklist* on the *INTUITY AUDIX LX Release 1 Documentation CD-ROM*, 585-313-818.
- <http://avaya.com/support>.

Avaya Modular Messaging System

For information on installing Avaya Modular Messaging systems, see *Modular Messaging Release 2.0 Documentation CD-ROM*, 11-300121.

ASAI and DEFINITY LAN Gateway

For information on installing ASAI systems and DEFINITY LAN Gateway, see *Avaya MultiVantage® ASAI Applications over MAPD*, 555-230-136 and *Avaya Communication Manager Release 2.0 ASAI Technical Reference*, 555-230-220 on the *Avaya Communication Manager Release 2.0 ASAI Documents* CD-ROM, 585-246-801.

Another document related to ASAI is *Avaya CVLAN Server 9.0 for Linux Installation and Basic Administration*, which is available at <http://avaya.com/support>. Click the following links:
Support>Technical Database>Contact Centers/CRM>CTI>CVLAN Server for Linux R9.

Avaya Interactive Response

For information on installing Avaya Interactive Response systems, see *Avaya Interactive Response R1.2.1 Install and Troubleshooting Guide*, 07-300180 on the Avaya Interactive Response R1.2.1 Documentation CD, 07-300181.

Avaya EC500 Extension to Cellular

For information on installing Avaya EC500 Extension to Cellular systems, see the *Avaya EC500 Extension to Cellular Installation and Administration Guide*, 210-100-500.

Call Accounting Systems

For information on installing Call Accounting Systems, see one of the following:

- The online help or documentation included with the eCAS software CD-ROM

Adding or Removing Hardware

Other adjunct installation information sources

A Troubleshooting an Upgrade

This appendix provides information to correct some problems when upgrading a system. The information in this appendix is a compilation of the most commonly reported troubles received by Tier 4 Support at Avaya. For general information on troubleshooting associated with maintenance procedures, see Chapter 1, “Maintenance for csi Systems,” of *Maintenance for Avaya DEFINITY Server CSI*.

This appendix is organized into two main sections, as described below:

- [Troubleshooting Guidelines](#) – provides general procedures to try before escalating a problem
- [Troubleshooting Upgrades](#) – provides specific troubleshooting procedures for common upgrade problems

Troubleshooting Guidelines

Before escalating a problem, try the troubleshooting procedures listed in this appendix. Also try the general troubleshooting procedures below.

- 1 Check the software compatibility on the Software Release Letter. Be sure the software that you are upgrading *from* is compatible with the Avaya Communication Manager that you are upgrading *to*.
- 2 Check the Avaya Communication Manager flashcard for defects.
- 3 Always use the Software Release Letter that accompanies the Avaya Communication Manager. If the letter is not available, use the appropriate chapter in this book.

Troubleshooting Upgrades

The subsections to follow present specific procedures for common upgrade problems, listed below:

- [No Translation After Upgrade](#)
- [Translation Corruption Detected](#)
 - [Unsuccessful Translation Backup](#)
 - [Software Incompatibility](#)
- [Re-install the ISDN-PRI Links \(Only for Failed Upgrades\)](#)

No Translation After Upgrade

This problem usually means that the translation flashcard was not present when the system expected it to be present. This can occur if the translation card is not fully inserted, or in some cases when the technician is distracted from monitoring the progress of the **upgrade software** command and fails to insert the translation card when prompted. To recover, perform the following:

- 1 Verify that the translation card is inserted (on duplicated SPE systems, it should be inserted in the active SPE).
- 2 Login as **craft**.
- 3 Verify the format and content of the flashcard by typing **status card-mem**, and observe that the output indicates that a translation file is present.
- 4 Type **reset system 3** and press **Enter**.
- 5 If the above fails, escalate the problem.

Translation Corruption Detected

This usually means that the translations were not successfully backed up to the translation card or that the current software may not be compatible with the new Avaya Communication Manager.

Unsuccessful Translation Backup

- 1 If the processor circuit pack was replaced as part of the upgrade, remove the processor and replace it with the original processor circuit pack.
- 2 Insert the original translation card (or backup translation card) into the TN798. This is a **csi** circuit pack only.
- 3 Enter **reset system 4** to reboot the system and to reinstall the original translations.
- 4 To correct the translation corruption problem, contact your Avaya representative.

Software Incompatibility

If these procedures do not clear the corruption problem, then the software versions may be incompatible. You may need to upgrade to an interim software version before upgrading to Avaya Communication Manager.

- 1 Consult the remediation that came with the Avaya Communication Manager.
- 2 Contact your Avaya representative for this information.

Re-install the ISDN-PRI Links (Only for Failed Upgrades)

If your upgrade failed and you need to re-install the ISDN-PRI links, use this procedure.

- 1 Type **add data-module [PI ext]** and press **Enter**.
- 2 Type the information in the fields based on the information that you entered earlier.
- 3 Type **change communication-interface links** and press **Enter**.
- 4 Type the information in the fields based on the information that you entered earlier with one exception. Leave the `Enable` field setting as it is.
- 5 Type **change communication-interface processor-channels** and press **Enter**.
- 6 Type the information in the fields based on the information that you entered earlier.
- 7 Type **change communication-interface links** and press **Enter**.
- 8 Type the information in the `Enable` field based on the information that you entered earlier.
- 9 Type **save translation** and press **Enter**.

B Access Security Gateway

This appendix provides information on how to administer Access Security Gateway (ASG). ASG employs a challenge/response protocol to confirm the validity of a user and reduce the opportunity for unauthorized access. ASG authentication will be imposed for Avaya services logins as indicated below:

- **init** - all types of access require ASG authentication
- **inads** - all types of access require ASG authentication
- **craft** - if accessing remotely, ASG authentication is required.

NOTE:

Craft login sessions from a direct connect management terminal continue to rely on password authentication.

Using the ASG Mobile

- 1 Double click on the ASG Mobile V1.1 on your desktop and an ASG Mobile V1.1 Login window appears.
- 2 In the `Tech ID` field, type your login ID, which is the name of the attached file (without the “.asg”). Your login ID is the same as your Avaya login (or an abbreviated part of it).
- 3 Type the password twice. Note that the password is case-sensitive.

NOTE:

Your new password will be sent to you in a separate email.

- 4 Click the **OK** button and an ASG Mobile V1.1 Authentication window appears.
- 5 Use your communications package (for example, DSA, ProComm, or TerraNova) to dial the switch you need to contact.
- 6 Log into your communications package window as either **init**, **inads**, or **craft**. Instead of a password prompt, a seven-digit (challenge) number appears in the window of your communications package.
- 7 Move to the ASG Mobile V1.1 Authentication window.
- 8 Type the 10-digit Product ID in the `Equipment ID` field. The default ID is 10 zeros (0000000000).
- 9 Type **init**, **inads**, or **craft** in the `Equipment Login` field. The craft login ID is the default.
- 10 Type the challenge number (from your communications package window) into the `Challenge` field. Do not use the “-” character.
- 11 Type the trouble ticket number in the `Ticket Number` field. If there is no ticket number, you can use this field as a one-word comment field or leave it blank.

- 12** Click the **Start** button. The `Activity Status` field displays “Started” and the `Response` field displays a new seven-digit number.
- 13** Move to your communications package window.
- 14** Type the new seven-digit (response) number in the `Response` field. Do not use the “-” character.
The Avaya CMC1 Media Gateway verifies the response. If the response is incorrect, return to Step 1. If this is the third rejection, see the *Maintenance for Avaya DEFINITY Server CSI*.

Index

Numerics

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 1146B power distribution unit, [89](#), [91](#)
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