AUDIX®

Installation

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AS593M-14695-MA-E.

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The ordering number for this document is 585-305-105. To order this document, call the GBCS Publications Fulfillment Center at 1-800-457-1235 (International callers use 1-317-361-5353). For more information about AT&T documents, refer to the *Global Business Communications Systems Publications Catalog* (555-000-010).

Comments

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Acknowledgment

This document was prepared by the AT&T Product Documentation Development Department, Denver, CO 80234-2703.

Contents

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LIST OF FIGURES

LIST OF TABLES

About This Document

The purpose of this manual is to show a technician how to install, administer for service, and test a new AUDIX Release 1 Version 8 (R1V8) system. Hardware upgrades and additions are described in *AUDIX Maintenance for Tier 1* (585-305-106).

INTENDED AUDIENCES

This manual is intended primarily for the on-site technician directly involved in the AUDIX system installation. It is also useful for remote maintenance services personnel, marketing support personnel, and hotline personnel.

PREREQUISITE SKILLS OR KNOWLEDGE

No prerequisite skills or knowledge are presumed. However, AUDIX system training is available and strongly recommended.

HOW THIS DOCUMENT IS ORGANIZED

Information in this document is organized as follows:

- Chapter 1, *Installation Preparations*, tells you what you need to know before you can begin an AUDIX system installation.

- Chapter 2, *Cabinet Installation*, contains the procedures to install an AUDIX base cabinet and expansion cabinet, as well as how to install earthquake mounting.

- Chapter 3, *System 75/Generic 1/Generic 3 Cabling*, describes how to cable an AUDIX system to a System 75, System 75 XE, or DEFINITY Communications System Generic 1 or Generic 3.

- Chapter 4, *System 85/Generic 2 Cabling*, describes how to cable an AUDIX system to a System 85 or DEFINITY Communications System Generic 2.

- Chapter 5, *DIMENSION PBX Cabling*, describes how to cable an AUDIX system to a DIMENSION PBX.

- Chapter 6, *1A ESS Switch Configuration*, describes an AUDIX system configuration with a 1A ESS Switch.

- Chapter 7, *5ESS Switch Configuration*, describes an AUDIX system configuration with a 5ESS Switch.

- Chapter 8, *AUDIX Standalone System Configuration*, describes an AUDIX system configuration with a non-AT&T switch or an AT&T switch without a data link.

- Chapter 9, *Terminal, Printer, and Modem Installation*, describes how to install the maintenance and administration terminals, printers, and modems.

- Chapter 10, *AUDIX System Initialization*, describes how to initialize (start up) the AUDIX system.

- Chapter 11, *AUDIX System Administration*, describes the AUDIX system administration needed for initial service and testing.

- Chapter 12, *AUDIX System Testing*, describes the confidence tests for the AUDIX system.

- Chapter 13, *DCS Administration*, describes how to set up the AUDIX system to serve a Distributed Communications System (DCS).

- Chapter 14, *Optional Features*, provides instructions to administer and test optional AUDIX features.

- Chapter 15, *Final Procedures*, concludes the installation with an inspection, disk cartridge test, and administrative preparations required for cut-to-service.

- Appendix A, *Removable Cartridge Procedures*, supplies the procedures for spinning down, removing, inserting, and spinning up the removable cartridges.

- Appendix B, *DC Power Setup*, describes how to setup an AUDIX system with factory-installed DC hardware.

- Appendix C, *LADS Installation*, supplies the procedures for installing and optioning a Local Area Data Set (LADS) for a data link connection and an extended local terminal.

- Appendix D, *VGA Setup*, provides information for setting up a Voice Gain Amplifier (VGA) if required.

CHANGES FROM THE PREVIOUS ISSUE

This document has been updated to reflect the following:

- AUDIX R1V8 feature testing has been updated throughout the manual to include the (#) (standard) and (*)(#) (traditional) prompts for the new R1V8 announcement sets.

- The Optima 2400 modem has been added to Chapter 9, *Terminal, Printer, and Modem Installation*.

- AUDIX R1V8 forms and procedural changes have been added to Chapters 10 and 11.

- In Chapter 11, *AUDIX System Administration*, the section on increasing filesystem sizes has been removed. The R1V8 filesystems are already sized for normal operations prior to system shipment.

NOTE	In this document, the terms *Generic 3i* and *Generic 3s* refer to versions of software based on DEFINITY Generic 1 features. The term *Generic 3r* refers to the version of software based on DEFINITY Generic 2 features. The term *Generic 3* refers to *all* versions of Generic 3 software (Generic 3i, Generic 3r, and Generic 3s).

CONVENTIONS USED IN THIS DOCUMENT

The following typographic conventions are used in this document:

- Information that appears on your terminal screen — including displays, field names, prompts, and error messages — is shown in a different style of type. Information that you are to type just as it appears in the document is shown in **bold** type. For example:

    At the when? prompt, type **now**.

- Keys on the terminal that you press are shown in curved-edge boxes. For example, an instruction to press the return, carriage return, or equivalent key is shown in this document as:

    Press (RETURN).

- Variables that the system supplies or that you must supply are shown in italic type. For example, an error message that is displayed on the screen with one of your specific filenames might be shown in this document as:

    Your file *filename* is formatted incorrectly.

TRADEMARKS AND SERVICE MARKS

The following trademarked products are mentioned in this document:

- 5ESS® Switch is a registered trademark of AT&T.

- AUDIX® System is a registered trademark of AT&T.

- DATAPHONE® is a registered trademark of AT&T.

- DEFINITY® Communications System is a registered trademark of AT&T.

- DIMENSION® PBX is a registered trademark of AT&T.

- ESS™ Switch is a trademark of AT&T.

- OMNI™ Port is a trademark of AT&T.

- RICOH™ is a trademark of RICOH Corporation.

- Silent Knight Autodialer® is a registered trademark of Silent Knight Security Systems.

- TELETYPE® is a registered trademark of AT&T.

RELATED RESOURCES

You may need the following documents while doing an AUDIX system installation:

- *AUDIX Administration* (585-305-501)

- *AUDIX Maintenance for Tier 1* (585-305-106)

- *AUDIX Networking* (585-300-903)

- *AUDIX Release 1 Version 8 Forms Reference* (585-305-209)

- *AUDIX System Description* (585-305-201)

- *Switch Administration for AUDIX Voice Messaging* (585-305-505)

See the *Global Business Communications Systems Publications Catalog* (585-000-010) for the description, price, and order number of any other AT&T documentation.

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AT&T
Product Documentation Development Department
Room 22-2C11
11900 N. Pecos St.
Denver, Colorado 80234

1. Installation Preparations

This chapter tells you what you need to know before you can begin an AUDIX system installation. It includes the following:

- Check Equipment and Translations

- Unpack the System

- Inventory the AUDIX System

- Tool Requirements

- Where to Go for Help

CHECK EQUIPMENT AND TRANSLATIONS

Ask your supervisor or the Account Team the following questions to make sure all the required work has been done before you begin the installation:

- Has all the required AUDIX system equipment been delivered?

- Is there any required switch hardware? (For example, hardware for AUDIX Networking that requires modem pooling, Digital Service – 1, etc.) If yes, has it been installed and tested?

- Are the switch translations complete?

  Switch requirements are covered in the *AUDIX System Description* (585-305-201). Switch administration is described in *Switch Administration for AUDIX Voice Messaging* (585-305-505).

UNPACK THE SYSTEM

Step 1:   Check the shock alarm (tip indicator) on the side of the shipping container before unpacking the carton.
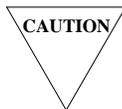
CAUTION *The shock alarm will indicate whether or not the cabinet has been through a damaging shock. If it has, notify your supervisor and do* **not** *continue.*

Step 2:   Take standard precautions when you unpack the AUDIX system cabinet.
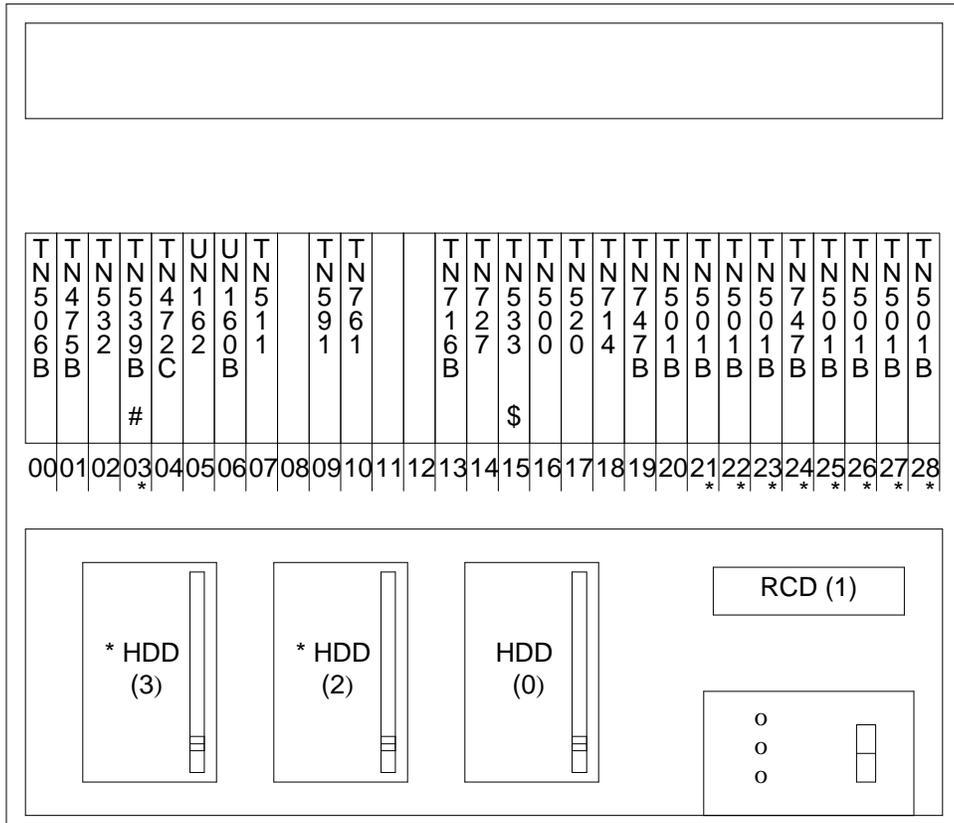
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
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			*																		*	*	*	*	*	*	*	*

RCD (1)

* HDD (3)   * HDD (2)   HDD (0)

* Optional equipment.

A TN539B ACCE may be installed in Slot 03 for Networking.

$ 1A ESS Switch and 5ESS Switch require a TN547(B) MPSI in this slot.

Figure 1-1. AUDIX One-Cabinet Configuration

NOTE	AUDIX systems may contain the 5.25-inch drives (shown in Figures 1-1 through 1-3) or smaller 3.5-inch drives.
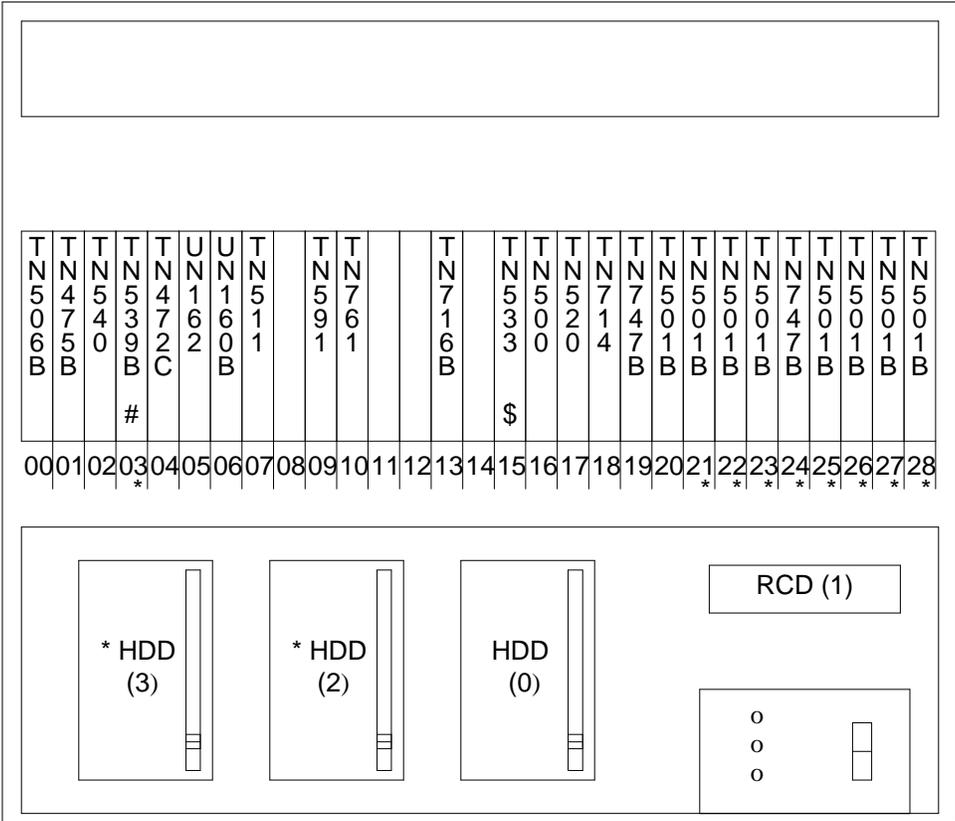
* Optional equipment.

A TN539B ACCE may be installed in Slot 03 for Networking.

$ 1A ESS Switch and 5ESS Switch require a TN547(B) MPSI in this slot.

Figure 1-2. AUDIX Two-Cabinet Configuration (Base Cabinet)

| NOTE | AUDIX systems may contain the 5.25-inch drives (shown in Figures 1-1 through 1-3) or smaller 3.5-inch drives. |

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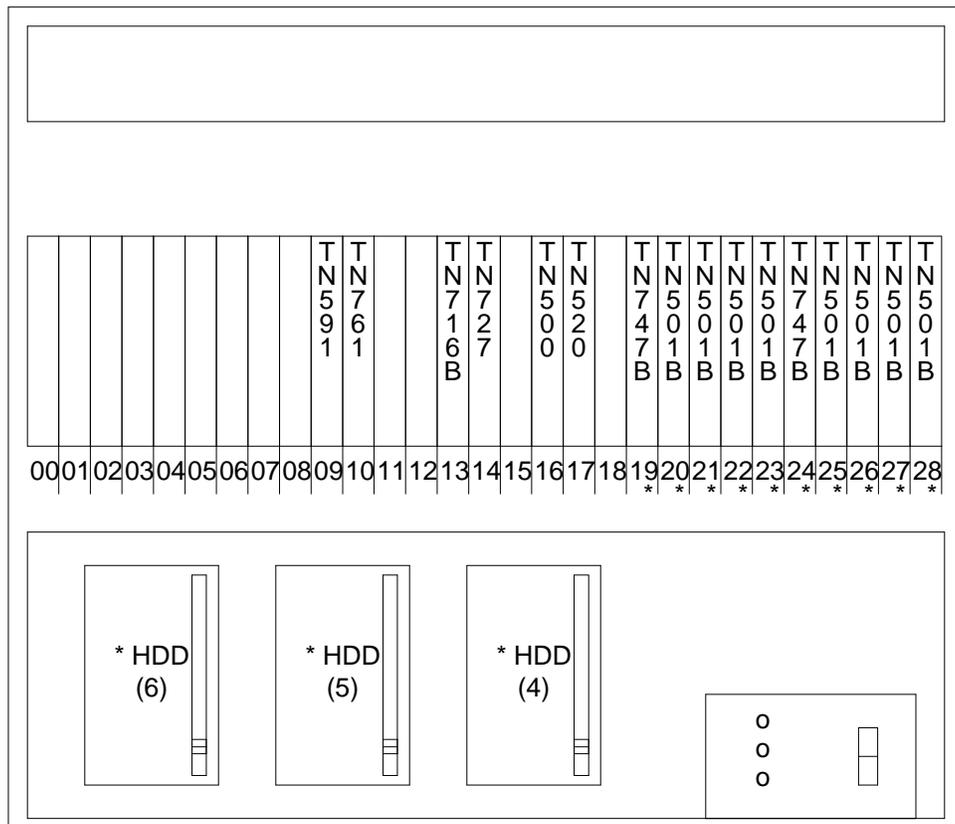
* Optional equipment.

Figure 1-3. AUDIX Two-Cabinet Configuration (Expansion Cabinet)

INVENTORY THE AUDIX SYSTEM

All AUDIX systems must include the equipment listed in this section.

Disk Drives and Circuit Packs

Use the following steps to inventory the disk drives and circuit packs.

Step 1:   Do you have the correct number of disk drives and circuit packs?

- Use the Customer Service Document (CSD) and the shipping slip to verify that the correct number of disk drives and circuit packs were shipped.

- See Figure 1-1, *AUDIX One-Cabinet Configuration* or Figures 1-2, *AUDIX Two-Cabinet Configuration (Base Cabinet)* and 1-3, *AUDIX Two-Cabinet Configuration (Expansion Cabinet)* to verify that you have the correct circuit packs for your system.

Step 2:   Are any socketed chips damaged?

The following circuit packs have one or more socketed chips:

TN475B (slot 01)	UN160B (slot 06)	TN500 (slot 16)
TN539B (slot 03)	TN511 (slot 07)	TN520 (slot 17)
TN472C (slot 04)	TN591 (slot 09)	TN714 (slot 18)

These chips may have vibrated loose during shipment. Check them as follows:

a.   Remove each circuit pack (*AC power must be OFF*) and place on a clean, flat, anti-static surface.

b.   Does the notch in the chip point to the circuit pack label and does each lead enter its corresponding socket?

c.   Press on the top of each socketed chip to make sure it is well seated.

Cables

You will need the following cables. Additional cables are listed in the *Data Links* section.

For One-Cabinet and Two-Cabinet Systems

☐ Two ED-1E434-11, Group 311 cables for the display terminals

☐ Two ED-1E434-11 H600-258, Group 1 cables for the display terminals

☐ Two to five ED-1E434-11, Group 300 cables (25-pair cable)

One of these 25-pair cables is used for reporting alarms to remote services equipment. Any other cables are for the voice ports (one cable is required for every eight voice ports).

For Two-Cabinet Systems

In *addition* to the above, two-cabinet systems require the following cables. These cables may already be attached to one end of the expansion cabinet.

☐ One ED-1E434-11, Group 186 50-pin cable (connects the AHF104 board to the disks)

☐ One ED-1E434-11, Group 185 14-pin cable (interconnects the CDR1B alarm boards)

☐ One ED67086-10, Group 4 40-pin cable (interconnects the AHF109 boards)

☐ One ED-1E434-11, Group 329 60-pin cable (interconnects AHF107 boards)

☐ One ED-1E434-11, Group 339 60-pin cable (interconnects AHF107 boards)

☐ One H600-140, Group 403 No.10 5-foot wire (S-Bus ground)

☐ One 1 inch by 4-1/2 inch by 6-1/2 inch cable duct (845952902)

Alarm Cable

Only a System 85, Generic 2, or DIMENSION PBX with duplicated common control will require this alarm cable.

☐ One ED-1E434-11, Group 340 alarm cable

Brackets

Brackets are required for two-cabinet systems only.

☐ One 7/8 inch by 26-3/4 inch bracket (846242840)

☐ One 1-inch spring clip (845798123) *or*

Two 7/8 inch by 26-3/4 inch brackets (846242840)

The additional bracket is used in place of the 1-inch clip in areas that require earthquake protection.

Cartridges

☐ One 50-Mbyte R1V8 programmed disk cartridge:

— For a one-cabinet system:
either one J58889UB-1 List 64 (PG3E666) cartridge for the standard announcement set
or one J58889UB-1 List 66 (PG3E668) cartridge for the traditional announcement set

— For a two-cabinet system:
either one J58889UB-1 List 65 (PG3E667) cartridge for the standard announcement set
or one J58889UB-1 List 67 (PG3E669) cartridge for the traditional announcement set

☐ One (or more) blank 50-Mbyte disk cartridges (comcode 406411314 or J58889UB-1 List 20)

Data Links

You will need one of the following data links if you have a fully integrated AUDIX system:

For Connection to System 75, Generic 1, or Generic 3 Systems

☐ One Isolating Data Interface (IDI)

☐ One ED-1E434-11, Group 174 cable

☐ One H600-210, Group 1 through 7 (group depends on length of cable: 1=10 ft., 2=25 ft., 3=50 ft., 4=100 ft., 5=200 ft., 6=300 ft., 7=400 ft.)

☐ *For Generic 3r only:* One H600-347, Group 1 cable

Or

☐ Two Data Service Units (DSUs)

☐ One ED-1E434-11, Group 110 cable

☐ One M25A 50-foot, RS-232C male-to-female cable

☐ *For Generic 3r only:* One H600-347, Group 1 cable

Or

☐ One MPDM with an RS-232C interface card

☐ One ED-1E434-11, Group 110 cable

☐ One ED-1E434-11 Group 300 25-pair cable

☐ One D8W-87 4-pair modular cord

☐ One 103A adapter (with 3-pair cord)

☐ *For Generic 3r only:* the additional equipment is required:

    — One B25A 25-pair cable

    — A second D8W-87 4-pair modular cord

    — A second 103A adapter (with 3-pair cord)

    — A second MPDM with an RS-232C interface card

    — One M25A 50-foot, RS-232C male-to-female cable

    — One H600-347, Group 1 cable

For Connection to System 85, Generic 2, or DIMENSION PBX Systems

□   One IDI

□   One ED-1E434-11, Group 174 cable

□   One ED-1E434-11, Group 304 cable

□   One ED-1E434-11, Group 342 cable for duplicated common control (optional)

    Or

□   Two Data Service Units (DSUs)

□   Two ED-1E434-11, Group 110 cables

□   Two 103A adapters and two D8W-87 modular cords

□   One ED-1E434-11, Group 342 cable for duplicated common control (optional)

For Connection to a 1A ESS Switch

□   202T Private Line modem with RS-232C to RS-449 cable

□   One M8K modular cord

□   One ED-1E434-11, Group 13 and/or M25A cable *or*
    One ED-1E434-11, Group 110 cable

For Connection to a 5ESS Switch

□   One Switch Communications Adapter (SCA)

□   One Network Termination 1 (NT1) Unit

□   One NT1 power supply

□   Two D6AP-87 modular cords

□   One D8W-87 modular cord

□   One ED-1E434-11, Group 110 cable

□   One ED-1E434-11, H600-258, Group 1 null-modem cable

Display Terminals or PCs

You will need a display terminal or Personal Computer (PC).

☐ One of the following display terminals or PCs:

- AT&T 715 BCS terminal (display monitor, keyboard, power cord)

- AT&T 610 BCT or 615 MT terminal or equivalent (display monitor, keyboard, 513 emulation cartridge, power cord)

- TELETYPE 4415 or 5420 terminal (display monitor, keyboard, power cord)

- AT&T 6300-type Personal Computer or Work Group System (313 monitor, keyboard, 513 emulation cartridge, appropriate software, and power cord)

☐ *Optional:* One data module or modem and cabling

Printer (Optional)

Printers come with a data cable and a box of ribbons.

☐ One 475 or 572 serial printer with an RS-232C cable *or*

One 570, 593, 595, or 6417 parallel printer with a printer cable

Earthquake Protection Kit (Optional)

An earthquake protection kit is required in certain areas according to local code.

☐ One ED1E496-70 earthquake protection kit

- Group 4 (raised computer floor)

- Group 5 (concrete floor)

Missing Parts

For missing parts not on the ordering slip, see the Account Executive (AE). For missing parts not shipped, contact the claims group, your project manager, or the appropriate remote maintenance service center (see the *Where to Go for Help* section).

TOOL REQUIREMENTS

The following tools are required to install the AUDIX system. You may also want to have a digital voltmeter and an electromagnetic compatibility (EMC) wrist strap available for troubleshooting.

Tool	Type
Tin Snips	—
Knife	—
Hammer Drill (for earthquake mounting)	—
Adjustable Wrench	6- or 8-inch
Ratchet	1/4-inch drive
Socket	5/16-inch 6-point
Carpenter's Level	30-inch
Single-Pair Insertion Cutoff Tool	788D

WHERE TO GO FOR HELP

AT&T provides four types of technical support to escalate AUDIX system problems:

● Related Documentation — When problems occur with the AUDIX system, refer to *AUDIX Maintenance for Tier 1* (585-305-106). If there are problems with equipment other than the AUDIX system, refer to the appropriate switch installation and maintenance manuals.

● Technical Support Hotline — If your AUDIX system is connected to an AT&T PBX or Central Office (CO) switch, direct any questions or problems to the appropriate remote maintenance service center. For example:

— The International Technical Assistance Center (ITAC) may be contacted at 1-303-538-4666.

— The Technical Service Center (TSC) may be contacted at 1-800-248-1234.

● Supporting Personnel — If required equipment is not at the site or you need to replace a part, contact the claims group, your project manager, or the Account Executive (AE).

● Customer Records Database Administrator — Most AUDIX systems are set up so remote maintenance personnel can track alarms or other problems with the system using the maintenance port over a telephone line and a modem installed at the switch. For example, you may contact the AT&T Initialization and Administration System (INADS) administrator at 1-800-248-1111 if this is the appropriate customer records database resource for you.

2. Cabinet Installation
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This chapter contains the the following procedures for installing a *new* AUDIX system:

- Base Cabinet Installation

- Earthquake Mounting

- Expansion Cabinet Installation

BASE CABINET INSTALLATION

If you need more information on site preparation and environmental requirements, see *AUDIX System Description* (585-305-201).

Step 1:   Use the floor plan supplied by the Account Team to set up the AUDIX system. Make sure there is adequate spacing between any adjacent cabinets so that there is room in front to open the cabinet doors and room behind to access the connector panel and the backplane.

Step 2:   Set up the base cabinet on the floor or position it on top of another cabinet. (The AUDIX cabinet could also be placed beneath the switch cabinet, but usually the switch cabinet is already in place when the AUDIX system is installed.)
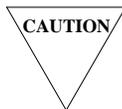
> **CAUTION** *Use two people to lift an AUDIX system cabinet.* **Never** *stack an AUDIX system more than two cabinets high.*

Step 3:   If you are mounting the AUDIX base cabinet on top of (or below) another cabinet (such as a System 75 XE, Generic 1, or Generic 3i/s), use front and rear brackets and screws to fasten the two cabinets together.

EARTHQUAKE MOUNTING

Install earthquake mounting only if local code requires it (see your Account Team if you are not sure) *and* you are installing a two-cabinet (stacked) configuration. A two-cabinet configuration can be either a two-cabinet AUDIX system or a one-cabinet AUDIX system stacked on top of a System 75 XE, Generic 1, or Generic 3i/s cabinet.
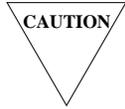
CAUTION *Install earthquake mounting **before** adding the expansion cabinet. Never move a two-cabinet system after both cabinets are attached.*

Earthquake mounting is typically installed on concrete floors only. Earthquake protection is possible on raised floors on a *conditional* basis if all four corners of the base cabinet are anchored to a concrete subfloor under the raised floor.

Step 1:   Draw a diagram like that shown in Figure 2-1, *Anchor Hole Locations*, on the floor where the AUDIX system base cabinet will go.

Step 2:   Using one of the anchor bits supplied with ED-1E496-70 and a hammer drill, drill a hole in the concrete floor at one of the four anchor hole marks indicated in Figure 2-2. Stop drilling when the mark on the bit reaches floor level (see Figure 2-2, *Cement Floor Anchor*). Pull the bit from the floor and insert one of the four plugs that come with ED-1E496-70. Drill the anchor back into the hole until the mark again reaches floor level. Pull on the drill to make sure the anchor is firmly in place. Using the drill as a lever, snap off the top of the anchor. Repeat this step with the other three anchors.

Step 3:   Using the cap screws (or rods and nuts), flat washers, and nylon washers supplied with ED-1E496-70, fasten the AUDIX base cabinet to the floor. Insert the nylon washers between the flat washers and the cabinet.

If the base cabinet does not have holes in the rear, see *AUDIX Maintenance for Tier 1* (585-305-106) to drill these holes. If this is a two-cabinet AUDIX system, leave the battery pack out when finished. It must be removed to install the expansion cables.

REAR

27

7-15/16   16-15/16   2-1/8

11/16

20-1/4

AUDIX FLOOR LAYOUT

2-1/2

6-3/8   11-11/16   8-15/16

FRONT
(ALL DIMENSIONS ARE IN INCHES)
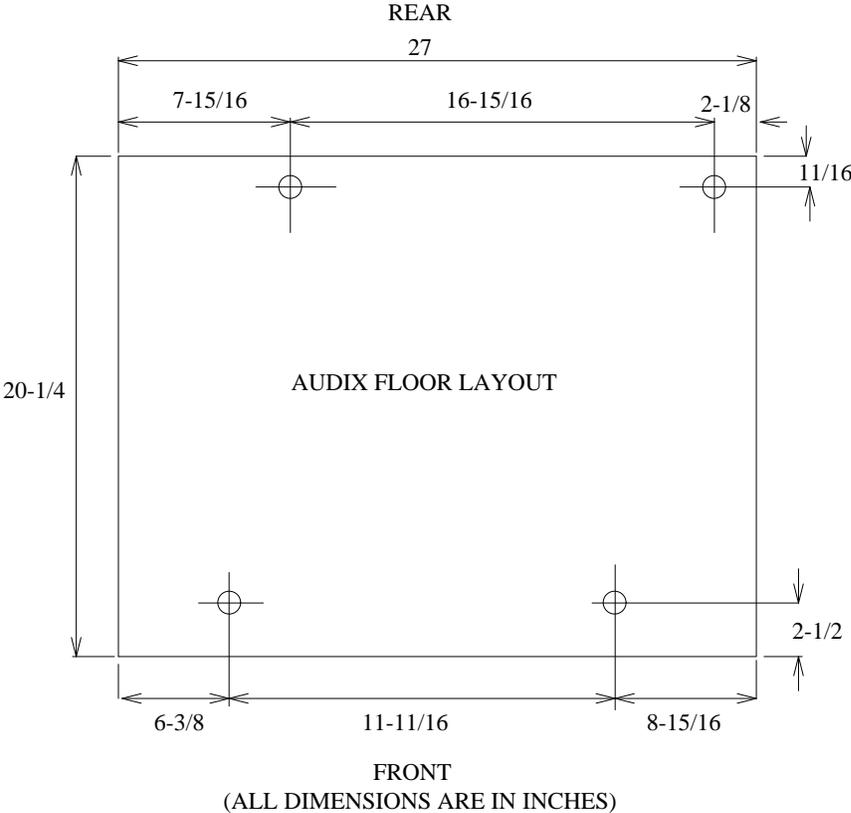
Figure 2-1. Anchor Hole Locations

FLOOR LEVEL

PLUG
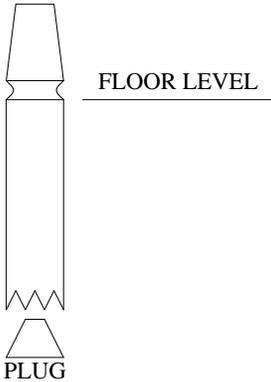
Figure 2-2. Cement Floor Anchor

EXPANSION CABINET INSTALLATION

The following steps are for installing a new AUDIX system. To add an expansion cabinet to an existing one-cabinet AUDIX system, see *AUDIX Maintenance for Tier 1* (585-305-106).

NOTE	You will need a copy of the *AUDIX Maintenance for Tier 1* manual (585-305-106) to complete the following procedures.

Step 1:   Take the necessary precautions to remove the cutout at the top-rear of the AUDIX system base cabinet, if not done already.

Make sure the cutout at the bottom-rear of the AUDIX expansion cabinet has been removed.

Step 2:   Place the expansion cabinet on top of the base cabinet.
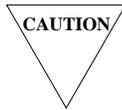
CAUTION	*Use two people to lift an AUDIX system cabinet. Do **not** stack an AUDIX system more than two cabinets high (a two-cabinet AUDIX system must never be stacked with additional cabinets).*

Step 3:   On each AUDIX system cabinet, remove the slotted screen covering the power supply/battery area. Also remove the solid panel directly above the connector panel.

Step 4:   Using the *AUDIX Maintenance for Tier 1* manual (585-305-106), remove the battery packs from the cabinets and set them aside. This makes the intercabinet cables easier to route between the cabinets.

Step 5:   Squeeze the cable duct and insert it through the cutout of the expansion cabinet. Insert the narrow tabs on the duct first. The duct must angle toward the back of the cabinets to fit through the cutout in the base cabinet.

Step 6:   Expansion Cabling:

- Signal Ground Cable: Connect a Group 403 #10 wire to the AHF107 board in the expansion cabinet. Run this cable down through the duct and attach it to the unused lug on the AHF107 board in the base cabinet.

- Small Computer System Interface Cable (SCSI): Connect a 50-pin Group 186 cable to the disk drives in the expansion cabinet, if any. Run this cable down through the duct. Attach the expansion cabinet's female connector to the base cabinet's AHF104 connector. Connect the expansion cabinet's other connector to the SCSI cable connector which runs to the disk drives.

- Alarm Signal Connector: Connect a 14-pin Group 185 cable to the CDR1B in the expansion cabinet (see Figure 2-3, *Alarm Signal Intercabinet Cabling*). Run this cable down through the duct and connect it to the matching header on the CDR1B in the base cabinet (slot 7). This cable is not keyed. Make sure it is oriented the same way in both cabinets.

TOP CABINET BACKPLANE

BOTTOM CABINET BACKPLANE
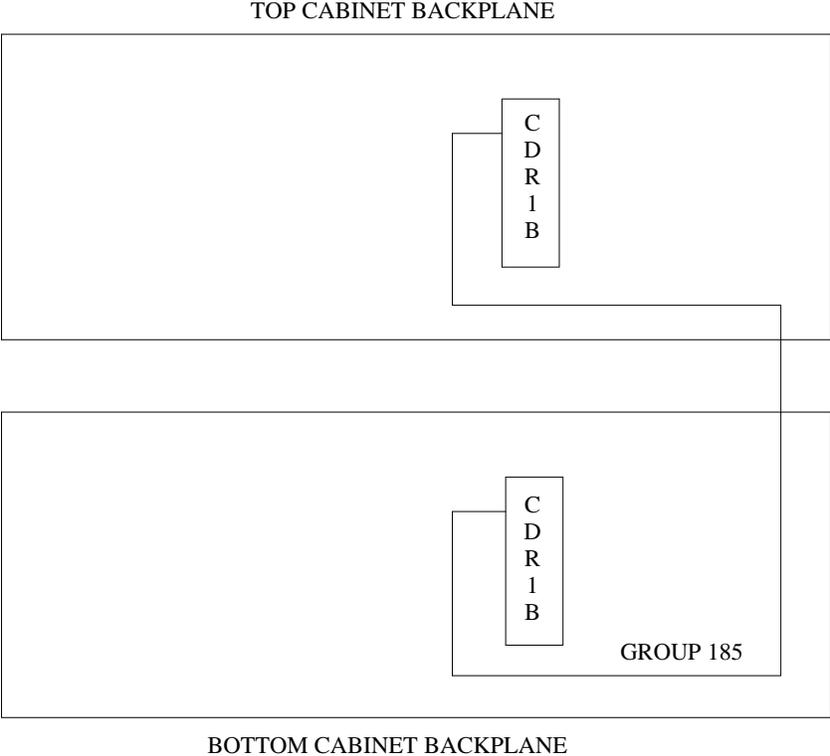
Figure 2-3. Alarm Signal Intercabinet Cabling

- S-Bus Cables: Connect two 60-pin ribbon cables (one Group 329 and one Group 339) between the S-Bus expansion boards (AHF107) in the base cabinet and expansion cabinet (see Figure 2-4, *S-Bus Intercabinet Cabling*). Run these cables down through the duct. Make sure that the cable connected to the inside header on the expansion cabinet board is connected to the inside header on the base cabinet board, and that the other ribbon cable is connected between the *outside* headers of the two boards.

TOP CABINET BACKPLANE

BOTTOM CABINET BACKPLANE
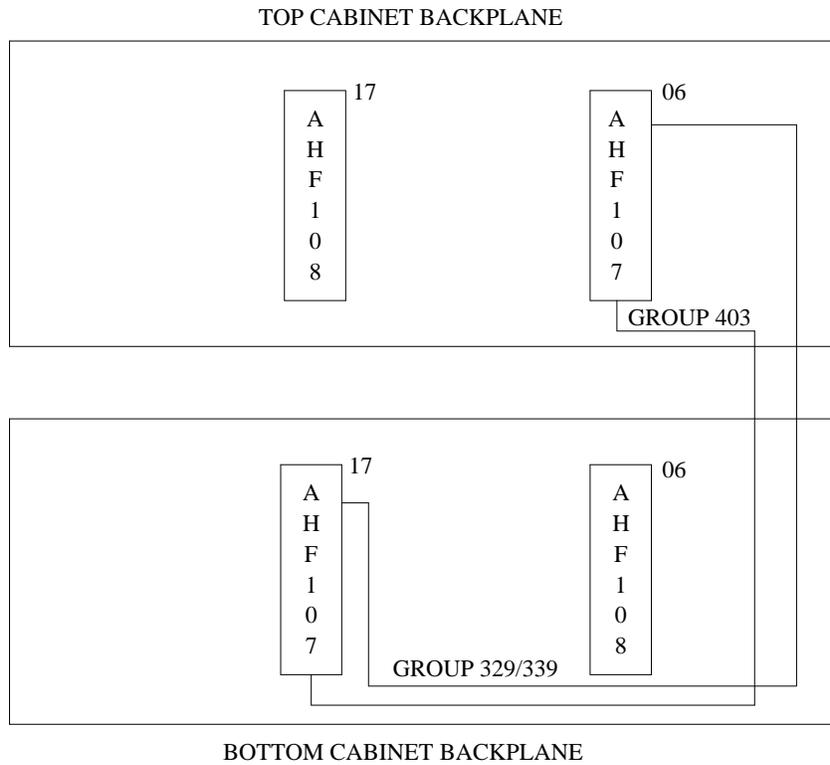
Figure 2-4. S-Bus Intercabinet Cabling

- TD-Bus Cable: Connect a 40-pin Group 4 cable to the AHF109 board in the expansion cabinet (see Figure 2-5, *TD-Bus Intercabinet Cabling*). Run this cable down through the duct and connect it to the AHF109 board in slot 00 of the base cabinet. This cable is not keyed. Make sure it is oriented the same way in both cabinets.

LIST 2 OR 4 BACKPLANES
TOP CABINET BACKPLANE

BOTTOM CABINET BACKPLANE
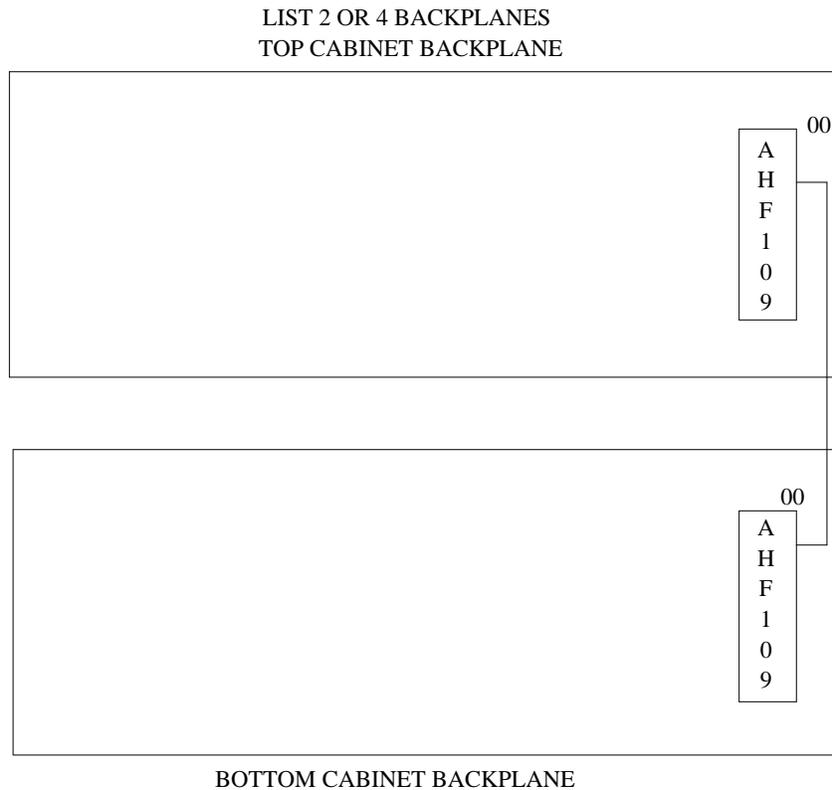
Figure 2-5. TD-Bus Intercabinet Cabling

Step 7:   Replace the battery packs. Use caution when sliding the battery packs in the cabinets as the ribbon cables are easily damaged.

Step 8:   Open the front doors of each cabinet. Fasten the two cabinets together with the spring clip or with the bracket. For earthquake protection, use the bracket and the self-tapping screws. If holes must be drilled in the base cabinet for this bracket, see *AUDIX Maintenance for Tier 1* (585-305-106). If the spring clip is used, slide it over the notches at the center of each cabinet's frame.

Step 9:   Reattach the four rear panels, except for the four screws on the bottom edge of the expansion cabinet.

Step 10:   Check the bracket supplied. It will have either notches or holes in it. Loosen or remove the four screws across the fan bracket at the top edge of the base cabinet. Using these screws and the screws left from step 9, install the bracket so it fastens the two cabinets together. Tighten all screws completely.

AFTER CABINET INSTALLATION

After you have installed the AUDIX base and (if needed) expansion cabinets:

- Install any additional AUDIX system hardware required for this installation, such as DC power, before continuing.

- Continue to one of the following chapters:

Switch Connection	Go To
System 75, System 75 XE, Generic 1, or Generic 3	Chapter 3
System 85 or Generic 2	Chapter 4
DIMENSION PBX	Chapter 5
1A ESS Switch	Chapter 6
5ESS Switch	Chapter 7
AUDIX Standalone or non-AT&T PBX	Chapter 8

3. System 75/Generic 1/Generic 3 Cabling

This chapter describes the cabling between the AUDIX system and a System 75, System 75 XE, DEFINITY Generic 1, or DEFINITY Generic 3. There is a section for each of the following:

- Cabling the Voice Ports

- Cabling the Data Link

- Cabling the Alarm Link

Figure 3-1, *AUDIX Cable Connectors*, shows the AUDIX connector panels located on the back of the AUDIX system cabinets. The lower panel is located on the base cabinet. The upper panel is located on the expansion cabinet (if this is a two-cabinet system).
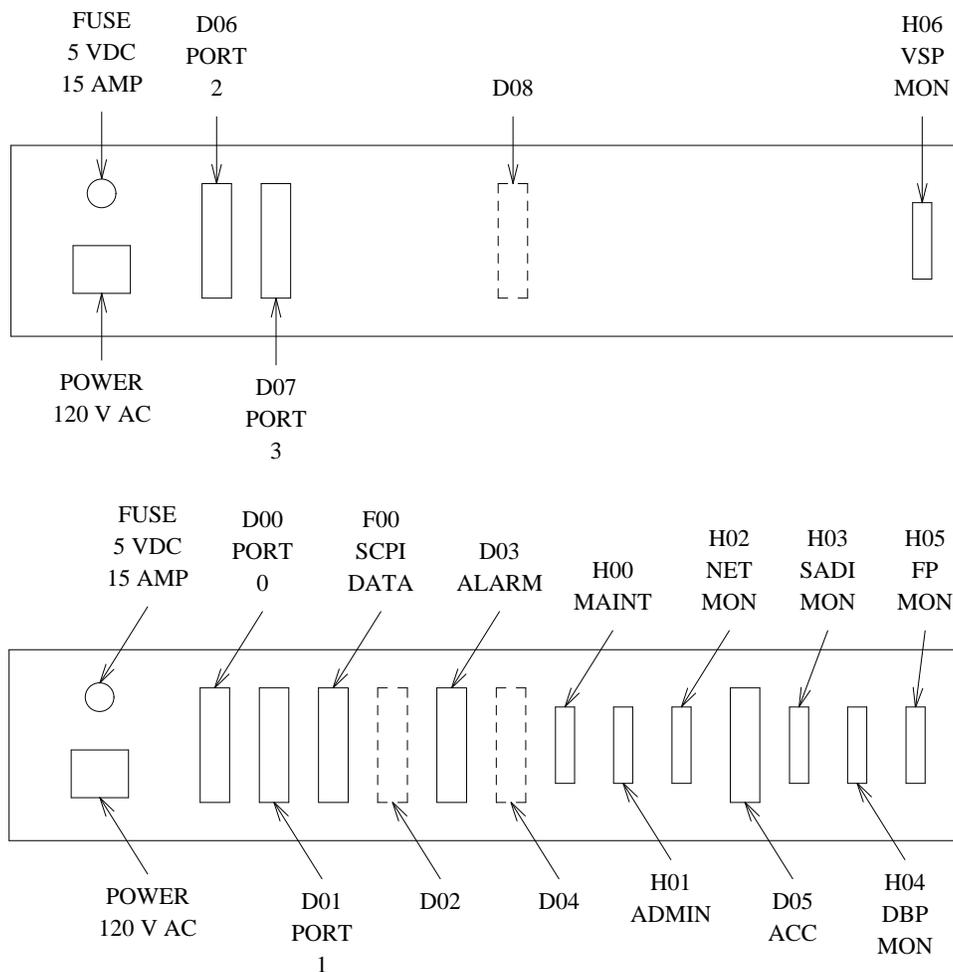
Figure 3-1. AUDIX Cable Connectors

CABLING THE VOICE PORTS

The voice links between the AUDIX system and the switch connect callers from a compatible switch port to an AUDIX voice port. Internal or external callers are directed through the switch to a call-distribution group or hunt group of analog ports associated with the AUDIX system. These ports then connect the callers to the appropriate extension on the AUDIX voice ports.

One or more 25-pair cables are used to patch the AUDIX system voice ports to analog ports at the switch (see Figure 3-2, *System 75, Generic 1, or Generic 3 Voice Port Cabling*).

Parts List

- One to 32 analog ports on the switch (TN742, TN746B, or TN769 — do *not* use a TN746)

- Up to eight 25-pair cables (four on the AUDIX system side and four on the switch side)

Procedure
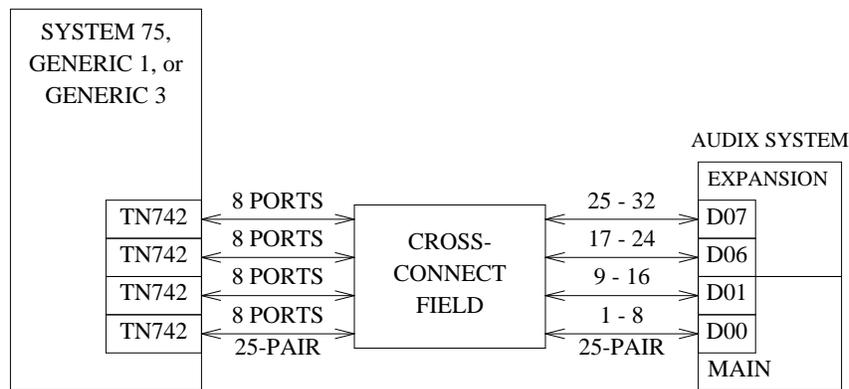
Figure 3-2. System 75, Generic 1, or Generic 3 Voice Port Cabling

Step 1:   Connect one to four 25-pair cables from AUDIX system to the cross-connect field. The following number of voice ports determine the number of cables required:

- D00 provides access to Voice Ports 1-8 — TN501Bs in slots 20-23 of the base cabinet.

- D01 provides access to Voice Ports 9-16 — TN501Bs in slots 25-28 of the base cabinet.

- D06 provides access to Voice Ports 17-24 — TN501Bs in slots 20-23 of the expansion cabinet.

- D07 provides access to Voice Ports 25-32 — TN501Bs in slots 25-28 of the expansion cabinet.

Step 2:   Patch the switch analog ports to the AUDIX system voice ports. If a modular cross-connect is used, the top jack is AUDIX system voice port #1, #9, #17, or #25. The bottom jack is voice port #8, #16, #24, or #32.

If a 66- or 110-type connector is used, see Table 3-1, *AUDIX System 66-/110-Type Terminal Block Pinout*.

IMPORTANT: Record each AUDIX voice port and its connection to the switch analog port. You will administer the ports on the AUDIX system the same way they are wired.

Table 3-1. AUDIX System 66-/110-Type Terminal Block Pinout

66- or 110-	AUDIX SYSTEM 25-PAIR CONNECTOR					
TERMINAL NUMBERS	WIRE COLORS	BASE			EXPANSION	
		D00	D01	D03	D06	D07
1,2	W/BL,BL/W	#1	#9	--	#17	#25
3,4	W/O,O/W	--	--	--	--	--
5,6	W/G,G/W	--	--	--	--	--
7,8	W/BR,BR/W	#2	#10	--	#18	#26
9,10	--	--	--	--	--	--
11,12	--	--	--	--	--	--
13,14	R/O,O/R	#3	#11	--	#19	#27
15,16	--	--	--	--	--	--
17,18	--	--	--	--	--	--
19,20	R/S,S/R	#4	#12	--	#20	#28
21,22	--	--	--	--	--	--
23,24	--	--	--	--	--	--
25,26	GR/BK,BK/GR	#5	#13	--	#21	#29
27,28	--	--	--	--	--	--
29,30	--	--	--	--	--	--
31,32	Y/BL,BL/Y	#6	#14	--	#22	#30
33,34	--	--	--	--	--	--
35,36	--	--	--	--	--	--
37,38	Y/BR,BR/Y	#7	#15	Minor	#23	#31
39,40	--	--	--	--	--	--
41,42	--	--	--	--	--	--
43,44	V/O,O/V	#8	#16	Major	#24	#32
45,46	--	--	--	--	--	--
47,48	--	--	--	--	--	--
49,50	--	--	--	--	--	--

CABLING THE DATA LINK

The data link is the connection from the AUDIX system cabinet to the switch that enables nonvoice messages, or data, to pass between the AUDIX system and the switch.

The AUDIX system connects to a System 75, System 75 XE, Generic 1, or Generic 3 by using one of the following data links:

- Data Service Unit (DSU)

- Isolating Data Interface (IDI)

- Modular Processor Data Module (MPDM)

IDI Connection

Use the following section to make an IDI connection to a System 75, System 75 XE, Generic 1, or Generic 3 system. The total length of the IDI connection must be 400 feet or less. For a longer connection, you need to install a pair of DSUs (see the *DSU Connection* section).

Parts List

- One IDI

- One ED-1E434-11, Group 174 cable (RS-449, 4.5-ft)

- One H600-210, Group 1 through 7 (depends on cable length)
  (RS-232C female to RS-449 male, up to 400 feet)

- *For Generic 3r only:* One H600-347, Group 1 cable
  (male 50-pin Amphenol to four RS-232C male connectors)
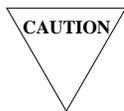
  ▽CAUTION   *Do* **not** *leave excess cable in a coil.*

Procedure

Use Figure 3-3, *System 75, Generic 1, or Generic 3i/s Data Link Using an IDI*, to make the data link connection between the AUDIX F00 connector and the EIA Port on the switch.
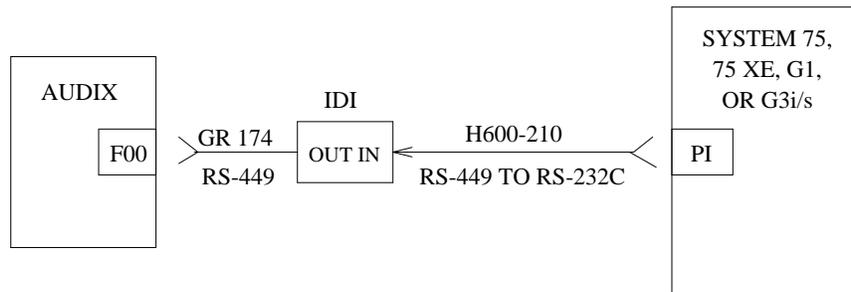
Figure 3-3. System 75, Generic 1, or Generic 3i/s Data Link Using an IDI

Use Figure 3-4, *Generic 3r Data Link Using an IDI*, to make an IDI connection between the AUDIX F00 connector and a Generic 3r switch.
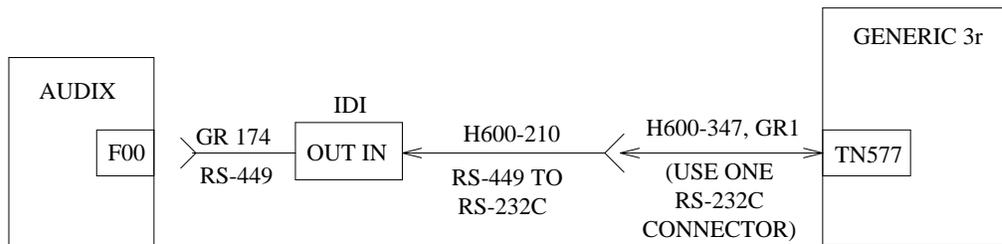
Figure 3-4. Generic 3r Data Link Using an IDI

DSU Connection

Use the following section to make a DSU connection to a System 75, System 75 XE, Generic 1, or Generic 3 system.

Parts List

- Two Data Service Units (DSUs)

- One ED-1E434-11, Group 110 cable (RS-449 to RS-232C, 50-ft)

- One M25A 50-foot, RS-232C male-to-female cable

  (If desired, a ED-1E434-11, Group 309 male-to-female RS-232C cable can be used instead of the M25A; the Group 309 has lengths of 5, 12, 25, and 50 feet)

- *For Generic 3r only:* One H600-347, Group 1 cable
  (male 50-pin Amphenol to four RS-232C male connectors)

Procedure

Use Figure 3-5, *System 75, Generic 1, or Generic 3i/s Data Link Using a DSU*, to make the data link connection between the AUDIX F00 connector and the switch.
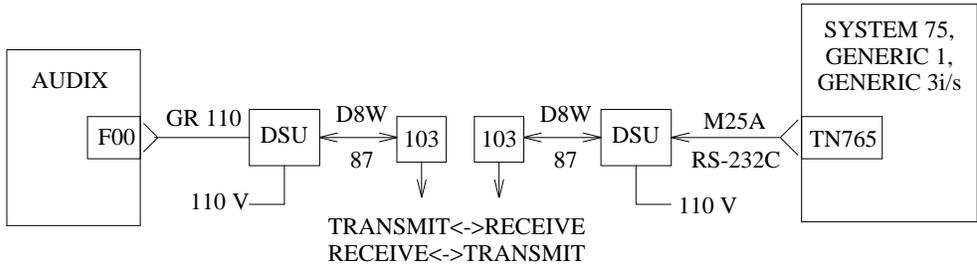
Figure 3-5. System 75, Generic 1, or Generic 3i/s Data Link Using a DSU

Use Figure 3-6, *Generic 3r Data Link Using a DSU*, to make a DSU connection between the AUDIX F00 connector and a Generic 3r switch.
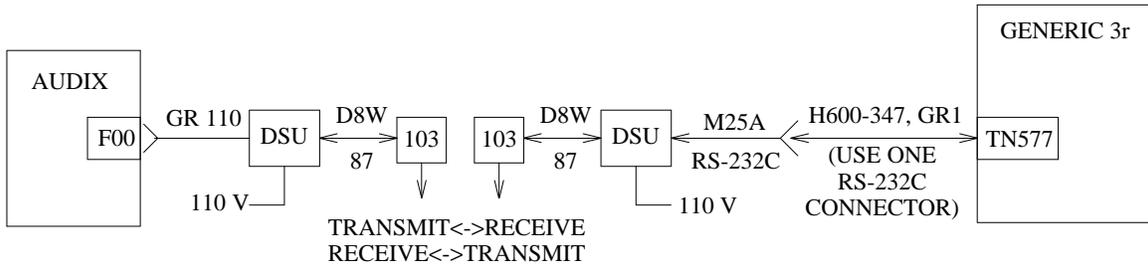
Figure 3-6. Generic 3r Data Link Using a DSU

MPDM Connection

Use the following section to make an MPDM connection from an AUDIX system to a Switch Communications Interface (SCI) board on System 75, or to a TN754 board on Generic 1 or Generic 3.

Parts List

- One MPDM (with an RS-232C interface card)

- One ED-1E434-11, Group 110 cable (RS-449 to RS-232C, 50-ft)

- One ED-1E434-11 Group 300 25-pair cable (connects the TN754 to the cross-connect field)

- One D8W-87 4-pair modular cord

- One 103A adapter (with 3-pair cord)

- *For Generic 3r only:* the additional equipment is required:

  — One B25A 25-pair cable (connects the second TN754 to the cross-connect field)

  — A second D8W-87 4-pair modular cord

  — A second 103A adapter (with 3-pair cord)

  — A second MPDM (with an RS-232C interface card)

  — One M25A 50-foot, RS-232C male-to-female cable

  — One H600-347, Group 1 cable
  (male 50-pin Amphenol to four RS-232C male connectors)

Procedure
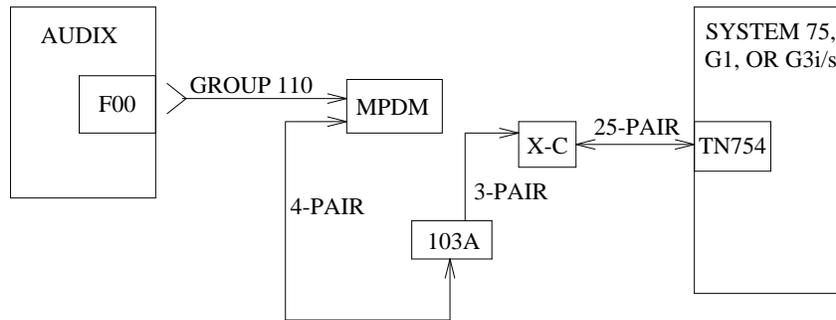
Figure 3-7. System 75, Generic 1, or Generic 3i/s Data Link Using an MPDM
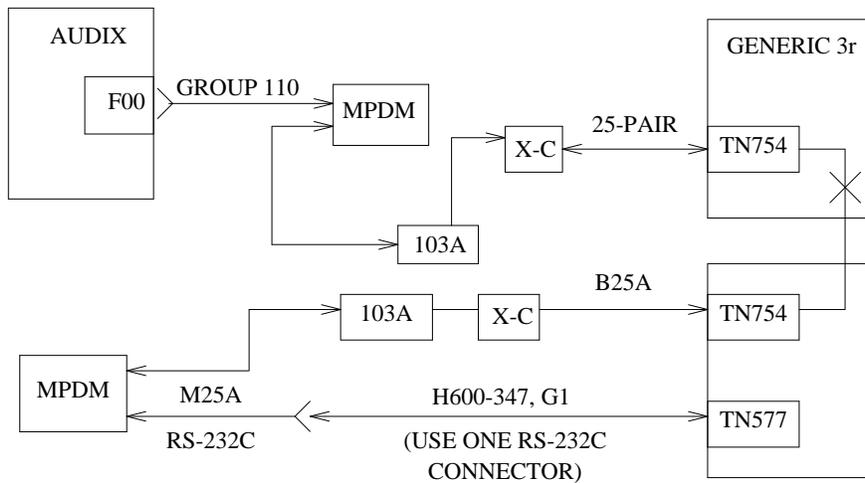
Figure 3-8. Generic 3r Data Link Using an MPDM

Step 1:   See Figure 3-7, *System 75, Generic 1, or Generic 3i/s Data Link Using an MPDM* or Figure 3-8, *Generic 3r Data Link Using an MPDM*. Connect the cables to the AUDIX F00 connector (RS-449) as shown.

> **NOTE** On a Generic 3r switch, an MPDM connection to a TN754 board requires a connection to be administered in the switch leading to a second TN754 board, which is cabled through the cross-connect field to a second MPDM which actually connects to the TN577 PGATE board.

Step 2:   Make the following settings on the MPDM:

SYNC	ON
9600	ON
INT	ON
AANS	ON
ALL OTHERS	OFF

FRAME GROUND OPTION: Separate the frame and signal grounds.

Step 3:   Plug the MPDM power cord into a 110-V outlet.

Step 4:   Connect the 4-pair D8W-87 cord from the MPDM to the 103A adapter.

Step 5:   Inside the 103A is a 3-pair cord coming from the back of the adapter. Make sure the wires of this cord are connected as follows:

— The W/O wire connects to Pin 3 of the 4-pair modular jack.

— The O/W wire connects to Pin 4 of the jack.

— The W/G wire connects to Pin 5 of the jack.

— The G/W wire connects to Pin 6 of the jack.

— The W-BL pair is *not* used.

Step 6:   Connect a 25-pair cable from the TN754 to the cross-connect field.

Step 7:   Run the 3-pair cord from the 103A adapter to the TN754 connector block.

Step 8:   Connect the W-O pair of the 103A adapter to the W-O pair of the TN754 (connector pins 3 and 4).

Step 9:   Connect the W-G pair of the 103A adapter to the W-G pair of the TN754 (connector pins 5 and 6).

CABLING THE ALARM LINK

The AUDIX alarm link (D03) automatically reports AUDIX system problems through the switch. Remote service personnel discover the alarm when they dial in through the AUDIX maintenance port. You will connect the maintenance port in Chapter 9, *Terminal, Printer, and Modem Installation.* Use this section to connect the AUDIX alarm link to the switch.

Parts List

- One ED-1E434-11 Group 300 25-pair cable (shipped with the AUDIX system)

Procedure

Alarm connections are made from the AUDIX system to the AUX alarm connector on either the switch's system cabinet or an Expansion Port Network (EPN) cabinet used for auxiliary equipment (see Figure 3-9, *System 75, Generic 1, or Generic 3 to AUDIX Alarm Link*). This connector may be labeled AUX, MAINTENANCE AUXILIARY, or REMOTE ALARM connector.

Step 1:   Cable the switch's AUX alarm connector to the yellow cross-connect field (Trunk/Auxiliary Field). The switch alarm circuits available at the cross-connect field are:

Block Pins (Color)	Designation
1,2 (W/BL,BL/W)	1M (or ap1), ground
3,4 (W/O,O/W)	1m (or ap2), ground

System 75 XE, Generic 1, and Generic 3 switches have only two alarm inputs per cabinet: a Major pair and a minor pair. The AUDIX system can be cabled to any cabinet that has alarm inputs available (the system cabinet or an EPN).

On a System 75 only, a total of six adjunct alarm circuits are available. If the first pair of Major/minor alarm circuits shown in the table is not available on a System 75, you may use pins 5 – 8 or 9 – 12 for additional Major/minor alarm circuits (refer to your System 75 switch documentation for details if necessary). *These additional leads are* **not** *available on Generic 1 or Generic 3 cabinets.*

Step 2:   Connect a 25-pair cable from the D03 connector on the back of the AUDIX system cabinet to a spare connector on the yellow cross-connect field. The two AUDIX alarm circuits appear at the cross-connect field as:

Block Pins (Color)	Designation
37,38 (Y/BR,BR/Y)	Minor Send, Minor Return
43,44 (V/O,O/V)	Major Send, Major Return

Step 3:   Select an unused pair of Major and minor alarm circuits on either the switch's system or EPN cabinet. Using Figure 3-9, *System 75, Generic 1, or Generic 3 to AUDIX Alarm Link* as a guide, patch this circuit to the AUDIX system alarm circuits.

Step 4:   Make sure the switch auxiliary leads 49 and 50 are correctly cabled at the cross-connect field to report alarms to remote maintenance service center personnel. Refer to the appropriate switch manual for details if necessary.
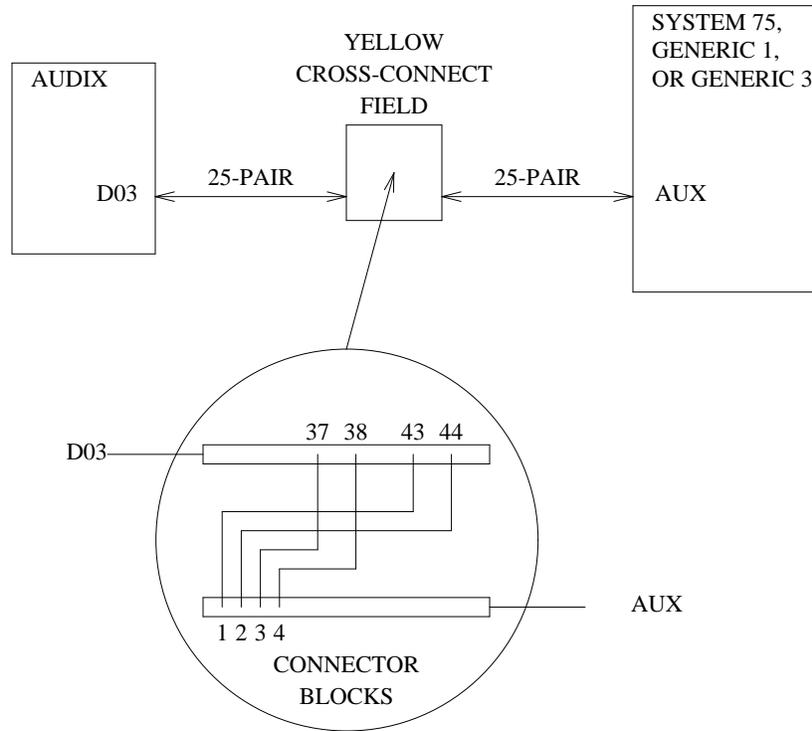
Figure 3-9. System 75, Generic 1, or Generic 3 to AUDIX Alarm Link

Continue to Chapter 9, *Terminal, Printer, and Modem Installation.*

4. System 85/Generic 2 Cabling

This chapter describes the cabling between the AUDIX system and a System 85 or a DEFINITY Communications Systems Generic 2. There is a section for each of the following:

- Cabling the Voice Ports

- Cabling the Data Link

- Cabling the Alarm Link

Figure 4-1, *AUDIX Cable Connectors*, shows the AUDIX system connector panels located on the back of the AUDIX system cabinets. The lower panel is located on the base cabinet. The upper panel is located on the expansion cabinet.

Figure 4-1. AUDIX Cable Connectors

CABLING THE VOICE PORTS

The voice links between the AUDIX system and the switch connect callers from a compatible switch port to an AUDIX voice port. Internal or external callers are directed through the switch to a call-distribution group or hunt group of analog ports associated with the AUDIX system. These ports then connect the callers to the appropriate extension on the AUDIX system voice ports.

NOTE	This section applies to Generic 2 traditional modules only. If you are connecting the AUDIX analog ports to a Generic 2 universal module, use the *Cabling the Voice Ports* section in Chapter 3 (Generic 2 universal modules use the same analog ports as Generic 1 and Generic 3 systems).

One or more 25-pair cables are used to patch the AUDIX system voice ports to switch analog ports.

Parts List

- Up to five ED-1E434-11, Group 300 25-pair cables (shipped with the AUDIX system)

- One to 32 analog ports (SN222, SN222B, SN228, SN228B, or SN229). The SN228B has option settings for on- or off-premises.

NOTE	For AUDIX system Outcalling to work properly, you must connect the AUDIX system voice ports to to SN222, SN222B, or SN228B switch ports.

Procedure

Step 1:   Connect one of the AUDIX system 25-pair cables to the D00 connector on the back of the AUDIX system base cabinet. If necessary, connect 25-pair cables to D01, D06, and D07. The number of TN747Bs determine the number of cables required.

Connect a 25-pair cable to the D03 alarm connector (base cabinet).

Step 2:   Mark the loose end of the cables and route them to the cross-connect field. Connect each cable to a spare connector on the cross-connect field.

Step 3:   Patch each AUDIX system voice port to one of the switch analog ports. Table 4-1, *AUDIX System 66-/110-Type Terminal Block Pinout*, shows the pinout for the AUDIX system voice ports and alarm circuits.

IMPORTANT: Record each AUDIX system voice port and its connection to the switch analog port. Later, you will administer the ports on the AUDIX system the same way they are wired.

Table 4-1. AUDIX System 66-/110-Type Terminal Block Pinout

| 66- or 110- | AUDIX SYSTEM 25-PAIR CONNECTOR | | | | | |
TERMINAL NUMBERS	WIRE COLORS	BASE D00	D01	D03	EXPANSION D06	D07
1,2	W/BL,BL/W	#1	#9	--	#17	#25
3,4	W/O,O/W	--	--	--	--	--
5,6	W/G,G/W	--	--	--	--	--
7,8	W/BR,BR/W	#2	#10	--	#18	#26
9,10	--	--	--	--	--	--
11,12	--	--	--	--	--	--
13,14	R/O,O/R	#3	#11	--	#19	#27
15,16	--	--	--	--	--	--
17,18	--	--	--	--	--	--
19,20	R/S,S/R	#4	#12	--	#20	#28
21,22	--	--	--	--	--	--
23,24	--	--	--	--	--	--
25,26	GR/BK,BK/GR	#5	#13	--	#21	#29
27,28	--	--	--	--	--	--
29,30	--	--	--	--	--	--
31,32	Y/BL,BL/Y	#6	#14	--	#22	#30
33,34	--	--	--	--	--	--
35,36	--	--	--	--	--	--
37,38	Y/BR,BR/Y	#7	#15	Minor	#23	#31
39,40	--	--	--	--	--	--
41,42	--	--	--	--	--	--
43,44	V/O,O/V	#8	#16	Major	#24	#32
45,46	--	--	--	--	--	--
47,48	--	--	--	--	--	--
49,50	--	--	--	--	--	--

CABLING THE DATA LINK

The data link is the connection from the AUDIX system cabinet (F00) to the switch that enables nonvoice messages, or data, to pass between the AUDIX system and the switch.

The AUDIX system connects to a System 85 or Generic 2 by using one of the following data links:

• An Isolating Data Interface (IDI)

• A pair of Data Service Units (DSUs)

NOTE	A pair of Local Area Data Sets (LADS) will also work. The LADS have been replaced by the DSUs and are no longer orderable. If your customer owns a pair of LADS and wants them installed, see Appendix C, *LADS Installation*.

IDI Connection

Use the following section for an IDI connection.

Parts List

- One IDI

- One ED-1E434-11, Group 304 cable (RS-449 extender, up to 400 feet)

- One ED-1E434-11, Group 174 cable (RS-449, 4.5 feet)

- A System 85 or Generic 2 with duplicated common control also requires an ED-1E434-11, Group 342 Y-cable.

Procedure

Connect the data link as shown in Figure 4-2, *Data Link Cabling Using an IDI*.
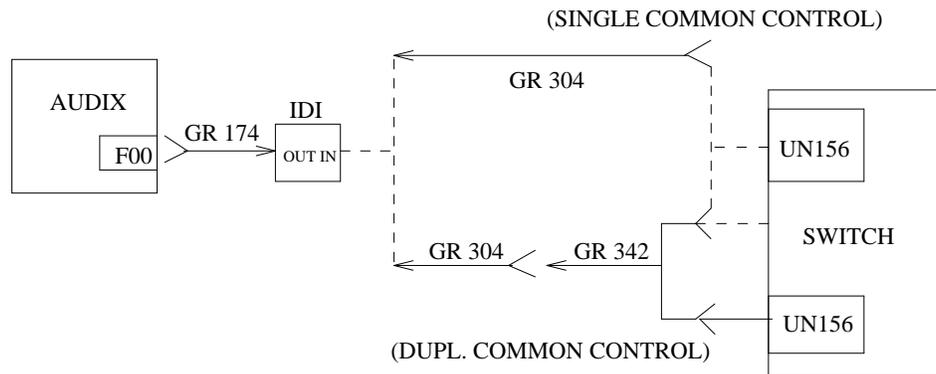
Figure 4-2. Data Link Cabling Using an IDI

DSU Connection

Use the following section for a DSU connection.

Parts List

- Two 2596A DSUs

- Two ED-1E434-11, Group 110 (50-foot) cables

- Two 103A adapters and two D8W-87 modular cords

- A System 85 or Generic 2 with duplicated common control also requires an
  ED-1E434-11, Group 342 Y-cable.

Procedure

Connect the DSUs as shown in Figure 4-3, *Data Link Cabling Using DSUs*. Make sure Pair 2 (transmit) of one DSU connects to Pair 4 (receive) of the other, and vice versa. You can access these wire pairs by using the 103A adapters to break out the D8W-87 cords.
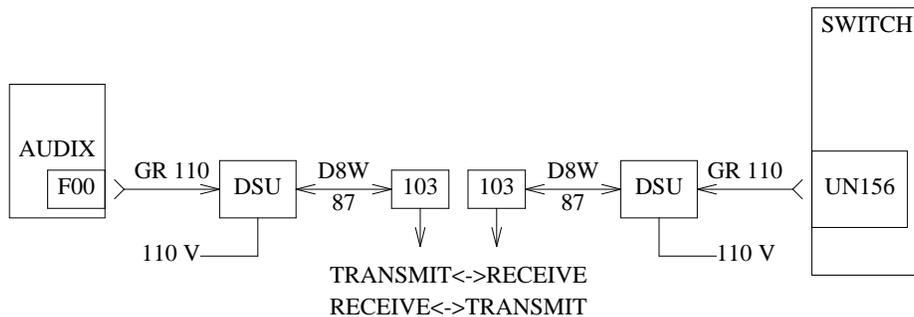
Figure 4-3. Data Link Cabling Using DSUs

NOTE	If a Group 342 cable is required at the switch, connect this cable between the Group 110 cable and the UN156s. (See Figure 4-2, *Data Link Cabling Using an IDI*, for a similar connection.)

Set the DSU for internal timing and 9600 baud (details are in Chapter 9, *Terminal, Printer, and Modem Installation*).

CABLING THE ALARM LINK

The alarm port (D03) automatically reports AUDIX system problems through the switch. Remote service personnel discover the alarm when they dial in through the AUDIX maintenance port. Refer to Chapter 9 to connect the maintenance port.

Use this section to connect the AUDIX alarm link to the switch. Alarm cabling from the switch's D6 connector to the cross-connect field should already exist. Alarm cabling from the AUDIX system to the cross-connect field was installed during the *Cabling the Voice Ports* section.

Use the following steps to patch the D6 connector to the AUDIX system alarm circuits through the cross-connect field:

Step 1:   Refer to Figure 4-4, *System 85 and Generic 2 Alarm Link Wiring*, and do the following:

     a.   *Major alarm circuit:* Connect the AUDIX D03 connector pin 43 (V/O) to the switch's D6 connector pin 18 (BR/R).

     b.   *Minor alarm circuit:* Connect the AUDIX D03 connector pin 37 (Y/BR) to the switch's D6 connector pin 17 (R/BR).

Step 2:   Connect the associated AUDIX system D03 wires to a common D6 UNIT lead as shown in Figure 4-4. Refer to Table 4-2, *System 85 and Generic 2 D6 Connector Pinout*, for UNIT lead designations.

     a.   *Major alarm circuit:* Connect the AUDIX D03 connector pin 44 (O/V) to an available D6 connector unit lead.

     b.   *Minor alarm circuit:* Connect the AUDIX D03 connector pin 38 (BR/Y) to an available D6 connector unit lead.

Step 3:   Call the appropriate customer records database administrator with the UNIT # used, or call your remote maintenance service center. For example, you may call the INADS administrator with the UNIT # for a new system, or the TSC to test the alarm leads.

When an alarm is generated at the AUDIX system, an alarm appears at the switch. An alarm will also be sent to the remote maintenance center associated with the unit number used.

A System 85 or Generic 2 with duplicated common control will also have duplicated alarm circuits connected through an ED-1E434-11, Group 340 cable.
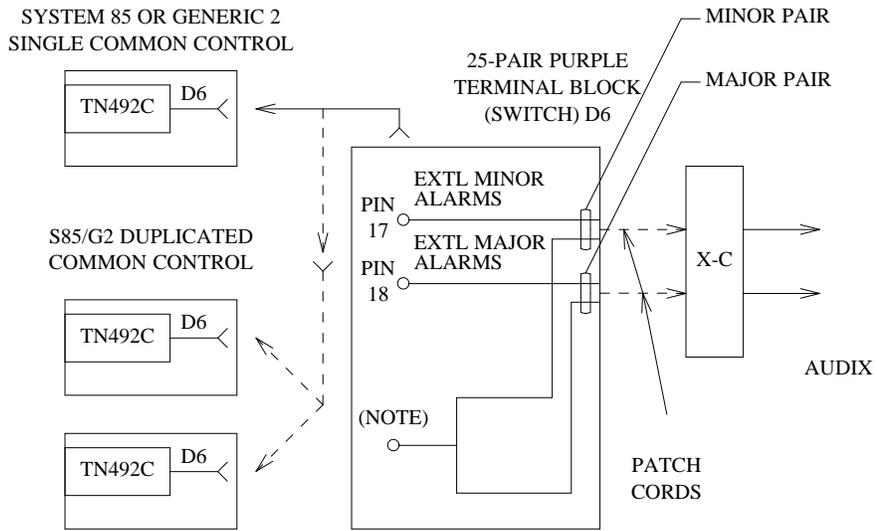
Figure 4-4. System 85 and Generic 2 Alarm Link Wiring

Continue to Chapter 9, *Terminal, Printer, and Modem Installation.*

Table 4-2. System 85 and Generic 2 D6 Connector Pinout *(Part 1 of 2)*

Connector	Lead Designation	Lead Color	Connecting Block Terminal
D6	UNIT20	W - BL	1
	UNIT19	BL - W	2
	UNIT22	W - O	3
	UNIT21	O - W	4
	UNIT24	W - G	5
	UNIT23	G - W	6
	spare	W - BR	7
	UNIT25	BR - W	8
	UNIT27	W - S	9
	UNIT26	S - W	10
	UNIT29	R - BL	11
	UNIT28	BL - R	12
	UNIT31	R - O	13
	UNIT30	O - R	14
	AUXCTMP	R - G	15
	UNIT32	G - R	16
	EXTEQMN	R - BR	17
	EXTEQMJ	BR - R	18
	AUXCRCT	R - S	19
	AUXCHO	S - R	20
	AUXCCB	BK - BL	21
	AUXCFRQ	BL - BK	22
	AUXCFAN	BK - O	23
	spare	O - BK	24

(Continued)

TABLE 4-2. System 85 and Generic 2 D6 Connector Pinout *(Part 2 of 2)*

Connector	Lead Designation	Lead Color	Connecting Block Terminal
	EXTPRMJ	BK - G	25
	EXTPRMN	G - BK	26
	UNIT2	BK - BR	27
	UNIT1	BR - BK	28
	UNIT4	BK - S	29
	UNIT3	S - BK	30
	UNIT6	Y - BL	31
	UNIT5	BL - Y	32
	UNIT8	Y - O	33
	UNIT7	O - Y	34
	UNIT10	Y - G	35
	UNIT9	G - Y	36
D6	spare	Y - BR	37
	UNIT11	BR - Y	38
	UNIT13	Y - S	39
	UNIT12	S - Y	40
	UNIT15	V - BL	41
	UNIT14	BL - V	42
	UNIT17	V - O	43
	UNIT16	O - V	44
	spare	V - G	45
	UNIT18	G - V	46
	RING0	V - BR	47
	TIP0	BR - V	48
	RING1	V - S	49
	TIP1	S - V	50

5. DIMENSION PBX Cabling

This chapter describes the cabling required to connect the AUDIX system to a DIMENSION PBX. It includes procedures for each of the following:

- Cabling the Voice Ports

- Cabling the Data Link

- Cabling the Alarm Link

Figure 5-1, *AUDIX Cable Connectors*, shows the AUDIX system connector panels located on the back of the AUDIX system cabinets. The lower panel is located on the base cabinet. The upper panel is located on the expansion cabinet.

Figure 5-1. AUDIX Cable Connectors

CABLING THE VOICE PORTS

The voice links between the AUDIX system and the switch connect callers from a compatible switch port to an AUDIX voice port. Internal or external callers are directed through the switch to a call-distribution group or hunt group of analog ports associated with the AUDIX system. These ports then connect the callers to the appropriate extension on the AUDIX voice ports.

One or more 25-pair cables are used to patch the AUDIX system voice ports to switch analog ports.

Parts List

- Two to five ED-1E434-11, Group 300 25-pair cables (shipped with the AUDIX system)
- One to 32 analog ports (LC03)

Procedure

Step 1:   Connect one of the AUDIX system 25-pair cables to the D00 connector on the back of the AUDIX system base cabinet. If necessary, connect 25-pair cables to D01, D06, and D07. The number of TN747Bs determines the number of cables required.

Step 2:   Mark the loose end of the cables and route them to the cross-connect field. Connect each cable to a spare connector on the cross-connect field.

Step 3:   Patch each AUDIX system voice port to one of the switch analog ports. Table 5-1, *AUDIX System 66-/110-Type Terminal Block Pinout*, shows the pinout for the AUDIX system voice ports and alarm circuits. Record the cross-connect data. You must administer the voice ports on the AUDIX system in the same way (see Chapter 11, *AUDIX System Administration*).

Table 5-1. AUDIX System 66-/110-Type Terminal Block Pinout

| 66- or 110- | AUDIX SYSTEM 25-PAIR CONNECTOR | | | | | |
| TERMINAL NUMBERS | WIRE COLORS | BASE | | | EXPANSION | |
		D00	D01	D03	D06	D07
1,2	W/BL,BL/W	#1	#9	--	#17	#25
3,4	W/O,O/W	--	--	--	--	--
5,6	W/G,G/W	--	--	--	--	--
7,8	W/BR,BR/W	#2	#10	--	#18	#26
9,10	--	--	--	--	--	--
11,12	--	--	--	--	--	--
13,14	R/O,O/R	#3	#11	--	#19	#27
15,16	--	--	--	--	--	--
17,18	--	--	--	--	--	--
19,20	R/S,S/R	#4	#12	--	#20	#28
21,22	--	--	--	--	--	--
23,24	--	--	--	--	--	--
25,26	GR/BK,BK/GR	#5	#13	--	#21	#29
27,28	--	--	--	--	--	--
29,30	--	--	--	--	--	--
31,32	Y/BL,BL/Y	#6	#14	--	#22	#30
33,34	--	--	--	--	--	--
35,36	--	--	--	--	--	--
37,38	Y/BR,BR/Y	#7	#15	Minor	#23	#31
39,40	--	--	--	--	--	--
41,42	--	--	--	--	--	--
43,44	V/O,O/V	#8	#16	Major	#24	#32
45,46	--	--	--	--	--	--
47,48	--	--	--	--	--	--
49,50	--	--	--	--	--	--

CABLING THE DATA LINK

The data link is the connection from the AUDIX system cabinet (F00) to the switch that enables nonvoice messages, or data, to pass between the AUDIX system and the switch.

The AUDIX system connects to a DIMENSION PBX by using one of the following data links:

- Isolating Data Interface (IDI)

- pair of Data Service Units (DSU)

NOTE	A pair of Local Area Data Sets (LADS) will also work. The LADS have been replaced by the DSUs and are no longer orderable. If your customer owns a pair of LADS and wants them installed, see Appendix C, *LADS Installation*.

IDI Connection

Use the following section for an IDI connection.

Parts List

- One IDI

- One ED-1E434-11, Group 304 cable (RS-449 extender, up to 400 feet)

- One ED-1E434-11, Group 174 cable (RS-449, 4.5 feet)

Procedure

Connect the data link as shown in Figure 5-2, *Data Link Cabling Using an IDI*.

Figure 5-2. Data Link Cabling Using an IDI

DSU Connection

Use the following section for a DSU connection.

Parts List

- Two 2596A DSUs

- Two ED-1E434-11, Group 110 (50 feet) cables

- Two 103A adapters and two D8W-87 modular cords

Procedure

Connect the DSUs as shown in Figure 5-3, *Data Link Cabling Using DSUs*. Make sure Pair 2 (transmit) of one DSU connects to Pair 4 (receive) of the other, and vice versa. These wire pairs can be accessed using the 103A adapters to break out the D8W-87 cords.
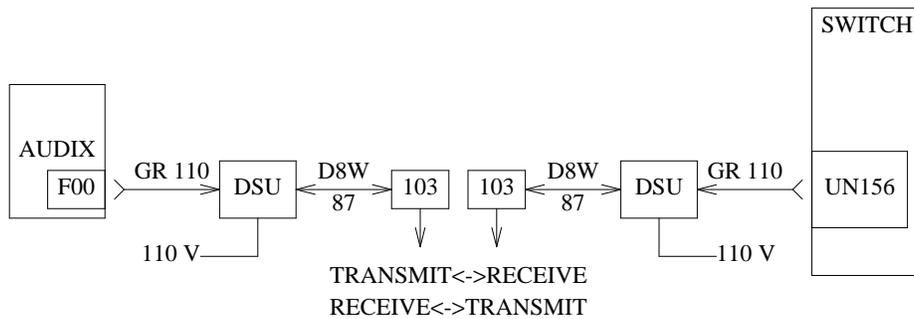
Figure 5-3. Data Link Cabling Using DSUs

Set the DSU for internal timing and 9600 baud (details are in Chapter 9, *Terminal, Printer, and Modem Installation*).

CABLING THE ALARM LINK

The alarm port (D03) automatically reports AUDIX system problems through the switch. Remote service personnel discover the alarm when they dial in through the AUDIX maintenance port. You will connect the maintenance port in Chapter 9, *Terminal, Printer, and Modem Installation*.

Use this section to connect the alarm link to the switch.

NOTE	The following installation is required only if the customer has purchased remote maintenance support.

Call your remote maintenance service center and ask for the Software Support group. Request an alarm-reporting phone number and an account number.

IMPORTANT: The remote maintenance center must have a Silent Knight Autodialer receiver.

Parts List

- One ED-1E434-11, Group 300 or Group 317 cable

- One Silent Knight Autodialer and 6 V battery

Procedure

Step 1:   Install the Silent Knight Autodialer onto the yellow cross-connect field backing (plywood).

           See the installation manual that shipped with the Silent Knight Autodialer.

Step 2:   Nine jumper wires are located on the autodialer unit. Cut jumper number 4. Leave the rest of the wires intact.

Step 3:   Punch-down the six leads coming out of the Silent Knight Autodialer to the cross-connect field.

Step 4:   Connect the 25-pair cable from the AUDIX system D03 connector to a spare connector on the yellow cross-connect field.

Step 5:   AUDIX system alarm circuits appear on D03 cable pins 47/22 (major) and pins 44/19 (minor). These pins correspond to connector block terminals 43/44 (O/V) and 37/38 (BR/Y), respectively.

           Patch the AUDIX system major alarm circuit to channel 1 of the autodialer. Patch the AUDIX system minor alarm circuit to channel 2. See Figure 5-4, *Silent Knight Autodialer Wiring Diagram*.
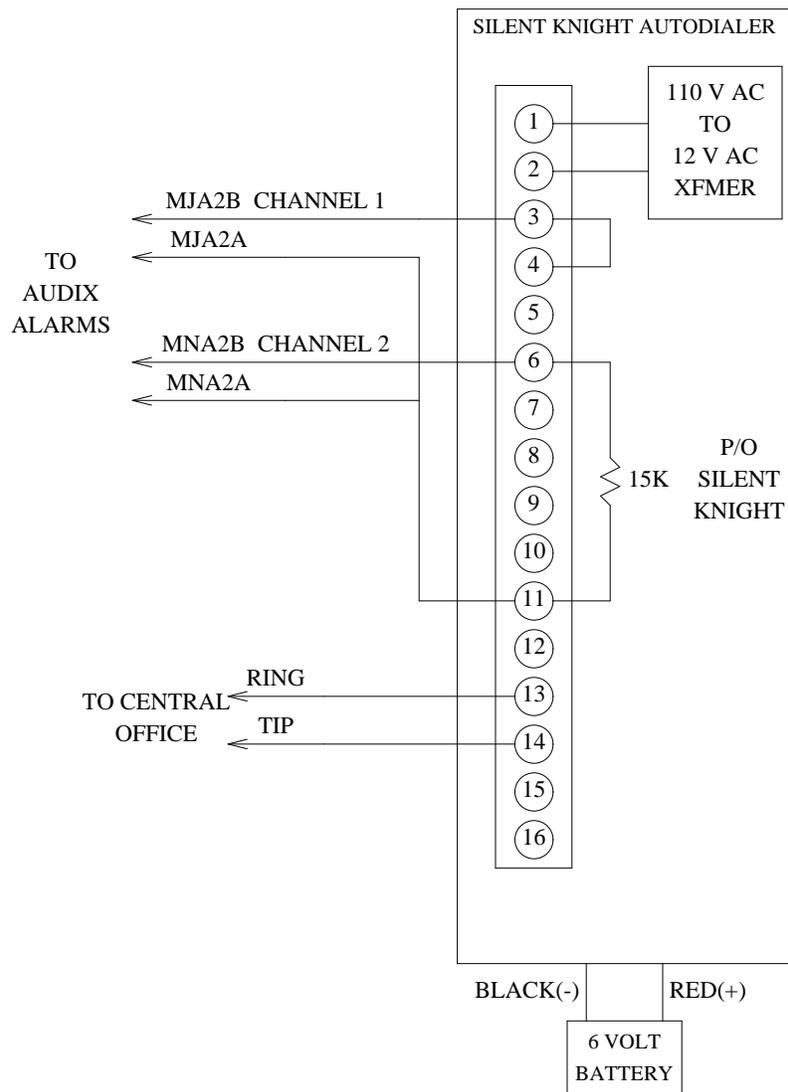
Figure 5-4. Silent Knight Autodialer Wiring Diagram

Step 6:   Wire the tip and ring from terminals 13 and 14 of the Silent Knight to a Central Office (CO) connection.

Step 7:   The power for the autodialer is provided from 120 volts AC through a transformer that cuts the voltage down to 12 volts AC. Verify that this power source is connected to terminals 1 and 2 on the autodialer.

Step 8: A 6-volt battery must be connected to the black (negative) and red (positive) battery wires on the autodialer.

WARNING

Verify that the 12-volt transformer is unplugged before setting the dialed digits. Otherwise, the autodialer may be damaged.

Step 9: This autodialer can dial between 3 and 13 digits. At the top of Figure 5-5, *Silent Knight Autodialer Sample Settings*, the autodialer is set for a local call. At the bottom, the autodialer is set for a long distance call.

To set the autodialer, open the door from the right. Place screws through the option holes and secure them with nuts.

Step 10: After installing the autodialer, test the unit by momentarily jumping screws 5 and 11. This will dial the remote maintenance center and report alarm code 9. If the battery is low, the autodialer will report alarm code 8.

IMPORTANT: The remote maintenance center requires a Silent Knight Autodialer receiver.

Alarm Code	Usage
1	Channel 1
2	Channel 2
3	Channel 3
4	Channel 4
5	Channel 5
8	Low Battery
9	Alarm Test

```
        PREFIX DIGITS      7-DIGIT NUMBER    ACCOUNT

   S    ◎ ◎ ◎ ◎ ◎ ◎        ○ ○ ○ ○
   1    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ◎ ○ ○    ○ ○ ○
   2    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ○    ◎ ○ ○
   3    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ○    ○ ○ ○
   4    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ◎    ○ ○ ○
   5    ○ ○ ○ ○ ○ ○        ◎ ◎ ◎ ○ ○ ○ ○    ○ ◎ ○
   6    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ◎ ○    ○ ○ ○
   7    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ○    ○ ○ ◎
   8    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ○    ○ ○ ○
   9    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ○    ○ ○ ○
   0    ○ ○ ○ ○ ○ ○        ○ ○ ○ ◎ ○ ○ ○    ○ ○ ○

        A B C D E F        G H I J K L M    X Y Z
```

Local Call to 555-0164 With Account Code 257.
Since prefix digits are not used, they are set as skips.

```
        PREFIX DIGITS      7-DIGIT NUMBER    ACCOUNT

   S    ○ ○ ○ ○ ◎ ◎        ○ ○ ○ ○
   1    ◎ ○ ◎ ○ ○ ○        ○ ○ ◎ ○ ○ ◎ ○    ○ ○ ○
   2    ○ ○ ○ ◎ ○ ○        ○ ○ ○ ○ ○ ○ ○    ◎ ○ ○
   3    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ○    ○ ○ ○
   4    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ◎ ○ ○    ○ ○ ○
   5    ○ ◎ ○ ○ ○ ○        ○ ◎ ○ ○ ○ ○ ◎    ○ ◎ ○
   6    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ○    ○ ○ ○
   7    ○ ○ ○ ○ ○ ○        ◎ ○ ○ ○ ○ ○ ○    ○ ○ ◎
   8    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ○    ○ ○ ○
   9    ○ ○ ○ ○ ○ ○        ○ ○ ○ ○ ○ ○ ○    ○ ○ ○
   0    ○ ○ ○ ○ ○ ○        ○ ○ ○ ◎ ○ ○ ○    ○ ○ ○

        A B C D E F        G H I J K L M    X Y Z
```

Call to 1-512-751-0415 With Account Code 257. Prefix digits
must start in Row A. Skips are used to fill in through Row F.

Figure 5-5. Silent Knight Autodialer Sample Settings

Continue to Chapter 9, *Terminal, Printer, and Modem Installation.*

6. 1A ESS Switch Configuration

This chapter provides step-by-step instructions to cable the AUDIX system to the demarcation point of a 1A ESS Switch.

These procedures are for an AUDIX system installed on the customer premises. You will install the lines from the 1A ESS Switch up to the demarcation point. One analog line is required for each AUDIX voice port, one for the AUDIX system alarm circuit, and one for remote maintenance locations (if provided). One full duplex channel on the Input/Output Processor (IOP) frame installed up to the demarcation point is required for the data link. It includes a section for each of the following:

- 1A ESS Switch Preparations

- AUDIX System Preparations

- Cabling the Voice Ports

- Cabling the Data Link

- Cabling the Alarm Link

For problems with the factory-installed cables within the AUDIX system equipment, refer to *AUDIX Maintenance for Tier 1* (585-305-106).

1A ESS SWITCH PREPARATIONS

Verify that the 1A ESS Switch is translated and ready for the AUDIX system installation by contacting your supervisor or the Account Team.

CO Requirements

The customer and the local operating company are responsible for translating the 1A ESS Switch at the Central Office (CO) to accept the AUDIX system. The local operating company must translate the 1A ESS Switch *before* you begin the installation. The following switch requirements are provided only to aid you with troubleshooting.

The following are required from the CO:

- The Simplified Message Service Interface (SMSI) or Simplified Message Desk Interface (SMDI) link provides the data link connection between the AUDIX system and the switch. Early systems use only computer mode; 1AE9 or later generics may use terminal mode for a more robust interface. The SMSI link must satisfy the following criteria:

  — An RS-232C, full duplex, asynchronous interface

  — ASCII operation

— A transmission rate of 1200 bps

- The AUDIX system needs some type of Message Waiting Indication (MWI) from the switch to notify users that they have a message. MWI is either audible (stutter dial tone) or visual (message waiting lamp). The switch provides message notification based on the following software loads:

  — Early versions of Generic 7 do *not* provide MWI. In this case, the AUDIX system uses Outcalling as message notification. Later versions, (1AE7A.08 or later) use audible MWI.

  — Generic 8 provides audible MWI only in 1AE8.02 and later.

  — Generic 9 provides audible and visual MWI in 1AE9.03 and later.

- The AUDIX system requires a full duplex channel on the IOP frame. Some early IOP Frames provide only half duplex channels and the AUDIX system does *not* support half duplex at this time. The IOP Frame must have a 4-wire 3002 analog voice Private Line (PL) data circuit that supports the SMSI feature. This circuit connects to an 829 Channel Interface Unit or equivalent, such as an OMNI port, located on the customer premises.

- The customer must install a 829 Channel Interface Unit (or equivalent) on the customer premises and cable it down to a standard 4-pin modular phone jack. This jack is usually the demarcation point and the end of the CO responsibility.

- The CO must have up to 32 two-way, loop-start, Centrex analog voice lines in a Multi-Line Hunt Group (MLHG) set up for the AUDIX system as follows:

  — The number of queue slots in the group must be based on traffic.

  — The number of analog lines must match the number of AUDIX voice ports.

  — These analog lines must be installed up to the customer's cross-connect field (the demarcation point).

  — The AUDIX voice ports must be allowed to originate calls (needed for the Outcalling feature).

  — Queuing (including optional music or recorded announcements) may be assigned to the hunt group if desired. Uniform Call Distribution (UCD) queuing ability may vary on different 1A ESS Switches.

  — *Optional*: Some AUDIX system ports may be assigned to a separate hunt group on the switch to support the AUDIX Automated Attendant feature (for example, if heavy Automated Attendant use is expected). Outside callers can then be directed to the Automated Attendant MLHG, while AUDIX system subscribers can dial directly into the main MLHG.

    If desired, other AUDIX ports may be set aside to support the Outcalling feature (for example, on a 1A ESS Switch Generic 7). This ensures that the AUDIX system has enough ports available to notify subscribers through Outcalling that they have new messages on the AUDIX system. The Outcalling feature always uses the highest numbered ports on the AUDIX system first (such as 29 to 32); these ports should be translated as individual station lines on the switch.

    Any ports that are set aside for specific Automated Attendant or Outcalling use are subtracted from the total number of ports available in the main AUDIX system hunt group. For example, if a 32-port system has 6 ports in a MLHG for Automated Attendant calls and 4 individual station lines set aside for Outcalling, 22 ports are available in the main AUDIX system MLHG for direct Voice Mailbox calls and redirected Call Answer calls.

  — One two-way analog station line is required for reporting AUDIX system alarms to a remote services site, if necessary.

— One two-way analog station line is required that allows remote services personnel to dial-in to the AUDIX system to do remote maintenance, if necessary.

— The lines for the AUDIX system subscribers (Centrex telephones) must have Call Forwarding with optional forwarding to the AUDIX system MLHG. This is needed for the AUDIX system Call Answer feature. The 1A ESS Switch bases internal call forwarding on the Centrex group.

Information Needed by the Technician

You will need the following information to complete the AUDIX system installation. Ask the Account Team to give you the following:

- The CO exchange number or prefix (NXX) of the Centrex users

- The IOP circuit number used for the data link

- The Multi-Line Hunt Group (MLHG) or Message Desk Center (MDC) number(s); this number is used as the first part of the AUDIX system voice port numbers assigned on the `system : translation : voice port` form

AUDIX SYSTEM PREPARATIONS

This section outlines the AUDIX system equipment required to install the AUDIX system with a 1A ESS Switch.

Make sure there is a TN547(B) circuit pack installed in slot 15 of the AUDIX system base cabinet. This is the data port required by the data link to the 1A ESS Switch.

The AUDIX system side of the data link consists of:

- 202T Private Line modem with RS-232C to RS-449 cable

- ED-1E434-11, Group 13 cable (fixed length, 36-inch, RS-232C to RS-449), or

  ED-1E434-11, Group 110 cable (fixed length, 50-foot, RS-232C to RS-449), or

  ED-1E434-11, Group 13 cable (fixed length, 36-inch, RS-232C to RS449) and M25A cable (orderable from 5 to 50 feet, RS-232C to RS-232C extender).

- M8K modular cord.

A device such as the Silent Knight Autodialer is required to report AUDIX system alarms to a remote location. The remote location must have a Silent Knight Autodialer receiver.

AUDIX Networking is provided only by a connection to a switch. Refer to *AUDIX Networking* (585-300-903) for details. This section provides step-by-step instructions to cable the AUDIX system to the demarcation point.

CABLING THE VOICE PORTS

The voice links between the AUDIX system and the switch connect callers from a compatible switch port to an AUDIX system voice port. Internal or external callers are directed through the switch to a call-distribution group or hunt group of analog ports associated with the AUDIX system. These ports then connect the callers to the appropriate extension on the AUDIX voice ports.

The 1A ESS Switch can be set up with one, two, or all three of the following:

- A MLHG for voice mail and call answer

- A MLHG for the AUDIX Automated Attendant

- One or more individual lines for AUDIX Outcalling

Figure 6-1, *AUDIX System Voice Port Cabling* and the following steps show how to connect an AUDIX system to a 1A ESS Switch that requires all three applications. If the AUDIX system you are installing does not require a separate hunt group for Automated Attendant and separate lines for Outcalling, connect all voice ports to one MLHG.

NOTE	If individual lines are set up for Outcalling, connect these ports last using the highest numbered AUDIX system ports. As shown in the example, ports 29 through 32 are used. In a 16-port system with two Outcalling ports, use ports 15 and 16.

Step 1:   Inside D00 (see Figure 6-1, *AUDIX System Voice Port Cabling*), AUDIX system Voice Port 1 is identified by the White/Blue wire pair. Connect this pair to Terminal 1 of the Call Answer/Voice Mail MLHG.

Step 2:   Inside D00, connect the White/Brown pair to Terminal 2 of the Call Answer/Voice Mail MLHG.

Step 3:   Repeat this procedure until voice ports 1 through 8 are connected to the Call Answer/Voice Mail MLHG.

Step 4:   D01 contains voice ports 9 through 16. The same wire colors are used inside this cable. Connect voice ports 9 through 16 to the Call Answer/Voice Mail MLHG.

Step 5:   D06 contains voice ports 17 through 24. Connect voice ports 17 through 20 to the Call Answer/Voice Mail MLHG.

Connect voice ports 21 through 24 to the Automated Attendant MLHG.

Step 6:   D07 contains voice ports 25 through 32. Connect voice ports 25 through 28 to the Automated Attendant MLHG.

Connect voice ports 29 through 32 to four individual lines.
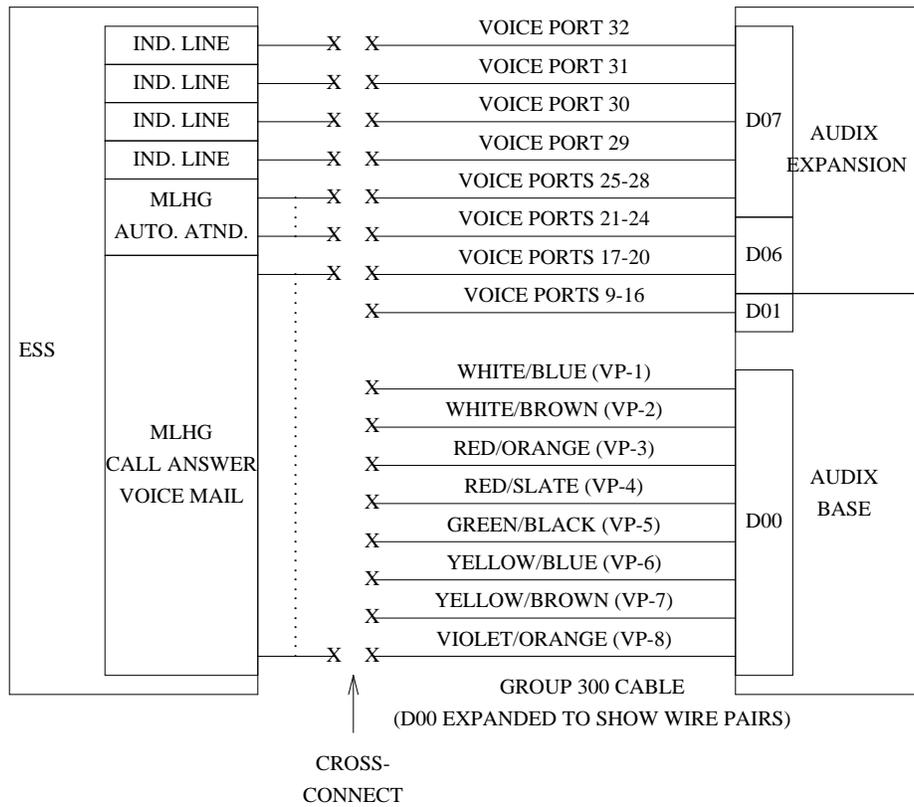
Figure 6-1. AUDIX System Voice Port Cabling

CABLING THE DATA LINK

The data link is the connection from the AUDIX system cabinet (F00) to the switch that enables nonvoice messages, or data, to pass between the AUDIX system and the switch.

Step 1:   Option settings inside the 202T modem must be changed. Options set at the factory will not work with the AUDIX system. See Figure 6-2, *202T Modem Dip Switch Locations*, for dip switch locations. The dashed lines in Figure 6-2 indicate a board that must be removed to get to switches S2 and S3. Remove the board and set the switch options according to Table 6-1, *Option Settings for the 202T Modem*. In the table, an ''X'' means the rocker should be down on the side the numbers are on.

After setting all switch options, return the board to its proper position, and connect the modem to the data link.
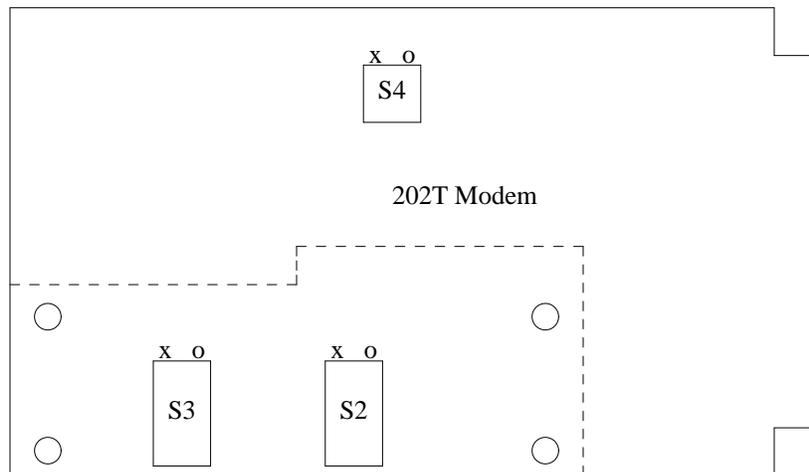
Figure 6-2. 202T Modem Dip Switch Locations

Table 6-1. Option Settings for the 202T Modem *(Part 1 of 2)*

Switch S2				
Segment	**Position**	**Feature**	**Option**	**Description**
1	X	4-Wire Operation	ZK*	—
2	X	Soft Turnoff and Squelch Intervals	Z	O (soft turnoff) O (squelch)
3	X	Fast Carrier Detection	N	Out (Normal Mode)
4	O	Clear-to-Send Interval	M*	8 ms
5	O	—	—	—
6	O	Soft Turnoff and Squelch Intervals	Z	O (soft turnoff) O (squelch)
7	X	Soft Turnoff and Squelch Intervals	Z	O (soft turnoff) O (squelch)
8	O	Soft Turnoff and Squelch Intervals	Z	O (soft turnoff) O (squelch)
9	X	—	—	—
0	O	Clear-to-Send Interval	M*	8 ms

Switch S3				
Segment	**Position**	**Feature**	**Option**	**Description**
1	O	4-Wire Operation	ZK*	—
2	O	Compromise Delay Equalization	ZU*	Maximum
3	O	Channel Condition	ZY*	Basic
4	O	4-Wire Operation	ZK*	—
5	O	Compromise Amplitude Equalization	ZW*	Maximum
6	X	4-Wire Operation	ZK*	—
7	X	4-Wire Operation	ZK*	—
8	X	4-Wire Operation	ZK*	—
9	X	4-Wire Operation	ZK*	—
0	X	4-Wire Operation	ZK*	—

* Factory furnished
X = Rocker down on the side adjacent to the numbers (closed)
O = Rocker up on the side adjacent to the numbers (open)

(Continued)

TABLE 6-1. Option Settings for the 202T Modem *(Part 2 of 2)*

Switch S4				
Segment	**Position**	**Feature**	**Option**	**Description**
1	X	Continuous Carrier	ZN	In
2	O	Carrier Detector Reset	ZM*	Out
3	X	State of CC (Data Set Ready) During Analog Loopback	YB	On

* Factory furnished
X = Rocker down on the side adjacent to the numbers (closed)
O = Rocker up on the side adjacent to the numbers (open)

Step 2:   Figure 6-3, *AUDIX System Data Link to a 1A ESS Switch*, shows how to cable the AUDIX system data link to the demarcation point. Connect the M8K modular cord from the 202T modem into the phone jack that leads to the 829.
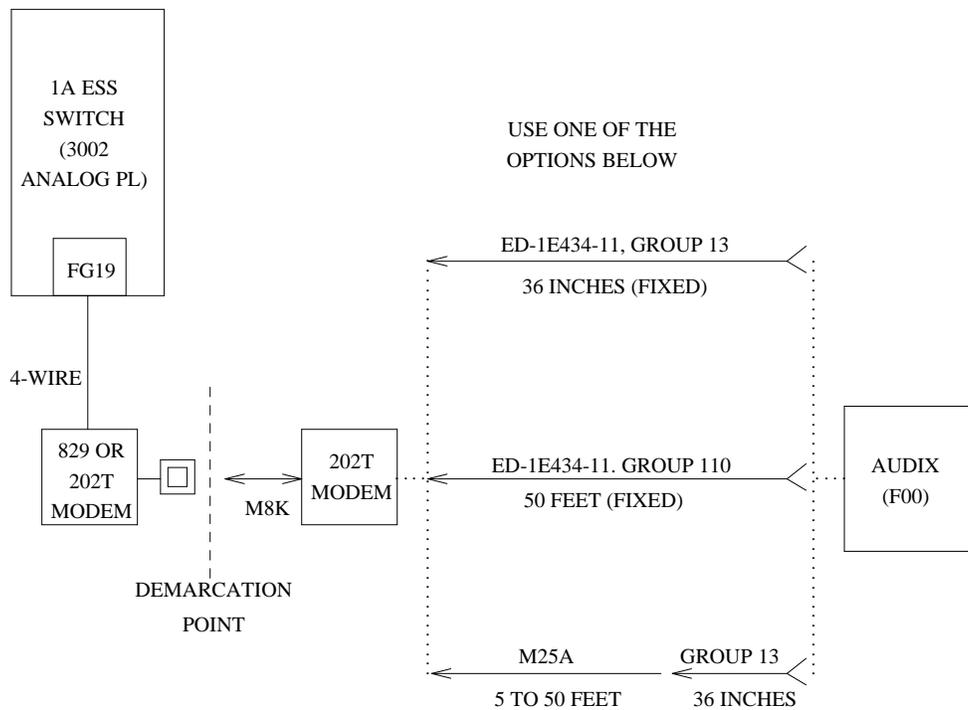
Figure 6-3. AUDIX System Data Link to a 1A ESS Switch

CABLING THE ALARM LINK

The AUDIX system reports alarms locally using LEDs mounted on the equipment and by keeping an alarm log (displayable on the maintenance terminal). If desired, these alarms can also be reported to a remote location. A major alarm circuit and a minor alarm circuit appear at D03. For steps to install a Silent Knight Autodialer, see *Alarm Cabling* in Chapter 5.

7. 5ESS Switch Configuration
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This chapter provides step-by-step instructions to cable the AUDIX system to the demarcation point of a 1A ESS Switch.

These procedures are for an AUDIX system installed on the customer premises. You will install the lines from the 1A ESS Switch up to the demarcation point. One analog line is required for each AUDIX system voice port, one for the AUDIX system alarm circuit, and one for remote maintenance locations (if provided). If you use a a Basic Rate Interface (BRI) line (2-wire, ''U'' interface), you will install it up to a Network Termination 1 (NT1). Ask the customer, Account Team, or project manager to provide the location of the demarcation point.

There is a section for each of the following:

- 5ESS Switch Preparations
- AUDIX System Preparations
- Cabling the Voice Ports
- Cabling the Data Link
- Cabling the Alarm Link

For problems with the factory-installed cables within the AUDIX system equipment, refer to *AUDIX Maintenance for Tier 1* (585-305-106).

5ESS SWITCH PREPARATIONS

Verify that the 5ESS Switch is translated and ready for the AUDIX system installation by contacting your supervisor or the Account Team.

CO Requirements

The customer and the local operating company are responsible for translating the Central Office (CO) to accept the AUDIX system. The local operating company must translate the 1A ESS Switch *before* you begin the installation. The following switch requirements are provided only to aid you with troubleshooting.

The following is required from the CO:

- Up to 32 analog ports assigned to a Multi-Line Hunt Group (MLHG) are required for AUDIX system Call Answer and voice mail ports. If an Applications Processor (AP) is used for the AUDIX system data link, MLHG 1 to 63 must be used. An AP is part of the Advanced Communications Package (ACP).

- Individual analog ports are required for AUDIX system Automated Attendant ports. Although not required, it is recommended that AUDIX system Outcalling also use individual analog ports. Both types of ports are optional.

- An individual analog port is required for reporting AUDIX system alarms to a remote location.

- A Basic Rate Interface (BRI) line or an ACP TTY port is required for the data link to the AUDIX system. An ACP connection does *not* require any additional Customer Provided Equipment (CPE). A BRI line requires the following CPE:

  — Network Termination 1 (NT1)

  — Standalone NT1 Power Supply

  — Two D6AP-87 6-pin modular cords

  — One D8W-87 8-pin modular cord

  — Brite cards are required if the 5ESS Switch and NT1 are separated by more than 5km. Refer to AT&T Practice, 533-700-100.

- The analog lines to the AUDIX system must be assigned to a Message Service Center (MSC) MLHG. This hunt group must use Uniform Call Distribution (UCD) and must be assigned to a Deluxe Message Service System (MSS) group (ISDN Messaging Service).

- A BRI line, if used, must be set up in Office Dependent Data (ODD) as an API. This link must be an OB+D link with D-channel packet switching. See *5ESS Switching System Installation Procedures Handbook 555*, section 487.

- An ACP, if used for the data link, requires a spare TTY port.

- User lines must have:

  — The Deluxe MSS feature

  — Call Forwarding assigned in ODD. The destination must be the lead extension/number of the AUDIX system MLHG.

  — Message Waiting Indication (MWI), either a lamp, stutter tone, or both.

  — If Leave Word Calling (LWC) is used, users must subscribe to either LWC-Incoming and Outgoing or LWC-Outcalling Only.

  — Attendant coverage must be set to ''yes''.

Refer to the *BRCS Assignment Guide 1* (5D5-200-100) for more information.

Information Needed by the Technician

You will need the following information to complete the AUDIX system installation. Ask the Account Team to give you the following:

- The CO exchange number or prefix (NXX) of the Centrex users

- The BRI line (0B+D link circuit number) and the Line Card Equipment Number (LCEN), a.k.a. LEN or OE — eight digits), if used

- The Advanced Communications Package (ACP) TTY port, if used

- The AUDIX system Call Answer/Voice Mail Multiline Hunt Group (MLHG) number

- The AUDIX system Automated Attendant MLHG number, if used

- The Business Customer ID (BCID) — (five digits)

AUDIX SYSTEM PREPARATIONS

This section outlines the AUDIX system equipment required when installing the AUDIX system with a 5ESS Switch.

Make sure there is a TN547(B) MPSI circuit pack installed in slot 15 of the AUDIX system base cabinet. This is the data port required by the data link to the 5ESS Switch.

The AUDIX system side of a BRI line interface consists of:

- One Switch Communications Adapter (SCA) with access to a 120 V, 60Hz, 3-wire outlet.

- One D8W-87 8-pin modular cord

- One H600-258, Group 1 null-modem cable (or ED-1E434-11, Group 350 cable)

- One ED-1E434-11, Group 110 RS-449 to RS-232C cable

The AUDIX system side of an ACP interface consists of an ED-1E434-11, Group 110 cable and an H600-258, Group 1 cable.

A device such as the Silent Knight Autodialer is required to report AUDIX system alarms to a remote location. The remote location must have a Silent Knight Autodialer receiver.

AUDIX Networking can be provided by a connection to any type of switch. See *AUDIX Networking* (585-300-903).

CABLING THE VOICE PORT

The voice links between the AUDIX system and the switch connect callers from a compatible switch port to an AUDIX voice port. Internal or external callers are directed through the switch to a call-distribution group or hunt group of analog ports associated with the AUDIX system.

The 5ESS Switch can be set up with one, two, or all three of the following:

- A MLHG for voice mail and call answer

- A MLHG for the AUDIX system Automated Attendant

- One or more individual lines for AUDIX system Outcalling

Figure 7-1, *AUDIX System Voice Port Cabling*, and the following steps show how to connect an AUDIX system to a 5ESS Switch that requires all three applications. If the AUDIX system does not require a separate hunt group for Automated Attendant and separate lines for Outcalling, connect all voice ports to one MLHG.

NOTE	If individual lines are set up of Outcalling, connect these ports last using the highest numbered AUDIX system ports. As shown in the example, ports 29 through 32 are used. In a 16-port system with two outcalling ports, ports 15 and 16 would be used.

Step 1:   Inside D00 (see Figure 7-1, *AUDIX System Voice Port Cabling*), AUDIX system Voice Port 1 is identified by the White/Blue wire pair. Connect this pair to Terminal 1 of the Call Answer/Voice Mail MLHG.

Step 2:   Inside D00, connect the White/Brown pair to Terminal 2 of the Call Answer/Voice Mail MLHG.

Step 3:   Repeat this procedure until voice ports 1 through 8 are connected to the Call Answer/Voice Mail MLHG.

Step 4:   D01 contains voice ports 9 through 16. The same wire colors are used inside this cable. Connect voice ports 9 through 16 to the Call Answer/Voice Mail MLHG.
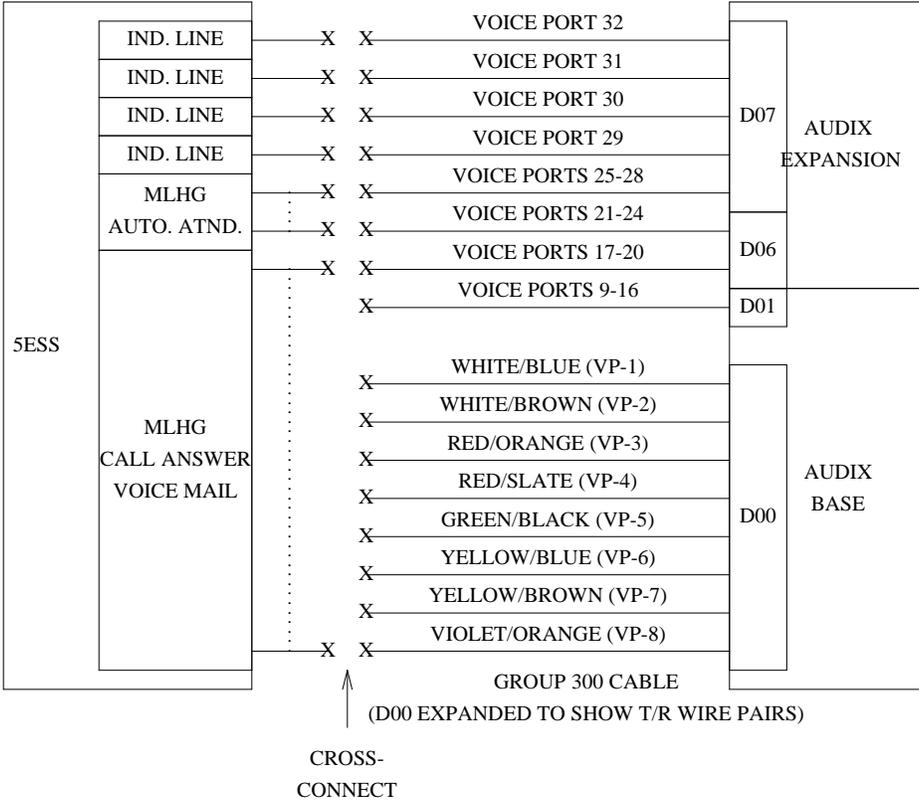
Figure 7-1. AUDIX System Voice Port Cabling

Step 5:   D06 contains voice ports 17 through 24. Connect voice ports 17 through 20 to the Call Answer/Voice Mail MLHG.

Connect voice ports 21 through 24 to the Automated Attendant MLHG.

Step 6:   D07 contains voice ports 25 through 32. Connect voice ports 25 through 28 to the Automated Attendant MLHG.

Connect voice ports 29 through 32 to four individual lines.

CABLING THE DATA LINK

The data link is the connection from the AUDIX system cabinet (F00) to the switch that enables nonvoice messages, or data, to pass between the AUDIX system and the switch.

The AUDIX system connects to a 5ESS Switch by using one of the following data links:

- BRI line

- Advanced Communications Package (ACP)

BRI Connection

Use the following steps for a BRI connection:

Step 1:   Remove the top of the SCA. Fifteen option switch positions are located inside (see Figure 7-2, *SCA Option Settings*). Each of the 15 switch positions contains eight rocker switches (1-8). Each switch position sets two digits (rockers 1 through 4 set one digit and rockers 5 through 8 set another). Use Figure 7-2 as a reference for the switch settings.
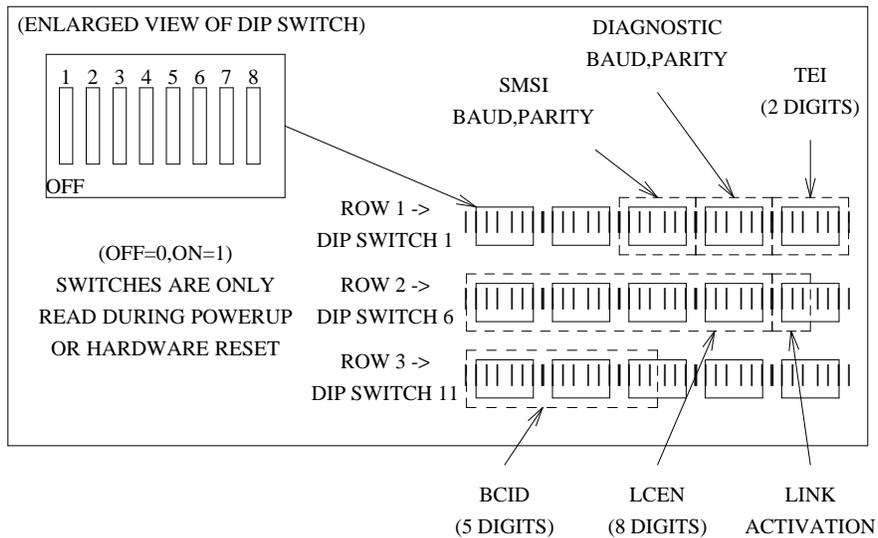
Figure 7-2. SCA Option Settings

NOTE
One or more IC sockets may be empty. This is normal.

Step 2:   Set Simplified Message Service Interface (SMSI) baud rate (Row 1, Switch 3, Rockers 1-4):

— 1200bps — **off-on-off-on**

— 2400-bps — **off-on-on-off**

Step 3:   Set SMSI Parity (Row 1, Switch 3, Rockers 5-8) to **off-off-off-on** (even parity with seven data bits and one stop bit).

Step 4:   Set the Diagnostic Baud Rate (Row 1, Switch 4, Rockers 1-4) — This must match the setting for the SMSI baud rate.

Step 5:   Set Diagnostic Parity (Row 1, Switch 4, Rockers 5-8) — This must match the setting for the SMSI parity.

Step 6:   Set Terminal Endpoint Identifier (TEI) [Row 1, Switch 5, Rockers 1-4 and 5-8] — The TEI is a 2-digit number and should be set to ''01''.

Rockers 1-4 — **off-off-off-off**

Rockers 5-8 — **off-off-off-on**

Step 7:   Set the LCEN — Row 2, Switches 6 through 9, Rockers 1-4 and 5-8. The LCEN consists of eight digits. Use Table 7-1, *Decimal to Binary Conversion*, to convert the decimal number to binary.

Table 7-1. Decimal to Binary Conversion

Decimal	Binary (Rockers 1-4 or Rockers 5-8)			
0	off	off	off	off
1	off	off	off	on
2	off	off	on	off
3	off	off	on	on
4	off	on	off	off
5	off	on	off	on
6	off	on	on	off
7	off	on	on	on
8	on	off	off	off
9	on	off	off	on

— Row 2, Switch 6, Rockers 1-4 set the first (most significant) digit of the LCEN.

— Row 2, Switch 6, Rockers 5-8 set the second digit of the LCEN.

— Row 2, Switch 7 sets the third and fourth digits of the LCEN.

— Row 2, Switch 8 sets the fifth and sixth digits of the LCEN.

— Row 2, Switch 9 sets the seventh and eighth digits of the LCEN.

Step 8:   Set Link Activation (Row 2, Switch 10, Rockers 1-4) — Verify that these rockers are preset at the factory to **off-on-off-off**.

Step 9:   Set BCID (Row 3, Switches 11 and 12, Rockers 1-4 and 5-8) — The BCID consists of five digits:

— Row 3, Switch 11 sets the first and second digits in the BCID.

— Row 3, Switch 12 sets the third and fourth digits of the BCID.

— Row 3, Switch 13, Rockers 1-4 set the fifth digit of the BCID. Set rockers 5-8 off.

The rest of the switches are unused.

Step 9:   Connect the female end of the Group 110 cable to the F00 connector on the back of the AUDIX system base cabinet. Refer to Figure 7-3, *AUDIX System to 5ESS Switch Data Link Using the SCA*.
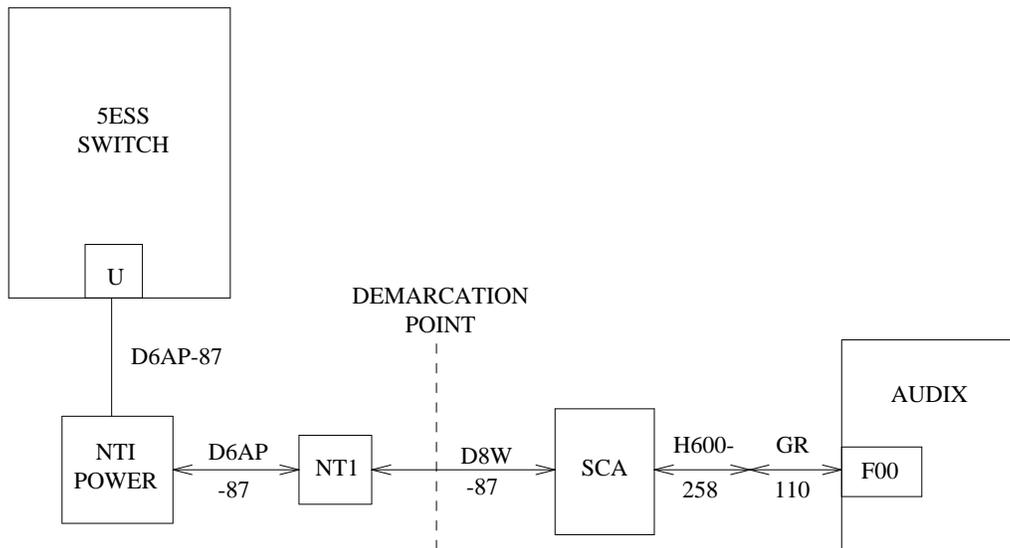
NT1 IS USED ONLY IF AUDIX IS MORE THAN 1 KILOMETER
AWAY FROM THE SWITCH.

Figure 7-3. AUDIX System to 5ESS Switch Data Link Using the SCA

Step 10:   Connect the H600-258, Group 1 (or ED-1E434-11, Group 350) cable between the male end of the Group 110 cable and the API port (P1) on the back of the SCA.

Step 11:   If the AUDIX system is less than 1 kilometer away from the switch, patch a four-wire circuit from the SCA to the switch.

If the AUDIX system is more than 1 kilometer away from the switch, connect the D8W-87 cord between the Integrated Services Digital Network Basic Rate Interface (ISDN BRI) jack on the back of the SCA and the NT1 (see Figure 7-3). The cord can connect directly into the NT1 or can be patched through the wall field.

ACP Connection

Use Figure 7-4, *Data Link Cabling Using the Local ACP*, when the AUDIX system is within 50 feet (15 m) of the ACP. Install the AUDIX system cables up to the demarcation point as shown.
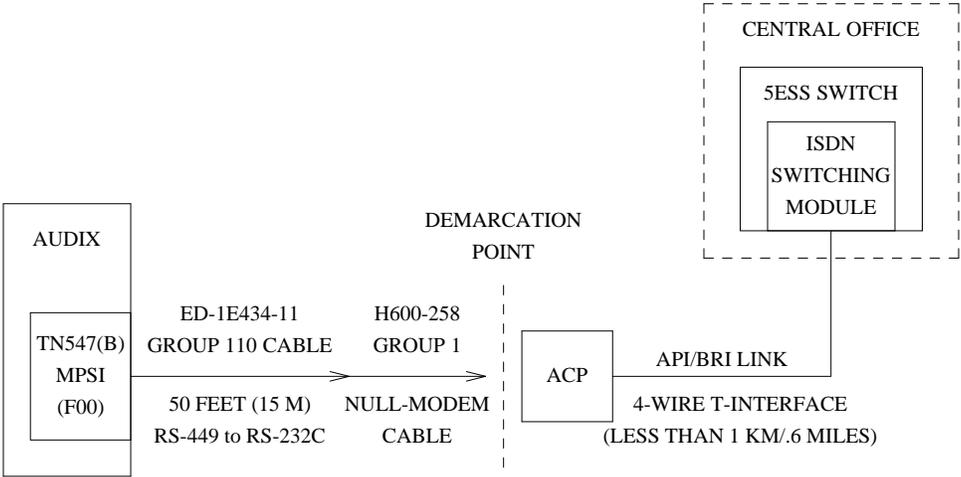
Figure 7-4. Data Link Cabling Using the Local ACP

When the AUDIX system is greater than 50 feet from the ACP, some type of link extension is required. Figure 7-5, *Data Link Cabling Using the Remote ACP*, shows a 202T modem in the link. Install the modem and cables as shown. The 202T modem located on the switch side of the demarcation point should already be installed.
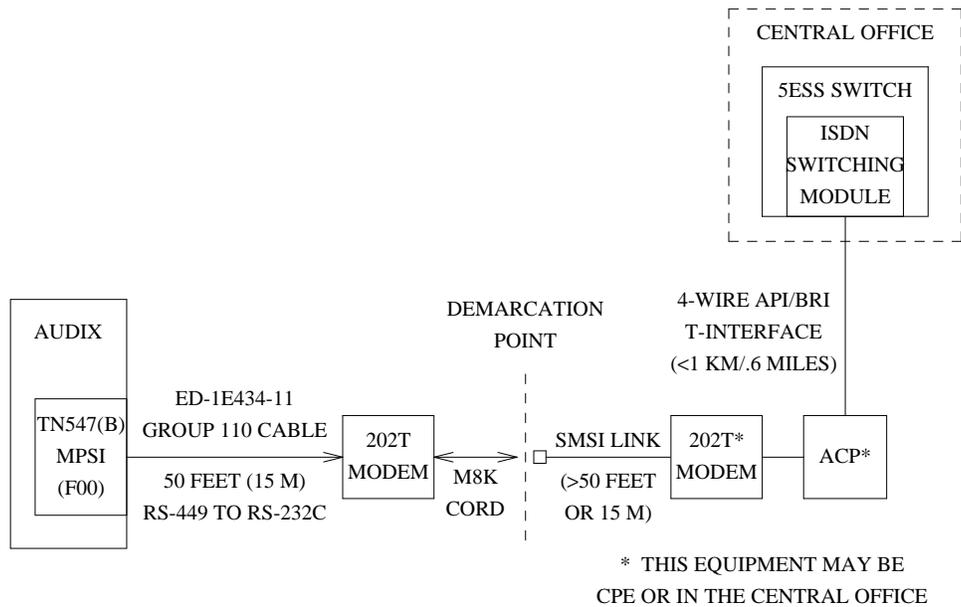
Figure 7-5. Data Link Cabling Using the Remote ACP

You must change the option settings inside the 202T modem. Options set at the factory will not work with the AUDIX system. See Figure 7-6, *202T Modem Dip Switch Locations*, for dip switch locations. The dashed lines in Figure 7-6 indicate a board that must be removed to get to switches S2 and S3. Remove the board and set the switch options according to Table 7-2, *Option Settings for the 202T Modem*. In the table, an ''X'' means the rocker should be down on the side the numbers are on.

After setting all switch options, return the board to its proper position, and connect the modem to the data link.
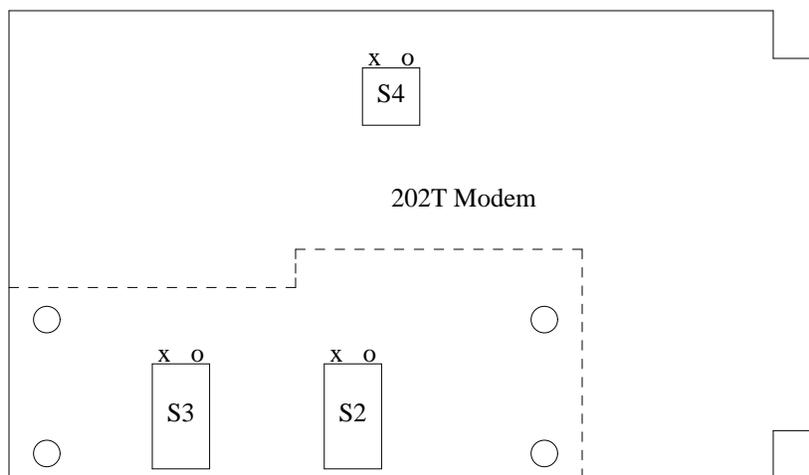
Figure 7-6. 202T Modem Dip Switch Locations

Table 7-2. Option Settings for the 202T Modem *(Part 1 of 2)*

Switch S2				
Segment	**Position**	**Feature**	**Option**	**Description**
1	X	4-Wire Operation	ZK*	—
2	X	Soft Turnoff and Squelch Intervals	Z	0 (soft turnoff) 0 (squelch)
3	X	Fast Carrier Detection	N	Out (Normal Mode)
4	0	Clear-to-Send Interval	M*	8 ms
5	0	—	—	—
6	0	Soft Turnoff and Squelch Intervals	Z	0 (soft turnoff) 0 (squelch)
7	X	Soft Turnoff and Squelch Intervals	Z	0 (soft turnoff) 0 (squelch)
8	0	Soft Turnoff and Squelch Intervals	Z	0 (soft turnoff) 0 (squelch)
9	X	—	—	—
0	0	Clear-to-Send Interval	M*	8 ms

Switch S3				
Segment	**Position**	**Feature**	**Option**	**Description**
1	0	4-Wire Operation	ZK*	—
2	0	Compromise Delay Equalization	ZU*	Maximum
3	0	Channel Condition	ZY*	Basic
4	0	4-Wire Operation	ZK*	—
5	0	Compromise Amplitude Equalization	ZW*	Maximum
6	X	4-Wire Operation	ZK*	—
7	X	4-Wire Operation	ZK*	—
8	X	4-Wire Operation	ZK*	—
9	X	4-Wire Operation	ZK*	—
0	X	4-Wire Operation	ZK*	—

(Continued)

TABLE 7-2. Option Settings for the 202T Modem *(Part 2 of 2)*

Switch S4				
Segment	**Position**	**Feature**	**Option**	**Description**
1	X	Continuous Carrier	ZN	In
2	0	Carrier Detector Reset	ZM*	Out
3	X	State of CC (Data Set Ready) During Analog Loopback	YB	On

* Factory furnished
X = Rocker down on the side adjacent to the numbers (closed)
O = Rocker up on the side adjacent to the numbers (open)

CABLING THE ALARM LINK

The AUDIX system reports alarms locally using LEDs mounted on the equipment and by keeping an alarm log (displayable on the maintenance terminal). If desired, these alarms can also be reported to a remote location. A major alarm circuit and a minor alarm circuit appear at D03. For steps to install a Silent Knight Autodialer, see *Alarm Cabling* in Chapter 5.

Continue to Chapter 9, *Terminal, Printer, and Modem Installation.*

8. AUDIX Standalone System Configuration
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An AUDIX Standalone system supports an AT&T or non-AT&T switch that does *not* have a compatible data link. This chapter describes the installation of an AUDIX Standalone system.

Verify that the switch is set up to accept the AUDIX system by contacting your supervisor or the Account Team.

For a list of switch requirements for an AUDIX Standalone system, see *Switch Administration for AUDIX Voice Messaging* (585-305-505).

Patch each AUDIX system voice port to an analog port at the switch. The AUDIX system external alarm circuits are patched to customer-provided equipment.

CABLING THE VOICE PORTS

The voice links between the AUDIX system and the switch connect callers from a compatible switch port to an AUDIX voice port. Internal or external callers are directed through the switch to a call-distribution group or hunt group of analog ports associated with the AUDIX system.

Figure 8-1, *AUDIX Standalone System Voice Port Cabling*, shows an expanded view of a 25-pair cable connected to the D00 connector on the back of the base cabinet. The D01 connector of the base cabinet contains Voice Pairs 9 through 16. The connectors on the expansion cabinet contain Voice Pairs 17 through 24 (D06) and Voice Pairs 25 through 32 (D07).
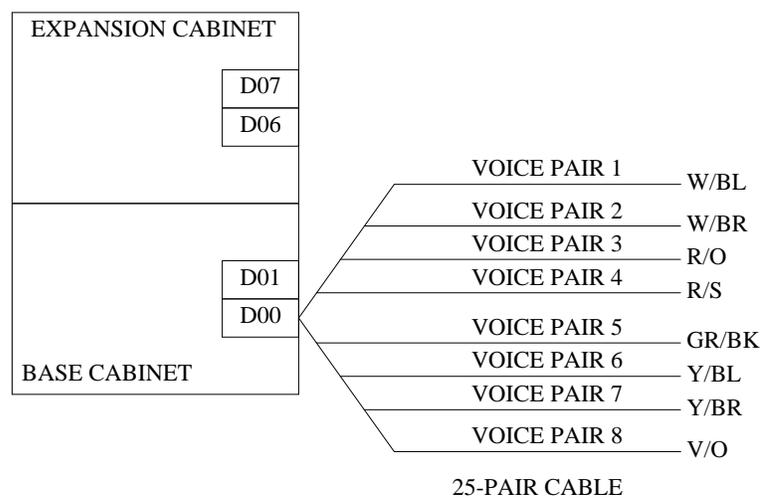
Figure 8-1. AUDIX Standalone System Voice Port Cabling

Step 1:   Connect the appropriate number of 25-pair cables to the cabinet(s) and route the cables to the cross-connect field.

Step 2:   Patch each wire pair to a separate analog switch port. The color codes at the right of Figure 8-1 identify each wire pair.

Step 3:   The switch ports must have the following characteristics:

— The same extension number length as administered on the
    `system : translation : machine : audix/amis/call delivery` form

— Call origination with touch-tone dialing

— Conference and transfer capabilities

CABLING THE ALARM LINK

To report AUDIX system alarms remotely, connect a 25-pair cable to the D03 connector on the back of the AUDIX system base cabinet. Inside this cable, two wire pairs are used:

— Y/BR pair (minor alarms)

— V/O pair (major alarms)

Each pair can be used to trigger some type of alarm device. For steps to install a Silent Knight Autodialer, see *Alarm Cabling* in Chapter 5.

AUDIX STANDALONE IN A DCS NETWORK

Use this section to administer an AUDIX system in a Distributed Communications System (DCS) environment.

The AUDIX system uses the extension number to identify subscribers. The host switch (the switch connected to the AUDIX system) must also use the extension number to differentiate between users at different nodes.

These switches must be administered using local practices to make sure subscribers at remote nodes can access the AUDIX system voice ports. Other than adding new subscribers using the `subscriber : local` form, no other administration is required at the AUDIX system. Do *not* use the `subscriber : remote` form; it is used for AUDIX Networking. Refer to *AUDIX Networking* (585-300-903) for more information.

Continue to Chapter 9, *Terminal, Printer, and Modem Installation.*

9. Terminal, Printer, and Modem Installation

This chapter covers the following topics:

- Installing Maintenance Terminals

- Installing Administration Terminals

- Setting Options

INSTALLING MAINTENANCE TERMINALS

You must install a Local Maintenance Terminal (LMT) next to the AUDIX system cabinet in order to initialize the AUDIX system. For LMT cabling, see Figure 9-1, *AUDIX Local Maintenance Terminal Cabling*. You can relocate the terminal after the installation.

Local Maintenance Cabling
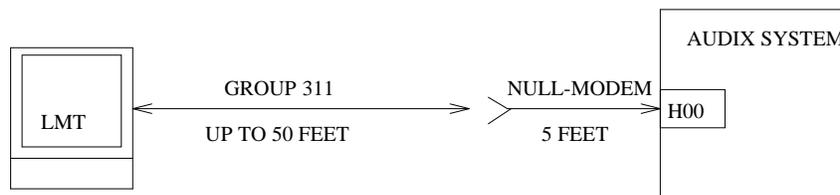
Figure 9-1. AUDIX Local Maintenance Terminal Cabling

> **NOTE** You can use an H600-258, Group 1 or an ED-1E434-11, Group 350 cable as the null-modem cable.

Step 1:   Connect the male end of the null-modem cable to the H00 connector on the back of the AUDIX system cabinet.

Step 2:   Connect the female end of the null-modem cable to one end of the Group 311 cable.

Step 3:   Connect the other end of the Group 311 cable to the appropriate RS-232C connector on the display terminal.

See *Setting Options* later in this chapter for the terminal option settings.

Remote Maintenance Cabling

This cabling provides a dial-up connection to the AUDIX system maintenance port for remote maintenance access. The switch should have Direct Inward Dialing (DID) service for this connection (see Figure 9-2, *AUDIX Remote Maintenance Cabling*). Without DID service, a Central Office (CO) trunk will have to be dedicated to this connection.

Parts List

- One Optima 2400, DM224, or equivalent Hayes-compatible modem
- One 104A adapter
- One ED-1E434-11, Group 311 (RS-232) cable
- One D8W-87 4-pair modular cord
- One analog switch port
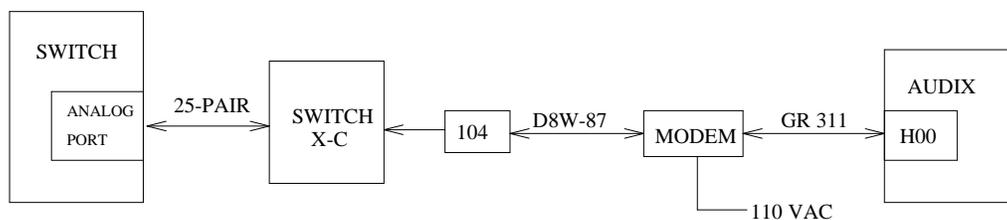
Figure 9-2. AUDIX Remote Maintenance Cabling

Step 1:   Connect the back of the 104A adapter to a spare analog port on the switch cross-connect field. This port should be administered as a DID extension.

Step 2:   Connect the D8W-87 cord from the 104A adapter to the modem. Plug the modem into a 110 VAC outlet.

Step 3:   Connect the RS-232 cable to the modem and route the cable to the back of the AUDIX system cabinet. Plug it into the H00 (MAINT) connector.

To set the options on a 2400 modem, do the following additional steps.

Step 4:   Temporarily connect the modem to the Local Maintenance Terminal (LMT) using an RS-232 cable.

Step 5:   Set the terminal to run at 1200 baud.

Step 6:   Type **at** and press the (RETURN) key on the terminal.

The screen should display OK to indicate the terminal recognizes the modem.

Step 7:   Type the following commands in order, pressing [RETURN] after each one. The word OK should appear after every command.

      a.   **atz0** (reset options to default values)

      b.   **atS0=1** (autoanswer on first ring, set for Hayes Optima modem only)

      c.   **atS37=5** (lock speed at 1200 bps)

      d.   **at&v** (verify S37 value)

      e.   **at&w1** (save settings in user profile 1)

      f.   **at&y1** (designate user profile 1 as the power-up options)

Step 8:   Put the 2400 modem in dumb mode after setting the options. Refer to the installation guidelines shipped with the modem for an illustration of this procedure.

      a.   Power off the modem and disconnect all cables (this includes the power cord, the D8W-87 cord, an optional phone, and the terminal).

      b.   Insert a screwdriver in the notch on the side of the front end cap, then twist the screwdriver to loosen the end cap.

      c.   The dumb mode jumper is located near the left side. It is set at the factory to connect the two rightmost of the three pins for intelligent operation. To enable dumb mode, move the jumper so it connects the two *leftmost* pins.

      d.   Reattach the front end cap, then attach the modem to the RS-232 cable connected to the H00 (MAINT) connector on the AUDIX system.

      e.   Reconnect the modem to the telephone line (the D8W-87 cord), then reconnect the power cable.

      f.   Power up the modem.

Step 9:   Dial into the maintenance port from another terminal/modem. The AUDIX system should answer and provide a login: prompt.

INSTALLING ADMINISTRATION TERMINALS

You can install customer administration terminals in the following ways:

- Local Administration Terminal — A terminal can be installed within 100 feet of the AUDIX system cabinet using direct cabling. The baud rate is 4800 bits per second (bps).

- Extended Local Terminal — A terminal can be located up to 17 miles away from the AUDIX system cabinet using direct cabling and digital data equipment (for example, Local Area Data Set [LADS] or Z3A Asynchronous Data Unit [ADU, Model Z3A]). The baud rate is 4800 bps.

> **NOTE** The LADS has been replaced by the Data Service Unit (DSU) and is no longer orderable. If your customer owns a pair of LADS and wants them installed, see Appendix C, *LADS Installation*.

- Dial-Up Terminal (Analog Connection) — With this arrangement, the AUDIX system can be accessed from any terminal with dialing capabilities. The path from the terminal to the AUDIX system may be through a private network or through the public network. An on-premises terminal could also access the AUDIX system (that is, a terminal connected directly to the switch). A data module at the switch (Optima 2400, DM224, or equivalent Hayes-compatible modem) connects the call to the AUDIX system. The baud rate is 1200 bps.

- Dial-Up Terminal (Digital) — An Modular Processor Data Module (MPDM) installed on the switch can provide digital access for an on-premises display terminal. The baud rate is 4800 bps.

Normally, two maintenance display terminals are installed — a dial-up arrangement for remote maintenance service personnel and a local arrangement for local service personnel. These two terminals must share the MAINT port on the back of the AUDIX system cabinet. The dial-up cable is plugged in for 24-hour monitoring and support, while the local cable is only attached when there is a need for local maintenance support.

The ADMIN port connects the customer's display terminal, which can be either local, extended, dial-up, or a shared arrangement as is the MAINT port.

> **WARNING** **Display terminals that receive power from a load center other than the one powering the AUDIX system cabinet or that are more than 100 feet from the AUDIX system cabinet require ground isolation. Properly adjusted data equipment provides the necessary ground isolation.**

Proper system grounding techniques are important to assure reasonable immunity to electrical interference from nearby equipment, to provide proper shielding of Radio Frequency Interference (RFI), and to protect interface circuits from possible damage. Local terminal equipment connected to the AUDIX system should be powered from the same breaker panel and share a common green-wire ground point at the breaker. Otherwise:

- Electrically isolate green-wire ground from signal ground in the terminal and break the protective ground at the terminal's RS-232C connector. This means that both pins 1 and 7 of the RS-232C connector must be isolated from the green-wire ground at the terminal's AC line cord.

- Provide ground isolation through the use of modems or modem eliminators such as the Z3A ADU.

Data modules and modems require power from inverters if service is to be maintained in the event of an AC power outage.

PC Administration Terminal

A PC can be used as an AUDIX system terminal if the 513 emulation package is used. The PC should be cabled to the AUDIX system using a null-modem cable (ED-1E434-11, Group 350 or H600-258, Group 1), an MPDM, or an AT&T Model 4000 modem. Check with your remote maintenance service center for more details.

Local Terminal Installation

For this arrangement, the display terminal must be within 50 feet of the AUDIX System cabinet (see Figure 9-3, *Local Administration Terminal*). Local terminals do not require dialing to log in to the AUDIX system because direct cabling is used. However, local terminals cannot be used for other purposes and prevent users of other terminals from accessing the AUDIX system. This arrangement runs at 4800 bps.
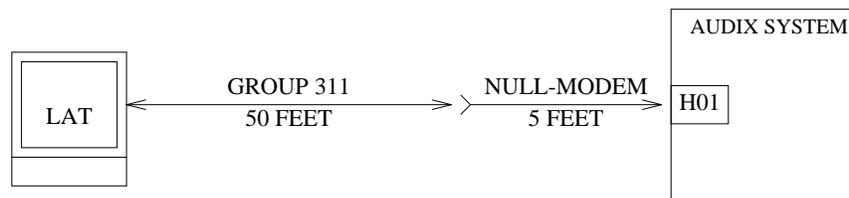
Figure 9-3. Local Administration Terminal

WARNING

Display terminals that receive power from a load center other than the one powering the AUDIX cabinet or that are more than 100 feet from the AUDIX cabinet require ground isolation. Properly adjusted data equipment provides the necessary ground isolation.

Parts List

- One 715 Business Communications System (BCS) terminal or equivalent (such as the 513 BCT, 610 BCT, 615 MT, or TELETYPE 4415 or 5420)

- One ED-1E434-11, Group 311 cable

- One ED-1E434-11, Group 350 cable or one H600-258, Group 1

- One 513 emulation cartridge (for 610 or 615 only)

Procedure

Step 1:   Connect the male end of the null-modem cable to the MAINT or ADMIN plug on the back of the AUDIX system cabinet.

Step 2:   Connect the female end of the null-modem cable to one end of the Group 311 cable.

Step 3:   Connect the other end of the Group 311 cable to the appropriate RS-232C connector on the display terminal.

Step 4:   Label the AUDIX system end of the cable for easy identification.

Extended Local Terminal Installation

A local terminal can be located up to 17 miles from the AUDIX system when data modules are used. Asynchronous Data Units (ADUs) are recommended inside of 7,000 feet. Terminals greater than 7,000 feet from the AUDIX system require a pair of DSUs or LADS. The LADS, DSU, and ADU data modules run at 4800 bps.

ADUs

Figure 9-4, *Extended Local Terminal Using ADUs*, shows an ADU configuration. See the *Z3A ADU Product Manual* (555-401-708) for more information. The ADU requires no option settings.

Parts List:

- Two Z3A ADU data modules

    — Z3A1 (Z3A2 with an 18-inch M8AK-87 male cord

    — Z3A2

    — Z3A4 (Z3A2 with an 18-inch M8AJ-87 female cord

- Two D8W-87 (8-conductor) cords

- Two 103A or 104A wall jacks

- One D8AM-87 crossover cord

> | NOTE | This ADU arrangement requires external power on the AUDIX system side.

    — One 400B adapter

    — One D6AP-87 cord

    — One 248B adapter

    — One Model 2012D transformer (15 V rms, 150 mA)

Figure 9-4. Extended Local Terminal Using ADUs

NOTE: THE TRANSMIT PINS (1, 2) OF ONE ADU MUST CONNECT
TO THE RECEIVE PINS (3, 6) OF THE OTHER ADU.
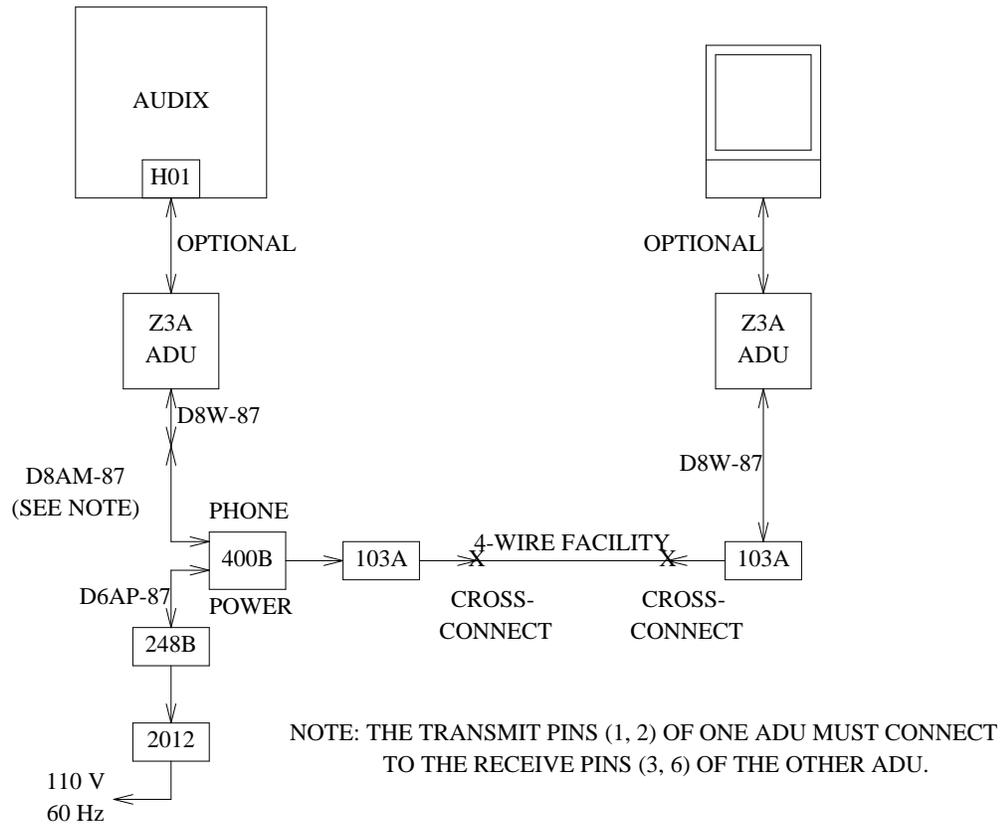
DSUs

Figure 9-5, *Extended Local Terminal Using DSUs*, shows a DSU arrangement. Option settings are provided later in this chapter under *Setting Options*.

Parts List:

- Two 2596A DSU data modules

- One 715 BCS or equivalent display terminal

- Two ED-1E434-11, Group 311 cables (RS-232C, 24-gauge, male-male)

NOTE: THE TRANSMIT-PAIR (NO. 2) OF ONE DSU CONNECTS
          TO THE RECEIVE-PAIR (NO. 4) OF THE OTHER.
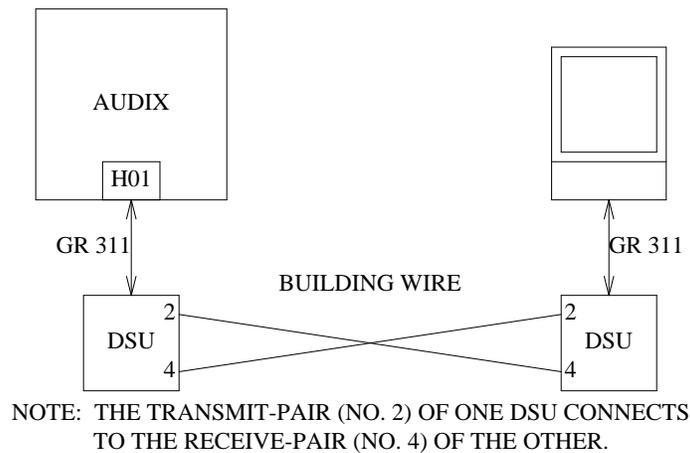
Figure 9-5. Extended Local Terminal Using DSUs

Dial-Up Terminal (Analog Connection)

This installation requires a modem and a Direct Inward Dialing (DID) trunk or dedicated Central Office (CO) trunk. The location of the modem is locally engineered. The currently recommended modem is an Optima 2400, DM224, or equivalent Hayes-compatible modem. Some customers may have other modems that will work (such as the 212AR or 2212C). Figure 9-6, *Dial-Up Terminal (Analog Connection)*, shows a sample modem connection. Figure 9-7, *Dial-Up Analog Connection (212AR Modem)*, shows a connection using a 212AR modem. Option settings are given later in this chapter.

Parts List

- One 715 BCS or equivalent display terminal

- One ED-1E434-11, Group 311 cable [Engineering Industries Association (EIA) RS-232C male-male]

- One Optima 2400, DM224, or equivalent Hayes-compatible modem

- One D8W-87 DCP, 8-conductor cable

- One 330A adapter jack (for CO trunk application)

- One analog port (DID extension) or dedicated CO trunk

- One wall jack (some modems may require an additional wall jack)
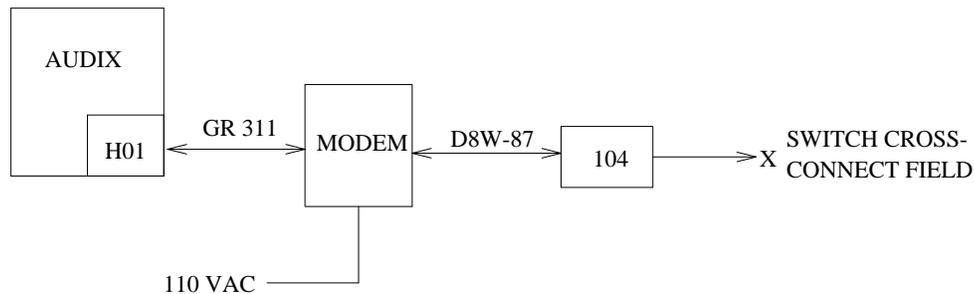
Figure 9-6. Dial-Up Terminal (Analog Connection)
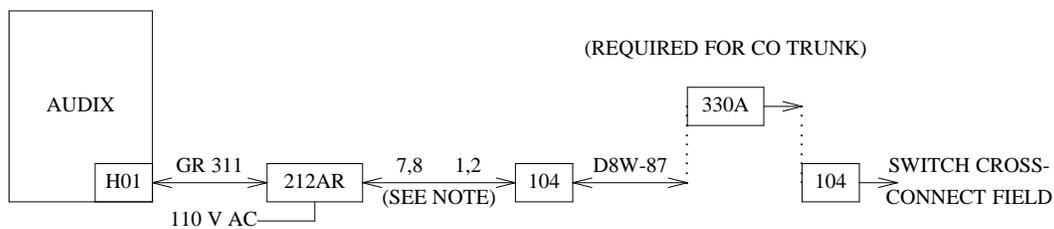
NOTE: D8W-87 CUT DOWN TO THE 104. PIN
NUMBERS 7,8 CONNECT TO 1,2 RESPECTIVELY.

Figure 9-7. Dial-Up Terminal Analog Connection (212AR Modem)

WARNING

Display terminals that receive power from a load center other than the one powering the AUDIX cabinet or that are more than 100 feet from the AUDIX cabinet require ground isolation. Properly adjusted data equipment provides the necessary ground isolation.

Auxiliary or Data Cabinet Mounting

If the modem is to be mounted in an auxiliary cabinet or a data cabinet, an ED-1E434-11, Group 30 and Group 300/317 (110-/66-type hardware) cable are needed. Use the switch maintenance manual for this installation. For convenience, the 40A4 Data Mounting pin-out is shown in Table 9-1, *40A4 Data Mounting Pin-Out Designations*.

Table 9-1. 40A4 Data Mounting Pin-Out Designations

Lead Color	Block Terminal	P3 Cable Pin	Data Set Number	Lead Designation
W - BL	1	26	1	Tip
BL - W	2	1	1	Ring
W - O	3	27	2	Tip
O - W	4	2	2	Ring
W - G	5	28	3	Tip
G - W	6	3	3	Ring
W - BR	7	29	4	Tip
BR - W	8	4	4	Ring
W - S	9	30	5	Tip
S - W	10	5	5	Ring
R - BL	11	31	6	Tip
BL - R	12	6	6	Ring
R - O	13	32	7	Tip
O - R	14	7	7	Ring
R - G	15	33	8	Tip
G - R	16	8	8	Ring
R - S	19	35	1	Make Busy 2
S - R	20	10	1	Make Busy 1
BK - BL	21	36	2	Make Busy 2
BL - BK	22	11	2	Make Busy 1
BK - O	23	37	3	Make Busy 2
O - BK	24	12	3	Make Busy 1
BK - G	25	38	4	Make Busy 2
G - BK	26	13	4	Make Busy 1
BK - BR	27	39	5	Make Busy 2
BR - BK	28	14	5	Make Busy 1
BK - S	29	40	6	Make Busy 2
S - BK	30	15	6	Make Busy 1
Y - BL	31	41	7	Make Busy 2
BL - Y	32	16	7	Make Busy 1
Y - O	33	42	8	Make Busy 2
O - Y	34	17	8	Make Busy 1
BL - V	42	21	1	Ring Detector
O - V	44	22	2	Ring Detector
G - V	46	23	3	Ring Detector
BR - V	48	24	4	Ring Detector
V - BL	41	46	5	Ring Detector
V - O	43	47	6	Ring Detector
V - G	45	48	7	Ring Detector
V - BR	47	49	8	Ring Detector
V - S	49	50	–	Frame Ground
S - V	50	25	–	Signal Ground

Dial-Up Terminal Using ADUs

See the *Z3A Asynchronous Data Unit Product Manual* (555-401-708) to set up a dial-up terminal with ADUs.

Dial-Up Terminal Installation (Digital)

This installation uses MPDMs to connect to the AUDIX system. All System 75, System 85, DEFINITY Generic 1, Generic 2, and Generic 2 PBXs provide digital access (DIMENSION PBXs must use analog access). Digital access requires that the display terminal be within 3,500 feet of the switch equipment and connect to a digital line port.

The location of the MPDM is locally engineered. The MPDM may be wall-mounted, mounted in an auxiliary cabinet, or mounted in a data cabinet. Figure 9-8, *Dial-Up Digital Connection (MPDM)* shows the MPDM wall-mounted. To install the MPDM in an auxiliary or data cabinet, see the appropriate documents. The 71A1 Data Mounting pin-out is provided here for convenience (see Table 9-2, *71A1 Data Mounting Pin-Out Designations*).

Parts List

- One 715 BCS or equivalent display terminal

- Two ED-1E434-11, Group 311 cables

- Two MPDMs

- One digital port for each MPDM (TN754 or SN270)

- Two D8W-87 DCP, 8-conductor cables

- Two 103A/104A modular wall jacks

WARNING   **Display terminals that receive power from a load center other than the one powering the AUDIX system cabinet or that are more than 100 feet from the AUDIX system cabinet require ground isolation. Properly adjusted data equipment provides the necessary ground isolation.**
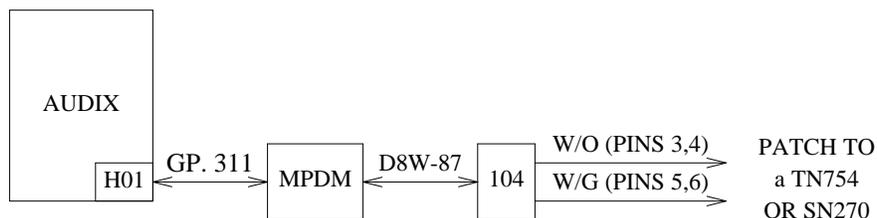
Figure 9-8. Dial-Up Digital Connection (MPDM)

Table 9-2. 71A1 Data Mounting Pin-Out Designations

Cable Pin	Block Terminal	PDM	Lead Designation	Lead Color
27	3	1	0D1 (transmit)	W - O
2	4	1	0D2	O - W
28	5	1	ID1 (receive)	W - G
3	6	1	ID2	G - W
30	9	2	0D1	W - S
5	10	2	0D2	S - W
31	11	2	ID1	R - BL
6	12	2	ID2	BL - R
33	15	3	0D1	R - G
8	16	3	0D2	G - R
34	17	3	ID1	R - BR
9	18	3	ID2	BR - R
36	21	4	0D1	BK - BL
11	22	4	0D2	BL - BK
37	23	4	ID1	BK - O
12	24	4	ID2	O - BK
39	27	5	0D1	BK - BR
14	28	5	0D2	BR - BK
40	29	5	ID1	BK - S
15	30	5	ID2	S - BK
42	33	6	0D1	Y - O
17	34	6	0D2	O - Y
43	35	6	ID1	Y - G
18	36	6	ID2	G - Y
45	39	7	0D1	Y - S
20	40	7	0D2	S - Y
46	41	7	ID1	V - BL
21	42	7	ID2	BL - V
48	45	8	0D1	V - G
23	46	8	0D2	G - V
49	47	8	ID1	V - BR
24	48	8	ID2	BR - V

SETTING OPTIONS

Option settings for terminals, printers, and data modules (including DSUs, modems, MPDMs, and Z3A ADUs) are covered in this section.

PC Administration Terminal

Always refer to the user's guide shipped with your PC or terminal for complete operating instructions, including procedures for setting options and programming function keys.

715 BCS Terminal Option Settings

Refer to the *715 BCS Terminal User's Guide and Service Manual* (999-300-765) for complete information on using the 715 BCS or if you have any questions on setting options.

Step 1:   Plug the AC power cord for the display terminal in an approved AC outlet and set the display terminal power switch to ON.

Step 2:   Begin terminal self tests and adjust the option settings using the *715 BCS Terminal User's Guide and Service Manual* (999-300-765).

Step 3:   To access the Communications Options submenu, press ⌐Ctrl-F1¬, then cursor down to the Communications Options line and press ⌐RETURN¬.

Figure 9-9, *715 BCS Terminal Option Settings*, shows the option settings used when terminal Port 2 (MAIN) is connected to the AUDIX system. In this example, a serial printer is connected to Port 1 (AUX); if your system uses a parallel printer, you will not see these settings.

```
                     COMMUNICATIONS OPTIONS


         MAIN                                          AUX

      port 2          Port Mapping                   port 1
       host           Port Service                   printer
       4800           Speed                            4800
       1 bit          Stop Bits                       1 bit
      7 bits          Data Bits                      7 bits
       space          Send Parity                     space
          no          Check Parity                       no
         off          Local Echo
         off          Encoding
    XON/XOFF          Generate Flow                XON/XOFF
        none          Receive Flow                 XON/XOFF
         240          XOFF at                           240
          no          Transmit Limit
          no          Answerback on Connect
        main          Clear Communication Port          aux




   ┌────────┬─────────┬────────┬────────┐  ┌─────┬─────┬─────┐   ┌─────┐
   │ SETUP  │PREVIOUS │ NEXT   │ CHANGE │  │     │     │     │   │     │
   │ MENU   │ SCREEN  │ SCREEN │ OPTION │  │     │     │     │   │     │
   └────────┴─────────┴────────┴────────┘  └─────┴─────┴─────┘   └─────┘
```

Figure 9-9. 715 BCS Terminal Option Settings

Step 4:   Return to the Setup Menu (press F1), then access the General Options submenu.
             Make sure that `Emulation` is set to BCS.

Step 5:   Return to the Setup Menu (press F1), then access the Printer Options submenu.
             Make sure that `Printer Types` is set to BCS.

610/615 Display Terminal Option Settings

Step 1:   Plug the AC power cord for the display terminal in an approved AC outlet and set the display terminal power switch to ON.

Step 2:   Begin terminal self tests and adjust the option settings using the operator's manual. Figure 9-10, *610/615 Display Terminal Option Settings*, shows the primary option settings required.

```
           OPTION SETTINGS


   COMMUNICATIONS              USER REFERENCES


   Speed            4800       Cartridge        used
   Send Parity      even       Columns          _80_
   Check Parity     _no_       Scrolling        jump
   Local Echo       _off       Reverse video    _no_
   Monitor Mode     _off       Volume           _4__
   Autowrap         _no_       Keyclick         _off
   Newline on LF    _no_       Cursor Type      blck
   Return Key       _CR_       Cursor Blink     _no_
   Enter Key        Ec[2a      Labels           _on_




   ┌──────┬──────┬────────┐  ┌────────┬────────┐  ┌──────┬──────┬──────┐
   │      │      │ CHANGE │  │DEFAULT │ SAVED  │  │ SAVE │ NEXT │CLEAR │
   │      │      │ OPTION │  │VALUES  │ VALUES │  │      │SETUP │TO END│
   └──────┴──────┴────────┘  └────────┴────────┘  └──────┴──────┴──────┘
```

Figure 9-10. 610/615 Display Terminal Option Settings

513 Display Terminal

See the *513 Terminal Emulator User Guide* (999-801-202IS) for complete information on this terminal.

Step 1:   Plug the AC power cord for the display terminal in an approved AC outlet and set the display terminal power switch to ON.

Step 2:   Begin terminal self tests and adjust the option settings using the operator's manual. Figure 9-11, *513 Display Terminal Option Settings*, shows the primary option settings required. Check the option settings on the terminal by pressing $\boxed{\text{SHIFT-f5}}$ followed by $\boxed{\text{f1}}$.

```
                    TERMINAL OPTIONS

       Speed   4800      Return Key  [    ]   Transmission   char
      Duplex   full    Newline on LF    no          Column  [    ]
 Send Parity   even       Autowrap  [    ]

 Check Parity    no          Cursor  [    ]       Send From  [    ]
Memory Access  [    ]      Keyclick  [    ]   Send Edit Seq  [    ]
       Clock   asynch   Margin Bell  [    ]   Send Graphics  [    ]

   "Enter" Key  Ec[2a              Block Terminator  [  ]

 Answerback [                                              ]

                 AUXILIARY PRINTER OPTIONS

 Lines Per Page   066      Printer Model   470    Flow Control  DC1DC3
      Paginate  [    ]             Speed   1200         Alarm   none


  PREVIOUS  NEXT    STEP     DEFAULT  SAVED      SAVE   PRINT   MONITOR
   FIELD   FIELD            VALUES   VALUES      ALL   SCREEN    MODE
```

Figure 9-11. 513 Display Terminal Option Settings

NOTES:
1. Synchronize the terminal and MI baud rate by pressing BREAK.
2. Ec = ESCAPE.

Step 3:   Check terminal modes by pressing (SHIFT-f4). Terminal modes appear as screen-labeled
             keys. Pressing the corresponding function key toggles the status of the mode from active to
             inactive. A star (*) appears on the screen next to the mode when it is active. The screen
             should look like the following:

CHAR	LINE	BLOCK		REMOTE	DC1DC3		132 COL	GRAPHICS	MONITOR
MODE*	MODE	MODE		MODE*	MODE		MODE	MODE	MODE

                 Only the CHAR MODE and REMOTE MODE should be on.

475 Printer Option Settings

If a 475 serial printer is provided, install it next to the display terminal. Connect its power cable to an AC outlet and the data cable to the AUX output (or equivalent) on the back of the display terminal.

Use the following procedure to verify the printer options set at the factory. Change any incorrect settings to match the ones given below (power should be off when changing the settings):

Step 1:   Remove the top cover of the printer. Two sets of rocker switches are located near the right-front corner (SW1 and SW2). The individual rockers are labeled from right-to-left, 1 through 8.

— On SW1, only Rocker 2 should be closed.

— On SW2, only Rockers 6 and 7 should be closed.

Step 2:   Four other sets of rocker switches are located under the printer roller. They are located on the right and are numbered counterclockwise from the back-right corner (SW21, SW22, SW23, SW24).

— SW21 has 8 rockers labeled right-to-left, 1 through 8. Only Rockers 5, 6, and 8 should be closed.

— SW22 has 4 rockers labeled right-to-left, 1 through 4. If a 513 is being used, set to 1200 baud (only Rockers 2 and 3 closed) regardless of the speed of the 513. The 513 can be optioned to operate with a slower running printer. (See item C below.) If a 610 or 615 is used, the printer must be set at the same speed as the terminal (only Rocker 3 closed for 4800 baud).

— SW23 has 6 rockers labeled right-to-left, 1 through 6. Only Rockers 1 and 5 should be closed.

— SW24 has 8 rockers labeled right-to-left, 1 through 8. Only Rockers 2, 4, 6, and 8 should be closed.

Step 3:   If a 513 BCT is being used, go to the display terminal option settings (MENU, terminal setup) and enter the following under AUXILIARY PRINTER OPTIONS (see Figure 9-11, *513 Display Terminal Option Settings*):

— Lines Per Page — 066

— Paginate — on or off

— Printer Model — 470 (Model 475 assigned as 470 also)

— Speed — 1200

— Flow Control — DC1DC3

— Alarm — none

572 Printer Option Settings

If a 572 serial printer is provided, install it next to the display terminal. Connect the printer power cable to an AC outlet and the RS-232C data cable to the AUX output (or equivalent) on the back of the display terminal.

Use the following procedure to verify the printer options that were set at the factory and to change any incorrect settings. For additional information, refer to the *572/573 Printer User's Guide* (999-300-562).

To verify that current operating characteristics are correctly set, follow the steps below:

Step 1:   Make sure that there is paper in the printer.

> **NOTE**
>
> While you are verifying or changing operating characteristics, you may operate the printer with its carrier cover in the unlatched position so that you can see each line as it is printed. Grasp the carrier cover (the black plastic piece) at the edge toward the rear of the printer. Gently lift the back of the cover so that it swivels toward you.

Step 2:   Locate the power switch on the righthand side of the printer toward the rear. Turn the power switch to OFF.

Step 3:   Locate the Function switch, and the Menu switch on the printer control panel (see Figure 9-12, *Printer Control Panel*).
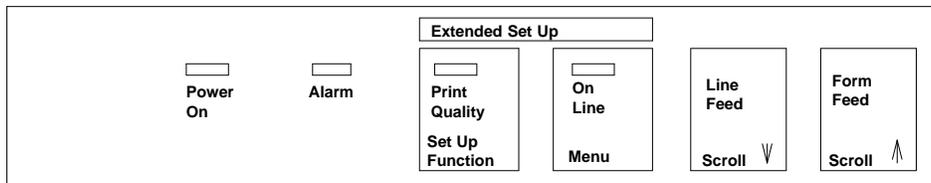
Figure 9-12. Printer Control Panel

Press and hold the Function and Menu switches while you turn the Power switch ON. A list of operating characteristics will print out. The printout should match the sample on the following page.

> **NOTE**
>
> In the function settings shown, the column of numbers titled **Function** identifies the functions that can be changed from the control panel. The column titled **Menu** gives the current setting of each function. The **Status** column briefly describes the current setting. For example, in the sample printout, Function 01 is identified as Form Length. Its menu setting is 09. The status number 11 tells you that the form length is 11 inches.

Function No.	Description	Menu No.	Status
01	FORM LENGTH	09	11
02	LPI	01	6
03	CPI	01	10
04	LQ OR NLQ	01	LQ
05	BUZZER	01	ON
06	FONT	01	BUILT-IN
07	RESOLUTION	02	180
11	BUFFER	02	N-LINE
13	PW ON MODE	01	ON-LINE
14	DIRECTION	02	BI-DIR.2
15	BUF. FULL	02	LF + CR
16	P.E.	01	ACTIVE
17	AUTO CR	01	CR + LF
18	ZERO	02	0 SLASHED
22	AUTO LF	01	CR ONLY
31	1" SKIP	02	ON
32	CHAR. SET (G0,GL)	02	USA
33	CHAR. SET (G1, GR)	02	USA
34	CHAR. SET (G2)	02	USA
35	CHAR. SET (G3)	02	USA
81	OFF-LINE STATE	01	ALL RECEIVE
82	DSR	02	OFF
83	RTS TIMING	01	RTS
84	CD	02	OFF
85	CTS	01	ON
91	OVER RUN	01	20
92	DATA BIT	02	8
93	PROTOCOL	03	XON/XOFF
94	STOP BIT	02	02
95	PARITY	01	NON
96	BPS	02	4800

Step 4:   Carefully check the printout to make sure that it agrees with the settings shown above. If it does not, change the settings as follows:

Step 5:   Turn the power switch OFF.

Step 6:   To change Functions 01 through 05, press the Print Quality switch while turning the Power switch ON. The Function lamp begins to blink. Go to step 7.

   To change Functions 06 through 96, press the Print Quality and On Line switches while turning the Power switch ON. The Function lamp begins to blink. Go to step 7.

Step 7:   With the Function lamp blinking, press the Line Feed switch. Each time you press the switch, the printer will print one line. When the line that you want to change prints out, press the Menu (On Line) switch; the lamp on the Menu switch will begin to blink. When the Menu lamp is blinking, use the Line Feed switch (down arrow) to select a higher numbered menu

setting; use the Form Feed switch (up arrow) to select a lower setting. Each time you press either the Line Feed or Form Feed switch, the printer will print one line showing the selected setting.

When you have made your selection and the desired setting has been printed, the lamp on the Menu (On Line) switch will continue to blink. As long as the Menu switch lamp or the Function switch lamp is blinking, any changes that you have made are not yet stored in the printer's memory. The printer is NOT ready to print normally.

Step 8:   Press the Function switch twice. The printer will eject the paper. When it has finished, neither the Function switch lamp nor the Menu switch lamp will be on. The buzzer will sound, and the ALARM light will come on. The printer is now ready to print normally, using the setting(s) you have selected. *Be sure to replace the dust cover before using the printer.*

Step 9:   To verify that all settings are correct, print out the current operating conditions again.

593 or 595 Printer Option Settings

If a 593 or 595 parallel printer is provided, install it next to the display terminal. Connect the printer power cable to an AC outlet and the parallel printer data cable to the AUX output (or equivalent) on the back of the display terminal. For additional information, refer to the *593 Laser Printer User Guide* (999-300-629) or *595 Laser Printer User Guide* (999-300-707).

6417 Printer Option Settings

The 6417 25-pin dot-matrix printer may be shipped with new AUDIX systems. Because this printer is a parallel printer, it leaves both serial connectors on the 715 BCS (or equivalent) terminal free, allowing one serial connection to be made to the AUDIX system and another serial connection to be made to the switch if desired.

To install the 6417 printer, follow the steps below. Refer to the *NCR 6417 Users Guide* (NCR order number ST-2112-09) for complete information.

Step 1:   Connect the printer power cable to an AC outlet. Connect the female D-shell connector on the data cable to the laser printer and the 25-pin male connector to the parallel printer port on the terminal.

Step 2:   On the 715 BCS terminal, access the User Preferences submenu and enable the printer port (see the previous *715 BCS Terminal Option Settings* section for instructions on accessing the Setup Menu and submenus on the 715 BCS).

Step 3:   Access the Printer Options submenu and change the Print Terminator to FF (Form Feed after print file is complete) and set the Printer Type to BCS.

DSU Option Settings

Set the DSU for internal timing (switches 6 and 7) as shown in Figure 9-13, *DSU Option Switches*. Set the baud rate with switches 10, 11, and 12. Figure 9-13 shows a DSU set for 9600 bps. Make sure the other switches are set as shown.

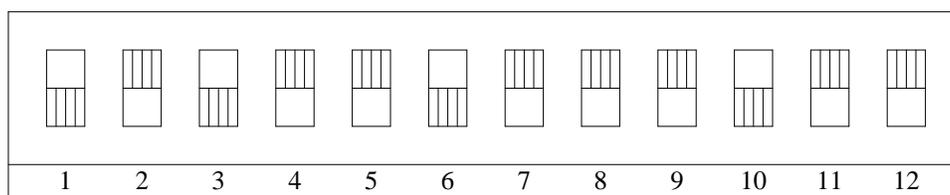| NOTE	The DSU is a synchronous unit. To operate with an asynchronous terminal, set the data rate at the highest speed. The unit will automatically adjust for synchronous operation at the lower speeds.

Figure 9-13. DSU Option Switches

Optima 2400 Modem Option Settings

The options for the Optima 2400 modem are set at the factory for intelligent operation. To adjust the settings for remote maintenance operation in dumb mode, see the *Remote Maintenance Cabling* section earlier in this chapter.

DM224 Modem Option Settings

The options for the DM224 modem are set at the factory. To adjust the settings for the remote maintenance terminal, refer to *AUDIX Maintenance for Tier 1* (585-305-106).

DM424 Modem Option Settings

Options for the DM424 when used in an AUDIX network are in *AUDIX Networking* (585-300-903).

212AR Modem Option Settings

Set the options as shown in Table 9-3, *212AR Modem Option Settings*. The location of the switches is shown in Figure 9-14, *Location of Option Settings for the 212AR*.

Table 9-3. 212AR Modem Option Settings

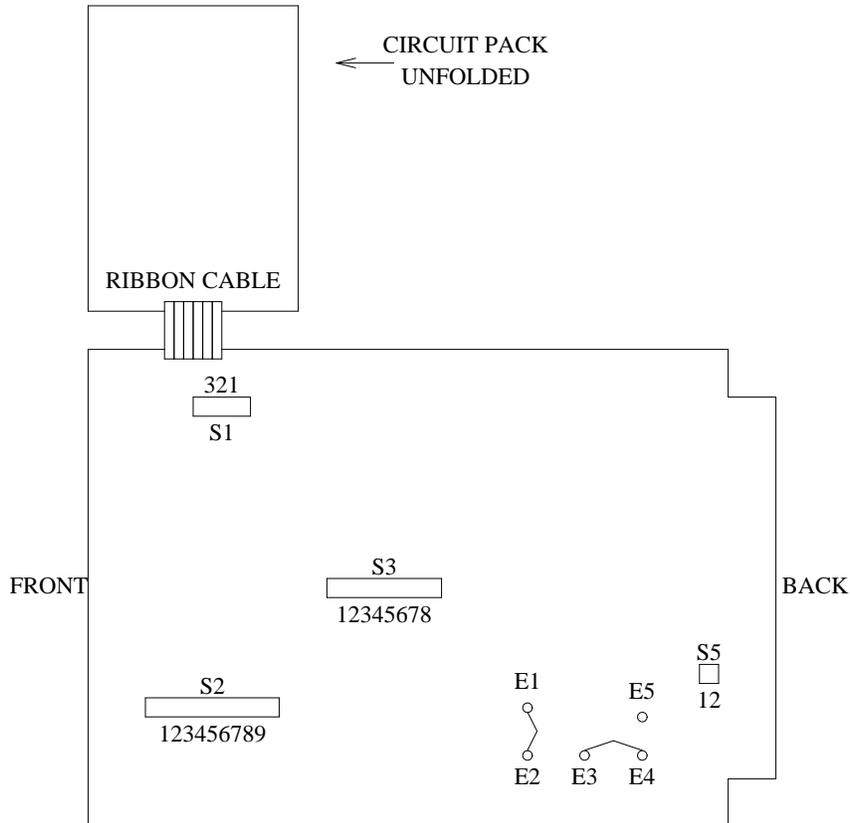| Option Switch	Rocker Number 1-n (O=Open,C=Closed)	Option Straps
S1	C O C	
S2	C C O O O C C O O	E1 to E2
S3	C C C C O O C O	E3 to E4
S5	O O	

Figure 9-14. Location of Option Settings for the 212AR

2212 Modem Option Settings

To set the options for the 2212 modem, follow the steps below:

Step 1:   Move the 311 cable from H00 to the INPUT connector on the back of the LMT. Record values, then set the terminal to 1200 bps, even parity, and Return Key to ''CR.''

The 2212's PASS lamp should be on after power up. Press ⟨RETURN⟩ a few times until `...dialer waiting` is displayed.

Step 2:   Press ⟨SHIFT⟩ ⟨o⟩ and ⟨RETURN⟩. Options S1 through S4 and options 1 through 11 should be displayed. Check the parity. It will be set to even.

Step 3:   Press ⟨RETURN⟩ again. Options 12 through 26 should be displayed. Check Option 12. It will be set to `y`.

Step 4:   If necessary, enter **set even** (displays `parity even`).

Step 5:   If necessary, enter **o12=y** (no spaces) (displays `12=y`).

Step 6:   Disconnect the terminal from the 2212 and return the terminal options to their original values.

Step 7:   Move the 311 back to H00. Reset the LMT to its original option settings.

2224 Modem Option Settings

Set the options for the 2224 modem as follows:

Step 1:   Locate the switches on the modem faceplate. Set Switches 1 and 6 to the UP position (1200 baud).

Step 2:   Connect the 2224 to the LMT as follows:

    a. Connect the back of the 104A adapter to a spare analog port on the switch cross-connect field. See Figure 9-6, *Dial-Up Terminal (Analog Connection).* This port is administered as a DID extension.

    b. Connect the D8W-87 cord from the 104A adapter to the 2224 modem. Plug the modem into a 110 VAC outlet.

    c. Connect the RS-232 cable to the modem and to the INPUT connector on the back of the LMT.

Step 3:   Record values, then set the terminal to 1200 bps, even parity and Return Key to "CR".

The 2224's PASS lamp should be on after power up. Press ⟨RETURN⟩ a few times until `dialer waiting` is displayed.

Step 4:   Press ⟨SHIFT⟩ ⟨o⟩ and ⟨RETURN⟩. Options S1 through S4 and options 1 through 11 should be displayed. Parity should be set to even. Press ⟨RETURN⟩ again. Options 12 through 26 should be displayed.

Step 5:   If necessary, enter **set parity=even** (for even parity).

Enter **o34=3**

Enter **o36=1**

Step 6   Disconnect the terminal from the 2224 modem and return the terminal options to their original values. Move the RS-232 cable back to the H00 (MAINT) connector on the back of the AUDIX system.

2296A Modem Option Settings

To option the 2296A modem, follow the steps below:

Step 1:   At the bottom of the modem (standing on end), check to make sure that the memory module in the right hand slot is a 104C1 (V1.1 or V1.2) or a 104F2 (V1.1). The chip on the memory module will be labeled ABTLG or ABTTA. If necessary, call 800-222-PART (comcode 105304935) to order the correct version. The 2296A modem does not need the optional ACU, AUTOCALL, or Micro Net Protocol (MNP) boards for 4800 or 9600 bps operations. It does need the MNP board for 19200 bps operation.

Step 2:   Two groups of switches are located at the top of the 2296A modem faceplate. Set the switches according to Table 9-4, *2296A Switch Settings*:

Table 9-4. 2296A Switch Settings

Switch	Option	Position
S1	1	OPEN
S2	1	CLOSED
	2	CLOSED
	3	OPEN
	4	CLOSED
	5	CLOSED
	6	OPEN
	7	CLOSED
	8	CLOSED

Step 3:   Using the 2296A Modem User's Manual, set the modem's internal options using the front panel of the modem pool carrier:

— Set Option 99 to **1**

— Set all options to their default.

— Set Option 50 (async/sync) to **y**

— Set Option 56 (Early DSR) to **y**

— Set the speed to **9600** (same as the MTDM)

— Set Option 99 to **0** (zero)

Options for the 2296A when used in an AUDIX network are in *AUDIX Networking* (585-300-903).

MPDM Option Settings

For an MPDM used in the AUDIX system data link or with an administration terminal, set the options on the MPDM according to Table 9-5, *MPDM Option Settings for an Administration Terminal* and Table 9-6, *MPDM Option Settings for a Data Link*.

Table 9-5. MPDM Option Settings for an Administration Terminal

4800	ON
ASYNC	ON
INT	ON
AANS	ON
ALL OTHERS	OFF

Table 9-6. MPDM Option Settings for a Data Link

9600	ON
SYNC	ON
INT	ON
AANS	ON
ALL OTHERS	OFF

If an MPDM is used, verify that the protocol interface card used within the MPDM is an RS-232C card. Use the *MPDM User Guide* (999-700-300) to verify the MPDM is installed correctly and that the ground screw is isolated.

On either a Processor Data Module (PDM) or MPDM, verify the ground screw is loose. This sets the ground isolation setting. Use the *PDM User's Guide* (999-700-028) to verify the PDM is installed correctly.

Z3A ADU Option Settings

The ADU has no option settings. However, if the ADU is used with a dial-up analog administration terminal, verify the following:

● System 85 or DEFINITY Generic 2 — The EIA board (SN238) has the Autobaud and KYBD options set. To set these options, switch the AUTO and KYBD switches (on the S2 switch) to the down position (i.e., away from the S2 label on the board). Also enable the baud rate to 4800 and 1200 on the S1 switch. To do this, switch the 4800 and 1200 to the down position (i.e., away from the S1 label on the board).

● System 75, Generic 1, or Generic 3 — Use the switch administration terminal to set the options on the TN726. From the *System 75/85 Dialing Procedures for EIA Port Board or Data Line Board with an ADU* User Reference Card (555-400-701):

To access the options menu, press $\boxed{\text{BREAK}}$ to begin a new call. (If autobaud is enabled, press $\boxed{\text{BREAK}}$ and $\boxed{\text{RETURN}}$.)

When the DIAL: prompt appears, press $\boxed{\text{BACKSPACE}}$ or $\boxed{\text{CONTROL-h}}$.

A menu appears for viewing or changing options.

10. AUDIX System Initialization

This section contains procedures for initial start-up. For in-service power-up, initialization, and support procedures, see *AUDIX Maintenance for Tier 1* (585-305-106). It includes the following:

- Power-Up Procedures

- Standard Initialization

- Names Administration

- System Status

POWER-UP PROCEDURES
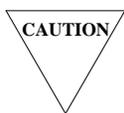
CAUTION *Remove the lower front panel and check each drive for grounding. Hand-tighten the nuts holding the drive brackets to the cabinet. Measure the resistance between an unpainted surface on the cabinet and the drive bracket (should be 0 ohms).*

Step 1:   Make sure the AC breaker is ON and the AUDIX system power switch is OFF (on *both* cabinets if this is a two-cabinet system). Make sure the toggle switch on the TN511 is in the center position.

Step 2:   If a printer is available, connect it to the terminal and plug it into a standard wall outlet. The terminal controls the initialization process. A printer is useful for providing a hard-copy of the process for future reference.

Step 3:   Use the AUDIX maintenance manual to set up the terminal. The manual also describes the functions of the terminal and the toggle switch.

Step 4:   Plug the AUDIX system power cord (20 amp) from the cabinet(s) to a standard wall outlet. Turn the AUDIX system power switch ON (on both cabinets if this is a two-cabinet system). The green AC lamp next to the power switch will flash and then remain lit. The prompt `standard initialization?` will appear on the maintenance terminal. Place the system in the control mode by hitting (CTRL) and (c) simultaneously on the terminal. The Control Mode Menu will appear on the maintenance terminal.

Step 5:   Remove the cartridge in the Removable Cartridge Drive (RCD) and replace the dummy cartridge with a blank cartridge after you remove the blue wrapping. See Appendix A, *Removable Cartridge Procedures* for more information.

Step 6:   Spin up the drive (see Appendix A for more information if needed). If the green lamp fails to flash while in the control mode, power down the AUDIX system cabinet(s). Verify the power cable connection between the power supply and the RCD. This is a four-wire connector (2 black/2 red leads).

STANDARD INITIALIZATION

To initialize (bring up) the AUDIX system:

Step 1:   On the Control Mode Menu, enter **5** and press [RETURN].

Step 2:   When asked for a standard initialization, enter **y** and press [RETURN]. See Figure 10-1, *AUDIX System Initialization (Screen One).* Wait about five minutes for `service not started`. (See Figure 10-2, *AUDIX System Initialization (Screen Two).* Then go to step 3. If the initialization does not pass, refer to *AUDIX Maintenance for Tier 1* (585-305-106).

> **NOTE**   In the following displays, enter a word shown in boldface type as a command.

```
Standard Initialization? (y or n)
    y
Standard Initialization Invoked
FP self tests passed.
VSP self-tests passed. (expanded systems only)
Interprocessor communication test passed. (expanded systems only)


            DBPI    SCP    VB1    VB2    VSP
Present       Y      Y      Y      N      N    (VB2 and VSP "Y" for expanded systems)
Accessible    Y      Y      Y      N      N    (VB2 and VSP "Y" for expanded systems)


S-Bus access test passed.

DBPI initialization passed. (Wait 2 min. for FP RAM test.)
FP RAM passed.
VSP RAM passed. (expanded systems only)
DBP RAM passed.

                   31        24  23        16  15         8  7          0
DBP CPU status:     00000000    00010000    00000000    000010000
VME configuration   00000000    00001000    00000000    00001010
Disk controller 1:  00000000    00000000    00000000    00000000
Disk controller 2:  00000000    00000000    00000000    00000000

DBP initialization passed.
Attempting DBP filesystem boot (controller, disk, filesystem): 0,0,f
```

Figure 10-1. AUDIX System Initialization (Screen One)

```
DBP boot file loaded.
AUDIX loader file opened.
AUDIX loader file loaded.
Impending transfer to AUDIX loader.
FP AUDIX loaded.
VSP AUDIX loaded. (expanded systems only)
Impending transfer to AUDIX.
MAINTENANCE INTERFACE ENTERING NORMAL MODE
login:  (Wait for "service not started" login.)
fp mtce on
login:
dbp available
login:
fpi/vspi
login:
vsp mtce on
login:
vsp mtce on
login:
vb/td bus up
login:
admin on
login:
service not started
login: craft
password: craft
terminal type: (see Step 3)
```

Figure 10-2. AUDIX System Initialization (Screen Two)

Step 3:   Enter the login and password as shown in Figure 10-2, *AUDIX System Initialization (Screen Two)*. Enter the following as a valid terminal type:

513 —   For an AT&T model 715 BCS
For an AT&T model 610 BCT or 615 MT running 513 emulation
For an AT&T model 513 BCT
For a PC running 513 emulation

5420 —   For a TELETYPE 5420 terminal
For an AT&T model 4415 terminal
For an AT&T model 705 terminal
For an AT&T model 610 BCT or 615 MT *without* 513 emulation

After entering the terminal type and pressing ⟨RETURN⟩, verify that the ⟨ENTER⟩ key is defined as ''Ec[2a'' (Ec = ESCAPE).

Step 4:   Go to the system : clock form by typing **sy cl** in the path line and press ⟨RETURN⟩. See Figure 10-3, *The* system : clock *Form*.

a.   Enter **x** next to set system clock.

b.   At this point, set only the correct date in the date (mmddyy) field.

c.   Press ⟨CTRL⟩ and ⟨z⟩ simultaneously to exit the form.

```
AUDIX STATUS: alarms: M    , logins: 1, thresholds:none
PATH: system : clock

(TO SELECT AN OPTION ENTER AN x THEN PRESS CHANGE)

_ set system clock (FILL IN DATE AND TIME BELOW)
_ time synchronization with switch (DCIU or SCI datalink only)
_ test system clock
  test result:


  date (mmddyy):
  time (24 hour clock, hhmm):
  day of week:




        (PRESS ENTER TO REDISPLAY CURRENT TIME)


Error and confirmation information appears on this line.

| CHANGE | ADD | DELETE |  | HELP | FIELD |  | CLEAR | EXIT | ENTER |
| OR RUN |     |        |  |      | HELP  |  | FROM  |      |       |
```

Figure 10-3. The system : clock Form

NAMES ADMINISTRATION

In the following sections, words appearing in boldface type indicate the entries you make on the terminal. At the maintenance terminal, perform the following steps:

Step 1:   Perform an administrative shutdown.

    a. Go to the `shutdown` form by typing **sh** in the path line and press $\boxed{\text{RETURN}}$.

    b. Type **f** in the `types (forced/camp-on)` field.

    c. Tab to the `reason (administration/maintenance)` field and type **a**

    d. Press $\boxed{\text{F1}}$ (CHANGE or RUN).

    e. Press $\boxed{\text{CTRL}}$ and $\boxed{\text{z}}$ simultaneously to exit the form.

Step 2:   Change the data in the `filesystem : detail` form.

    a. Go to the `filesystem : detail` form by typing **fi d** in the path line and press $\boxed{\text{RETURN}}$.

    b. Enter the data shown in Figure 10-4, *The* `filesystem : detail` *Form*.

    c. Press $\boxed{\text{F1}}$ (CHANGE or RUN).

    d. Press $\boxed{\text{CTRL}}$ and $\boxed{\text{z}}$ simultaneously to exit the form.

```
AUDIX STATUS: alarms: M   , logins: 1, thresholds: none
PATH: filesystem : detail

filesystem:  disk00.nm     type:  ndat

(PRESS ENTER TO DISPLAY FILESYSTEM DATA)

      size:  200     free:

      redundant (y/n/d)? _ status:

      master filesystem: _____

      slave filesystem :




      _____
Error and confirmation information appears on this line.
 CHANGE    ADD    DELETE      HELP    FIELD      CLEAR    EXIT    ENTER
 OR RUN                               HELP       FROM
```

Figure 10-4. The filesystem : detail Form

Step 3:   Do a startup.

    a.   Go to the `startup` form by typing **st** in the path line and press ⌊RETURN⌋.

    b.   Press ⌊F1⌋ (CHANGE or RUN).

        Information about the system startup will scroll down the screen.

    c.   Log in again at the `start service` login prompt.

    d.   Press ⌊CTRL⌋ and ⌊z⌋ simultaneously to exit the form.

Step 4:   Equip the backup cartridge in the RCD.

    a.   Go to the `maintenance : dbp : equip` form by typing **m db e** in the path line and press ⌊RETURN⌋.

    b.   Type **SCSI** in the `circuit pack code` field.

    c.   Type **1** in the `disk device number` field.

    d.   Type **back01** in the `volume label` field.

    e.   Type **y** in the `erase (y/n)?` field.

    f.   Press ⌊F1⌋ (CHANGE or RUN).

    g.   The system will prompt you to continue. Enter a **y** to confirm (you want to initialize/erase the cartridge).

        The system should then spin up the cartridge, erase it, label it, and display `operation confirmed`.

    h.   Press ⌊CTRL⌋ and ⌊z⌋ simultaneously to exit the form.

Step 5:   Create a backup names filesystem on the cartridge in the RCD.

    a.   Go to the `filesystem : detail` form by typing **fi d** in the path line and press ⌊RETURN⌋.

    b.   Type **back01.nmbackup** in the `filesystem` field.

> **NOTE**   If the system has more than one hard disk, you may place the weekly names backup filesystem on another hard disk (for example, **disk02.nmbackup**).

    c.   Tab to the `type` field and type **ndat**

    d.   Type **200** in the `size` field.

    e.   Press ⌊F2⌋ (ADD).

    f.   Press ⌊CTRL⌋ and ⌊z⌋ simultaneously to exit the form.

Step 6:   Activate the announcements and names filesystems:

    a.   Go to the `system : announcement : filesystems` form by typing **sy an fi** in the path line and press ⌊RETURN⌋.

        (See Figure 10-5, *The* `system : announcement : filesystems` *Form.*)

b. If needed, type **disk00.ana** (for the standard announcement set) or
    disk00.anc (for the traditional announcement set) in the `active
    announcements` field.

c. Tab to the `weekly names backup` field and type the same filesystem
    name you used in step 4 (for example, **back01.nmbackup**).

d. Press ⟨ F1 ⟩ (CHANGE or RUN).

e. Press ⟨ CTRL ⟩ and ⟨ z ⟩ simultaneously to exit the form.

```
AUDIX STATUS: alarms: M    , logins: 1, thresholds: none
┌──────────────────────────────────────────────────────────┐
│PATH: system : announcement : filesystem                  │
└──────────────────────────────────────────────────────────┘

active announcements: disk00.ana
admin announcements : _____
names               : disk00.nm

weekly names backup : back01.nmbackup   status:

  (TO COPY, SWAP, OR BACKUP, ENTER AN X THEN PRESS CHANGE)

_ copy announcements active to admin

_ swap active and admin announcements

_ backup names to: _____    status:


┌──────────────────────────────────────────────────────────┐
│                                                          │
└──────────────────────────────────────────────────────────┘
Error and confirmation information appears on this line.
┌─────────┬───────┬────────┐ ┌───────┬───────┐ ┌───────┬───────┬───────┐
│ CHANGE  │  ADD  │ DELETE │ │ HELP  │ FIELD │ │ CLEAR │ EXIT  │ ENTER │
│ OR RUN  │       │        │ │       │ HELP  │ │ FROM  │       │       │
└─────────┴───────┴────────┘ └───────┴───────┘ └───────┴───────┴───────┘
```

Figure 10-5. The system : announcement : filesystems Form

SYSTEM STATUS

Verify system status as follows:

Step 1:   On the status line of the maintenance terminal, `alarms:` should show `M` (major). To obtain a list of the codes associated with the alarm, do the following:

      a.   Go to the `maintenance : active alarms : display` form by typing **m act d** in the path line and press RETURN .

      b.   Copy (or print) the alarm codes and press CTRL and z simultaneously to exit the form.

The alarm log on the `maintenance : active alarms : display` form may show the following:

    Fault 67,   Unit 32 (no voice port translations) — Resolved when the voice ports are assigned and a Service Dispatcher audit is run.

    Fault 68,   Unit 32 (data link translations inconsistent) — Resolved when the data link is assigned and a Service Dispatcher audit is run.

    Fault 16,   Unit 116 (batteries on high-charge rate) — Resolved when the batteries are fully charged.

    Fault 252,   Unit 120 (system clock failure) — Resolved when the clock is set and tested.

See *AUDIX Maintenance for Tier 1* (585-305-106) for a detailed explanation of the codes.

Step 2:   Check the cabinet circuit packs and verify that no red alarm LEDs are lit, other than the one on the TN511 Maintenance Interface (MI) and the one on the TN727 Network Controller board. Make note of all alarm faults, unit, and device numbers but do *not* spend a lot of time trying to clear them at this time. If the alarms are still active after AUDIX system administration, see *AUDIX Maintenance for Tier 1* (585-305-106).

11. AUDIX System Administration

This chapter describes the administration of the AUDIX system for AT&T and non AT&T switches. The following step-by-step procedures provide only the procedures that prepare the AUDIX system for service. Subsequent AUDIX system administration is typically performed by the System Administrator. See *AUDIX Administration* (585-305-501) for those procedures.

Administer the AUDIX system for each item listed below. For a detailed explanation of how to use the AUDIX system forms, refer to the *AUDIX Release 1 Version 8 Forms Reference* (585-305-209).

For the administration of *optional* AUDIX system features including the automated attendant, see Chapter 14, *Optional Features*.

This chapter is organized as follows:

- Assign the Machine ID
- Assign the Switch Connection and Machine Numbers
- Assign the Time Zone
- Assign the Extension Number Length
- Run Maintenance Audits on the FP
- Assign the Voice Ports
- Restart the AUDIX System
- Set and Test the AUDIX System Clock
- Check the Alarm Status
- Check the Hardware Status

ASSIGN THE MACHINE ID

Enter machine identification number and other important system information as follows:

Step 1:   Go to the identification form by typing **id** in the path line and press RETURN . See Figure 11-1, *The* identification *Form.*

Step 2:   Tab to the alarm reporting telephone number field and enter the number the customer should dial to report alarms (for example, **800-242-2121**). Major alarms are reported automatically when the AUDIX system and the switch are set up to do so.

Step 3:   At the system name field, enter the customer's name and some kind of designation that identifies the AUDIX system type, for example, **2-cabinet**. This provides useful information to remote maintenance personnel.

Step 4:   At the system location field, enter the customer's city and state.

Step 5:   Press F1 (CHANGE or RUN).

Step 6:   Press CTRL and z simultaneously to exit the form.

```
AUDIX STATUS: alarms: M   , logins: 1, thresholds:none
PATH: identification


    login id: craft
new password: _____  old password: _____  (needed to change password)

login ids
      administrative port:
      maintenance port   : craft

AUDIX serial number:

alarm reporting telephone number:  8002422121

system name:

system location:




_____
Error and confirmation information appears on this line.

CHANGE    ADD    DELETE        HELP    FIELD        CLEAR    EXIT    ENTER
OR RUN                                 HELP         FROM
```

Figure 11-1. The identification Form

ASSIGN SWITCH CONNECTION AND MACHINE NUMBERS

This section describes the steps for administering the AUDIX system for connectivity to a specific switch. Go to the section for your switch.

System 75, System 75 XE, Generic 1, and Generic 3

The default values on the `system : translation : switch connection` form on the AUDIX system may or may not match the translations on the switch. Use this section to make sure the AUDIX system translations match those on the switch.

Step 1:   Go to the `communication-interface processor-channels` form on the switch and copy the entries in the following fields:

- Proc Chan _____
- Interface Channel _____

Step 2:   Go to the `system : translation : switch connection` form on the AUDIX system by typing **sy tr s** in the path line and press ⏎RETURN⏎. See Figure 11-2, *The* `system : translation : switch connection` *Form (DCIU-SCI)*.

The system is shipped with `connection type` set to `dciu-sci`. This is the correct entry for System 75, System 75 XE, DEFINITY Generic 1, and DEFINITY Generic 3.

```
AUDIX STATUS: alarms: M    , logins:1, thresholds:none
PATH: system : translation : switch connection

connection type (dciu-sci/smsi/bri-api/sl1/sid/standalone): dciu-sci
(PRESS CHANGE TO MODIFY CONNECTION TYPE, NEW FIELDS WILL BE DISPLAYED)

     (THE FOLLOWING FIELDS APPLY ONLY TO A DCIU OR SCI DATALINK)

switch  audix  switch  logical  data   switch  audix  switch  logical  data
number  port   port    channel  link   number  port   port    channel  link

 1:      1      59       1        1       2:      2      59       2        1
 3:      0       0       0        0       4:      0       0       0        0
 5:      0       0       0        0       6:      0       0       0        0
 7:      0       0       0        0       8:      0       0       0        0
 9:      0       0       0        0      10:      0       0       0        0
11:      0       0       0        0      12:      0       0       0        0
13:      0       0       0        0      14:      0       0       0        0
15:      0       0       0        0      16:      0       0       0        0
17:      0       0       0        0      18:      0       0       0        0
19:      0       0       0        0      20:      0       0       0        0
host switch: 1   AUDIX: 1


Error and confirmation information appears on this line.

 CHANGE    ADD    DELETE       HELP    FIELD       CLEAR    EXIT    ENTER
 OR RUN                                HELP        FROM
```

Figure 11-2. The system : translation : switch connection Form (DCIU-SCI)

The values you assign on the `system : translation : switch connection` form depend on how many AUDIX adjuncts and how many switch ports are supported by the switch. Switches vary as follows:

- System 75 and System 75 XE always use port 59 and support only one directly connected AUDIX adjunct (one data link).

- Generic 1, Generic 3i, and Generic 3s may use any port from 1 to 64 and support only one directly connected AUDIX adjunct (one data link).

- Generic 3r may use any port from 1 to 64 and supports up to eight directly connected AUDIX adjuncts (data links 1 to 8).

Use the following table to make sure the AUDIX system translations on the `system : translation : switch connection` form match the switch. Change the default values as necessary. The defaults are associated with switch number 1. Zero the default values next to switch number 1 if not used.

Field	May Equal
`switch number`	switch node number (1 – 20)
`audix port`	59 (for System 75) *or* 1 – 64 (for Generic 1 or 3)
`switch port`	`Proc Chan` (see step 1)
`logical channel`	`Interface Channel` (see step 1)
`data link`	1
`host switch`	local switch number

`AUDIX`	1 (for System 75,
	  Generic 1, or Generic 3i/s)
	  or
	1 – 8 (for Generic 3r)

Step 3:   Press ⬚F1 (CHANGE or RUN) if any of the defaults were changed.

Step 4:   Press ⬚CTRL and ⬚z simultaneously to exit the form.

Continue with the *ASSIGN THE TIME ZONE* section.

System 85 and Generic 2

The default values on the `system : translation : switch connection` form on the AUDIX System may or may not match the translations on the switch. Use this section to make sure the AUDIX system translations match those on the switch.

Step 1:   Go to the `system : translation : switch connection` form on the AUDIX system by typing **sy tr s** in the path line and press RETURN. See Figure 11-2, *The* `system : translation : switch connection` *Form (DCIU-SCI)*.

The system is shipped with `connection type` set to `dciu-sci`. This is the correct entry for System 85 or Generic 2.

Use the following table to make sure the AUDIX system translations on the `system : translation : switch connection` form match the switch. Change the default values as necessary. The defaults are associated with switch number 1. Zero the default values next to switch number 1 if not used.

Field	Must Equal
`audix port`	`remote port` (PROC 257, Word 2, Field 2) 59 – 62 (for System 85) *or* 1 – 64 (for Generic 2)
`switch port`	`local port` (PROC 257, Word 2, Field 1)
`logical channel`	`Component B — Logical Channel` (PROC 257, Word 1, Field 4)
`data link`	1
`host switch`	local switch number (PROC 275, Word 3, Field 8)
`AUDIX`	AUDIX system machine number (PROC 026, Word 1, Field 11)

Step 2:   Press F1 (CHANGE or RUN) if any of the defaults were changed.

Step 3:   Press CTRL and z simultaneously to exit the form.

Continue with the *ASSIGN THE TIME ZONE* section.

DIMENSION PBX

The default values on the `system : translation : switch connection` form on the AUDIX system may or may not match the translations on the switch. Use this section to make sure the AUDIX system translations match those on the switch.

Step 1:   Go to the `system : translation : switch connection` form on the AUDIX system by typing **sy tr s** in the path line and press ⟨RETURN⟩. See Figure 11-2, *The* `system : translation : switch connection` *Form (DCIU-SCI).*

The system is shipped with `connection type` set to `dciu-sci`. This is the correct entry for DIMENSION PBX.

Use the following table to make sure the AUDIX system translations on the `system : translation : switch connection` form match the switch. Change the default values as necessary. The defaults are associated with switch number 1. Zero the default values next to switch number 1 if not used.

| NOTE | Entries are made next to the correct number in the `switch number` field. (The correct number equals the value in PROC 275, Word 3, Field 9.) |

Field	Must Equal
`audix port`	`remote port` (PROC 256, Word 3, Field 2)
`switch port`	20
`logical channel`	`Component B — Logical Channel` (PROC 256, Word 2, Field 4)
`data link`	1
`host switch`	local switch number (PROC 275, Word 3, Field 9)
`AUDIX`	AUDIX system machine number (PROC 026, Word 1, Field 11)

Step 2:   Press ⟨F1⟩ (CHANGE or RUN) if any of the defaults were changed.

Step 3:   Press ⟨CTRL⟩ and ⟨z⟩ simultaneously to exit the form.

Continue with the *ASSIGN THE TIME ZONE* section.

1A ESS Switch

Use this section to make the translations on the 1A ESS Switch match the AUDIX system translations.

After making changes to any field, press F1 (CHANGE or RUN).

Step 1:   Go to the `system : translation : switch connection` form by typing **sy tr s** in the path line and press RETURN.

Step 2:   Type **smsi** next to the `connection type` field. Press F1 (CHANGE or RUN). A new set of fields will be displayed. See Figure 11-3, *The* `system : translation : switch connection` *Form (SMSI)*. The default for the `host type` field is `1aess`.

Step 3:   Set the `data speed` field to **1200**.

Step 4:   Tab to the `channel terminal type (c/t):` field and type:

— **t** if the 1A ESS Switch has 1AE9 or later generic software.

— **c** for earlier versions.

> **NOTE**   Terminal mode (t) is recommended, if available, so the switch can detect problems and receive messages in the data link. Computer mode (c) is supported on *all* switches.

Step 5:   Make sure the `end to end datalink number` field has seven zeroes (0000000). This is the default value.

The `end to end datalink number` field is used by the AUDIX system to send a message to the switch every 30 seconds to confirm that the attached 1A ESS Switch is responding to the AUDIX system.

Step 6:   At the `host switch` field, enter the host switch number. The default is 1.

Step 7:   In the `address ranges:` field, specify from 1 to 8 address ranges for the SMSI connection [the address ranges shown in Figure 11-3, *The* `system : translation : switch connection` *Form (SMSI)* are examples only]. A 3- to 10-digit first extension is followed by a 3- to 10-digit last extension and a 7- or 10-digit public network number. The following guidelines apply:

— Range values are inclusive.

— Each extension value must have the same number of digits as specified on the `system : translation : machine : audix/amis/call delivery` form.

— Values must be numeric.

— The last extension must be equal to or greater than the first extension.

— The address default range is `0-0 : 9-9` (as determined by the number of digits field). For example, if five digits are specified for the machine, the default address range first and last extension numbers are `00000` to `99999`.

— Ranges cannot overlap.

— The default public network number is zeroes (not specified). The public network may not be zeroes after the initial entry of the form.

Step 8:   Press ⬚ CTRL ⬚ and ⬚ z ⬚ simultaneously to exit the form.

Step 9:   Continue with the *ASSIGN THE TIME ZONE* section.

```
AUDIX STATUS: alarms: M    , logins:1, thresholds:none
┌─────────────────────────────────────────────────────────────────────┐
│PATH: system : translation : machine : switch connection             │
└─────────────────────────────────────────────────────────────────────┘

connection type (dciu-sci/smsi/bri-api/sll/sid/standalone):  smsi
(PRESS CHANGE TO MODIFY CONNECTION TYPE, NEW FIELDS WILL BE DISPLAYED)

      (THE FOLLOWING FIELDS APPLY ONLY TO AN SMSI DATALINK)

host type (1aess/5ess/dms100/sl100) : _____
data speed(1200/9600)          : ____  channel terminal type (c/t) : _____
call answer timeout (seconds)  : 5
timeout treatment (m/n/t)      : t   extension: _____
end to end datalink number     : _____
voice port disconnect timing   (milliseconds): _____
host switch: ___   AUDIX: ___
address ranges   (first    / last extension    public network number)
            1:  _____70000 / _____79999        ___2770000
            2:  _____ / _____          _____
            3.  _____ / _____          _____
            4.  _____ / _____          _____
            5.  _____ / _____          _____
            6.  _____ / _____          _____
            7.  _____ / _____          _____
            8.  _____ / _____          _____


┌─────────────────────────────────────────────────────────────────────┐
│                                                                     │
└─────────────────────────────────────────────────────────────────────┘
Error and confirmation information appears on this line.
```

Figure 11-3. The system : translation : switch connection Form (SMSI)

5ESS Switch

Use this section to make the translations on the 5ESS Switch match the AUDIX system translations.

There are two types of connections between a 5ESS Switch and an AUDIX system:

- Basic Rate Interface (BRI) connection

- Advanced Communications Package (ACP) connection

BRI Connection

Use this section if the AUDIX system is connected to a BRI.

After making changes to any field, press ⎡F1⎤ (CHANGE or RUN).

Step 1:   Go to the system : translation : switch connection form by typing **sy tr s** in the path line and press ⎡RETURN⎤.

Step 2:   Change connection type to **bri-api**

Press ⎡F1⎤ (CHANGE or RUN). A new set of fields will be displayed. See Figure 11-4, *The* system : translation : switch connection *Form (API)*.

```
AUDIX STATUS: alarms: M    , logins:1, thresholds:none
PATH: system : translation : switch : connection

connection type (dciu-sci/smsi/bri-api/sl1/sid/standalone): bri-api
(PRESS CHANGE TO MODIFY CONNECTION TYPE, NEW FIELDS WILL BE DISPLAYED)

    (THE FOLLOWING FIELDS APPLY ONLY TO A BRI-API CONNECTION TYPE)

data speed (1200-9600):
call answer timeout (seconds):
timeout treatment (m/n/t)   : n       extension: _____
end to end datalink number  :_____
voice port disconnect timing  (milliseconds): _____
host switch: ___    AUDIX: ___
address ranges   (first    / last extension   public network number)
          1:  _____70000/_____79999        ___2770000
          2:  _____/_____        _____
          3:  _____/_____        _____
          4:  _____/_____        _____
          5:  _____/_____        _____
          6:  _____/_____        _____
          7:  _____/_____        _____
          8:  _____/_____        _____


Error and confirmation information appears on this line.
```

Figure 11-4. The system : translation : switch connection Form (API)

Step 3:   Set `data speed` to match the speed of the Switch Communications Adapter (SCA).

Step 4:   Leave `timeout treatment` at n and the `extension` field blank for now.

Step 5:   Make sure the `end to end datalink number` field has seven zeroes (0000000). This is the default value.

The `end to end datalink number` field is used by the AUDIX system to send an update message to the switch every 30 seconds to confirm that the attached 5ESS Switch is responding to the AUDIX system.

Step 6:   Set `AUDIX` to the AUDIX system machine number.

Step 7:   In the `address ranges:` field, specify from 1 to 8 address ranges for the API connection. In the `address ranges (first)` field, enter a 3- to 10-digit first extension [70000 is used as an example in Figure 11-4, *The* `system : translation : switch connection` *Form (API)*]. In the `address ranges (last extension)` field, enter a 3- to 10-digit last extension (79999 is the example used in Figure 11-4). In the `public network number` field, enter the extension prefix (27 is the example in Figure 11-4) followed by the first extension number (70000 in Figure 11-4). The following guidelines apply to the address ranges:

— Range values are inclusive.

— Each extension value must have the same number of digits as specified on the `system : translation : machine : audix/amis/call delivery` form.

— Values must be numeric.

— The last extension must be equal to or greater than the first extension.

— Ranges cannot overlap.

— The address default range is `0-0 : 54` (as determined by the number of digits field). For example, if five digits are specified for the machine, the default address range first and last extension numbers are `00000` to `99999`.

— The default public network number is zeroes (not specified). The public network may not be zeroes after the initial entry of the form.

Step 8:   Press ⌐F1⌐ (CHANGE or RUN).

Step 9:   Press ⌐CTRL⌐ and ⌐z⌐ simultaneously to exit the form.

Step 10:   Continue with the *ASSIGN THE TIME ZONE* section.

ACP Connection

If the AUDIX system is connected to an ACP, do the following:

Step 1:   Go to the system : translation : switch connection form by typing **sy tr s** in the path line and press ⌐RETURN⌐.

Step 2:   The system is shipped with connection type set to dciu-sci.

            Change connection type to **smsi**

            Press ⌐F1⌐ (CHANGE or RUN). A new set of fields will be displayed. See Figure 11-5, *The* system : translation : switch connection *Form (SMSI).*

Step 3:   Set host type to **5ess**

Step 4:   Set timeout treatment to **n** for now.

Step 5:   Make sure the end to end datalink number field has seven zeroes (0000000). This is the default value.

            The end to end datalink number field is used by the AUDIX system to send an update message to the switch every 30 seconds to confirm that the attached 5ESS Switch is responding to the AUDIX system.

Step 6:   Set the host switch number to a value from 1 to 20.

Step 7:   Set AUDIX to the AUDIX system machine number. The default is 1.

Step 8:   In the address ranges: field, specify from 1 to 8 address ranges for the SMSI connection. In the address ranges (first) field, enter a 3- to 10-digit first extension [70000 is used as an example in Figure 11-5, *The* system : translation : switch connection *Form (SMSI)*]. In the address ranges (last extension) field, enter a 3- to 10-digit last extension (79999 is the example used in Figure 11-5). In the public network number field, enter the extension prefix (27 is the example in Figure 11-5) followed by the first extension number (70000 in Figure 11-5). The example used in Figure 11-5 for the public network number field is 2770000. The following guidelines apply to the address ranges:

            — Range values are inclusive. Ranges cannot overlap.

            — Each extension value must have the same number of digits as specified on the system : translation : machine : audix/amis/call delivery form.

            — Values must be numeric.

            — The last extension must be equal to or greater than the first extension.

            — The address default range is 0-0 : 9-9 (as determined by the number of digits field). For example, if five digits are specified for the machine, the default address range first and last extension numbers are 00000 to 99999.

            — The default public network number is zeroes (not specified). The public network may not be zeroes after the initial entry of the form.

Step 9:   Press ⌐F1⌐ (CHANGE or RUN).

Step 10:   Press ⌐CTRL⌐ and ⌐z⌐ simultaneously to exit the form.

Step 11:   Continue with the *ASSIGN THE TIME ZONE* section.

```
AUDIX STATUS: alarms: M    , logins:1, thresholds:none
PATH: system : translation : machine : switch connection

connection type (dciu-sci/smsi/bri-api/sl1/sid/standalone):  smsi
(PRESS CHANGE TO MODIFY CONNECTION TYPE, NEW FIELDS WILL BE DISPLAYED)

     (THE FOLLOWING FIELDS APPLY ONLY TO AN SMSI DATALINK)

host type (1aess/5ess/dms100/sl100) : _____
data speed(1200/9600)           : ____ channel terminal type (c/t) : _____
call answer timeout (seconds) : 5
timeout treatment (m/n/t)      : t    extension: _____
end to end datalink number     : _____
voice port disconnect timing   (milliseconds): _____
host switch: ___    AUDIX: ___
address ranges    (first     / last extension   public network number)
            1:  _____70000 / _____79999       ___2770000
            2:  _____ / _____          _____
            3.  _____ / _____          _____
            4.  _____ / _____          _____
            5.  _____ / _____          _____
            6.  _____ / _____          _____
            7.  _____ / _____          _____
            8.  _____ / _____          _____

 _____
Error and confirmation information appears on this line.
```

Figure 11-5. The system : translation : switch connection Form (SMSI)

AUDIX Standalone System

Use the following section for an AUDIX Standalone system.

Step 1:   Go to the system : translation : switch connection form by typing **sy tr s** in the path line and press ⌈RETURN⌋.

Step 2:   Set connection type to **standalone**

            Press ⌈F1⌋ (CHANGE or RUN). A new set of fields will be displayed. See Figure 11-6, *The* system : translation : switch connection *Form (Standalone).*

Step 3:   Set voice port disconnect timing to **400**

Step 4:   Set call answer timeout to **5**

Step 5:   Set timeout treatment to **n** for now.

Step 6:   Leave automated attendant extension blank for now.

Step 7:   Set the port types. For the AUDIX system ports wired to the switch as type ''c'' ports (call answering), enter a **c** in the corresponding port call type fields. Do the same for the type ''v'' (voice mail) ports, if any.

The type ''a'' (automated attendant) ports will be assigned in Chapter 14, *Optional Features*, if required. Only one main automated attendant is allowed in a standalone configuration.

| NOTE |

See *AUDIX System Description* (585-305-201) or *Switch Administration for AUDIX Voice Messaging* (585-305-505) for information on setting up ''m'' ports. No more than five m-type ports may be administered at one time.

Step 8:   Press ⟨CTRL⟩ and ⟨z⟩ simultaneously to exit the form.

Step 9:   Continue with the *ASSIGN THE TIME ZONE* section.

```
AUDIX STATUS: alarms: M   , logins:1, thresholds:none
 PATH: system : translation : switch connection

connection type (dciu-sci/smsi/bri-api/sll/sid/standalone): standalone
(PRESS CHANGE TO MODIFY CONNECTION TYPE, NEW FIELDS WILL BE DISPLAYED)

     (THE FOLLOWING FIELDS APPLY ONLY TO STAND-ALONE)

voice port disconnect timing (milliseconds): 400
is line quality high? (y/n)  :__   ground start (y/n) : ___
call answer timeout (seconds): 5
timeout treatment (m/n/t) : n       extension: _____
automated attendant extension:
MWI access codes, on:  *33_____ off: #33_____

port call type (c/v/a/m)
 1- 8: c c c c c c c c
 9-16: c c c c _ _ _ _
17-24:  _ _ _ _ _ _ _ _
25-34:  _ _ _ _ _ _ _ _

host switch: ___    AUDIX: ___

 _____
Error and confirmation information appears on this line.

┌─────────┬───────┬─────────┬───────┬───────┬────────┬──────┬───────┐
│ CHANGE  │  ADD  │ DELETE  │ HELP  │ FIELD │ CLEAR  │ EXIT │ ENTER │
│ OR RUN  │       │         │       │ HELP  │ FROM   │      │       │
└─────────┴───────┴─────────┴───────┴───────┴────────┴──────┴───────┘
```

Figure 11-6. The system : translation : switch connection Form (Standalone)

ASSIGN THE TIME ZONE

Assign the time zone for each switch connected to the AUDIX system as follows:

Step 1:   Go to the `switch time zone` form by typing **sw** in the path line and press (RETURN).
           See Figure 11-7, *The* `switch time zone` *Form*.

Step 2:   Enter the time zone next to the host switch number.

           The time zone is represented by a number (0-23) that indicates the number of hours of
           difference during standard time between your time zone and universal coordinated time
           (formerly called Greenwich mean time). For example:

           - Atlantic Standard Time = 4

           - Eastern Standard Time = 5

           - Central Standard Time = 6

           - Mountain Standard Time = 7

           - Pacific Standard Time = 8

           - Hawaii and Alaska = 10

Step 3:   Enter **y** if daylight savings is used (the AUDIX system will automatically adjust the time each
           spring and fall).

Step 4:   Press (F1) (CHANGE or RUN).

Step 5:   Press (CTRL) and (z) simultaneously to exit the form.

```
AUDIX STATUS: alarms: M    , logins:1, thresholds:none
PATH: switch time zone

 switch    time    daylight        switch    time    daylight
 number    zone    savings?        number    zone    savings?

   1:        5       y                2:        6       y
   3:       __       _                4:       __       _
   5:       __       _                6:       __       _
   7:       __       _                8:       __       _
   9:       __       _               10:       __       _
  11:       __       _               12:       __       _
  13:       __       _               14:       __       _
  15:       __       _               16:       __       _
  17:       __       _               18:       __       _
  19:       __       _               20:       __       _

                        host switch:    1


 Error and confirmation information appears on this line.

 CHANGE    ADD    DELETE      HELP    FIELD       CLEAR    EXIT    ENTER
 OR RUN                               HELP        FROM
```

Figure 11-7. The switch time zone Form

ASSIGN THE EXTENSION NUMBER LENGTH

Assign the AUDIX system extension length and address ranges as follows:

Step 1:   Go to the `system : translation : machine : audix/amis/call delivery` form by typing **sy tr m aud** in the path line and press RETURN. See Figure 11-8, *The* `system : translation : machine : audix/amis/call delivery` *Form.*

Step 2:   Set `extension length` to the number that matches the length of the subscriber and voice port extension numbers.

Step 3:   Press F1 (CHANGE or RUN).

Step 4:   Set `address range start/end` to the range that corresponds to the extension length. Press F1 (CHANGE or RUN). See Figure 11-8 for an example.

Step 5:   Press CTRL and z simultaneously to exit the form.

Other fields on this form apply only to AUDIX systems that are networked.

```
AUDIX STATUS: alarms: M   , logins:1, thresholds:none
 PATH: system : translation : machine : audix/amis/call delivery

machine name: _____   local/remote: l  password: _____    ext length: 5
voiced name (y/n)? n   voice id: ___    AMIS callback no.: _ (1, 2, 3, 4, or 5)
default community: _   connection type: ____    data rate: _____    channel: _
 dial string _____
address ranges (prefix     start     / end extension)  warnings
 1: _____   00000____ / 99999_____   _____
 2: _____   _____  / _____    _____
 3: _____   _____  / _____    _____
 4: _____   _____  / _____    _____
 5: _____   _____  / _____    _____
 6: _____   _____  / _____    _____
 7: _____   _____  / _____    _____
 8: _____   _____  / _____    _____
 9: _____   _____  / _____    _____
10: _____   _____  / _____    _____
message transmission schedule (hh:mm)
1. start: __:__   end: __:__   interval: __:__   updates (y/n)?  in _  out _
2. start: __:__   end: __:__   interval: __:__   network turnaround (y/n)? _
3. start: __:__   end: __:__   interval: __:__   log connect events (y/n)? _
new machine name: _____       send to non-administered recipients (y/n)? _
 _____
 Error and confirmation information appears on this line.
```

Figure 11-8. The system : translation : machine : audix/amis/call delivery Form

RUN MAINTENANCE AUDITS ON THE FP

If the extension length was changed, an audit must be run before the voice ports can be translated.

Step 1:   Go to the `maintenance : audits : fp` form by typing **m au fp** in the path line. See Figure 11-9, *The* `maintenance : audits : fp` *Form*.

Step 2:   Set `Service Dispatcher:` to **x**

Step 3:   Set `start:` to **x**

Step 4:   Press F1 (CHANGE or RUN). This audit should only take a few seconds.

Step 5:   After waiting a few seconds, blank out the `start` field.

Step 6:   Set `status:` to **x**

Step 7:   Press F1 (CHANGE or RUN). If the audit is still in progress, wait a minute and press F1 (CHANGE or RUN) again. The message `completed` should display.

```
AUDIX STATUS: alarms: M   , logins:1, thresholds:none
PATH: maintenance : audits : fp
To start or stop a demand audit, choose one:
   AUDIT             DEMAND STATUS         NIGHTLY STATUS
Message-Waiting Lamp  : _
DBP Administrator     : _
Service Dispatcher    : x
Alarm Log             : _
Announcement Structure: _
Subscriber Data       : _
Message Data          : _
Subscriber Mailbox    : _
Mailing List and      : _
Personal Directory
Network Data          : _
Subscriber Name Data  : _
Voice Data Rebuild    : _
Voice Files           : _
Subscriber Id         : _
Choose one:    start x      stop _      status _

Error and confirmation information appears on this line.
```

Figure 11-9. The maintenance : audits : fp Form

ASSIGN THE VOICE PORTS

Use the following guidelines when assigning the voice ports:

- For TN747B Voice Port (VPT) boards, the extension you enter in the `extension/port id number` field must be the same length as the extensions you assigned on the `system : translation : machine : audix/amis/call delivery` form.

- Enter the extension/port id number in the same order as the AUDIX hunt group or ACD split is assigned on the switch.

Figure 11-10, *The* `system : translation : voice port` *Form*, shows sample voice port assignments for an AUDIX system integrated with an AT&T digital switch.

Step 1:   Go to the `system : translation : voice port` form by typing **sy tr v** in the path line and press ⌐RETURN⌐. See Figure 11-10, *The* `system : translation : voice port` *Form*.

Step 2:   Enter the extension/port id number assigned to VOICE PORT 1 (W/BL, cable D00) in the first field next to line 1- 4. The other extension/port id numbers assigned to D00 must follow to the right and on line 5- 8.

Step 3:   Enter the extension/port id number assigned to VOICE PORT 9 (W/BL, cable D01) in the first field next to 9-12, etc.

Step 4:   Press ⌐F1⌐ (CHANGE or RUN) after you have assigned all extension/port id numbers.

Step 5:   Press ⌐CTRL⌐ and ⌐z⌐ simultaneously to exit the form.

```
AUDIX STATUS: alarms: M    , logins:1, thresholds:none
PATH: system : translation : voice port

extension/port id length: 5

voice ports        extension/port id number

  1- 4:  28426   28427   28428   28429
  5- 8:  28430   28431   28432   28433

  9-12:  28434   28435   28436   28437
 13-16:  28438   28439   28440   28441

 17-20:
 21-24:

 25-28:
 29-32:




Error and confirmation information appears on this line.

 CHANGE    ADD    DELETE       HELP    FIELD       CLEAR    EXIT   ENTER
 OR RUN                                HELP        FROM
```

Figure 11-10. The system : translation : voice port Form

RESTART THE AUDIX SYSTEM

Bring the AUDIX system back into service as follows:

Step 1:   Go to the startup form by typing **st** in the path line and press (RETURN).

Step 2:   Press (F1) (CHANGE or RUN). This will write the voice port translations to disk.

Step 3:   Enable the data link from the switch side. Refer to *Switch Administration for AUDIX Voice Messaging* (585-305-505) for more information if needed.

    a. *For System 75, Generic 1, or Generic 3:* From the Switch Administration Terminal (SAT) or equivalent, enable the data link on the communication-interface link form.

    b. *For System 85 or Generic 2:* Release the data link (it is normally busied out until the AUDIX system is ready for service).

Step 4:   Log in after the start service prompt. If the start service prompt does *not* appear, use the AUDIX maintenance manual to troubleshoot the system. The system will not deliver messages until service has been started.

Step 5:   Test and synchronize the AUDIX system clock according to instructions in section, *CHECK THE ALARM STATUS*.

SET AND TEST THE AUDIX SYSTEM CLOCK

Check and test the AUDIX system clock as follows:

Step 1:   Check the clock on the switch. You may need special permission to do this.

   IMPORTANT: Do *not* reset the clock without consulting maintenance personnel. Resetting the clock could have an adverse affect on traffic studies.

   - System 75, System 75 XE, Generic 1, and Generic 3 — Do display time at the local maintenance or administration terminal to display the date and time.

   - System 85, Generic 2, and DIMENSION PBX — Use PROC 284. Press DISPLAY and EXECUTE.

   If the time, day, etc., is not accurate, consult local maintenance personnel to have it reset.

Step 2:   Go to the system : clock form by typing **sy cl** in the path line and press RETURN. See Figure 11-11, *The* system : clock *Form*.

Step 3:   Enter **x** next to time synchronization with switch.

   The AUDIX system clock will not synchronize with the switch clock if the data link has not been enabled or is busied out.

Step 4:   Press F1 (CHANGE or RUN). After confirmation, blank out the x.

Step 5:   Enter **x** next to test system clock.

Step 6:   Press F1 (CHANGE or RUN).

Step 7:   Press CTRL and z simultaneously to exit the form.

```
AUDIX STATUS: alarms: M   , logins: 1, thresholds:none
PATH: system : clock

(TO SELECT AN OPTION ENTER AN x THEN PRESS CHANGE)

_ set system clock (FILL IN DATE AND TIME BELOW)
_ time synchronization with switch (DCIU or SCI datalink only)
_ test system clock
  test result:


  date (mmddyy):
  time (24 hour clock, hhmm):
  day of week:




     (PRESS ENTER TO REDISPLAY CURRENT TIME)


Error and confirmation information appears on this line.

 CHANGE    ADD    DELETE      HELP    FIELD       CLEAR    EXIT    ENTER
 OR RUN                               HELP        FROM
```

Figure 11-11. The system : clock Form

CHECK THE ALARM STATUS

Check the current status of the AUDIX system as follows:

Step 1:   Go to the maintenance : active alarm : display form by typing **m act d** in the path line and press ⌈RETURN⌉. Typically, only the Fault 16, Unit 116 alarm is still active.

Step 2:   Use *AUDIX Maintenance for Tier 1* (585-305-106) to resolve any active alarms.

Step 3:   Press ⌈CTRL⌉ and ⌈z⌉ simultaneously to exit the form.

CHECK THE HARDWARE STATUS

Step 1:   Go to the `maintenance : dbp : status` form by typing **m db s** in the path line and press ⎡RETURN⎤.

a.   Make sure that all standard and optional Data Base Processor (DBP) devices ordered are shipped as EQ/EN. Figure 11-12, *The* `maintenance : dbp : status` *Form*, shows a small system (up to four disks) ordered with two Hard Disk Drives (HDDs) (disk00 and disk02) and the Removable Cartridge Drive (RCD) (disk01). Expanded systems will have fields for seven disks.

b.   Press ⎡CTRL⎤ and ⎡z⎤ simultaneously to exit the form.

```
AUDIX STATUS: alarms: M   , logins:1, thresholds:none
PATH: maintenance : dbp : status


DBP Equipment status

EQUIPPED (EQ)            ENABLED (EN)
UNEQUIPPED (UE)          DISABLED (D)

DISK 00-03:  EQ/EN   EQ/EN   EQ/EN   UE/D




Error and confirmation information appears on this line.

CHANGE    ADD    DELETE        HELP    FIELD        CLEAR    EXIT    ENTER
OR RUN                                 HELP         FROM
```

Figure 11-12. The maintenance : dbp : status Form

Step 2:   If the status of one of the disks is incorrect, do the following:

Go to the `maintenance : dbp : unequip` form by typing **m db u** in the path line and press ⎡RETURN⎤.

a.   Unequip the disk by typing the disk device number (0 to 3 for a one-cabinet system or 0 to 6 for a two-cabinet system) in the `disk device number` field.

b.   Press ⎡F1⎤ (CHANGE or RUN).

c.   Press ⎡CTRL⎤ and ⎡z⎤ simultaneously to exit the form.

To re-equip the disk, go to the `maintenance : dbp : equip` form by typing **m db eq** in the path line and press (RETURN). See Figure 11-13, *The* `maintenance : dbp : equip` *Form*.

    a.   Type **SCSI** in the `circuit pack code` field.

    b.   Enter the `disk device number` field (0 to 3 for a one-cabinet system or 0 to 6 for a two-cabinet system).

    c.   If equipping disk01, make sure field `erase (y/n)?` is set to **n**.

> **WARNING**
>
> **If you enter** y **at the** `erase (y/n):` **field, the system will erase the contents of the disk, then format and label it for future use. When equipping a disk that already contains useful information, enter** n **in this field to prevent the contents from being destroyed. Only authorized AT&T personnel can erase the contents of a hard disk (such as disk00).**

    d.   Press (CTRL) and (z) simultaneously to exit the form.

```
AUDIX STATUS: alarms: M    , logins:1, thresholds:none
PATH: maintenance : dbp : equip


circuit pack code    :

disk device number   :        volume label  :
erase (y/n)          ?

Result
```

CHANGE OR RUN	ADD	DELETE		HELP	FIELD HELP		CLEAR FROM	EXIT	ENTER

Error and confirmation information appears on this line.

Figure 11-13. The maintenance : dbp : equip Form

If this process fails, see *AUDIX Maintenance for Tier 1* (585-305-106) to perform further tests. If the equip process is successful, go back to the `maintenance : dbp : status` form (type **m db s**) and see if the disk is enabled.

Step 3:   Go to the `maintenance : vsp : equipage` form by typing **m vs eq** in the path line and press ⎡RETURN⎤. See Figure 11-14, *The* `maintenance : vsp : equipage` *Form*. This displays the status of the VSP devices. They are shipped as UEQ.

  a. Where the boards are present in the cabinets, change their status to EQ by tabbing to the appropriate field and pressing the space bar to delete the U.

VB/TDBI 1-2	TN500/TN520 — base slots 16 and 17
	TN500/TN520 — expansion slots 16 and 17
VPC 1-8	TN501B — base slots 20-23 and 25-28
VPC 9-16	TN501B — expansion slots 20-23 and 25-28
VPT 1-4	TN747B — base slots 19 and 24
	TN747B — expansion slots 19 and 24

  b. When all the necessary changes have been made, press ⎡F1⎤ (CHANGE or RUN). If successful, all EQs will shift one space to the left.

  c. Press ⎡CTRL⎤ and ⎡z⎤ simultaneously to exit the form.

```
AUDIX STATUS: alarms: M   , logins:1, thresholds:none
PATH: maintenance : vsp : equipage

VSP Equipage

EQUIPPED (EQ)   UNEQUIPPED (UEQ)   NOT APPLICABLE (NA)


VB/TDBI 1-2 : EQ    UEQ

VPC 1-8     : UEQ   UEQ   UEQ   UEQ   UEQ   UEQ   UEQ   UEQ
VPC 9-16    : UEQ   UEQ   UEQ   UEQ   UEQ   UEQ   UEQ   UEQ

VPT 1-5     : UEQ   UEQ   UEQ   UEQ   NA




Error and confirmation information appears on this line.

CHANGE    ADD    DELETE       HELP    FIELD        CLEAR    EXIT    ENTER
OR RUN                                HELP         FROM
```

Figure 11-14. The maintenance : vsp : equipage Form

Step 4:   Go to the `maintenance : active alarm : display` form by typing **m act d** in the path line and press [RETURN].

    a.   Verify that no alarm has occurred.

    b.   Press [CTRL] and [z] simultaneously to exit the form.

    c.   Check the circuit pack LEDs for alarms.

    d.   See *AUDIX Maintenance for Tier I* (585-305-106) to resolve new alarms, replace circuit packs, etc.

Step 5:   Go to the `maintenance : td-bus : status` form by typing **m td- s** in the path line and press [RETURN].

    a.   Verify that all equipped devices are IS (In-Service).

    b.   Press [CTRL] and [z] simultaneously to exit the form.

Step 6:   Go to the `maintenance : vsp : busyout` form by typing **m vs b** in the path line and press [RETURN].

    a.   Verify that all equipped devices show their port status as `r` (released).

    b.   Enter each type (one at a time) and press [F1] (CHANGE or RUN).

    c.   Press [CTRL] and [z] simultaneously to exit the form.

Step 7:   Go to the `maintenance : vb : channel status` form by typing **m vb c** in the path line and press [RETURN].

    a.   To verify that all channels are idle (`IDLE`), enter a type and a unit and press [F8] (ENTER).

    b.   Press [CTRL] and [z] simultaneously to exit the form.

Step 8:   Go to the `maintenance : vb : status` form by typing **m vb s** in the path line and press [RETURN].

    a.   To verify that the Voice Buffer/Time Division Bus Interface (VB/TDBI) has a non-zero vintage, press [F8] (ENTER) to display the VB/TDBI(s) status.

    b.   Press [CTRL] and [z] simultaneously to exit the form.

Step 9:   Go to the `maintenance : system : hardware status` form by typing **m sy h** in the path line and press [RETURN].

    a.   Verify that all zeros are returned. For one-cabinet AUDIX systems, the VSP and VB2 come up `can't determine`.

    b.   Press [CTRL] and [z] simultaneously to exit the form.

Step 10:   Go to the `maintenance : system : vintage` form by typing **m sy v** in the path line and press [RETURN].

    a.   The vintages that appear on the terminal screen should equal or exceed the vintages shown in Table 11-1, *AUDIX Circuit Packs and Required Minimum Vintages*.

    b.   Press [ENTER] to change between the two screens shown in Figure 11-15, *The* `maintenance : system : vintage` *Form (Screens One and Two)*.

    c.   Press [CTRL] and [z] simultaneously to exit the form.

Table 11-1. AUDIX Circuit Packs and Required Minimum Vintages *(Part 1 of 2)*

Circuit Pack	Description and Remarks	Comcode	Minimum Vintage
TN366 *or*	ACC (AUDIX Communications Controller)	103279840	5
TN366B		106186588	1
TN472C	DBP CPU (Data Base Processor Central Processing Unit); a TN472C is required for two-cabinet systems	105474126	
	TN472 (non-networking)		3
	TN472C (non-networking)		1
	TN472C (networked systems)		2
TN475 *or*	SADI (SCSI to AUDIX Disk Interface)	103280830	2
	TN475 (works only with small HDDs)		
TN475B	TN475B (with one-cabinet AUDIX)	105474118	2
	TN475B (with two-cabinet AUDIX)		5
TN477	TDBI (Time Division Bus)	103280855	1
TN500	TDBI	103281085	
	≤ 24 ports		7
	> 24 ports		10
TN501B	VPC (Voice Processor Circuit)	103965182	6
TN506 *or*	BC (Bus Controller)	103281143	3
TN506B		105222301	1
TN511	MI (Maintenance Interface)	103281192	2
TN520	VB (Voice Buffer)	103281283	
	≤ 24 ports		11
	> 24 ports		15
TN523	FP CPU (Feature Processor Central Processing Unit)	103281317	11
	(vintages 12 & 13 should not be used)		

(Continued)

TABLE 11-1. AUDIX Circuit Packs and Required Minimum Vintages *(Part 2 of 2)*

Circuit Pack	Description and Remarks	Comcode	Minimum Vintage
TN532	DBP RAM — 2 Mbyte (one-cabinet only)	103281408	1
TN533	SCPI (Switch Communications Processor Interface) < 5 DCS ports ≥ 5 DCS ports	103281416	 7 11

TN539 *or*
 	
TN539B
	ACCE (AUDIX Communications Controller Enhanced)
	    TN539 with 4 out of 6 ports active
	    TN539 with all 6 ports active
		103281473
		
		106757768
			
			4
			7
			8

TN540	DBP RAM — 4 Mbyte (two-cabinet only)	103281481	1
TN547 *or* TN547B	MPSI (Multiprotocol Switch Interface)	103281556 105717359	2 1
TN591	CPU	103281994	1
TN714	TC (Tone and Clock)	103556676	4
TN716 *or* TN716B	FP BI (Feature Processor Bus Interface)	103556692 105442412	3 1
TN727	NC (Network Controller)	103556809	8
TN734	FP RAM — 2 Mbyte	103556809	2
TN747B	VPT (Voice Port)	105167266	2
TN761	FP RAM — 4 Mbyte	103557146	1
TN762B	VPT (Voice Port for SL-1 integration)	103976171	4
UN160 *or* UN160B	DBPI (Data Base Processor Interface)	103666038 105319818	8 2
UN162	VSFI (Voice Store and Forward Interface)	103666053	2

```
AUDIX STATUS:  alarms: none,  logins: 1,  thresholds: none
 PATH:   maintenance : system : vintage

VSF                     VSF                     VSF
BOARD       VINTAGE     BOARD       VINTAGE     BOARD       VINTAGE












software version:
field update number:
USE ENTER TO PAGE _


Error and confirmation messages appear here.
 CHANGE | ADD  | DELETE        HELP  | FIELD        CLEAR | EXIT | ENTER
 or RUN |      |                     | HELP         FORM  |      |
```

```
AUDIX STATUS:  alarms: none,  logins: 1,  thresholds: none
 PATH:   maintenance : system : vintage

DBP                     DBP                     DBP
BOARD       VINTAGE     BOARD       VINTAGE     BOARD       VINTAGE












software version:
field update number:
USE ENTER TO PAGE _


Error and confirmation messages appear here.
 CHANGE | ADD  | DELETE        HELP  | FIELD        CLEAR | EXIT | ENTER
 or RUN |      |                     | HELP         FORM  |      |
```

Figure 11-15. The maintenance : system : vintage Form (Screens One and Two)

12. AUDIX System Testing

Use this chapter to perform the AUDIX system acceptance tests. It is divided into the following sections:

- Subscriber Setup

- Maintenance Tests

- Basic Feature Tests (AUDIX Integrated System)

- Basic Feature Tests (AUDIX Standalone System)

- AUDIX-to-Switch Tests

SUBSCRIBER SETUP

Use this section to assign two AUDIX system test subscribers. The test subscribers must have the same extension length as assigned in *Assign the Extension Number Length* in Chapter 11, *AUDIX System Administration*, and at the switch.

Subscriber Profiles

Administer two test subscribers as follows:

Step 1:   Go the the `subscriber : local` form by typing **su lo** in the path line and press RETURN .

        a. Enter a name and extension (see Figure 12-1, *The* `subscriber : local` *Form*). This will be Subscriber 1.

        b. Press F2 (ADD).

            Other fields are filled in automatically from the `cos : default` form.

Step 2:   Clear the form by pressing F6 (CLEAR FORM).

Step 3:   Enter another name and extension. This subscriber will be referred to as Subscriber 2.

Step 4:   Press F1 (CHANGE or RUN).

Step 5:   Stay in the `subscriber : local` form.

Announcement Control

The subscriber : local form should still have Subscriber 2's data displayed on the form.

Step 1:   Assign Announcement Control to Subscriber 2:

    a. Set announcement control (y/n): to **y**

    b. Press $\boxed{\text{F1}}$ (CHANGE or RUN) and wait for confirmation. This will allow Subscriber 2 to record subscriber names into the names filesystem.

Step 2:   Press $\boxed{\text{CTRL}}$ and $\boxed{\text{z}}$ simultaneously to exit the form.

```
AUDIX STATUS: alarms: M   , logins:1, thresholds:none
PATH: subscriber : local
name: _____ ext: _____
(PRESS ENTER TO DISPLAY SERVICE OPTIONS)
cos: _____ (optional)        password: _____ (optional)
community id : __                broadcast mailbox (y/n)? _
switch number: __                  misc: _____          (optional)
covering extension: _____ (optional)  addressing format (e/n): _
permissions, type (a/c/p/n): _  announcement (y/n)? _
          outcalling (y/n)? _  priority msg (y/n)? _  broadcast (v/l/b/n): _
text service machine: _____  user id: _____
incoming mailbox,  lifo/fifo (l/f): _  category order (n,u,o): ___
    retention times (days),    new: ___ old: ___ unopened: ___
outgoing mailbox,  lifo/fifo (l/f): _  category order (f,u,n,d,a): _____
    retention times (days), file cab: ___ delivered/nondeliverable: ___
voice mail message (seconds),  maximum length: ___  minimum needed: ___
call answer message (seconds), maximum length: ___  minimum needed: ___
end of message warning time (seconds): __
maximum mailing lists: ___    total entries in all lists: ____
mailbox size (seconds), maximum: ____  minimum guarantee: ____

new name: _____  new ext: _____ locked (y/n)? _

_____
Error and confirmation information appears on this line.
```

Figure 12-1. The subscriber : local Form

Recording Subscriber Names

This is an administrative task normally done by the customer's AUDIX system administrator. When completed, each test subscriber's name is stored in the data base along with their extension number. This is *not* the subscriber's greeting. The greeting is recorded in the *Record a Personal Greeting* section.

Use any voice terminal for this procedure.

Step 1:   Dial the AUDIX system extension.

Step 2:   Dial Subscriber 2's extension followed by (#).

Step 3:   Subscriber 2's password at this time is null. Just press (#).

Step 4:   Although not a voiced option, press (9).

Step 5:   To create or change a message fragment, press (4).

Step 6:   Dial Subscriber 2's extension, followed by (#).

Step 7:   Speak Subscriber 2's name and press (#) or (*) (#) to approve it.

> | NOTE | An R1V8 system with *standard* announcements will prompt you to press (#) to approve your entry, while an R1V8 system with *traditional* announcements will prompt you to press (*) (#). Either command will work. |

Step 8:   When prompted to record another subscriber name, dial Subscriber 1's extension, followed by (#).

Step 9:   Speak Subscriber 1's name, press (#) or (*) (#) to approve it, and hang up.

Step 10:   Activate call-coverage or call-forwarding for Subscriber 1, call Subscriber 1, and verify that Subscriber 1's name is voiced when the AUDIX system answers.

MAINTENANCE TESTS

Use *AUDIX Maintenance for Tier 1* (585-305-106) if any of the following tests fail.

Step 1:   Test the Data Link (possible for fully integrated systems only)

      a.   Go to the `maintenance : datalink : test` form by typing **m da t** in the path line and press ⎣RETURN⎦.

          Set `Enter loopback point (1-4)` to **2** and press ⎣F1⎦ (CHANGE or RUN) to test the SCPI.

      b.   Enter loopback point **1** and press ⎣F1⎦ (CHANGE or RUN) to test the switch connection. (Takes about 10 minutes.)

Step 2:   Test the TD-Bus

      a.   Go to the `maintenance : td-bus : test` form by typing **m td r** in the path line and press ⎣RETURN⎦.

          Set `type` to **TC**

          Set `board` to **1**

          Set `repetitions` to **3**

          Set `long version` to **y**

          Press ⎣F1⎦ (CHANGE or RUN). (Takes about 1 second per repetition.) Also test the TDBI(s), the Voice Processor Computers (VPCs) (boards 1 through 16, if equipped), and the Voice Ports (VPTs) (boards 1 through 4, if equipped).

          Press ⎣CTRL⎦ and ⎣z⎦ simultaneously to exit the form.

      b.   Go to the `maintenance : tc : test` form by typing **m tc t** in the path line and press ⎣RETURN⎦.

          Set `repetitions` to **3**

          Set `long version` to **y**

          Press ⎣F1⎦ (CHANGE or RUN). (Takes about 4 minutes.)

          Press ⎣CTRL⎦ and ⎣z⎦ simultaneously to exit the form.

      c.   Go to the `maintenance : tdbi : test` form by typing **m tdb t** in the path line and press ⎣RETURN⎦.

          Set `board` to **1**

          Set `repetitions` to **3**

          Set `long version` to **y**

          Enter **x** next to `start`.

          Press ⎣F1⎦ (CHANGE or RUN). (Takes about 30 seconds per channel.)

          Press ⎣CTRL⎦ and ⎣z⎦ simultaneously to exit the form.

d. Go to the `maintenance : vpc : test` form by typing **m vpc t** in the path line and press [RETURN].

Set `board` to **1**

Set `repetitions` to **3**

Set `long version` to **y**

Enter **x** next to `start`.

Press [F1] (CHANGE or RUN). (Takes about 6 minutes.) Also test boards 2 through 8, if equipped.

Press [CTRL] and [z] simultaneously to exit the form.

Step 3:   Final Verification

After executing the demand tests and replacing/retesting faulty circuit packs, go to the `maintenance : system : hardware status` form by typing **m sy h** in the path line and press [RETURN].

Check for S-Bus processor failures. Redisplay this form every minute for 10 minutes to verify that there are no intermittent problems.

Press [CTRL] and [z] simultaneously to exit the form.

Alarm/Error Inspection and Test

A visual inspection of the AUDIX system can indicate whether or not any alarms exist. On the maintenance terminal `STATUS` line, `alarms` can show any of the following:

- `M` — major

- `m` — minor

- `w` — warning

- `A` — administrator

The `maintenance : active alarms : display` form shows the codes associated with the alarm. The *AUDIX Maintenance for Tier 1* (585-305-106) gives an explanation of these codes.

Also check the circuit packs for abnormally lit LEDs. *AUDIX Maintenance for Tier 1* (585-305-106) gives a full explanation of when and why the LEDs are lit and how to treat them.

Alarm, Battery Holdover, and Remote Maintenance Test

These procedures test the reporting of AUDIX system alarms to the remote maintenance location. The remote maintenance cable will then be connected to H00 to verify that remote personnel can access the system for maintenance.

Preliminary Setup:

Step 1:   Log off the AUDIX system at the maintenance terminal and turn off the terminal.

Step 2:   At the rear of the AUDIX system cabinet, move the maintenance terminal cable from H00 to H01 (the administration port).

Step 3:   Connect the remote maintenance cable to the maintenance port (H00).

Step 4:   Verify the modem status (that it is ready to accept incoming calls).

Step 5:   Verify the Operation of the Administration Port:

Turn on power to the local maintenance terminal, log in (login = cust, password = cust) and verify that the terminal works properly while connected to the administration port. Whenever a maintenance shutdown has been executed, the administration port is disabled.

Generate a System Alarm to the Switch:

Step 1:   Interrupt the AC power by unplugging the AUDIX system cabinet to generate an environmental alarm.

Step 2:   Verify that the AUDIX system remains operational, now powered by the batteries. In about 30 seconds the system will shut down (SHUTDOWN lamp on the TN511 will light) and automatically disconnect the batteries.

Step 3:   Restore AC power to the AUDIX system cabinet.

Verify Remote Maintenance Access:

Step 1:   Call your remote maintenance service center and verify that the alarm was reported.

Step 2:   Request that the remote personnel call the AUDIX system maintenance port to test the interface. Have them go to the `maintenance : active alarm : display` form where a new entry should be displayed (fault 891, level 2, unit 116).

Alarm and Remote Maintenance Test Clean-up:

Step 1:   Disconnect the remote maintenance cable and reconnect the local maintenance terminal to H00.

Step 2:   Verify that the alarm is cleared. The red MI LED should be dark. If no alarms existed before starting the maintenance tests, the `alarms` field on the STATUS line should be blank. The corresponding alarm log entry is automatically moved from the active alarm log to the resolved alarm log (`maintenance : resolved alarm : display` form).

BASIC FEATURE TESTS (AUDIX INTEGRATED SYSTEM)

Except for the data link, switch administration must be complete at this time. The data link is required for the Call Answer tests.

The following tests verify the operation of the voice ports and verify the operation of the basic AUDIX system features. The basic features do not require administration. Features that do require administration are tested later in Chapter 14, *Optional Features*.

There are four parts to these tests:

- Make a test call to each port extension to verify that all analog ports between the AUDIX system and the switch are operational.

- Record a personal greeting.

- Test the Call Answer feature. This is also the first verification of the data interface between the AUDIX system and the switch.

- Test the Leave Word Calling feature.

If any of the test calls fail, check the following to debug the AUDIX system-to-switch analog circuits:

- Check dial tone from the switch port on the cross-connect field.

- Check continuity to the AUDIX system backplane.

- Make sure *ringing* lights a yellow LED on the AUDIX system VPT circuit pack.

- Check for crossed lines (for example, Port 0, ext. 2220 wired or translated to Port 1).

Voice Port Test

Test each voice port found in the `system : translation : voice port` form.

Step 1:   Go to the `maintenance : system : test call` form by typing **m sy t** in the path
           line and press ⬚RETURN⬚.

           Enter a port number and set `type` to **c**

           Press ⬚F1⬚ (CHANGE or RUN). The port's extension will be displayed.

Step 2:   At a voice terminal, dial the extension number associated with the port. Wait for ringing.

Step 3:   On the `maintenance : system : test call` form, press ⬚F1⬚ (CHANGE or RUN)
           to connect the call.

Step 4:   At the voice terminal, enter Subscriber 1's login and password.

           Record the location of the yellow LEDs that light on the VPT, VPC, VB, and TDBI circuit
           packs.

Step 5:   On the `maintenance : system : test call` form, set `type:` to **d** and press `F1` (CHANGE or RUN).

Go on-hook at the voice terminal.

Step 6:   Repeat steps 1 through 5 for the other ports. On the `maintenance : system : test call` form, specify a different VPC and VB-TDBI channel for each call.

Press `CTRL` and `z` simultaneously to exit the form.

Record a Personal Greeting

Step 1:   If the data link is up, call the AUDIX system extension. If not, use the test-call procedure of the previous section to call the AUDIX system.

Step 2:   Enter a login and password of one of the test subscribers.

Step 3:   Press `3` to create/invoke a personal greeting.

Step 4:   Follow the system prompts to voice the greeting, approve it, and invoke it. Later tests of the Call Answer feature will use this personal greeting.

Call Answer Feature Test

NOTE	The data link must be administered and operating in order to perform the remaining tests.

The Call Answer feature test verifies that switch translations, the personal greeting, the message-waiting lamp, and the data link are operative. Call Coverage redirects calls to the AUDIX system (Call Answer feature) under three circumstances:

- The called subscriber does not answer.

- The called subscriber is busy.

- The called subscriber has Send All Calls active.

The called subscriber can also use Call Forwarding to redirect calls to the AUDIX system. In each case, Call Answer can record a message from the caller.

Place a ''Don't Answer'' Call and Record a Message:

Step 1:   Using a voice terminal other than Subscriber 1's, call Subscriber 1 and allow the terminal to ring until the switch redirects (transfers) the call to the AUDIX system.

Step 2:   When the AUDIX system answers, listen to the personal greeting.

Step 3:   After listening to the personal greeting and the system prompt, record a short message (for example, ''This is a test of the Don't Answer feature'') and go on-hook.

Step 4:   Verify that the message-waiting lamp lights on Subscriber 1's voice terminal.

Place a ''Busy'' Call and Record a Message:

Step 1:   At Subscriber 1's voice terminal, go off-hook to busy out this extension. (Each appearance of the extension must be in use to busy the extension.)

Step 2:   Using another voice terminal, call Subscriber 1.

Step 3:   When the AUDIX system answers, listen to the personal greeting.

Step 4:   When the system prompts you, leave a short message (for example, ''This is a test of a busy subscriber extension''). This time, press ⬚#⬚ or ⬚*⬚ ⬚#⬚ to approve the message (either command will work).

Step 5:   Press ⬚1⬚ to make the message *private* (nonforwardable). Press ⬚#⬚ or ⬚*⬚ ⬚#⬚ again to ''deliver'' the message, or simply hang up.

Place a ''Send All Calls'' Call and Record a Message.

Step 1:   Activate Send All Calls for Subscriber 1.

Step 2:   Using another voice terminal, call Subscriber 1.

Step 3:   When the AUDIX system answers, listen to the personal greeting.

Step 4:   When the system prompts, leave a short message and go on-hook (for example, ''This is a test of Send All Calls'').

Verify the Call Answer Recorded Messages:

Step 1:   Press ⬚*⬚ ⬚R⬚ to log back in, then follow the system prompts to listen to the Call Answer messages. Delete each message after it plays by pressing ⬚*⬚ ⬚D⬚ (Delete).

Step 2:   Verify that the message-waiting lamp on Subscriber 1's voice terminal goes off after all messages have been heard and deleted.

Step 3:   After you have deleted the last message, press ⬚*⬚ ⬚*⬚ ⬚U⬚ (Undelete) to restore the *last* message you deleted. Verify that the message has been restored, and that the message-waiting lamp on Subscriber 1's voice terminal goes back on.

Step 4:   Play the message again, then go on-hook. Verify that the message-waiting lamp on Subscriber 1's voice terminal goes off.

Leave Word Calling Feature Test

This test verifies that Leave Word Calling can be used to leave messages with the AUDIX system. Make sure Leave Word Calling is assigned to both installer extension numbers. The test is performed in the following two ways:

- Activate Leave Word Calling *before* the call is transferred to the AUDIX system.

- Activate Leave Word Calling *after* the AUDIX system answers the call and voices the greeting.

Activate Leave Word Calling *before* the AUDIX system answers:

Step 1:   Dial Subscriber 2 — From Subscriber 1's voice terminal, call Subscriber 2.

Step 2:   Activate Feature — After the first ring, activate Leave Word Calling (confirmation tone should be received) and hang up. Verify that the message-waiting lamp on Subscriber 2's voice terminal lights.

Step 3:   Get Message — Call the AUDIX system and log in as Subscriber 2. Press ⌷2⌷ to get the message. Press ⌷0⌷ to listen to the message. Verify that a Leave Word Calling message was left. The AUDIX system uses a generic recording to have the subscriber return the call. Delete the message (press ⌷*⌷⌷D⌷) and hang up. Verify that the message-waiting lamp goes off.

Activate Leave Word Calling *after* the AUDIX system answers (this can only be done with a Leave Word Calling feature button):

Step 1:   Dial Subscriber 2 from Subscriber 1's voice terminal.

Step 2:   After the AUDIX system answers and voices the Call Answer greeting, press the Leave Word Calling button and hang up. Verify that the message-waiting lamp on Subscriber 2's voice terminal lights.

> **NOTE**   Leave Word Calling confirmation tone is *not* received by Subscriber 1 in this case.

Step 3:   Call the AUDIX system and log in as Subscriber 2.

Press ⌷2⌷⌷0⌷ and verify that a Leave Word Calling message was left.

Delete the message (press ⌷*⌷⌷D⌷) and verify that the message-waiting lamp goes off.

BASIC FEATURE TESTS (AUDIX STANDALONE SYSTEM)

Switch administration must be complete before performing the following tests. The tests verify the operation of the switch-to-AUDIX system analog circuits.

If any of the test calls fail, check the following to debug the AUDIX system-to-switch analog circuits:

- Check dial tone from the switch port on the cross-connect field.

- Check continuity to the AUDIX system backplane.

- Make sure ringing lights a yellow LED on an AUDIX system VPT circuit pack. After the AUDIX system answers, a yellow LED on an AUDIX system VPC circuit pack lights.

- Check for crossed lines (for example, Port 0, ext. 2220 wired or translated to Port 1).

Test the Type ''v'' Voice Ports (if applicable)

Step 1:   At a voice terminal, dial a type ''v'' extension number. When the AUDIX system answers, the prompt (''Welcome to AUDIX...'') should be heard, which starts a subscriber session.

Step 2:   Unlike the AUDIX Integrated, the subscriber's extension number must be dialed as part of the login. Enter Subscriber 1's login and password. Notice the lit yellow LEDs on the VPT, VPC, VB, and TDBI circuit packs.

Step 3:   Record a message (option 1) and address it to Subscriber 2.

Step 4:   Hang up and repeat the test call procedure for the other type ''v'' extensions. Log in as Subscriber 2 and retrieve the message from Subscriber 1.

Test the Type ''c'' Voice Ports

Step 1:   At a voice terminal, dial one of the type ''c'' extension numbers. When the AUDIX system answers, the prompt (''Your call is being answered by AUDIX. Using touch-tones, please enter the number of the person whom you are calling. To access your mailbox, press * R.'') should be heard. In this case, a Call Answer session is started. But as indicated by the prompt, this port can also be used to start a subscriber session by pressing ⟨ * ⟩⟨ R ⟩.

Step 2:   Enter Subscriber 2's extension, followed by ⟨ # ⟩. Leave a message (''This is a test of voice port 5''). The message will be saved in Subscriber 2's mailbox.

Step 3:   Press ⟨ * ⟩⟨ R ⟩ to verify that this port can be used to log in to the AUDIX system.

Step 4:   Hang up and repeat the test for the other type ''c'' extensions. Be sure to access and delete all test messages before going on.

NOTE	Type ''a'' ports are tested in Chapter 14, *Optional Features*.

Test the Standalone Time-Out Treatment

Step 1:   Go to the `system : translation : switch connection` form by typing **sy tr s** in the path line and press ⌐RETURN⌐.

Make sure that the `timeout treatment (m/n/t):` field is set to **n**

Step 2:   Dial the Call Answer extension (one of the type ''c'' ports). Wait for time-out. The call will be disconnected.

Step 3:   On the `system : translation : switch connection` form, set `timeout treatment (m/n/t):` to **t**

Press ⌐F1⌐ (CHANGE or RUN).

Step 4:   Set `extension` to the receptionist's extension number.

Press ⌐F1⌐ (CHANGE or RUN).

Step 5:   Dial the Call Answer extension and wait for time-out. The AUDIX system should transfer the call to the receptionist.

Step 6:   Return to the `system : translation : switch connection` form.

Set `timeout treatment (m/n/t):` to **m**

Step 7:   Set `extension` to Subscriber 1's extension.

Press ⌐F1⌐ (CHANGE or RUN).

Press ⌐CTRL⌐ and ⌐z⌐ simultaneously to exit the form.

Step 8:   Dial the Call Answer extension and wait for time-out. The AUDIX system should take a message and put it in Subscriber 1's AUDIX system mailbox.

AUDIX-TO-SWITCH TESTS

The tests described in this section verify the AUDIX system-to-switch analog connections. Perform these tests when the AUDIX system is connected to a 1A ESS or 5ESS switch. If any of the test calls fail, check the following to debug the analog circuits between the AUDIX system and the switch:

- Check dial tone from the switch port on the cross-connect field.

- Check continuity to the AUDIX system backplane.

- Make sure ringing lights a yellow LED on the AUDIX system VPT circuit pack.

- Check for crossed lines (for example, Port 0 wired or translated to Port 1).

AUDIX System Feature Tests

The Call Answer feature test verifies that switch translations, the personal greeting, the Message Waiting Indicator, and the data link are operative.

Call Forwarding is used to redirect calls to the AUDIX system. In each case, Call Answer can record a message from the caller.

Place a ''Don't Answer'' Call and Record a Message:

Step 1:   Using Subscriber 2's telephone, call Subscriber 1 and allow the telephone to ring until the switch redirects (transfers) the call to the AUDIX system.

Step 2:   When the AUDIX system answers, listen to the personal greeting.

Step 3:   After listening to the personal greeting and the system prompt, record a short message (for example, ''This is a test of the Don't Answer feature'') and go on-hook.

Step 4:   Verify that the Message Waiting Indicator at Subscriber 1's telephone is active.

Place a ''Busy'' Call and Record a Message:

Step 1:   At Subscriber 1's telephone, go off-hook to busy out this extension. (Each appearance of the extension must be in use to busy the extension.)

Step 2:   Using another telephone, call Subscriber 1.

Step 3:   When the AUDIX system answers, listen to the personal greeting.

Step 4:   When the system prompts, leave a short message and go on-hook (for example, ''This is a test of a busy subscriber extension'').

Place a ''Call Forwarding — All Calls'' Call and Record a Message:

Step 1:   Activate Call Forwarding — All Calls for Subscriber 1.

Step 2:   Using another telephone, call Subscriber 1.

Step 3:   When the AUDIX system answers, listen to the personal greeting.

Step 4:   When the system prompts, leave a short message and go on-hook
              (for example, ''This is a test of Call Forwarding — All Calls'').

Verify the Call Answer Recorded Messages:

Step 1:   From Subscriber 1's telephone, call the AUDIX system number.

Step 2:   When the AUDIX system answers, dial Subscriber 1's extension and press (#).

Step 3:   Dial (#) as Subscriber 1's password. (This is the default password until subscribers set their
              own.)

Step 4:   Follow system prompts to listen to the Call Answer messages, and go on-hook. Verify that the
              Message Waiting Indicator at Subscriber 1's telephone goes off after all messages have been
              heard.

Individual Voice Port Tests

Use the following procedures to test the connection of each voice port.

Step 1:   Go to the `traffic : load : hour` form by typing **tr l h** in the path line. Press
              (RETURN). The peg count for each voice port should be zero.

Step 2:   At a Centrex telephone, dial the 5- or 7-digit number associated with the AUDIX system. Wait
              for an answer. You will hear the AUDIX system greeting (''Welcome to AUDIX...''). If the
              AUDIX system answers in Standalone mode, there could be a translation or wiring problem.

              If ring-no-answer is received, and the tip and ring has ringing, you may have a bad TN747B. If
              ring-no-answer is received and there is no ringing on the tip and ring, there could be a problem
              with the central office.

Step 3:   At the telephone, enter a subscriber's login and password.

Step 4:   Press (F8) (ENTER) at the local maintenance terminal. When a successful connection to a
              port is made, the count will increase by one. Monitor this form during the rest of the steps.
              Fresh data is displayed by pressing (F8) (ENTER).

Step 5:   Verify that one of the pegs under the `peg count (number of calls)` field has a peg
              count of 1. If all the pegs still display 0, you will have to check this port again. However, you
              must test the other ports first before getting back to this port. Hang up.

Step 6:   Repeat the procedures from step 2. This time you should have a peg count of ''1'' in the next
              port.

Step 7:   Continue until all the ports are tested. Use the AUDIX system maintenance manual to
              troubleshoot any failures.

              Press (CTRL) and (z) simultaneously to exit the form.

13. DCS Administration

The AUDIX system can serve more than one switch when the switches are part of a network such as the AT&T Distributed Communications System (DCS). The switch that hosts the AUDIX system acts as the AUDIX system interface for the other switches in the network.

Use this chapter to administer an AUDIX system in a DCS network. See *Switch Administration for AUDIX Voice Messaging* (585-305-505) for the switch administration procedures.

The AUDIX system interface to the switch network will use existing DCS trunks for both data and voice communication.

Touch-tone senders/receivers are required at each switch in the network for the AUDIX system to work properly (this includes the host switch).

For an AUDIX Standalone system in a DCS environment, see Chapter 8, *AUDIX Standalone System Configuration*.

This chapter is divided as follows:

- Data Link Administration

- Voice Port Access

- Subscriber Administration

- DCS Acceptance Tests

DATA LINK ADMINISTRATION

Figure 13-1, *AUDIX System Data Link to a DCS Switch*, shows that the data connection for a DCS switch involves three different systems: the distant switch, the host switch, and the AUDIX system. Some coordination is required among these three systems when assigning port and channel numbers. The following section explains the preparation required for the complete administration of the data link.
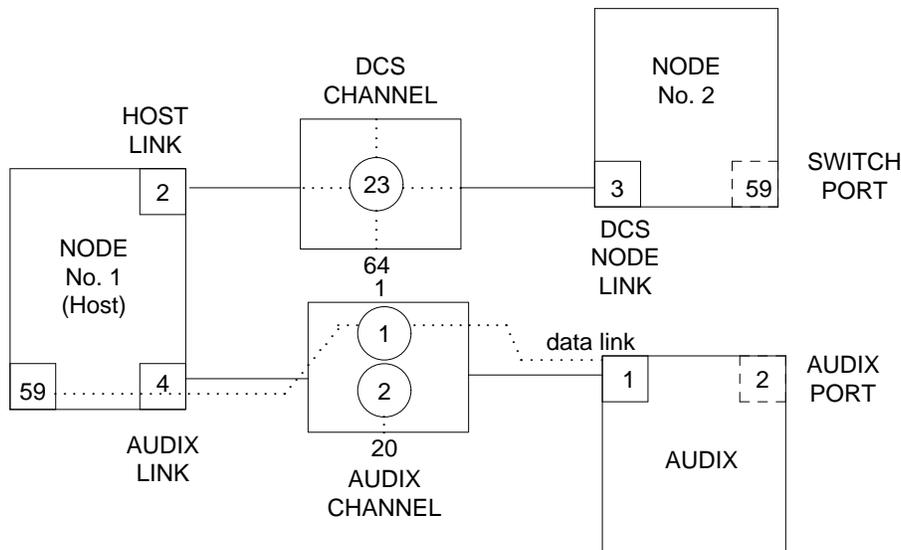
Figure 13-1. AUDIX System Data Link to a DCS Switch

Data Link Coordination

Before starting, the following should be determined:

- Which switch port will be used at the distant switch?

  — DIMENSION PBX use any available port that is reserved (1 – 20)

  — System 75 or System 75 XE use 59

  — System 85 R2V2 and R2V3 use 59, 60, 61, or 62

  — System 85 R2V4 or DEFINITY Generic 1, Generic 2, or Generic 3 use any available port that is reserved (1 – 64)

  SWITCH PORT _____ (59 is used in Figure 13-1, *AUDIX System Data Link to a DCS Switch*)

- Which DCS link and channel will be used between the distant and host switches?

  DCS NODE LINK _____ (3 is used in Figure 13-1)
  DCS HOST LINK _____ (2 is used in Figure 13-1)
  DCS CHANNEL _____ (23 is used in Figure 13-1)

- Which AUDIX system port/channel will be used between the host switch and the AUDIX system? Ideally, each switch in the network will have a node number:

    — System 75, 75 XE, Generic 1, and Generic 3 — Uniform Number Plan (PBX ID)

    — System 85 or Generic 2 — PROC 275, Word 3, Field 8

    — DIMENSION PBX — PROC 275, Word 3, Field 9 (currently, switch number 19 cannot be used)

    Use this number as the switch number (must be between 1 and 20), as the AUDIX system port, and as the AUDIX system channel.

    AUDIX PORT ____ (2 is used in Figure 13-1)

    AUDIX CHANNEL ____ (2 is used in Figure 13-1)

System 85 R2V4 and Generic 2 use Enhanced Services (ES) message-oriented signaling over the Distributed Communications Interface Unit (DCIU) link. If an installation has one or more centralized the AUDIX system adjuncts in a DCS network (adjuncts which serve more than one switch in the network), use Procedure 261 and Procedure 257, Word 6 to set up external adjunct characteristics for the AUDIX system. This procedure gives the switch the necessary intelligence to pass ES messages to the correct AUDIX system adjunct over a DCS network. With an end-to-end ES connection, the AUDIX system information can piggy-back on the DCS channel with other data (hop channels are *not* needed on the host for the AUDIX system in a DCS network that uses ES signaling).

Assigning a switch port at a node and assigning a node's AUDIX system data channel (to hop through the host to the AUDIX system) are covered in the *Switch Administration for AUDIX Voice Messaging* (585-305-505).

AUDIX System Administration

Use the following steps to assign a node's data link at the AUDIX system. Use the AUDIX system Local Maintenance Terminal (LMT).

Step 1:   Go to the `system : translation : switch connection` form by typing **sy tr s** in the path line and press (RETURN). See Figure 13-2, *The* `system : translation : switch connection` *Form (DCIU).* Next to the switch number (column 1) that matches the node number:

    a. Set `audix port` to the AUDIX system port number.

    b. Set `switch port` to the switch port number.

    c. Set `logical channel` to the AUDIX system channel number.

    d. Set `data link` to **1**.

    e. Press (F1) (CHANGE or RUN).

    f. Press (CTRL) and (z) simultaneously to exit the form.

Step 2:   Go to the `startup` form by typing **st** in the path line and press (RETURN).

    a. Press (F1) (CHANGE or RUN).

    b. Press (CTRL) and (z) simultaneously to exit the form.

```
AUDIX STATUS: alarms: M    , logins:1, thresholds:none
PATH: system : translation : switch connection

connection type (dciu-sci/smsi/bri-api/sll/sid/standalone): dciu-sci
(PRESS CHANGE TO MODIFY CONNECTION TYPE, NEW FIELDS WILL BE DISPLAYED)

     (THE FOLLOWING FIELDS APPLY ONLY TO A DCIU OR SCI DATALINK)

switch  audix  switch  logical  data   switch  audix  switch  logical  data
number  port   port    channel  link   number  port   port    channel  link

 1:      1      59       1        1      2:      2      59       2        1
 3:      0      0        0        0      4:      0      0        0        0
 5:      0      0        0        0      6:      0      0        0        0
 7:      0      0        0        0      8:      0      0        0        0
 9:      0      0        0        0     10:      0      0        0        0
11:      0      0        0        0     12:      0      0        0        0
13:      0      0        0        0     14:      0      0        0        0
15:      0      0        0        0     16:      0      0        0        0
17:      0      0        0        0     18:      0      0        0        0
19:      0      0        0        0     20:      0      0        0        0
host switch: 1    AUDIX: 1


Error and confirmation information appears on this line.

 CHANGE    ADD    DELETE        HELP    FIELD        CLEAR    EXIT    ENTER
 OR RUN                                HELP         FROM
```

Figure 13-2. The system : translation : switch connection Form (DCIU-SCI)

VOICE PORT ACCESS

NOTE
When all tie trunks to the host are busy, calls can be routed to the host over alternate facilities. In the case of a call to an AUDIX system subscriber which must route to the AUDIX system for coverage, the call must use a DCS-type tie trunk or the subscriber data will be lost. Make sure these calls stay queued on the tie trunks.

For subscribers at a node to access the AUDIX system voice ports, the DCS node must be administered by switch personnel. Information on administering the DCS nodes can be found in *Switch Administration for AUDIX Voice Messaging* (585-305-505).

SUBSCRIBER ADMINISTRATION

The switch administrator will assign two test subscribers at the DCS node. The subscribers' extension length must be the same as the length assigned at the AUDIX system on the `system : translation : machine : audix/amis/call delivery` form. Switch administration is covered in *Switch Administration for AUDIX Voice Messaging* (585-305-505).

Assigning Test Subscribers to the AUDIX System

Step 1:   Go to the `subscriber : local` form by typing **su lo** in the path line and press
            ⌐RETURN⌐ . See Figure 13-3, *The* `subscriber : local` *Form*.

Step 2:   Enter a name in the `name` field.

Step 3:   Enter a DCS extension number in the `ext` field.

Step 4:   Enter the switch number in the `switch number` field.

Step 5:   Press ⌐F2⌐ (ADD).

            The other fields are filled in from `cos : default`.

Step 6:   Press ⌐CTRL⌐ and ⌐z⌐ simultaneously to exit the form.

```
AUDIX STATUS: alarms: M   , logins:1, thresholds:none
 PATH: subscriber : local
name: _____ ext: _____
(PRESS ENTER TO DISPLAY SERVICE OPTIONS)
cos: _____ (optional)        password: _____ (optional)
community id : __               broadcast mailbox (y/n)? _
switch number: __                  misc: _____         (optional)
covering extension: _____ (optional)  addressing format (e/n): _
permissions, type (a/c/p/n): _  announcement (y/n)? _
          outcalling (y/n)? _  priority msg (y/n)? _  broadcast (v/l/b/n): _
text service machine: _____  user id: _____
incoming mailbox,  lifo/fifo (l/f): _   category order (n,u,o): ___
    retention times (days),    new: ___ old: ___ unopened: ___
outgoing mailbox,  lifo/fifo (l/f): _   category order (f,u,n,d,a): _____
    retention times (days), file cab: ___ delivered/nondeliverable: ___
voice mail message (seconds),  maximum length: ___  minimum needed: ___
call answer message (seconds), maximum length: ___  minimum needed: ___
end of message warning time (seconds): __
maximum mailing lists: ___    total entries in all lists: ____
mailbox size (seconds), maximum: ____  minimum guarantee: ____

new name: _____ new ext: _____ locked (y/n)? _

 _____
Error and confirmation information appears on this line.
```

Figure 13-3. The subscriber : local Form

Time Zone Assignment

Step 1:   Go to the switch time zone form by typing **sw** in the path line and press ⸨RETURN⸩.

Step 2:   In the time zone column, after switch number 1, enter the time zone according to the following:

Atlantic	= 4	Mountain	= 7
Eastern	= 5	Pacific	= 8
Central	= 6	Hawaii	= 10

Step 3:   Indicate whether or not daylight savings time is used by entering **y** or **n** in the daylight savings? column. Figure 13-4, *The* switch time zone *Form* shows Switch 1 configured for eastern daylight time and Switch 2 configured for central daylight time.

Step 4:   Press ⸨CTRL⸩ and ⸨z⸩ simultaneously to exit the form.

Step 5:   Go to the startup form by typing **st** in the path line and press ⸨RETURN⸩.

Step 6:   Press ⸨F1⸩ (CHANGE or RUN).

Step 7:   Press ⸨CTRL⸩ and ⸨z⸩ simultaneously to exit the form.

```
AUDIX STATUS: alarms: M   , logins:1, thresholds:none
 PATH: switch time zone

 switch    time    daylight        switch    time    daylight
 number    zone    savings?        number    zone    savings?

  1:         5       y               2:        6         y
  3:        __       _               4:       __         _
  5:        __       _               6:       __         _
  7:        __       _               8:       __         _
  9:        __       _              10:       __         _
 11:        __       _              12:       __         _
 13:        __       _              14:       __         _
 15:        __       _              16:       __         _
 17:        __       _              18:       __         _
 19:        __       _              20:       __         _

                    host switch:    1


 _____
 Error and confirmation information appears on this line.

 CHANGE   ADD    DELETE      HELP    FIELD      CLEAR    EXIT    ENTER
 OR RUN                              HELP       FROM
```

Figure 13-4. The switch time zone Form

DCS ACCEPTANCE TESTS

Before performing the acceptance tests, ensure that all administrative tasks for the DCS node(s) and the Applications Processor (AP) have been completed.

Acceptance tests are performed on the following:

- AUDIX System Connectivity — Tests a DCS subscriber's ability to access the AUDIX system and perform functions such as creating a personal greeting, creating a mailing list, and performing the create, send, and retrieve messaging functions.

- Call Answer — Tests the transfer of unanswered and forwarded calls to the AUDIX system.

- Leave Word Calling — Tests the ability to leave a message at the AUDIX system using the Leave Word Calling feature.

AUDIX System Connectivity Tests

These tests will verify that the DCS subscriber can access an AUDIX system voice port, log in, and perform AUDIX system functions.

Step 1:   Dial the AUDIX System Extension Number:

Step 2:   Log In:

Enter the subscriber's login followed by (#). Enter the password followed by (#).

If subscribers have not already had their names voiced in before logging in the first time, they will be required to voice in their name and password.

Step 3:   After logging into the AUDIX system, perform the following feature tests:

   a.   Press (1) to create a message. Follow the voice prompts. Record a short message, approve it, and schedule immediate delivery to both subscribers (yourself and the second subscriber). Use the two subscriber extension numbers as the addresses for delivering the messages.

   b.   Press (2) to retrieve/scan the message delivered to the first voice terminal (yourself). Follow the voice prompts, listen to the entire message, and note the quality of the voice.

   c.   Press (3) to create/invoke a personal greeting (follow the voice prompts), record the greeting, approve it, and invoke it. Later tests of the Call Answer feature will use this personal greeting.

   d.   Press (4) to check the status of outgoing messages.

   e.   Press (5) to change the password.

Step 4:   Repeat the test call procedures from the second subscriber voice terminal. Also, do the following:

   a. Experiment with the system prompts and announcements for incorrect logins/passwords, and try dialing through to override system prompts. (Experienced users will not want to wait for a system prompt to complete if they already know what number to push. The number can be pushed immediately to interrupt the prompt and go to the next prompt.)

   b. Create at least one new message (by pressing 1) during each call, delivering the message to subscribers at the host and to subscribers at other switches. Experiment with rewind/playback and with deleting, editing, and scheduling a message.

   c. Listen (by pressing 2) to at least one new message during each test call. Experiment with rewind, playback, skip, deleting a message, scanning headers, filing a message, and responding to a message.

   d. Try other subscriber activities and functions (for example, press 5 to create a distribution list).

Call Answer Feature Test

These tests verify that Call Forwarding and Send All Calls can redirect a call from a subscriber's voice terminal to the AUDIX system for recording a message. The tests also verify that the message-waiting lamp lights when a message has been recorded.

Step 1:   Test Call Forwarding and Record a Message:

   a. At the subscriber's voice terminal, activate Call Forwarding to DCS AUDIX EXT (System 75, System 75 XE, System 85 R2V2 or later, DIMENSION PBX, or DEFINITY Generic 1, 2, or 3) or to the host AUDIX system extension.

   b. Call the subscriber's extension number.

   c. When the AUDIX system answers, listen for the personal greeting.

   d. After listening to the personal greeting and the system prompt, record a short message (for example, ''This is a test of the Don't Answer feature'') and go on-hook. Verify that the message-waiting lamp lights on Subscriber 3's voice terminal.

Step 2:   Place a ''Send All Calls'' Call and Record a Message:
           (System 75, System 75 XE, System 85 R2V3 or later, or DEFINITY Generic 1, 2, or 3)

   a. Activate Send All Calls for the subscriber.

   b. Using another switch extension, call the subscriber.

   c. When the AUDIX system answers, listen for the personal greeting.

   d. When the system prompts, leave a short message and press # or * # as prompted to approve the recording. Press * R to login to the AUDIX system as a Voice Mailbox user. Use Subscriber 3's login and password.

Step 3:   Verify the Call Answer Recorded Messages:

   a.   After pressing (*) (R) and logging in, follow the voice prompts to listen to the three
        Call Answer messages, and go on-hook.

   b.   Verify that the message-waiting lamp on the Subscriber 3 voice terminal goes off after
        all messages have been heard.

Leave Word Calling Feature Test

This test verifies that a Leave Word Calling message can be left at the AUDIX system for a DCS
subscriber. The subscribers must be at a System 75, System 75 XE, System 85, or DEFINITY Generic 1, 2,
or 3 node. Make sure LWC is assigned to both subscriber extension numbers.

Activate Leave Word Calling *before* the AUDIX system answers:

Step 1:   From Subscriber 1's voice terminal, call Subscriber 2.

Step 2:   After the first ring, activate Leave Word Calling (confirmation tone should be received) and
            hang up. Verify that the message-waiting lamp lights on Subscriber 2's voice terminal.

Step 3:   Call the AUDIX system and log in as Subscriber 2. Press (2) to get the message. Press (0)
            to listen to the message. Verify that a Leave Word Calling message was left. The AUDIX
            system uses a generic recording to have the subscriber return the call. Press (*) (D) to delete
            the message and hang up. Verify that the message-waiting lamp goes off.

Activate Leave Word Calling *after* the AUDIX system answers:

Step 1:   From Subscriber 1's voice terminal, call Subscriber 2.

Step 2:   After the AUDIX system answers and voices the Call Answer greeting, activate Leave Word
            Calling and hang up. Verify that the message-waiting lamp on Subscriber 2's voice terminal
            lights.

            ┌──────────┐   LWC confirmation tone is not received by Subscriber 1 in this case.
            │   NOTE   │
            │   │
            └──────────┘

Step 3:   Call the AUDIX system and login as Subscriber 2. Press (2) and (0) and verify that a Leave
            Word Calling message was left. Press (*) (D) to delete the message and verify that the
            message-waiting lamp goes off.

14. Optional Features

An optional feature in the AUDIX system requires administration before it can be activated. Basic features, on the other hand, are activated automatically without administration. The sections in this chapter describe how to assign optional AUDIX system features so that the technician can test them.

- Enhanced Automated Attendant

- Priority Outcalling

ENHANCED AUTOMATED ATTENDANT

The Automated Attendant feature consists of three parts:

- AUDIX System Administration — The attendant requires a subscriber profile *and* an attendant profile. Both profiles are assigned the same extension number. If the AUDIX system is a Standalone, the AUDIX system must also have one or more type ''a'' voice ports.

- Switch Administration — A method of directing Automated Attendant calls to the AUDIX system for call-answer treatment is required (Call Forwarding or Send All Calls to the AUDIX system). Switch Administration for Enhanced Automated Attendant is covered in *Switch Administration for AUDIX Voice Messaging* (585-305-505).

   For Standalone systems, a separate hunt group is assigned for the type ''a'' voice ports. Call Forwarding or Send All Calls then directs calls to this hunt group, not the AUDIX system extension.

- Backup Strategy — Some means of backup for the Automated Attendant is needed so that calls do not go unanswered when the AUDIX system is busy. This may require consultation with AT&T Marketing. Each installation will have to be individually tailored. Suggestions for providing a backup for the Enhanced Automated Attendant feature are found in *Switch Administration for AUDIX Voice Messaging* (585-305-505).
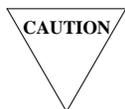
> ▽ **CAUTION** *The Call Transfer Out of AUDIX feature must be enabled to use the Automated Attendant feature.* **Do not activate or test** *the Call Transfer Out of AUDIX feature unless the customer intends to use this feature almost immediately afterwards. If the customer does request you to set up and test an Automated Attendant, activate the Call Transfer Out of AUDIX feature only until you have tested the feature, then* **deactivate** *the call transfer feature following the test.*
>
> **Customers must activate the Call Transfer Out of AUDIX feature themselves so they will see the warning message about possible toll fraud. Under no circumstances are you to activate the Call Transfer Out of AUDIX feature for a customer.**

Enhanced Automated Attendant Administration

From a user's perspective, the Enhanced Automated Attendant feature works the same whether the AUDIX system is set up as an integrated or Standalone system. The administration and system operation are different.

AUDIX Integrated Administration

An integrated system can have one or more *main* attendants and one or more *nested* attendants. Main attendants are accessible directly from the dialed number. Nested attendants are accessible through an option on a main attendant menu.

In Figure 14-1, *Enhanced Automated Attendant Structure (AUDIX Integrated System)*, there are three different attendant numbers. Each number is forwarded or covers to the AUDIX system extension and receives call-answer treatment at the AUDIX system. Each number has its own attendant menu of options. Attendant Menu 3000 shows an example of a nested attendant.
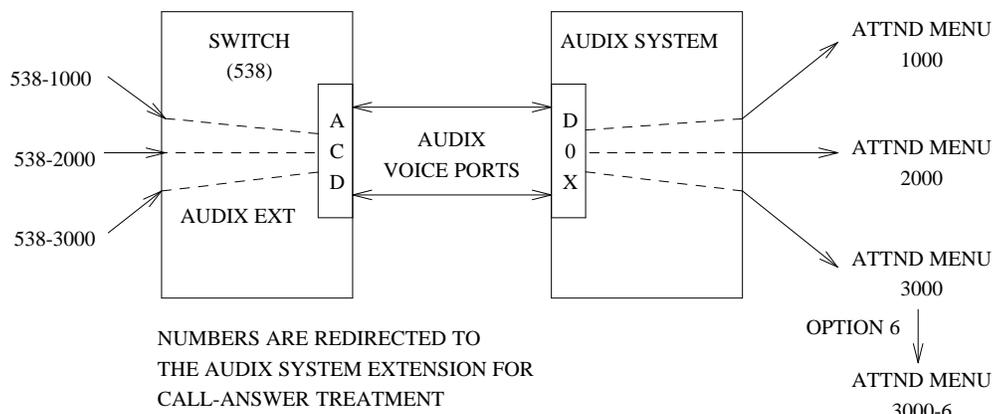
Figure 14-1. Enhanced Automated Attendant Structure (AUDIX Integrated System)

Use the following steps to assign a main attendant.

Step 1:   Go to the system : appearance form by typing **sy ap** in the path line and press
           (RETURN).

     a. Set the call transfer out AUDIX? field to **y**
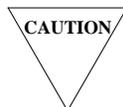
           △ CAUTION   *Remember to turn call transfer back off before you leave the customer site (set this field back to* **n***). Failure to do so could result in toll fraud.*

b. The enhanced call transfer? field will automatically be set to **y**

— If the host switch is a System 75, System 75 XE, System 85 R2V4, or a DEFINITY Generic 1, 2, or 3, go on to the next step (these switches support enhanced call transfer).

— If the host switch does *not* enhanced call transfer, set the enhanced call transfer? field to **n** and press ⌐F1⌐ (CHANGE or RUN).

c. Press ⌐CTRL⌐ and ⌐z⌐ simultaneously to exit the form.

Step 2:   Go to the subscriber : local form by typing **su lo** in the path line and press ⌐RETURN⌐.

a. Set extension to the extension number that will be assigned at the switch as the Automated Attendant extension.

b. Set permissions, type (a,c,p,n): to **a** for attendant.

c. Press ⌐F2⌐ (ADD).

d. Press ⌐CTRL⌐ and ⌐z⌐ simultaneously to exit the form.

Step 3:   Go to the system : attendant form by typing **sy at** in the path line and press ⌐RETURN⌐. (See Figure 14-2, *The* system : attendant *Form*).

```
AUDIX STATUS: alarms:      , logins: 1, thresholds: none
PATH: system : attendant

name: _____     automated attendant extension: 5000
(PRESS ENTER TO DISPLAY SERVICE OPTIONS)
allow *T (call transfer) y/n? y

 button      extension      treatment               comment
                           (ca/t/g)
   1:          6131            ca        Test Set
   2:         _____          ___        _____
   3:         _____          ___        _____
   4:           e              t         Dial any extension
   5:         _____          ___        _____
   6:         _____          ___        _____
   7:         _____          ___        _____
   8:         _____          ___        _____
   9:         _____          ___        _____
   0:         _____          ___        _____
timeout:       _____          ___        _____

length of time-out on initial entry (sec): 4

 _____
Error and confirmation information appears on this line.

 CHANGE    ADD    DELETE       HELP    FIELD      CLEAR    EXIT    ENTER
 OR RUN                                 HELP      FROM
```

Figure 14-2. The system : attendant Form

a. At the name field, assign a name to the Automated Attendant.

b. In the automated attendant extension field, enter the extension assigned to the subscriber profile of step 2.

c. Press ⌐F8⌐ (ENTER).

   d.   Set `allow *T (call transfer) y/n?` to **y**

   e.   Next to Button 1 under `extension`, enter the extension of an accessible telephone.

   f.   In the `treatment` field, enter **ca** (for call answer).

   g.   Under `comments`, enter **Test Set**

   h.   Next to the button that defines the first digit of the extension numbers on the switch, enter **e**. For example, if extension numbers start with the digit 4, under `extension` and next to Button 4, enter **e**

   i.   In the `treatment` field, enter **t** (for transfer).

   j.   Under `comments`, enter **Dial any extension**

   k.   Leave the `time-out:` field blank.

   l.   Set `length of time-out on initial entry (sec):` to **4**

   m.   Press ⌑F1⌑ (CHANGE or RUN).

   n.   Press ⌑CTRL⌑ and ⌑z⌑ simultaneously to exit the form.

Step 4:   Go to section, *Record the Automated Attendant Menu.*

To set up a nested attendant menu, do the following:

Step 1:   Go to the `subscriber : local` form by typing **su lo** in the path line and press ⌑RETURN⌑.

   a.   Enter an unused extension number in the `ext:` field.

   b.   Set `permissions, type (a,c,p,n):` to **a**

   c.   Press ⌑F2⌑ (ADD).

   d.   Press ⌑CTRL⌑ and ⌑z⌑ simultaneously to exit the form.

Step 2:   Go to the `system : attendant` form by typing **sy at** in the path line and press ⌑RETURN⌑.

   a.   Set `automated attendant extension` to the extension from step 1.

   b.   Press ⌑F8⌑ (ENTER).

   c.   Set up the rest of this form as desired.

   d.   Press ⌑F1⌑ (CHANGE or RUN).

Step 3:   Press ⌑F6⌑ (CLEAR FORM), or exit the form and come back.

   a.   Set `automated attendant extension` to a main attendant extension.

   b.   Press ⌑F8⌑ (ENTER).

   c.   Next to a button enter the nested attendant's extension.

   d.   Under `comments`, enter **nested menu**

   e.   Press ⌑F1⌑ (CHANGE or RUN).

   f.   Press ⌑CTRL⌑ and ⌑z⌑ simultaneously to exit the form.

Step 4:   Go to section, *Record the Automated Attendant Menu.*

For a 1A ESS or 5ESS Switch: Some differences in Automated Attendant operations that apply to a 1A ESS Switch or 5ESS Switch are listed below.

- Callers who dial the number for an AUDIX Automated Attendant are directed to the main AUDIX system Multi-Line Hunt Group (MLHG). The hunt group directs the call to the correct Automated Attendant menu, which then plays and lets the caller select an option to redirect the call. As in all 1A ESS Switch and 5ESS Switch transfers, Basic Call Transfer is used to complete the call.

- *Applications for Many Calls:* Customers who expect many Automated Attendant calls may optionally assign the Automated Attendant ports to a separate hunt group on the switch. Outside callers are then directed to the Automated Attendant MLHG, while the AUDIX system subscribers can dial directly into the main MLHG. (If individual station lines are used for Automated Attendant calls instead of another MLHG, each line has a different extension number, but queuing and other MLHG features are not available.)

  Setting aside ports in this way ensures that some AUDIX system ports are always reserved for Automated Attendant use. However, this may lead to increased blocking on the main MLHG used for Voice Mailbox and Call Answer calls (fewer ports are available in each MLHG to handle any type of call). Customers should decide on the importance of the Automated Attendant before setting up the switch in this way.

  Any ports that are set aside for specific Automated Attendant use are subtracted from the total number of ports available in the AUDIX system. For example, if a 32-port system has 8 ports in a MLHG for Automated Attendant calls, 24 ports would be available in the main AUDIX system MLHG for direct Voice Mailbox calls and redirected Call Answer calls. In a normal setup (one MLHG), all 32 ports would be used for the AUDIX system direct, redirected, Automated Attendant, and Outcalling calls as needed.

- *Standalone Mode:* On a 1A ESS Switch or 5ESS Switch, the AUDIX system can answer in Standalone mode if the data link is down or if the switch link is having problems. Callers who reach the AUDIX system in Standalone mode must use a slightly different user interface. Because no called-party ID is available, callers need to reenter the number they just dialed (up to 10 digits). The AUDIX system can then place the call to the correct Automated Attendant.

AUDIX Standalone System Administration

The Automated Attendant extensions are set up at the switch in their own hunt group. See Figure 14-3, *Automated Attendant Structure (AUDIX Standalone System).* If the hunt group requires a controlling extension, this will be the main attendant extension. Otherwise, one of the voice port extensions is used as the main attendant extension.

AUDIX Standalone can have only one main attendant. You must nest any others off the main attendant menu. The main attendant extension is designated on the `system : translation : switch connection` form.
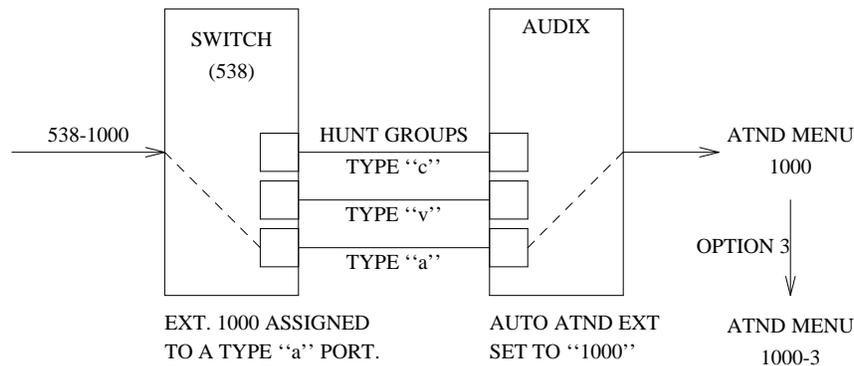
Figure 14-3. Automated Attendant Structure (AUDIX Standalone System)

Use the following steps to assign only the main attendant. To assign a nested attendant menu, see the previous section, *AUDIX Integrated Administration*.

Step 1:   Go to the `subscriber : local` form by typing **su lo** in the path line and press ⬚RETURN⬚.

     a.   Set `extension` to one of the type ''a'' extensions.

     b.   Set `permissions, type (a,c,p,n):` to **a** for attendant.

     c.   Press ⬚F2⬚ (ADD).

     d.   Press ⬚CTRL⬚ and ⬚z⬚ simultaneously to exit the form.

Step 2:   Go to the `system : translation :switch connection` form by typing **sy tr s** in the path line and press ⬚RETURN⬚.

     a.   In the `Automated Attendant extension` field, enter the extension assigned to the subscriber profile of step 1.

     b.   Press ⬚F1⬚ (CHANGE or RUN).

     c.   Set the appropriate `port call type` fields to **a**

     d.   Press ⬚F1⬚ (CHANGE or RUN). Any call received by the AUDIX system via a type a port will be directed to the `Automated Attendant extension` mailbox.

     e.   Press ⬚CTRL⬚ and ⬚z⬚ simultaneously to exit the form.

Step 3:   Go to the `maintenance : audits : fp` form by typing **m au fp** in the path line and press ⬚RETURN⬚. This will start a Service Dispatcher audit.

     Press ⬚CTRL⬚ and ⬚z⬚ simultaneously to exit the form.

Step 4:   Go to the `system : attendant` form by typing **sy at** in the path line and press ⬚RETURN⬚. (See Figure 14-2, *The* `system : attendant` *Form*).

     a.   At the `name` field, assign a name to the Automated Attendant.

     b.   In the `automated attendant extension` field, enter the extension assigned to the subscriber profile of step 1.

c.   Press [F8] (ENTER).

d.   Set `allow *T (call transfer) y/n?` to **y**

e.   Next to Button 1 under `extension`, enter the extension of an accessible telephone.

f.   In the `treatment` field, enter **ca** (for call answer).

g.   Under `comments`, enter **Test Set**

h.   Next to the button that defines the first digit of the extension numbers on the switch, enter **e**. For example, if extension numbers start with the digit 4, under `extension` and next to Button 4, enter **e**

i.   In the `treatment` field, enter **t** (for transfer).

j.   Under `comments`, enter **Dial any extension number**

k.   Leave the `time-out:` field blank.

l.   Set `length of time-out on initial entry (sec):` to **4**

m. Press [F1] (CHANGE or RUN).

n.   Press [CTRL] and [z] simultaneously to exit the form.

Record the Automated Attendant Menu

To record the message (menu) the automated attendant plays to callers, follow the steps in this section.

Step 1:   Call the AUDIX system:

• For an integrated AUDIX system, dial the AUDIX system extension.

• For AUDIX Standalone, dial the AUDIX system to get direct access to a subscriber mailbox. You may also dial a call-answer extension, but you need to press [*] [R] to dial in to a mailbox (you want to hear the ''Welcome to AUDIX'' prompt).

Step 2:   Dial the attendant extension number, followed by [#].

Step 3:   To enter a null password, just type [#].

> **NOTE**   If the Name Record by Subscriber and Minimum Password Length features are active, you may need to voice a name and enter a password before proceeding.

Step 4:   To administer the attendant menu, press [3].

Step 5:   To record the attendant menu, press [1].

Step 6:   Speak a greeting, followed by the options that appear on the `system : attendant` form. For the menu shown in Figure 14-2, *The* `system : attendant` *Form*, the greeting might be:

> ''Welcome. If you are calling from a touch-tone phone and want to reach a specific person, dial their extension. To reach the switch room, press [1]. For further assistance, please wait.''

Step 7:   Press ① to edit the menu, if necessary. Otherwise, press # or *   # as prompted to
approve and activate the menu.

Automated Attendant Test

Do the following to test the Automated Attendant.

System 75, System 75 XE, DEFINITY Generic 1, or Generic 3 — AUDIX Integrated

To test the Automated Attendant for AUDIX integrated with a System 75, System 75 XE, Generic 1, or
Generic 3 switch, do the following:

Step 1:   At any voice terminal, dial the trunk group assigned to the Automated Attendant.

Wait for answer. The AUDIX system should play the Automated Attendant menu.

Press ① . It will put you into the switch room extension mailbox.

Step 2:   Repeat step 1, only this time dial the switch room extension to verify that the ''e'' function is
active.

Step 3:   To test the Transfer operation, repeat step 1. This time press *   T , the receptionist's
extension, and the # sign.

Step 4:   Repeat step 1. This time, wait for time-out. Since the time-out extension on the `system :
attendant` form was left blank, the options will be repeated. Wait for time-out. This time
the call will be disconnected.

Step 5:   Return to the `system : attendant` form by typing **sy at** in the path line and press
 RETURN .

   a.   Enter the Automated Attendant extension.

   b.   Press F8 (ENTER).

   c.   Set the `timeout` extension to the receptionist's extension. If the receptionist's
extension is ''0'', leading zeros must be entered to equal the assigned extension length.
(If you wish instead to assign a spare AUDIX mailbox for this function, first assign the
extension to a mailbox using the `subscriber : local` form.)

   d.   Press F1 (CHANGE or RUN).

   Press CTRL and z simultaneously to exit the form.

Step 6:   Repeat step 1. After the first time-out, the call will be transferred to the receptionist's (or
mailbox) extension.

System 85, DEFINITY Generic 2, and DIMENSION PBX — AUDIX Integrated

The following test is for customers with DID (Direct Inward Dialing) Service. If DID Service is not provided, consult the personnel at your remote maintenance service center for an alternative arrangement. Test the Automated Attendant as follows:

Step 1:   At any voice terminal, dial the number assigned to the Automated Attendant.

Wait for answer. The AUDIX system should replay the Automated Attendant menu.

Press (1). It will put you into the switch room extension mailbox.

Step 2:   Repeat step 1, only this time dial an extension number to verify that the ''e'' function is active.

Step 3:   To test the Transfer operation, repeat step 1. This time press (*) (T), the receptionist's extension, and the (#) sign.

Step 4:   Repeat step 1. This time, wait for time-out. Since the time-out extension on the system : attendant form was left blank, the options will be repeated. Again, wait for time-out. This time the call will be disconnected.

Step 5:   Return to the system : attendant form by typing **sy at** in the path line and press (RETURN).

    a.   Enter the Automated Attendant extension.

    b.   Press (F8) (ENTER).

    c.   Set the timeout extension to the receptionist's extension. If the receptionist's extension is ''0'', leading zeros must be entered to equal the assigned extension length. (If you wish instead to assign a spare AUDIX mailbox for this function, first assign the extension to a mailbox using the subscriber : local form.)

    d.   Press (F1) (CHANGE or RUN).

Press (CTRL) and (z) simultaneously to exit the form.

Step 6:   Repeat step 1. After the first time-out, the call will be transferred to the receptionist's (or mailbox) extension.

AUDIX Standalone System

Test the Automated Attendant for AUDIX Standalone systems as follows:

Step 1:   At any voice terminal, dial the number assigned to the Automated Attendant.

Wait for answer. The AUDIX system should replay the Automated Attendant menu.

Press (1). It will put you into the switch room extension mailbox.

Step 2:   Repeat step 1, only this time dial an extension number to verify that the ''e'' function is active.

Step 3:   To test the Transfer operation, repeat step 1. This time press (*) (T), the receptionist's extension, and the (#) sign.

Step 4:   Repeat step 1. This time, wait for time-out. Since the time-out extension on the `system :
`attendant` form was left blank, the options will be repeated. Again, wait for time-out. This
time the call will be disconnected.

Step 5:   Return to the `system : attendant` form by typing **sy at** in the path line and press
(RETURN).

    a. Enter the Automated Attendant extension.

    b. Press (F8) (ENTER).

    c. Set the `timeout` extension to the receptionist's extension. If the receptionist's
extension is ''0'', leading zeros must be entered to equal the assigned extension length.
(If you wish instead to assign a spare AUDIX mailbox for this function, first assign the
extension to a mailbox using the `subscriber : local` form.)

    d. Press (F1) (CHANGE or RUN).

       Press (CTRL) and (z) simultaneously to exit the form.

Step 6:   Repeat step 1. After the first time-out, the call will be transferred to the receptionist's (or
mailbox) extension.

Deactivate Call Transfer Out of AUDIX

When you are satisfied the Automated Attendant feature works correctly, deactivate the Call Transfer Out
of AUDIX feature as follows:

Step 1:   Go to the `system : appearance` form by typing **sy ap** in the path line and press
(RETURN).

    a. Set the `call transfer out AUDIX?` field to **n**

    b. Press (F1) (CHANGE or RUN).

    c. Press (CTRL) and (z) simultaneously to exit the form.

PRIORITY OUTCALLING

The Outcalling feature can be used with either AUDIX Integrated or AUDIX Standalone. Outcalling can be used by any AUDIX system subscriber who wants to be notified at home of any new messages. Priority Outcalling allows subscribers to request that outcalling be done only when priority messages exist in the mailbox. For a subscriber to activate priority outcalling, you must first administer the Outcalling feature. Outcalling must be assigned for the AUDIX system *and* for each subscriber or class-of-service requiring this feature.

> **NOTE**
>
> When the host switch is a System 85 or a DEFINITY Generic 2 traditional module, the AUDIX system voice ports must be connected to SN222, SN222B, or SN228B switch ports for Outcalling to work properly.

Outcalling Administration

This section describes administration of the Outcalling feature.

Step 1:   Go to the `system : outcalling` form by typing **sy o** in the path line and press
        (RETURN) to enable Outcalling for the system. (See Figure 14-4, *The* `system :
        outcalling` *Form*).

   a.   Set `outcalling active?` to **y**

   b.   Assign the period during which outcalling is allowed. For now, use the default period so that this feature can be tested.

   c.   The `interval` is the number of minutes between outcalling attempts. For now, leave at `00:15`.

   d.   The `maximum simultaneous ports` must be locally engineered. This is the number of ports that can be used for Outcalling at any one time.

        For a 1A ESS Switch or a 5ESS Switch, set this to the number of individually wired outcalling ports.

```
  AUDIX STATUS: alarms: MmwA, logins: 1, thresholds: none

 ┌─────────────────────────────────────────────────────────────────┐
 │ PATH: system : outcalling                                         │
 └─────────────────────────────────────────────────────────────────┘

    outcalling active (y/n)?  y

          start       end      interval     maximum
          time        time                 simultaneous
        (hh:mm)     (hh:mm)    (hh:mm)       ports
    1:   00:00       23:59      00:15          1
    2:   __:__       __:__      __:__         ___
    3:   __:__       __:__      __:__         ___


    initial delay (mins): 0
    maximum number digits: 32



 ┌─────────────────────────────────────────────────────────────────┐
 │                                                                   │
 └─────────────────────────────────────────────────────────────────┘
 Error and confirmation information appears on this line.

 ┌────────┬───────┬────────┐  ┌───────┬───────┐  ┌───────┬───────┬───────┐
 │ CHANGE │  ADD  │ DELETE │  │ HELP  │ FIELD │  │ CLEAR │ EXIT  │ ENTER │
 │ OR RUN │       │        │  │       │ HELP  │  │ FROM  │       │       │
 └────────┴───────┴────────┘  └───────┴───────┘  └───────┴───────┴───────┘
```

Figure 14-4. The system : outcalling Form

    e.   The `initial delay` is the number of minutes between reception of the message and the first outcalling attempt. Leave as **0** at this time.

    f.   The `maximum number digits` is the number of digits allowed by an outcall. This can be set from 1 to 32.

    g.   When everything is set, press ⌞F1⌟ (CHANGE or RUN).

    h.   Press ⌞CTRL⌟ and ⌞z⌟ simultaneously to exit the form.

Step 2:   Go to the `cos : default` form (optional) by typing **cos** in the path line and press ⌞RETURN⌟.

    a.   Set `outcalling (y/n)?` to **y**

    b.   Press ⌞F1⌟ (CHANGE or RUN).

    c.   Press ⌞CTRL⌟ and ⌞z⌟ simultaneously to exit the form.

Step 3:   Go to the `maintenance : audits : fp` form by typing **m au fp** in the path line and press ⌞RETURN⌟. This will start a Service Dispatcher audit.

    Press ⌞CTRL⌟ and ⌞z⌟ simultaneously to exit the form.

Assign Outcalling for a Subscriber

Step 1:   Go to the `subscriber : local` form by typing **su lo** in the path line and press ⌞RETURN⌟.

Step 2:   Enter a subscriber's extension.

Step 3:   Press [F1] (CHANGE or RUN).

Step 4:   Set outcalling (y/n)? to **y**

Step 5:   Press [F1] (CHANGE or RUN).

Step 6:   Press [CTRL] and [z] simultaneously to exit the form.

Activate Outcalling for a Subscriber

To activate the Outcalling feature for a subscriber:

Step 1:   Dial the AUDIX system extension and log in as Subscriber 1.

Step 2:   From the main activity menu, press [6] to access the Outcalling feature.

Step 3:   Press [y] to activate the Outcalling feature.

Step 4:   Press [6] again to hear the summary of outcalling options set for that subscriber.

Step 5:   Press [*] [R] to return to the activity menu.

Step 6:   Either hang up, or press [*] [*] [R] and log in as Subscriber 2 to turn on Outcalling for that extension.

Outcalling Test

Test the Outcalling feature as follows:

Step 1:   Call Subscriber 1 and leave a message.

Step 2:   When the AUDIX system calls the subscriber, do one of the following:

- Hang up (the AUDIX system will retry the Outcalling attempt).

- Press [*] [#] to cancel Outcalling for this message (listen for the prompt).

- Log in to the AUDIX system and access the message (extension and [#], then password and [#]).

To Activate Priority Outcalling

Step 1:   Log into the AUDIX system.

            Press [6].

Step 2:   Follow the prompts to create an Outcalling number (for this test it can be a dummy number; for example, 93332222).

Step 3:   Press [y] to turn on Outcalling. Then press [2]. You should hear ''Outcalling turned on for all new priority messages.''

15. Final Procedures
═══

Before cutting the system into service, the AUDIX installation requires the following final procedures:

- Inspection

- RCD Test

- Provide Services with AUDIX System Data

- Prepare for the Cut-to-Service

INSPECTION

Inspect the newly installed AUDIX system for the following items:

Step 1:   Make sure all AUDIX system cables are labeled for future reference. The remote maintenance
            cable should be connected to the H00 connector and to a 1200 baud modem in case remote
            service is required.

Step 2:   Check the Customer Service Document (CSD) to verify that the complete order is installed.

RCD TEST

To test the Removable Cartridge Drives (RCDs), follow the steps below:

Make sure you can equip each RCD. If not, order a new one:

Step 1:   Unequip the blank cartridge inside the RCD by doing the following:

      a.   Go to the `maintenance : dbp : unequip` form by typing **m db u** in the path
         line and press ⎡RETURN⎤.

      b.   Enter **1** at the `disk device number` field.

      c.   Press ⎡F1⎤ (CHANGE or RUN). The drive will spin down automatically.

      d.   Press ⎡CTRL⎤ and ⎡z⎤ simultaneously to exit the form.

Step 2:   Replace the cartridge with a spare cartridge. If the spare cartridge is new, be sure to remove
            the blue tape before inserting it into the drive. See Appendix A, *Removable Cartridge
            Procedures* for details on how to remove an RCD.

Step 3:   Equip the new cartridge by doing the following:

      a.   Go to the `maintenance : dbp : equip` form by typing **m db eq** in the path
         line and press ⎡RETURN⎤.

b. Enter the following:

   - circuit pack code: **SCSI**

   - disk device number: **1**

   - volume label: **backup**

   - erase:

      — **n** for cartridges that contain valuable data

      — **y** for blank cartridges or cartridges you want to reuse

c. Press ⎡F1⎤ (CHANGE or RUN).

d. Wait for operation confirmed to appear at the bottom of the screen.

   IMPORTANT: If this step fails, press the button on the RCD to spin down the drive and remove the cartridge. Label this cartridge BAD.

Step 4:   Repeat Steps 1 through 3 for each cartridge.

Leave a blank cartridge inside the RCD. The system will use it for the automatic 10:00 p.m. backups. The system can also use this blank cartridge for the *weekly names backup*, if desired.

PROVIDE REMOTE PERSONNEL WITH SYSTEM DATA

You will need to call the appropriate personnel at your remote maintenance service center so they can update their records and provide the customer ongoing service. Refer to the *Where to Go for Help* section in Chapter 1, *Installation Preparations*, for some domestic phone numbers.

Call the Remote Maintenance Service Center

Call the appropriate remote maintenance service center and provide them with the following information:

- Customer address

- Customer contact

- AUDIX system configuration (one-cabinet, two-cabinet)

- Number of AUDIX system ports (1 to 32)

- Number of hard disk drives (1 to 6)

- Generic software issue (for example, 8:1)

- Host switch type (System 75, System 85, DIMENSION PBX, DEFINITY Generic 1, Generic 2, Generic 3, or other)

- For AUDIX Integrated, the host switch software issue (for example, from the list configuration software screen)

- For DIMENSION PBXs and AUDIX Standalone systems, the 3-digit product ID (Silent Knight Autodialer)

- CIN and FSAC number from the order

- AUDIX system remote maintenance port (   )_____-_____

- AUDIX system mailbox (   )_____-_____

- AUDIX system administrator name

- AUDIX system administrator phone (   )_____-_____

- On-site technician phone (   )_____-_____

Call the Customer Records Database Administrator

Call the appropriate customer records database administrator and provide the following information:

- Delivery Operating Support System (DOSS) order number

- Customer contact

- Customer phone number

- Main listed directory number of the host switch

- Remote port phone number

- The internal equipment location of the alarm link (link number)

- AUDIX system software issue (for example, 8:1)

- Host switch type (System 75, System 85, DIMENSION PBX, DEFINITY Generic 1, Generic 2, Generic 3, or other)

- For AUDIX Integrated, the host switch software issue (for example, from the `list configuration software` screen)

PREPARE FOR THE CUT-TO-SERVICE

Prepare for the cut-to-service by doing the following:

Remove Voice Terminals Used for Testing

If the voice terminals used for testing are no longer required, tear down the connections to the cross-connect field and remove the associated switch and AUDIX system translations.

Remove AUDIX System Feature Translations Used for Testing

Remove any translations used for testing the AUDIX system features in Chapter 14, *Optional Features*. If desired, the customer's AUDIX system administrator will reassign them.

Back Up Filesystems

Inform the AUDIX system administrator that it is a good idea to back up (make copies of) filesystems on a separate disk drive from the original. In the event of a hardware or operational error, the backup copy may be the only way to restore valuable customer data. It is especially important for customers to back up any customized announcements. The *AUDIX Administration* (585-305-501) guide covers the procedures for backing up filesystems.

Inform the system administrator of the backups that currently exist. The location of the active (original) filesystem varies depending on how many disks are installed in the system.

- Names Filesystem — The weekly names backup filesystem is typically on disk01 (the RCD).

- Boot Filesystem — The active boot filesystem (boot_f) is on disk00 for a new system and the backup boot filesystem (boot_e) is on disk00 or disk02.

- Announcement Filesystem — The backup announcement filesystem is the copy on the generic program cartridge.

Customer Login and Password

Tell the AUDIX system administrator to change the customer login and password:

Step 1:   Go to the identification form by typing **id** in the path line and press ⎡RETURN⎤.

Step 2:   Change the login and password. Change the login by overwriting the existing one. Change the password by entering both a new and the old password.

Step 3:   Press ⎡F1⎤ (CHANGE or RUN).

Step 4:   Press ⎡CTRL⎤ and ⎡z⎤ simultaneously to exit the form.

A. Removable Cartridge Procedures

This appendix supplies procedures for spinning down, removing, inserting, and spinning up the removable cartridges.

REMOVE AND INSERT THE RCD

The following procedures tell you how to spin down a 50-Mbyte RCD, remove it, and insert a new cartridge.

1. If the RCD is spinning (green LED on), press the start/stop button (see Figure A-1, *50-Mbyte Disk Drive*) to spin it down. The green LED will blink and then stay off. (This takes approximately 4 seconds.)

    If there is no green LED, the RCD is already spun down.
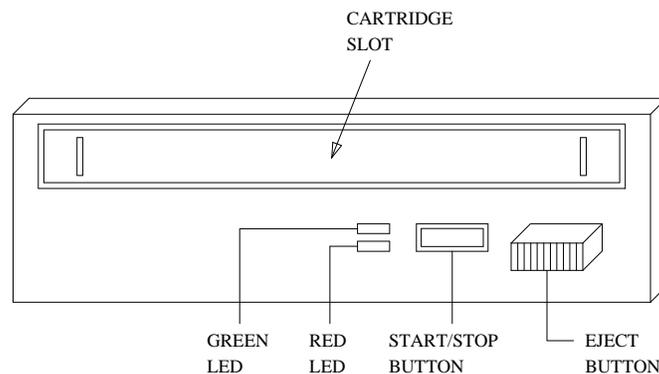
Figure A-1. 50-Mbyte Disk Drive

2. Press the eject button to eject the cartridge.

3. Remove the cartridge. *Before setting it down*, label the cartridge with the volume name and contents. Place the cartridge in its protective cover.

4. Check the cartridge you are going to insert and verify that the red tab on the underside of the cartridge is set to the W/R position (for write/read).

5. Position the cartridge so that the arrow is on top and pointing toward the slot. (See Figure A-2, *Inserting a 50-Mbyte Cartridge*.)
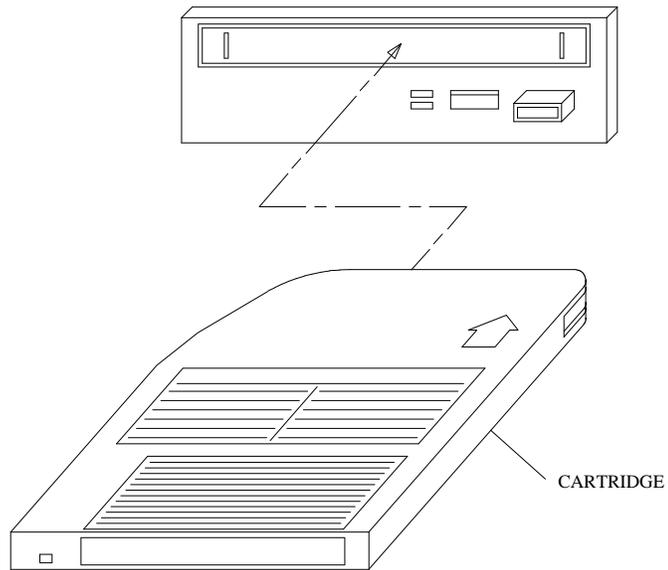
Figure A-2. Inserting a 50-Mbyte Cartridge

6.   Slide in the cartridge.

7.   Press the start/stop button to spin it up. The green LED will blink and then stay on. (This takes approximately 20 seconds).

B. DC Power Setup

Use the procedures in this appendix if your AUDIX system was shipped with factory-installed DC hardware or you are installing external DC cabling for AUDIX systems that are being converted from AC power to DC power.

If you want to install DC cabling and hardware *inside* the AUDIX system cabinet, see the instructions included in the DC power option kit (D-182236) or see *AUDIX Maintenance for Tier 1* (585-305-106).

DC POWER AND GROUND REQUIREMENTS

If the AUDIX system is equipped with the DC power option (Extended Holdover DC Filter), you must wire the filter to a battery plant and ground discharge bar.

Both the one-cabinet and two-cabinet AUDIX systems require two -48 V, 30-amp, single-pole dedicated circuits.

> **DANGER**
>
> **If the communications switch uses a battery plant, the battery plant must provide the additional capacity to handle the AUDIX system. This will prevent electrocution.**

INSTALL THE BATTERY PLANT

The battery plant distributes AC power and protects the AUDIX system from excess current. This battery plant is typically a LORAIN Battery Plant (AC-to-DC converter). Building AC power is routed from a Load Center to the Battery Plant.

To install the LORAIN Battery Plant, use the manuals that come with the battery plant. If there are no documents provided, request them by writing:

> LORAIN Products
> 1122 F. Street
> Lorain, Ohio 44052

INSTALL THE GROUND DISCHARGE BAR

The ground discharge bar is required at the battery plant and must connect to the battery plant's Load Center or Protector Cabinet. The Load Center or Protector Cabinet must connect to building approved ground.

DANGER

When the AUDIX system is installed in the same room as the switch, use the same ground discharge bar connected to the same single-point ground that the communications switch uses (no matter what source is used at the switch). This is necessary to prevent electrocution.

Assuming AC power is installed to the site, use the following information and Figure B-1, *AUDIX System DC Power Source*, to install the ground discharge bar.
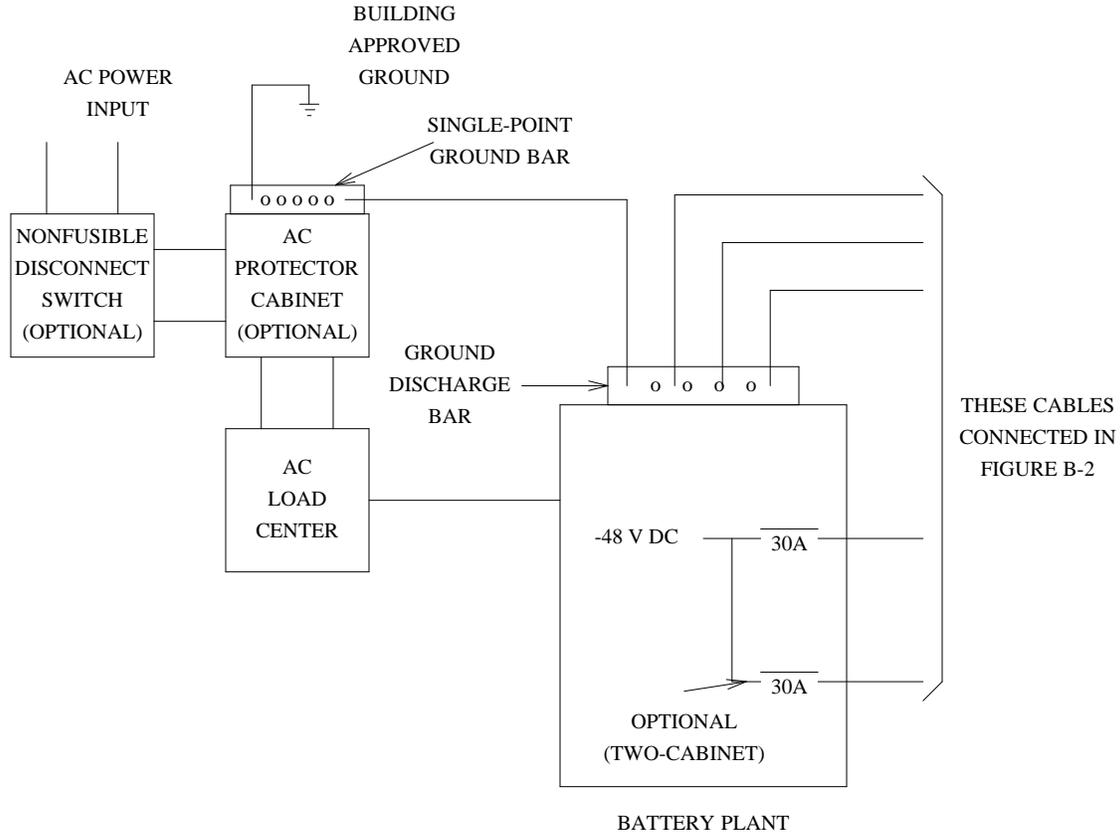
Figure B-1. AUDIX System DC Power Source

Locate the ground discharge bar (see Figure B-1). The ground discharge bar is connected to the approved ground at the Load Center using a 6-gauge copper wire. Approved ground can be any of the following arrangements according to Section 250-81 or the National Electric Code:

- Metallic cold water pipe that is continuous and connects electrically to the street side of the water meter

- Building steel that bonds to water pipes and power source ground

- Ground electrode encased by at least two inches of concrete and in direct contact with the earth

- A ground ring that encircles a building and is at least 2.5 feet beneath the earth

NOTE	When the AC Protector Cabinet is not used, you must connect the AC Load Center's ground bar to building approved ground. You must then connect the ground discharge bar to the Load Center's ground bar. The AC Protector Cabinet is required when local codes prevent access to the AC Load Center.

INSTALL THE FEEDER WIRES

Installing DC cable involves running two 6 American Wire Gauge (AWG) feeder wires (-48 VDC and Return) from the DC power source to the DC terminal strip located in the AUDIX system cabinet. A one-cabinet AUDIX System uses one set of DC cables (DC power and return). An expansion cabinet requires an additional set for a total of four cables. A separate dedicated 30-amp breaker is required for each AUDIX system cabinet.

NOTE	Local code may require that only a qualified electrician may install the feeder wires.

To install the feeder wires, follow the steps below:

Step 1:   Make sure that the breaker switch on the DC power plant is off.

Step 2:   Connect one feeder line to -48 VDC on the DC power source and to the terminal labeled ''-48'' on the terminal strip in the AUDIX system cabinet. Connect the other feeder line to the ground discharge bar at the DC power source and the other end to the terminal labeled ''48 RTN'' on the terminal strip. See Figure B-2, *AUDIX System DC Power Connections*.

TO SAME SINGLE-POINT
GROUND LEADING TO
AN APPROVED GROUND

GROUND
DISCHARGE BAR

(6 TO 10 AWG CABLES)

BATTERY PLANT

AUDIX SYSTEM
EXPANSION CABINET

CHARGER

AC

TERMINAL STRIP

-48 V DC
RETURN

DC

TO AC
LOAD CENTER

-48 V DC
POWER

AUDIX SYSTEM BASE
(OR SINGLE) CABINET

-48 V DC

TERMINAL STRIP

-48 V DC
RETURN

30-AMP
BREAKERS

-48 V DC POWER
(6 TO 10 AWG CABLES)
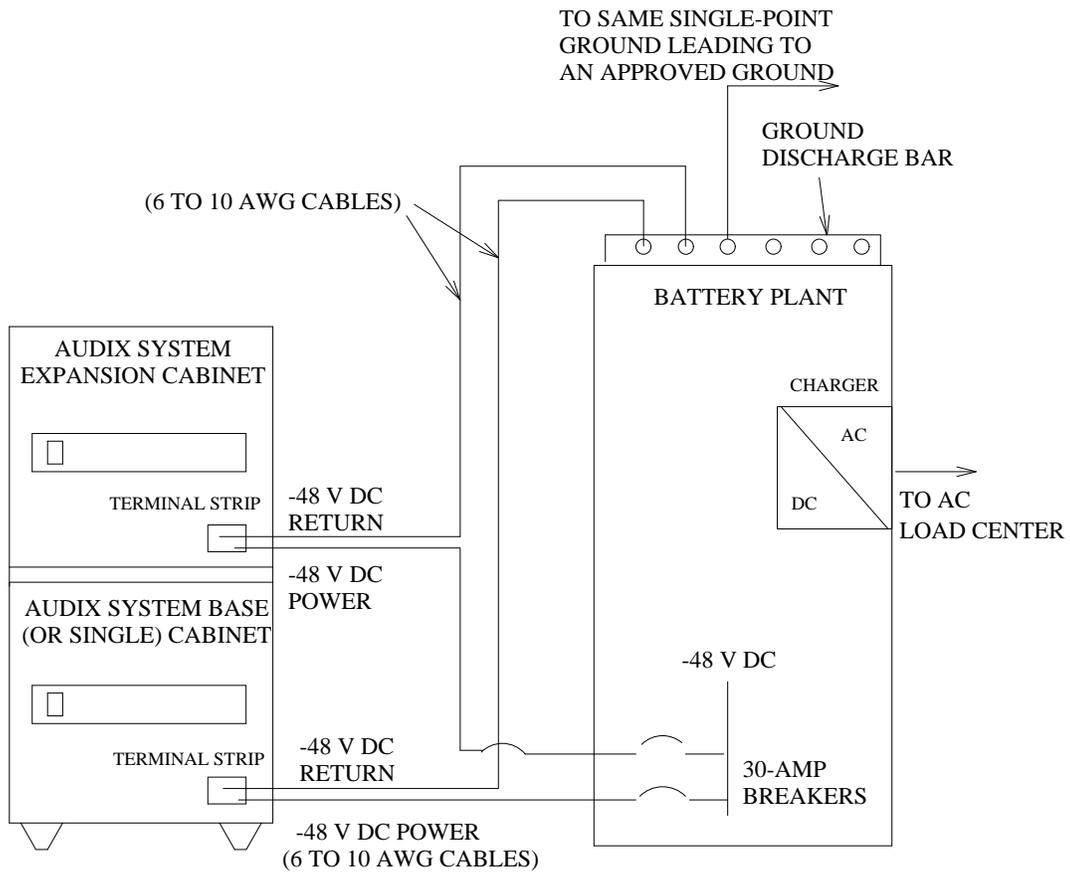
Figure B-2. AUDIX System DC Power Connections

INSTALL THE GUTTER TAP

To ground the AUDIX system cabinet properly, you must attach a 6-AWG cable between the AUDIX system cabinet and a 2-AWG ground cable installed by the customer. To make the required connections, you need a gutter tap kit (D-181895).

To install the gutter tap, follow the directions below:

Step 1:   Inspect the gutter tap kit to make sure the following items are present:

Quantity	Description	Product Identifier
1	Tap, gutter, ILSCO	405265315

4	Lug, Thomas & Betts	403210479
4	Screw, SPHM 1/4-20x1/2 289A finish	841059843
4	Washer, external tooth, lock 1/4, 289A finish	804236362
4	nut, 1/4-20, 289A finish	802207563

Step 2:   At appropriate location on the 2-gauge wire, remove insulation to accommodate the gutter tap (see Figure B-3, *AUDIX System DC Ground Connections*, and Figure B-4, *Gutter Tap*).
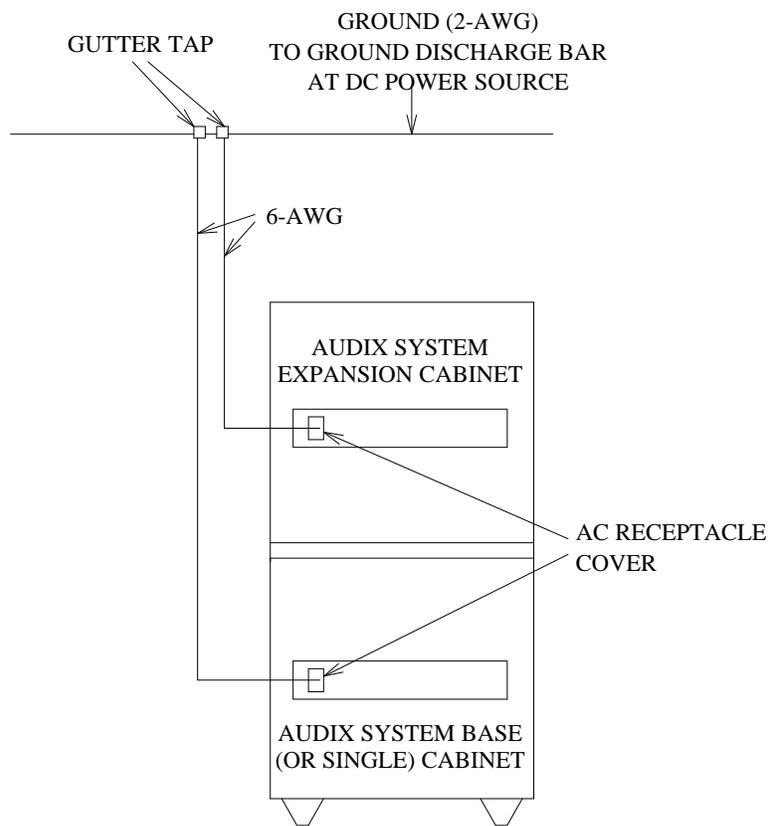
Figure B-3. AUDIX System DC Ground Connections

Step 3:   Using screw (841059843), washer (804236362), and nut (802207563), attach lug (405265315) to the receptacle cover on the AUDIX system cabinet (see Figure B-4, *Gutter Tap*).

REMOVE INSULATION
AT APPROPRIATE   GUTTER TAP
LOCATIONS   TO GROUND
                                          DISCHARGE BAR

                                          2-GAUGE WIRE

                             6-GAUGE WIRE

                    LUG
                    AC RECEPTACLE
                    COVER
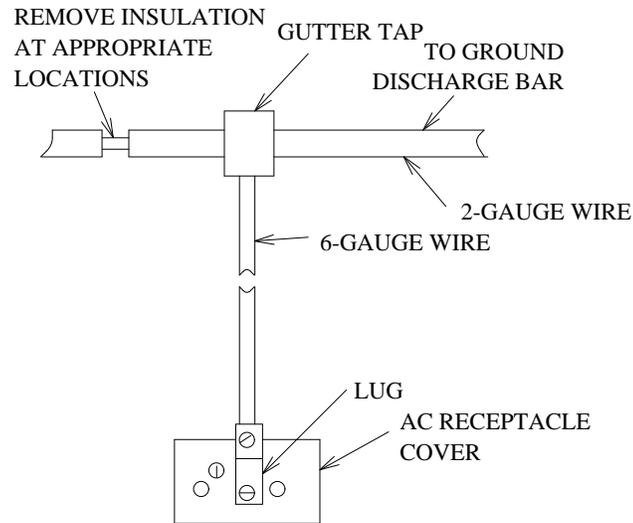
Figure B-4. Gutter Tap

Step 4:   Cut a piece of 6-gauge wire long enough to reach from the gutter tap to the lug on the receptacle cover. Strip insulation from each end of the wire. Attach the wire to the gutter tap and to the lug. Make sure that the gutter tap wire and the ground wire to the ground stud are on *separate* screws at the receptacle cover.

Step 5:   Attach the gutter tap to the 2-gauge wire.

| NOTE | If you are installing an AUDIX system expansion cabinet, run a separate gutter tap to the expansion cabinet. |

C. LADS Installation
══

You can install a pair of Local Area Data Sets (LADS) for an extended local terminal or for the data link connection on a System 85, Generic 2, or DIMENSION PBX. The LADS have been replaced by the Data Service Units (DSUs) and are no longer orderable. Use this appendix if your customer owns a pair of LADS and wants them installed.

This chapter is divided into the following sections:

- Data Link Connection

- Extended Local Terminal Connection

- Option Settings

DATA LINK CONNECTION

Use Figure C-1, *Data Link Cabling Using LADS*, to make a data link connection.

Parts List

- Two LADS

- Two ED-1E434-11, Group 110 (50 feet) cables

- Building wiring

- A System 85 or Generic 2 with duplicated common control also requires an ED-1E434-11, Group 342 Y-cable.
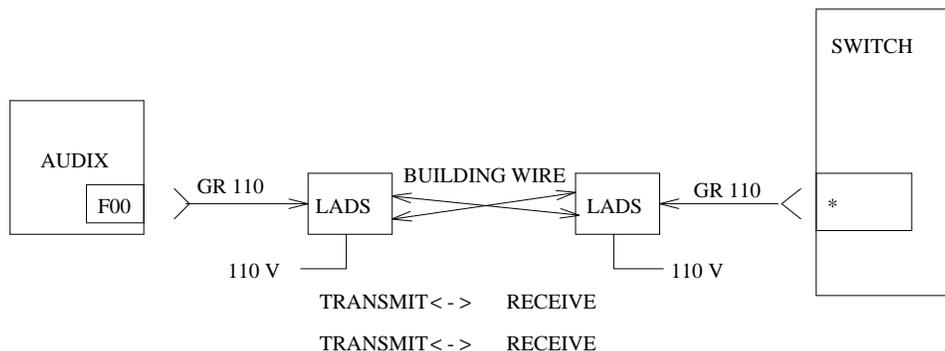
* A System 85 or Generic 2 uses a UN156 and a DIMENSION PBX uses an LC505.

Figure C-1. Data Link Cabling Using LADS

NOTE	If a Group 342 cable is required at the switch, connect this cable between the Group 110 cable and the UN156. See Figure 4-2, *Data Link Cabling Using an IDI*, in Chapter 4 for a similar connection.

EXTENDED LOCAL TERMINAL CONNECTION

Figure C-2, *Extended Local Terminal Using LADS*, shows a LADS arrangement with an extended local terminal. See the *LADS User's Guide* (999-100-166) for more details.

Parts List

- Two 48252 LADS data modules

- One 610/615 (513 emulation cartridge), 513 BCT, 5420, or equivalent

- Two ED-1E434-11, Group 311 cables (RS-232C, 24-gauge, male-male)

NOTE: THE TRANSMIT-PAIR OF ONE LADS CONNECTS TO
THE RECEIVE-PAIR OF THE OTHER LADS.
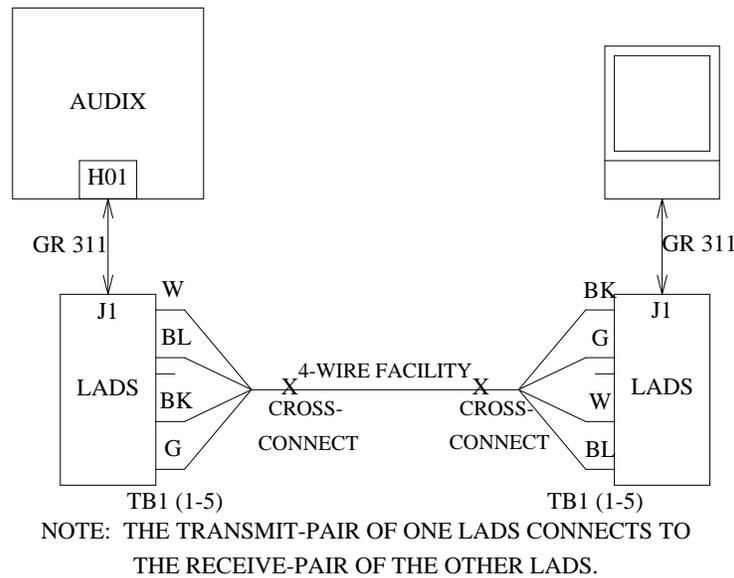
Figure C-2. Extended Local Terminal Using LADS

Install the LADS data modules in the switch auxiliary or data cabinet, as desired. Wire the LADS to the cross-connect field as follows:

Parts List

- One ED-1E434-11, Group 30

- One ED-1E434-11, Group 300 (110-type hardware) or Group 317 (66-type hardware) cable

NOTE	The Group 300 or Group 317 cable connects the cabinet to the cross-connect field. Four spare wires on an existing cable can be used, if available.

Procedure

Step 1: Connect the Group 311 cable from the AUDIX system to the auxiliary or data cabinet J connector instead of the LADS.

Step 2: Connect the Group 30 cable from inside the cabinet to the J1 connector of the LADS.

Step 3: Patch the TB1 connections to the internal cross-connect field.

Step 4: Connect the Group 300 or Group 317 cable from the cabinet D connector to the cross-connect field.

Step 5: Patch the 2-pair connection to the site of the display terminal. Be sure to connect the transmit-pair of one LADS to the receive-pair of the other LADS (see Figure C-2, *Extended Local Terminal Using LADS*).

OPTION SETTINGS

Remove the ground strap for the power supply. Open the LADS chassis to access the circuit card. Set the following options:

OUTPUT LEVEL = -16 (XZ1)

XMIT TMG = INT (XZ2)

DX MODE = FULL (XZ2)

CARR CONT = ON (XZ2)

RCV HOLD = MARK (XZ3)

DATA RATE = 4800 (terminal) or 9600 (data link) (XZ3)

CA/CB DELAY = 0 (XZ5)

RCV CLK = NORM (XZ5)

XMT CLK = NORM (XZ5)

XMT IMPD = 150 ohms

RCV IMPD = 150 ohms

2/4 WIRE = FOUR

D. VGA Setup

You may need to install a Voice Gain Amplifier (VGA) if the AUDIX system will be accessed by one or more of the following:

- A long distance call from a rotary phone

> **NOTE**   You can use a rotary phone to access the AUDIX system by using a touch-tone generator such as a pocket dialer.

- An international call
- A call that is transmitted over a long path through a public network

To ensure access to the AUDIX system, the switch will need the following:

- Lorain Voice Switch amplifier (VFR 5050)
- Central Office (CO) port and two-wire connection at the cross-connect field
- Wide Area Telecommunications Service (WATS) access to the CO port (an incoming call must be able to access a single port to which the VFR 5050 is assigned).

The Lorain VFR 5050 Variable Voice Switch Gain (VVSG) unit is a variable switched amplifier. This unit provides either flat or equalized gain to a two-wire cable pair. This unit is *not* controlled by the switch. The following table shows the VFR 5050 option settings. Figure D-1, *Lorain VGA Connections*, shows the VFR 5050 wiring diagram.

The AUDIX system compensates automatically if the call is boosted too much. Consult the *Lorain VFR 5050 Installation* manual that comes with each unit for details on these option settings.

VFR 5050 Option Settings	
GAIN DIRECTION	Towards AUDIX system
FLAT GAIN	All switches ON
EQUALIZER	All switches OFF
SENSITIVITY	NORM
Screws S1, S2	UP

Figure D-1. Lorain VGA Connections

Index