

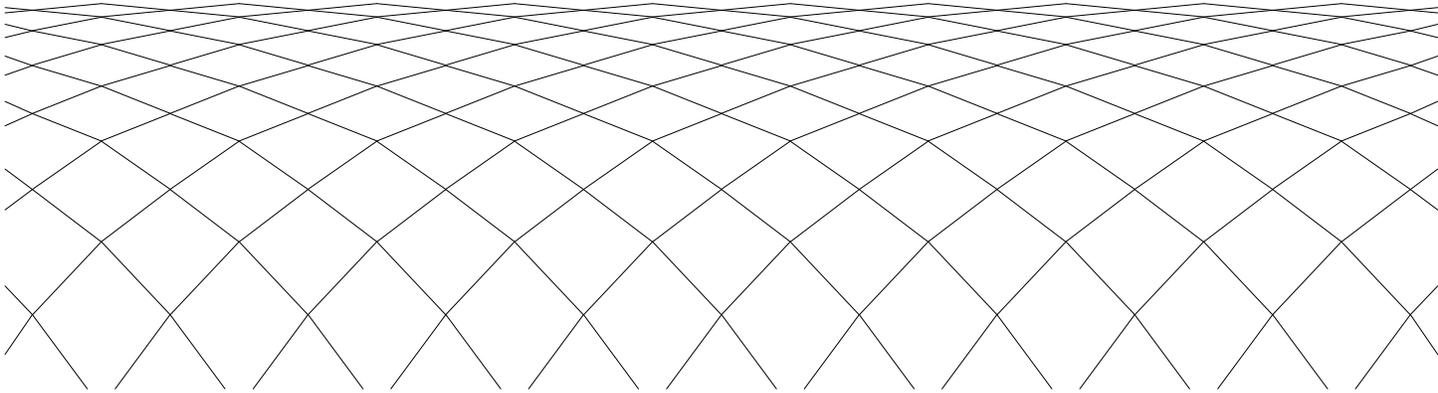


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AT&T Product Interfaces

Reference

SYSTEM 75 TO AUDIX



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SYSTEM 75 TO AUDIX

CONFIGURATION

The Audio Information Exchange (AUDIX) uses the following switch interfaces for System 75 and System 75 XE R1V3:

- Voice links connecting AUDIX voice port (VPT) circuit packs to analog circuit packs administered as a call-distribution group or hunt group on the switch (required for all systems). See figure 1.

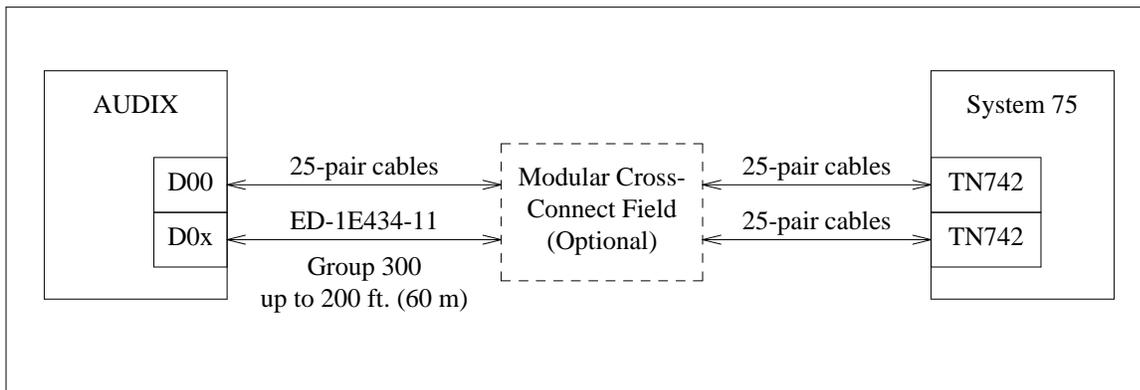


Figure 1: System 75 (or 75 XE) Voice Port Cabling

- Data link connecting an AUDIX to the switch (required for all fully integrated systems). The link varies depending on the type of switch (System 75 or System 75 XE) and AUDIX model used. See figures 2, 3, and 4 for common System 75 and 75 XE setups.

Note: The AUDIX-S (Small) 16-port model has been renamed the "AUDIX one-cabinet configuration." An AUDIX base cabinet with an expansion cabinet on top (allowing up to 32 ports) is called the "AUDIX two-cabinet configuration." Both AUDIX models use the same type of data link. The AUDIX-L (Large) hardware model has been discontinued, although the software may still be upgraded.

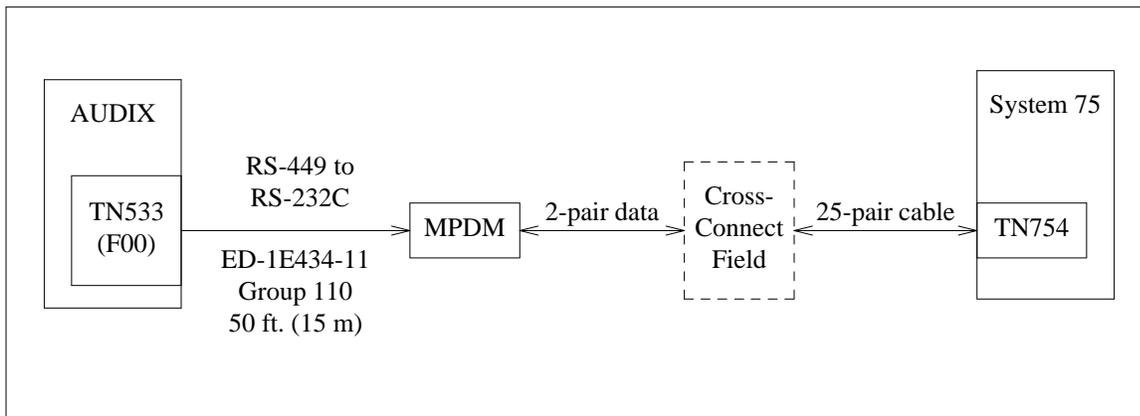


Figure 2: System 75 Data Link (Using MPDM) to AUDIX

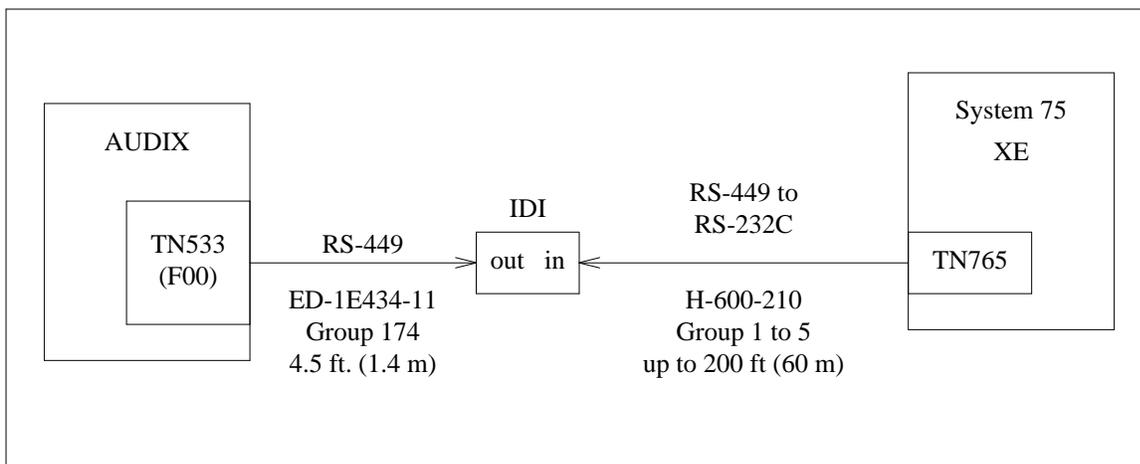


Figure 3: System 75 XE Data Link (Using IDI) to AUDIX

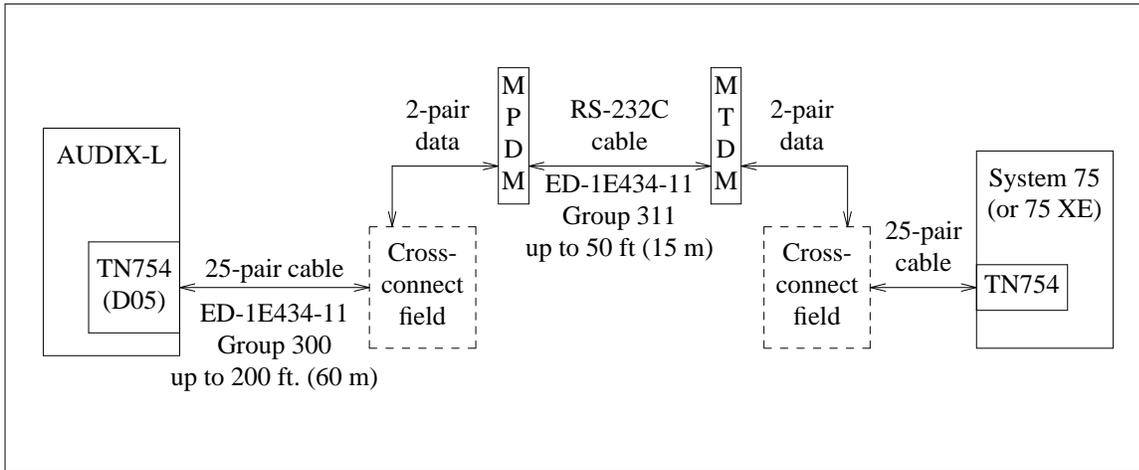


Figure 4: System 75 (or 75 XE) Data Link (DCP Port) to AUDIX-L

- Alarms link connecting AUDIX to the switch’s alarm-reporting facilities (recommended for all systems). See figure 5.
- Remote maintenance link connecting AUDIX to a remote maintenance site (recommended for all systems). See figure 6.
- AUDIX Networking link (optional), connecting AUDIX to a maximum of 100 other AUDIX machines. Analog or digital facilities may be used between switches. See figure 7.
- Switched-access administration connecting the administration terminal to AUDIX through the switch using digital or analog equipment (optional). See the *AUDIX Reference Manual* for details.

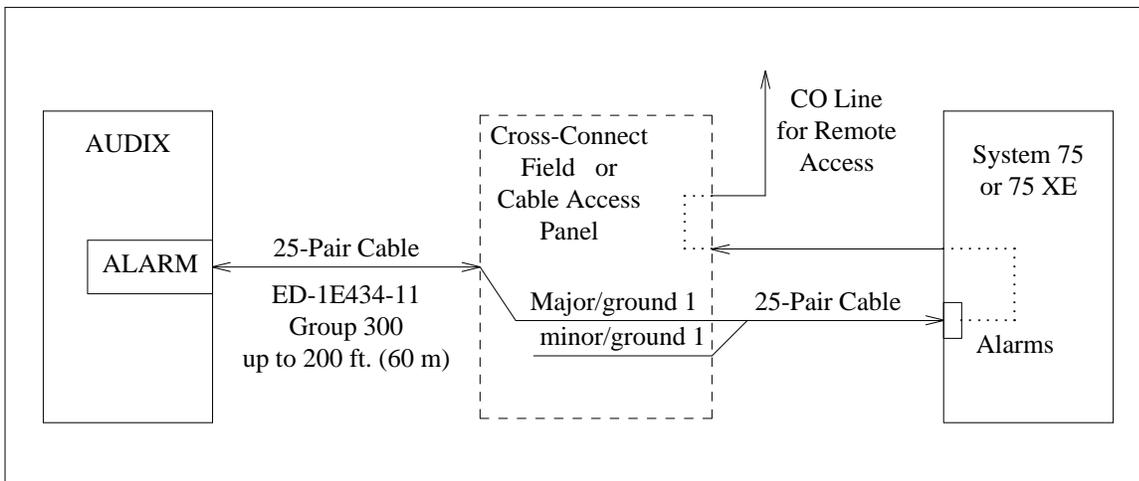


Figure 5: AUDIX System 75 Alarms Link

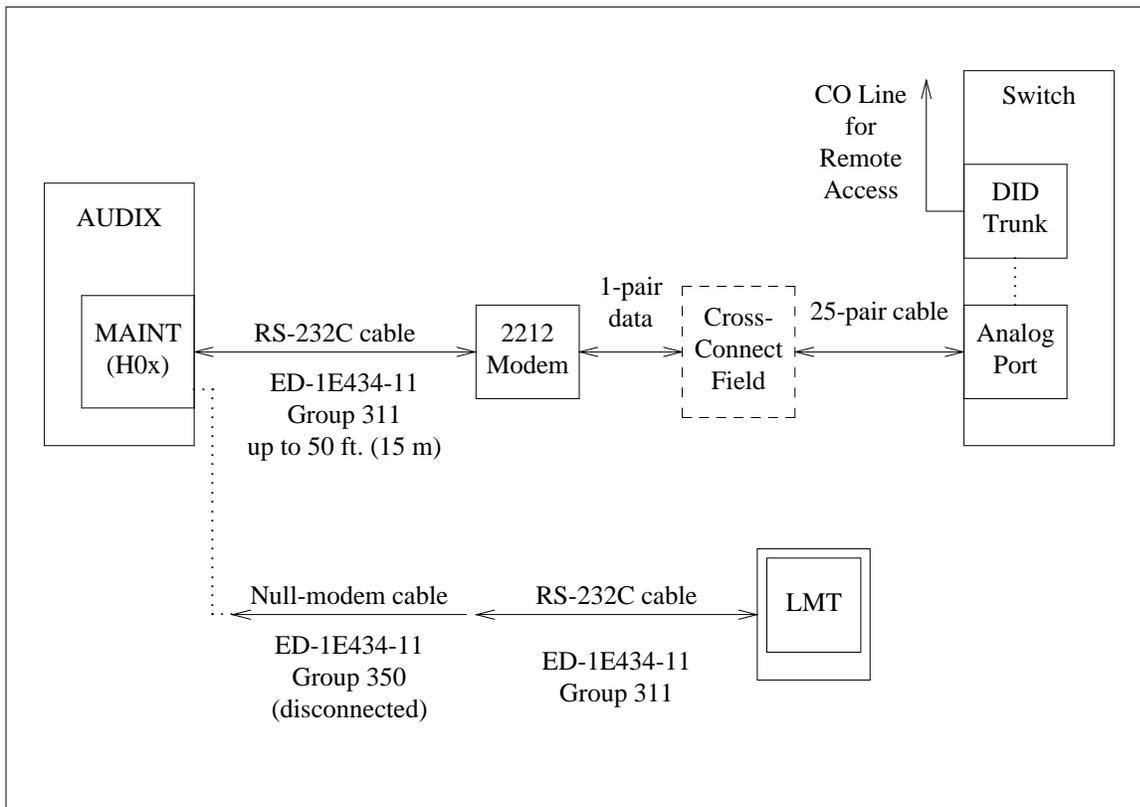


Figure 6: Remote Maintenance Terminal Cabling

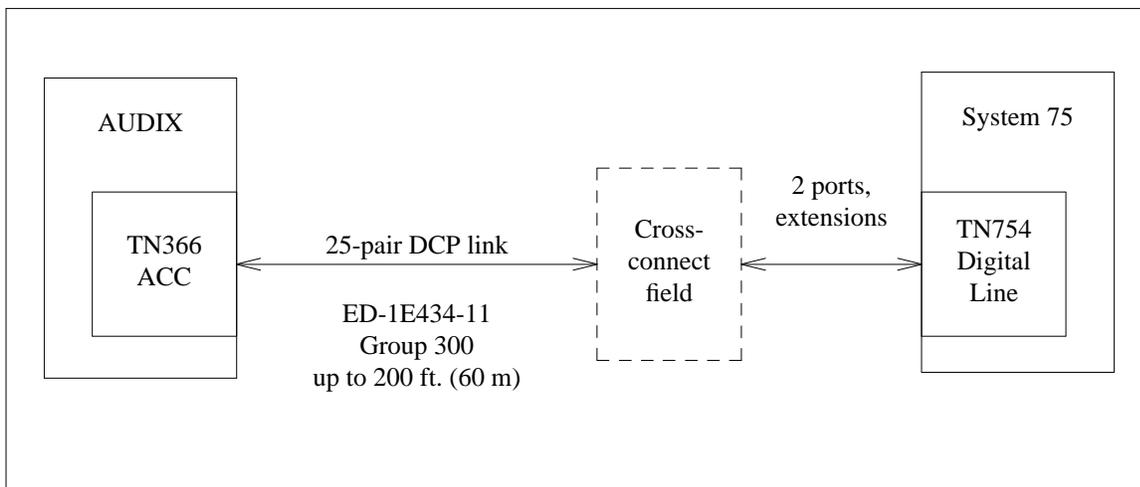


Figure 7: System 75 AUDIX Networking Link

REQUIRED EQUIPMENT

Most of these connections use circuit packs that are always installed in the AUDIX. However, you must check your configuration for the number of optional voice ports installed.

- *One-Cabinet AUDIX* (formerly AUDIX-S): Up to eight 2-port TN501B voice processor (VPC) circuit packs (16 ports) and two 8-port TN747B VPT circuit packs may be installed. The VPT circuit packs connect to AUDIX ports PORT 0 (D00) and PORT 1 (D01).
- *Two-Cabinet AUDIX*: Up to sixteen 2-port TN501B VPC circuit packs (32 ports) and four 8-port TN747B VPT circuit packs may be installed on ports 0 and 1 (D00 and D01) in the base cabinet and ports 2 and 3 (D06 and D07) in the expansion cabinet.
- *AUDIX-L*: Up to sixteen 2-port TN501B VPC circuit packs (32 ports) and four 8-port TN747B VPT circuit packs may be installed on AUDIX-L ports (D00, D01, D02, and D03).

System 75 (and 75 XE) Analog Circuit Packs

System 75 and System 75 XE can use the following types of analog line circuit packs for AUDIX VPT connections. The TN742 is recommended for most connections.

- *TN742*: (PEC 63111) The 8-port TN742 is the standard circuit used for analog station connections in System 75. It may also be used for connecting off-premises analog stations [those going out-of-building through a Central Office (CO)]. Signals may travel from 13,000 ft (3,962 m) on 26-gauge wire to 20,000 ft (6,100 m) on 24-gauge wire through the building wiring.
- *TN769*: (PEC 63142) This 8-port circuit pack is identical to the TN742 except it also supports neon message-waiting lamps and is a more expensive analog option.

System 75 and 75 XE Data Links

System 75 or System 75 XE can contain two types of data links for attaching adjuncts, data applications, or Distributed Communications System (DCS) nodes. The data link is also called the "AP/CMS/DCS/AUDIX Interface," depending on the type of processor attached. System 75 and 75 XE allow only one AUDIX adjunct to be attached at one time.

Switch Communications Interface (SCI). The SCI (PEC 63126) is connected through its time-division multiplex (TDM) bus to a TN754 digital line circuit pack (PEC 63114) in the System 75 common control cabinet. The TN754 has a 25-pair amphenol connector which connects to AUDIX through the cross-connect field. The TN754 connector can provide eight Digital Communications Protocol (DCP) connections, but AUDIX only uses one port. The SCI consists of the following circuit packs:

- *Interface 1 (INT1) TN716B*: (comcode 103556692) This circuit pack provides the bus interface between the System 75 Switch Processing Element (SPE) and the Switch Communications Processor (SCP).
- *Interface 2 (INT2) TN738*: (PEC 63129A) The SCP TN738 circuit pack processes DCS signaling or BX.25 protocol. The TN738 circuit pack provides four data links (AUDIX may use one).
- *Interface 3 (INT3) TN719*: (comcode 103556726) The synchronous/asynchronous interface (SAI) TN719 circuit pack is the interface between the SCP links and the TDM bus.

Processor Interface (PI). (PEC 63153) A TN765 PI circuit pack can replace the three interface circuit packs needed for an SCI. Like the SCI, the PI offers four data links through the TDM bus for adjuncts or

data applications. However, the TN765 also has one EIA port which allows direct access to *one* data link. This is the recommended interface for AUDIX on a System 75 XE; it may be used as long as the EIA port is not already in use.

Data Link to AUDIX

SCI. A one- or two-cabinet AUDIX can connect to a System 75 SCI data link using a modular processor data module (MPDM) with an RS-232C interface card as shown in figure 2. The MPDM connects to AUDIX with an RS-449 to RS-232C cable. The RS-232C end plugs into the MPDM's 25-pin connector, and the RS-449 end connects to the AUDIX SCPI DATA connector (F00). The MPDM should be located within of 50 ft (15 m) of the AUDIX, although the cable may extend up to 100 ft (30 m) if necessary.

The MPDM transmits DCP data through a modular connector over 2- or 4-pair wiring over standard building wiring from 4,000 ft (1,220 m) on 26-gauge wire to 5,000 ft (1,524 m) on 24-gauge wire. The connection may terminate on the modular System 75 cross-connect field or on a 110-type hardware wall field. A 25-pair amphenol cable extends from the cross-connect field to a TN754 digital line circuit pack in the System 75 control cabinet.

PI. An AUDIX may also be connected to the System 75 or 75 XE through the TN765 PI circuit circuit pack's EIA port. The AUDIX TN533 SCPI circuit pack's male F00 connector should be attached to a 4.5 ft (1.4 m) RS-449 cable leading to an Isolating Data Interface (IDI). The baud rate should be set through the System 75 to 9600 bps. An RS-449 to RS-232C H-600-210 cable from 10 ft (9 m) up to 200 ft (60 m) in length connects the IDI directly to the TN765 EIA port (see figure 3).

Data Link to AUDIX-L

An AUDIX-L may be attached to a System 75 or System 75 XE SCI, as long as the switch has at least one DCP port free (the SCI has four possible data links). In this setup, an MPDM is connected to a Modular Trunk Data Module (MTDM) at the cross-connect field. These devices must be set up back-to-back using a straight-through RS-232C cable in order to isolate and correctly transmit data between the AUDIX and switch (see figure 4).

AUDIX Alarms Link

A 25-pair cable up to 200 ft (60 m) in length attaches the AUDIX ALARM connector to existing switch-alarm facilities at the cross-connect field or cable access panel (see figure 5). The total length of the connection from the ALARM port to the switch's alarm facilities may be up to 4,900 cable ft (1,493 m). However, the wiring should *never* be run outside of the building.

CAUTION: AUDIX's alarm-contact closures do not have current-limiting resistors. Therefore, the cable attached to the ALARM connector must not be exposed to damaging surge conditions such as lightning. The cross-connect field may be equipped with lightning resistors.

System 75 has three alarm codes which may be assigned to external entities (such as AUDIX or other adjuncts). The 25-pair alarm cable from AUDIX is attached to the cross-connect field or cable access panel, the linked to one of the three external alarm codes on the System 75 AUX cable. The System 75 or 75 XE maintenance board can then detect a major or minor alarm from AUDIX.

If an alarm is reported and remote maintenance such as the Initialization and Administration System (INADS) is available, the switch automatically dials the maintenance number. The switch gives remote service personnel the identification number of the AUDIX with the alarm and the number of the remote maintenance link to dial.

AUDIX Remote Maintenance Link

Two maintenance links are required for AUDIX: local and remote. These links share the same connector (when the local maintenance terminal is in use, the remote maintenance link is disconnected). The remote link should be connected at all times *except* when the local link is being used by on-site service personnel (see figure 6). Usually a 2212, 212AR, or equivalent modem is attached to the MAINT connector for the remote maintenance link. The MAINT connector is labeled H00 on AUDIX and H02 on AUDIX-L.

Note: The 2212 modem needs to have one option adjusted before it can be attached to AUDIX. Using a terminal, set the "Data Transparency" option to "y" (yes) *before* connecting the modem to the AUDIX maintenance port.

The modem's analog signals require only 1-pair wiring. The analog port is usually connected to a remote maintenance site through a trunk administered with Direct Inward Dialing (DID) access. The modem must be assigned an extension number which is accessible from an outside CO line. If the switch does *not* have DID access or if technicians wish to bypass the switch in case of problems, the modem may be connected directly to a CO line, but this requires a dedicated trunk.

AUDIX Networking Link

AUDIX Networking is an optional AUDIX R1V3 feature that allows AUDIX adjuncts (which may be different AUDIX models) to communicate with other AUDIX machines (which may be connected to different types of switches) using either analog or digital facilities on the switch. All AUDIX Networking machines require a TN366 AUDIX communications controller (ACC) circuit pack and a 25-pair ED-1E434-11 Group 300 cable to connect the ACC circuit pack to a digital port on the local (host) switch (see figure 7). Two physical Digital Communications Protocol (DCP) links (two transmit and receive pairs) are connected.

If end-to-end digital facilities are used, a 64 Kbps data transmission rate is always used (DS1/AVD service). System 75 requires a TN722B circuit pack to support a 64 Kbps DS1 tie-trunk interface.

If analog facilities are used, modem-pooling facilities are required; the data transmission rates can range from 1200 to 2400 bps (9600 bps is not yet available on System 75). System 75 requires the following circuit packs for analog networking:

- *TN742*: (PEC 63111) One port on an eight-port TN742 analog line circuit pack is required for every modem connection to the switch.
- *TN748C*: The TN748C vintage tone-detector circuit pack is required for 2296A modems (not yet available).
- *TN754*: (PEC 63114) The eight-port TN754 digital line circuit pack is required for the TN366 ACC circuit pack; a maximum of two AUDIX extensions are available (one for each port). One port is also needed for every MTDM connection to the modem pool.
- *TN747B*, *TN753*, or *TN760B* may be used for the analog-trunk interface to the CO.

Recommended modems, required cables, and switch translation procedures for AUDIX Networking are in *AUDIX Reference Manual*, *AUDIX-L Installation Manual*, and *AUDIX Installation Manual*.

System 75 (or 75 XE) Digital Circuit Packs

Digital port circuit packs on System 75 or System 75 XE include:

- *TN754 digital line circuit pack*: (PEC 63114) The digital line circuit pack has eight DCP ports which may be used for optional switched-access administration or for AUDIX Networking (see the *AUDIX Reference Manual* for details). One of these ports may be connected to an MPDM or MTDM.
- *TN726 data line circuit pack*: (PEC 63130) A data line circuit pack translates Asynchronous Data Unit (ADU) protocol (on the RS-232C device side) to DCP (on the switch side). Each TN726 has eight ports, and each ADU (Z3A1, Z3A2, or Z3A4) uses one port. The data line circuit pack may also be connected to an 8-port Multiple Asynchronous Data Unit (MADU). The data line circuit pack is also called the "DLC" circuit pack or "EIA Interface." An ADU attached to an AUDIX administration or maintenance port should use external power.

Digital line and data line circuit packs use DCP protocol and may be connected to each other through the switch. For example, an MPDM-to-digital line circuit pack arrangement at one end of the switch may be connected to a data line-to-ADU port circuit pack arrangement at the other.

REQUIRED SOFTWARE

AUDIX works on any System 75 or System 75 XE running R1V3 software. However, System 75 R1V3, Issue 1.4 software is required for the following AUDIX features to work:

- Full Distributed Communications System (DCS) transparency for AUDIX
- Enhanced Call Transfer Out of AUDIX (*T or *0)
- Call Transfer Into AUDIX.

AUDIX Standalone systems do *not* require compatible switch software because they do not use a data link. AUDIX Standalone may be used with System 75 Model 1A or 1B, or any System 75 or System 75 XE that does *not* run R1V3 software. See the *AUDIX Reference Manual* for details on AUDIX software and differences between releases.

APPLICATION

AUDIX is a message-handling system for recording and distributing spoken messages or "voice mail." It contains stored voice prompts that guide AUDIX users to create, send, retrieve, answer, save, or forward spoken messages. AUDIX gives people the means to record and exchange voice messages when direct communication is inconvenient or unnecessary. Complete information on AUDIX applications and features is in the *AUDIX Reference Manual*. For example, AUDIX provides:

- An automatic call-answering service that:
 - Allows callers to leave detailed messages for personnel who are busy, away from the office, or otherwise unavailable.
 - Allows the called party to work without interruption, and to later receive messages and prepare for a return call.
- A notification to subscribers (users) that they have new messages:
 - For subscribers who have voice terminals (telephones) with message-waiting lamps, AUDIX causes the lamp to light when new messages are received.
 - In addition (or for systems that do not have message-waiting lamps), AUDIX can call a personally administered extension when new messages come in.
- Integration with other switch and Applications Processor (AP) message facilities for more complete and efficient message handling.
- An Automated Attendant that can answer incoming calls, and even route them to the appropriate department, making fewer live attendants necessary.
- AUDIX Networking allows convenient voice-mail communication with different groups in multiple locations. Each networked AUDIX machine can schedule automatic delivery of voice mail messages to a maximum of 100 other AUDIX systems. Up to 32,000 subscribers may be administered on one AUDIX Networking system.

CABLING REQUIREMENTS

Cables for required AUDIX connections are shown in figures 1 through 6. Some descriptions appear in the *Configuration* section. Cable lengths, connector genders, and ordering codes are covered in *AUDIX Reference Manual*, *AUDIX-L Installation Manual*, and *AUDIX Installation Manual*.

Data Link Cabling

The data link is *not* connected for AUDIX Standalone systems. See the *Configuration* section for some common data link setups for fully integrated systems.

Voice Port Cabling

Administration: On AUDIX systems, switch port circuit packs must be set up as one or more Uniform Call Distribution (UCD) or hunt groups to route incoming calls to idle ports on AUDIX. The switch must be administered so its analog ports are correctly associated with the voice ports on AUDIX. See *AUDIX Reference Manual*, *AUDIX-L Installation Manual*, or *AUDIX Installation Manual* for details on call-distribution or hunt-group administration.

Direct Connections: If a switch and AUDIX are co-located, the 25-pair voice-link cables may be attached directly to connectors on the switch port circuit pack if the pinouts are compatible (AUDIX uses the first wire pair for the first analog port, skips two pairs, uses the fourth pair, skips two pairs, and so on). This eliminates the need to use the cross-connect field (see figure 1). However, it also dedicates the entire switch pack to AUDIX, which may reduce reliability or increase ring blocking.

Reliability: When setting up the call-distribution (or hunt) group for the voice ports, a good strategy is to spread out the switch ports in the group over as many port carriers as possible. This reduces the size of failure groups when they occur, and distributes ring blocking over a larger area. System 75 can ring 72 ports per system and 4 ports per circuit pack. Ports should therefore be distributed among different circuit packs to minimize ring blocking. For example, an 8-port circuit pack rings only 4 ports at the same time. Since the switch distributes calls to the split one at a time, it is unlikely that four calls will continue to ring before one is answered. However, spreading out the AUDIX ports is still recommended to help increase response time and reliability.

PARAMETER SETTINGS

This section summarizes AUDIX software and hardware settings.

Administration Settings

AUDIX administration falls into two major categories: switch administration and AUDIX system administration.

- AUDIX switch administration is covered in the AUDIX installation manuals (references *AUDIX-L Installation Manual*, *AUDIX Installation Manual*, and *AUDIX-S Installation Manual*).
- AUDIX system administration is covered in the AUDIX administration manuals. For AUDIX Enhanced (R1V2) or Enhanced II (R1V3) software, see *AUDIX Administration Manual*. For AUDIX Basic (R1V1) software (AUDIX-L only), see *AUDIX Administrator's Manual*.

Hardware Switch Settings

Some equipment, such as the MPDM and modem, must have its option switches correctly set to work with AUDIX. Some settings appear in the "Configuration" section. For complete information on customizing the required connecting equipment, see *AUDIX-L Installation Manual*, or *AUDIX Installation Manual*.

TRANSMISSION REQUIREMENTS

AUDIX uses the same type of TN747B CO circuit packs (comcode 105167266) as System 75. The TN747B circuit packs on AUDIX are subject to the same restrictions and use the same ringing voltages as a System 75. For a detailed list of transmission specifications, see *AUDIX Reference Manual*, *AUDIX-L Installation Manual*, or *AUDIX Installation Manual*.

The data link is a synchronous interface. It requires isolated signals and should always run at 9600 bps. The correct options may be set on the device (such as the MPDM) or through switch software. The AUDIX and switch data link circuit packs are Data Terminal Equipment (DTE) devices. The devices which connect to them (IDIs or MPDMs) are Data Communications Equipment (DCE) devices.

The AUDIX administration and maintenance links can run at either 1200 or 4800 bps in a local (or switched) setup. Because the remote maintenance connection uses a modem, it normally runs at 1200 bps. See the appropriate AUDIX installation manual (reference *AUDIX-L Installation Manual*, or *AUDIX Installation Manual*) for details on connecting AUDIX links and setting options. The AUDIX administration and maintenance ports are both asynchronous, DTE, RS-232C interfaces.

Physical Layer Protocol

The AUDIX administration and maintenance ports use a standard RS-232C connection. See the *Transmission Requirements* section for analog port specifications.

AUDIX uses BX.25 protocol for its data link. The System 75 data link (SCI or PI) presents an RS-232C interface link. Because AUDIX has an RS-449 interface, an RS-232C to RS-449 conversion must be made (see figures 2 and 3). On AUDIX-L, the DCP connector is wired through the cross-connect field to use the correct 25-pair interface to the System 75 data link (see figure 4).

Note: AUDIX Standalone systems do *not* use a data link.

TESTING

The AUDIX physical connections and features should be tested when AUDIX is installed. Complete testing procedures are in references *AUDIX-L Installation Manual*, and *AUDIX Installation Manual*.

AUDIX may also need tested as part of problem diagnosis or resolution. See the appropriate AUDIX maintenance manual (*AUDIX-L Maintenance Manual*, or *AUDIX Maintenance Manual*) for complete troubleshooting and test procedures.

UPGRADE REQUIREMENTS

AUDIX may be upgraded to support additional subscribers or new features as described.

Hardware Upgrades. AUDIX hardware upgrades include:

- The AUDIX-S model (2 to 16 ports and up to 3 hard disks) may be upgraded to a two-cabinet AUDIX configuration (up to 32 ports and 6 hard disks). Some circuit packs may need to be upgraded (see the *AUDIX Reference Manual*).
- 380-Mbyte drives may be installed for greater storage (most AUDIX systems ship with 170-Mbyte drives). A TN475 vintage SADI disk controller (if installed) must be exchanged with a TN475B to support 380-Mbyte drives.
- An AUDIX Standalone may be upgraded to use a data link.
- If AUDIX Networking is to be added, the circuit pack vintages must be checked (especially on AUDIX-L) and a TN366 ACC circuit pack must be installed.

Hardware installation for a new system is covered in the AUDIX installation manuals (*AUDIX-L Installation Manual* and *AUDIX Installation Manual*). Hardware needed for upgrades is covered in the *AUDIX Reference Manual* and the appropriate AUDIX maintenance manual (*AUDIX-L Maintenance Manual*, or *AUDIX Maintenance Manual*).

Software Upgrades. AUDIX software upgrades include:

- AUDIX-L may be upgraded from AUDIX Basic (R1V1) software to AUDIX Enhanced (R1V2) software using the directions in reference *AUDIX (R1V1 to R1V2) Upgrade Instructions*. A TN734 memory circuit pack is needed for this upgrade.
- AUDIX-L or AUDIX-S may be upgraded from R1V2 to AUDIX Enhanced II (R1V3) software using the upgrade utility described in *AUDIX Upgrade Instructions*. No new hardware is required for most R1V3 upgrades.

USER INTERFACE REQUIREMENTS

The AUDIX user interface is model independent (AUDIX subscribers need not know if they are using a one-cabinet, two-cabinet, or AUDIX-L model). Therefore, most AUDIX user and administration guides cover all AUDIX models and software releases (see references *AUDIX Administration Manual*, *AUDIX Data Acquisition Package*, and *AUDIX User's Guide*). The exception is AUDIX Basic (R1V1) software which runs only on AUDIX-L and has its own administration manual (see the *AUDIX Administrator's Manual*).

Service technicians, however, *must* have the correct AUDIX documentation for their particular model in order to install, administer, troubleshoot, and repair it. AUDIX-L is described in *AUDIX-L Installation Manual*, and *AUDIX-L Maintenance Manual*. The one- or two-cabinet AUDIX model is covered in *AUDIX Installation Manual*, and *AUDIX Maintenance Manual*. AUDIX-S R1V2 systems are covered in *AUDIX-S Installation Manual*.

PEOPLE INTERACTIONS

AUDIX touches many groups of people who must communicate clearly for AUDIX to run smoothly. Some important interactions are noted in the following sections.

AUDIX Configuration

The System Consultant (SC) and Account Team have access to internal documentation that can help them design and customize an AUDIX system. SCs should use this information to work up actual configurations and orders for AUDIX systems. The forms for recording problems and the numbers that customers can call in case of service interruptions or malfunctioning equipment should be shared with the customer. When the customer decides on the final configuration and set of AUDIX features, the SC must communicate this information to the service technician or System Implementation Manager (SIM) to facilitate AUDIX installation and administration.

If AUDIX is part of a DCS network, the SC, the Regional Engineering Center (REC), or the National Engineering Center (NEC) needs to estimate the impact the additional traffic will have on the tie trunks between the remote switch or switches and the host switch that serves AUDIX.

CAUTION: All DCS or AUDIX Networking setups must be reviewed by the REC. Always obtain technical guidance when setting up a network or AUDIX Automated Attendant.

Before Installation

Before installing AUDIX, an architectural engineer should certify the floor load to be sure the floor can safely support the cabinet(s). This is especially critical for side-by-side cabinet arrangements on System 75, where the AUDIX might weigh more than the switch cabinet.

The customer must arrange for a qualified electrician to install the necessary AC or DC power and ground equipment, according to local code. Most of the work may be done before the AUDIX installation begins, or it may be done all at one time after AUDIX is partially installed (when the power receptacles are in place). All AUDIX breakers and wires should be clearly labeled. See *AUDIX Reference Manual*, *AUDIX-L Installation Manual*, or *AUDIX Installation Manual* for details.

AUDIX Installation

Problems during installation should be reported to the service technician, installation supervisor, the SC, the National Customer Support Center (NCSC), and the appropriate Customer Support Service Organization (CSSO). After customer cutover, problems should be reported to the appropriate CSSO, NCSC, or REC using normal problem-escalation procedures. Usually customers receive a toll-free 800 number for service calls.

Because AUDIX is maintained by both local and remote service personnel, important numbers and system identification must be recorded. These numbers include the alarms link, remote maintenance dial-up number, and all AUDIX access codes. The AUDIX "identification" form should be filled out to aid remote service technicians (see the AUDIX service manuals).

AUDIX Subscribers

The AUDIX system administrator is responsible for training and adding AUDIX subscribers, as well as updating and recording names for subscriber profiles. The system administrator should set up local problem-reporting procedures, and should in turn report subscriber problems or requests for enhancements involving current AUDIX design or operation to the SC or Account Team.

REFERENCES

1. *AUDIX Reference* manual, 585-300-201, Issue 2
2. *AUDIX-L Installation* manual, 585-300-101, Issue 4
3. *AUDIX Installation* manual, 585-302-105, Issue 1
4. *AUDIX Administration* manual, 585-302-501, Issue 2
5. *AUDIX Administrator's Manual*, 999-700-503 IS, Issue 1 (covers R1V1 software).
6. *AUDIX-L Maintenance* manual, 585-302-102, Issue 2
7. *AUDIX Maintenance* manual, 585-300-106, Issue 2
8. *AUDIX (R1V1 to R1V2) Upgrade Instructions*, 585-302-107, Issue 5
9. *AUDIX Upgrade Instructions*, 585-302-108, Issue 3 (covers R1V2 to R1V3 software upgrades)
10. *AUDIX Data Acquisition Package*, 585-302-502, Issue 2
11. *AUDIX User's Guide*, 585-302-701, Issue 2

12. *AUDIX-S Installation* manual, 585-300-105, Issue 1 (covers R1V2 software only)

These documents are available from the AT&T Customer Information Center (CIC). To obtain copies of these documents, write to:

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