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AUDIX™ System Integration Package

for the SL-1 PBX

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Ordering Information

The ordering number for this document is 585-304-203. To order this document, call the AT&T Customer Information Center at 1-800-432-6600 (in Canada, 1-800-255-1242). For more information about AT&T documents, refer to the *Business Communications Systems Publications Catalog* (555-000-010).

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Acknowledgment

This document was prepared by the BCSystems Product Documentation Development Department, Denver, CO.

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ABOUT THIS DOCUMENT

This booklet provides administration and reference information for integrating an AT&T Audio Information Exchange (AUDIX) system with a Northern Telecom SL-1 private branch exchange (PBX).

The purpose of this booklet is to direct the reader to the appropriate procedure for proper administration of an AUDIX system when connected to an SL-1 PBX. Administration procedures that are identical to those used with an AT&T PBX are identified and can be found in the *AUDIX Release 1 Version 5 Administration* (585-305-501) manual.

INTENDED AUDIENCES

This booklet is intended for the person or persons administering the AUDIX system.

PREREQUISITE SKILLS OR KNOWLEDGE

This booklet does not assume prerequisite skills or knowledge. However, training for AUDIX administration is available and is strongly recommended.

HOW THIS DOCUMENT IS ORGANIZED

Information is organized in this document as outlined in the following table:

Chapter Title	Description
Chapter 1, *General Reference*	Provides technical elaborations specific to an AUDIX/SL-1 configuration.
Chapter 2, *Administration*	Describes administration procedures that are unique to an AUDIX integrated with an SL-1 switch.

HOW TO USE THIS DOCUMENT

This booklet provides information that is specific to an AUDIX/SL-1 configuration and should be used in conjunction with the following documents:

- *AUDIX Release 1 Version 5 Administration (585-305-501)*
- *AUDIX Release 1 Version 5 Forms Reference (585-305-202)*
- *AUDIX System Description (585-305-201)*
- *AUDIX Feature Descriptions (585-305-203)*
- *AUDIX Release 1 Version 5 Installation (585-305-105)*
- *AUDIX Release 1 Version 5 Maintenance for Tier 1 (585-305-106)*

You should be familiar with how the first three documents are organized and the information they contain. Any information for an AUDIX/SL-1 configuration that is identical to that contained in the documents listed above will be identified.

CONVENTIONS USED IN THIS DOCUMENT

The following typographic conventions are used in this document:

- Terminal keys 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).

- The word ‘‘enter’’ means to type a value and press (RETURN). For example, an instruction to type `y` and press (RETURN) is shown in this document as:

  Enter **`y`** to continue.

- Two or three keys that you press at the same time (that is, you hold down the first key while pressing the second key and, if appropriate, the third key as well) are shown together in a curved-edge box and are separated by hyphens. For example, an instruction to press and hold (ALT) while typing the letter *d* is shown in this document as:

  Press (ALT-d).

- Information that is displayed on your terminal screen — including screen displays, field names, prompts, and error messages — is shown in constant-width type. Information that you enter from your keyboard is shown in constant-width bold type. Here is an example:

  At the `Login ID?` prompt, enter **`snowfox`**

- 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 generically in this document as:

  `Your file` *filename* `is formatted incorrectly.`

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- AT&T DEFINITY Communications System is a trademark of AT&T.
- SL-1 is a registered trademark of Northern Telecom Limited.
- DIMENSION System is a registered trademark of AT&T.
- Silent Knight Autodialer is a registered trademark of Silent Knight Security Systems.

RELATED RESOURCES

Related resources available for AUDIX are:

AUDIX Documentation

Description	Order Number
AUDIX Release 1 Version 5 Administration	585-305-501
AUDIX Release 1 Version 5 Forms Reference	585-305-202
AUDIX Release 1 Version 5 Installation	585-305-105
AUDIX Release 1 Version 5 Maintenance for Tier 1	585-305-106
AUDIX System Description	585-305-201
AUDIX Feature Descriptions	585-305-203

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1. GENERAL REFERENCE

This chapter contains general information for connecting a one- or two-cabinet AUDIX to a Northern Telecom SL-1 Private Branch Exchange (PBX). Information includes:

- A configuration summary for AUDIX and the SL-1 including preinstallation requirements, hardware and software requirements, port selection, and an ordering summary
- An installation overview and maintenance summary
- A feature summary including SL-1 features and AUDIX feature operation
- Technical reference including hardware changes and a functional description of the SL-1 interface.

The information in this chapter is designed for quick reference and is intended for systems consultants, account teams, customers, remote technical support personnel, and others who typically use the *AUDIX System Description* manual (585-305-201).

This booklet covers only the differences between an SL-1 setup and a regular AUDIX R1V5 integration; see the *AUDIX System Description* manual (585-305-201) for complete information. This booklet may be inserted in the system description binder if desired.

NOTE

SL-1 integrations are *not* available on AUDIX-L systems. Only AUDIX one- and two-cabinet systems are supported.

OVERVIEW

This document describes how to integrate a one- or two-cabinet AUDIX with a Northern Telecom SL-1 PBX. The basic configuration is similar to an AUDIX integration with an AT&T PBX (System 75, System 85, DEFINITY Generic 1, DEFINITY Generic 2, or DIMENSION PBX). The major difference is that another type of port board (the TN762B Hybrid Line) is used for Call Answer or Voice Mail port connections, and that up to five VPT (Voice Port Trunk) boards may be installed. See the *Configuration Summary* section for details on hardware and software requirements for SL-1 setups.

AUDIX requires the Integrations Package software to connect to an SL-1 PBX. Integrations Package offers all the features of the AUDIX R1V5 software release. No new user features have been provided. See the *Feature Summary* section later in this chapter for details on switch and feature interactions between AUDIX and an SL-1.

Port Connections

AUDIX and SL-1 PBX connections are similar to AUDIX connections to an AT&T PBX (see Figure 1-1). However, in order to provide all standard AUDIX features, both integrated and nonintegrated Voice Port (VPT) boards are used as follows:

- Integrated ports (the TN762B Hybrid line board) permit the transmission of data link messages (such as connect and disconnect) and are used for the AUDIX Call Answer and Voice Mailbox features. The TN762B boards support two pair of tip and ring (T and R) signals per port: one pair of voice T and R and one pair of control (or data) T and R signals.
- Nonintegrated ports (the TN747B VPT board) support the Automated Attendant and Outcalling features the same way as a Standalone AUDIX does. The TN747B boards use one pair of tip and ring (T and R) signals per port as they do in all other AUDIX connections.

To provide all possible combinations of integrated and nonintegrated voice ports, an additional VPT board (either a TN747B or TN762B) can be installed in carrier slot 21 in the main cabinet. When installed, the extra VPT board replaces a Voice Processor Computer (VPC) board, reducing the total number of available VPC ports by two for a total of 14 ports on a one-cabinet system and 30 ports on a two-cabinet system. Details on port selection are found in Tables 1-1 and 1-2.

Physical Connections

AUDIX and the SL-1 are linked in the following ways (see Figure 1-1):

- Voice links — Up to 32 voice ports can be supported over a maximum of five 25-pair cables. The fifth cable is used only in SL-1 setups that require a certain mix of integrated and nonintegrated ports (see Tables 1-1 and 1-2).
- Data link — Voice Mail and Call Answer message information is carried over a data link called the Integrated Voice Messaging System (IVMS).

  The data link between AUDIX and the SL-1 is connected via an Isolating Data Interface (IDI) and associated cabling. See the *Installation and Maintenance* section for details.
- Alarms link — A Silent Knight Autodialer is used to report AUDIX alarms to a remote location (see the *AUDIX Requirements* section later in this chapter).
- Remote maintenance link — AT&T service technicians use this link to troubleshoot the system remotely (see the *AUDIX Requirements* section later in this chapter).

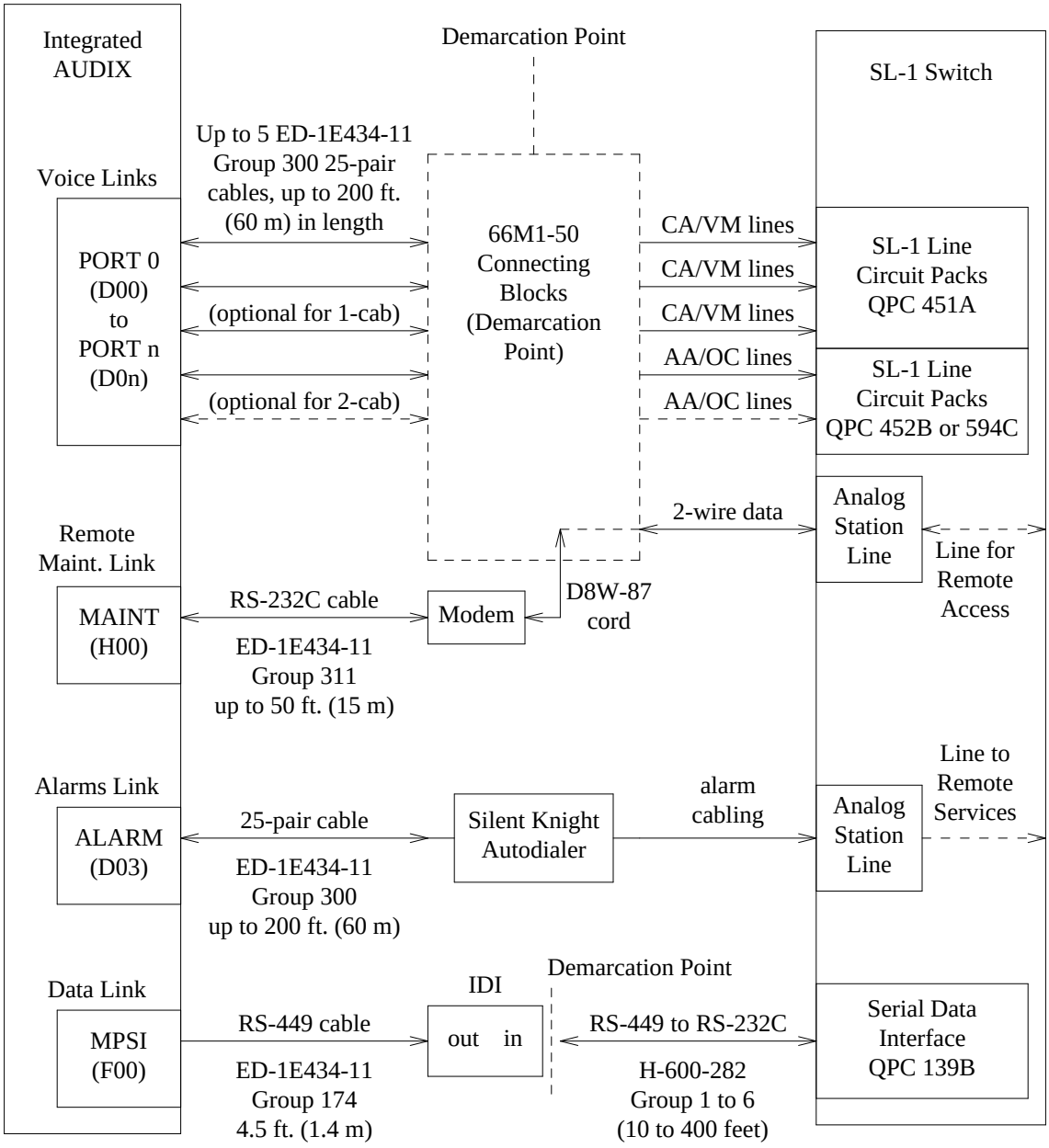


Figure 1-1. AUDIX to SL-1 Connectivity

CONFIGURATION SUMMARY

Before AUDIX can be fully integrated with the SL-1 switch, certain preinstallation, hardware and software requirements must be met. These requirements are described in the following sections.

Preinstallation Summary

Generally, preinstallation considerations are the same for the SL-1 as they are for a System 75, System 85, DEFINITY Generic 1, or DEFINITY Generic 2 PBX; see the *AUDIX System Description* manual (585-305-201) for details. Important differences are covered in the following sections.

NOTE

It is the responsibility of Northern Telecom personnel to make sure the switch translations are administered correctly to work with AUDIX. The AT&T service technician can only test as many of the AUDIX system functions as the switch supports at the time of installation.

AUDIX Requirements

For full integration with the SL-1, the following software and hardware must be installed in AUDIX:

- Software — AUDIX requires the Integrations Package software load to be ordered. The Integrations Package software contains all the features offered in AUDIX R1V5 software, in addition to full integrations to Northern Telecom switches including the SL-1 PBX.
- Hardware — The AUDIX to SL-1 interface uses two different types of voice ports: the TN747B VPT (an analog CO Trunk board), which supports the Automated Attendant and Outcalling features; and the TN762B VPT (a Hybrid Line board), which supports the Voice Mail and Call Answer features. Both of these boards can be used interchangeably in the VPT slots. When it is necessary to achieve a certain combination of integrated and nonintegrated voice ports, one of these VPTs can also be placed in a VPC slot (slot 21 in the main cabinet).

  AUDIX must also have a TN547B Multiple Protocol Switch Interface (MPSI) circuit pack to support the IVMS data link. The TN547B vintage MPSI must be installed in the main AUDIX cabinet *instead of* earlier versions of the TN547 MPSI or the TN533 SCPI board.
- Peripheral Equipment — The following equipment may also be needed at the customer site, depending on customer requirements:
  - — If AT&T service technicians are to maintain and troubleshoot the AUDIX, a Silent Knight Autodialer is required to report AUDIX alarms to a remote location. See the *AUDIX System Description* manual (585-305-201) for details.
  - — The service technicians also require an analog line to dial into AUDIX to troubleshoot the system remotely (see Figure 1-1). The remote maintenance connection is also described in the *AUDIX System Description* manual (585-305-201).

SL-1 Requirements

For full integrations with AUDIX, the SL-1 must have the following software and hardware:

- Software — The SL-1 must be running the following basic software releases (or later): X11 Release 4 or later (for touch-tone phones), X11 Release 5 or later (for nontouch-tone SL-1 telephone sets)
- SL-1 feature packages required to support an SL-1 Integrated Voice Messaging System (IVMS): Feature Package (FP) 35 — Integrated Messaging System, FP 46 — Message Waiting Center, FP 17 — Make Set Busy
- Automatic Call Distribution (ACD) package required for a fully integrated AUDIX (one with a data link). ACD package A, B, C-1, C-2, or D may be used (the D package must be an X11 Release 12 Issue .31 or later release).

NOTE

If the SL-1 is set up for hunt groups only, no data link messages can pass between AUDIX and the PBX (fully integrated AUDIX operation is not possible).

- Data link translations for the Serial Data Interface (SDI)
- Hardware — The SL-1 must contain the following circuit packs:
  - — QPC 139B SDI board (for the AUDIX data link)
  - — QPC 451A 8-port voice port interface boards (these 4-wire boards interface with the 4-wire AUDIX TN762B VPT boards)
  - — QPC 452B 8-port analog board (interfaces with the 2-wire AUDIX TN747B VPTs)
  - — QPC 594C 16-port analog board (interfaces with the 2-wire AUDIX TN747B VPTs).
- Up to 32 two-way analog voice lines. The number of lines should match the number of AUDIX voice ports.
- Additional analog station lines for alarms and remote service support.

Port Selection

The number of TN747B and TN762B boards required depends on the number voice ports needed for certain AUDIX features (TN762B boards support Call Answer and Voice Mail, while TN747B ports are needed to support Automated Attendant and Outcalling).

To determine the type and number of boards required for a specific customer, refer to the following tables. Table 1-1 lists the VPT requirements for a one-cabinet AUDIX; Table 1-2 lists the VPT requirements for a two-cabinet AUDIX.

In column 1, select the number of Automated Attendant/Outcalling ports that are required. Next, go to column 2 and match this number to the number of Voice Mail/Call Answer ports that are required. Finally, go to the right to determine the circuit pack(s) that must be used in the slots indicated.

Table 1-1. VPT Requirements (One-Cabinet AUDIX)

Ports Required		**Circuit Packs Required**		
Auto. Attend, Outcalling	Voice Mail, Call Answer	Slot 19	Slot 21	Slot 24
0	1-8	TN762B	TN501B†	-
	9-16	TN762B	TN501B	TN762B
1	0	TN747B	-	-
	1-8	TN762B	TN501B†	TN747B
	9-13	TN762B	TN747B*	TN762B
2	0	TN747B	-	-
	1-8	TN762B	TN501B	TN747B
	9-12	TN762B	TN747B*	TN762B
3	0	TN747B	TN501B	-
	1-8	TN762B	TN501B	TN747B
	9-11	TN762B	TN747B*	TN762B
4	0	TN747B	TN501B	-
	1-8	TN762B	TN501B	TN747B
	9-10	TN762B	TN762B*	TN747B
5	0	TN747B	TN501B	-
	1-8	TN762B	TN501B	TN747B
	9	TN762B	TN762B*	TN747B
6-8	0	TN747B	TN501B	-
	1-8	TN762B	TN501B	TN747B
9	0	TN747B	TN501B	TN747B
	1-5	TN747B	TN747B*	TN762B
10	0	TN747B	TN501B	TN747B
	1-4	TN747B	TN747B*	TN762B
11	0	TN747B	TN501B	TN747B
	1-3	TN747B	TN747B*	TN762B
12	0	TN747B	TN501B	TN747B
	1-2	TN747B	TN762B*	TN747B
13	0	TN747B	TN501B	TN747B
	1	TN747B	TN762B*	TN747B
14-16	0	TN747B	TN501B	TN747B

* When a TN747B or TN762B is used in slot 21, the cabinet is limited to 14 ports.

† This slot will be empty in systems with 1 to 2 ports.

In column 1, select the number of Automated Attendant/Outcalling ports that are required. Next, go to column 2 and match this number to the number of Voice Mail/Call Answer ports that are required. Finally, go to the right to determine the circuit pack(s) that must be used in the slots indicated (note that the circuit packs listed in slots 19 and 24 of *Main* and slot 19 of *Expansion* are interchangeable).

Table 1-2. VPT Requirements (Two-Cabinet AUDIX)

Ports Required		**Circuit Packs Required**				
		Main			**Expansion**	
Auto. Attend, Outcalling	Voice Mail, Call Answer	Slot 19	Slot 21	Slot 24	Slot 19	Slot 24
0	17-24	TN762B	TN501B	TN762B	TN762B	-
	25-32	TN762B	TN501B	TN762B	TN762B	TN762B
1	14-16	TN762B	TN501B	TN762B	TN747B	-
	17-24	TN762B	TN501B	TN762B	TN762B	TN747B
	25-29	TN762B	TN747B*	TN762B	TN762B	TN762B
2	13-16	TN762B	TN501B	TN762B	TN747B	-
	17-24	TN762B	TN501B	TN762B	TN762B	TN747B
	25-28	TN762B	TN747B*	TN762B	TN762B	TN762B
3	12-16	TN762B	TN501B	TN762B	TN747B	-
	17-24	TN762B	TN501B	TN762B	TN762B	TN747B
	25-27	TN762B	TN747B*	TN762B	TN762B	TN762B
4	11-16	TN762B	TN501B	TN762B	TN747B	-
	17-24	TN762B	TN501B	TN762B	TN762B	TN747B
	25-26	TN762B	TN762B*	TN762B	TN762B	TN747B
5	10-16	TN762B	TN501B	TN762B	TN747B	-
	17-24	TN762B	TN501B	TN762B	TN762B	TN747B
	25	TN762B	TN762B*	TN762B	TN762B	TN747B
6-8	9-16	TN762B	TN501B	TN762B	TN747B	-
	17-24	TN762B	TN501B	TN762B	TN762B	TN747B
9	6-8	TN747B	TN501B	TN747B	TN762B	-
	9-16	TN747B	TN501B	TN747B	TN762B	TN762B
	17-21	TN747B	TN747B*	TN762B	TN762B	TN762B
10	5-8	TN747B	TN501B	TN747B	TN762B	-
	9-16	TN747B	TN501B	TN747B	TN762B	TN762B
	17-20	TN747B	TN747B*	TN762B	TN762B	TN762B
11	4-8	TN747B	TN501B	TN747B	TN762B	-
	9-16	TN747B	TN501B	TN747B	TN762B	TN762B
	17-19	TN747B	TN747B*	TN762B	TN762B	TN762B
12	3-8	TN747B	TN501B	TN747B	TN762B	-
	9-16	TN747B	TN501B	TN747B	TN762B	TN762B
	17-18	TN747B	TN762B*	TN762B	TN762B	TN747B

(*Continued*)

* When a TN747B or TN762B is used in slot 21 of the main cabinet, the main cabinet is limited to 14 ports and the entire system is limited to 30 ports.

Table 1-2. VPT Requirements (Two-Cabinet AUDIX — Cont'd)

Ports Required		Circuit Packs Required				
		Main			Expansion	
Auto. Attend, Outcalling	Voice Mail, Call Answer	Slot 19	Slot 21	Slot 24	Slot 19	Slot 24
13	2-8	TN747B	TN501B	TN747B	TN762B	-
	9-16	TN747B	TN501B	TN747B	TN762B	TN762B
	17	TN747B	TN762B*	TN762B	TN762B	TN747B
14-16	1-8	TN747B	TN501B	TN747B	TN762B	-
14-16	9-16	TN747B	TN501B	TN747B	TN762B	TN762B
17	0	TN747B	TN501B	TN747B	TN747B	-
	1-8	TN747B	TN501B	TN747B	TN747B	TN762B
	9-13	TN747B	TN747B*	TN762B	TN747B	TN762B
18	0	TN747B	TN501B	TN747B	TN747B	-
	1-8	TN747B	TN501B	TN747B	TN747B	TN762B
	9-12	TN747B	TN747B*	TN762B	TN747B	TN762B
19	0	TN747B	TN501B	TN747B	TN747B	-
	1-8	TN747B	TN501B	TN747B	TN747B	TN762B
	9-11	TN747B	TN747B*	TN762B	TN747B	TN762B
20	0	TN747B	TN501B	TN747B	TN747B	-
	1-8	TN747B	TN501B	TN747B	TN747B	TN762B
	9-10	TN747B	TN762B*	TN762B	TN747B	TN747B
21	0	TN747B	TN501B	TN747B	TN747B	-
	1-8	TN747B	TN501B	TN747B	TN747B	TN762B
	9	TN747B	TN762B*	TN762B	TN747B	TN747B
22-24	0	TN747B	TN501B	TN747B	TN747B	-
	1-8	TN747B	TN501B	TN747B	TN747B	TN762B
25	0	TN747B	TN501B	TN747B	TN747B	TN747B
	1-5	TN747B	TN747B*	TN747B	TN747B	TN762B
26	0	TN747B	TN501B	TN747B	TN747B	TN747B
	1-4	TN747B	TN747B*	TN747B	TN747B	TN762B
27	0	TN747B	TN501B	TN747B	TN747B	TN747B
	1-3	TN747B	TN747B*	TN747B	TN747B	TN762B
28	0	TN747B	TN501B	TN747B	TN747B	TN747B
	1-2	TN747B	TN762B*	TN747B	TN747B	TN747B
29	0	TN747B	TN501B	TN747B	TN747B	TN747B
	1	TN747B	TN762B*	TN747B	TN747B	TN747B
30-32	0	TN747B	TN501B	TN747B	TN747B	TN747B

* When a TN747B or TN762B is used in slot 21 of the main cabinet, the main cabinet is limited to 14 ports and the entire system is limited to 30 ports.

Ordering Summary

An AUDIX that is to be installed with an SL-1 PBX should be ordered using Price Element Codes (PECs) and the Delivery Operations Support System (DOSS) like any other AUDIX system. The following PECs apply specifically to SL-1 setups:

- PEC 1253-V47 — Right-to-use Integrations Package software on a one-cabinet AUDIX system.
- PEC 1253-V48 — Right-to-use Integrations Package software on a two-cabinet AUDIX system.
- PEC 1253-E48 — Right-to-use Integrations Package software on a one- to two-cabinet AUDIX upgrade.
- PEC 70364 — TN547B MPSI required for an SL-1 PBX data link; use attribute ASV03 for a one- or two-cabinet AUDIX (order *instead of* PEC 70363).
- PEC 70371 — Program cartridge (Integrations Package) for a one-cabinet AUDIX system (J58889UB-1 List 8). Order attribute DOC01 to receive an entire set of R1V5 documentation and two integration booklets covering the SL-1.
- PEC 70372 — Program cartridge (Integrations Package) for a two-cabinet AUDIX system (J58889UB-1 List 9). Order attribute DOC01 to receive an entire set of R1V5 documentation and two integration booklets covering the SL-1. This PEC also includes five 66M150 blocks (comcode 101238178).
- PEC 70373 — Hardware for a new Integrations Package system; includes one 105B IDI (comcode 105778179), one ED-1E434-11 Group 174 cable (specify length up to 50 feet), and one H600-282 Group 1 cable (RS-449 to RS-232C),
- PEC 70374 — Hardware for an Integrations Package upgrade; includes one D-kit (D-182216, comcode 105716542). When ordering this PEC for a second cabinet, you must also order PEC 70373 to get all of the hardware needed for an Integrations Package.
- PEC X600-AAO — Number of Automated Attendant and Outcalling ports (requires TN747B boards; needed for manufacturing information only).
- PEC X600-VMC — Number of Voice Mail and Call Answer ports (requires TN762B boards; needed for manufacturing information only).

INSTALLATION AND MAINTENANCE

This section covers specific installation and maintenance considerations for SL-1 setups. See the *AUDIX Integrations Package for the SL-1 PBX: Installation and Maintenance* booklet (585-304-109) for complete information.

Installation Overview

Most AUDIX integrations with an SL-1 switch are installed the same way as an AUDIX integrated with an AT&T PBX. Some special considerations include:

- Coordinating the installation with the customer, the person administering the switch translations for the SL-1, the AT&T service technician, etc.

  Note that AT&T is not responsible for the SL-1 and therefore cannot administer the switch translations. However, appendix A, *SL-1 Switch Administration*, contains certain basic translations that are necessary for the AUDIX/SL-1 integration.

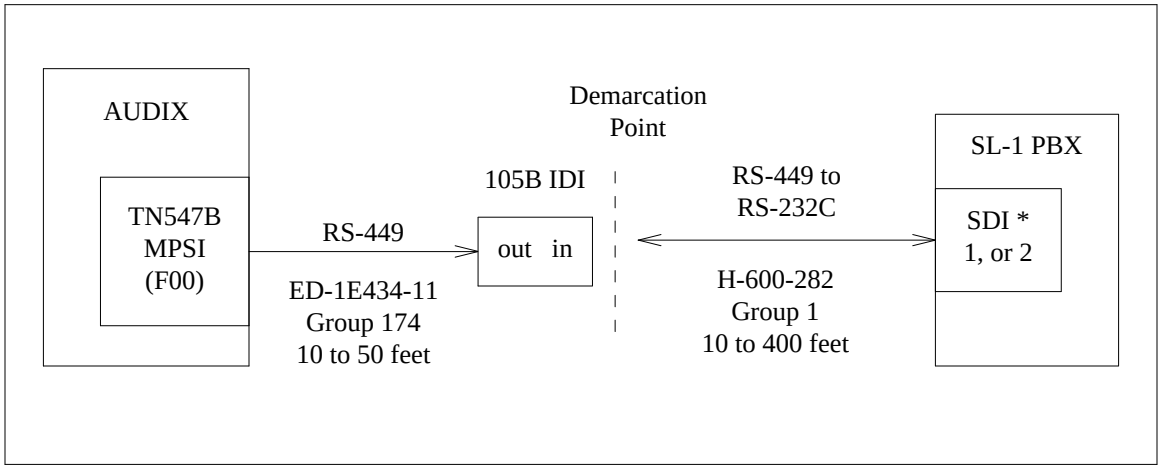
- A TN547B MPSI board and Integrations Package software must be ordered and installed in the AUDIX.
- If a customer's application requires a VPT board in slot 21, an interface cable and keyblock for backplane slot 21 must be installed. The interface cable and keyblock are usually installed at the factory but they are also included as part of a field upgrade kit (D-182216).
- The voice port cables should use 66M1-50 connecting blocks as a demarcation point (the point where AT&T responsibility ends and customer or Northern Telecom responsibility begins).

The data link and its demarcation point are covered in the next section.

IDI Setup

An SL-1 setup may use direct cabling and an Isolating Data Interface (IDI) for its data link as shown in Figure 1-2. This setup involves the following equipment:

- A 105B IDI
- A Group 174 RS-449 cable from the AUDIX TN547B MPSI to the IDI
- An RS-449 to RS-232C H-600-282 cable from the IDI to the SL-1



* DO NOT use SDI board 0

Figure 1-2. AUDIX Data Link to an SL-1 Switch Using an IDI

AT&T Installer Responsibilities

The AUDIX installer is responsible for:

- Cabling the AUDIX system to the demarcation point (see the previous sections)
- Initializing (powering up) the AUDIX system and verifying its readiness to function
- Translating the AUDIX system to prepare it for service. The installer administers enough of the system to bring it into service; the AUDIX system administrator completes the procedure through the cut-to-service tasks.
- Testing the AUDIX system to verify that it is ready for service (see the next section)

Acceptance Tests

The SL-1 PBX should already be set up and translated for AUDIX and subscriber telephone service when the AUDIX system arrives on-site. This allows the local AT&T service technician to quickly connect the AUDIX to the agreed-upon demarcation point and run acceptance tests to verify that the system works. The customer must decide prior to the actual installation what acceptance tests are to be done.

If the switch is ready, AT&T service technicians can test the AUDIX voice features from a nearby telephone (at least one should be in the machine room). They can also test individual AUDIX voice ports (see the following section). Any further testing should be arranged between the customer and Northern Telecom.

NOTE

It is the responsibility of the customer or Northern Telecom personnel to make sure the switch translations are administered correctly to work with AUDIX. The AT&T service technician can only test as many of the AUDIX system functions as the switch supports at the time of installation.

Maintenance Summary

An AUDIX connection to an SL-1 PBX is maintained in much the same way as an AUDIX connection to an AT&T PBX, except that AT&T service technicians have no access to the SL-1 and are not responsible for any equipment past the demarcation point (the 66M150 connecting blocks). Some specific SL-1 concerns are covered in this section.

Calls When the Data Link is Down

If the data link is down and AUDIX and the SL-1 are both operational, incoming calls will be handled as follows:

- Integrated ports — Calls directed to the ACD group will either ring with no answer, or be diverted to the night call-forwarding number (depending on switch administration).
- Automated Attendant ports — AUDIX will answer incoming calls to the Automated Attendant normally; the Automated Attendant is designed to work in Standalone mode.
- Outcalling ports — Nonintegrated ports that are *not* set up for Automated Attendant will ring with no answer.

Port Busy-Out

AUDIX or an AT&T service technician may busy-out AUDIX ports due to a service problem (such as a faulty port board) or in order to improve system operation depending on the configuration.

- VPT Busy-Out — AUDIX can busy-out fully integrated TN762B ports both on AUDIX and on the switch as it does for an AT&T PBX. This prevents incoming calls from accessing a faulty port.

  NOTE

  AUDIX is unable to deactivate nonintegrated (TN747B) ports on the switch side; this is similar to an AUDIX Standalone connection.

  If all the VPT ports are busied out, the SL-1 directs calls to the night call-forwarding number (administered on the switch). The appropriate service technician person must reactivate the port(s) when the system is fixed.

- VPT Busy-Out — If a third VPT (on a one-cabinet AUDIX) or a fifth VPT (on a two-cabinet AUDIX) is installed, the customer may wish to have certain VPT ports busied out manually. If the ports are not selected manually, AUDIX will busy-out two VPT ports at random (the installation of a third or fifth VPT requires two VPT ports to be busied out).

The customer may elect to manually busy-out the ports depending on the system configuration. For example, if the customer has TN762B boards installed in VPT slots 1 through 4, and only one TN747B set up as an Automated Attendant in slot 5, only three ports (30 through 32) are available for incoming Automated Attendant calls. If the customer or AT&T service technician specifically busies out two other VPT ports (such as 3 and 4), the system will never busy-out one of the three Automated Attendant ports.

Port Test Calls

The test call procedure varies depending on the type of AUDIX port:

- Integrated ports — AT&T service technicians cannot call an integrated port directly (the `maintenance : system : test call` form simply shows integrated port numbers 1 through 253). Technicians must busy-out all the other integrated ports and then place a call to the ACD group in order to test a specific TN762B port.
- Automated Attendant ports — Depending on the type of hunt group, technicians can call a TN747B port directly using the `maintenance : system : test call` form. The technicians may need to repeatedly call until they access the port they want to test.
- Outcalling ports — Nonintegrated ports that are *not* set up for Automated Attendant are used for Outcalling. These ports do *not* accept incoming calls. In order to test an Outcalling port, it must be temporarily set up as an Automated Attendant port on AUDIX and tested as described above.

Audits

Internal audits check the port status as on a regular AUDIX integration. A port may be alarmed if it fails to receive calls after five passes through the ACD group. The port may be out of synchronization with the switch; disabling and enabling the port or running the `maintenance : datalink : test` form may solve the alarm.

The Message Waiting Indicator audit works on SL-1 the same as it does on an SMSI integration. Updated message-waiting lamp status is sent continually because the SL-1 does not confirm its status. To disable message-waiting indication, put remote subscribers or other AUDIX extensions on `switch 0` from the `subscriber : local` form.

Maintenance Forms

Differences in the maintenance forms include the following (for more specific information, review the *AUDIX Release 1 Version 5 Maintenance for Tier 1* manual [585-305-106]):

- The `maintenance : system : error counters` form, introduced in AUDIX R1V4_5 software, replaces the `maintenance : vsp : error counters` form. The new form shows errors for the MPSI board as well as for the VSP subsystem boards; this form should be used only by remote AT&T services personnel.

- One field (VPT 5) has been added to the `maintenance : system : vintage` form.

  Under some circumstances, there is another changed field on the `maintenance : system : vintage` form. If VPT 3 in a one-cabinet system, or VPT 5 in a two-cabinet AUDIX, is equipped (based on the `maintenance : vsp : equipage` form), then VPC 2 will have `NA` displayed as its vintage. If VPC 2 is equipped, VPT 3 (or VPT 5) will have `NA` displayed as its vintage.

- One field has been added to the `maintenance : td-bus : reset` form. This field shows the PASS/FAIL result of the TD-bus reset for VPT 5. When VPT 5 is equipped (based on the `maintenance : vsp : equipage` form), VPC 2 is not equipped. The test result for VPT 5 will be either PASS or FAIL, while the result for VPC 2 will be `NA.` The opposite is true when VPT 5 is unequipped and VPC 2 is equipped. The same applies to VPT 3 for a one-cabinet AUDIX.

- One field (VPT 5) has been added to the `maintenance : td-bus : status` form. This field shows the status of VPT 5, which is connected to the TD-bus. It shows the same results as those for the `maintenance : td-bus : reset` form, described above.

- On the `maintenance : td-bus : test` form, the range of the VPT has been expanded from 1-4 to 1-5. If VPT 5 is not equipped (based on the `maintenance : vsp : equipage` form), the range is 1-4 for a two-cabinet AUDIX or 1-2 for a one-cabinet AUDIX. If VPT 5 is equipped, the VPC range is 1,3-16 for a two-cabinet AUDIX and 1,3-8 for a one-cabinet AUDIX.

- On the `maintenance : vpt : test` form, the VPT number field has been expanded from 1-4 to 1-5 (1-2 to 1-3 for a one-cabinet AUDIX).

NOTE

The dial tone and hybrid tests cannot be run on the fully integrated TN762B VPT ports and will be shown as `NA` on the form.

- On the `maintenance : vsp : equipage` form, one field has been added for VPT 5. When VPT 5 is equipped, VPC 2 cannot be equipped, and the form will automatically display `NA` for VPC 2 and vice versa. If VPT 5 and VPC 2 are both unequipped, `UEQ` should be displayed in both fields. On a one-cabinet system, ports 14-16 must be busied out before VPT 3 can be equipped or unequipped. On a two-cabinet system, ports 30-32 must be busied out before VPT 5 can be equipped or unequipped.

- If VPT 3 on a one-cabinet system (or VPT 5 in a two-cabinet AUDIX) is equipped, two voice ports of the customer's choice may be busied out on the `maintenance : vsp : busyout` form. If the customer chooses not to select the ports to busy-out, the system will select the ports. This is not recommended in some configurations. For example, if the customer has only a few Automated Attendant and Outcalling ports, the customer may wish to actively busy-out two of the Call Answer/Voice Mail voice ports, so the fewer number of nonintegrated ports remain free for user calls.

- On the `maintenance : vsp : busyout` form a new field (STATE REASON) has been added to each port to identify the reason for the busyout. Also, there is a new error message stating that at least two voice ports must be busied out if VPT 5 is equipped and you are trying to free more than 30 voice ports.

FEATURE SUMMARY

An AUDIX integration with an SL-1 switch offers all the features found in the AUDIX R1V5 release. These features are generally implemented as they are for an AT&T PBX (System 75, System 85, DEFINITY Generic 1, or DEFINITY Generic 2). Some differences are covered in the following sections.

Overview

Feature enhancements in the integrations package software release that apply to the SL-1 include:

- Additional Switch Connection Types — The AUDIX R1V5 release allows IVMS connections to an SL-1 switch through the `system : translation : switch connection` form. See the *SL-1 Switch Connection* bullet further down this list for more information.
- IVMS Transmission — All data over the IVMS link is transmitted asynchronously in full duplex mode. Each character consists of 10 bits: one start bit, eight data bits, and one stop bit. All data bits are sent with the least significant bit first with no parity.
- Remote Subscribers — Any non-resident AUDIX subscribers (those who do not have a telephone number on the switch) or any subscribers who are *not* administered for MWI must be manually administered to reside on switch 0 using the `subscriber : local` form. This restriction includes ‘‘dummy’’ subscribers such as extension numbers administered for Automated Attendant or Information Service. Unless these subscribers or extension numbers are assigned to switch 0, AUDIX will continuously attempt to update their message-waiting indicators, causing the SL-1 to log numerous errors. Only subscribers with telephones on the switch should be administered to receive MWI.
- SL-1 Switch Connection — After selecting the SL-1 as the host type on the `system : translation : switch connection` form, the system administrator must enter the appropriate data to configure AUDIX for the SL-1 mode. This includes entering the following information on the form:
  - — *Baud Rate:* In the R1V5 release, the data link can run at 1200, 2400, 4800, or 9600 bps, depending on the switch. At the present time, 1200 baud is the only value that AUDIX supports. The `maintenance : datalink : test` can be run to change the baud rate if needed.
  - — *The type of ACD feature package used on the SL-1 (A, B, C, or D):* If the data link, SL-1, or AUDIX has been down, the ports integrated with the SL-1 must be logged back in before they can be used. The login procedure used by AUDIX varies depending on the ACD feature package. The Service Dispatcher (SD) audit on the `maintenance : audits : fp` form can be run to change the feature package.

NOTE

Option ‘‘C’’ must be used for customers with an ACD feature package D (option ‘‘D’’ does not appear on the form).

— *Automated Attendant extensions:* Numbers entered in this field designate the extension to be used for calls coming in on a port marked as an Automated Attendant port. Up to three Automated Attendant extensions can be entered per SL-1 switch; these Automated Attendants work just as they do for AUDIX Standalone systems, except three Automated Attendant numbers are allowed instead of one. The SD audit on the `maintenance : audits : fp` form can be run to change the Automated Attendant extensions.

— *The type of service (integrated or nonintegrated) available for each voice port:* The system identifies each VPT board installed in AUDIX as either a TN747B or a TN762B (this is a display-only field, the administrator does not enter this information).

— *Automated Attendant group:* This designates which ports on a TN747B board are to be used as Automated Attendant ports. Since three Automated Attendant extensions can be specified, the field should be filled with a **`1`** for the first Automated Attendant extension, a **`2`** for the second extension, and so on. The SD audit on the `maintenance : audits : fp` form can be run to change the Automated Attendant group(s).

The system administrator must do a system restart or reboot, administer the Service Dispatcher Audit, or administer a Datalink Test to activate these values. See the *Administration* chapter for details on form layout, field description, allowable values, and error checks.

- System-Wide Covering Extension — Because the SL-1 supports call transfers only to a central operator (the SL-1 night call-forwarding number), the system-wide covering extension on the `system : appearance` form should use the same number for a consistent user interface (see the *Call Transfer* bullet in the next section, *Operation*). Another option is to use an Automated Attendant as the covering extension. This would allow the caller to transfer to any extension.
- Traffic Forms — The `traffic : special features : day` and `hour` forms display additional data for SL-1 integrations (see the *Administration* chapter for more information).
- Voice Port Translations — The `system : translation : voice port` form shows port ID numbers 1 to 253 for integrated TN762B ports, and extension numbers for nonintegrated TN747B ports. See the previous *Maintenance Summary* section for test call procedures for these different types of ports.

  Normally a VPT supports eight ports. However, ports 14 to 16 will be on VPT 3 (in a one-cabinet system) and ports 30 to 32 will be on VPT 5 (in a two-cabinet system) if VPT 3 or 5 is installed.

Operation

Some of the AUDIX features operate differently then described in the *AUDIX Feature Descriptions* manual (585-305-203) when AUDIX is connected to an SL-1. The following paragraphs describe the changes in feature operation:

- Automated Attendant — This feature, which is available in AUDIX Enhanced II (R1V3) and later software, allows a caller to reach an extension without going through a receptionist. In the AUDIX to SL-1 interface, an Automated Attendant works *only* on a nonintegrated TN747B voice port. The Automated Attendant transfers calls as it does for an AUDIX Standalone system (see the *AUDIX System Description* manual [585-305-201]); basic call transfer (switchhook flash) is used to complete the call.

  Unlike the Standalone AUDIX, which supports only one Automated Attendant, the SL-1 integration supports three different Automated Attendant extensions. These are administered on the `system : translation : switch connection` form (see the *Administration* chapter later in this booklet).

- Call Answer — Call Answer is only available on fully integrated TN762B VPT ports. If subscriber A dials subscriber B and subscriber B is busy or does not answer, subscriber A is forwarded to the ACD group number associated with AUDIX. Subscriber B's greeting plays as usual. The only difference callers might hear is if they try to use the personal covering extension (dial 0 to reach a secretary or other covering agent). On the SL-1, the only extension that is available is the system-wide covering extension that is administered on the switch (the same as the night call-forwarding extension).

- Call Transfer — Calls transferred out of AUDIX are handled as described below:

  — For integrated ports, *T, *0, and 0 can be used to transfer out of AUDIX. When a caller enters any of these transfer requests, the extension (if any is entered) is ignored (SL-1 integrated ports do not support call transfers to a user-specified extension). Instead, AUDIX tells the caller that the call is being transferred to the operator, then transfers the caller to the switch-wide covering extension. This is usually the SL-1 night call-forwarding number (this number must be administered on the SL-1). Note that you may use a nonintegrated Automated Attendant to assist in call transfers (see two paragraphs below).

  — For nonintegrated Outcalling and Automated Attendant ports, *T, *0, and 0 are available and work the same on an SL-1 as they do on a System 75 or System 85. Depending on the transfer request, users will be prompted for the number they wish to transfer to, and the personal covering extension or system-wide covering extension on AUDIX will be used. Users can also select a menu choice, and AUDIX will transfer the call to the corresponding number using basic call transfer.

- Telset Messaging — Telset Messaging lets callers on the switch or switch dial plan leave a standard-format message requesting a return call. On the SL-1, the user can select from a menu of ten Telset status messages. AUDIX does not support these optional SL-1 messages, only its standard message.

- Message Waiting Indication (MWI) — AUDIX uses the ‘‘MWI Update’’ message to continually send the status of a user’s message-waiting lamp to the SL-1. The SL-1 gives no confirmation of this message.
- Outcalling — The Outcalling feature is available on AUDIX Enhanced II (R1V3) and later systems. It allows AUDIX to place a call to subscribers to inform them of new messages. For the AUDIX to SL-1 interface, Outcalling works only on the nonintegrated TN747B ports. AUDIX always uses Outcalling on any available TN747B ports that are not administered for Automated Attendant; incoming calls are not accepted on these ports (callers hear ringing with no answer or a busy signal).

  If none of the non-Automated Attendant ports are available, it will start using the available Automated Attendant ports. Because the SL-1 does not provide a disconnect signal over its analog ports, if someone enters a touch-tone on the outcall, AUDIX will only disconnect after timing out, too many invalid entries, or an explicit **X (Exit) command.
- System Clock — The AUDIX Real-Time Clock (RTC) cannot be synchronized with the SL-1 PBX; it must be set manually using the `system : clock` form. See the *AUDIX Release 1 Version 5 Installation* manual (585-305-105).
- Unified Messaging — The SL-1 does not support Unified Messaging.

TECHNICAL REFERENCE

Additional information on changes that support the SL-1 PBX integration (Integrations Package) are summarized in this section. Carrier layouts, new circuit packs, and changes to the system architecture are covered.

Carrier Layouts

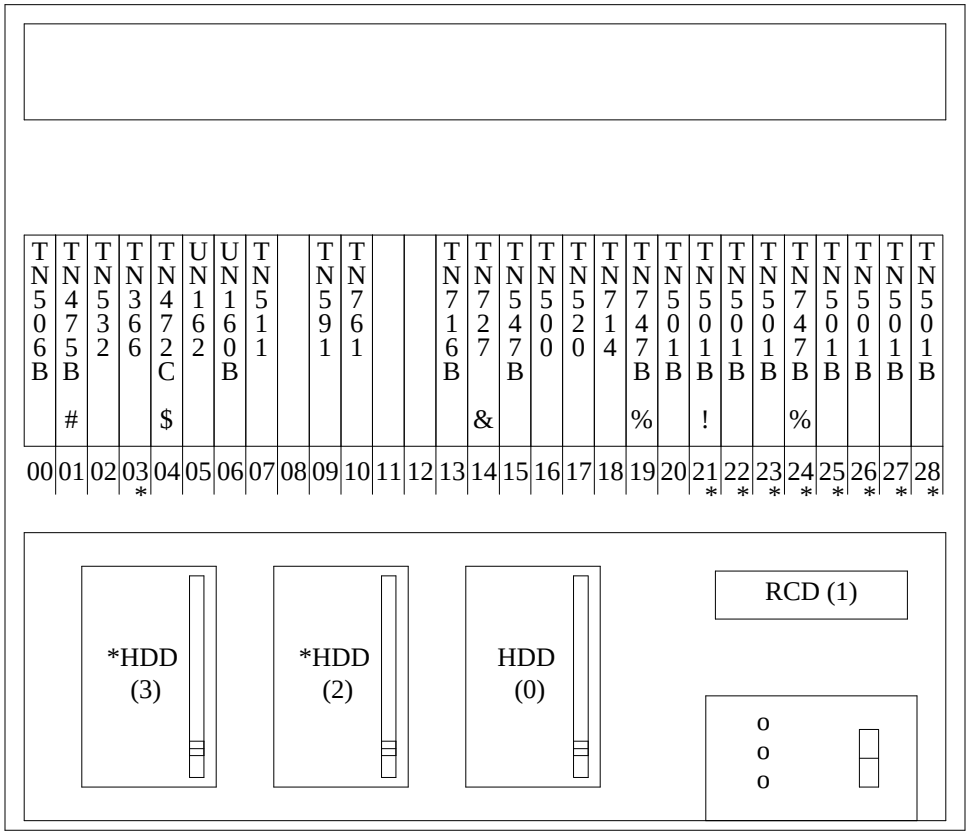
The carrier layouts for one- and two-cabinet AUDIX for the SL-1 integration differ slightly from other layouts in that either a TN747B or TN762B VPT board can be added to the normal 2- or 4-VPT board configuration and inserted into VPC slot 2 in the carrier. The need to insert either of these boards in a VPC slot depends on the customer's application (see Tables 1-1 and 1-2).

One-Cabinet AUDIX

In a one-cabinet AUDIX without a third VPT board, ports 9-16 will be supported by VPT 2. When a third VPT board is added, ports 9-13 will be on VPT 2 and ports 14-16 will be on VPT 3. Table 1-3 shows the effect of VPT 3 on a one-cabinet system.

Table 1-3. Adding VPT 3 to a One-Cabinet AUDIX

Ports	VPT Board
1-8	VPT 1, ports 1-8
9-13	VPT 2, ports 1-5
14-16	VPT 2, ports 6-8 (if VPT 3 is not equipped) VPT 3, ports 6-8 (if VPT 3 is equipped)
NOTE: If a third VPT is added, only 14 voice ports are available because of the loss of one VPC board. Two ports are busied out automatically by the system, or may be busied out manually using the `maintenance : vsp : busyout` form.	



* Optional equipment
\# TN475B required for 380-Mbyte (or larger) HDDs
$ TN472C required for AUDIX Networking
& TN727 is in top cabinet in two-cabinet systems
% TN762B may also be used
! TN747B or TN762B may also be used

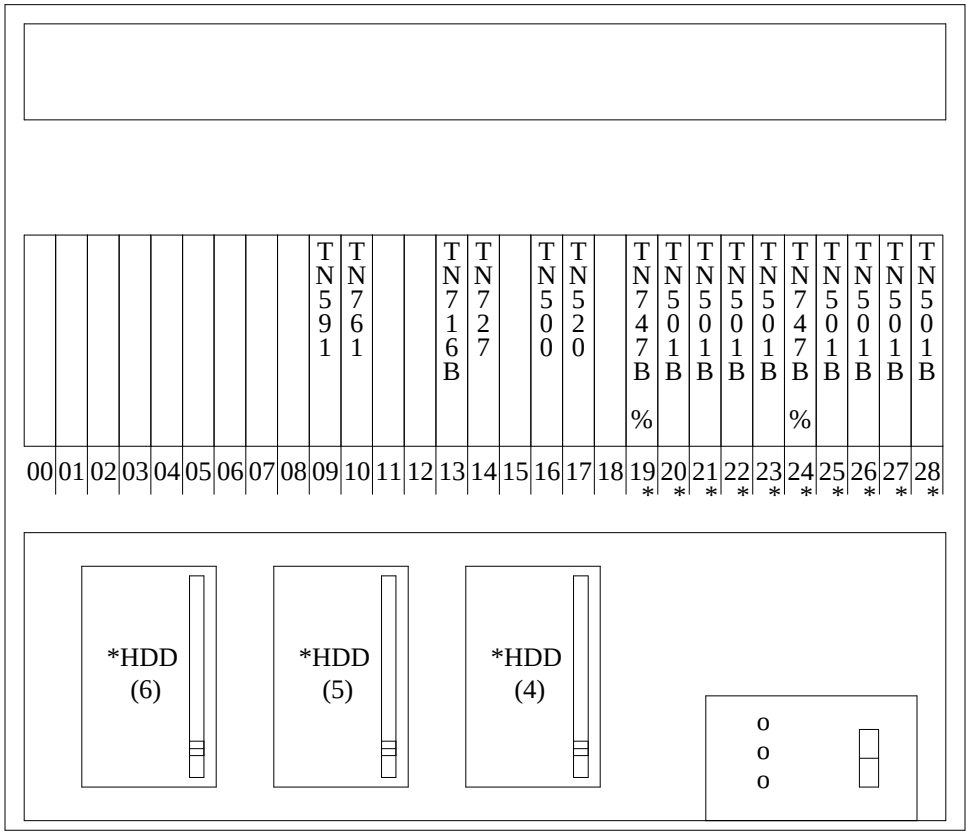
Figure 1-3. AUDIX One-Cabinet Configuration

Two-Cabinet AUDIX

In a two-cabinet AUDIX, the port numbering scheme does not vary significantly from the current scheme. Only ports 30-32 vary when VPT 5 is equipped in the main cabinet. For a two-cabinet AUDIX, the numbering scheme is shown in Table 1-4.

Table 1-4. Adding VPT 5 to a Two-Cabinet AUDIX

Ports	VPT Board
1-8	VPT 1, ports 1-8
9-16	VPT 2, ports 1-8
17-24	VPT 3, ports 1-8
25-29	VPT 4, ports 1-5
30-32	VPT 4, ports 6-8 (if VPT 5 is not equipped) VPT 5, ports 6-8 (if VPT 5 is equipped)
NOTE: If a fifth VPT is added, only 30 voice ports are available because of the loss of one VPC board. Two ports are busied out automatically by the system, or may be busied out manually using the `maintenance : vsp : busyout` form.	



* Optional equipment
% TN762B may also be used

Figure 1-4. AUDIX Two-Cabinet Configuration

Circuit Packs

New circuit packs which are used in the SL-1 integration include:

- TN547B Multiple Protocol Switch Interface (MPSI) — (SL-1 only) A TN547B vintage MPSI is required to support the IVMS data link. The TN547B firmware supports the SL-1 messages and packets that are sent over the IVMS data link. Larger 27512 EPROMs provide 128 Kbytes of memory for the enhanced firmware.
- TN762B Hybrid Line — (SL-1 only) This System 75/DEFINITY Generic 1 circuit pack is used to support fully integrated voice ports on the AUDIX (Call Answer and Voice Mail). It has four lines per port: 1 pair of voice tip and ring (T and R) signals, and 1 pair of control (or data) T and R signals. The second (control) pair must be present to support fully integrated calls, but the wires are not connected.

Functional Description

Some differences in AUDIX operation that apply to an SL-1 setup are covered in this section.

System Architecture

Some architectural differences that apply to an AUDIX integration with an SL-1 are noted below. Figure 1-5 summarizes these changes.

Configurable elements include:

- In a one-cabinet AUDIX, up to three VPT boards may be installed instead of just one or two. A two-cabinet AUDIX supports up to five VPT boards instead of four.
- The VPT boards may be *non*integrated TN747B VPTs (which support the optional Automated Attendant and Outcalling ports), or fully integrated TN762B VPTs (which support the Call Answer and Voice Mail features).

Call Setup and Disconnect

Unlike other AUDIX integrations, the SL-1 provides no 400 millisecond (ms) drop signal for nonintegrated voice ports (for integrated ports, the disconnect is the same as the DCIU_SCI disconnect). AUDIX normally uses this ‘‘drop 400’’ signal to determine when a call is being set up or disconnected. Instead, AUDIX must rely on messages from the SL-1 in order to correctly set up and disconnect calls. Some details on call setup and disconnect are covered in this section.

- Call Setup — For fully integrated ports, SL-1 protocol uses three messages to set up a call. The first message ‘‘Present Call’’ is sent by the SL-1 to AUDIX. Upon receipt of this message, AUDIX does the following:

  — attempts to set up resources for the call

  — notifies the SL-1 of a successful (or unsuccessful) setup

  — sets a 60-second timer, and waits for a ‘‘Call Answered’’ message from the SL-1

  If the setup was successful, AUDIX informs the SL-1 by sending a ‘‘Key(IN CALLS)’’ message. The SL-1 responds with the ‘‘Call Answered’’ message. When the ‘‘Call Answered’’ message is received, AUDIX proceeds with the call, and plays either the voice mail or call answer prompts. If AUDIX does not receive a ‘‘Call Answered’’ message within 60 seconds, the call is disconnected.

  If the setup was not successful, AUDIX redirects the call to the SL-1 ACD (Automatic Call Distribution) queue by responding with the ‘‘Key(NRDY)’’ message. It then makes the port available for future calls by sending the ‘‘Key(NRDY)’’ message again.

  For nonintegrated ports, call setup is similar to that used in AUDIX Standalone mode. However, since these ports are used only for Automated Attendant and Outcalling, incoming calls on the non-Automated Attendant ports are ignored.

- Call Disconnect — For an integrated port, disconnect (initiated by the SL-1) is the same as the DCIU_SCI disconnect, except the message is different. The SL-1 data link differs from other data links currently in use by AUDIX in that messages contain a process identification (ID). This process ID is assigned on a per-call basis by the ‘‘Present Call’’ message sent by the SL-1 to notify AUDIX of an incoming call. All later messages (excluding MWI updates) for that call *must* use the same process ID. AUDIX checks the process ID presented in each message against the process ID currently using the port. If the process IDs differ, the message is discarded and AUDIX will detect no user activity and initiate a disconnect.

  For an integrated port, AUDIX may initiate a disconnect with the SL-1 due to a timeout or a **X (Exit) command input. If any of these situations occur, AUDIX notifies the SL-1 of the disconnect with the ‘‘Key(INCALLS)’’ message, which is transmitted every 15 seconds until AUDIX receives either a ‘‘Disconnect’’ or a ‘‘Present Call’’ message from the SL-1. If a ‘‘Present Call’’ message is received on the disconnected port, the call is processed and the disconnect timer is reset.

  There is no disconnect processing on nonintegrated ports because no ‘‘drop 400’’ signal is received by AUDIX. On these ports, AUDIX terminates a call only when there is a timeout, when the user exits via **X, or when there are too many invalid entries.

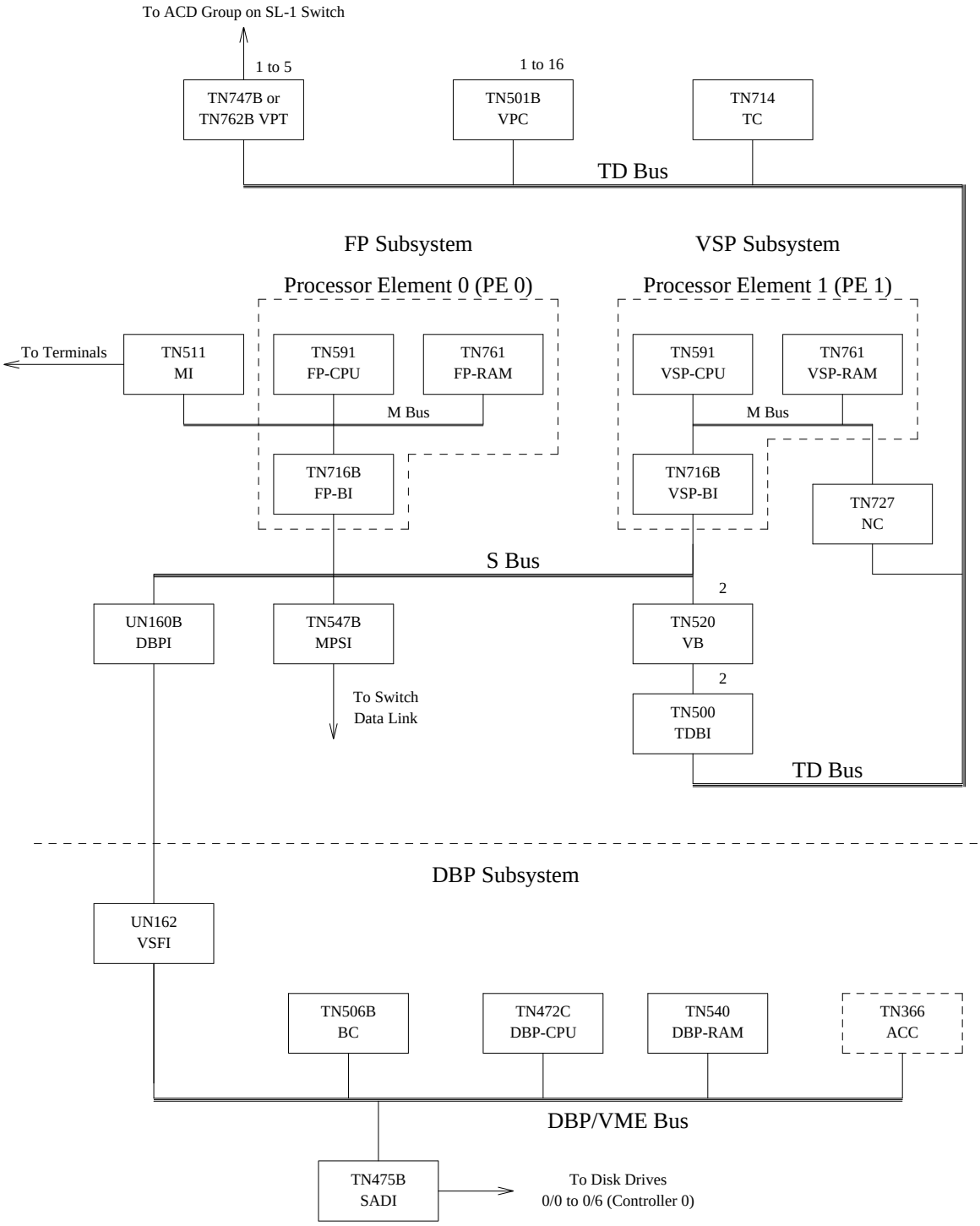


Figure 1-5. Two-Cabinet AUDIX System Architecture (SL-1)

2. ADMINISTRATION

This chapter is intended for AUDIX administrators. It provides information for administering a one- or two-cabinet AUDIX when configured with a Northern Telecom SL-1 switch.

This chapter must be used in conjunction with *AUDIX Release 1 Version 5 Administration* (585-305-501) manual. You should become familiar with that manual before proceeding with this chapter.

With only a few exceptions, the administrative tasks for AUDIX when configured with an SL-1 switch can be accomplished using the information found in *AUDIX Release 1 Version 5 Administration* manual (585-305-501). The exceptions are listed below:

- AUDIX to SL-1 data links
- AUDIX voice port translations
- AUDIX traffic information

After you have administered the AUDIX system, you will need to modify one of the system announcement fragments. Fragment number 152 (listed in the *AUDIX Release 1 Version 5 Administration* manual [585-304-501]) should be changed as follows:

Verbose Fragment

"Leave Word Calling message from" to "Telset message from"

Abbreviated Fragment

"Leave Word Calling from" to "Telset from"

To modify these fragments, follow the procedure defined in *Customize System Announcements and Greetings* in chapter 6 *Ongoing Filesystem Administration* in the *AUDIX Release 1 Version 5 Administration* manual (585-305-501).

DEFINING DATA LINKS

To define the data link between AUDIX and the SL-1, you will use the `system : translation : switch connection` form. For an AUDIX/SL-1 environment, that form, and directions for its use, differ from those presented in *AUDIX Release 1 Version 5 Administration* manual (585-305-501) and, consequently, are presented here.

Once the initial data link administration has been done, you need only remember that whenever you do any administration that involves the `system : translation : switch connection` form, the information in this booklet rather than that in *AUDIX Release 1 Version 5 Administration* manual (585-

305-501) applies.

The `system : translation : switch connection` form that you will be using is shown on the following page, followed by an explanation of each of the fields.

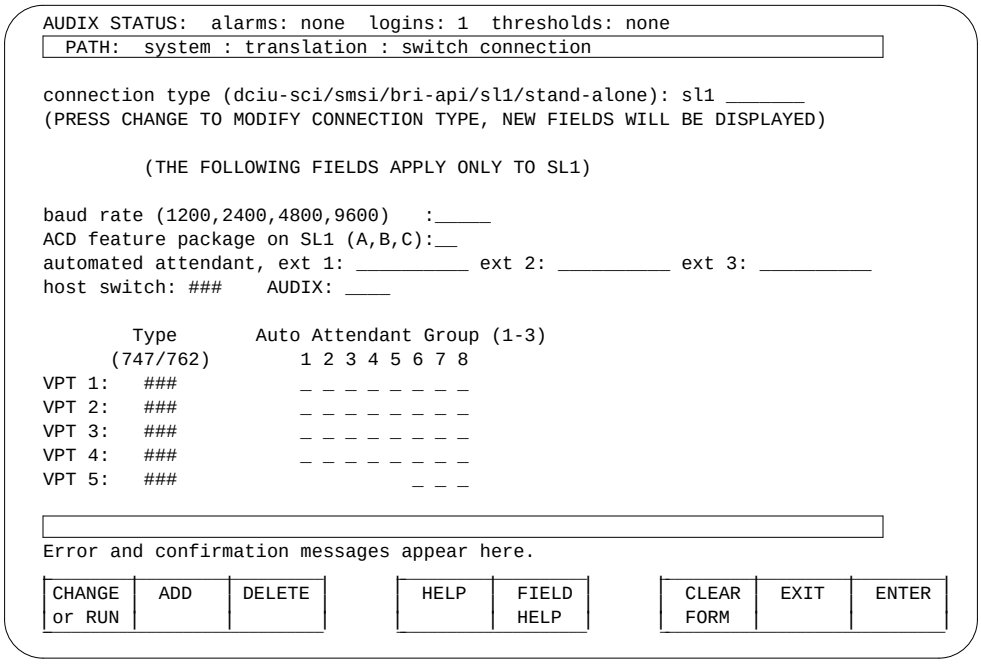


Figure 2-1. The System Translation Switch Connection Form

Field: `connection type (dciu-sci/smsi/bri-api/sl1/stand-alone)` — The value entered must be **sl1**. When that value is entered, the proper version of the form will be displayed. After you have changed this field to **sl1**, you must restart the system to make the connection type known to the software.

Field: `baud rate (1200,2400,4800,9600)` — This field defines the speed that data is transmitted over the SL-1 data link. The baud rate selected here should match the speed setting on the SL-1 Serial Data Interface Port board. If you change the baud rate, you must run the `maintenance : datalink : test` form to make the new baud rate known to the software.

Field: `ACD feature package on SL-1 (A,B,C)` — This field defines the ACD feature package used on the SL-1 switch. Use the following information to select the appropriate option for this field:

- Select **A** if the switch is equipped with *ACD Basic Features* (ACD Package A)
- Select **B** if the switch is equipped with *ACD Advanced Features Option* (ACD Package B)
- Select **C** if the switch is equipped with *ACD Management Reports* (ACD Package C1), *ACD Load Management* (ACD Package C2), or ACD Package D.

After selecting the ACD package, you must run the Service Dispatcher (SD) audit on the `maintenance : audits : fp` form to make the ACD package known to the software.

Field: `automated attendant (ext 1, ext 2, ext 3)` — Numbers entered in this field designate the extension to be used for calls coming in on a port marked as an Automated Attendant port. Up to three Automated Attendant extensions can be administered per SL-1 switch; these Automated Attendants work just as they do for AUDIX Standalone systems, except three Automated Attendant numbers are allowed instead of one.

After defining the Automated Attendant extensions, you must run the Service Dispatcher (SD) audit on the `maintenance : audits : fp` form (or restart the system) to make them known to the software.

Field: `host switch` — This is a display-only field. For AUDIX in an SL-1 configuration, the number displayed will always be **`1.`**

Field: `AUDIX` — The number entered in this field should represent the number of the AUDIX machine configured with the SL-1. This field exists for record-keeping when there is more than one AUDIX connected to the SL-1. Enter a number from 1 to 999 (default is 1).

Field: `VPT Type (747/762)` — This display-only field identifies the type of VPT board installed in AUDIX as either a TN747B (for Outcalling and Automated Attendant) or a TN762B (for integrated Voice Mail or Call Answer connectivity to the SL-1).

Field: `Auto Attendant Group (1-3)` — This field designates which ports on a TN747B board are to be used as Automated Attendant ports. Since three Automated Attendant extensions can be specified, the field should be filled with a **`1`** for the first Automated Attendant extension, a **`2`** for the second extension, and a **`3`** for the third extension.

After defining the Automated Attendant ports, you must run the Service Dispatcher (SD) audit on the `maintenance : audits : fp` form (or restart the system) to make them known to the software.

VOICE PORT TRANSLATIONS

To associate the AUDIX voice port numbers to the SL-1 extension numbers, you will use the `system : translation : voice port` form. For an AUDIX/SL-1 environment, that form, and directions for its use, differ from those presented in *AUDIX Release 1 Version 5 Administration* manual (585-305-501) and, consequently, are presented here.

Whenever you do any administration that involves the `system : translation : voice port` form, the information in this booklet rather than that in *AUDIX Release 1 Version 5 Administration* manual (585-305-501) applies (voice port translations are made during installation and will only need to be changed if additional voice ports are to be added).

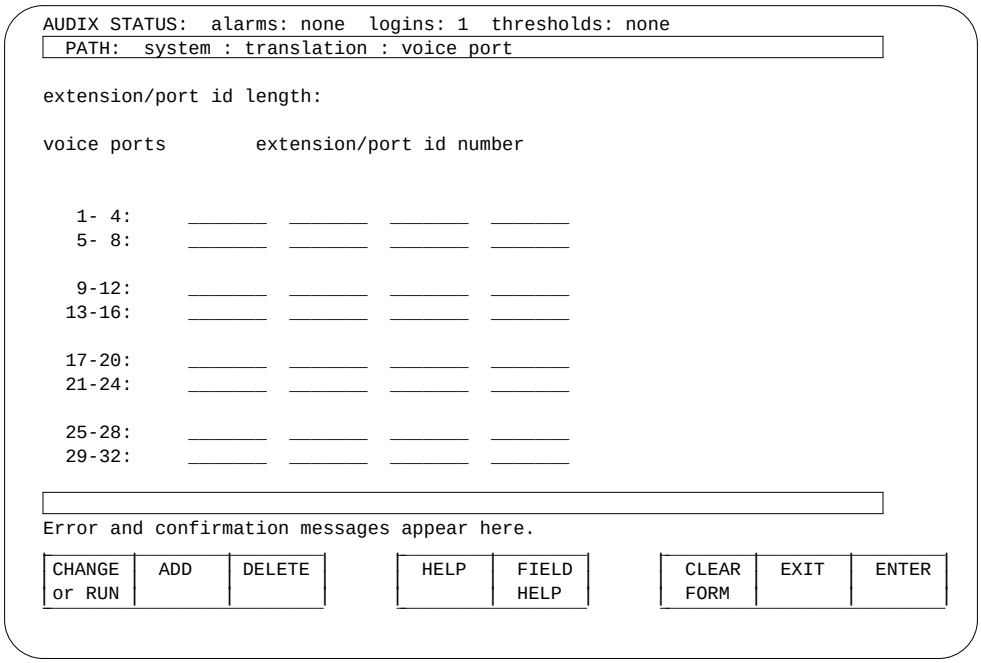


Figure 2-2. The System Translation Voice Port Form

Field: `extension/port id length` — This display-only field defines the number of digits in the extensions on the telephones at your company. The number must be from 3 to 7 digits and must match the number defined on the switch (defined in the `system : translation : machine : audix` form).

Field: `voice ports` — The sets of numbers beneath this field represent between one and 32 possible active ports in the AUDIX call distribution group as translated on the switch.

Field: `extension/port id number` — The numbers entered in this field for integrated ports (TN762B ports) should be the member number of the ACD group between 1 and 253. The numbers entered for nonintegrated ports (TN747B ports) should be extension numbers.

NOTE

Normally a VPT supports eight ports. However, ports 14 to 16 will be on VPT 3 (in a one-cabinet system) and ports 30 to 32 will be on VPT 5 (in a two-cabinet system) if VPT 3 or 5 is installed.

AUDIX TRAFFIC INFORMATION

For an AUDIX/SL-1 installation, there are several additional fields in the `traffic : special features : day` and in the `traffic : special features : hour` forms. These forms and directions for their use differ from those presented in *AUDIX Release 1 Version 5 Administration* manual (585-305-501) and, consequently, are presented here.

```
AUDIX STATUS:  alarms: none,  logins: 1,  thresholds: none
  PATH:  traffic : special features : day
date (mmddyy): _____     ending time: _____
                 (PRESS ENTER TO DISPLAY TRAFFIC)

   port type                  average number of    maximum simultaneous
                                ports in use          ports assigned

   integrated      :               ____                   __
   auto attendant 1:               ____                   __
   auto attendant 2:               ____                   __
   auto attendant 3:               ____                   __
   all other non-integrated:       ____                   __

maximum simultaneous outcalls: ___
outcalls attempted  : ________
outcalls completed  : ________
outcalls rescheduled: ________

               (PRESS ENTER FOR NEXT DAY'S TRAFFIC)

Error and confirmation messages appear here.

| CHANGE or RUN | ADD | DELETE |   | HELP | FIELD HELP |   | MORE KEYS | EXIT | ENTER |
```

Figure 2-3. The Traffic Special Features Day Form

Field: `date` — The date of the traffic record you want to see.

Field: `ending time` — The time that the data collecting ended.

Field: `port type` — This field designates the type of port that data was gathered for. These ports are:

- integrated — TN762B
- auto attendant — TN747B
- non-integrated — TN747B

Field: `average number of ports in use` — This field displays the maximum of all hourly averages during the collection period.

Field: `maximum simultaneous ports assigned` — This field displays the maximum number of ports with a call in progress at any one time during the collection period.

Field: `maximum simultaneous outcalls` — This field displays the maximum number of ports with an outcall in progress at any one time during the collection period.

Field: `outcalls attempted` — This field displays the total number of outcalls attempted during the collection period.

Field: `outcalls completed` — This field displays the total number of outcalls successfully completed during the collection period.

Field: `outcalls rescheduled` — This field displays the total number of outcalls rescheduled during the collection period due to a lack of voice port resources.

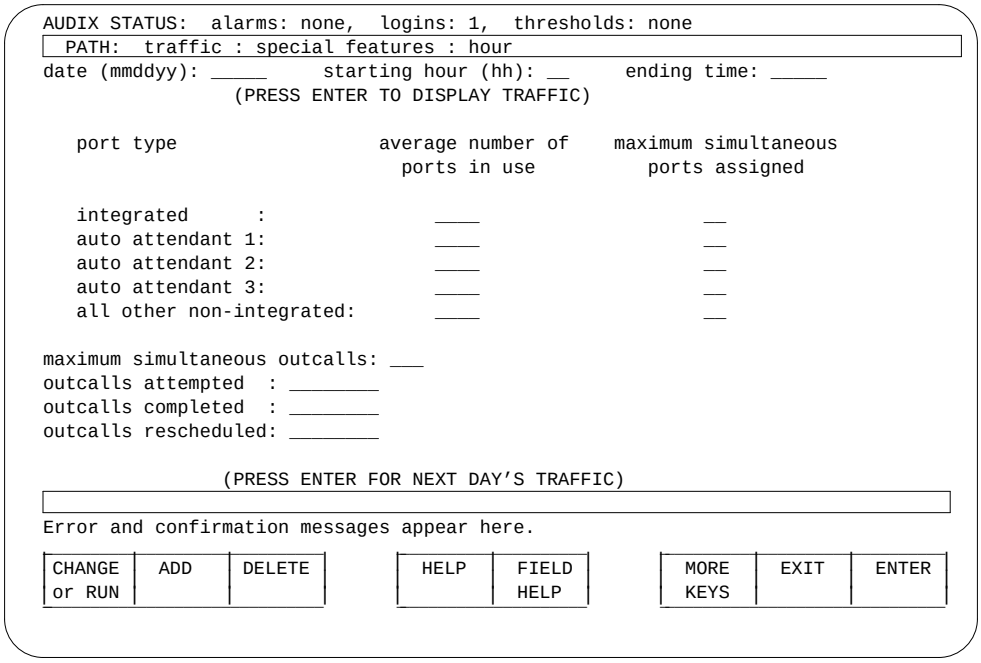


Figure 2-4. The Traffic Special Features Hour Form

Field: `date` — The date of the traffic record you want to see.

Field: `starting hour` — The hour of the traffic record you want to see.

Field: `ending time` — The time that the data collecting ended.

Field: `port type` — This field designates the type of port that data was gathered for. These ports are:

- integrated — TN762B
- auto attendant — TN747B
- non-integrated — TN747B

Field: `average number of ports in use` — This field displays the average number of ports (for that type) in use during the collection period.

Field: `maximum simultaneous ports assigned` — This field displays the maximum number of ports with a call in progress at any one time during the collection period.

Field: `maximum simultaneous outcalls` — This field displays the maximum number of ports with an outcall in progress at any one time during the collection period.

Field: `outcalls attempted` — This field displays the total number of outcalls attempted during the collection period.

Field: `outcalls completed` — This field displays the total number of outcalls successfully completed during the collection period.

Field: `outcalls rescheduled` — This field displays the total number of outcalls rescheduled during the collection period due to a lack of voice port resources.

A. SL-1 SWITCH ADMINISTRATION

Certain basic switch translations are necessary for an AUDIX/SL-1 configuration. This appendix outlines these translations.

NOTE

The information contained in this appendix should be used as a guide. Since AT&T is not responsible for administering the SL-1 switch translations, we can only offer this information as a general reference to aid in preparing the SL-1 for the installation of AUDIX. Also, this information can be used to help troubleshoot problems that may occur between AUDIX and the SL-1.

The switch translations required by the SL-1 are in the Customer Data Block (CDB), the Configuration Block (CFN), the ACD group for the main AUDIX number, the analog Outcalling and Automated Attendant ports, and the subscriber extensions.

NOTE

After entering all of the translations for the SL-1, a reboot of the switch may be required for some of the translations to be recognized. A general rule to follow is that after all of the translations have been entered and AUDIX is not communicating with the SL-1, reboot the switch.

CONFIGURATION BLOCK

To add the link to the messaging system, assign the following:

ADAN 0-15 *(add a messaging system link to the SL-1, this is a tty number from 0 to 15)*

ESDI no *(link does not use ESDI card)*

CDNO 1 DDEN

USER APL *(the link is an auxiliary processor link)*

XSM no

AXQI 20-255 *(number of call registers used to receive messages from the messaging system)*

AXQO 20-25 *(number of call registers used to output messages to the messaging system)*

CUSTOMER DATA BLOCK

The following must be set to *yes*:

IMS	*(allow changes to the integrated messaging system [IMS] feature)*
IMA	*(enables the IMS feature)*

VOICE MAIL QUEUE

The following must be set to *yes* for the ACD group definition:

MWC	*(ACD is an IMS)*
IMS	*(allow changes to the IMS feature)*
IMA	*(ACD DN is used as an IMS DN)*
IVMS	*(voice messaging system is activated)*
ESS	*(voice messaging system uses end-to-end signaling to send tone)*

In addition, the night call-forwarding number should be assigned to the extension that callers will be forwarded to when transferring out of AUDIX.

ACD MEMBER TRANSLATIONS

The members of the main ACD group associated with AUDIX must be translated as SL-1 sets (TYPE SL-1), and they must have the following class of service options:

WTA	*(warning tone allowed)*
IMA	*(IMS attendant)*
AGN	*(ACD agent)*

When assigning the individual ports for the members of the ACD group, an LTN number must be assigned. This is a logical number associated with the TN (the physical location) for each port. This LTN is used by AUDIX on the `system : translation : voice port` form to identify the members of the ACD group. In addition, the key assignments for the members must be set as follows:

MSB	*(make set busy)*
NRD	*(key number, not ready)*

AUTOMATED ATTENDANT OR OUTCALLING TRANSLATIONS

The Automated Attendant or Outcalling ports are analog lines that need the following class of service options assigned:

UNR	*(unrestricted)*
XFA	*(call transfer allowed)*
HTA	*(hunting allowed)*

If there is one main Automated Attendant number and two or more ports are to be assigned to this attendant, put the number to hunt to under HUNT for the main extension.

When entering voice port information on the AUDIX `system : translation : voice port` form, the logical terminal numbers should be entered for the SL-1 ports and the actual extensions should be entered for the Automated Attendant or Outcalling ports.

EXTENSION OR SUBSCRIBER TRANSLATIONS

Calls should forward when there is no answer and go to the main AUDIX extension (unless another extension is desired in the hunt path). The translations for these features are defined on a per set basis as follows:

HUNT	*(enter AUDIX main extension)*
FDN	*(enter AUDIX main extension)*

The following class of service options are required to allow the sets to go to AUDIX coverage and/or activate message waiting indication:

FBA	*(call-forward, busy allowed)*
WTA	*(warning tone allowed)*
FNA	*(call-forward, no answer allowed)*
HTA	*(hunting allowed)*
MWA	*(message waiting allowed - if message waiting indicators are used)*

To assign a message waiting lamp on an SL-1 hybrid or analog set, use a key not assigned on the set and type MWK and the main AUDIX ACD number. The lamp next to the key will light when the subscriber receives an AUDIX message. The subscriber can simply press the key to dial AUDIX directly and retrieve any messages.

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