AVAYA communication

DEFINITY® AUDIX® System

System Description

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About This Document

This document contains an overview and technical description of the DEFINITY® AUDIX® R3.1 System.

It is designed to answer basic questions about the system's setup, design, and operation. It is a companion manual to *DEFINITY AUDIX System — Feature Descriptions,* 585-305-206.

Intended Audiences

This document may be useful to the following groups of people:

- The customer using a DEFINITY AUDIX system; this includes the telecommunications managers and system administrators.
- Support personnel at the Field Services Organization (FSO), Technical Marketing Center (TMC), Technical Services Organization (TSO), Customer Training Center (CTC); project managers, Software Specialists and Associates (SSs and SAs).

How This Document Is Organized

This document covers general and end-user information as well as technical and hardware-oriented information.

- Chapter 1, "System Design and Operation", gives a physical and functional overview of the DEFINITY AUDIX system.

- Chapter 2, “Maintenance and Administration”, discusses the hardware and software that are provided to maintain and administer a DEFINITY AUDIX system. Information includes installation requirements.
- Chapter 3, “System Sizing”, summarizes the guidelines required to order and install a DEFINITY AUDIX system. It also lists required and optional system components, and provides ordering codes for switch hardware and peripheral equipment.
- Appendix A, “PEC Explosions”, lists Price Element Codes (PECs) and comcodes for primary and peripheral equipment as well as additional items used with the DEFINITY AUDIX system.

This document also includes a list of abbreviations and acronyms, a glossary, and a cross-referenced index.

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Related Resources

In addition to this document, the DEFINITY AUDIX documentation set includes the following:

Title	Number	Issue
DEFINITY AUDIX System—Documentation Guide	585-300-011	4 or later
DEFINITY AUDIX System—Feature Descriptions	585-300-206	4 or later
Planning for the DEFINITY AUDIX System	585-300-904	5 or later
DEFINITY AUDIX System—Installation and Upgrade	585-300-111	5 or later
DEFINITY AUDIX System—Installation Checklist	585-300-109	4 or later
Switch Administration for the DEFINITY AUDIX System	585-300-509	4 or later
DEFINITY AUDIX System—Administration	585-300-507	4 or later
DEFINITY AUDIX System R3.1—Screens Reference	585-300-211	1 or later
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AUDIX Administration and Data Acquisition Package	585-302-502	11 or later
AMIS Analog Networking	585-300-512	3 or later
Voice Messaging Outcalling Quick Reference	585-310-721	2 or later
A Portable Guide to Voice Messaging	585-300-701	3 or later
Voice Messaging Quick Reference	585-300-702	4 or later
Multiple Personal Greetings Quick Reference	585-300-705	4 or later
DEFINITY AUDIX System Subscriber Artwork Package	585-300-703	4 or later
Voice Messaging Wallet Card	585-300-704	3 or later
Voice Messaging Business Card Stickers	585-304-705	3 or later
Intuity Message Manager User Guide	585-310-725	1 or later

Refer to the *Global Business Communications Systems Publication Catalog*, 555-000-010 for a listing of manuals relating to switching systems and peripheral equipment that can be integrated with the DEFINITY AUDIX system.

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System Design and Operation

1

The DEFINITY AUDIX system, shown in Figure 1-1, *System Hardware*, is one of AT&T's message-handling systems that allows the recording and exchanging of messages over the phone and a personal computer (PC) when direct communication is inconvenient or unnecessary. This chapter gives a physical and functional description of that system.

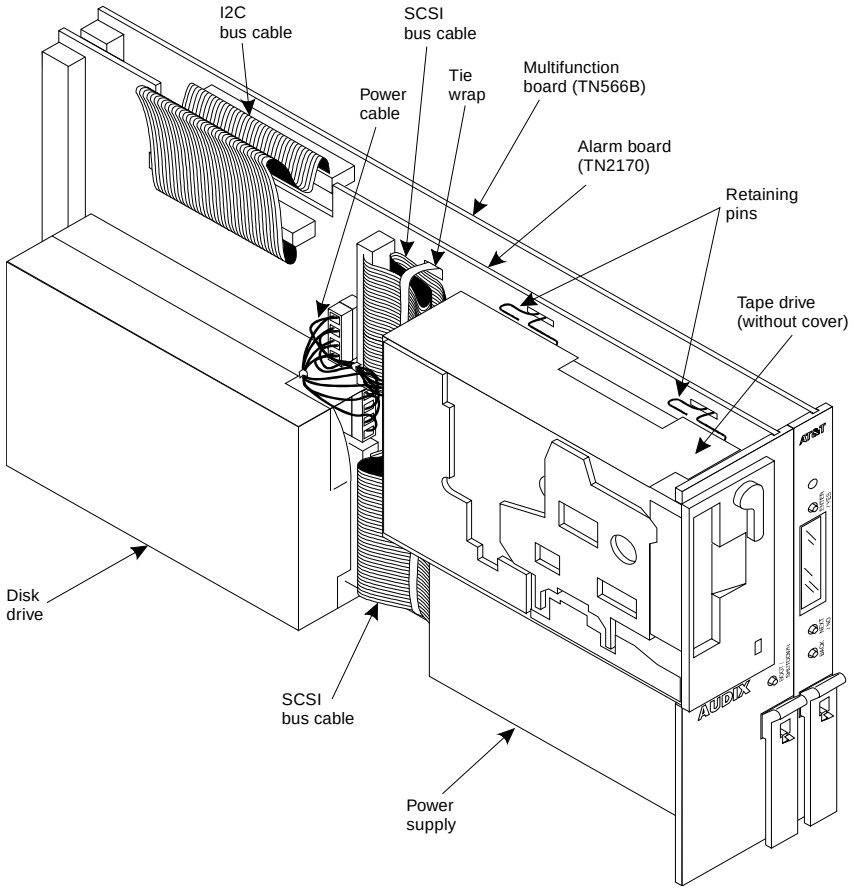

Figure 1-1. System Hardware

System Specifications

Table 1-1, *Capacities and Requirements*, defines the basic specifications of the DEFINITY AUDIX system.

Table 1-1. Capacities and Requirements

Physical Dimensions	■ Weight: 6.2 pounds ■ Length: 14.75 inches ■ Height: 7.6 inches ■ Width: 2.9 inches
Power Requirements	-48 VDC from the switch (Acceptable range: -54.0 VDC to -44.0 VDC) Converted to: ■ +12 VDC for disk/tape drives ■ (Acceptable range: +11 VDC to +13 VDC) ■ +5 VDC for TN566B and TN2170 (Acceptable range: +4.85 VDC to +5.15 VDC) ■ -5 VDC for TN2170 (Acceptable range: -5.2 VDC to -4.8 VDC)
Switch Integrations	■ Control Link Operation—System emulates switch's analog port board (TN746B) ■ Digital Port Operation—System emulates switch's digital port board (TN754) ■ Non-Native Support—Switch sees system as a TN746B or TN754 ■ Native Support—Switch sees system as a TN566B (DEFINITY AUDIX multifunction board)
Voice Port Capacity	■ Control Link—16 ports ■ Digital Port—8 ports
Internet Capacity	■ 500 Transmission Control Protocol/Internet Protocol (TCP/IP) sessions ■ 32 login sessions
Disk Storage Capacities— Maximum Subscribers	■ 6 Hours—300 (local/administered remote) ■ 15 Hours—1000 (local/administered remote) ■ 40 Hours—2000 (local/administered remote)
Supporting Switches— Software Issues (Loads)	■ System 75 R1V3, XE R1V3 — 2.2 or later ■ DEFINITY G1, G3 Global† — all tape issues ■ DEFINITY G3r*† — 5.3 or later ■ DEFINITY G3i*, G3s*, G3vs* — 13.2 or later in Digital Port mode — 16.2.2 or later in Control Link mode
Temperature Requirements	■ -40 — 150F (-19 — 71C) storage temperature ■ 60 to 85F (18 — 29C) operating temperature ■ Tape drive becomes inoperable at 115 F
Humidity Requirements	■ 10 to 80 percent (noncondensing) ■ 79F (26C) maximum wet-bulb temperature
Altitude Limitations	■ 200 feet (60m) below sea level ■ 10,000 feet (3050m) above sea level

* In Digital Port mode, Multifunction Analog Telephones (MFATs) can be used with this switch using this hardware. In Control Link mode, MFATs can be used with all the above switches.

† Native support for Digital Port mode only.

Physical Description

Four main hardware items make up the DEFINITY AUDIX system. They are:

- TN566B Multifunction Board (MFB) — The main circuit board that holds the central processing unit, controllers, memory devices, and signal processors.
- TN2170 Alarm Board (ALB) — Works with the TN566B to provide monitoring for system power and environmental status, -48 VDC to +12 VDC power conversion for the mass-storage devices, remote terminal access, and a 10baseT Ethernet connection for client-based software applications. This replaces the TN2169 only if Intuity Message Manager, which needs the 10baseT connection, is purchased by the customer.
- 3½" Disk Drive — A hard disk used to store customer data, boot the system, and log system error information. Drives are purchased according to hours of storage and can be upgraded to a larger size to fit customer needs.
- 3¼" Tape Drive — A 160-Mbyte data cassette recorder used to distribute software onto a disk, store periodic backups of customer data, and install new software releases. Standalone Tape Utilities (STU) software is included to provide recovery, restoration, upgrade and other maintenance options.

The system faceplate is made up of the following items:

- Red Light Emitting Diode (LED) — Indicates the health of the MFB and alarm board. When flashing, it indicates a software problem. When it is steadily lit, a hardware problem exists.
- Liquid Crystal Display (LCD) — A 10-character alphanumeric display which automatically shows status of the MFB including alarms, and information and procedures from a menu when any of the three buttons described in the next bullet are pressed.
- ENTER/YES, BACK, NEXT/NO Buttons — Allow service personnel to move through a structured menu system one item at a time as indicated on the LCD (see *Front Panel Interface* in Chapter 2).
- BOOT/SHUTDOWN Button — A recessed button used to take the entire system off line to a Maintenance Shutdown state. Closes all files, stops file operations, and executes a spin-down of the disk drive. Pressing it again when the system is shut down causes the system to reboot.

Cables on the system and connected to the system include:

- Interboard Bus Cable — A flat ribbon cable that provides the communications link between the MFB and ALB. It transmits power, environmental status, and control information.

- Small Computer Systems Interface (SCSI) bus cables — Two fifty-conductor ribbon cables that connect the disk and tape drives to the ALB. They provide pass-through data transfer to the MFB.
- Power Cable — Provides 12 VDC power to the disk and tape drives from the power module on the ALB.
- Adapter Cables — Two cables connected to the ALB and MFB through the back of the switch. The ALB cable provides connections to remote alarms and the Local Area Network. The MFB Y-cable provides connections to the switch and to a local or remote administration and maintenance terminal.

Circuit Board Flashware

Both circuit boards provide programmable memory residing in non-volatile, electrically flash erasable PROMs (FPROMs). This flashware allows the MFB to boot the system, and holds the code for the processor on the alarm board. A copy of all active programs is stored on disk.

Whenever the system is booted, the FPROM resident files are automatically reprogrammed should they be different from those on disk. This situation will arise after new FPROM files are copied to the disk from a generic tape to provide enhancements or fixes. Reprogramming may also be required if a new MFB or alarm board is installed in the system and their flashware is different from that on the disk.

Tape Drive Functions

Approximately 32 system backups can be stored on a single 160 Mbyte tape cartridge.

Because the tape stores backups sequentially, rewinding the tape and writing new data at the beginning will erase all backups and make all remaining data inaccessible. Backup control software is therefore provided to warn the system administrator that space is getting low and a new cartridge must soon be inserted into the drive.

When less than four more backups will fit on the tape, a warning message is put into the system administration log. When less than two more backups will fit on the tape, a warning alarm is raised on the administrator's terminal.

The tape drive requires manual cleaning of its tape heads every three months, or after every 100 passes. A minor alarm is automatically placed in the administration log when cleaning is required. A separate kit includes a cleaning tape, swabs and cleaning solution. The cleaning tape is pressed into the drive; the swab tip, dampened with cleaner, is then inserted into the guide hole of the inserted cassette and rubbed over the tape heads.

Disk Drive Functions

Each DEFINITY AUDIX system requires one hard disk drive. The disk:

- Holds software programs used for standard system operation
- Stores subscriber messages, lists, headers, and personal greetings
- Updates software and records data continuously as the system is used

The MFB writes to and reads from any of the filesystems stored on the disk. Table 1-2, *Filesystems*, lists and describes each filesystem. Space size configurations for 6-hour, 15-hour, and 40-hour disk drives are discussed in Chapter 3.

Table 1-2. Filesystems

Filesystem	Automatic Backup?	Use
System Operation	No	Filesystems containing directories and files neededto bring the system into operation and to repair a filesystem. Alsocontain utilities and swap space.
Storage	Sundays	Contains voice messages and personal greetings,standard, terse and multilingual announcement sets, customized announcement fragments,and subscriber names. Size can change depending onnumber of subscribers and announcements, and message use.
Master Data	No	Contains non-voice data for management devicesresiding on the MFB.
System Data	Nightly	Contains message headers, mailing lists,subscriber profiles, and message-waiting lamp status.

Switch Integration

The DEFINITY AUDIX system can be installed and administered to work in any of the compatible switches as an analog or digital device. Either mode of operation is dependent on whether the system emulates the switch's TN746B *Analog* Port board or TN754 *Digital* Port board.

Digital Port Integration

An installed DEFINITY AUDIX system can be treated by the switch as a TN754 digital line board having up to eight attached 7405D station sets with displays. These emulated phone sets are administered as members of a hunt group which is put into a call coverage path. All stations provided system coverage use this path. The hunt group access number allows a subscriber to dial into the system and retrieve messages. No other switch analog lines are required.

Refer to Figure 1-2, *Digital Port Integration.*

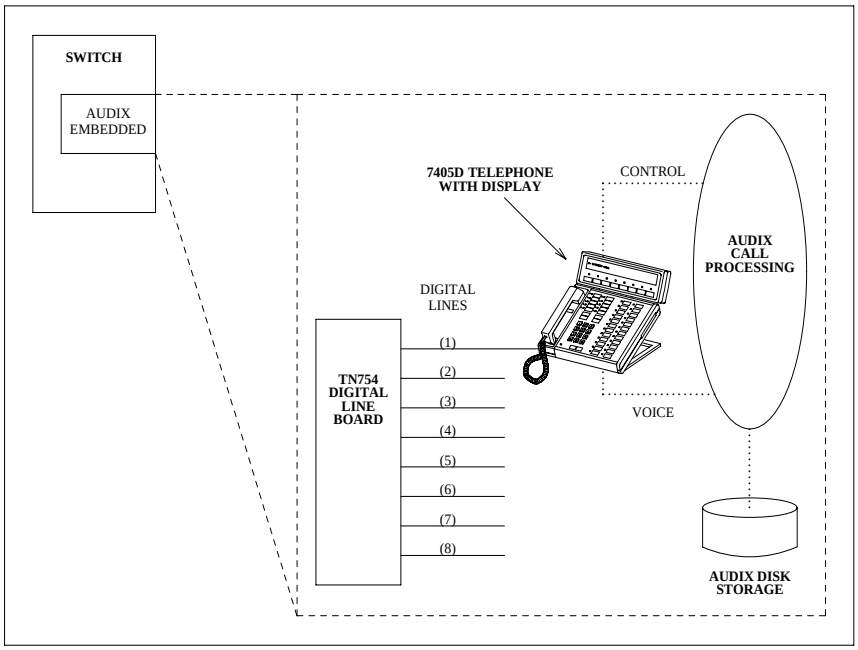

Figure 1-2. Digital Port Integration

Call Control

Calls are controlled from information passed through each emulated 7405D digital telephone. Call control includes:

- Detection of an incoming call (that is, a port that is ringing)
- Calling and called party information
- The disconnection of a call on any port
- Detection that the calling party has hung up
- Disabling a port to prevent incoming calls
- Seizing a port for an outgoing call
- Transferring a call from any port to any extension in the switch's dial plan
- Querying the switch for directory information

Call History Information

The DEFINITY AUDIX system parses display information on the emulated 7405D, identifying calling and called party extensions (if available), and how the call will be processed.

By parsing the display information, the system determines whether this is a direct call to itself or a redirected call. If direct, the system determines the calling ID (if the call was made internally). If redirected, the system gets both the calling and called parties.

To identify a calling and called party, the system keys in on the subscriber's name and/or extension number as administered on the switch. It assumes the first set of contiguous digits that are the same length as the dial plan represents the user's extension number.

Because the system queries the switch for directory information, it is *not* necessary for the name field to contain the extension. It is important, however, that any two extensions *not* have the same exact name; otherwise, the system will be unable to distinguish between the two.

Hunt groups/trunk equipment groups (TEGs) that cover a DEFINITY AUDIX system must include the extension number with the name field.

It is important to ensure that any subscriber with a system call-coverage path also have a mailbox. If the called party, for instance, has no mailbox, the system will not process the call. The phone will keep ringing until the calling party disconnects.

Message Waiting Indication

The Message Waiting Indicator (MWI) on a subscriber's phone is activated or deactivated through the Leave Word Calling feature of the switch. The system sends a "store" message to the switch when the subscriber has no new messages and then receives a new message. This turns on the called party's MWI lamp.

A "cancel" message is sent to the switch when the subscriber retrieves the last new message in his/her mailbox, which turns off the MWI lamp.

The operation of these and other features is explained in detail in *DEFINITY AUDIX System — Feature Descriptions*, 585-300-206.

Control Link Operation

The DEFINITY AUDIX system can be installed or upgraded to use an BX.25 control link with the switch. When administered this way, the DEFINITY AUDIX system emulates a switch's TN746B Analog Port board. An external RS-232C connection between the MFB and the switch is required. Figure 1-3, *Control Link Configurations*, shows possible hookups.

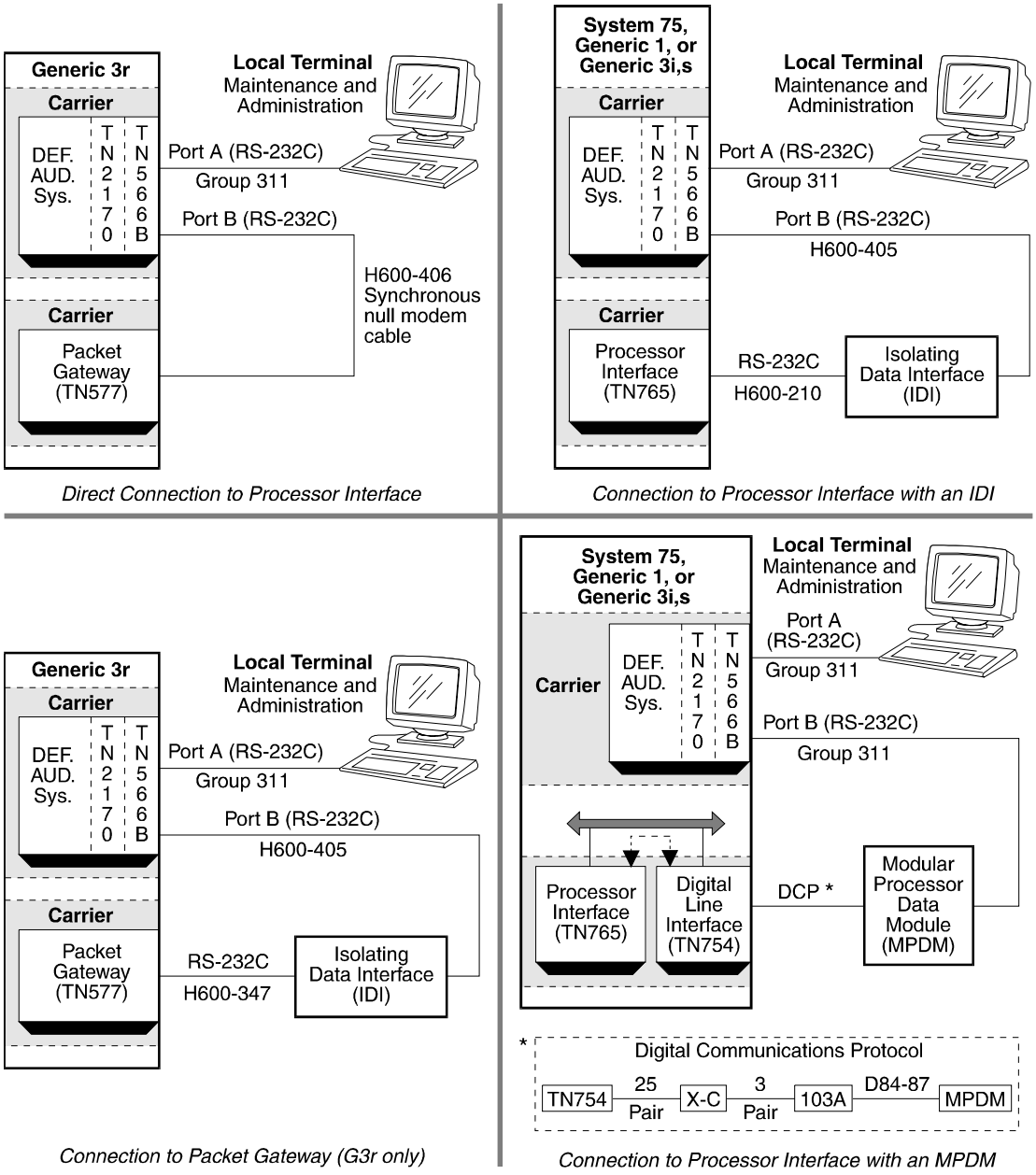

Figure 1-3. Control Link Configurations

The DEFINITY AUDIX system administered for Control Link operation combines the advantages of being embedded in a switch port carrier of an AT&T switch with the advantages of being integrated with the switch.

For instance, the BX.25 control link CONNECT message sent from the switch includes message-waiting statuses. These allow the DEFINITY AUDIX system to inform the subscriber about the existence of messages in other message services supported by the switch, such as a message center.

The system also uses message waiting status update messages on the control link to control message waiting indication (MWI). This permits:

- Immediate activation of the MWI when a new message is received
- Immediate deactivation when the last new message is retrieved
- Switch-based auditing of MWI status
- Elimination of voice port usage by the system to activate Leave Word Calling (LWC) for MWI
- Storage of LWC in AUDIX subscribers' mailboxes

Refer to Table 1-3, *Functional and Feature Availability*, for a comparison of DEFINITY AUDIX system features for both Control Link and Digital Port switch integrations.

Table 1-3. Functional and Feature Availability

Function/Feature	Digital Port Integration	Control Link Integration
MWI Control	LWC message	Link message
RS-232 Ports—Local Access	2	1
Board Type/Vintage Number Recognized by Switch		
Non-Native Support	TN754 Vintage 50+*n*†	TN746B Vintage 50+*n*†
Native Support	TN566B Vintage *n*†	TN566B Vintage *n*†
RS-232 Ports—Remote Access	1	1
Integrated Message Notification	No	Yes
LWC stored on AUDIX	No	Yes
Call Transfer Out of AUDIX	Basic only	Enhanced only
Call Transfer Into AUDIX	Indirect	Yes
Disconnect Signalling Detection	Yes	Yes
Multilingual Capability		
Subscriber-Specific	Yes	Yes
Announcement Sets		
Call Answer Language Choice	Yes	Yes
Dual Language Greetings	Yes	Yes
Control Port Availability	Yes	Yes
Time Synchronization with Switch	Yes	Yes
AMIS Analog Networking	Yes	Yes

Table 1-3. Functional and Feature Availability

Digital Networking	No	No
Call Screening on Call Answer	Yes	No
**R* Available for Call Answer	No	Yes
DCS Operability	No	Yes‡
Control Link Trace	No	Yes
Telecommunications Device for the Deaf Support	Yes	Yes
LAN Application Processor Interface	Yes	Yes

† *n* equals actual vintage number.
‡ DCS with a G3r as the host switch is not currently supported.

Installation Requirements

A single DEFINITY AUDIX system contains all resources and interfaces necessary to function as a subsystem within the System 75 R1V3, System 75 XE R1V3, DEFINITY Generic 1, or DEFINITY Generic 3 PBX.

The system occupies four slots with an adjacent slot left open on the right side to allow proper air flow and clearance for the MFB. Other boards may have to be rearranged to allow this space.

A system can be shipped in a newly purchased switch, be added to an existing switch, or moved from one switch to another.

Refer to Figure 1-4, *Sample Location within a Switch,* and to the following text for general rules concerning installation.

Also review *Planning for the DEFINITY AUDIX System*, 585-300-904.

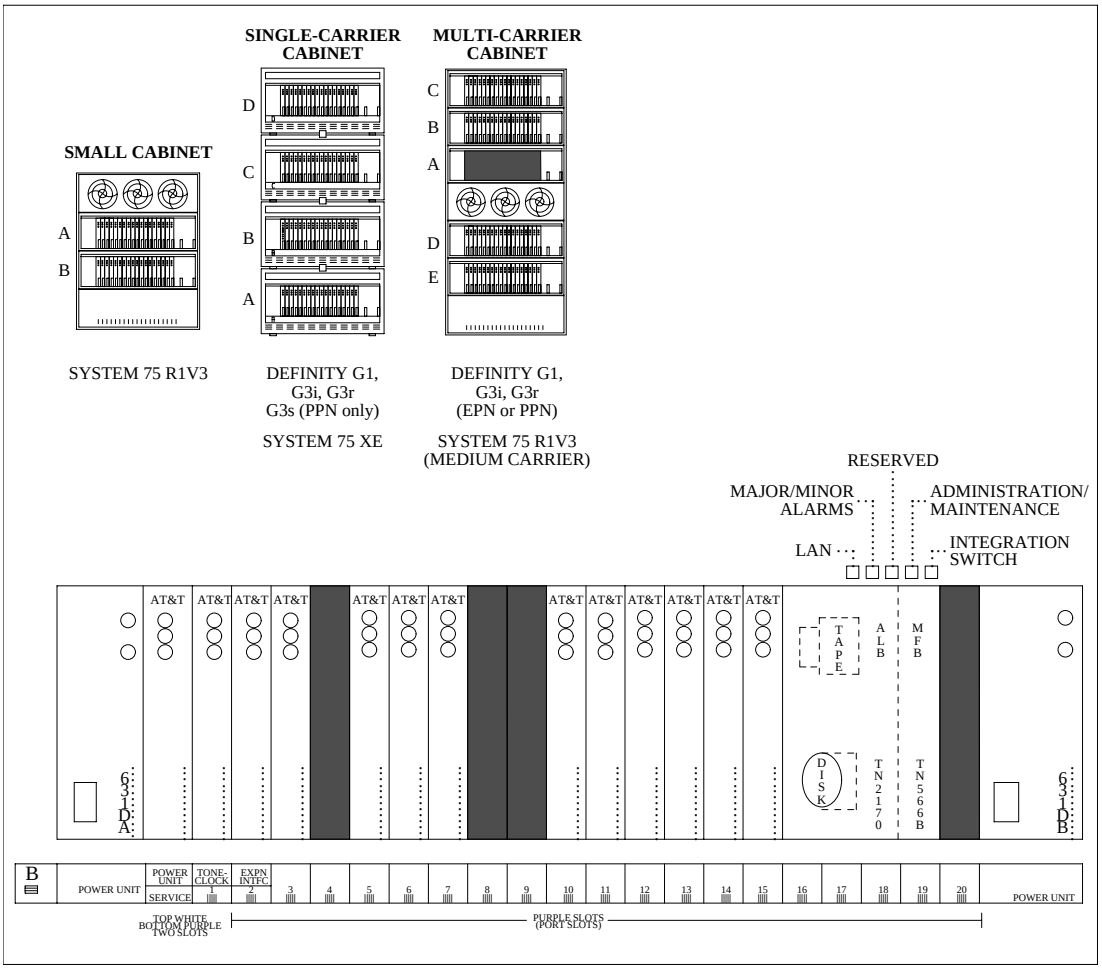

Figure 1-4. Sample Location within a Switch

System 75 R1V3 (Small Cabinet)

In the System 75 R1V3 small cabinet, the DEFINITY AUDIX system is installed in *control carrier A* if possible. This is best because, in the event of a power failure, the control carrier has back-up power.

System 75 R1V3 (Medium Cabinet)

In the System 75 R1V3 medium cabinet, the DEFINITY AUDIX system is installed in *control carrier A* if possible. This is best because this carrier is closest to the fan and has back-up power. *Port carriers B, D,* or *E* can be used, but *port carrier C* should never be used.

System 75 XE R1V3; DEFINITY G1, G3r, G3i, G3s, G3vs (Single-Carrier Cabinet)

In single-carrier cabinets, it is preferable to install the DEFINITY AUDIX system in a *processor port network (PPN)* rather than the *expansion port network (EPN)*.

In the PPN, the DEFINITY AUDIX system should be placed in *control cabinet A* or *duplicated control cabinet B*; any five contiguous slots are allowed. Otherwise, *port cabinets C* or *D*, slots 5 through 9 or numerically higher slots, can be used. (The backplane path providing +5 V to slots 1 to 6 is narrower than in the numerically higher slots, which will cause a voltage drop to the DEFINITY AUDIX system, resulting in a reset of the MFB processor and disk drive.)

If the DEFINITY AUDIX system must be placed in the EPN, it should go in *expansion control cabinet A*, in slots 4 through 8 or numerically higher slots. If this cabinet cannot be used, the DEFINITY AUDIX system will work in any of the *port cabinets*; any five contiguous slots are allowed.

The G3s switch does not provide an EPN. The DEFINITY AUDIX system should therefore be placed between universal slots 4-13 of the *enhanced control cabinet A*.

The G3vs switch has only one carrier and the DEFINITY AUDIX system requires only four slots. For this switch, the DEFINITY AUDIX system should be placed in port slots 7-10.

DEFINITY G1, G3i, G3r (Multicarrier Cabinet)

In DEFINITY G1 and G3i multicarrier cabinets, it is preferable to have the DEFINITY AUDIX system in the PPN, although an EPN can be used. In the PPN, the system should be placed in *control carrier A* (or *duplicated control carrier B*); otherwise, *port carriers B, D*, or *E* will work.

If the DEFINITY AUDIX system has to go into an EPN, it should be installed in *expansion control carrier A* if possible. Otherwise, *port carriers B, D*, or *E* will work.

When the DEFINITY AUDIX system is installed in a G3r switch, it should be placed in *expansion control carrier A* if possible; otherwise, *carriers B, D,* or *C* (if they are *port* carriers) will work.

If the PPN must be used, the DEFINITY AUDIX system can be installed in *port carriers B, D*, or *E*. It cannot be placed in *control carrier A* or *carrier B* (if a duplicated control carrier).

DCS Networks

Distributed Communications System (DCS) networking is a *switch* feature that allows feature transparency between two or more PBX switching systems. For the PBXs to work together, each switch (called a DCS *node*) must be connected to the other nodes in the DCS network (or *cluster*) with logical (channel) links.

A single DEFINITY AUDIX system in Control Link Mode can provide service for multiple switches in a DCS network. Figure 1-5, *Sample DCS Network with a DEFINITY AUDIX System*, shows an example of a DEFINITY AUDIX system in a DCS Network.

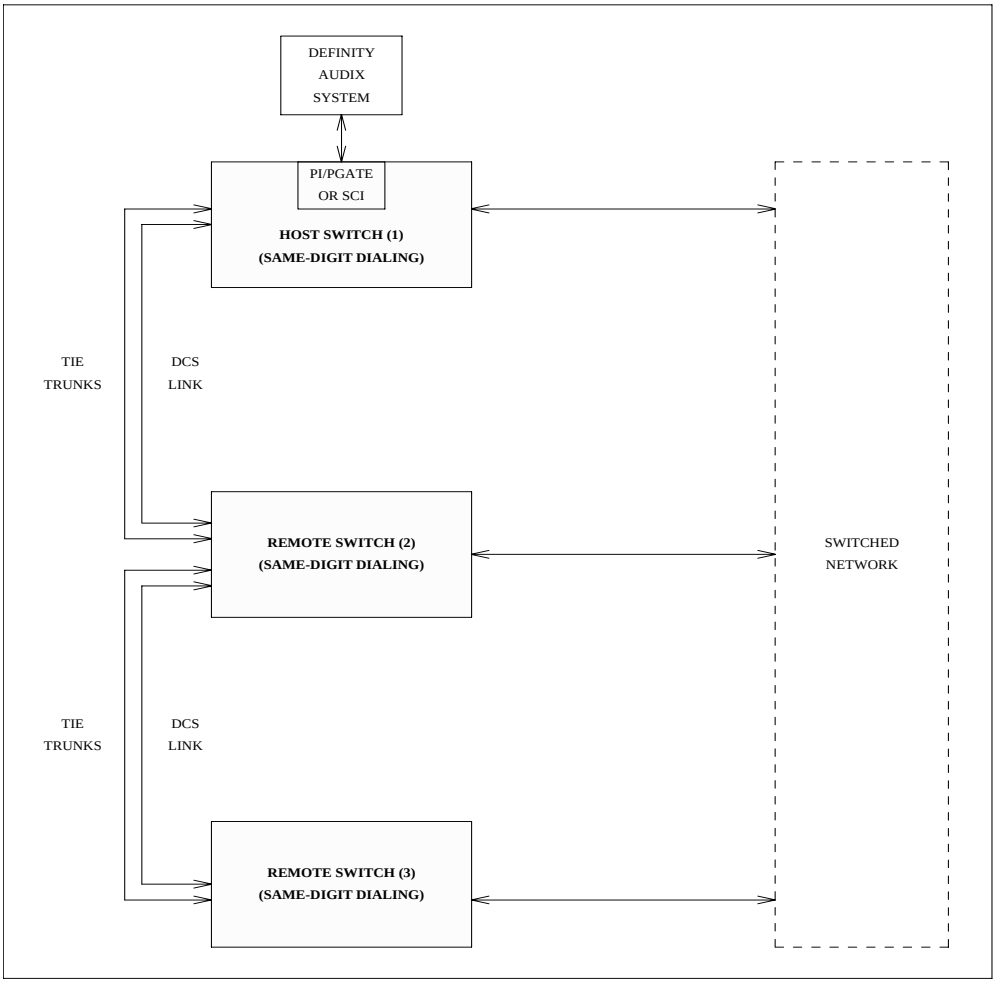

Figure 1-5. Sample DCS Network with a DEFINITY AUDIX System

Local and Remote Switch Feature Transparency

A single DEFINITY AUDIX system can serve up to 20 switches in a DCS network. This is known as DEFINITY AUDIX transparency in a DCS network. Full DEFINITY AUDIX feature transparency is always available for users on the host switch.

The degree of feature transparency between a DEFINITY AUDIX system and a remote switch varies according to the type of switch and the release of software used (refer to Appendix D, *DCS Networks*, in *DEFINITY AUDIX System—Feature Descriptions*, 585-300-206. Each switch can support one DEFINITY AUDIX system via the data links listed below:

- *System 75 R1V3, DEFINITY Generic 1, DEFINITY Generic 3i, DEFINITY Generic 3s, and DEFINITY Generic 3vs:* These switches support a DEFINITY AUDIX system as follows:
  - — *All:* The TN765 Processor Interface (PI) board offers four data links [including the Electronic Industry Association (EIA) port which allows direct access to *one* of its data links]. A DEFINITY AUDIX system uses one of the four links.
  - — *System 75 R1V3 Only:* The Switch Communications Interface (SCI) provides four data links. A DEFINITY AUDIX system uses one of the four links.
- *Generic 3r*[1]*:* The TN577 Packet Gateway (PGATE) board offers eight data links. The DEFINITY AUDIX system connects to one of these links.
- *System 85 (R2V3 or later), DEFINITY Generic 2:* These switches can be only remote switches in a DCS Network served by a DEFINITY AUDIX system. The TN405, TN406, and UN156 operate as a unit to provide DCIU capability offering either four or eight data links. A DEFINITY AUDIX system uses one of these links.

Considerations

One DEFINITY AUDIX system can support users on *all* switches in the DCS cluster; that DEFINITY AUDIX system can answer calls from any DCS remote node that is administered to access the DEFINITY AUDIX system. A DCS network could be divided so that different DEFINITY AUDIX systems support one or more switches independently; but users on each switch in the network can have mailboxes only on a single DEFINITY AUDIX system.

System 85, Generic 2, and Generic 3r switches also support Enhanced Services (ES) signaling. With an end-to-end ES connection, DEFINITY AUDIX information can piggy-back on the DCS channel with other data (hop channels are *not* needed

1. The DEFINITY AUDIX system does not currently support a DCS network in which a G3r is the host switch.

on the host for DEFINITY AUDIX systems in a DCS network that uses ES signaling).

Tie Trunk Impact

A critical consideration when configuring a DEFINITY AUDIX system in a DCS network is the potential traffic increase from the remote switch(es) to the host switch that houses the DEFINITY AUDIX system. Tie trunk use should be carefully evaluated to make sure that access blocking is minimized. The overall traffic patterns of the DCS network may also change because of DEFINITY AUDIX system use.

NOTE:
A DCS application needs engineering support to properly size the DEFINITY AUDIX system, determine the optimum number of tie trunks, and perform processor occupancy configurations on the systems involved. The Global Business Communications Systems Design Center (GBCS Design Center) should estimate the impact of a DEFINITY AUDIX system on a DCS network.

Local Area Networks

DEFINITY AUDIX contains an Ethernet port on the TN2170 Alarm Board which allows the system to serve outside software applications over a Local Area Network (LAN).

This client/server connectivity provides service to clients on PCs or workstations, allowing up to 32-login sessions to take place simultaneously. Data is sent and processed between client and server using Transmission Control Protocol/Internet Protocol (TCP/IP), and is sent through twisted pair (10BaseT) wiring. The customer has the option of providing a balun or hub to connect 10BaseT to coaxial cable. See Figure 1-6, *DEFINITY AUDIX LAN Connectivity*.

Through a Microsoft Windows™-based client application called Intuity™ Message Manager, users on PCs can:

- Get visual notification of DEFINITY AUDIX messages
- Read messages
- View messages simultaneously
- Access non-sequential messages
- Record, edit, and play back messages and greetings
- Access Voice Mail features via PC point-and-click actions
- Archive messages on the PC
- Access and use AUDIX directory and mailing lists

- Monitor multiple mailboxes

See the *Intuity Message Manager User's Guide*, 585-310-725 and the online help available with the IMM client client software for more information.

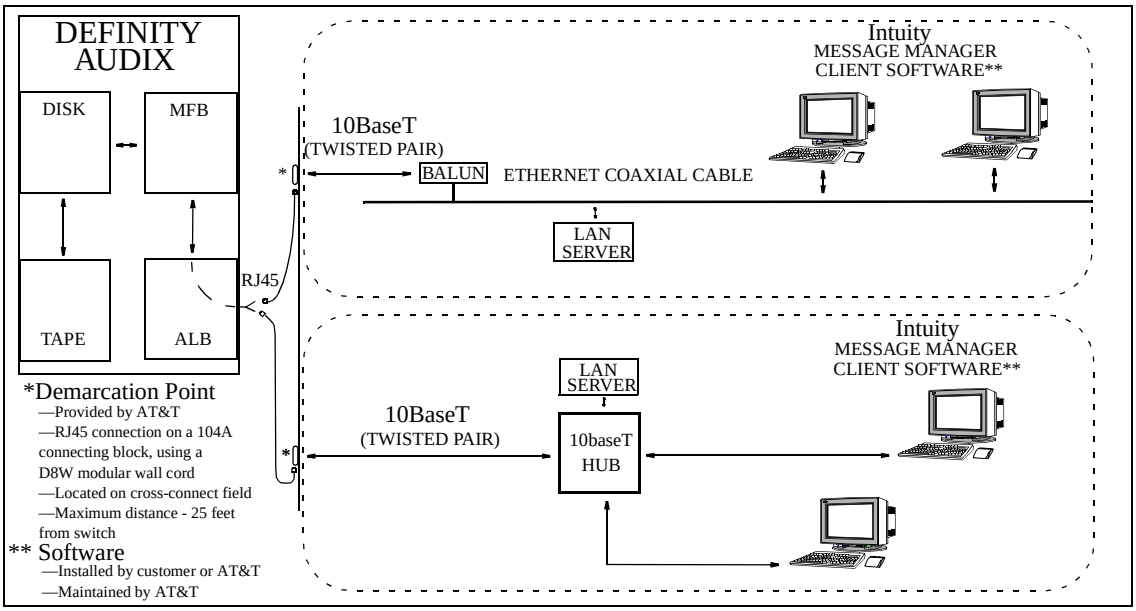

Figure 1-6. DEFINITY AUDIX LAN Connectivity

See Chapter 3 on how Intuity Message Manager is configured with regular Voice Mail use.

Maintenance and Administration

2

This chapter briefly discusses the hardware and software that are provided to maintain and administer a DEFINITY AUDIX system. These tools include the system front panel interface, remote and local maintenance and administration access through terminals, utility programs, and the screens that are accessed.

System Status

The DEFINITY AUDIX system initializes, operates, shuts down, and is diagnosed and maintained in different states. These states are displayed automatically on the system faceplate panel liquid crystal display (LCD), as shown in Figure 2-1, *LCD and Menu Control Buttons*.

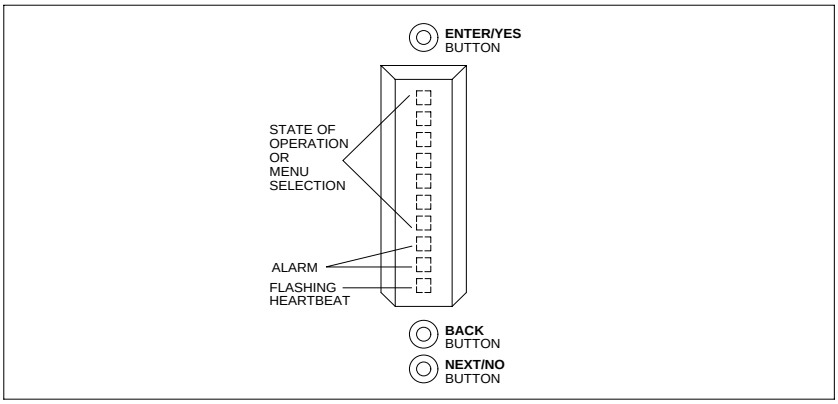

Figure 2-1. LCD and Menu Control Buttons

The faceplate on the DEFINITY AUDIX system also provides limited control functions and system and circuit status to the on-site technician.

The red light-emitting diode (LED) on the MFB is turned on by either the faceplate and alarm controller (FAC) or the MFB's central processing unit when problems occur or when the system is reset. Both processors must attempt to turn the LED off before it will be extinguished.

Table 2-1, *System Status Displays*, shows and describes the states of operation that appear on the LCD.

Table 2-1. System Status Displays

Display	Definition
Heartbeat Indication	
[*]	Flashing at a one-second on, half-second off rate, indicates an active MFB.
[0]	Flashing at a one-second on, half-second off rate, indicates that the MFB is in an offline, standby state.
Alarms	
[WN]	Warning — Displays a problem not severe enough to noticeably degrade operation. Requires on-site intervention.
[MN]	Minor alarm — Displays a problem which could disable part of a system function and noticeably degrade operation. Requires intervention from the TSC.
[MJ]	Major alarm — Displays a problem which could widely degrade system operation and seriously impact service. Requires intervention from the TSC.

Table 2-1. System Status Displays — *Continued*

Display	Definition
Initialization Status Messages	
386_DEAD	Displayed when the MFB's main processor fails or is not able to communicate with the Faceplate and Alarm Controller (FAC). The FAC and alarm board processor can still be functioning. In this state, it is safe to remove the AUDIX system for repair.
BTEST	Board Test — Whenever the system is reset, this is displayed when flashware is performing a hardware initialization and test on the MFB.
BOOT	Displayed when the board test is complete and flashware turns control over to the boot loader.
OSINIT	Operating System Initialization — Displayed just before the bootloader turns control over to the operating system or the booted utility.
AINIT	AUDIX Initialization — Displayed when the AUDIX software is initializing from boot.
AUDIX	AUDIX State — Displayed when the AUDIX software is fully initialized and providing service, or ready to provide service. Flashes when software restarts from an error condition, or when the technician enters RESET SYSTEM RESTART.
Shutdown Status Messages	
E_SHUT	Error Shutdown — Flashes whenever a critical error condition is encountered and the system is shutting down. Once the disk is spun down, the display becomes steadily-lit. Flashware continues to execute. Can also be entered when: ■ Board tests have failed and the red LED is lit ■ Flashware or software has failed to initialize and has shut down ■ A maintenance shutdown was directed and an operational error occurs. For instance, the Faceplate and Alarm Panel (FAC) timed out on the transition of the MFB 80386SX to the M_SHUT state. ■ On a running system, maintenance software detects a condition requiring an error shutdown. When in this state, the system can be powered down and removed from the switch carrier for repair.
M_SHUT	Maintenance Shutdown — Flashes when a technician has directed Maintenance shutdown either by pressing the BOOT/SHUTDOWN button, or through the RESET SYSTEM SHUTDOWN screen on a maintenance terminal. Flashware executes and the disk is spun down. Once the system is completely shut down, the display becomes steadily-lit. When in this state, the system can be powered down and removed from the switch carrier for repair.
S_SHUT	Shows only if the interboard bus cable is disconnected. Reconnecting the cable will bring the system back to the OA&M or AUDIX state.
Maintenance, Utility Status Messages	

Table 2-1. System Status Displays — *Continued*

Display	Definition
OA&M	The state where certain operation, administration, and maintenance procedures are available, such as restoring customer data or displaying alarms. No in-line or background maintenance takes place. Entry may occur automatically from either the AUDIX or AINIT state if the software determines that the system cannot provide service. Also entered from the AUDIX state when the RESET SYSTEM OA&M is invoked.
CMD	Displayed when the flashware is running and a technician on a remote or local maintenance terminal enters the Command Mode menu. Can be entered in the BTEST, M_SHUT, or E_SHUT state by pressing CONTROL C twice. Menu options include: 1. Display initialization history—Lists flashware tests that have passed during system initialization, and other information 2. Display status—Lists current alarms, hardware status diagnostics, sensor and voltage readings, and other information. These displays are also shown on the faceplate panel LCD. 3. Read/Write functions—Lists byte-, word-, and long-address values 4. Additional tests—Lists diagnostic tests. These are also shown on the faceplate panel LCD. 5. Automatic boot—Brings up the system from a shutdown mode, showing initialization operations and tests 6. Preempt automatic boot—Ensures that all initialization operations and tests will pass 7. Manual boot—Allows a boot to be done manually from the faceplate panel. Shows initialization operations and tests. 8. Board commands—Provides board reset or shutdown options 9. Quit and automatically boot—Allows the technician to leave the command menu. Automatically boots the system.
UTIL	This state allows the technician to load and boot new software, or fix catastrophic problems using the Standalone Tape Utilities. Can be entered: ■ Remotely, when the system is active. Invoke the RESET SYSTEM SHUTDOWN . Get into the firmware command mode by pressing CONTROL C twice on the local maintenance terminal. Have the backup tape removed and the generic tape inserted. Select the utility program from the options. ■ At the site by pressing the BOOT/SHUTDOWN button, or invoking the RESET SYSTEM SHUTDOWN on the local terminal. Get into the firmware command mode by pressing CONTROL C twice. Insert the generic tape and select the utility program from the options.
OS	Displayed only when a Technical Service Center (TSC) technician interrupts the normal initialization sequence. The operating system remains on-line, but the AUDIX software is off-line. Used to perform system diagnostics and repair using the factory or supplied system operation tools. The customer does not have access to this login.

Alarm Origination

The DEFINITY AUDIX system automatically performs more than 120 in-line and background maintenance procedures (MPs) on itself. These tests do not disrupt service to the user, nor do they make an idle resource unavailable for service for more than 10 seconds. These tests may include scheduled, periodic, diagnostic, initialization, and shutdown tests.

Audits also run automatically on a periodic basis to keep the system database sane, consistent, and clean. An audit may replace lost data with default values. Whenever error conditions are found and fixed in the database being audited, the condition is logged in an event log on the disk. During testing, most audits can also be run on a demand basis. Table 2-2, *Audits*, lists the audits.

Table 2-2. Audits

Audit	When Audit is Automatically Performed	Performed on Demand?
Message Waiting Lamp Refresh	Continuously	No
Names	Weekly	Yes
Switch Translations	Weekly	Yes
Voice File	Sunday night	Yes
Maintenance Log Checks	Weekly	Yes
Site Data Copy	Nightly	No
Subscriber Data	Nightly	Yes
Switch Name (DP mode only)	Nightly	Yes
Subscriber Mailbox	Nightly	Yes
Mailing Lists	Nightly	Yes
Personal Directories	Sunday night	Yes

Problems not corrected by the automatic maintenance tests and periodic audits may first appear as errors; these errors, if exceeding certain thresholds, will set an alarm.

When DEFINITY AUDIX system software logs a major or minor alarm into its active alarm log, the alarm is displayed on the faceplate LCD.

The software also initiates a remote call to the Technical Service Center (TSC) Initialization and Administration System (INADS). The call consists of modem-dialing commands and the INADS phone number, the system product identification code, date and time of the call, and the active alarm log entry. INADS acknowledges receipt of the call, and the DEFINITY AUDIX system keeps track of which alarms have been transmitted successfully.

When INADS receives alarm information, a trouble ticket is created that is used to track the problem. Resolution of the problem involves a TSC engineer who remotely dials into the same modem and port that were used to report the alarm. Using maintenance screens on a remote terminal, the technician attempts to resolve the problem.

The TN2170 Alarm Board provides the following interfaces for transmitting minor and major alarms:

- A two-wire relay closure connected to the switch. An alarm will be activated when the relay closes and sent to an external alarm notification unit. Should the MFB processor go insane or there is an immediate power failure, only this interface can notify the remote end of the alarm condition.
- A tip-ring interface to a remote terminal via an internal modem.

Several options are available to the customer for directing alarms to INADS. Switch customers may choose to use existing incoming/outgoing central office trunks, or have dedicated network connections with Listed Directory Number (LDN) service. System 75 and Generic 1 customers may also use existing modem-pool or RS-232 facilities.

Terminal Configurations

Common types of terminals are used for both switch and DEFINITY AUDIX maintenance and administration. This allows the same baud rates and parity to be used. Table 2-3, *Supported Terminals*, lists available terminal types. Note that, during login, the administrator or technician is prompted to enter one of five terminal types listed on the screen. Any emulated terminal will work at the prompting. A 715 Business Communications Terminal (BCT), for instance, which is always shipped with new DEFINITY AUDIX systems, works when 513 is prompted.

Table 2-3. Supported Terminals

Listed Terminal Types	Terminals Emulating Listed Terminals
4410	5410
4425	5425

Table 2-3. Supported Terminals — *Continued*

Listed Terminal Types	Terminals Emulating Listed Terminals
5420	4415
513	715
	610
	515
	510
g3-ma (Formerly SAT-PC)	g3-ma

Figure 2-2, *Control Link and Terminal Configurations — CL Mode*, and Figure 2-3, *Terminal Configurations — DP Mode*, summarize the control link connections and terminal configurations that are available to a DEFINITY AUDIX system.

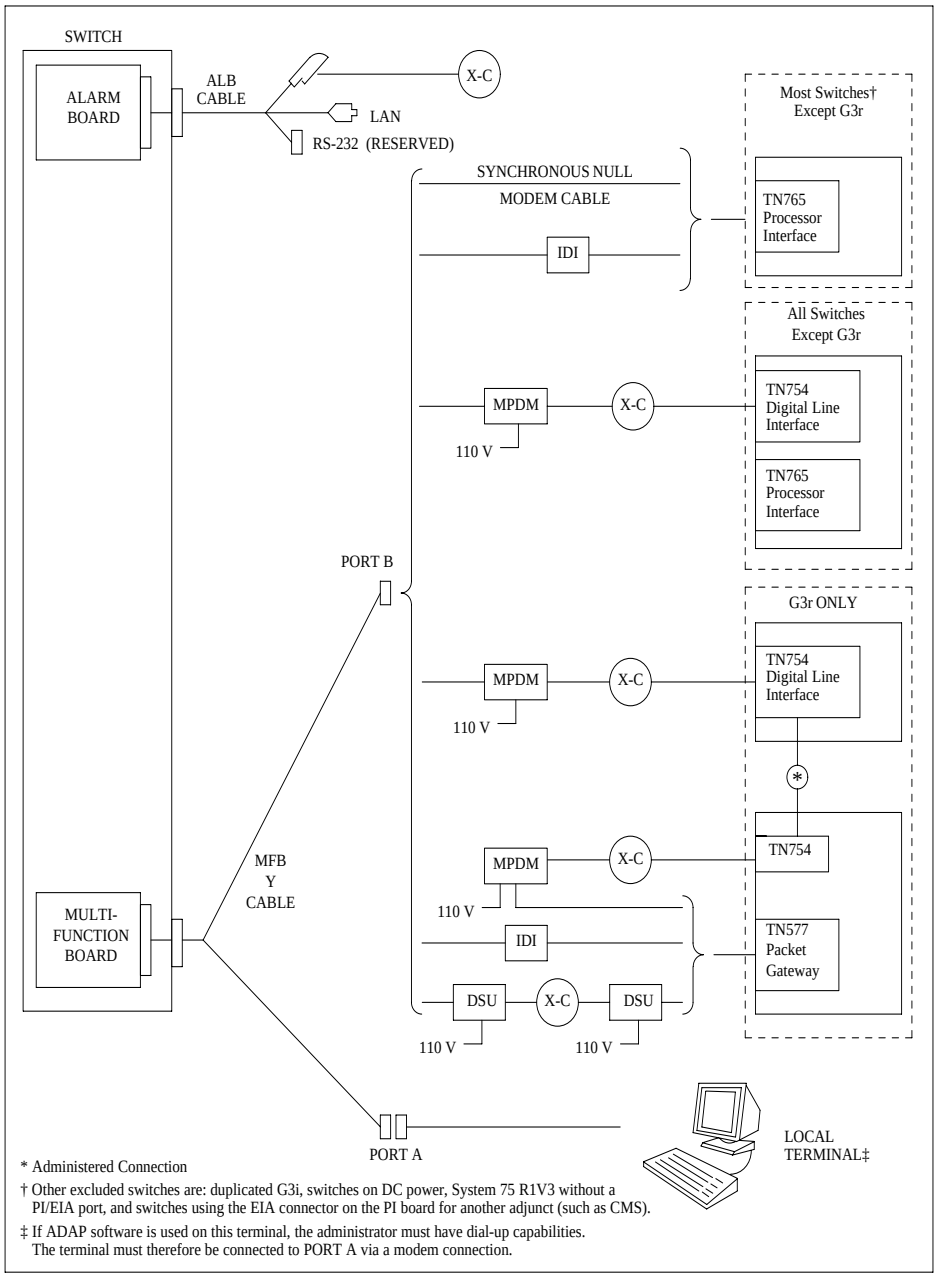

Figure 2-2. Control Link and Terminal Configurations — CL Mode

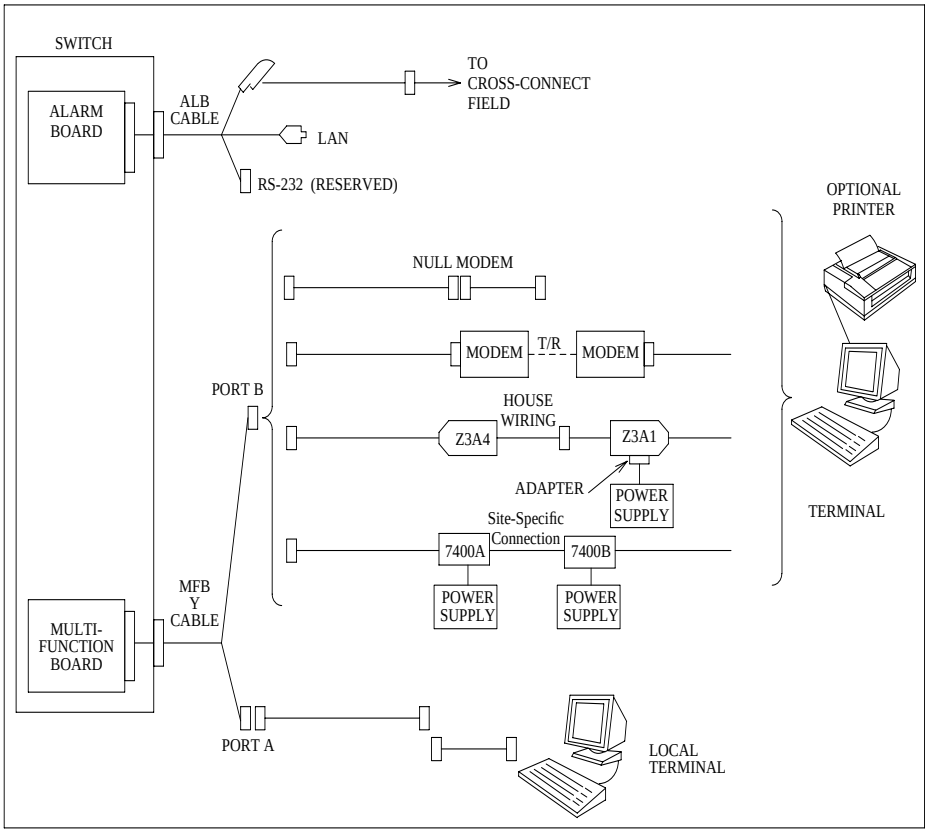

Figure 2-3. Terminal Configurations — DP Mode

A TERMINFO descriptor file is used with the local and remote terminal. The file requires a 24-line-by-80-column screen with cursor addressing, eight fixed function keys labeled outside the text area, and arrow keys.

Presently, only the tip/ring interface is used as the remote access maintenance port. It supports both incoming and outgoing calls, although not simultaneously. The baud rate through the system's internal modem can be set at either 1200 or 2400 (default). The TSC Tier 3 engineer (or Tier 4 development personnel) has access to the system's alarm board processor, CPU flashware, operating system, Standalone Tape Utilities, as well as the DEFINITY AUDIX screens.

The administration terminal can be set at 1200, 2400, 4800, or 9600 (default) baud. (The BREAK key is pressed for the desired speed.) Maintenance screens as well as the administration screens can be accessed.

The local maintenance port is fixed at 9600 baud. It allows the on-site technician to have access to the DEFINITY AUDIX system's 80386SX flashware, screens, operating system, and Standalone Tape Utilities.

For more information on local and remote maintenance setups including option settings, see *DEFINITY AUDIX System—Installation*, 585-300-111. Refer to *DEFINITY AUDIX System—Administration*, 585-300-507 for complete information about administering a DEFINITY AUDIX system.

ADAP

The AUDIX Administration and Data Acquisition Package (ADAP) enables a DEFINITY AUDIX system administrator to transfer subscriber, maintenance, and/or traffic data over the administration port to a compatible administration PC or work group station (WGS). This PC or WGS can double as the administrator's main terminal with appropriate terminal emulation (4410, 513) software.

The package, using dBASE III PLUS software, includes a nontechnical menu-driven program, PC2AUDIX, that generates commonly-used reports. Programs can be tailored to bill subscribers, analyze traffic data, monitor disk and port use, create directory listings, and produce easily-read reports.

ADAP also speeds up subscriber administration by allowing the system administrator to add, remove, or modify subscriber profiles. Should system subscribers be moved from one system to another, the administrator can transfer the profiles to the terminal, then upload the profiles to the new system. After minor editing and voicing-in, the new subscriber administration is complete.

The software is shipped on both 3- and 5-inch diskettes. A guide, *AUDIX Administration and Data Acquisition Package*, 585-302-502, is also shipped with the package.

Screens Access and Use

The DEFINITY AUDIX system administrator or maintenance technician accesses screens that are similar to those used with the DEFINITY switch. The screens use a verb-to-object approach for their access. Refer to Figure 2-4, *Screen Layout*, for a sample screen layout. A complete definition of each screen and its use can be found in *DEFINITY AUDIX System R3.1—Screens Reference*, 585-300-211.

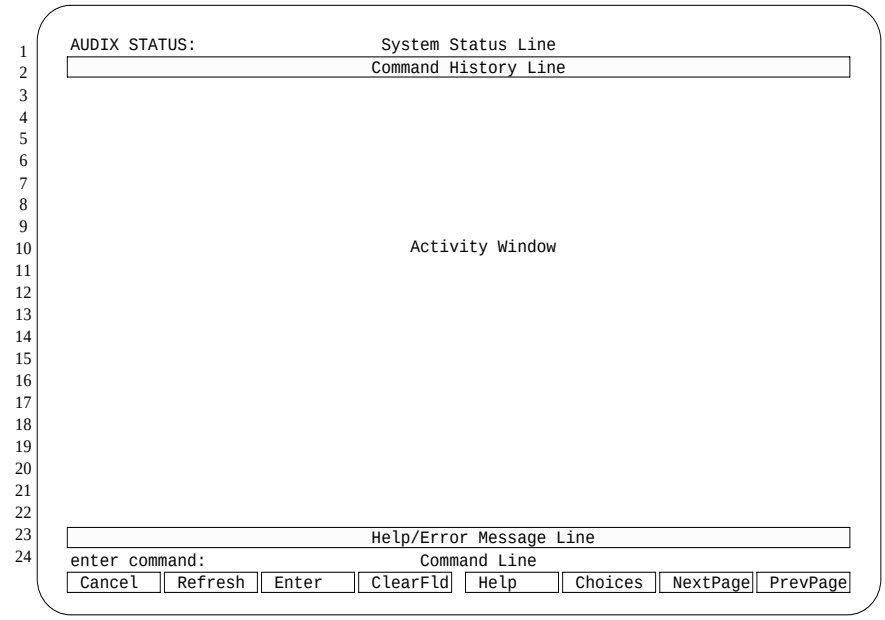

Figure 2-4. Screen Layout

Table 2-4, *Screen Layout*, describes the information that appears on the screen shown above when an administration or maintenance terminal accesses a DEFINITY AUDIX system.

Table 2-4. Screen Layout

Screen Area	Definition
Status Line	Shows: ■ alarms: w (Warning); M (Major); m (Minor); A (Administrative) ■ logins: 1 (one terminal); 2 (two terminals) ■ thresholds: — lower: Indicates that the lower preset space threshold for voice messages has been exceeded, for example, 50% (default 75%). — middle: Indicates that the middle preset space threshold for voice messages has been exceeded, for example, 60% (default 85%). — upper: Indicates that the upper preset space threshold for voice messages has been exceeded, for example, 70% (default 95%). — filesystem: Indicates that more than 85% of the space within at least one filesystem has been used.
Command History Line	The title of what appears in the Activity Window. Includes the current page number and page count of the screens, for example, Page 1 of 2.
Activity Window	Used for: ■ Display of screens for administration and maintenance data entry. ■ Display of reports (screens in which data entry is not allowed). ■ Display of screen and field help. ■ Display of menus for command entry brought up with the Choices key.
Help/Error Message Line	Displays short error messages and prompts.
Command Line	Where the user enters commands to the system.
Function Keys/ (Control Key Equivalents)/ Function	■ F1 (CTRL X) `Cancel` — In a screen, aborts the current activity and returns the user to the command line. On the command line, erases the entire contents listed there. ■ F2 (CTRL L) `Refresh` — Repaints the screen. ■ F3 (CTRL E) `Enter` — In a screen, submits a completed screen for the action specified on the command line. On the command line, requests execution of the command or posting of the requested screen. The RETURN key is identical to Enter on the command line only. ■ F4 (CTRL K) `ClearFld` — Clears an entire field in a screen or a single keyword from the command line. ■ F5 (CTRL W) `Help` — On the command line, this is identical to the **HELP** command which displays a screen explaining what types of help are available. In a screen, this displays information about the screen. ■ F6 (CTRL C) `Choices` — On the command line, this requests a menu of valid entries for command-line keywords. If a Choices menu is already displayed, depressing this key again will select the current item from the menu. ■ F7 (CTRL N) `NextPage` — Navigates forward through multiple-page screens, reports, or help and back to the first page. ■ F8 (CTRL P) `PrevPage` — Navigates backward through multiple-page screens or help and to the last page from the first page.

System Sizing

3

A DEFINITY AUDIX system is configured on an AT&T Order Management System (ATTOMS) or a Delivery Operations Support System (DOSS configurator). Inputs will automatically determine an appropriate number of voice ports, a correct disk size, and cross-use between voice and non-voice applications. This chapter describes how these requirements are determined.

Estimating System Demand

When configuring a first-time DEFINITY AUDIX installation, an accurate estimate of user demand must be determined. The Account Team will get a general feel for the type of user population prevalent at the customer's facility and their service demands before a system is ordered.

Voice Port Traffic

The following factors must be considered to come up with a general estimate for voice port traffic.

- How many people will be DEFINITY AUDIX subscribers? (This is the number of Voice Mailboxes needed.)
- How many people are light, medium, or heavy phone users? How many hours per day do people actually spend on the phone? (This affects the number of ports and the size of the disk needed.)
- How long will messages need to be kept on disk for reference? (This affects the amount of disk space needed.)
- How many phone messages are currently generated on paper? What is the length of most messages? (This affects the amount of disk space needed.)

- How many messages are lost or never taken because the caller's desired contact was busy or out of the office? (The Call Answer feature may be needed.)
- If the Call Answer feature is needed, how many subscribers would use it? How many internal and external callers would use it? (This affects the number of ports and the size of the disk needed.)
- Would the organization use an announcement or bulletin board service? (The Bulletin Board feature may be used.) This affects how many ports will be needed.
- Will the Automated Attendant or Outcalling features be used? (This affects the number of ports needed.)
- Is there a need to send out regular notifications or reports on standard distribution lists? How many different lists would be used? How long are the reports? (This affects the Voice Mailbox, disk space, and port requirements.)

Local Area Network Traffic

The following factors must be considered to come up with a general estimate for LAN traffic.

- How many clients on PCs or workstations will have access to the system? (This affects the session traffic into the system and the amount of disk space needed.)
- Will Intuity Message Manager (IMM) be used mostly as a simple Call-Answering machine, or as a more sophisticated Voice Mail machine using many features? (This affects the amount of disk space needed as well as the number of voice ports when IMM users are responding to their messages over the phone.)
- When a client is logged into DEFINITY AUDIX, how often will IMM query for new messages?
- When a client is logged into DEFINITY AUDIX, how often will IMM do a full scan of the mailbox?
- When a client is logged into DEFINITY AUDIX but is not actively using IMM, how long will the session be allowed to be active before it times out? (This can be set between five and 60 minutes.)

Voice Port Requirements

The DEFINITY AUDIX system is sold in two-port increments (two, four, six, or eight voice ports for Digital Port operation, or up to 16 ports for Control Link operation). A *Block Calls Delayed* model is used to determine the required

number of ports. This model assumes that calls arriving when all ports are busy are queued by the switch until a port becomes available. Port capacity is measured in *Erlangs* (average ports in use at various Grades of Service [GOS]).

The port GOS represents the fraction of calls to the port group that are delayed more than 10% of the length of an average session during the busy hour. Average session time varies with feature-usage characteristics, but averages 60-100 seconds when all features are accessed through a single port group.

Ports are dynamically shared by all services (Automated Attendant, Call Answer, Voice Mail, Bulletin Board, Information Service).

Refer to Table 3-1, *Port Capacities*, for a list of port capacities in Erlangs at various Grades of Service.

Table 3-1. Port Capacities

DEFINITY AUDIX Port Capacities

Ports	.01	.02	.03	.04	.05	.06	.08	.10
2	0.16	0.23	0.29	0.33	0.38	0.41	0.48	0.54
3	0.47	0.61	0.71	0.79	0.86	0.92	1.03	1.12
4	0.89	1.09	1.22	1.34	1.43	1.51	1.65	1.78
5	1.38	1.64	1.81	1.94	2.07	2.17	2.35	2.49
6	1.92	2.24	2.44	2.60	2.74	2.86	3.06	3.22
7	2.51	2.86	3.11	3.31	3.44	3.58	3.81	4.00
8	3.14	3.53	3.81	4.00	4.17	4.33	4.58	4.78
9	3.78	4.22	4.53	4.75	4.94	5.08	5.36	5.58
10	4.44	4.92	5.25	5.50	5.69	5.89	6.17	6.42
11	5.14	5.67	6.00	6.28	6.50	6.67	6.97	7.25
12	5.83	6.39	6.78	7.06	7.28	7.47	7.81	8.08
13	6.56	7.17	7.56	7.83	8.08	8.31	8.64	8.92
14	7.31	7.92	8.33	8.64	8.92	9.14	9.50	9.78
15	8.03	8.69	9.14	9.47	9.72	9.97	10.33	10.64
16	8.81	9.50	9.94	10.28	10.56	10.81	11.19	11.53

Two design options are available for the DEFINITY AUDIX system, as described below.

Standard Design

The Standard Design option is configured according to the range of system use and the customer type. System use is divided into five categories according to minutes of voice-port use per subscriber each day and the number of minutes of voice-message storage required for each subscriber.

Customer types are split into two categories: *Call Answer*, where the DEFINITY AUDIX system is used primarily as a call-coverage vehicle, and *Voice Mail*, where customers use the system for the most part to create and send messages. The majority of customers fall into the *Call Answer* category. Table 3-2, *System Use Per Subscriber*, defines these categories.

Table 3-2. System Use Per Subscriber

Port/ Disk Use	Voice Port Use (Minutes Per Subscriber Per Day)	Call Answer Disk Space (Minutes Per Subscriber)	Voice Mail Disk Space (Minutes Per Subscriber)
Light	2	1.3	2.0
Medium	4	1.9	2.8
Heavy	6	2.3	3.4
Very Heavy	8	2.6	3.9
Extremely Heavy	10	3.0	4.5

For a Standard Design, the following numbers are put into the DOSS configurator to determine the correct number of ports and the needed disk size:

- Total number of local subscribers, including automated attendants, bulletin boards, and so forth
- Voice port usage per subscriber per day, using the appropriate system usage category in Table 3-2
- Minutes of disk storage per subscriber, using the appropriate system usage category in Table 3-2 (select either the Call Answer or Voice Mail type)
- Busy hour fraction (fraction of all calls that occurs during the busiest hour of the day)
- Port Grade of Service (fraction of all calls to the port group that are delayed more than 10% of an average session time during the busy hour)
- Average number and length of personal greetings
- Whether Control Link or Digital Port operation is being used

User-Specified Design

This option is provided for customers who specifically state their port requirements and needed hours of storage. Refer to the following sections to determine these requirements.

Intuity Message Manager Requirements

IMM use over a LAN will compete with regular phone use for processing time and disk space on a DEFINITY AUDIX system. The following application limits must be considered.

Table 3-3. IMM Use on a DEFINITY AUDIX System

LAN Connections to DEFINITY AUDIX	Limit	User Activities During Sessions
Administered Subscribers Those with IMM software loaded on their PCs or workstations and administered to use DEFINITY AUDIX	Available PCs	None
TCP/IP Sessions When administered subscribers are connected to the system, that is, that time when an IMM icon shows on a subscriber's PC	0 to 500	Subscribers receive notification of new messages arriving in their AUDIX mailbox
Login Sessions That time when administered subscribers are logged into DEFINITY AUDIX and accessing and manipulating the IMM screens	0 to 32	—Message Creation —Personal Greeting Administration —Notification Administration —List Administration —Directory Access —Forward Message —Replay to Sender —Call Sender —Empty Wastebasket —Message movement between folders —Server data viewing and administration —Refresh message header contents

Table 3-3. IMM Use on a DEFINITY AUDIX System

LAN Connections to DEFINITY AUDIX	Limit	User Activities During Sessions
Audio Sessions That time when IMM requires a voice port	0 to 16 ports	—Message Playback —Recording and Playback of Personal Greetings —Message Creation —Call Sender —Play/record name —Originate call via IMM

Disk Requirements

Three sizes of disk drives are offered for the DEFINITY AUDIX system. Each disk is rated in terms of the number of hours of voice message storage and the number of subscribers it will support. The smallest disk that will support both and allow for growth within a year is selected for the system. Because filesystem sizes are fixed, all overhead calculations are already included.

Additional Feature Considerations

Certain features in the DEFINITY AUDIX system can significantly affect resource use. These features are divided into three categories, *Outcalling, Automated Attendant*, and *Broadcast Messaging*, each of which is represented separately in the DOSS configurator.

Features Affecting Ports

When the *Outcalling* feature is needed, the following estimates are entered into the DOSS configurator:

- The total number of outcalls during the busiest hour of the day. It is assumed that:
  - — A successful outcall requires 15 seconds; an unsuccessful one requires 60 seconds.
  - — Fifty percent of outcalls that do not go to a pager are successful.
- The fraction of total outcalls that go to a pager and are therefore treated as unsuccessful.

When *Automated Attendant* is needed, the following estimates are entered into the DOSS configurator:

- The busy hour Automated Attendant calls and the average holding time per call
- The port GOS for the Automated Attendant trunk group, *if* configured as a separate trunk group. (Typically, Automated Attendant traffic will use the same voice ports as the rest of the system. This is the preferred situation because greater port efficiencies are possible when all traffic uses the same ports.)

When *Broadcast Messaging* is needed, the following estimates are entered into the DOSS configurator:

- The total number of Broadcast Messages that will be generated during the day
- The average length in seconds of a Broadcast Message

Multilingual and TDD Requirements

Each DEFINITY AUDIX is shipped with one language tape. The multilingual feature permits the addition and simultaneous use of several more languages, depending on system size. Each additional language is purchased separately by the customer.

In addition, a Telecommunications Device for the Deaf (TDD) announcement set can be provided which responds to tones input from a keypad. (TDD sets are available at any AT&T phone center. For information about operation, refer to the TDD user guide.)

The number of announcement sets put on a system is determined by available disk space and backup space on a tape. Each language set takes up the following blocks of space in hours, with additional allowance for feature growth:

Standard U.S. English	1.8 hours
U.S. English 123	1.6 hours
Latin Spanish	1.9 hours
Canadian French	2.1 hours
British English	1.7 hours
Portuguese	2.2 hours
Dutch	2.0 hours
German	2.1 hours
U.S. English TDD	3.4 hours

For configuration purposes, two hours of space on the disk are allowed for each multilingual language set (1.6 hours with allowance for feature growth). The TDD announcement set fills approximately three hours.

Using an approximate two-hour capacity for each language set, the number of language sets a system can hold is configured as follows:

- Besides the standard (or terse) set, three extra announcement sets can be added to a six-hour system for a total of *four* sets.
- A 15-hour system can hold *eight* sets.
- A 40-hour system is limited to a maximum of *nine* sets.

The average response time on a fully-loaded 16-port system will be reduced an average of 10% or less per language set.

Networking

AMIS Analog Networking is the only type of networking available with the DEFINITY AUDIX system. Both it and the *Message Delivery* feature require voice ports for message transmission. When these features are needed, the following estimates are entered into the DOSS configurator:

- Total number of administered remote subscribers
- Number of incoming and outgoing AMIS Analog messages during the busiest hour of the day
- Average length of incoming and outgoing AMIS Analog messages
- Number of Message Delivery messages during the busiest hour of the day
- Average length of Message Delivery messages. The following assumptions are made for these messages:
  - — Fifty percent of the calls are unsuccessful and require a retry, then complete on the retry.
  - — An unsuccessful call requires 60 seconds.

PEC Explosions

A

This appendix contains a list of Price Element Codes (PEC) for primary and optional components comprising the DEFINITY AUDIX system.

Complete System

Table A-1. Identifiers for Complete System

Description	PECs and Attributes
DEFINITY AUDIX Package (See individual items in Table A-2)	PECs: 7021-D06, D15, or D40 (New Switch Installation) 7021-A06, A15, or A40 (Existing Switch Installation) 7021-U06, U15, or U40 (Upgrade) 7021-S06 or S15 (TIBI-G3s) 7021-T06, T15, or T40 (TIBI) Attributes: ALB01—Standard Alarm Board (TN2169) ALB02—Optional Alarm Board (TN2170) for Message Manager Interface
G3s Advantage Bundles	PECs: 6308-B8A, B8B, or B8C 6308-C8A, C8B, or C8C 6308-E8A, E8B, or E8C 6038-F8A, F8B, or F8C
G3s Premier Bundles	6038-G8A, G8B, or G8C 6038-H8A, H8B, or H8C Attributes (for either G3s Advantage or Premier Bundles): ALB01—TN2169 without Optical Isolator (for AC-powered switch) ALB02—TN2170 without Optical Isolator (for AC-powered switch) ALB03—TN2169 with Optical Isolator (for DC-powered switch) ALB04—TN2170 with Optical Isolator (for DC-powered switch)

Primary Equipment

NOTE:
Only the multifunction board, alarm board, disk and tape drives listed in the following table are stocked regionally; cables and miscellaneous parts must be ordered directly from the factory.

Table A-2. Identifiers for Primary Hardware and Software

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
TN566B MFB		107 083 651 ED1E54670 G-14	1	Included in basic package listed in Table A-1, or can be ordered separately.
TN2169 ALB		106 433 063 ED1E54670 G11	1	Choice of alarm board included in basic package listed in Table A-1, or can be ordered separately.
TN2170 ALB		106 433 071 ED1E54670 G(TBD)	1	
6-Hour Disk Drive		406 621 607 ED1E54670 G-3	1	One disk drive included in basic package listed in Table A-1, or can be ordered separately.
15-Hour Disk Drive		407 033 653 ED1E54670 G-4	1	
40-Hour Disk Drive		406 740 613 ED1E54670 G-5	1	
Tape Drive		406 680 884 ED1E54670 G-1	1	Included in basic package listed in Table A-1, or can be ordered separately.
Tape Drive Shield		846 906 089	1	
SCSI Bus Cable		601 463 318 H 600-344, G1	2	
Interboard Bus Cable		601 463 326 H 600-345, G1	1	
Power Cable		601 463 300 H 600-343, G1	1	
Drive Mounting		846 777 407	2	
Retaining Pins (2 per drive)		846 777 324	4	
MFB Two-Way Splitter Cable		601 458 110 H 600-352, G1	1	

Table A-2. Identifiers for Primary Hardware and Software — *Continued*

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
ALB (TN2169) Two-Way Splitter Cable		601 458 128 H 600-353, G1	1	Cable matched to proper ALB. Included in basic package listed in Table A-1, or can be ordered separately.
ALB (TN2170) Three-Way Splitter Cable	2720-06X	601 463 334	1	
104A Connecting Block		103 116 943	1	Included in basic package listed in Table A-1, or can be ordered separately.
D8W Modular Wall Cord	2725-07S	103 786 828	1	
T2-380 Tape Cleaning Kit		406 680 868		
M-F Null Modem Cables		H600-258 G-1	2	
Assembly Kit, Includes:		846 873 693	1	Items included in basic package listed in Table A-1, or can be ordered separately.
Plastic standoffs		901 005 058	3	
Screws, machine slotted hex—SEMS .138-32x5/16		406 546 176	3	
Screws, machine slotted hex—SEMS .138-32x3/16		406 580 837	4	
Screws, pan head slotted—3C6 MSPZ (metric)		406 602 045	4	
Cable ties		401 077 862	2	
Retainer, spring tandem		846 751 766	1	
Blank Backup Tape	70422 (New) 70422A (Existing)	406 680 843 J58889VA1 L-1	2	Included in basic package listed in Table A-1, or can be ordered separately.
Upgrade to 200 MB disk	70427A	ED1E54670 G-4		
Upgrade to 400 MB disk	70428A	ED1E54670 G-5		
AMIS Analog Networking	1253-DAA	107 094 617	1	

Table A-2. Identifiers for Primary Hardware and Software — *Continued*

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
Right To Use (RTU) for two additional voice ports on a *NEW* switch	1253-DVP	011 111 111	2	Two ports are included with basic package. Extra ports ordered separately.
RTU for Two Additional Voice Ports on an *EXISTING* Switch	1253-DVPA	011 111 111	2	
RTU DEFINITY AUDIX System R3.1 Software	1253-A31		1	For existing DEFINITY or System 75 R1V3 switches (without accompanying upgrade to a DEFINITY G3 switch).
RTU DEFINITY AUDIX System R3.1 Software	1253-D31		1	For new switch, new refurbished switch, or with upgrade to a DEFINITY G3 switch.
RTU Upgrade to R3.1 from R1.0, R2.0 or R3.0	1253-Z31		1	If Control Link Integration is required, 1253-CLI must also be specified as well as any additional ports (1253-AVP).
Upgrade kit for new R3.1 systems. Includes program tape, installation, and documentation. (Same PEC is used to order kit for upgrade from R3.0. Note that language attributes are different.)	70482		1	Paired with either 1253-A31/D31 for a new system, or with 1253-Z31. Includes one primary language, picked from the following by attribute: LAN01—Standard American English LAN02—American English 123 LAN03—British English LAN04—Latin Spanish LAN05—Canadian French LAN06—TDD LAN09—German LAN10—Portuguese LAN11—Dutch

Table A-2. Identifiers for Primary Hardware and Software — *Continued*

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
Upgrade kit for upgrades to R3.1 from R3.0. Includes program tape, installation, and documentation.	70482		1	Paired with either 1253-A31/D31 for a new system, or with 1253-Z31. Includes one primary language, picked from the following by attribute: LAN01—British English LAN03—Canadian French LAN04—German LAN07—Dutch LAN09—Portuguese LAN10—Latin Spanish LAN16—Standard American English LAN17—TDD LAN18—American English 123
Upgrade to R3.1 from R1.0 or R2.0. Kit includes program tape, replacement MFB (TN566 to TN566B), installation, and documentation.	70483		1	Paired with 1253-Z31. Includes one primary language, picked from the following by attribute: LAN01—British English LAN03—Canadian French LAN04—German LAN07—Dutch LAN09—Portuguese LAN10—Latin Spanish LAN16—Standard American English LAN17—TDD LAN18—American English 123
R3.1 Customer Documentation Set	70740		1	Includes ADAP documentation and disks (replaces PEC 70731).
RTU for Multilingual option	1253-MLF		1	Allows up to nine languages. Language RTUs and tape cartridges must be ordered separately.
RTU American English 123	1253-DNU	107 145 013	1	New systems.
	1253-DNUA		1	After market addition.
	1253-NUU		1	Upgrades already having this language.
American English 123 cartridge tape	70416		1	Paired with one of the above RTUs..

Table A-2. Identifiers for Primary Hardware and Software — *Continued*

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
RTU Standard American English	1253-DAE		1	New systems.
	1253-DAEA		1	After-market additions.
	1253-AEU		1	Upgrades already having this language.
Standard American English cartridge tape	70485		1	Paired with one of the above RTUs.
RTU British English	1253-DBE	107 015 869	1	New systems.
	1253-DBEA		1	After-market additions.
	1253-BEU		1	Upgrades already having this language.
British English cartridge tape	70414		1	Paired with one of the above RTUs.
RTU Canadian French	1253-DCF	107 015 877	1	New systems.
	1253-DCFA		1	After-market additions.
	1253-UCF		1	Upgrades already having this language.
Canadian French cartridge tape	70412		1	Paired with one of the above RTUs.
RTU Latin Spanish	1253-DLS	107 015 885	1	New systems.
	1253-DLSA		1	After-market additions.
	1253-LSU		1	Upgrades already having this language.
Latin Spanish cartridge tape	70488		1	Paired with 1253-DLS for new systems, or with 1253-LSU for upgrades already having this language.
RTU TDD	1253-DTD	107 145 013	1	New systems.
	1253-DTDA		1	After-market additions.
	1253-TDU		1	Upgrades already having this language.
TDD cartridge tape	70490		1	Paired with 1253-DTD for new systems, or with 1253-TDU for upgrades already having this language. Not applicable for R2.0 or R1.0.
RTU German	1253-DGE		1	New systems.
	1253-DGEA		1	After-market additions.
	1253-GEU		1	Upgrades already having this language.

Table A-2. Identifiers for Primary Hardware and Software — *Continued*

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
German cartridge tape	70491		1	Paired with 1253-DGE for new systems or with 1253-GEU for upgrades already having this language. Not applicable for R3.1, R3.0, R2.0, or R1.0.
RTU Dutch	1253-DDU		1	New systems.
	1253-DDUA		1	After-market additions.
	1253-UDU		1	Upgrades already having this language
Dutch cartridge tape	70492		1	Paired with 1253-DDU for new systems or with 1253-UDU for upgrades already having this language. Not applicable for R3.1, R3.0, R2.0, or R1.0.
RTU Portuguese	1253-DPO		1	New systems.
	1253-DPOA		1	After-market additions.
	1253-DPOA		1	Upgrades already having this language.
Portuguese cartridge tape	70484		1	Paired with 1253-DDU for new systems or with 1253-UDU for upgrades already having this language. Not applicable for R3.1, R3.0, R2.0, or R1.0.
Opto-isolator attribute ISO 01		106 005 242	2	M-F RS-232 116A (DC-powered switch only)
Control Link direct-connect cable[1]	70441	H600-406 G1	1	Factory installed, 1.75 ft
		H600-406 G2	1	Upgrade, 7 ft
M-M RS-232 Group 311 cables:		601 087 075	2	5 ft (Attribute: LNG05)
		601 087 083	2	10 ft (Attribute: LNG50)
		601 087 091	2	20 ft (Attribute: LNG25D)
		601 087 109	2	30 ft (Attribute: LNG27)
		601 087 117	2	40 ft (Attribute: LNG28)
		601 001 365	2	50 ft (Attribute: LNG11)

1. Alternative control-link connections requiring different cables are possible. See Chapter 2, Task 8 in the *DEFINITY AUDIX System Installation* manual for alternative specifications.

Peripheral Equipment

All peripherals are optional to the order. However, the customer must provide at least one terminal for DEFINITY AUDIX system administration/maintenance. See the *Installing the Terminal(s)* worksheet for terminal information.

Table A-3. Identifiers for Peripheral Equipment

Description	PEC	Comcode, H/ED Drawing	Qty	Notes
715 BCT	6950-ET6	ED3P00170	opt	Amber
	6950-ET7		opt	White
G3-MA	1268-200		opt	New switch, new DEFINITY AUDIX system
	1268-1AX		opt	Existing switch, new DEFINITY AUDIX system
AT&T 2400 modem (Courier)		407 044 965	1	Optional for remote admin.
3820 Comsphere 9600 modem	2270-SA2	106 597 776	1	Optional for remote admin.
3830 Comsphere 9600 modem (301)		106 904 303	1	Optional for remote admin.
DM224 2400 modem	2224-CEO		1	Optional for remote admin.
212AR 1200 modem (1A-2A)		103 624 003	1	Optional for remote admin.
2212D 1200 modem			1	Optional for remote admin.
7400A data set	2171-ADM	105 558 050	1	Optional for remote admin. (paired with 7400B)
7400B data set	2172-101		2	Optional for remote admin. (paired with 7400A)
Power supply for 7400s	21625		2	Required with 7400 data sets
Model 2830 Telecommunications Device for the Deaf (TDD)	3780-004	406 613 265	1	Must have buffer if Automatic Attendant menus are used.
Z3A-1 male ADU	2169-001		1	Optional for remote admin. (paired with Z3A-4)
Z3A-4 female ADU	2169-004		1	Optional for remote admin. (paired with Z3A-1)
Power supply for ADUs	21691		1	One per ADU pair (includes one 400B2 or 248B adapter)
D8AM crossover cord		104 154 430	1	Req. for ADU connection
Parallel printer and cable	6951-417 6950-EB1			Optional printer Printer cable

Table A-3. Identifiers for Peripheral Equipment — *Continued*

Description	PEC	Comcode, H/ED Drawing	Qty	Notes
Isolating Data Interface (IDI)	65399		1	May be required for a CL connection to a processor interface or packet gateway board
Z700-D Modular Processor Data Module (MPDM)	2161-PDM	103 954 541	1-2	Required for a CL connection to the digital-line interface board or packet gateway board
Data Service Unit (DSU) (many models)			2	May be required for a CL connection to the packet gateway board
M-F RS232C – RS449 Cable		H600-210	1	Required for IDI connection
M-M RS232C – RS449 Cable		H600-405	1	Required for IDI connection
M-M RS232C Cable		H600-347	1	Required for CL connection to packet gateway
M-F RS232 M25A Cables:		846 823 649	1	5 ft Required for some
		846 823 656	1	9 ft DSU or MPDM
		846 823 664	1	25 ft CL connections
		846 823 680	1	50 ft

Intuity Message Manager

Table A-4. Identifiers for Intuity Message Manager

Description	PEC	Comcode	Notes
RTU IMM interface activation via the *init* screen	1253-IVM		Includes capacities of 32 sessions and up to 500 clients.
IMM Upgrade Kit	70493		Includes TN2170, 3-way splitter cable to make the LAN connection, and the upgrade software forI MM.
IMM Desktop Applications	7028-001		1 to 5 sets (5 to 25 users)
(Disks and Documentation)	7028-002		6 to 10 sets (26 to 50 users)
(One package has 5 complete sets)	7028-003		11 to 15 sets (51 to 75 users)
	7028-004		16 to 20 sets (76 to 100 users)
	7028-005		21+ sets (101+ users)
IMM Site License	7028-101		1 to 25 users
(Includes license, 2 sets of application disks and 2 sets of tutorial disks)	7028-102		26 to 50 users
	7028-103		51 to 75 users
	7028-104		76 to 100 users
	7028-105		101 to 200 users
	7028-106		201 to 300 users
	7028-107		301 to 400 users
	7028-108		401 to 500 users
Additional Documentation	7028-201		One package of 5 documents
	7028-202		Camera-ready master of IMM document for local reproduction

Abbreviations

A

ABP
Alarm Board Processor

AC
Alternating Current

ACD
Automatic Call Distribution

ACM
Assistant Contract Manager

ADAP
Administration and Data Acquisition Package

ADC
Analog-to-Digital Converter

ADM
Administration Manager

ADU
Asynchronous Data Unit (ZA)

ADX
AUDIX State

AE
Account Executive

AFIO
Asynchronous File Input/Output

AIM
AUDIX Initialization Manager

AKSRV
AUDIX Kernel Server

ALB
Alarm Board (TN2170)

AMIS
Audio Messaging Interchange Specification

ANET
AUDIX Network

AOM
Alarm Origination Manager

API
Application Program Interface

ASC
Audio Session Control

ATTOMS
AT&T Order Management System

AUCC
AUDIX Upgrade Control Center

AUDIX
Audio Information Exchange

AWG
American Wire Gauge

B

BMPM
Board Mounted Power Module

BTU
British Thermal Unit

C

CALC
Call Answer Language Choice

CL
Control Link

CLT
Control Link Trace Manager

CO
Central Office

CPU
Central Processing Unit

D

DAC
Dial Access Code

DC
Direct Current

DCIU
Data Communications Interface Unit

DCP
Digital Communications Protocol

DCS
Distributed Communications System

DD
Disconnect Detect

DDD
Direct Distance Dialing

DID
Direct Inward Dialing

DIO
DSP Input/Output Controller

DLG
Dual Language Greetings

DM
Database Manager

DMA
Direct Memory Access

DOSS
Delivery Operations Support System

DP
Digital Port

DPC
DSP Parallel Interface Controller

DRAM
Dynamic Random Access Memory

DS
Design Specialist

DS1
Digital Service 1

DSI
Digital Service Interface

DSIC
Dedicated Switch Installation Crew

DSP
Digital Signal Processor

DTE
Data Terminal Equipment

DTMF
Dual Tone Multifrequency

DUSCC
Dual Synchronous Channel Chip

E

EDT
Equipped Device Table

EIA
Electronic Industries Association

EMI
Electro-magnetic Interference

EPROM
Electrically Programmable Read Only Memory

ER
Error Manager

ES
Enhanced Services

ESS
Electronic Switching System

F

FAC
Faceplate and Alarm Controller

FC
Forms Control

FIFO
First-In First-Out

FP
Feature Processor

FPROM
Flash Erasable Programmable Read Only Memory

FSA
File System Administrator

FSO
Field Service Organization

FW
Flashware

G

GBCS
Global Business Communications Systems

GBCSDC
Global Business Communications Systems Design Center

I

ICITT
International Consultive Committee for Telephony and Telegraphy

I^2C
Inter-Integrated Circuit

IDI
Isolating Data Interface

IL
Installation Location

INADS
Initialization and Administration System

IMM
Intuity Message Manager

I/O
Input/Output

ISB
In Service Busy

ISI
In Service Idle

ISP
In Service Pending

ISDN
Integrated Services Digital Network

K

Kbyte
Kilobyte (1024 bytes)

kHz
kilohertz

L

LAN
Local Area Network

LAT
Local Administration Terminal

LCD
Liquid Crystal Display

LEC
Local Exchange Carrier

LED
Light-Emitting Diode

LWC
Leave Word Calling

M

Mbyte
Megabyte (~= one million bytes)

MCM
Maintenance Control Manager

MD
Management Devices

MFAT
Multifunction Analog Telephone

MFB
Multifunction Board (TN566B)

MHz
Megahertz

MOJ
Material on Job

MP
Maintenance Procedure

MPDM
Modular Processor Data Module

MPM
Maintenance Procedure Manager

ms
Millisecond

MSB
Mass Storage Bracket

MSC
Message Service Center

MTBF
Mean Time Between Failures

MWI
Message-Waiting Indication

N

NACS
New AUDIX Call Simulator

NDC
National Design Center

NMI
Non-maskable Interrupt

NVRAM
Non-volatile Random Access Memory

O

OA&M
Operations, Administration, and Maintenance

OOS-D
Out of Service-Due to insufficient translations

OOS-F
Out of Service-Fault

OOS-R
Out of Service-Resource

OOS-T
Out of Service-Testing

OS
Operating System

P

PBX
Private Branch Exchange

PC
Power Converter or Personal Computer

PDM
Processor Data Module

PEC
Price Element Code

PM
Project Manager

PPE
Packet Processing Element

PROC
Procedure

PROM
Programmable Read Only Memory

Q

QSD
Quick Silence Disconnect

R

RAM
Random Access Memory

RMT
Remote Maintenance Terminal

ROM
Read Only Memory

RTU
Right to Use

S

SAKI
Sanity and Control Interface

SA
Software Associate

SAS
Subscriber-Specific Announcement Sets

SAT
System Administration Terminal

SCI
Switch Communications Interface

SCSI
Small Computer Systems Interface (AUDIX)

SD
Switch Dispatcher, System Data

SDI
SCSI Driver Interface

SIM
System Implementation Manager

SS
Software Specialist, System Status

STRC
Sales Technical Response Center

STU
Standalone Tape Utilities

T

TBD
Tone Based Disconnect

TCP/IP
Transmission Control Protocol/Internet Protocol

TD
Target Driver

TDD
Telecommunications Device for the Deaf

TDM
Time Division Multiplex

TEG
Trunk Equipment Group

TMC
Technical Marketing Center

TSO
AT&T's Technical Services Organization

U

UEQ
Unequipped

UL
Underwriters Laboratories

UPS
Uninterruptible Power Supply

USART
Universal Synchronous/Asynchronous Receiver-Transmitter

V

VB
Voice Buffer

VD
Voice Data

VM
Voice Messages

VSC
Voice Session Control

W

WGS
Work Group System

Glossary

Numeric

10BaseT
A network baseband medium using twisted wire pairs, operating at 10 Mbits per second.

A

Activity Menu
The list of main options voiced to subscribers when they access the DEFINITY AUDIX system.

Administration
The process of setting up a system (such as a switch or a voice mail system) so that it will function as desired. Options and defaults are normally set up (translated) by the system administrator or remote services personnel.

Alarm Board (ALB)
The hardware platform (TN2169) which works with the Multifunction board to provide monitoring for system power and environmental status, -48 VDC to +12 VDC power conversion for the system's disk and tape drives, and remote terminal access. The TN2170 also provides SCSI-to-Ethernet connectivity to support Intuity Message Manager.

Alarms
Hardware, software, or environmental problems that may affect system operation. These faults are classified as *major*, *minor*, or *warning*. They are recorded into an alarm log which can be accessed either locally or remotely on a terminal connected to the system.

Angel
A processor activity that exchanges TDM bus control messages and performs functions associated with call setup and port maintenance.

Announcement Fragment
A numbered piece of spoken voice mail information that makes up a system message or prompt.

Asynchronous Transmission
A form of serial communications where each transmitted character is bracketed with a start bit and one or two stop bits.

Asynchronous Data Unit (ADU)
A small device that can extend data transmission far beyond recommended Electronic Industries Association (EIA) limits over building wiring. System terminals may use a Z3A1 or Z3A4 ADU.

Audio Messaging Interchange Specification (AMIS)
An analog networking feature that allows subscribers of different voice mail systems to send voice mail messages to one another.

Audit
A software program that resolves filesystem incompatibilities and updates restored filesystems to a workable level of service. Audits are done automatically on a periodic basis, or can be performed on demand.

Audio Information Exchange (AUDIX)
A complete voice-mail messaging system accessed and operated by touch-tone telephones and integrated with a switch.

AUDIX Administration and Data Acquisition Package (ADAP)
A software package which allows the DEFINITY AUDIX administrator to transfer system subscriber, maintenance, or traffic data over the administration port to a personal computer (PC) or Work Group System (WGS).

Automated Attendant
A DEFINITY AUDIX feature that allows a customer to set up a main number with a menu of options that routes callers to an appropriate department at the touch of a button.

B

Backup
A duplicate copy of a filesystem saved on a removable tape. The backup filesystem may be copied back (restored) if the active version is damaged (corrupted) or lost.

Balun
On the DEFINITY AUDIX LAN connection, the adapter needed to connect the twisted-pair breakout cable to the coaxial building wire distribution system.

Baud Rate
Transmission signaling speed.

Boot (or Reboot)
The operation to start a computer system by loading programs from disk to main memory (part of system initialization).

Boot Filesystem
The filesystem from which the system loads its initial programs.

Broadcast Messaging
A feature that enables the system administrator and other designated users to send a voice mail message to all subscribers automatically.

Buffer
Memory used to compensate for time differences in transmission by temporarily storing data.

Business Communications Terminal (BCT)
The recommended terminal for system maintenance or administration.

Busyout Service
When a technician or administrator blocks service to keep customers from using faulty equipment until it can be repaired or tested. For instance, when ports (or a link) are busied out, subscribers who try to access their mailboxes hear a *fast busy* reorder tone. People who would normally reach DEFINITY AUDIX through Call Answering are not forwarded; they hear ringing and no answer at the number they called.

C

Call Answer
A feature that allows the system to answer a call and record a message when the subscriber is unavailable. Callers may be redirected to the system through the call coverage or Call Forwarding switch features. Subscribers may record a personal greeting for these callers.

Call Answer Language Choice
Call answer multilingual option where a user can alternate between a primary language set and a secondary language. The two languages are administered on a per subscriber basis. If CALC is enabled, the subscriber may not use the standard DEFINITY AUDIX Multiple Personal Greetings feature.

Camp-On
A system shutdown option that waits for ports to become idle before blocking service to them. This allows subscribers to finish calls in progress.

Central Office (CO)
A main telephone office where private customer lines are terminated and connected to the public network through common carriers.

Central Processing Unit (CPU)
The Multifunction board's main 80386SX processor that controls system data transfer, input/output (I/O), and logical instructions.

Class of Service (COS)
The standard set of features given to subscribers when they are first administered (set up with a Voice Mailbox).

Command Mode
A system state where flashware is in control and software is shut down. In this state, a technician has access to menu options to see flashware status and initialization history, run through flashware diagnostics, and to start or continue system initialization.

Configuration
The particular composition and hardware selected for a system, including internal options and peripheral equipment.

Control Link (CL)
The switch-link integration, or interface, between the DEFINITY AUDIX system and the switch that enables the transmission of control messages from the DEFINITY AUDIX system to the switch. The control messages carry information such as calling-party identification and message-waiting indicator status and control.

Control-Link Mode
The type of switch-link integration for which the DEFINITY AUDIX System R3.0 is connected to the switch via analog-line card emulation and a digital connection.

D

Default
A value that is automatically supplied if no other value is specified.

Digital-Port (DP) Mode
The type of switch-link integration for which the DEFINITY AUDIX System R3.0 is connected to the switch via digital line card emulation.

Digital Signal Processor (DSP)
Programmed RAM chips on the Multifunction board that provide signaling, power-level control, speech coding, and data processing.

Disconnect Signaling Detection
Signaling from the CO to the PBX which indicates that the far end caller has hung up.

Dual Language Greetings
When the Call Answer Language Choice is in effect, the subscriber can record personalized greetings for each of the languages listed as the primary and secondary announcement sets. The subscriber instructs the caller to enter *1 to switch to the alternate language.

E

Errors
Problems detected by the system during automatic self-tests and recorded in an error log. Errors can produce an alarm (fault) if they exceed a threshold.

Events
Occurrences such as inline errors, maintenance procedure failures, alarms, errors, or transitions into or out of the *AUDIX* or *OA&M* states which are recorded in an events log.

F

Faceplate and Alarm Controller (FAC)
The circuitry on the Multifunction board which monitors activity of the DEFINITY AUDIX system.

Field
An area on a form, menu, or report where information can be typed or displayed.

Filesystems
A collection of related files (programs or data) stored on disk which are required to initialize a DEFINITY AUDIX system and provide full service.

Flashware
Code that is stored in electrically reprogrammable memory on the DEFINITY AUDIX system. This programming is retained over power outages but can be reprogrammed automatically on board during initialization.

Forms
Terminal screens of information that allow data to be displayed or changed.

G

Generic Tape
A copy of the standard software and Standalone Tape Utilities that is shipped with a new system.

Graceful Shutdown
Taking the DEFINITY AUDIX system offline (to the maintenance shutdown state) using RESET SYSTEM SHUTDOWN in a camp-on manner.

Guest Password
A feature that allows people who are not subscribers to leave messages on the system by dialing a subscriber's extension and entering a system-wide guest password.

H

Header
Information that the system creates to identify a message. A message header includes the originator or recipient, type of message, creation time, and delivery time.

Hunt Group
A group of analog ports on a switch usually administered to search for available ports in a circular pattern.

I

Initialization
The process of bringing a system to a predetermined operational state. The start-up procedure tests hardware and flashware; loads the boot filesystem programs, locates, mounts, and opens other required filesystems; and starts normal service.

Initialization and Administration System (INADS)
A maintenance system used by remote technicians to track alarms.

Interboard Bus
The inter-integrated circuit (I^2C) bus that provides connectivity between the Alarm board and the Multifunction board.

Intuity Message Manager
Used for retrieval and display of message headers, addressing to lists, managing personal greetings, and for creating, forwarding, and replying to Voice Mail messages.

L

Leave Word Calling
A switch feature that allows the calling party to leave a standard (nonvoice) message for the called party using a feature button or dial access code.

Light Emitting Diode (LED)
A red-light indicator on the system Faceplate panel that shows the status of operations and possible fault conditions. An unlit LED indicates a healthy system. When flashing, the LED indicates a software problem. When it is steadily lit, a hardware problem exists.

Liquid Crystal Display (LCD)
The 10-character alphanumeric display on the DEFINITY AUDIX faceplate panel that automatically shows status of the system including alarms.

Local Area Network (LAN)
The System 75 packet bus. Also, a network that provides connectivity between a DEFINITY AUDIX server and Intuity Message Manager on a PC.

Local Maintenance Terminal (LMT)
A display terminal located near the DEFINITY AUDIX system and the switch. It is temporarily attached to the Multifunction board via a Y-cable during an on-site service visit.

Login
A unique code used to gain approved access to a subscriber's Voice Mailbox or to a display terminal.

M

Mailbox
A portion of disk memory given to each subscriber for creating and storing outgoing and incoming messages.

Message-Waiting Lamp
An LED on a telephone that alerts subscribers to new messages.

Modem
A modulator/demodulator used for transmitting analog signals across phone lines.

Multifunction Board (MFB)
The hardware platform (TN566B) which holds the central processing unit, controllers, memory devices, and signal processors that make a DEFINITY AUDIX system operational.

Multilingual System
A DEFINITY AUDIX system containing primary and secondary language announcement sets. A large (40 hour) system can hold up to nine different language sets. The Telecommunications Device for the Deaf (TDD)-based announcement set is treated as a multilingual option.

N

Native Mode
The ability of the switch to recognize the DEFINITY AUDIX multifunction board (MFB) as a TN566B (AUDIX) circuit pack. With native mode support, the switch reserves five slots for the DEFINITY AUDIX assembly, and the switch is able to correctly identify the DEFINITY AUDIX board in alarms sent to the services organization.

Nonnative Mode
Without native mode, the MFB slot is provisioned as a TN754 (for the DP integration mode) or as a TN746B (for the CL integration mode), the five slots occupied by the DEFINITY AUDIX assembly are not reserved, and MFB alarms are reported as alarms for a TN754 or TN746B.

Nonvolatile Random Access Memory (NVRAM)
A battery-backed RAM on the Multifunction board that retains data through loss of power.

Null Modem
An RS232-C cable interface which allows a direct connection between two devices when a modem is not required. Null modems provide no timing signals, but are used with asynchronous devices that derive their timing from start/stop bits.

O

Operating System (OS)
The set of programs that runs the hardware and interprets software commands.

Operations, Administration, and Maintenance (OA&M)
A state of system operation where core processes of the Multifunction board are accessed, including system initialization, resource configuration, forms interface, entry into the maintenance subsystem, and filesystem access. Also entered when customer data must be restored.

Outcalling
A feature that allows the system to dial subscribers' numbers or go to pagers to inform them they have new messages.

P

Port
A connection or link between two devices, allowing information to travel through it to a desired location. For example, a switch port connects to a DEFINITY AUDIX port to allow a subscriber on a voice terminal to leave a message.

R

Reboot
A system *reboot* is done to clear major system problems (such as corrupt program memory). It also runs automatically whenever the system is powered up.

Remote Field Update
A set of software changes on a given release that is transmitted from a central location to customer equipment. Changes are generally restricted to serious *bug* fixes and are limited in volume.

Reply Loop Escape
Allows the subscriber the option to return to responding to a message after trying to reply to a non-subscriber message.

Restart
During maintenance, a system *restart* brings the system software back into full service, usually after an administrative shutdown. This is often done to try to clear software problems.

S

Sanity and Control Interface (SAKI)
An integrated circuit that receives and transmits TDM bus control messages and monitors the sanity of the angel processor.

Shutdown States
States of system operation where either a technician can shut down the system for maintenance, or where a critical error condition brings down the system. In either case, filesystems are closed and the system can be powered down and removed from the carrier.

Small Computer Systems Interface (SCSI)
An interface standard defining the physical, logical, and electrical connections to computer system peripherals such as tape and disk drives.

Standalone Tape Utility
A software utility with options that include disk drive initialization, copying files from a generic tape onto the customer's disk, and map partition modification.

Subscriber Specific Announcement Set
When the Multilingual feature is enabled, each subscriber form has three fields specifying the announcement set with which the subscriber will interact with the system once they log in, and the two announcement sets with which callers to the subscriber's mailbox can interact with the system.

T

Transmission Control Protocol/Internet Protocol
A set of protocol standards which allows a process on one machine to send data to a process on another machine. Communication may be full or half duplex. TCP/IP includes support for multiple operating systems and machine architectures.

Technical Service Organization
The *Tier 3* services group who remotely maintains and diagnoses a DEFINITY AUDIX system using a set of forms generated on a computer terminal.

Telecommunications Device for the Deaf (TDD)
A feature providing Call Answering and Personal Greeting capabilities to the hearing-disabled. The announcement set responds to Baudot tones which are input from a special keypad.

Time Division Multiplex (TDM) Bus
The interface between the DEFINITY AUDIX system and the switch that carries digitally-encoded voice waveforms and circuit-switched data.

U

Update
A limited incremental change on an existing release involving software only.

Upgrade
The replacement of one release with a new release. This may involve software, flashware, hardware, and/or data.

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