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DEFINITY AUDIX System Release 3.2.4

Maintenance

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Issue 7
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EMC Directive	89/336/EEC
Low Voltage Directive	73/23/EEC
	The "CE" mark affixed to the equipment means that it conforms to the above Directives.

Acknowledgment
This document was prepared by the Product Documentation Development group, Lucent Technologies, Denver, CO and Columbus, OH.

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About This Document

This document contains the basic information needed to repair, diagnose, and maintain the DEFINITY® AUDIX® system.

Changes in this issue include a modification to the upgrade script to expedite the upgrade procedure, and changes to six alarms.

The six alarms are:

- Software alarm 4100
- Voice port alarms 0004, and 0005
- Tape alarms 0000 and 0001
- Switch alarm 0001

Intended Audiences

This document is provided for the following audiences:

- On-site technician who will have access to the same forms at the site using a local maintenance terminal. The on-site technician will also have access to information shown on the system faceplate.
- Customer (system administrator) who can be expected to perform simple functions such as replacing tapes and cleaning tape heads.

- Remote Support Center (RSC) engineers who will maintain and diagnose the system using a set of forms generated on a computer terminal.

  NOTE:
  RSC includes technical support organizations such as the Technical Service Center (TSC), National Service Assistance Center (NSAC), International Technical Assistance Center (ITAC), Center of Excellence (COE), Design Center (DC), Sales Technical Response Center (STRC), and National Technical Marketing (NTM).
  In another context, RSC is used to mean Remote Switching Center.

How This Document Is Organized

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

- Chapter 1, ''Repair Orientation'', gives a brief description of system hardware, maintenance connections, strategy, forms, and states of operation.
- Chapter 2, ''Maintenance Strategy'', briefly discusses problems that might be reported by the phone user and considerations for beginning the troubleshooting process.
- Chapter 3, ''Circuit Packs'', lists fault and error codes, alarm levels, resources, and repair actions for the two system circuit boards and for system timing. It also gives basic replacement procedures for the circuit packs.
- Chapter 4, ''SCSI Devices'', lists fault and error codes, alarm levels, resources, and repair actions for the system tape and disk drives. It also lists ongoing maintenance procedures for the tape drive, and replacement procedures for both drives.
- Chapter 5, ''Environment'', lists fault and error codes, alarm levels, resources, and repair actions for system overheating.
- Chapter 6, ''Voice, Control, and LAN Links'', lists fault and error codes, alarm levels, resources, and repair actions that affect the voice ports.
- *Chapter 7, ''Digital Networking'',* discusses Digital networking in the DEFINITY AUDIX System. It includes alarms, repair procedures, errors, and tests for networking ports and remote machines
- Chapter 8, ''Filesystems'', lists fault and error codes, alarm levels, resources, and repair actions that apply to the filesystems.
- Chapter 9, ''Software'', lists fault and error codes, alarm levels, resources, and repair actions that apply to system software.
- Chapter 10, ''Audits, Shutdown Codes'', lists fault and error codes, alarm levels, resources, and repair actions that apply to system audits. It also discusses system shutdown codes and possible repair actions.

- Chapter 11, ‘‘Utilities, Upgrades, On-Site Diagnosis’’, discusses the Standalone Tape Utilities and repair/upgrade scenarios using the STU. Use of the faceplate panel for diagnosis is also discussed, as well as the alarm messages that appear in the system administration log.
- Appendix A, ‘‘PEC Explosions’’, contains a list of Price Element Codes (PECs) for primary and optional components of the DEFINITY AUDIX system.

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

Related Resources

For more information on the DEFINITY AUDIX System, reference the *DEFINITY AUDIX System-Documentation Guide,* 585-300-011, Issue 4 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.

How to Make Comments About This Document

Reader comment cards are at the beginning of this document. While we have tried to make this document fit your needs, we are interested in your suggestions for improving it and urge you to fill one out.

If the reader comment cards are missing, please send your comments and suggestions to:

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Repair Orientation

1

This chapter gives basic information about the DEFINITY AUDIX System, and what you will use to maintain and diagnose it. Refer to Figure 1-1, DEFINITY AUDIX System, and the descriptions afterwards of hardware items.

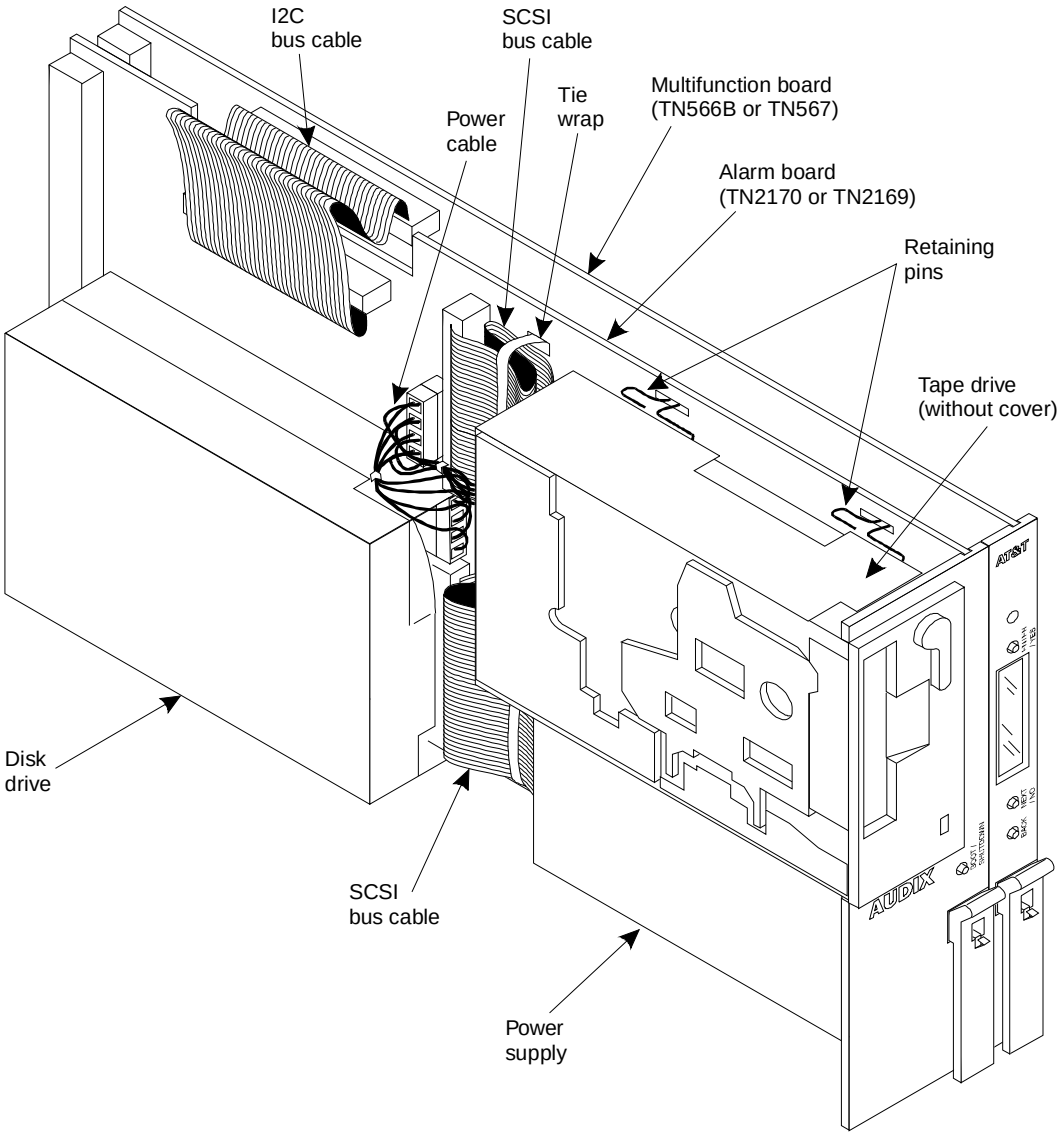


Figure 1-1. DEFINITY AUDIX System

System Specifications

Table 1-1 defines the basic specifications of the DEFINITY AUDIX System.

Table 1-1. Capacities, Requirements, Limitations

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 communicates with switch's DCIU link. ■ Display Set Operation — System communicates with switch by emulating digital phone operator. ■ Non-Native Support — Switch sees system as a TN746B, TN754, or TN2181. ■ Native Support — Switch sees system as a TN566B or TN567 (DEFINITY AUDIX multifunction board)
Digital Networking Capacity	■ 2 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)

Continued on next page

Table 1-1. Capacities, Requirements, Limitations — *Continued*

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* ■ G3V1-13.2 or later in Display Set 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
Voice port capacity‡	■ See Table 1-2.

* Native support for Display Set mode only.

† In Display Set 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.

‡ Voice Port Capacity may be reduced with the TN566B MFB when networking is being used.

Table 1-2 lists the voice port capacity and switch circuit pack emulations of the DEFINITY AUDIX System by switch type.

Table 1-2. Voice Port Capacity

Switch Type	Maximum Number of Voice Ports with Digital Networking		Switch Circuit Pack Emulation
G3V4 and higher	12 (14)	16	TN2181 (16 Port DCP) (with native mode support)-
G3V2, G3V3	12 (14)	16	TN2181 (16 Port DCP) (without native mode support)
G3V2, G3V3	8	8	TN754 (8 Port DCP)
System 75, G1, G3V1	8	8	TN754 (8Port DCP)

Physical Description

Four main items make up the DEFINITY AUDIX System hardware as shown in Figure 1-1.

They are:

- Multifunction Board (MFB) — The main circuit board which holds the central processing unit, controllers, memory devices, and signal processors which make the system operational. Pre-R3.0 systems use the TN566 (eight megabytes); R3.0 and later systems use the TN566B (386 with 16 megabytes) or the TN567 (486 with 16 megabytes).
- Alarm Board (ALB) — Works with the MFB to provide monitoring for system power and environmental status, -48 VDC to +12 VDC power conversion for the mass-storage devices, and remote terminal access. If Intuity Message Manager (IMM) is ordered, a TN2170 is used. If IMM is not ordered, a TN2169 is used. The TN2170 has the added Ethernet to SCSI interface for IMM.
- 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.
- 3½" Tape unit — A 160 or 600 Mbyte data cassette recorder used to distribute software onto a disk, store periodic backups of customer data, install new software releases, and remove core dumps and other maintenance information.

Note that the number of hours of storage for each of the current disk sizes has been readjusted downward for this release so that they match the number of hours advertised to customers, as shown in Table 1-3:

Table 1-3. Filesystem Sizes for Digital Networking

	120/140 MB	230 MB	426 MB	1.05 GB
Hours of Voice Storage Pre- R3.2 Hours Reduction in Hours	6 8.67 2.67	15 19.5 4.5	40 45.3 5.3	100 - -
Maximum Local Subscribers	300/150	1.000	2,000/ 1,000	2,000
Maximum Remote Subscribers	300/1,200	8,000	10,000/ 16,000	100,000

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 following buttons 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 Chapter 3, *Front Panel Interface*).
- 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 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 MFB Y-cable provides switch integration and administration/maintenance terminal connections. The ALB cable provides an Ethernet connection to a Local Area Network, an Amphenol connection to a remote maintenance center via the switch, and a reserved RS-232 connector. When the DEFINITY AUDIX System operates in the Control Link Emulation mode, one lead on the MFB cable provides the control link to the switch.

System Operation

The DEFINITY AUDIX System automatically performs 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 (See Chapter 9). 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 the event log.

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

From your maintenance terminal, you will have access to demand tests and demand audits which may or may not retire an alarm. Unresolved problems may require a technician at the site to replace system hardware or software. The system administrator may have to deal with switch or environmental problems.

System States

The DEFINITY AUDIX System initializes, operates, shuts down, and is diagnosed and maintained in different states. These states are displayed on the faceplate panel liquid crystal display (LCD), as shown in Figure 1-2, LCD Status Mode Display.

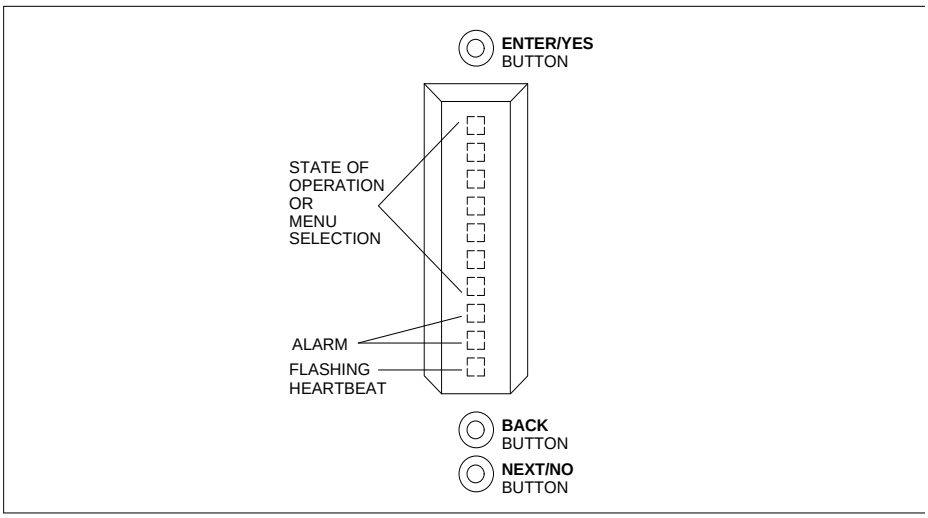


Figure 1-2. LCD Status Mode Display

Table 1-4, System States, gives a description of the alarms, indications, and states of the DEFINITY AUDIX System. (For more information on using the faceplate panel, see Chapter 10.)

Table 1-4. System States

Display	Definition
Heartbeat Indication	
[*]	Flashing at a one-second on, half-second off rate, indicates an active MFB.
[0]	Flashing at a one half-second on, half-second off rate, indicates that the MFB is in an offline, standby state.

Continued on next page

Table 1-4. System States — *Continued*

Display	Definition
Alarms	
MN	Minor alarm — Displays a problem which could disable part of a system function and noticeably degrade operation. Requires intervention from the RSC.
MJ	Major alarm — Displays a problem which could widely degrade system operation and seriously impact service. Requires intervention from the RSC.
WN	Warning — Displays a problem not severe enough to noticeably degrade operation. Requires on-site intervention.
386_DEAD	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 DEFINITY 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 boot loader turns control over to the operating system or the booted utility.
PGM386 PGMFAC PGMALB	Brought up during OS initialization only if the system determines that one or more of the 80386SX, faceplate and alarm controller, or alarm board FPROMs must be reprogrammed. Reprogramming is done automatically. **WARNING:** *The system should never be shut down during the reprogramming sequence. The MFB will have to be sent back to the factory if programming is not allowed to complete.*
AINIT	AUDIX Initialization — Displayed when the DEFINITY AUDIX software is initializing from boot.
ADX	AUDIX State — Displayed when the DEFINITY 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.

Continued on next page

Table 1-4. System States — *Continued*

Display	Definition
Shutdown States	
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.

Continued on next page

Table 1-4. System States — *Continued*

Display	Definition
Maintenance, Utility Status Messages	
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 screen 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 simultaneously pressing CONTROL and 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 (see Chapter 10, Table 10-2 on page 10-2). 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 (see Chapter 10, Table 10-2 on page 10-2). 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 shut down options. 9. Quit and automatically boot — Allows the technician to leave the command menu. Automatically boots the system.

Continued on next page

Table 1-4. System States — *Continued*

Display	Definition
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 screen. Get into the firmware command mode by simultaneously pressing CONTROL and C twice on the local maintenance terminal. Have the backup tape removed and the generic tape inserted. Select the utility program from the options (See Chapter 10). ■ At the site by pressing the BOOT/SHUTDOWN button, or invoking the RESET SYSTEM SHUTDOWN screen on the local terminal. Get into the firmware command mode by simultaneously pressing CONTROL and C twice. Insert the generic tape and select the utility program from the options.
OS	Displayed only when a Remote Support Center (RSC) engineer interrupts the normal initialization sequence. The operating system remains on-line,but the DEFINITY 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.
INST	Displayed during an upgrade or installation. Goes into this state when the technician gets into the command mode by simultaneously pressing CONTROL and C twice and then preempting an automatic boot from the command menu.

Figure 1-3, System Initialization and Shutdown Flow, shows the steps the DEFINITY AUDIX System automatically takes from a dead state to full operation. It also shows the states that can be entered whenever errors occur, or when the technician manually changes states using the faceplate panel or with specific screens (discussed later in this chapter).

Note that the states are shown as they appear on the faceplate panel LCD.

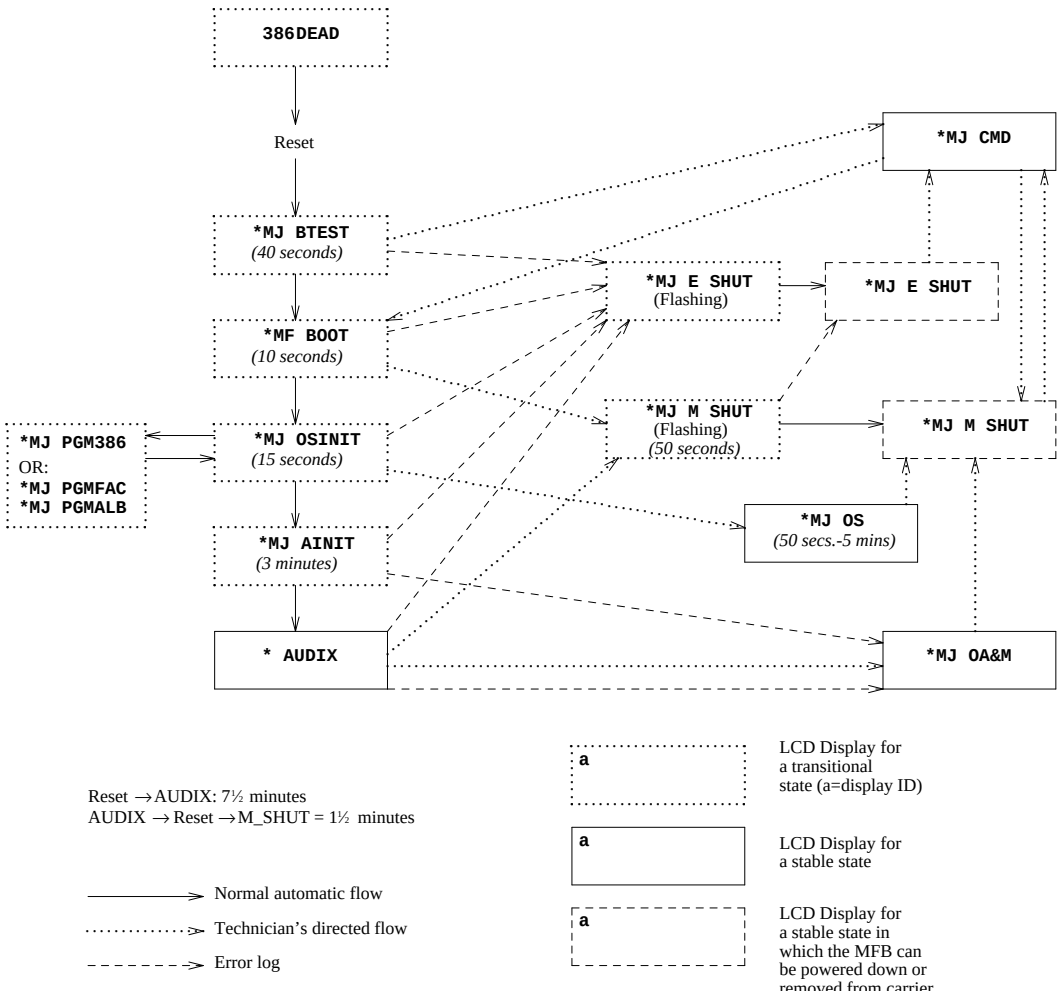


Figure 1-3. System Initialization and Shutdown Flow

Maintenance Connections

Common types of console terminals are used for both switch and local DEFINITY AUDIX maintenance, allowing the same baud rates and parity to be used. Although a local maintenance terminal is required, it does not have to be dedicated to the DEFINITY AUDIX System.

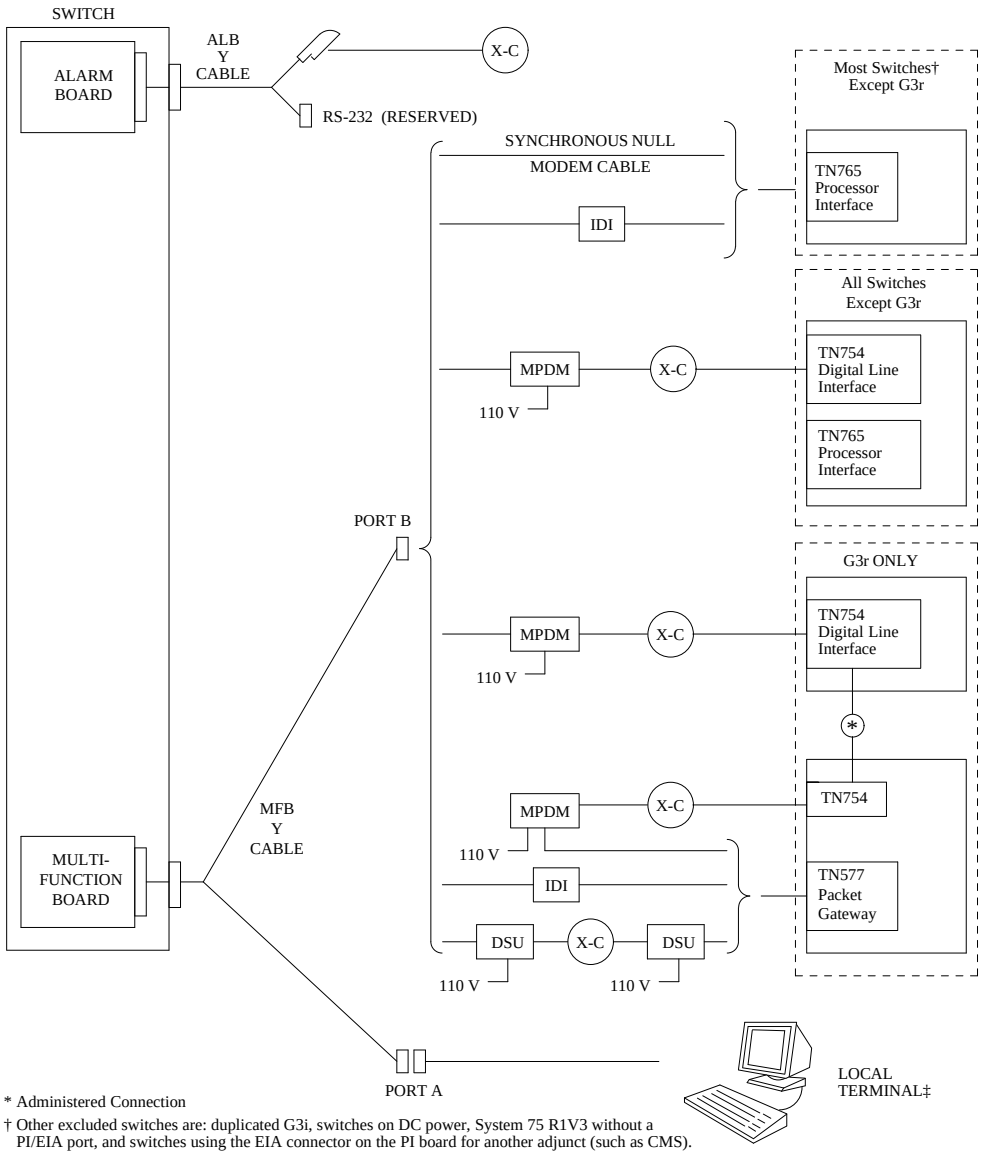
Terminals that can be connected locally or remotely to the DEFINITY AUDIX System include: 715 BCT (shipped with new DEFINITY AUDIX Systems);

513 BCT; 4410; 5410; 4425; 5425; 4415; 610 and 615 (using 513, 4410, or 4425 emulation cartridge only); PC (using 513 or 4410 emulation package); the Cross-Talk software tool or the Terranova software tool (via 513 emulation).

When the system is operating in Control Link mode, Port A on the MFB Y-cable provides the connection to the maintenance (and administration) terminal. The other connector is attached to the switch.

When the system is operating in Display Set mode, Port B on the MFB Y-cable is connected to the maintenance (and administration) terminal. The other connector is attached to the switch.

Figure 1-4, shows the terminal configurations available with a DEFINITY AUDIX System in CL mode



* Administered Connection

† Other excluded switches are: duplicated G3i, switches on DC power, System 75 R1V3 without a PI/EIA port, and switches using the EIA connector on the PI board for another adjunct (such as CMS).

‡ If ADAP software is used on this terminal, the administrator must have dial-up capabilities. The terminal must therefore be connected to PORT A via a modem connection.

Figure 1-4. Control Link and Terminal Configurations — CL Mode

Figure 1-5, shows the terminal configurations available with a DEFINITY AUDIX System in DS mode.

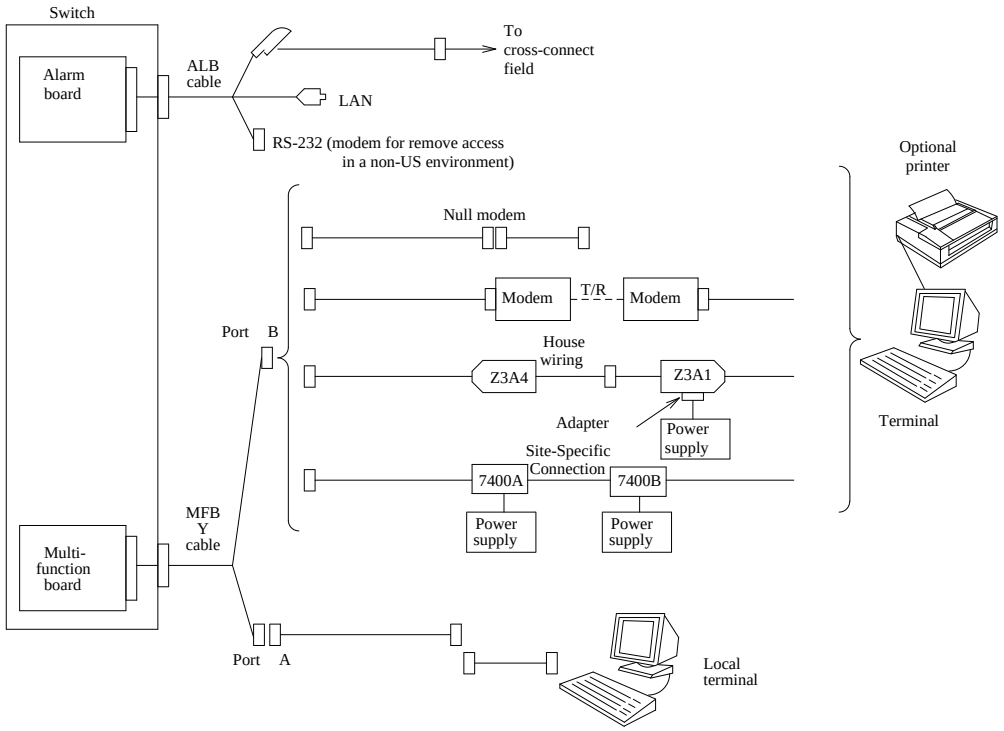


Figure 1-5. Terminal Configurations — DSMode

The AT&T 470, 570, and 580 series of printers can be used optionally with the maintenance and administration terminal when hard-copy readouts are needed. Table 1-5, Maintenance Terminal Hookups, lists the general requirements of these terminals when hooked up locally or remotely. Always refer to the terminal and printer manuals that accompany each machine to make cable connections, set up option settings, and program function keys.

Table 1-5. Maintenance Terminal Hookups

Local RS-232C Hookup (Direct Connection)	Remote RS-232C Hookup (Through External Modem)	Tip/Ring Hookup (Through Internal Modem)
Baud Rate: ■ 9600	**NOTE: This connection is presently not used**	*Baud Rates:* ■ 1200 ■ 2400 (default) (Press BREAK key to change)
Option settings:(On all terminals) ■ Send Parity = space ■ Check Parity = no ■ RETURN key = CR ■ Newline on LF = no ■ ENTER key = ec[2a (ec is ESCAPE key)	*Baud Rates:* ■ 1200 ■ 2400 (default) (Press BREAK key to change) ■ 4800 ■ 9600	*Option settings: (On all terminals)* ■ Send Parity = space ■ Check Parity = no ■ RETURN key = CR ■ Newline on LF = no ■ ENTER key = ec[2a (ec is ESCAPE key)
Printer option settings: ■ Speed = 1200 ■ Printer Model = 470 (for a 475 or 572 also) ■ Flow Control = DC1DC3 (XON/XOFF) ■ Alarm = pin 20 (or none)	*Option settings: (On all terminals)* ■ Send Parity = space ■ Check Parity = no ■ RETURN key = CR ■ Newline on LF = no ■ ENTER key = ec[2a ■ (ec is ESCAPE key)	*Printer option settings:* ■ Speed = 1200 ■ Printer Model = 470 (for a 475 or 572 also) ■ Flow Control = DC1DC3 (XON/XOFF) ■ Alarm = pin 20 (or none)

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Table 1-5. Maintenance Terminal Hookups — *Continued*

Local RS-232C Hookup (Direct Connection)	Remote RS-232C Hookup (Through External Modem)	Tip/Ring Hookup (Through Internal Modem)
Accesses: ■ AUDIX screens ■ MFB Flashware ■ Operating System Shell ■ Standalone Tape ***Utilities***	*Printer option settings:* ■ Speed = 1200 ■ Printer Model = 470 (for a 475 or 572 also) ■ Flow Control = DC1DC3 (XON/XOFF) ■ Alarm = pin 20 (or none) *Accesses:* ■ AUDIX screens ■ MFB Flashware ■ Alarm Board Processor ■ Operating System Shell ■ Standalone Tape Utilities ■ Dedicated port for Alarm Origination calls to RSC and calls to assigned AUDIX extension (incoming and outgoing calls cannot be made simultaneously)	*Accesses:* ■ AUDIX screens ■ MFB Flashware ■ Alarm Board Processor ■ Operating System Shell ■ Standalone Tape Utilities ■ Dedicated port for Alarm Origination calls and calls to assigned AUDIX extension (incoming and outgoing calls cannot be made simultaneously)

Because the 715 BCT is shipped with all new DEFINITY AUDIX systems, specific options for setting it up are included in Table 1-6, 715 BCT Port Options. Port 1 is the (parallel) printer port. Port 2 is used to connect the local maintenance terminal (LCT) cable. To turn on the printer, use the *User Preference* screen. For a complete list of options, refer to Appendix B in *DEFINITY AUDIX System — Installation*, 585-300-111, or to the terminal manual that accompanies the 715 BCT.

Table 1-6. 715 BCT Port Options

Port 2	Port mapping	Port 1
Host	Port service	Printer
4800	Baud rate	4800
1 bit	Stop bit	1 bit
7 bits	Data bits	7 bits
Even	Send parity	Even
No	Check parity	No
Off	Local echo	
Off	Encoding	
Xon/Xoff	Generate flow	Xon/Xoff
Xon/Xoff	Receive flow	Xon/Xoff
240	X off at	240
No	Transmit limit	
Yes	Answer back on connect	
Main	Clear communications port	Auxiliary

Maintenance Screens and Usage

You will access screens that are similar to those used with System 75. These screens use a verb-to-object approach. Refer to Figure 1-6, *Screen Layout*, for a sample screen layout (screens used for maintenance are described later).

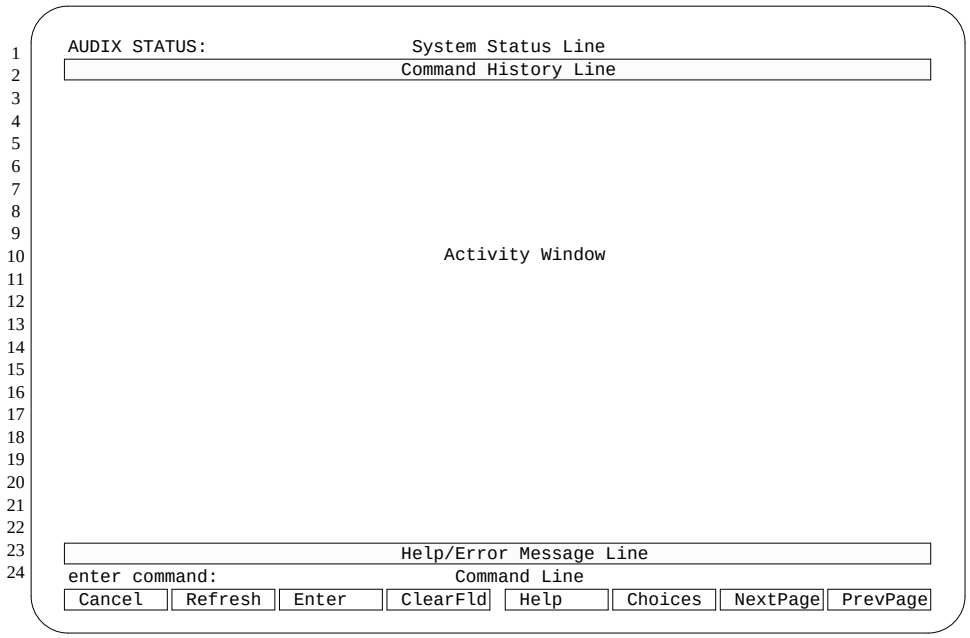


Figure 1-6. Screen Layout

Screen Accessing

Table 1-7, Screen Usage, describes the information that appears on the DEFINITY AUDIX screen shown above when you access a DEFINITY AUDIX System.

Table 1-7. Screen Usage

Screen Area	Definition
Status Line	Shows: ■ `alarms:` `w` (Warning); `M` (Major); `m` (Minor); `A` (Administrative) ■ `logins:` `1` (one terminal); `2` (two terminals); `3` (three terminals) ■ thresholds: — `lower:` Indicates that the lower preset space threshold across all *voice text* filesystems has been exceeded, for example, 50% (default 75%). — `middle:` Indicates that the middle preset space threshold across all *voice text* filesystems has been exceeded, for example, 60% (default 85%). — `upper:` Indicates that the upper preset space threshold across all *voice text* 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 (forms 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

Continued on next page

Table 1-7. Screen Usage — *Continued*

Screen Area	Definition
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 (CONTROL 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 (CONTROL L) `Refresh` — Repaints the screen. ■ F3 (CONTROL 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 (CONTROL K) `ClearFld` — Clears an entire field in a screen or a single keyword from the command line. ■ F5 (CONTROL 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 (CONTROL 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 (CONTROL N) `NextPage` — Navigates forward through multiple-page screens, reports, or help and back to the first page. ■ F8 (CONTROL P) `PrevPage` — Navigates backward through multiple-page screens or help and to the last page from the first page.

Maintenance Login Procedure

For a normal login, you type **cust**, **craft**, or **tsc** at the prompt, and press RETURN .

NOTE:
If you cannot log in, first check terminal power, connections, settings, and modem speed if you are connected via a modem. If the modem appears to be locked up, type * @; this may fix the remote access problem. If you still cannot reach the DEFINITY AUDIX System, call the switch administrator. Is the switch working? Can the administrator call into the system? A technician may have to be dispatched to the site.

When the DEFINITY AUDIX System is rebooted, a login prompt appears briefly, followed immediately by the following lines:

```
System name: audix

login: Phase 2 file check PASSED
Phase 3 file check PASSED
Phase 4 file check PASSED
Phase 5 file check PASSED
DOTRACE=yes
TRACELOG=/var/spool/audix/tracelog
TRACECMD=-s 60 -o /var/spool/audix/tracelog.a -o
                     /var/spool/audix/tracelog.b
TRACEOUTPUT=/dev/null
Save output to Trace process
OLDTRACELOG=/var/spool/audix/oldtrace
```

When the last line appears, press RETURN. You will get another login prompt. At this point, you can log in normally.

Forms You Will Use

Table 1-8, Maintenance Screens and Their Use, lists the screens that will allow you to maintain, repair, and diagnose a DEFINITY AUDIX System from the local or remote maintenance terminal.

Once you are logged into the system, type the name of the screen and press RETURN . If needed, refer to the HELP for each screen to ensure proper action.

Table 1-8. Maintenance Screens and Their Use

Form/Available Logins	Purpose
`display alarms` **`craft`** (onsite technician) **`cust`** (Customer)	Displays active or resolved *MAJOR, MINOR*, or *WARNING* alarms. Indicates by resource type what part of a DEFINITY AUDIX System may be faulty, and when and if it was automatically resolved. Can be activated if the system is in administrative shutdown mode. Troubleshoot the first alarm listed, as this may resolve the other alarms. Problems are listed in this manual according to resource type.
`display errors` **`craft`** (onsite technician)	Lists errors that occur during automatic inline and maintenance procedure testing. Repeated errors will set an alarm. Can be activated if the system is in administrative shutdown mode.
`display events` **`craft`** (onsite technician)	Lists all reported maintenance events including inline errors, maintenance procedure failures, alarms, and errors. An entry is made in this log whenever a transition is made into or out of the AUDIX or OA&M state. Maintenance engineers use this when the system needs an in-depth diagnosis.
`display/restore backups tsc` **`craft`** (onsite technician) **`cust`** (Customer)	Display backups lists up to 32 system backups that are made from disk to tape on a nightly and weekly basis. Backups include those done automatically and manually, and also include announcements, voice filesystems, Lucent software, and system (panic/crash) dumps. **NOTE:** Restore backups restores a complete backup from the tape to the disk. This action can only be done in the OA&M state.
`display administration-log` **`craft`** (onsite technician) **`cust`** (Customer)	DEFINITY AUDIX administration alarms reported to maintenance. Reports the date, time, and type of alarm. (‘ Chapter 10 for a list of alarm messages and repair actions.)

Continued on next page

Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
display/change switch-link **craft** (onsite technician) **cust** (Customer)	For CL mode, display/change the Logical Channel, Switch Port, and Data Link for the switches using this DEFINITY AUDIX System. Also, display/change the host switch number and AUDIX machine number known by the switch. For DS mode, display/change the call-answer timeout extension and parameters. Also, display/change the host switch number and AUDIX machine number known by the switch.
display/change link-log **craft** (onsite technician)	Displays the link-log parameters: enable/disable link-log data collection and the maximum number of link-log entries.
display/change network-group	Displays or changes the digital networking ports and extensions The networking ports administered must match the networking ports administered on the switch.

Continued on next page

Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
`status network-group` **`craft cust`**	Displays the status of all network ports. Can be executed from any user id and is available only if the number of purchased networking ports (from the "system-parameters customer-options" form) is greater than 0. Updates the displayed status every 3 seconds until the user presses the CANCEL key. For inactive ports, the State-Reason field is as for the busyout/release commands and the remaining fields are blank. For active ports the status fields are: ■ State-Reason: ISB-IN, ISB-OUT, OSP-C, or OOS-T ■ Machine: name of remote machine to which this port is connected (or "TRANSITION" during call setup) ■ Activity: current activity on the port (TEST-IN, TEST -OUT, ADMIN-OUT, VMAIL-IN, VMAIL-OUT, STATUS-IN, STATUS-OUT, UPDATE-IN, UPDATE-OUT, NAMES-IN, NAMES-OUT ■ Speed: current line speed (64000,56000,19200,9600,4800,2400,1200) ■ Mode: DMI mode (M1,M2,M3)

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Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
`test board (address of board)` **`craft`** (onsite technician)	A demand test that checks the following: ■ Operation of the MFB's major circuitry components (hardware clock, faceplate interface, switch backplane interface, etc.) ■ System time vs. switch time ■ Status of usart devices ■ Operation of switch control link ■ Long test only ■ port test for each administered voice port ■ operation of the MFB's Digital Signal Processor circuits ■ Long or short test (as administered) ■ each administered voice port ■ each administered networking port.
`Test machine (name)` **`craft`** **`cust`**	Places a test call to remote AUDIX machine (name) and sends a test message. Displays call progress and gives a pass-fail indication.
`test board (address of board)` **`craft`** (onsite technician)	A *short* or *long* demand test which checks the alarm board processor, FPROM, RAM, internal modem, transmitter/receiver, and remote access port. The *long* test, if executed remotely, will drop the user who will have to dial back in to see the test results.

Continued on next page

Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
`test tape` **`craft`** (onsite technician) **`cust`** (Customer)	The *short* demand test runs a non-destructive test of the tape drive. The test rewinds the tape, reads a single block at the beginning of the tape, then skips to the end of tape data. Pass/fail results are listed on the screen. The *long* demand test (non-destructive) verifies that data on the tape may be written and read from the tape. ■ Verifies that the working backup tape is in the drive and that enough room exists at the end of the tape to write a test file. ■ If these conditions are met, a file label and test file are written. If not met, the test will terminate with a message on the screen. ■ The tape is rewound, and the data in the test file is checked. The *test tape clean* resets the tape cleaning-interval counter.
`test port` **`craft`** (onsite technician)	A demand test that checks the following: ■ Switch-line response (DS mode only) — Verifies that a DEFINITY AUDIX port can go off-hook, can read the display, and go back on-hook. ■ Message waiting indicator updates (DS mode only) — Verifies that a DEFINITY AUDIX port can update a message waiting light. ■ Dial tone seizure (CL mode only) — Verifies that dial tone is received from the switch when a DEFINITY AUDIX port goes off-hook. This test will not execute until all ports are manually busied out.
`test alarm-origination` **`craft`** (onsite technician)	Indicates the status of the remote access port, then attempts to place a test call to the administered reporting station. The test can be executed remotely, giving the user a chance to put the test in the background and hang up.

Continued on next page

Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
`test switch-link` **`craft`** (onsite technician) **`cust`** (Customer) *(Control Link operation only)*	The *long* demand test checks the complete path to the switch. The *looparound* test checks to an external loopback plug.
`test lan` **`craft`**(onsite technician) **`cust`** (Customer)	The *short* non-destructive demand test verifies that the AUDIX System is connected to the local area network (LAN). It invokes or provides: ■ A readout of the ethernet hardware's checksum/version/hardware id ■ Tests the AUDIX Interaction Server (AIS) software process ■ An external looparound (a test message to see if the normal communication route across LAN is open) The *long* destructive demand test resets and then verifies the LAN connection. It will cause connection failure errors for any active Message Manager users but does not affect voice interface users. Besides performing the *short* tests, it: ■ Kills and restarts the AIS process and its post box ■ Does hardware and firmware looparounds ■ Resets the ethernet chip The *dest {nnn.nnn.nnn.nnn}* non-destructive test executes a UNIX ping of the given address and reports its success or failure on the screen.
`busyout/release switch-link` **`craft`**(onsite technician) **`cust`** (Customer) *(Control Link operation only)*	The *busyout* function places the switch link out of service. The AUDIX switch link stops sending or receiving messages from the switch within five seconds. Retires all alarms against the switch link except for the WARNING alarm indicating it is busied out. The *release* function releases the switch link from craft busyout.

Continued on next page

Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
busyout/release port **craft** (onsite technician)	The *busyout* function places a designated voice port out of service prior to testing (see test port). Retires all alarms against the voice port except for the WARNING alarm indicating it is busied out. The *release* function releases a single voice port after BUSYOUT PORT has been invoked. Release of a voice port does not reset the MFB or alarm board.
busyout/release voice-group **craft** (onsite technician)	The *busyout* function places all voice ports on the DEFINITY AUDIX System out of service. Testing can now take place. Does not retire the alarms against the voice group. The *release* function releases all ports from testing. Voice port locations are displayed on the screen.
status voice-group	The *status voice group* function provides status and translation data for each voice port in the system.
reset system oa&m **craft** (onsite technician) **cust** (Customer)	Takes the system to the OA&M state from the AUDIX state. Entered when core processes of the Multifunction Board must be accessed, or when customer data must be restored. Call activity and subscriber administration become impossible in this state. Using the *camp-on* option stops any new calls from coming in and waits until all calls in progress have completed. The *forced* option idles ports immediately. Customers should first be informed through a broadcast message that the system is being shut down.
reset system shutdown **craft** (onsite technician) **cust** (Customer)	Takes the system to the M_SHUT state from the AUDIX or OA&M state. The shutdown state must be entered prior to powering down the switch carrier. Can be done in a camp-on or forced manner from the AUDIX state. Using the camp-on option is the graceful way to shut down the system. Customers should first be informed through a broadcast message that the system is being shut down. A critical error condition can also bring the system to this state.

Continued on next page

Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
reset system restart **craft** (onsite technician)	Restarts the system software immediately if in the OA&M state, or in a camp-on or forced manner if in the AUDIX state.
reset system reboot **craft** (onsite technician) **cust** (Customer)	Reboots the operating system and restarts software in a camp-on or forced manner if in the AUDIX state, or immediately if in the OA&M state.
change/display voice group	The *change/display* function administers the DEFINITY AUDIX System voice-port extensions and locations.
system-parameters maintenance **craft** (onsite technician) **cust** (Customer)	Used to display or change system parameters such as system location, alarm reporting phone number, alarm origination activation and access, system notes, alarm action matrices, and the maximum number of event log entries.
audit switch-translations **craft** (onsite technician) **cust** (Customer)	A demand audit that examines and updates internal data used by the Service Dispatcher. If the audit finds that no voice port translations exist, an error will be logged that results in the activation of an alarm. Also checks the switch translations database.
audit maintenance-log **craft** (onsite technician) **cust** (Customer)	A demand audit that performs internal checks on maintenance logs. For instance, corrects resource types in the active and resolved alarm logs after a system upgrade.

Continued on next page

Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
audit subscriber-data **craft** (onsite technician) **cust** (Customer)	A demand audit that: ■ Validates the contents of the delivery lists associated with current outgoing messages, and timestamps the profiles of remote subscribers that appear in these lists. ■ Validates fields in class-of-service templates, subscriber profiles, and automated attendant profiles. ■ Counts subscribers. ■ Checks for conflicts between the system guest password and individual subscriber passwords, making an entry in the Admin log if a match exists. ■ Removes subscriber IDs of deleted subscribers from message headers, mailboxes, mailing lists, and personal directories. ■ Deletes remote subscribers. ■ Cross checks extensions, names, touch-tone, user directory, and remote node list translation files for consistency with the subscriber profiles.
audit network-data **craft** (onsite technician) **cust** (Customer)	A demand audit that checks network and machine translations, and displays the results.

Continued on next page

Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
`audit mailboxes` **`craft`** (onsite technician) **`cust`** (Customer)	A demand audit that: ■ Deletes old messages. ■ Clears broadcast deleted messages. ■ Validates mailbox structure and checks for valid message IDs. ■ Logs an error for each local subscriber missing a mailbox, and creates an empty mailbox for that subscriber. ■ Makes space-accounting corrections on a per-subscriber and system basis.
`audit mailing-lists` **`craft`** (onsite technician) **`cust`** (Customer)	A demand audit that: ■ Counts entries on the subscriber mailing lists, and the lists themselves. ■ Examines and updates the system's rescheduling increment administration. ■ Audits the delivery manager queues, and makes deleted subscriber entries undeliverable.
`audit personal-directories` **`craft`** (onsite technician) **`cust`** (Customer)	This demand audit cleans subscribers' personal lists for internal consistency.
`audit names` **`craft`** (onsite technician) **`cust`** (Customer)	This demand audit: ■ Ensures that every voiced name corresponds to a valid subscriber. ■ Logs messages in the Admin log for the first 20 local subscribers who do not have a voiced name.

Continued on next page

Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
`audit voice-files` **`craft`** (onsite technician) **`cust`** (Customer)	This demand audit: ■ Deletes any voice file without a message header. ■ Removes references to nonexistent voice files from each message header.
`audit switch-names` **`craft`** (onsite technician) **`cust`** (Customer)	When the system is in the Display Set mode, builds a map to allow the DEFINITY AUDIX System to derive extensions of calling parties and subscribers. The screen does not do anything when the system is in the Control Link mode, although it can be brought up.
`save nightly` **`craft`** (onsite technician) **`cust`** (Customer)	Used to perform an immediate backup of the data backed up automatically each night. The backup consists of subscriber data including subscriber profiles, message headers, mailing lists, user directory file, and message waiting lamp status. This screen can be activated while in the OA&M or AUDIX state. ■ The **save nightly** command appends the backup to the end of the existing backups on the tape. ■ The **save nightly rewind** command causes the tape to be rewound before the backup begins, and erases all data currently on tape.
`save weekly` **`craft`** (onsite technician) **`cust`** (Customer)	Used to perform an immediate backup of the data backed up automatically on a weekly basis. This backup consists of all voiced-in subscriber names including those of remote subscribers. This screen can be activated while in the OA&M or AUDIX state. ■ The **save weekly** command appends the backup to the end of the existing backups on the tape. ■ The **save weekly rewind** command causes the tape to be rewound before the backup begins, and erases all data currently on tape.

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Table 1-8. Maintenance Screens and Their Use — *Continued*

Form/Available Logins	Purpose
`save announcements` **`craft`** (onsite technician) **`cust`** (Customer)	Used to perform a manual backup of the announcements filesystem. This screen can be activated while in the OA&M or AUDIX state. ■ The **save announcements** command appends the backup to the end of the existing backups on the tape. ■ The **save announcements rewind** command causes the tape to be rewound before the backup begins, and erases all data on tape.
`save voice` **`craft`** (onsite technician)	Used to perform a manual backup of the voice filesystem. This screen can be activated while in the OA&M or AUDIX state. ■ The **save voice** command appends the backup to the end of the existing backups on the tape. ■ The **save voice rewind** command causes the tape to be rewound before the backup begins, and erases all data on tape.
`status switch-link` **`craft`** (onsite technician) **`cust`** (Customer) *(Control Link operation only)*	■ Displays type, speed, and location of switch link. ■ Displays state of operation: *ISB* (In service, busy)

Placing Test Calls

To place a test call, first busyout the DEFINITY AUDIX voice port that you want to test. Then place a priority call to the port extension (check the switch administration for the feature access code for initiating a priority call.) In releases prior to 3.2, a priority call was not required if the DEFINITY AUDIX System was in control link integration mode. In release 3.2, a priority call is always required.

NOTE:
If you cannot place a test call, it may be because the DEFINITY software is down, lines are not connected, or the port you are trying to call into is faulty or out of service. Go to the alarm log.

Maintenance Strategy

2

This chapter briefly discusses normal steps to take when problems occur with the DEFINITY AUDIX System. Feature problems that may be reported by the subscriber are also listed, with possible solutions.

CAUTION:
Many of the repair actions and use of utilities described in the following chapters should not be performed by the customer. Certain procedures may be destructive to the system.

Begin Troubleshooting

Refer to Figure 2-1, *Resolving Alarms*, when trouble calls are placed and alarms will have to be resolved.

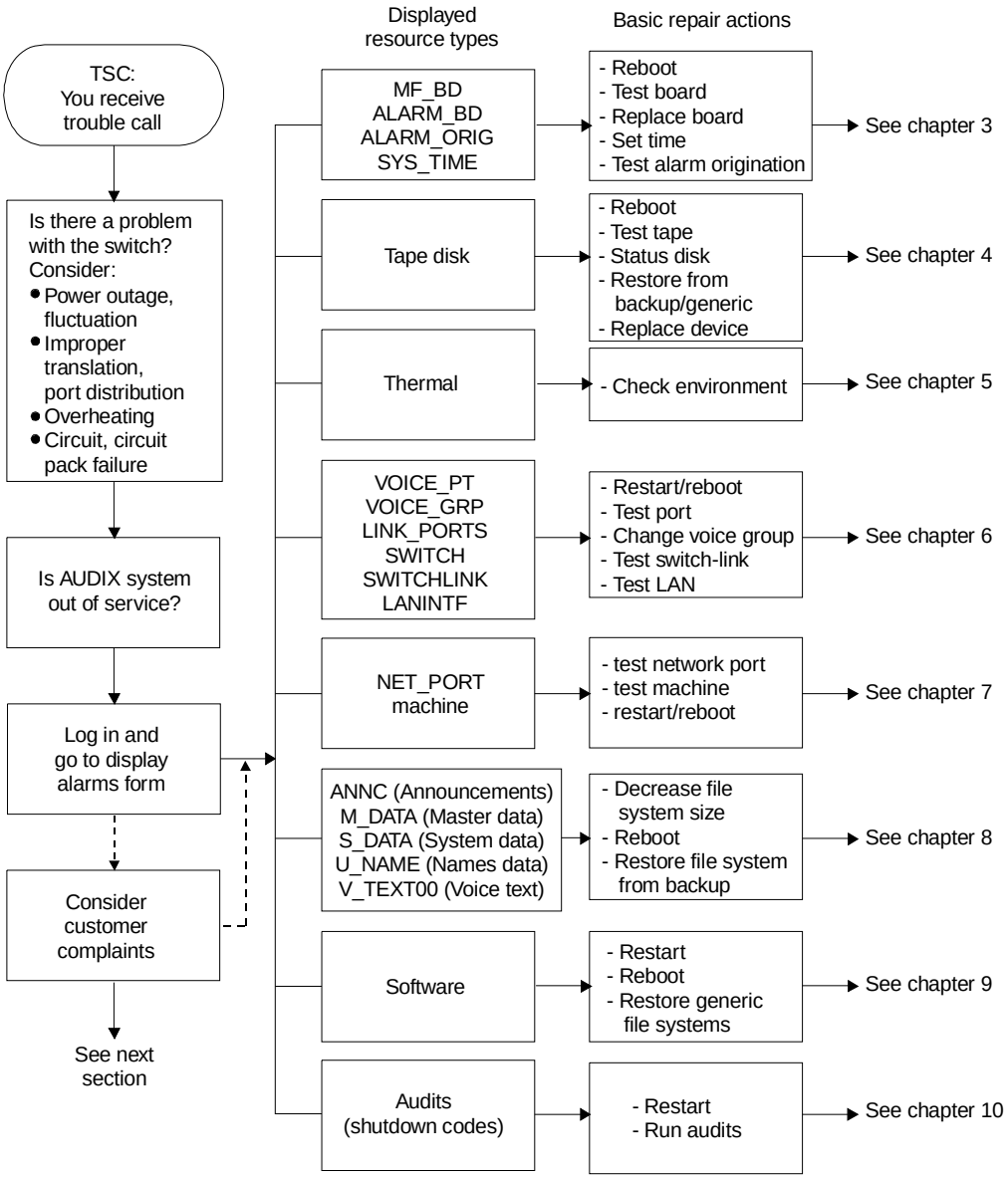


Figure 2-1. Resolving Alarms

Feature Problems Reported by Subscriber

Are DEFINITY AUDIX subscribers reporting feature problems through the system administrator; AUDIX Subscriber; AUDIX System Administrator, AUDIX helpline (RSC)? Table 2-1, *Customer Reported Feature Problems*, lists the most common feature problems the customer may report. In considering these, customer contact may be needed to get more explicit details of the problem.

Table 2-1. Customer Reported Feature Problems

Feature Problem	What to Consider
After dialing the AUDIX extension (for a Voice Mailbox call), a subscriber hears ringback tone but the AUDIX system never answers.	1. Is the switch port open? Place a test call: — Dial the switch extension related to the AUDIX port. — Listen for ringing, go off-hook and verify a dial tone. — Break the dial tone to ensure that the switch port listens. — If a call cannot be placed, check the alarm log. 2. Is a voice port out of service? (Go to Chapter 6.) 3. Is the system clock set? (Go to Chapter 3.) 4. Do filesystems exist? (Go to Chapter 7.) 5. Is the system hardware bad or improperly seated? (Go to Chapter 3.) 6. If the problem persists and no alarms are present, check for errors in the error log. Compare these with past alarms.
A subscriber dials for a Call Answer call, receives a ringback tone, but the AUDIX system never answers.	1. Is the call-coverage translation correct? (Go to Chapter 6.) 2. Is the subscriber set up with Call Answer permission? The administrator should check this. 3. Is the switch port open? Place a test call. If the call cannot be placed, check the alarm log. 4. Have the filesystem thresholds been exceeded? Is the voice text filesystem out of space? (Go to Chapter 7.) 5. Is the disk drive operating? (Go to Chapter 4.) 6. If the problem persists and no alarms are present, check for errors in the error log. Compare these with past alarms.

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Table 2-1. Customer Reported Feature Problems — *Continued*

Feature Problem	What to Consider
The subscriber dials the AUDIX system, but it answers only after many ringings.	1. This is normal during heavy traffic conditions. The subscriber is being placed in a waiting queue. Verify heavy traffic activity by checking the port usage/peg count data on the LIST MEASUREMENTS LOAD HOUR screen. 2. If a port has not been used for some time, check the STATUS VOICE-GROUP screen to verify that ports are in service. 3. Check the CHANGE/DISPLAY VOICE-GROUP screen to see if voice port locations and extensions are correct. 4. If the problem persists and no alarms are present, check the error log for any voice-group errors. (Go to Chapter 6.)
The subscriber dials the AUDIX system and hears static or abnormal noise.	1. Is the call internal or external? If external, the local telephone facilities need to deal with this. 2. Run the TEST BOARD LONG (MFB).
When making a Voice Mail or Call Answer call, the subscriber is connected to the AUDIX system but receives no system announcements, wrong announcements, garbled announcements, or announcements out of order.	1. If the problem occurs rarely or occasionally, check for a faulty AUDIX port. 2. If bad announcements occur frequently or always, the system may not be able to access the Storage filesystem. (Go to Chapter 7.) — Check the DISPLAY ANNOUNCEMENT screen for active announcements. If this field is empty, recover the filesystem from the backup tape. (Go to Chapter 7.) — If the filesystem appears intact, check the status of the disk using the STATUS DISK screen. (Go to Chapter 3.)
The subscriber's message waiting lamp (MWL) may not light or extinguish properly.	■ *The lamp does not light in response to a sent message:* Place a test call to check the switch voice port. Also check that MWL translations are correct. (See *DEFINITY AUDIX System — Installation*, 585-300-111.) ■ *The lamp does not extinguish*: Check the MWL translations for the subscriber's phone.
When scanning messages, the subscriber may hear "There is no message to play back." On a Call Answer call, this announcement may be followed by a standard system greeting instead of a personal greeting.	1. Check the DISPLAY ALARMS/ERRORS logs for a corrupted voice text filesystem (Go to Chapter 7) or a bad disk. (Go to Chapter 4.) 2. Check the logs for intermittent errors and alarms (those that resolve themselves and then become active again).

Continued on next page

Table 2-1. Customer Reported Feature Problems — *Continued*

Feature Problem	What to Consider
When trying to create a message, the subscriber hears "There is no room in your mailbox."	1. The subscriber should delete unneeded messages in response to the warning message. 2. If the subscriber's mailbox is not full, the system administrator should check the subscriber's maximum message lengths. Also, minimum requirements for subscribers should be checked. 3. Check for extra voice data and text files in the Storage filesystem. (Go to Chapter 7.)
The subscriber receives a reorder tone (fast-busy) after dialing the system.	1. Will occur if you were working on the AUDIX system and all the voice ports were busied out. 2. Will occur if you were not doing service, but the system was out of service because of a restart. Check the alarm and error logs for restart errors. (Go to Chapter 3 for hardware errors and Chapter 8 for software errors.) 3. Check the logs for intermittent errors and alarms. 4. Check the hunt group translations.
A CL-mode system answers in standalone mode (subscriber hears "Use touchtones to reenter the number you called").	1. Check the STATUS SWITCH-LINK screen to see that the datalink is in-service and in data-transfer. 2. Check the switch translations, particularly the message center field to ensure it is set to *audix* in the hunt group.
A subscriber complains that voice mail messages are not being sent to users on a remote system.	1. Use DISPLAY REMOTE to determine to which remote machine the user is sending. 2. Use LIST MEASUREMENTS REMOTE MACHINE DAY to determine if any messages are being sent or received to or from that machine. 3. Use TEST MACHINE (NAME) to place a test call to that machine. If it fails, check the phone number and switch translations or if ok, the trouble may be in the remote machine.

Circuit Packs

3

TN566B and TN567 Multifunction Board

Table 3-1, Alarms And Repair Procedures, lists alarms and repair procedures addressed to the Multifunction Board (MFB). Repair actions are performed one at a time until the problem is solved. If the problem reoccurs, refer to Table 3-2, MFB ERRORS, to better understand the errors that may be triggering the alarms.

Alarms appear in the DISPLAY ALARMS screen under the resource type:

MF_BD

Table 3-1. Alarms And Repair Procedures

100	Unable to pump DSP Parallel Controller	MAJOR	DSP_SUBSYS	— Invoke RESET SYSTEM REBOOT. If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace the MFB.
101	Failed to configure Voice Buffer driver	MAJOR	DSP_SUBSYS	
102	DSP Parallel Controller process died	MAJOR	DSP_SUBSYS	Used internally. Alarm is never active.
103	Process error	No alarm	DSP_SUBSYS	
200	Firmware detected faulty Digital Signal processor	MAJOR	DSP_VOICE	Replace MFB.

Continued on next page

Table 3-1. Alarms And Repair Procedures — *Continued*

201	Digital Signal Processor failed tone test	MAJOR	DSP_VOICE	— Invoke test board long (MFB). — Replace MFB..
202	Reached maximum repumps allowed	MAJOR	DSP_VOICE	— System resets Digital signal Processor automatically. — Invoke test board long (MFB) — Invoke reset system reboot. — If system alarm reoccurs, replace MFB.
203	Digital Signal Processor failed	MAJOR	DSP_VOICE	
204	Process error reported	MAJOR	DSP_VOICE	— System resets Digital signal Processor automatically. — If system alarm reoccurs, replace MFB.
205	Digital Signal Processor kernel fatal error	MAJOR	DSP_VOICE	— System resets Digital signal Processor automatically. — If system alarm reoccurs, replace MFB.
206	Digital Signal Processor kernel fault	MAJOR	DSP_VOICE	
207	Digital Signal Processor insane	MAJOR	DSP_VOICE	
208	Digital Signal Processor voice port fault	MAJOR	DSP_VOICE	
300	Going to M_SHUT	No alarm	EMB_MFB	Used internally. Alarm is never active.

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Table 3-1. Alarms And Repair Procedures — *Continued*

301	Restarting system	MAJOR	EMB_MFB	— Invoke RESET SYSTEM REBOOT. — If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace the MFB.
302	Restart w/o angel initialization	MAJOR	EMB_MFB	
303	Go to OA&M	MAJOR	EMB_MFB	
304	Flashware tests failed	MAJOR	EMB_MFB	Shut down the system via the console or by using the shutdown button, and replace the MFB.
305	Clock Hardware failed	MAJOR	EMB_MFB	— Run TEST BOARD LONG [MF_BD] — If the alarm is still active, alert the RSC.
306	Initialization angel failed	MAJOR	EMB_MFB	— If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace MFB. — If system initializes to OA&M state, boot from the generic tape. — If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace MFB.

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Table 3-1. Alarms And Repair Procedures — *Continued*

307	Time-Division Multiplexing clock failed	MAJOR	EMB_MFB	— Verify the TDM clock is operational on the switch. — If the switch TDM clock is operational, invoke RESET SYSTEM RESTART. — If system does not return to AUDIX state, or error/fault reoccurs, restore from the generic tape. — If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace MFB.
308	Angel problem in KDB	MAJOR	EMB_MFB	System reboots.
309	Sanity timer update	MAJOR	EMB_MFB	— Restore the generic partitions. — If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace MFB.
310	NVRAM battery too high	MAJOR	EMB_MFB	— Run TEST BOARD SHORT (MFB). — Shut down the system via the console or by using the shutdown button, and replace the MFB.
311	NVRAM battery too low	MINOR	EMB_MFB	Shut down the system via the console or by using the shutdown button, and replace the MFB.
312	Time Slot Controller bad	MAJOR	EMB_MFB	— Verify the TDM clock is operational on the switch. — If the switch TDM clock is operational, shut down the system via the console or by using the shutdown button, and replace the MFB. — If the problem reoccurs, check the switch TDM clock.

Continued on next page

Table 3-1. Alarms And Repair Procedures — *Continued*

313	386 flashware reprogramming aborted	WARNING	ALARM_BD	Inspect the **/usr/add-on/audix/lib/pumpware/fw386/reprog.out** file. This file will contain the reason code for why reprogramming aborted or failed. Refer to the *Flashware Reprogramming Failures* section in the *maintenance engineers' Maintenance* manual.
314	386 flashware reprogramming failed	WARNING	ALARM_BD	
315	FAC flashware reprogramming aborted	WARNING	ALARM_BD	Inspect the **/usr/add-on/audix/lib/pumpware/fac/reprog.out** file. This file will contain the reason code for why reprogramming aborted or failed. Refer to the *Flashware Reprogramming Failures* section in the *maintenance engineers' Maintenance* manual.
316	FAC flashware reprogramming failed	WARNING	ALARM_BD	
317	386 flash PROM checksum error	MAJOR	ALARM_BD	If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace the MFB.
318	Not enough memory	MAJOR	EMB_MFB	Replace the TN566 with a TN566B.
319	TN567 configuration	MAJOR	EMB_MFB	ReplaceTN566B with TN567.
600	SCSI protocol failure	MAJOR	SCSI_CHIP	— Shut down the system and check the SCSI bus cables. — If system is in the AUDIX state, invoke RESET SYSTEM REBOOT. — If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace the disk drive. — If system still does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace the MFB.
601	SCSI hardware diagnostic	MAJOR	SCSI_CHIP	

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Table 3-1. Alarms And Repair Procedures — *Continued*

800	Loop-back failed	MAJOR	SYNC_PT	— Execute TEST SWITCH-LINK LONG. — As a last resort, replace the MFB.
900	FW detected DSP fault	MAJOR	DSP_NETor MF_BD??	— Invoke RESET SYSTEM REBOOT.. If error persists, replace MFB.
901	DSP failed tone test	MAJOR	DSP_NET	— If MF_BD alarm 312 active see its repair actions. Otherwise run test again, and if error persists replace MFB.
902	DSP died	MAJOR	DSP_NET	— Invoke TEST NETWORK-PORT XXXX LONG for network port served by the faulted DSP. — Busyout VOICE-GROUP and all network ports, then invoke TEST BOARD XXX LONG for the MFB. Observe results of MFB tone test. — Invoke RESET SYSTEM REBOOT. — Replace MFB
903	DSP died	MAJOR	DSP_NET	— Invoke TEST NETWORK-PORT XXXX LONG for network port served by the faulted DSP. — Replace MFB.
904	Proc error reported	MAJOR	DSP_NET	Same as alarm 903
905	DSP kernel fatal error	MAJOR	DSP_NET	— Same as alarm 903
906	DSP kernel fault	MAJOR	DSP_NET	— Same as alarm 903
907	DSP insane	MAJOR	DSP_NET	— Same as alarm 903
908	DSP net port fault	MAJOR	DSP_NET	— Same as alarm 903

Table 3-2, MFB ERRORS, lists the errors logged in the DISPLAY ERRORS screen. These errors, if incremented enough times, may generate the above alarms. Note that pseudonyms of listed error resources may appear on the error log; these "hidden" resources are listed in parenthesis with their related resources.

Table 3-2. MFB ERRORS

DSP_SUBSYS	80	Initialization MP 17 aborted (pumps DPC chip to program it)	MF_BD	100
DSP_SUBSYS	80	Initialization MP 20 aborted (configures DSP driver)	MF_BD	101
DSP_SUBSYS	80	Initialization MP 21 aborted (configures VB driver)	MF_BD	102
DSP_SUBSYS	81	Diagnostic MP 17 failed (pumps DPC chip to program it)	MF_BD	100
DSP_SUBSYS	81	Diagnostic MP 20 failed (configures DSP driver)	MF_BD	101
DSP_SUBSYS	81	Diagnostic MP 21 failed (configures VB driver)	MF_BD	102
DSP_SUBSYS	81	Diagnostic MP 21 failed (configures VB driver)	MF_BD	103
DSP_SUBSYS	81	Diagnostic MP 21 failed (configures VB driver)	MF_BD	104
DSP_SUBSYS	81	Initialization MP 17 failed (pumps DPC chip to program it)	MF_BD	100
DSP_SUBSYS	81	Initialization MP 20 failed (configures DSP driver)	MF_BD	101
DSP_SUBSYS	81	Initialization MP 21 failed (configures VB driver)	MF_BD	102
DSP_SUBSYS	112	Process died	MF_BD	103
DSP_SUBSYS	116	Process error	MF_BD	104
DSP_VOICE	14	DSP failed MF_BD tone test	MF_BD	207
DSP_VOICE	80	Initialization MP 16 aborted (pump/configure DSP chip for voice)	MF_BD	201
DSP_VOICE	81	Diagnostic MP 16 failed (pump/configure DSP chip for voice)	MF_BD	200
DSP_VOICE	81	Diagnostic MP 16 failed (pump/configure DSP chip for voice)	MF_BD	201
DSP_VOICE	81	Initialization MP 16 failed (pump/configure DSP chip for voice)	MF_BD	201
DSP_VOICE	112	Process died	MF_BD	201
DSP_VOICE	116	Process error	MF_BD	202
DSP_VOICE	340	DSP kernel fatal error	MF_BD	203
DSP_VOICE	341	DSP kernel non-fatal error	MF_BD	204
DSP_VOICE	342	DSP kernel maintenance error	MF_BD	205
DSP_VOICE	343	DSP non-fatal voice port error	MF_BD	206
DSP_VOICE	350	DSP passed MFB Tone Test	MF_BD	200
(DSP_CHAN)				
EMB_MFB	80	Initialization MP 103 aborted (check FAC reprogramming)	MF_BD	315
EMB_MFB	80	Initialization MP 104 aborted (check 386 reprogramming)	MF_BD	313
EMB_MFB	80	Initialization MP 106 aborted (test FAC reprogramming)	MF_BD	316
EMB_MFB	80	Initialization MP 107 aborted (test 386 reprogramming)	MF_BD	314
EMB_MFB	80	Initialization MP 111 aborted (query state of TDM clock)	MF_BD	307
EMB_MFB	80	Initialization MP 18 aborted (initialize angel process)	MF_BD	306

Continued on next page

Table 3-2. MFB ERRORS — *Continued*

EMB_MFB	80	Initialization MP 34 aborted (check flashware tests on MFB)	MF_BD	304
EMB_MFB	81	Initialization MP 52 failed (check hardware time against system time)	MF_BD	305
EMB_MFB	81	Diagnostic MP 116 failed (initialize angel)	MF_BD	304
EMB_MFB	81	Diagnostic MP 73 failed (restart system)	MF_BD	301
EMB_MFB	81	Diagnostic MP 83 failed (restart system in OA&M mode)	MF_BD	303
EMB_MFB	81	Diagnostic MP 97 failed (restart after faceplate shutdown)	MF_BD	300
EMB_MFB	81	Initialization MP 103 failed (check FAC reprogramming)	MF_BD	315
EMB_MFB	81	Initialization MP 104 failed (check 386 reprogramming)	MF_BD	313
EMB_MFB	81	Initialization MP 106 failed (test FAC reprogramming)	MF_BD	316
EMB_MFB	81	Initialization MP 107 failed (test 386 reprogramming)	MF_BD	314
EMB_MFB	81	Initialization MP 111 failed (query for state of TDM clock)	MF_BD	307
EMB_MFB	81	Initialization MP 18 failed (initialize angel process)	MF_BD	306
EMB_MFB	81	Initialization MP 34 failed (check flashware tests on MFB)	MF_BD	304
EMB_MFB	81	Long demand sequence MP 54 failed (long sequence hardware/system time check)	MF_BD	305
EMB_MFB	81	Periodic MP 102 failed (gets update of sanity driver)	MF_BD	309
EMB_MFB	81	Scheduled MP 52 failed (check hardware time against system time)	MF_BD	305
EMB_MFB	81	Short demand sequence MP 53 failed (short sequence hardware/system time check)	MF_BD	305
EMB_MFB	90	NVRAM battery voltage not too low	MF_BD	311
EMB_MFB	90	Obviously the voltage is not too high	MF_BD	310
EMB_MFB	90	Obviously the voltage is not too low	MF_BD	311
EMB_MFB	118	BOOT/SHUTDOWN button pressed	MF_BD	300
EMB_MFB	218	Time slot controller slipped	MF_BD	312
EMB_MFB	219	Switch TDM clock recovered	MF_BD	307
EMB_MFB	224	No response from angel	MF_BD	302
EMB_MFB	226	Error reading angel DPRAM	MF_BD	302
EMB_MFB	227	Illegal angel interrupt code	MF_BD	302
EMB_MFB	228	Angel reported bad board ID	MF_BD	302
EMB_MFB	229	Angel problem in KDB mode	MF_BD	308
EMB_MFB	231	Invalid angel DPRAM message	MF_BD	302
EMB_MFB	234	SAKI reset detected (restart system)	MF_BD	301
EMB_MFB	237	Switch TDM clock failed	MF_BD	303

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Table 3-2. MFB ERRORS — *Continued*

EMB_MFB	321	NVRAM battery voltage too high	MF_BD	310
EMB_MFB	322	NVRAM battery voltage too low	MF_BD	311
EMB_MFB	323	NVRAM battery voltage not too high	MF_BD	310
EMB_MFB	329	BOOT/SHUTDOWN button pressed	MF_BD	300
EMB_MFB	374	Not enough memory	MF_BD	318
EMB_MFB	8857	386 Flash PROM checksum error	MF_BD	317
(MF_BD)				
(RT_ANGEL)				
SCSI_CHIP	1	Unexpected interrupt	MF_BD	601
SCSI_CHIP	3	Abnormal script interrupt	MF_BD	601
SCSI_CHIP	4	Abnormal SIOP DMA interrupt	MF_BD	601
SCSI_CHIP	5	SIOP SCSI interrupt (abnormal)	MF_BD	601
SCSI_CHIP	10	No TC found after reconnect interrupt	MF_BD	601
SCSI_CHIP	13	Spurious interrupt	MF_BD	601
SCSI_CHIP	14	SIOP failed HW diagnostics	MF_BD	600
SCSI_CHIP	15	No abort status after forced abort	MF_BD	601
SCSI_CHIP	16	HW driver command failed	MF_BD	601
SCSI_CHIP	35	SCSI bus has been reset	MF_BD	601
SCSI_CHIP	39	Invalid interrupt before abort	MF_BD	601
SCSI_CHIP	81	Long demand sequence MP 4 failed (generates equipped device table)	MF_BD	600
SCSI_CHIP	81	Short demand sequence MP 4 failed (generates equipped device table)	MF_BD	600
(IODEV)				
(SCSI_BUS)				
SYNC_PT	367	USART failed loop-back test	MF_BD	800
SYNC_PT	368	USART passed loop-back test	MF_BD	800
Body				

Table 3-3, Test MFB Board Results, lists test names and results whenever a short or long TEST BOARD (MFB) is performed, and possible repair actions.

Table 3-3. Test MFB Board Results

Test H/W Time *(Short and long tests)*	P TIM_DIF=nn			Hw/sw nn seconds off (OK)
		F NV_BAT_LOW_OR_HI		Replace MFB
		F RTC_STOPPED!		Replace MFB
		F CHK_NV_BAT_FAIL		System (fac) error (call RSC)
			A F_RTC_OPN nn	System error (call RSC)
			A F_RTCRTIME nn	System error (call RSC)
			A F_RTC_CLS nn	System error (call RSC)
		F RTC_CNVT_FAILED		System error (call RSC)
			A F_ADXTMRQ nn	System error (call RSC)
(Long test only)		F F_RTC_YEAR nn		System error (call RSC)
		F F_CH_SYSTM nn		Couldn't set system time
Check FAC stat	P FAC_SANE			
		F FPROM_CHKSM_FAIL		Replace MFB
		F INTERNAL_RAM_FAIL		Replace MFB
		F IIC_BUS_FAIL		Replace MFB
		F EXTERNAL_RAM_FAIL		Replace MFB
		F DPRAM_FAIL		Replace MFB
			A FAC_OPN nn	System (kernel) error (call RSC)
			A FACST nn	System (kernel) error (call RSC)
			A FAC_CLS nn	System (kernel) error (call RSC)
Test Angel	P Passed			
		F Failed		Various failure conditions

Continued on next page

Table 3-3. Test MFB Board Results — *Continued*

Tone Test	P PPPPPP			All dsps OK
		F PPFPPP		F's indicate bad dsps
			A No Alists	System error (call RSC)
		F Can't stat rscs		System error (call RSC)
			A Voice Grp not busied	Busyout voice group, try again
		F angel open fail		System error (call RSC)
		F NPE write fail		System error (call RSC)
		F task error		System error (call RSC)
Test SCSI SIOP	P Passed			
		F Failed		Check tape/disk tables
			A Aborted	Check tape/disk tables
Tst Adx vs Sw Time	Passed			
		F Invalid Switch year		Fix time on switch
		F TIM_DIF_OUT_BNDS		Switch & audix time difference is greater than 15 min.
(Control link only)			A Switch link unavail	Try again later
			A Failed:See Error Log	(Actually aborted) See error log
			A Failed:No Response	(Actually aborted) Switchlink down?
			A Failed:System Error	(Actually aborted) Try restart, call RSC

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Table 3-3. Test MFB Board Results — *Continued*

(Display set only)			A All Ports are busy	Check switch ports. Try again later
			A CNV_SW_TIM_ FAIL	System error (call RSC)
			A F_ADXTMRQ nn	System error (call RSC)
Test UART	P Passed			
	P DCD_INACTIVE			
		F DSR_INACTIVE		
		F DUCSS_CLOSE_FAILED		System error (call RSC)
		F DUSCC_OPEN_FAILED		System error (call RSC)
		F DUSCC_IOCTL_FAILED		System error (call RSC)

NOTE:
See Chapter 6, Voice, Control, and LAN Links, and LAN for voice port tests.
See Chapter 7, Digital Networking for network port tests.

TN2170 or TN2169 ALARM BOARD

Refer to Table 3-4, Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to the Alarm Board (ALB). Repair actions are performed one at a time until the problem is solved. Alarms appear in the DISPLAY ALARMS screen under the resource type:

ALARM_BD

Table 3-4. Alarms and Repair Procedures

0	Alarm board processor hardware bad	MINOR	ALARM_BD	— Run TEST BOARD (ALB). — Reseat the system. — Invoke the RESET SYSTEM SHUTDOWN screen and replace the ALB.
1	Remote access port failure	MINOR	ALARM_BD	— Check the administered command string. — Plug in a headset and listen for a dial tone on the analog tip/ring. — Use TEST ALARM-ORIGINATION command for placing test calls. — Check the modem settings and power the modem on/off. — Verify that the cabling between the modem and the switch is connected and functional. — Replace the modem. — Reseat the system. — Replace the ALB.
2	ALB processor and Faceplate and Alarm Controller Interboard bus cable is bad. When the cable is bad, the ALB will also look insane.	MINOR	ALARM_BD	— This can be a problem with the MFB, ALB, or the cabling between them. If the heartbeat on the faceplate LCD is flashing, the bus on the MFB is okay. — Run TEST BOARD (ALB). — If this does not resolve the alarm, shut down the system. — Remove the system and check the cabling between the MFB and ALB. — Replace the MFB. — Replace the ALB.

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Table 3-4. Alarms and Repair Procedures — *Continued*

3	ALB processor is insane. This can be caused by a hardware fault on the ALB or a problem with the resident flashware.	MINOR	ALARM_BD	— Reseat the system. — Replace the ALB.
4	Remote console is active	WARNING	ALARM_BD	When the remote console is disconnected, this alarm is resolved.
5	ALB flashware reprogramming aborted	WARNING	ALARM_BD	Inspect the **/usr/add-on/audix/.lib/pumpware/alb/reprog.out** file. This file will contain the reason code for why reprogramming aborted or failed. Refer to the *Flashware Reprogramming Failures* section in the *maintenance engineers' Maintenance* manual.
6	ALB flashware reprogramming failed	WARNING	ALARM_BD	

Table 3-5, Alarm Board Errors, lists the errors logged in the DISPLAY ERRORS screen. If incremented enough times, these errors may generate the above alarms.

Table 3-5. Alarm Board Errors

ALARM_BD	80	Initialization MP 0 aborted (test MP)	ALARM_BD	6
ALARM_BD	80	Initialization MP 60 aborted (checks ALB processor tests)	ALARM_BD	0
ALARM_BD	81	Initialization MP 0 failed (test MP)	ALARM_BD	5
ALARM_BD	81	Initialization MP 0 failed (test MP)	ALARM_BD	6
ALARM_BD	81	Initialization MP 60 failed (checks ALB processor tests)	ALARM_BD	0
ALARM_BD	81	Long demand sequence MP 60 failed (checks ALB processor tests)	ALARM_BD	0
ALARM_BD	81	Long demand sequence MP 63 failed (tests ALB UART and modem)	ALARM_BD	1
ALARM_BD	81	Short demand sequence MP 60 failed (checks ALB processor tests)	ALARM_BD	0
ALARM_BD	299	Remote console is active	ALARM_BD	4

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Table 3-5. Alarm Board Errors — *Continued*

ALARM_BD	300	Remote console is inactive	ALARM_BD	4
ALARM_BD	301	ABP & FAC Interface bus bad	ALARM_BD	2
ALARM_BD	302	ABP & FAC Interface bus OK	ALARM_BD	2
ALARM_BD	303	ABP insane	ALARM_BD	3
ALARM_BD	304	ABP sane	ALARM_BD	3
ALARM_BD	311	ABP hardware bad	ALARM_BD	0
ALARM_BD	314	ABP hardware OK	ALARM_BD	0
ALARM_BD	315	UART broken	ALARM_BD	1
ALARM_BD	316	UART OK	ALARM_BD	1

Table 3-6, Test Alarm Board Results, lists individual tests performed when TEST ALARM BOARD is run, what shows on the screen when the tests pass, fail, or abort, and possible repair actions. Note that the same individual tests are run for either the *long* or *short* test:

Table 3-6. Test Alarm Board Results

Check ALB result	P Passed			
		F OPN_FAIL nn		System error (call RSC)
			A FACST_FL nn	System error (call RSC)
		F FAC_ABP_NOT_PRESENT		Alarm board dead?
		F FAC_ABP_INSANE		Alarm board not responding
		F FAC_IIC_BAD		IIC bus problems
			A ABPST_FL nn	System error (call RSC)
		F ABP_IIC_BAD		IIC bus problems
		F INTRNL_RAM_TST_FAIL		Alarm board RAM problems
		F CLS_FAIL nn		System error (call RSC)

Continued on next page

Table 3-6. Test Alarm Board Results — *Continued*

Test ALB fprom	P Passed			
			A ABPST_FL nn	System error (call RSC)
		F ABP_FPRM_CHKSM_FAIL		Alarm board FPROM problems
		F CLS_FAIL nn		System error (call RSC)
Check ALB RAM test	P Passed			
			A ABPST_FL nn	System error (call RSC)
		F EXTRNL_RAM_TST_FAIL		Alarm board RAM problems
		F CLS_FAIL nn		System error (call RSC)
Test ALB UART	P Passed			
			A ABTST_FL nn	System error (call RSC)
		F UART_RESET_FAIL		Replace alarm board
		F MODEM_RESET_FAIL		Replace alarm board
		F MODEM&UART_RST_FAIL		Replace alarm board
		F CLS_FAIL nn		System error (call RSC)
Check UART Result	P Passed			
			A ABPST_FL nn	System error (call RSC)
		F UART_TEST_FAIL		Replace alarm board
		F MODEM_TEST_FAIL		Replace alarm board
		F CLS_FAIL nn		System error (call RSC)

Continued on next page

Table 3-6. Test Alarm Board Results — *Continued*

	P DCD_ACT,DSR_ACT			
	P DCD_ACT,DSR_INACT			
	P DCD_INACT,DSR_ACT			
	P DCD_INACT,DSR_INACT			
Check RACC stat			A NO_REM_ACC_ PORT	
			A AB_PTST nn	System error (call RSC)
		F CLS_FAIL nn		System error (call RSC)

Alarm Origination

Refer to Table 3-7, Alarm Origination Alarms and Repair Actions, for a list of alarms and repair procedures addressed to the alarm origination feature. All actions are performed one at a time until the problem is solved. Alarms appear in the DISPLAY ALARMS screen under the resource type:

```
ALARM_ORIG
```

Table 3-7. Alarm Origination Alarms and Repair Actions

0	Too many call failures	MINOR	ALARM_ORIG	— *No dial tone* suggests a problem with the T/R interface to the remote access port (for either Modem or RS-232) such as cabling. — *Busy, No Answer, No Tone* suggest either the RSC is experiencing difficulty or the wrong number is being called. A manual call to the phone number can determine whether calls can be placed to the number without problems. — Check your administered command string. — Plug in a headset and listen for dial tone. — Utilize TEST ALARM-ORIGINATION command for placing test calls. — Check modem settings and power it on/off. — Verify that cabling between the modem and the switch is connected and functional. — Replace external modem. — Reseat the system. — Replace the ALB.

Continued on next page

Table 3-7. Alarm Origination Alarms and Repair Actions — *Continued*

1	Bad external modem	MINOR	ALARM_ORIG	— Use TEST ALARM-ORIGINATION command. — Verify there is a modem present and power it on/off. — Check modem settings. — Verify that cabling between the alarm board and the modem is connected and functional. — Replace modem. — Reseat the system. — Replace the ALB.
2	Bad internal modem	MINOR	ALARM_ORIG	— Use TEST BOARD LONG (ALB). — Replace the ALB.

Table 3-8, Alarm Origination Errors, lists the errors logged in the DISPLAY ERRORS screen which, if incremented enough times, may generate the above alarms.

Table 3-8. Alarm Origination Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
ALARM_ORIG	312	ABP internal modem failure	ALARM_ORIG	2
ALARM_ORIG	313	ABP internal modem operational	ALARM_ORIG	2
ALARM_ORIG	347	Alarm origination call failed	ALARM_ORIG	0
ALARM_ORIG	348	No external modem	ALARM_ORIG	1
ALARM_ORIG	349	Alarm origination call succeeded	ALARM_ORIG	0
ALARM_ORIG	350	External modem present	ALARM_ORIG	1

Table 3-9, Test Alarm-Origination Results, lists individual tests, results, and possible repair actions whenever TEST ALARM ORIGINATION is performed.

Table 3-9. Test Alarm-Origination Results

Test Name	Test Result (Passed)	Test Result (Failed)	Test Result (Abort)	Action
Test Alarm Orig Port	P Idle			
		F Idle		Check SYSTEM-PARAMETERS MAINTENANCE screen
		F Busy, see form help		Check port status on STATUS ALARM ORIGINATION screen. If executing test remotely, repeat and put test in background, then hang up. Call back to see test results via STATUS TEST.
	P ACK			Acknowledged
Test Alarm Orig Call		F Call in progress		Try later — disable alarm origination, if desired
		F No Product id		Set product id on sys maint screen
		F No Dial string		Set phone number
		F SO 3		Product ID not known by INADS
		F (modem string)		Response from modem, such as NO RESPONSE, NO CARRIER

System Time

Refer to Table 3-10, System Time Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to system timing. Alarms appear in the DISPLAY ALARMS screen under the resource type:

SYS_TIME

Table 3-10. System Time Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	Invalid system time. Causes inappropriate system behavior. For instance, if the time is set back too far and messages are recorded, they will be cleaned up as old messages by the audits when the time is set correctly.	MAJOR	SYS_TIME	Using SET TIME, set AUDIX time or synchronize to switch time as appropriate. Invoke RESET SYSTEM RESTART to bring the system to the AUDIX state from the OA&M state.
1	get_date() failed	MAJOR	SYS_TIME	Restore the generic software using the Standalone Tape Utilities and reboot the system.
2	Check clock failed. The switch and AUDIX time have drifted more than 15 minutes from each other, which can disrupt the coordination of events.	WARNING	SYS_TIME	Using SET TIME, set AUDIX time or synchronize to switch time as appropriate.
3	CHK_CLOCK_MP in progress	No Alarm	SYS_TIME	Used internally. Alarm is never active.

Table 3-11, System Time Errors, lists the errors logged in the DISPLAY ERRORS screen. These errors may generate the above alarms.

Table 3-11. System Time Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
SYS_TIME	80	Initialization MP 51 aborted (validates system time)	SYS_TIME	0
SYS_TIME	81	Diagnostic MP 29 failed (checks switch time against system clock)	SYS_TIME	2
SYS_TIME	81	Diagnostic MP 29 failed (checks switch time against system clock)	SYS_TIME	3
SYS_TIME	81	Diagnostic MP 83 failed (restart system in OA&M mode)	SYS_TIME	0
SYS_TIME	81	Initialization MP 51 failed (validates system time)	SYS_TIME	0
SYS_TIME	81	Long demand sequence MP 29 failed (checks switch time against system clock)	SYS_TIME	2
SYS_TIME	81	Periodic MP 29 failed (checks switch time against system clock)	SYS_TIME	2
SYS_TIME	81	Short demand sequence MP 29 failed (checks switch time against system clock)	SYS_TIME	2
SYS_TIME	81	Synchronize demand MP 30 failed (synchronizes switch time with system clock)	SYS_TIME	2
SYS_TIME	244	change switch time-zone screen executed	SYS_TIME	3
SYS_TIME	245	Switch changed its time	SYS_TIME	3
SYS_TIME	246	get_date() call failed	SYS_TIME	1
SYS_TIME	247	get_date() call passed	SYS_TIME	1

MFB and Alarm Board Replacement

Refer to Figure 3-1, Top View of DEFINITY AUDIX System, to replace the MFB or Alarm Board.

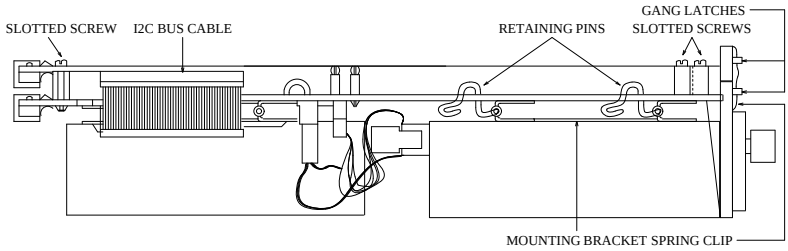


Figure 3-1. Top View of DEFINITY AUDIX System

Follow the steps below to replace the MFB or Alarm Board.

WARNING:
Static electricity can be destructive to system parts. Use an anti-static wrist strap whenever removing or installing a DEFINITY AUDIX System. Also use an anti-static mat when taking the system apart to replace circuit packs or storage devices.

1. Ensure that the customer knows you will be powering down the system and disrupting service.
2. If it is not already shut down, bring the system to the MSHUT state with the RESET SYSTEM SHUTDOWN screen.
3. Unsnap the two gang latches at the bottom front of the MFB and Alarm Board, and swing downward. Squeeze the boards together and slip off the spring clip.
4. Carefully slide the DEFINITY AUDIX System from the switch carrier. Handle with care: the system weighs 6.2 pounds.
5. Disconnect the Interboard bus cable from the top edge of both boards using the pull tab.
6. Remove the three socket-headed slotted screws that hold the MFB to the alarm board.
7. Separate the two boards. If the Alarm Board is to be replaced, remove the disk and tape drives from it as described at the end of Chapter 4.

Replace the MFB or Alarm Board using the above steps in reverse order. Note the play between the boards when they are together. This allows the system to be easily seated into the switch carrier.

SCSI Devices

4

This chapter lists errors and alarms that may occur to the tape drive or disk drive. Refer to the alarm log table for repair procedures and to the error log table to better understand what equipment errors will trigger each alarm.

Tape Problems

Errors that occur inline during normal tape operation are recorded in the system error log.

Errors detected during background tests are also recorded in the system error log. These tests are executed every hour. They:

- Determine whether or not the device is equipped
- Determine the device type and compare it with the administered type
- Determine whether or not the device is write-protected (this problem does not cause an error)
- Verifies that a tape cartridge is in the drive

Note that the tape drive cannot be busied out. Also, self diagnostics on the tape are not performed because the cartridge may have already been removed.

Use the STATUS TAPE screen to display the current states of the tape drive, listed below. Bringing up this screen will also invoke a tape background test.

UEQ	Unequipped
ISP	In Service Pending. The tape cartridge may have just been added to the system but initialization is not yet complete.
OOS-D	Out Of Service due to insufficient translation information. This implies that the tape is inserted but has not yet been added with the ADD TAPE screen.
ISB	In Service Busy. The tape is active.
OOS-F	Out Of Service Fault. The tape shows an alarm against it.
ISI	In Service Idle. The tape has been added and is inactive.
OOS-T	Out Of Service for Testing. A tape test is running.

Refer to Table 4-1, Tape Alarms and Repair Procedures for a list of alarms and repair procedures addressed to the tape drive. Perform dashed repair actions one at a time until the problem is solved. Perform all numbered repair actions in order as listed. Alarms appear in the DISPLAY ALARMS screen under the resource type:



Table 4-1. Tape Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	SCSI medium (block read/write) failure	MINOR	TAPE	— When the TEST TAPE LONG screen is invoked and no errors are detected, the alarm is retired. Removing or replacing the tape using the REMOVE TAPE screen also retires the alarm. — Run TEST TAPE LONG. — Clean the tape heads (see procedure in this chapter). — Replace the tape cartridge (data on the original tape will be lost). — Replace the tape drive.

Continued on next page

Table 4-1. Tape Alarms and Repair Procedures — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
1	Hardware (device) failure	MINOR	TAPE	— Test the tape using the TEST TAPE LONG screen. — Check the cables. — Insert another tape cartridge and invoke TEST TAPE LONG to see if the original tape might be causing the problem. — If device errors still occur, replace the tape drive.
2	Tape driver (software) error	MINOR	TAPE	— Reboot the system. — Reseat the AUDIX System. — Restore the generic software using the Standalone Tape Utilities and reboot the system.
3	Tape drive SCSI error	MINOR	TAPE	
4	Backup job failed	WARNING	TAPE	— Run a manual backup. — Verify any other alarms for this resource type (TAPE). — Verify backups are enabled.
5	Dirty tape cartridge. A count of write-passes is written on the tape. When the count reaches 12, an alarm is raised.	WARNING	TAPE	1. Invoke REMOVE TAPE. Replace the tape cartridge as described in this chapter. 2. Discard the old cartridge. (Data on the original will be lost). 3. Invoke ADD TAPE. 4. Invoke SAVE NIGHTLY. 5. Invoke SAVE WEEKLY.
6	Dirty tape heads. A count of write-passes is written on a file on the disk. When the count reaches 6, an alarm is raised.	WARNING	TAPE	Clean heads as described in this chapter. Invoke the TEST TAPE CLEAN screen.

Table 4-2, Tape Drive Errors, lists the errors logged in the DISPLAY ERRORS screen. These errors may generate the above alarms.

Table 4-2. Tape Drive Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
TAPE	81	Diagnostic MP 56 failed (audits tape files)	TAPE	1
TAPE	81	Periodic MP 56 failed (audits tape files)	TAPE	1
TAPE	170	General driver error	TAPE	2
TAPE	171	Tape SDI error	TAPE	2
TAPE	172	Tape drive SCSI error	TAPE	3
TAPE	174	SCSI medium error	TAPE	0
TAPE	175	Hardware error	TAPE	1
TAPE	182	A backup job retry failed	TAPE	4
TAPE	183	Too many tape passes — replace tape	TAPE	5
TAPE	184	Too many tape device passes — clean heads	TAPE	6
TAPE	190	Medium OK	TAPE	0
TAPE	191	Hardware OK	TAPE	1
TAPE	195	A backup job passed	TAPE	4
TAPE	196	Tape passes OK	TAPE	5
TAPE	197	Tape device passes OK	TAPE	6

Table 4-3, Test Tape Results, lists the *short, long*, and *clean* tests, what is shown on the screen when they pass, fail or abort, and possible repair actions.

NOTE:
The TEST TAPE and AUDIT functions cannot be performed at the same time.

Table 4-3. Test Tape Results

Test Name	Test Result (Passed)	Test Result (Failed)	Test Result (Abort)	Action
Test Tape Long	P Passed			
			A Add tape in progress	
			A Tape in use	
		F Must add tape first		
		F Tape access disabled		Too hot?
		F Type is not backup		
		F Tape write-protected		
		F No space left		
Test Tape Clean	P Passed			
		F Tape administered		
		F Add tape in progress		
Test Tape Short	P Passed			
			A Add tape in progress	
			A Tape in use	
		F Must Add tape first		
		F Tape access disabled		

On-Site Task: Tape Head Cleaning

The tape drive requires manual cleaning of its tape heads every three months, or after every 100 passes. A minor alarm is raised when cleaning is required. Use the provided kit which includes a cleaning tape cartridge, cleaning sticks, and cleaning solution.

Procedure

1. Invoke REMOVE TAPE and remove the working tape. Be sure the yellow LED on the the tape drive becomes unlit.
2. Insert the cleaning tape cartridge into the drive, pushing it with your finger all the way into the streamer. *Do not* lock it into place by turning the front lever clockwise.
3. Invoke TEST TAPE CLEAN.
4. Dip the pad of the cleaning stick into the cleaning solution and insert into the guide hole at the bottom of the tape. Ensure that the blue side of the pad touches the head (it will face the LED of the streamer).
5. Gently pressing the pad against the head, run the stick back and forth through the guide hole 10 times.
6. Turn the stick so the white side of the pad touches the head. Run the stick back and forth 5 to 10 times.
7. Using the dry white pad of another cleaning stick, perform the same operation 5 to 10 times.
8. Remove the cleaning tape and allow the head to dry for a minute before reinserting the working tape.
9. Invoke ADD TAPE. This clears the alarm and loads the cartridge.

⚠ CAUTION:

- *The cleaning solution is highly volatile. Keep it away from high temperatures and direct sunlight.*
- Use the specified cleaning solution only. The head may be damaged if other types of solutions are used.
- People with sensitive skin should use rubber gloves for protection.
- Do not use broken cleaning sticks with partially detached pads.
- *Discard cleaning sticks after four to six times of use. If the device becomes extremely dirty, replace the cleaning stick after one use.*

On-Site Task: Tape Cartridge Replacement

The DEFINITY AUDIX System maintains a count of write passes on a working tape cartridge. When this count reaches 150, a warning alarm is raised. At this point, the cartridge should be replaced. The system administrator will be required to do this job.

Procedure

1. Invoke REMOVE TAPE to unload the tape cartridge.
2. Remove the tape cartridge from the drive and discard. Replace it with a new cartridge. If the LED begins to flash when the new cartridge is inserted, the cartridge has been inserted backwards.
3. Invoke ADD TAPE. This clears the alarm and loads the cartridge.

CAUTION:
Check that backup tapes are not write-protected; the tab is positioned closest to the end of the cartridge (it will cover the deeper inset). On the generic tape, ensure that the tab remains in the write-protected position.

Disk Problems

Except for normal inline error detection, and periodic background tests which occur every 30 seconds, no tests are manually performed on the disk drive using screens. The disk drive cannot be busied out.

Use the STATUS DISK to display the current values of the disk drive, listed below. Bringing up this screen will also invoke a disk background test.

UEQ	Unequipped
OOS-F	Out Of Service Fault. The disk shows an alarm against it.
ISB	In Service Busy. The disk is active.

Refer to Table 4-4, Disk Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to the disk drive. Alarms appear in the DISPLAY ALARMS screen under the resource type:

DISK

Table 4-4. Disk Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	SCSI medium (block read/write) failure.	MINOR	SCSI_HD	— Look in the *error* log for messages logged against resource type DISK using codes *124* or *125* (these indicate the same block given in the field aux2). Manually reassign every such block using the Standalone Tape Utilities. — If manual reassignment fails or block errors reoccur, replace the disk and restore generic and customer data.
1	Device (hardware) failure.	MAJOR	SCSI_HD	— Test the disk by invoking the STATUS DISK screen. — Check the cables to see that they are firmly inserted into the board and the disk drive, and that there are no broken leads. — If device errors still occur, replace the disk drive.

Table 4-5, Disk Drive Errors, lists the errors logged in the DISPLAY ERRORS screen. These errors may generate the above alarms.

Table 4-5. Disk Drive Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
SCSI_HD	80	Initialization MP 55 aborted (audits disk files)	DISK	1
SCSI_HD	81	Diagnostic MP 55 failed (audits disk files)	DISK	1
SCSI_HD	81	Initialization MP 55 failed (audits disk files)	DISK	1
SCSI_HD	81	Periodic MP 55 failed (audits disk files)	DISK	1
SCSI_HD	124	Recoverable disk medium error	DISK	0
SCSI_HD	125	Non-recoverable disk medium error	DISK	0
SCSI_HD	126	Remove disk command executed	DISK	0
SCSI_HD	127	Disk device error	DISK	1
SCSI_HD	128	Disk diagnostics OK (status disk)	DISK	1
SCSI_HD	131	Diagnostics failed on a drive	DISK	1

Disk/Tape Drive Replacement Procedures

Refer to Figure 4-1, Side View of DEFINITY AUDIX System, when replacing the disk or tape drive.

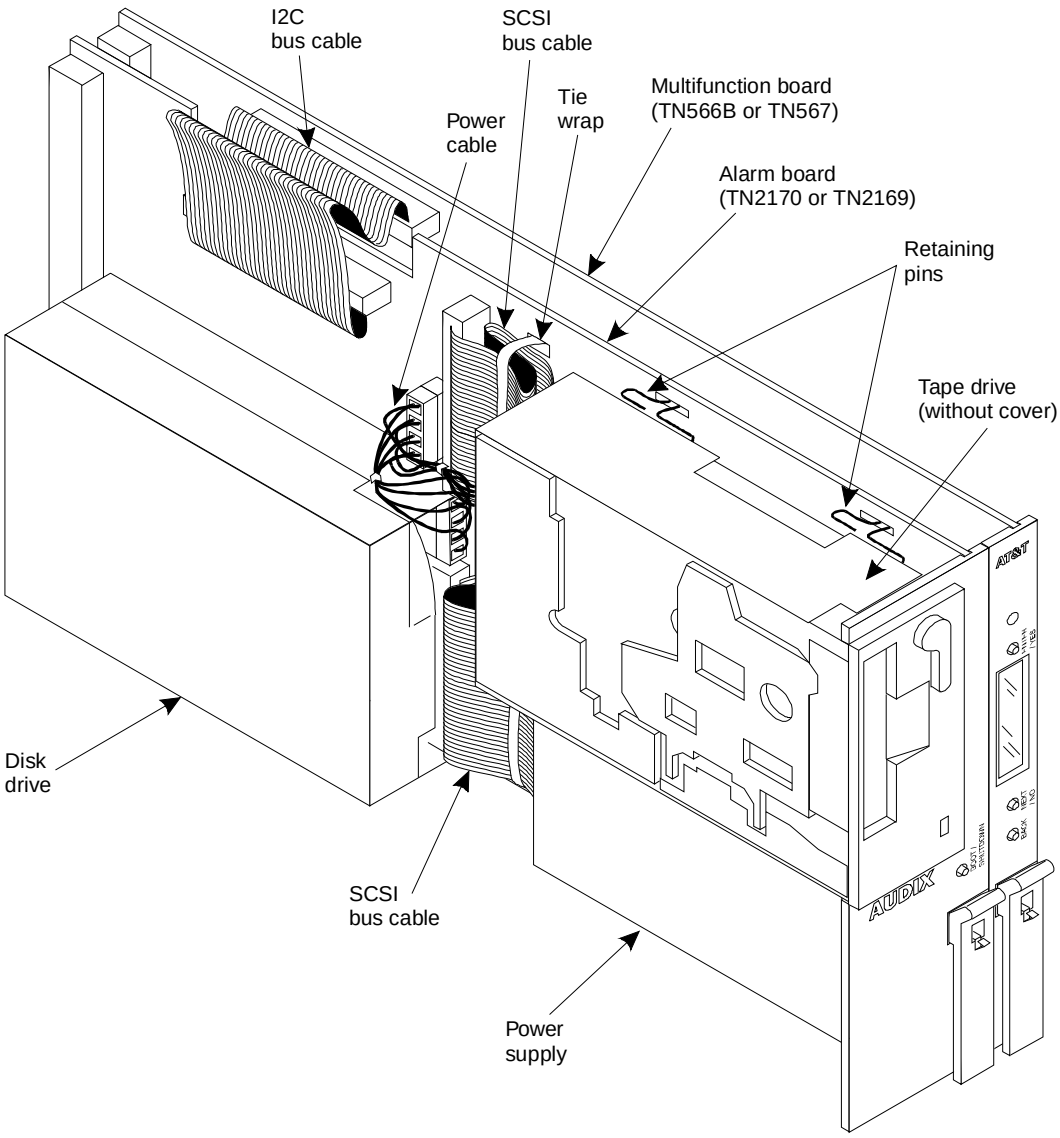


Figure 4-1. Side View of DEFINITY AUDIX System

To remove either the disk drive or the tape drive from the alarm board:

WARNING:
Static electricity can be destructive to system parts. Use an anti-static wrist strap whenever removing or installing a DEFINITY AUDIX System. Also use an anti-static mat when taking the system apart to replace storage devices or circuit packs

1. Ensure that the customer knows you will be powering down the system and disrupting service.
2. If it is not already shut down, bring the system to the MSHUT state with the RESET SYSTEM SHUTDOWN screen.
3. Carefully slide the system from the switch carrier. Handle with care: the system weighs 6.2 pounds.
4. Cut loose and remove the tie wrap that holds the power cable and the tape drive SCSI bus cable against the alarm board.
5. Disconnect the SCSI bus cable from the alarm board which is connected to the drive being replaced, using the pull tabs.
6. As shown in Figure 4-2, Unlocking Retaining Pin, unlock each of two retaining pins (B) from the slots along the edge of the alarm board that hold the drive in place. Slide out both pins (C); this releases the drive from the board.

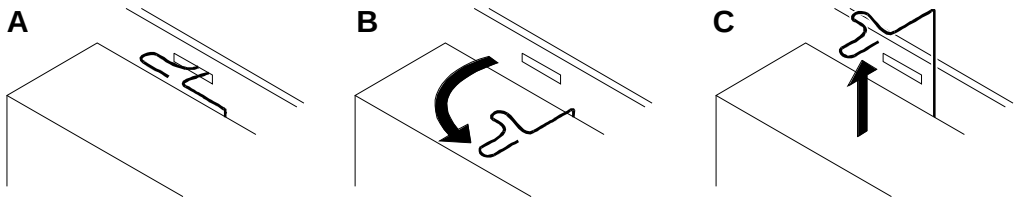


Figure 4-2. Unlocking Retaining Pin

7. Disconnect the power and SCSI bus cables from the drive.
8. On the tape drive, pry off the stainless steel EMI shield. Note that the narrow end of the cover fits over the ridge above the option jumpers; the wide end locks over the mounting bracket.
9. If either drive is to be replaced, the mounting bracket from the bottom of each will have to be removed and reattached to the new drive. (Note the four screws which attach the bracket to the drive.)

To mount either drive:

1. Ensure that the EMI shield is snapped into place across the tape drive.
2. First plug the power and SCSI bus cables into the drive.
3. Position the drive on the alarm board, and slide the two retaining pins into the drive mounting bracket. Lock the pins into the slots along the edge of the alarm board.
4. Attach the SCSI bus (and power) cables to the alarm board.
5. Insert a new tie wrap through the middle hole in the alarm board. Slide between the boards, pull through the hole at the edge of the board, and wrap both ends over the cables. Snap firmly together to hold the cables snugly against the board.

7120S Disk Drive

The 7120S is a SCSI hard disk drive that provides up to 6 hours of voice storage when used on the DEFINITY AUDIX System. Figure 4-3, 7120S Drive Jumper Settings, shows the printed circuit board on which the jumpers are located.

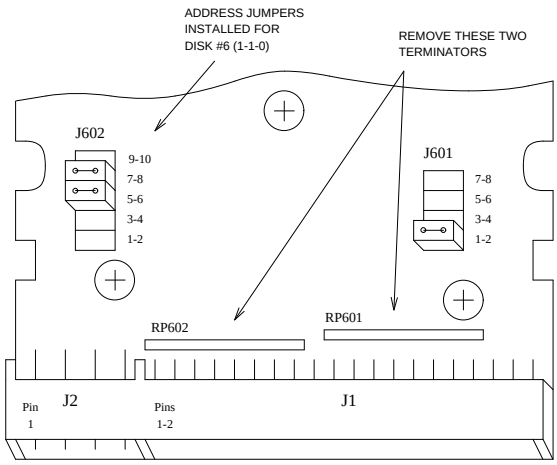


Figure 4-3. 7120S Drive Jumper Settings

Jumper settings should be:

- *Drive Position Jumpers*: Jumpers J602 (5-6), J602 (7-8), and J602 (9-10) tell the AUDIX software the identification of the disk drive. Because the system recognizes the disk as *SCSI disk drive 0*, none of these jumpers are installed.
- *Bus-Parity Jumper:* The J601 (5-6) jumper disables parity. It should *not* be installed.
- *Motor-Start Jumper:* The J602 (1-2) jumper determines the start up sequence. This jumper should *not* be installed so the drive will wait for a start command.
- *Terminator Power:* Jumper J601 (1-2) should be installed.
- *Bus Terminators*: Terminators RP601 and RP602 should *not* be installed.
- *Other Jumpers:* Any other jumpers on this disk drive should be left alone. Do *not* remove or change any jumpers not previously specified.

ST3283N Disk Drive

The ST3283N drive is a 3.5-inch SCSI hard disk drive that provides up to 15 hours of voice storage when used on the DEFINITY AUDIX System. Figure 4-4, ST3283N Drive Jumper Settings, shows the location of the jumpers and terminating resistors.

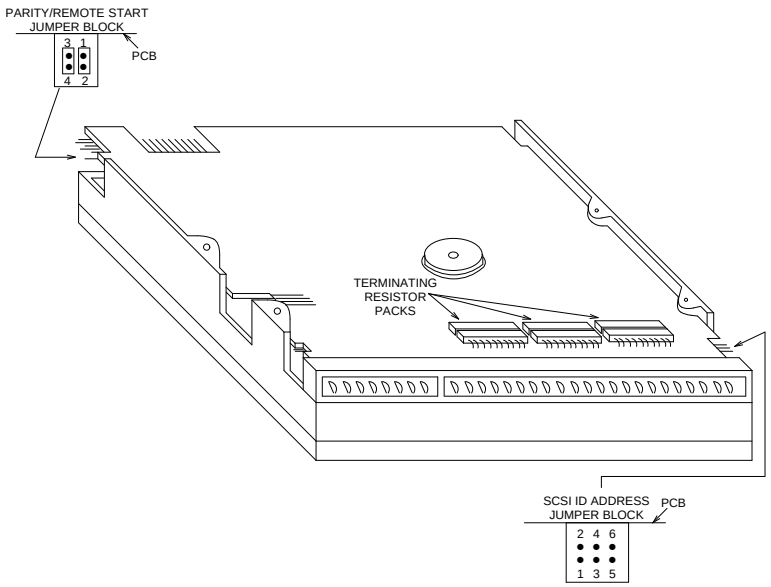


Figure 4-4. ST3283N Drive Jumper Settings

Jumper settings should be:

- *Parity/Remote Start Jumper Block:*
  - *Bus Parity:* When a jumper is installed on pins 1-2 of this jumper block, the drive will check the SCSI bus parity. Although the drive will operate with or without this jumper, it is recommended that this jumper be installed.
  - *Spindle Control (Remote Motor Start):* When a jumper is installed on pins 3-4 of this jumper block, the drive spindle motor will not start on power-up until it has received a motor start command. Therefore a jumper should be installed on this position.
- *SCSI ID Address Jumper Block:* Pins 1-2, 3-4, and 5-6 are used to control the identification of the disk drives in AUDIX using binary coding. Because the disk drive is recognized by the system as *SCSI disk drive 0*, none of the three jumpers are installed.
- *Terminators:* Interface terminator packs should *not* be installed. Verify that they are not present.
- *Other Jumpers:* Any other jumpers on this disk drive should be left alone. Do *not* remove or change any jumpers not previously specified.

ST1480N Disk Drive

The ST1480N is a 3.5-inch SCSI hard disk that provides up to 40 hours of voice storage when used on the DEFINITY AUDIX System. Figure 4-5, ST1480N Drive Jumper Settings, shows the location of the jumpers, terminators, and power connection.

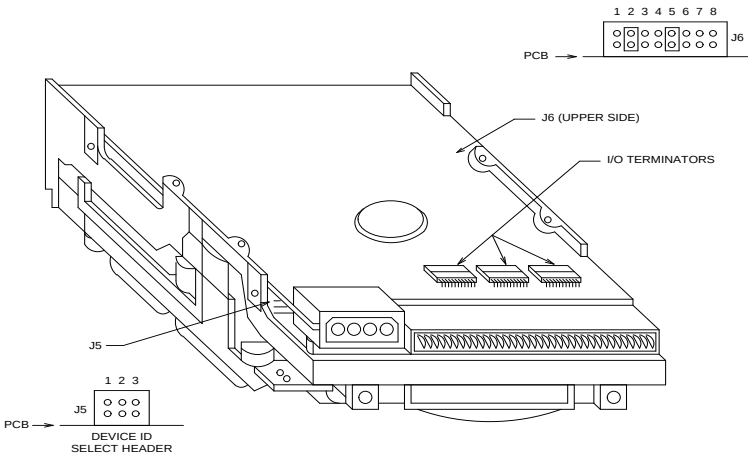


Figure 4-5. ST1480N Drive Jumper Settings

Jumper settings should be:

- *Bus Parity:* When a jumper is installed on J6 position 5, the drive will check the SCSI bus parity. Although the drive will operate with or without this jumper, it is recommended that this jumper be installed.
- *Spindle Control (Remote Motor Start):* When a jumper is installed on J6 position 2, the drive spindle motor will not start on power-up until it has received a motor start command. Therefore a jumper should be installed on this position.
- *Drive Identification:* Jumpers J5-1, J5-2, and J5-3 are used to control the identification of the disk drive. Because the system recognizes the disk as *SCSI disk drive 0*, none of these jumpers are installed.
- *Terminators:* Interface terminator packs should *not* be installed. Verify that they are not present.
- *Other Jumpers:* Any other jumpers on this disk drive should be left alone. Do *not* remove or change any jumpers not previously specified.

Seagate ST3550N Disk Drive

The Seagate drive is a hard disk drive with approximately 456 megabytes that provides up to 58 hours of voice storage when used on the DEFINITY AUDIX System. It supports the SCSI interface. Figure 4-6, shows the location of the Seagate ST3550N jumper fields and bus terminators.

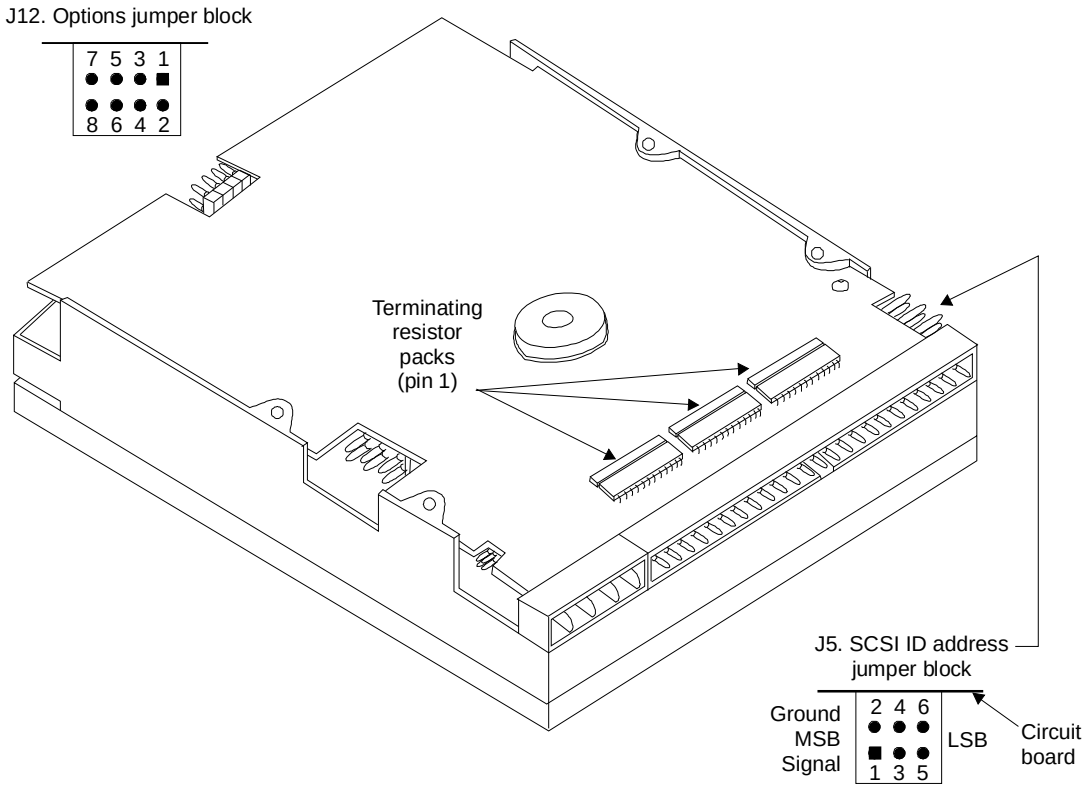


Figure 4-6. Location of Seagate ST3550N Jumper Fields and Bus Terminators.

Jumper settings should be:

- *Unterminated*:
  - — Interface terminator packs should not be installed. See Figure 4-6 for the location of these terminator packs. Verify that they are not present. Normally no action is required since all drives should be shipped without these terminator packs.
- *Options Jumper Block*:
  - — Bus Parity - When a jumper is installed on pins 1-2 of this jumper block, the drive will check the SCSI bus parity. The drive will operate in AUDIX with or without this jumper. However, it is recommended that this jumper be installed. (see Figure 4-6).
  - — Spindle Control (Remote Motor Start) - When a jumper is installed on pins 3-4 of this jumper block, the drive spindle motor will not start on power-up until it has received a motor start command. This feature is used to sequence drive spin-up to reduce maximum current requirements. Therefore a jumper should be installed on this position.
- *SCSI ID Address Jumper Block:*
  - — Drive identification - pins 1-2, 3-4, and 5-6 are used to control the identification of the Hard Disk Drive in AUDIX using binary coding.

    Disk00 should not have any of the three jumpers installed.

    Disk01 should have only the 5-6 jumper installed

    Disk02 should have only the 3-4 jumper installed.

    Disk03 should have only the 3-4 and 5-6 jumpers installed.

    Disk04 should have only the 1-2 jumper installed.

    Disk05 should have only the 1-2 and 5-6 jumpers installed.

    Disk06 should have only the 1-2 and 3-4 jumpers installed.

    These three jumpers are identified in Figure 4-6.
- *Remaining Jumpers:* Any other jumpers on this disk drive should be left alone. Do not remove or change any jumpers not mentioned.

Seagate ST5660N

The three types of Seagate drives, ST5660N-148, ST5660N-248, and ST5660N-456, are hard disk drives with a capacity of approximately 148, 248, and 456 megabytes respectively. The ST5660N-148 provides 14 to 20 hours of voice storage; the 248, 33 hours of voice storage, and the 456, 58 hours of voice storage when used with the DEFINITY AUDIX System. They support the SCSI interface. Figure 4-7 shows the location of the Seagate ST5660N-XXX jumper fields.

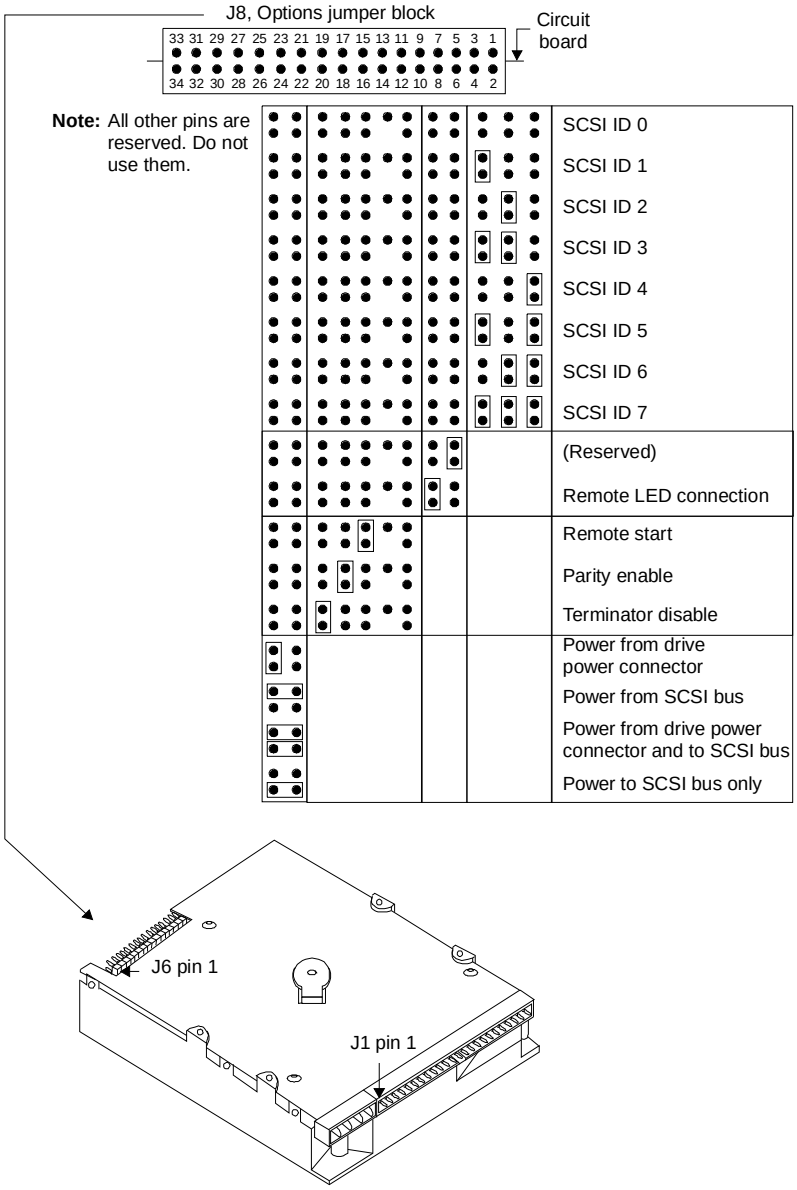


Figure 4-7. Location of Seagate ST5660N-XXX Jumper Fields

NOTE:
DEFINITY AUDIX requires that any time a ST5660N (or future) disk drive is used, a software upgrade to release 3.1, issue 2 must be done as soon as possible. The 3.1 release of software works only with a TN566B. When upgrading to the new software release, the system may also need to be upgraded to a TN566B.

Jumper settings should be:

- *J8.Options Jumper Block*:
  - Terminator Disable - When a jumper is installed on pins 19-20, the terminators are disabled. This jumper must be installed for the drives to operate in AUDIX.
  - *Bus Parity:* When a jumper is installed on pins 17-18, the drive will check the SCSI bus parity. The drive will operate in AUDIX with or without this jumper. However, it is recommended that this jumper be installed.
  - *Spindle Control (Remote Start)*: When a jumper is installed on pins 15-16 of this jumper block, the drive spindle motor will not start on power-up until it has received a motor start command. This feature is used to sequence drive spin-up to reduce maximum current requirements. Therefore a jumper should be installed on this position.
- *SCSI ID Address*:
  - *Drive Identification*: Pins 1-2, 3-4, and 5-6 are used to control the identification of the hard disk drives in AUDIX using binary coding.

    Disk00 should not have any of the three jumpers installed.

    Disk01 should have only the 5-6 jumper installed.

    Disk02 should have only the 304 jumper installed.

    Disk03 should have only the 3-4 and 5-6 jumpers installed.

    Disk04 should have only the 1-2 jumper installed.

    Disk05 should have only the 1-2 and 5-6 jumpers installed.

    Disk06 should have only the 1-2 and 3-4 jumpers installed.

    These three jumpers are identified in Figure 4-6.
- *Remaining Jumpers:*
  - Any other jumpers on this disk drive should be left alone. Do not remove or change any jumpers not mentioned.

ST31230N Disk Drive

The ST31230N is a 3.5 inch hard disk drive with a capacity of approximately 1050 megabytes, that provides up to 100 hours of voice storage when used with the DEFINITY AUDIX System. It supports the SCSI interface. Figure 4-8, Location of Seagate 31230N Jumper Fields, shows the location of the jumper fields.

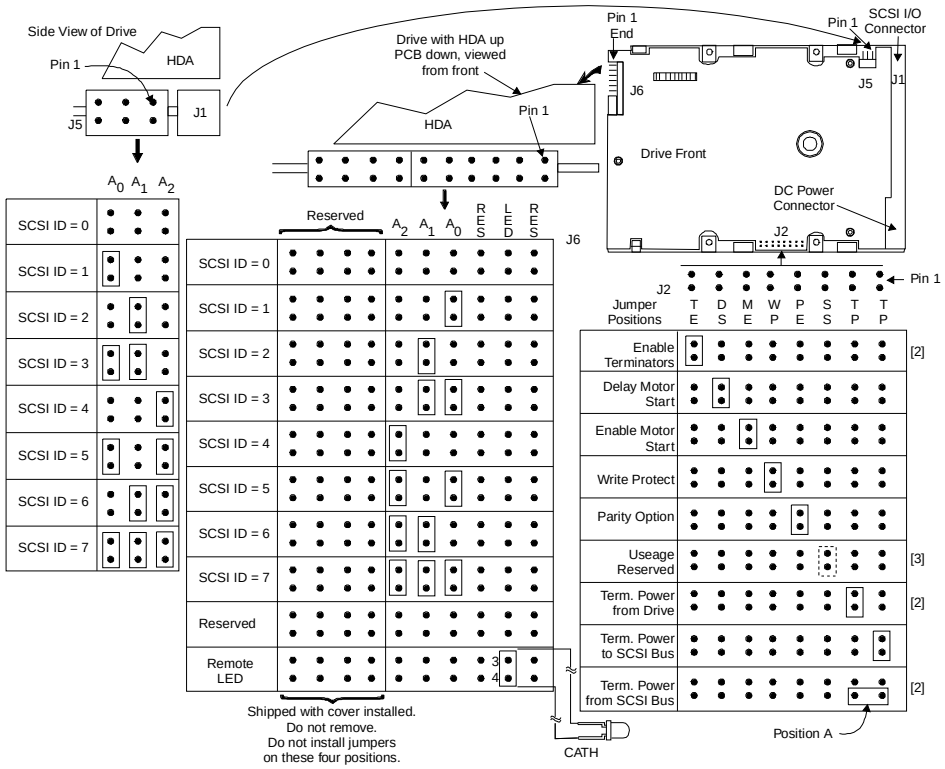


Figure 4-8. Location of Seagate 31230N Jumper Fields

Jumper settings should be:

- *J2. Options Jumper Block:*
  - — *Terminator enable (TE):* When a jumper is installed on pins TE, the terminators are enabled. This jumper must be removed for the drive to operate in AUDIX. See Figure 4-8.
  - — *Delay motor start (DS)*. When a jumper is installed on pins DS, the motor start will be delatyed by SCSI ID times 12 seconds after power is applied. This jumper must be removed for the drive to operate in AUDIX.
  - — *Enable Motor Start (ME)*: When a jumper is installed on pins ME of this jumper block, the drive spindle motor will not start on power-up until it has received a motor start command. This feature is used to sequence drive spin-up to reduce maximum current requirements. Therefore a jumper should be installed on this position. See Figure 4-8.
  - — *Bus Parity (PE)*: When a jumper is installed on pins PE, the drive will check the SCSI bus parity. The drive will operate in AUDX with or without this jumper. However, it is recommended that this jumper be installed. See Figure 4-8.
- *J6 or J1 Options Jumper Blocks*:

  NOTE:
  SCSI ID Address. Use only one of the two blocks, either J6 or J1. Do not use both.

  - — *Drive Identification*: Pins AQ, A1, and A2 are used to control the identification of the Hard Disk Drive in AUDIX using binary coding.

    Disk00 should not have any of the three jumpers installed.

    Disk01 should have only the A0 jumper installed.

    Disk02 should have only the A1 jumper installed.

    Disk03 should have only the A0 and A1 jumpers installed.

    Disk04 should have only the A2 jumper installed.

    Disk05 should have only the A0 and A2 jumpers installed.

    Disk06 should have only the A1 and A2 jumpers installed.

    These three jumpers are identified in Figure 4-8.
  - — *Remaining Jumpers*: Any other jumpers on this disk drive should be left alone. Do not remove or change any other jumpers not mentioned on this memo.

MT2ST/N50 Tape Drive

The MT2ST/F50 -16 5-inch SCSI tape drive (tape CT-600F,600 megabyte) is used on the DEFINITY AUDIX System. Figure 4-9, MT2ST/N50 Tape Drive Jumpers, shows the jumper connections which select options to allow the drive to be accessed.

NOTE:
The new tape can read the old one, but can not write from it.

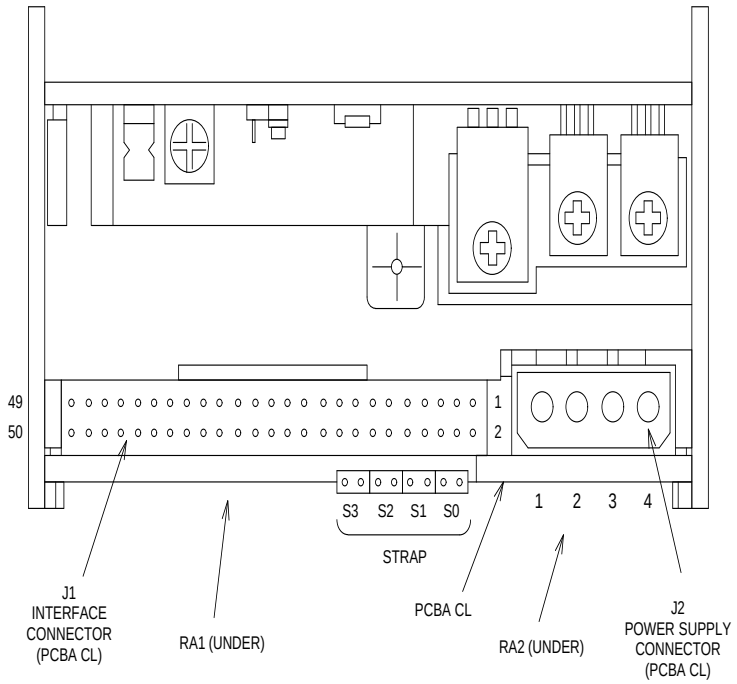


Figure 4-9. MT2ST/N50 Tape Drive Jumpers

The tape drive connections are set to the following specifications for the DEFINITY AUDIX System.

- Terminating resistors *RA1* and *RA2,* on the bottom of the disk unit, are not installed. Verify they are not present when a tape drive is shipped.
- When jumper *S3* is installed, it checks the SCSI bus parity. The drive will operate with or without the jumper, but it is recommended the jumper be installed for the DEFINITY AUDIX System.

- The DEFINITY AUDIX System identifies the tape drive as SCSI tape drive 1. For this configuration, *S0* must be removed, and *S1* and *S2* must be installed.
- *Other Jumpers:* Any other jumpers on this disk drive should be left alone. Do *not* remove or change any jumpers not previously specified.

Environment

5

Thermal Problems

Refer to Table 5-1, Thermal Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to overheating problems of the DEFINITY AUDIX System. Perform each repair action one at a time until the problem is solved. Alarms appear in the DISPLAY ALARMS screen under the resource type:

THERMAL

Table 5-1. Thermal Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	Circuit temperature over level 4	MAJOR	THERMAL	— Verify that the embedded system is not installed in carrier "C". If it is, shut down the system and move to another carrier (as close to the fan as possible). — Ensure that the equipment room temperature is not too hot. If too hot, either cool down the room or shut down the system. — Check the fan in the switch. — Check the air filter for blockage. — Suspect the circuit reporting the fault or the circuit's thermal sensor as being faulty. The error log will identify the circuit reporting the fault. As a last resort, replace the MFB.
1	Circuit temperature over level 3	WARNING	THERMAL	

Continued on next page

Table 5-1. Thermal Alarms and Repair Procedures — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
2	Tape temperature over level 2	MINOR	THERMAL	— Verify that the embedded system is not installed in carrier "C". If it is, shut down the system and move to another carrier (as close to the fan as possible). — Ensure that the equipment room temperature is not too hot. If too hot, either cool down the room or shut down the system. — Check the fan in the switch. — Check the air filter for blockage. — Suspect the circuit reporting the fault or the circuit's thermal sensor as being faulty. The error log will identify the circuit reporting the fault. As a last resort, replace the ALB.
3	Tape temperature over level 1	WARNING	THERMAL	

Table 5-2, Thermal Errors, lists the errors logged in the DISPLAY ERRORS screen, and the generated alarms listed above.

Table 5-2. Thermal Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
THERMAL	80	Initialization MP 68 aborted (checks ALB temperature — 110°)	THERMAL	3
THERMAL	80	Initialization MP 69 aborted (checks ALB temperature — 120°)	THERMAL	2
THERMAL	80	Initialization MP 70 aborted (checks MFB temperature — 155°)	THERMAL	1
THERMAL	80	Initialization MP 71 aborted (checks MFB temperature — 165°)	THERMAL	0
THERMAL	81	Diagnostic MP 68 failed (checks ALB temperature — 110°)	THERMAL	3
THERMAL	81	Diagnostic MP 69 failed (checks ALB temperature — 120°)	THERMAL	2
THERMAL	81	Diagnostic MP 70 failed (checks MFB temperature — 155°)	THERMAL	1
THERMAL	81	Diagnostic MP 71 failed (checks MFB temperature — 165°)	THERMAL	0

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Table 5-2. Thermal Errors — *Continued*

Error Resource	Error Code	Description	Fault Resource	Fault Code
THERMAL	81	Initialization MP 68 failed (checks ALB temperature — 110°)	THERMAL	3
THERMAL	81	Initialization MP 69 failed (checks ALB temperature — 120°)	THERMAL	2
THERMAL	81	Initialization MP 70 failed (checks MFB temperature — 155°)	THERMAL	1
THERMAL	81	Initialization MP 71 failed (checks MFB temperature — 165°)	THERMAL	0
THERMAL	305	Tape temperature over 105 degrees F	THERMAL	3
THERMAL	306	Tape temperature over 115 degrees F	THERMAL	2
THERMAL	317	Circuits temperature over 130 degrees F	THERMAL	1
THERMAL	318	Circuits temperature over 140 degrees F	THERMAL	0

Voice, Control, and LAN Links

6

Voice Port Problems

Alarms against a voice port will disappear:

- When the system is restarted
- If it becomes unadministered
- When it is *busied out* (this causes a warning alarm which will end when the port is *released*)
- When error conditions stop over a period of time ("leaky bucket")
- When an automatic test of the alarm condition passes
- When a priority test call or CHANGE VOICE-GROUP command is used to clear the alarm

Refer to Table 6-1, Voice Port Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to the voice ports. Perform dashed repair actions one at a time until the problem is resolved. Perform all numbered repair actions in order as shown. Alarms appear in the DISPLAY ALARMS screen under the resource type:

```
VOICE_PT
```

Table 6-1. Voice Port Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	Unable to restart Voice Session Controller	MAJOR	VOICE_PT	The system automatically reinitializes the port.
1	VSC software manager fails to initialize	MINOR	VOICE_PT	
2	VSC process sanity failed	MINOR	VOICE_PT	
3	Switch port busied	WARNING	VOICE_PT	Release the busied-out port on the switch.
4	Failed configuration/test port	MINOR	VOICE_PT	Verify the switch translations. Refer to the Switch Administration manual.
5	No switch line response	WARNING	VOICE_PT	Code 5 will resolve itself in10 minutes or less or will become a fault code 4 Verify the switch translations. Refer to the Switch Administration manual.
6	Leave Word Calling not enabled for a line	MINOR	VOICE_PT	1. Check the switch translations to see if *lwc-store* and *lwc-cancel* are administered on display buttons 1 and 2 respectively for the line. 2. Run TEST PORT to see if the problem has been resolved.
7	The AUDIX port (extension) is not listed in, or does not match the switch translations.	MINOR	VOICE_PT	1. Compare the switch and system voice port translations for a mismatch. Match the two. 2. Execute the CHANGE VOICE-GROUP screen to clear the alarm. 3. If the mismatch is not fixed, translation faults will immediately return. To verify the alarm is gone for other faults, place calls to the system hunt group number. To cycle through the hunt group, place enough calls to equal the members of the hunt group (not the number of calls according to translated ports in the system voice port translations).

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Table 6-1. Voice Port Alarms and Repair Procedures — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
8	Busy/Release problem	MINOR	VOICE_PT	— Verify the switch translations (Aux Work). Refer to the Switch Administration manual. — Verify the port is not busied out on the switch.
9	Software synchronization problem	MAJOR	VOICE_PT	— Release/Busyout the port. — Restart the system.
10	Voice Buffer channel post box timeout	MINOR	VOICE_PT	The system will reinitialize the port automatically.
11	Unable to kill Voice Session Processor	MAJOR	VOICE_PT	Restart/reboot the system.
97	Out-of-Service Resource	WARNING	VOICE_PT	Object out of service because a necessary resource is unavailable. Repair the associated resource to get this object back into service.
98	Out-of-Service Craft	WARNING	VOICE_PT	Object out of service due to busyout request. Release to put back into service.

Table 6-2, Voice Port Errors, lists the errors which, if exceeding a certain threshold, may generate the listed faults. They are logged in the DISPLAY ERRORS screen. Note that pseudonyms of listed error resources may appear on the error log; these hidden resources are listed in parenthesis with their related resources. Refer to the list of abbreviations for a definition of abbreviations used here.

Table 6-2. Voice Port Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
VOICE_PT	24	No switch line response	VOICE_PT	5
VOICE_PT	80	Initialization MP 146 aborted (test for dial tone)	VOICE_PT	4
VOICE_PT	80	Initialization MP 146 failed (test for dial tone)	VOICE_PT	4
VOICE_PT	80	Initialization MP 22 aborted (make post box for VB driver)	VOICE_PT	0

Continued on next page

Table 6-2. Voice Port Errors — *Continued*

Error Resource	Error Code	Description	Fault Resource	Fault Code
VOICE_PT	80	Initialization MP 24 aborted (make post box for VSC)	VOICE_PT	0
VOICE_PT	80	Initialization MP 27 aborted (call SD to configure voice port)	VOICE_PT	4
VOICE_PT	80	Initialization MP 6 aborted (create VSC process)	VOICE_PT	1
VOICE_PT	80	Initialization MP 72 aborted (check sanity of VCS sanity)	VOICE_PT	2
VOICE_PT	81	Diagnostic MP 132 failed (forcibly idles port)	VOICE_PT	0
VOICE_PT	81	Diagnostic MP 22 failed (make post box for VB driver)	VOICE_PT	0
VOICE_PT	81	Diagnostic MP 23 failed (remove post box for VB driver)	VOICE_PT	0
VOICE_PT	81	Diagnostic MP 24 failed (make post box for VSC)	VOICE_PT	0
VOICE_PT	81	Diagnostic MP 25 failed (remove post box for VSC)	VOICE_PT	0
VOICE_PT	81	Diagnostic MP 27 failed (call SD to configure voice port)	VOICE_PT	4
VOICE_PT	81	Diagnostic MP 28 failed (call SD to test voice port)	VOICE_PT	4
VOICE_PT	81	Diagnostic MP 5 failed (kill VSC process)	VOICE_PT	11
VOICE_PT	81	Diagnostic MP 6 failed (create VSC process)	VOICE_PT	1
VOICE_PT	81	Diagnostic MP 72 failed (check sanity of VSC process)	VOICE_PT	2
VOICE_PT	81	Initialization MP 22 failed (make post box for VB driver)	VOICE_PT	0
VOICE_PT	81	Initialization MP 24 failed (make post box for VSC)	VOICE_PT	0
VOICE_PT	81	Initialization MP 27 failed (call SD to configure voice port)	VOICE_PT	4
VOICE_PT	81	Initialization MP 6 failed (create VSC process)	VOICE_PT	1
VOICE_PT	81	Initialization MP 72 failed (check sanity of VSC process)	VOICE_PT	2
VOICE_PT	81	Long Demand sequence MP 28 failed (call SD to test voice port)	VOICE_PT	4
VOICE_PT	81	OOS-R sequence MP 23 failed (remove post box for VB driver)	VOICE_PT	0
VOICE_PT	81	OOS-R sequence MP 25 failed (remove post box for VSC)	VOICE_PT	0
VOICE_PT	81	OOS-R sequence MP 5 failed (kill VSC process)	VOICE_PT	11
VOICE_PT	81	Periodic MP 72 failed (check sanity of VSC process)	VOICE_PT	2
VOICE_PT	81	Release sequence MP 72 failed (check sanity of VSC process)	VOICE_PT	2
VOICE_PT	81	Shutdown sequence MP 23 failed (remove post box for VB driver)	VOICE_PT	0
VOICE_PT	81	Shutdown sequence MP 25 failed (remove post box for VSC)	VOICE_PT	0

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Table 6-2. Voice Port Errors — *Continued*

Error Resource	Error Code	Description	Fault Resource	Fault Code
VOICE_PT	81	Shutdown sequence MP 5 failed (kill VSC process)	VOICE_PT	11
VOICE_PT	81	Diagnostic MP 135 failed (reboot system)	VOICE_PT	11
VOICE_PT	81	Diagnostic MP 140 failed (test dial tone seizure)	VOICE_PT	4
VOICE_PT	98	Port busied out on switch	VOICE_PT	3
VOICE_PT	99	Port released on switch	VOICE_PT	3
VOICE_PT	104	System and switch translations differ	VOICE_PT	7
VOICE_PT	105	System and switch translations OK	VOICE_PT	7
VOICE_PT	109	LWC not enabled for a line	VOICE_PT	6
VOICE_PT	112	VSC process died	VOICE_PT	1
VOICE_PT	114	VSC postbox died	VOICE_PT	1
VOICE_PT	229	Unable to busy or release port	VOICE_PT	8
VOICE_PT	282	VSC postbox library access timeout	VOICE_PT	10
VOICE_PT	8078	RCM to SD state sync problem	VOICE_PT	9
(VB_PBOX)				
(VSC)				
(VSC_PBOX)				

Figure 6-3, Test Port Results, lists individual tests and pass/fail/abort information that appear on the screen when TEST PORT is run, and possible repair actions.

Table 6-3. Test Port Results

Test Name	(Passed)	(Failed)	(Abort)	Action
	P Passed	F See Admin Log	A Port not busied	Busyout port, try again
			A cannot alloc port	Someone else testing? (check with RSC)
				See admin log
			A Test active	Someone else testing? (Check with RSC)

Continued on next page

Table 6-3. Test Port Results — *Continued*

Test Name	(Passed)	(Failed)	(Abort)	Action
			A Cannot busy port	Check switch admin for port
Test Voice Port			A Switch names audit	Port in use for names audit
			A Port in use for MWI	Port in use for lamp updates
			A Call active on port	Busyout port, try again
		F Port busy on switch		Release port on switch
		F Aux-Work unreliable		Check switch translations for the port. Make sure the Aux-Work button is administered and has the correct hunt number.
		F Invalid port		System error (call RSC)
		F Failed		System error (call RSC)
	P Passed			
			A No A lists	System error (call RSC)
			A Port not busied	Busyout port, try again
D-tone Seizure Test			A cannot alloc port	Someone else testing? (check with RSC)
(Control Link Only)		F port ext failed		System error (call RSC)
		F port not admin'd		System error (call RSC)
		F cannot vb_init		System error (call RSC)
		F cannot go offhook		System error (call RSC)
		F No dialtone present		Check switch translations, status, TDM
		F cannot break dialtone		Check switch translations, status

Voice Group Problems

Refer to Table 6-4, Voice Group Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to the voice ports. Perform all numbered repair actions in order as shown. Alarms appear in the DISPLAY ALARMS screen under the resource type:

```
VOICE_GRP
```

Table 6-4. Voice Group Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	Voice port translation bad	MAJOR	VOICE_GRP	On the CHANGE VOICE-GROUP screen, administer at least one voice port.
1	A switch port is not in the AUDIX translations. An extra or different extension exists in the switch translations for the hunt group.	MINOR	VOICE_GRP	1. Compare the switch and system voice port translations for a mismatch. Add the missing extension in the system translations, or change the different extension to match that in the switch translations. 2. Execute the CHANGE VOICE-GROUP screen to clear the alarm. 3. If the mismatch is not fixed, translation faults will immediately return. To verify the alarm is gone for other faults, place calls to the system hunt group number. To cycle through the hunt group, place enough calls to equal the members of the hunt group (not the number of calls according to translated ports in the system voice port translations).
2	More than 25% of the voice ports are out of service. This is an escalation of other alarms that may be active on the voice ports.	MAJOR	VOICE_GRP	1. Look at the STATUS VOICE-GROUP and DISPLAY ALARM screens to determine which voice ports are out of service and why. 2. Determine what action is needed to bring individual voice ports back into service.

Table 6-5, Voice Group Errors, lists the errors which, if exceeding a certain threshold, may generate the listed alarm faults. Errors are logged in the DISPLAY ERRORS screen.

Table 6-5. Voice Group Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
VOICE_GRP	103	No voice port translations	VOICE_GRP	0
VOICE_GRP	104	AUDIX and switch translations differ	VOICE_GRP	1
VOICE_GRP	105	AUDIX and switch translations OK	VOICE_GRP	1
VOICE_GRP	106	Voice port translations OK	VOICE_GRP	0
VOICE_GRP	107	Too many voice ports OOS-R/OOS-F	VOICE_GRP	2
VOICE_GRP	108	Sufficient voice ports in service	VOICE_GRP	2

Link Ports Problems

When the DEFINITY AUDIX System attempts to use unpurchased voice ports to do message-waiting updates or audit switch names, errors will be logged, eventually setting off an alarm. Improper switch translations most likely cause these errors and alarms.

Refer to Table 6-6, Link Port Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to the voice ports. Perform all numbered repair actions in order as shown. Alarms appear in the DISPLAY ALARMS screen under the resource type:

VOICE_PT

Table 6-6. Link Port Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	Check error log	MINOR	LINK_PORTS	1. Compare the switch and AUDIX voice port translations for a mismatch. Match the two. 2. Execute the CHANGE VOICE-GROUP screen to clear the alarm. 3. If the mismatch is not fixed, translation faults will immediately return. To verify the alarm is gone for other faults, place calls to the AUDIX hunt group number. To cycle through the hunt group, place enough calls to equal the members of the hunt group (not the number of calls according to translated ports in the AUDIX voice port translations). 4. If the alarm returns several minutes after being cleared by CHANGE VOICE-GROUP, restart the system using RESET SYSTEM RESTART.

Table 6-7, Link Port Errors, lists the errors logged in the DISPLAY ERRORS screen. These errors, if exceeding a certain threshold, may generate the listed fault alarms. Note that pseudonyms of listed error resources may appear on the error log; these "hidden" resources are listed in parenthesis with their related resources.

Table 6-7. Link Port Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
LINK_PORTS	24	No switch line response	LINK_PORTS	0
LINK_PORTS	104	System/switch translations differ	LINK_PORTS	0
LINK_PORTS	105	System/switch translations OK	LINK_PORTS	0
LINK_PORTS	106	CHANGE VOICE GROUP executed	LINK_PORTS	0
LINK_PORTS	109	LWC not enabled for a line	LINK_PORTS	0
LINK_PORTS	112	VSC process died	LINK_PORTS	0
LINK_PORTS	229	Unable to busy or release port	LINK_PORTS	0
LINK_PORTS	8078	RCM to SD state synchronization problem	LINK_PORTS	0
(VOICE_PT)				

Switch (Remote DCS Switch) Problems

When the DEFINITY AUDIX System operates in the Control Link Emulation mode, the following problems may occur with the control link between the remote DCS switch and the DEFINITY AUDIX System. Alarms and repair actions are grouped together in Table 6-8, Switch (Remote DCS Switch) Alarms and Repair Procedures. Perform all numbered repair actions in order as shown.

Alarms appear in the DISPLAY ALARMS screen under the resource type:

```
SWITCH
```

Table 6-8. Switch (Remote DCS Switch) Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	BX25 level 4 translation	MINOR	SWITCH	Check and compare AUDIX and switch translations for the data link. If the switch is not transferring data, continuous attempts are made to bring the link back into service. The alarm will clear when the link test passes or the switch passes data.
1	Remote switch out of data transfer for an extended period of time, and is not recovering	WARNING	SWITCH	1. Resolve switch link fault. 2. Verify remote switch is correctly translated and host switch is correctly translated.

Table 6-9, Switch (Remote DCS Switch) Errors, lists the errors logged in the DISPLAY ERRORS screen. These errors, if exceeding a certain threshold, may generate the listed fault alarms.

Table 6-9. Switch (Remote DCS Switch) Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
SWITCH	81	Diagnostic MP 141 failed (check if switchlink is operational)	SWITCH	1
SWITCH	361	Remote switch translation removed	SWITCH	0,1
SWITCH	360	Bad BX25 level 4 translation	SWITCH	0
SWITCH	363	Host switch data transfer recovered	SWITCH	0,1
SWITCH	8902	Remote switch out of data transfer	SWITCH	1

Switch Link (Control Link) Problems

Refer to Table 6-10, Switch Link (Control Link) Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to the Switch Link. These occur when the DEFINITY AUDIX System is operating in the Control Link Integration mode. Perform all numbered repair actions in order as shown. Alarms appear in the DISPLAY ALARMS screen under the resource type:

```
SWITCHLINK
```

Table 6-10. Switch Link (Control Link) Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	USART failed loop test	WARNING	SWITCHLINK	1. Run TEST SWITCH-LINK LONG. 2. If that fails, run TEST BOARD SHORT (MFB). 3. As a last resort, replace the MFB.
1	Lost DCIU carrier (Level 1)	MAJOR	SWITCHLINK	1. Connect an external loopback plug to the Y-cable Port B connection and run TEST SWITCH-LINK LOOPAROUND test. 2. Physically check cabling and wiring. Start at the AUDIX end. 3. Check the IDI or MPDM and replace if necessary.
2	Lost protocol (Level 2)	WARNING	SWITCHLINK	1. Check the switch translations. 2. Run TEST SWITCH-LINK LONG. 3. Physically check cabling and wiring. Start at the AUDIX end. 4. Check the IDI or MPDM and replace if necessary.

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Table 6-10. Switch Link (Control Link) Alarms and Repair Procedures — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
3	Host out of data transfer	MAJOR	SWITCHLINK	1. Check switchlink *in/out of data transfer* status using the STATUS SWITCH-LINK screen. 2. Connect an external loopback plug to the Y-cable Port B connection and run TEST SWITCH-LINK LOOPAROUND. 3. Check IDI or MPDM and replace if necessary.
4	Bad switch number	MAJOR	SWITCHLINK	1. Check the switch translations. 2. Change the switch number using the *change switch-link* option in the SWITCH LINK DCIU-SCI screen. Running this also clears the alarm. 3. Make remote call to check if the number is correct.
5	Bad AUDIX number	MAJOR	SWITCHLINK	1. Check AUDIX translations. 2. Change the AUDIX number using the *change switch-link* option in the SWITCH LINK DCIU-SCI screen. Running this also clears the alarm. 3. Make a test call to a voice port to see if a call can be placed.
98	Out of service - craft (OOS-C)	WARNING	SWITCHLINK	The alarm is cleared when RELEASE SWITCH-LINK is executed.

Table 6-11, Switch Link (Control Link) Errors, lists the errors logged in the DISPLAY ERRORS screen. These errors, if exceeding a certain threshold, may generate the listed fault alarms.

Table 6-11. Switch Link (Control Link) Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
SWITCHLINK	81	Diagnostic MP 141 failed (check if switch link is operational)	SWITCHLINK	6
SWITCHLINK	81	Diagnostic MP 142 failed (switch link internal looparound test)	SWITCHLINK	3
SWITCHLINK	81	Long demand sequence MP 144 failed (reset the switch link)	SWITCHLINK	3
SWITCHLINK	362	Change switch-link executed	SWITCHLINK	4,5
SWITCHLINK	363	Host switch data transfer recovered	SWITCHLINK	0,1,2, 3
SWITCHLINK	364	X25 driver time-out	SWITCHLINK	6
SWITCHLINK	365	Bad switch number in message	SWITCHLINK	4
SWITCHLINK	366	Bad AUDIX number in message	SWITCHLINK	5
SWITCHLINK	367	USART failed loopback test	SWITCHLINK	0
SWITCHLINK	368	USART passed loopback test	SWITCHLINK	0
SWITCHLINK	370	Lost DCIU carrier (Level 1)	SWITCHLINK	1
SWITCHLINK	371	Recovered DCIU carrier (Level 1)	SWITCHLINK	1
SWITCHLINK	372	Lost protocol (Level 2)	SWITCHLINK	2
SWITCHLINK	373	Recovered protocol (Level 2)	SWITCHLINK	2
SWITCHLINK	8902	Host switch out of data transfer	SWITCHLINK	6

Table 6-12, Test Switchlink Results, lists individual switchlink tests and test results when TEST SWITCH-LINK is run, and possible repair actions.

Table 6-12. Test Switchlink Results

Test Name	Test Result (Passed)	Test Result (Failed)	Test Result (Abort)	Action
Test UART	P Passed			
(Control Link Only)		F Level 1 failure		DSR or DCD not active
		F UART Test Timeout		System error (call RSC)

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Table 6-12. Test Switchlink Results — *Continued*

Test Name	Test Result (Passed)	Test Result (Failed)	Test Result (Abort)	Action
Reset Looparound	P Passed			
			Voice Grp not busied	Busyout Voice-group
		F Int loop failure		Try again, replace MFB
		F Level 1 failure		DSR or DCD not active
		F Level 2 failure		
		F Int loop Timeout		System error (call RSC)
		F Data Trans Timeout		System error (call RSC)
		F Level 1 timeout		System error (call RSC)
		F Level 2 timeout		System error (call RSC)
External Loop Test	P Passed			
		F Ext loop failure		
		F Ext Loop Timeout		System error (call RSC)
Query data transfer	P Passed			
		F Not in Data Trans		Switch not in data xfer
		F Data Trans Timeout		System error (call RSC)

LAN Problems

Refer to Table 6-13, Local Area Network (LAN) Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to the system's Local Area Network interface, which supports client software applications such as Intuity Message Manager. Perform all dashed repair actions one at a time until the problem is solved. Alarms appear in the DISPLAY ALARMS screen under the resource type:

```
LANINTF
```

Table 6-13. Local Area Network (LAN) Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	No ethernet circuit	MINOR	LANINTF	— Upgrade system, replacing TN2169 with TN2170 — Manually reboot the system — Replace the TN2170
1	Ethernet internal	MINOR	LANINTF	— Replace the TN2170
2	FW ethernet loop	MINOR	LANINTF	— Examine the TN2170 cabling to the LAN — Verify correct setting of network integrity option switch — The customer's LAN is inoperable and the customer must repair it.
3	Ping gateway	WARNING	LANINTF	— Examine the data on the SYSTEM-PARAMETERS IMAPI screen — Verify that the customer's LAN is operable. — Manually reboot the system. — Replace the TN2170

Table 6-14, Local Area Network (LAN) Errors, lists the errors logged in the DISPLAY ERRORS screen. These errors, if exceeding a certain threshold, may generate the listed fault alarms.

Table 6-14. Local Area Network (LAN) Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
LANINTF	81	Diagnostic MP 160 failed (resets LAN interface chip)	LANINTF	0
LANINTF	81	Diagnostic MP 162 failed (firmware ethernet loop)	LANINTF	2
LANINTF	81	Diagnostic MP 163 failed (external ethernet loop)	LANINTF	3
LANINTF	81	Diagnostic MP 166 failed (firmware ethernet tests)	LANINTF	1
LANINTF	81	Long demand sequence MP 160 failed (resets LAN interface chip)	LANINTF	0
LANINTF	81	Long demand sequence MP 161 failed (gets ethernet chip ID)	LANINTF	2

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Table 6-14. Local Area Network (LAN) Errors — *Continued*

Error Resource	Error Code	Description	Fault Resource	Fault Code
LANINTF	81	Long demand sequence MP 162 failed (firmware ethernet loop)	LANINTF	2
LANINTF	81	Long Demand sequence MP 163 failed (external ethernet loop)	LANINTF	3
LANINTF	81	Long Demand sequence MP 166 failed (firmware ethernet tests)	LANINTF	1
LANINTF	81	Periodic MP 161 failed (gets ethernet chip ID)	LANINTF	0
LANINTF	81	Periodic MP 163 failed (external ethernet loop)	LANINTF	3
LANINTF	81	Short demand sequence MP 161 failed (gets ethernet chip ID)	LANINTF	0
LANINTF	81	Short demand sequence MP 163 failed (external ethernet loop)	LANINTF	3

Table 6-15, Test LAN Results, lists individual Local Area Network tests and test results when TEST LAN is run, and possible repair actions.

Table 6-15. Test LAN Results

Test Name	Test Result (Passed)	Test Result (Failed)	Test Result (Abort)	Repair Action
Short and Long Tests				
	P Passed			
Test Process		F Failed		Call RSC (examine error log)
			A under test	Try again later

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Table 6-15. Test LAN Results — *Continued*

Test Name	Test Result (Passed)	Test Result (Failed)	Test Result (Abort)	Repair Action
External loop around	P Passed			
		F Failed		See fault code 3 repair actions
			A No ethernet	Replace TN2169 with TN2170
			A Ethernet hardware failed	Indicates hardware loop test failed
			A Firmware loop failed	Indicates firmware loop test failed
			A No gateway IP address	Examine *system-parameters imapi* data
			A (anything else)	Call RSC (examine error log)
Get hardware id	P v2.02 i0000a5cd3700			v is fw version, i is ethernet id
	p v2.02 i0000a5cd3700*			* indicates ethernet id is not factory-assigned value
		F No ethernet		Replace TN2169 with TN2170
Long Test Only				
Reset ethernet chip	P Passed			
		F No ethernet		Replace TN2169 with TN2170
		F Failed		Call RSC (examine error log)
Hardware loop around	P Passed			
		F Ethernet h/w failed		Replace TN2170
		F (anything else)		Call RSC (examine error log)
			A No ethernet	Replace TN2169 with TN2170

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Table 6-15. Test LAN Results — *Continued*

Test Name	Test Result (Passed)	Test Result (Failed)	Test Result (Abort)	Repair Action
Firmware loop around	P Passed			
		F f/w loop failed		
			A No ethernet	Replace TN2169
			A ethernet h/w failed	Indicates hardware loop test failed
			A (anything else)	Call RSC (examine error log)
Reset Process	P Passed			
		F Failed		Call RSC (examine error log)
			A Aborted	Call RSC (examine error log)

Digital Networking

7

This chapter discusses Digital networking in the DEFINITY AUDIX System. It includes alarms, repair procedures, errors, and tests for networking ports and remote machines.

Networking Port Alarms

Table 7-1 NET_PORT Alarms and Repair Procedures, lists alarms and repair procedures addressed to NET_PORT. Repair actions are performed one at a time until the problem is solved. If the problem reoccurs, refer to Table 7-3, Test Network Port Results (short), to better understand the errors that may be triggering the alarms.

Alarms against networking ports belong to alarm origination category NETWORK.

Table 7-1. NET_PORT Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	Software resources (ACCE process or its postbox) associated with the port cannot be initialized or the ACCE process died	MAJOR	NET_PORT, ACCE, or ACCE_PBOX	— Process restarts automatically. Manually reboot. — Restore from generic.
1	The corresponding ACCE process does not respond to process sanity	MINOR	ACCE, or ACCE_PBOX	— Process restarts automatically. — Manually reboot. — Restore from generic.
2	The switch does not respond to activity on the port	MINOR	NET_PORT	— Examine administration data both on the DEFINITY AUDIX System and on the switch. In particular make sure the DTDM is translated on the switch. — Invoke **test network-port xxxx** — Reboot DEFINITY AUDIX System.
3	The port is busied out on the switch	WARNING	NET_PORT	— Release the busyout condition on the switch
97	The port is unusable due to a SOFTWARE or MF_ BD fault condition	WARNING	NET_PORT	— See repair actions for the SOFTWARE or MF_BD alarms.
98	The port has been manually busied out	WARNING	NET_PORT	— Release the busyout via the **release network-port** command**.**

Networking Port Errors

Table 7-2 lists networking port error and fault codes.

Table 7-2. Networking Port Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
NET_PORT	24	No switch response	NET_PORT	2
NET_PORT	80	MP 10 (make postbpox for ACCE process) aborted	NET_PORT	0
NET_PORT	80	MP 11 (remove postbox for ACCE process) aborted	NET_PORT	0
NET_PORT	80	MP 13 (create ACCE process) aborted	NET_PORT	0
NET_PORT	80	MP 15 (check sanity of ACCE process) aborted	NET_PORT	1
NET_PORT	80	MP 16 (pump networking DSP) aborted	NET_PORT	0
NET_PORT	80	MP 115 (kill ACCE process) aborted	NET_PORT	0
NET_PORT	80	MP 171 (test switch response) aborted	NET_PORT	2
NET_PORT	80	MP 172 (initiate 64k loopback) aborted	NET_PORT	none
NET_PORT	80	MP 173 (initiate 56k loopback) aborted	NET_PORT	none
NET_PORT	80	MP 174 (stop loopback) aborted	NET_PORT	none
NET_PORT	80	MP 175 (check sanity of networking DSP) aborted	NET_PORT	none
NET_PORT	80	MP 176 (reset network port) aborted	NET_PORT	0
NET_PORT	81	MP 10 (make postbox for ACCE process) failed	NET_PORT	0
NET_PORT	81	MP 11 (remove postbox for ACCE process) failed	NET_PORT	0
NET_PORT	81	MP 13 (create ACCE process) failed	NET_PORT	0
NET_PORT	81	MP 15 (check sanity of ACCE process) failed	NET_PORT	1
NET_PORT	81	MP 16 (pump networking DSP) failed	NET_PORT	0
NET_PORT	81	MP 115 (kill ACCE process) failed	NET_PORT	0
NET_PORT	81	MP 171 (test switch response) failed	NET_PORT	2
NET_PORT	81	MP 172 (initiate 64k loopback) failed	NET_PORT	none
NET_PORT	81	MP 173 (initiate 56k loopback) aborted	NET_PORT	none
NET_PORT	81	MP 174 (stop loopback) failed	NET_PORT	none
NET_PORT	81	MP 175 (check sanity of networking DSP) failed	NET_PORT	none
NET_PORT	81	MP 176 (reset network port) failed	NET_PORT	0
NET_PORT	98	Port busied out on switch	NET_PORT	3
NET_PORT	99	Port release on switch	NET_PORT	3
ACCE	112	ACCE process died	NET_PORT	0
ACCE_PBOX	282	ACCE postbox background library timeout	NET_PORT	1
NET_PORT	229	Unable to release port	NET_PORT	2

Networking Port Test Results

The **test network-port *<location>*** command runs the default (short) network port test, which is a set of non-intrusive tests verifying basic operation of the network port and associated DSP.

Table 7-3 lists network port results for the short network port test.

Table 7-3. Test Network Port Results (short)

Test Name	Test Result	Repair Action
Switch response[1]	P Passed	na
	A port is busy	run test later
	A port in loopback	stop loopback testing and run again
	A system error	try again, reboot, call RSC
	F failed	same as NET_PORT alarm 2
Test Process	P Passed	na
	F res=1190, Erno=0	run long test, reboot, reinstall generic software
	F Failed	run long test, reboot, reinstall generic software
DSP sanity	P Passed	na
	A system error	try again, run long test, reboot, replace MFB
	F Failed	run long test, reboot, replace MFB

1. The Switch response test aborts if a network call is active on the port.

NOTE:
The *short* test checks most of the software and the hardware involved in the test.

The **test network-port *<location>* long** command runs the *long* network port test, which resets the network port and associated DSP and then verifies basic operation of the network port and associated DSP.

Table 7-4 Test Network Port Results (long), lists network port results for the long network port test.

Table 7-4. Test Network Port Results (long)

Test Name	Test Result	Repair Action
Reset net port	P Passed	na
	A port not busied	busyout port and run test again
	F DSP*n*BAD	reboot, replace MFB
	F Failed	reboot, reinstall generic, replace MFB
Switch response	same as short test	same as short test
Test Process	same as short test	same as short test
DSP sanity	same as short test	same as short test

NOTE:
The **Reset network port test** aborts unless the port is busied out.

The **test network-port *<location>* 64k-start-loop** command runs the 64k-start-loop test which puts the indicated port in 64kbps looparound mode. The port is restored to its normal mode by running **test network -port *<location>* stop-loop**.

NOTE:
The actual looparound test is run by long-distance carrier services from a remote location.

The **test network-port *<location>* 56k-start-loop** command runs the *56k-start-loop* test which is identical to the 64k-start-loop test except the port is put in 56k bps rather than 64kbps looparound mode.

Table 7-5 lists network port results for the **64k-start-loop** and **56k start-loop.**

Table 7-5. Test Network Port Results (64k start-loop or 56k start-loop)

Test Name	Test Result	Repair Action
Start 64K (or 56K) looparound	P passed	na
	A port is busied out	release busyout, run test again
	A port is busy	run test later
	A already in loopback	stop loopback, run test again
	A system error	try again, run long test, reboot, call RSC
	F Failed	run long test, reboot, call RSC

NOTE:
The 64k start loop test aborts unless the port is in-service and idle.

test network-port *<location>* stop-loop command runs the *stop-loop* test which returns the indicated port to its normal mode after having been put into 64k or 56k looparound via either the *64k-start-loop* or *56k-start-loop* test. Stop the loop-around after network services has finished their test.

Table 7-6 lists network port results.

Table 7-6. Test network port stop-loop

Test name	Test Result	Repair Action
	P Passed	na
Stop looparound	A port is busied out	release busyout, start loopback
	A port is busy	wait for test call to complete, try again
	A port not in loopback	must start loopback before stopping it
	A system error	try again, run long test, reboot, call RSC
	F Failed	run long test, reboot, call RSC

NOTE:
The stop loop test aborts unless the port is in one of the loop-around modes.

Remote Machine Alarms

The following alarms may be raised on resource MACHINE, corresponding to a specific remote machine. In all cases, the error log resource is MACHINE. In the alarm, event, and error logs, the location for MACHINE resources is the remote machine's voice id as displayed on the list machine form. Alarms against remote machines belong to alarm origination category NETWORK.

Table 7-7 lists MACHINE alarms and repair procedures for remote networking machines.

Table 7-7. MACHINE (Remote Networking machine) Alarms and Repair Procedures

Alarm code	Description	Alarm Level	Error Log Resource	Repair Action
0	continuing failure to connect	WARNING	MACHINE	Check administration on local machine of remote machine and vice versa. Try connection test via **test machine**.
1	remote update failure	WARNING	MACHINE	Check administration on local machine of remote machine and vice versa. Try connection test via **test machine**. Initiate remote update on demand via **get remote-updates**

It may be useful to dial the remote machine from a telephone to hear the type of call-progress failures encountered.

Remote Machine Errors

Table 7-8 lists MACHINE errors and fault codes for remote machines.

Table 7-8. Remote Machine Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
MACHINE	80	MP 168 (check for connection failures) aborted	MACHINE	0
MACHINE	80	MP 169 (check for remote update)	MACHINE	1
MACHINE	80	MP 170 (make test networking call) aborted	MACHINE	none
MACHINE	81	MP 168 (check for connection failures) failed	MACHINE	0
MACHINE	81	MP 169 (check for remote update failures) failed	MACHINE	1
MACHINE	81	MP 170 (make test networking call) failed	MACHINE	none
MACHINE	375	Failure to connect	MACHINE	0
MACHINE	376	Successful connection	MACHINE	0
MACHINE	377	Remote update failed	MACHINE	1
MACHINE	378	Remote update succeeded	MACHINE	1
MACHINE	379	Network call dropped	MACHINE	none

Remote Machine Test

Test machine does not generate the alarm, it resolves the alarm by:

- Specifying the machine by voice id or by name
- Optionally specifying which port to use
- Automatically camping on if port is currently busy
- Displaying quasi real-time status of test call

The full command is:

test machine *<machine-identifier>* [network-port *<network-port-identifier>*]

Table 7-9 shows the screen displays of a normal mode 2 data call:

Table 7-9. Screen Displays of Normal Mode 2 Data Call

Test Machine Screen State	Description
R Running	Test Call Executed
R Starting	Test Call Starting
R Seizing	Test Call Seizing an AUDIX network port to place the data call
R Dialing	DEFINITY AUDIX network port dialing the local DCP data module extension (data module either an ADU or 7400A)
R Connecting	DEFINITY AUDIX network port connecting to local DCP data module
R Starting DSP	DEFINITY AUDIX network port connected to DCP data module and establishing RS232 connection to modem
R Dialing ATDT9,555...	DEFINITY AUDIX software activating the local modem to dial the remote modem using the AT dial command
R Connected	Local and remote modems connected
R Sending Break	DEFINITY AUDIX software sending BREAK character to activate the DIAL: prompt on the remote DCP data module
R Dialing 12345	DEFINITY AUDIX software dialing the remote DEFINITY AUDIX networking port
R Ringing	Ringing detected on remote DEFINITY AUDIX networking port
R Answered	Remote DEFINITY AUDIX networking port answered, completing the end to end connection
R Starting Data Link	The local and remote DEFINITY AUDIX exchange machine name and password information
R Sending Test File	Machine and password information verified and test file transmitted
P Test Done-Pass	Test Call Succeeded

Table 7-10 shows errors that are displayed in the Most Recent Test Result field for an unsuccessful test call.

Table 7-10. Error Displays

Test Machine Screen State	Description
F Seizing-Fail	Could not seize the networking port
F Seizing-Busy	Network port is not IDLE or is busied out
F Seizing-Efail	Could not seize the networking port
F Seizing-Abort	While seizing the port, the port is busied out
F Dialing-NoansF	Networking call not answered on remote
F Dialing-Busy	Received busy tone
F Dialing-Denied	Received intercept tone
F Dialing-Reorder	Received reorder tone
F Dialing-Tmout	Got timeout on dialing the port
F Dialing-Disconnect	Received disconnect message while dialing
F Dialing-Abort	While dialing the port, the port is busied out
F Dialing-Fail	Dialing failed for unknown reason
F Connected-NoansT	Call was answered, but did not receive modem answer tone
F Connected-Tmout	Call was connected, but timed out before an expected result or state occurred
F Connected-Fail	Expected connection or result failed to occur. (Check administration log for more information)
F Connected-Busy	Call received busy tone
F Connected-Reject	Incorrect password
F Connected-Abort	While connecting to networking port, the port is busied out
F File Transfer-Fail	Connection dropped during transfer

Table 7-11 lists the failure error message for Mode 2 Test Calls. In the *Most RecentTest Result* column (from the TEST MACHINE form) it shows the last completed step in the call prior to the failure. It also shows the possible problem and a list of corrective actions.

Table 7-11. Error Messages for Mode 2

Most Recent Test Result (Last Step that Completed)	Most Recent Test Result (Failure)	Possible Problem	Corrective Action
None	F Seizing-Fail	AUDIX outgoing networking port hung	Busy out and test networking port.
R Seizing-Pass	F Dialing-Tmout	1. Hardware problem with 7400A	1. Run self-test on the 7400A. Replace if test fails.
		2. Local 7400A interface set to AT command (7400A may be set to factory defaults).	2. Change interface to keyboard dial and set options on 7400A.
		3. Local modem not administered correctly. (Modem may be set to factory defaults).	3. Change modem to correct option settings.
		4. Local modem turned off	4. Check modem.

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Table 7-11. Error Messages for Mode 2 — *Continued*

Most Recent Test Result (Last Step that Completed)	Most Recent Test Result (Failure)	Possible Problem	Corrective Action
R Seizing-Pass	F Dialing-NoansF	Modular cord on 7400A or ADU plugged into the wrong modular jack on the back of the device	Check the cord and plug into the Line modular jack.
		Cable between 7400A/ADU and Modem unplugged or bad. Auto answer not administered on the ADU.	Check cable.
		ADU or 7400A failed	Run **test data <ext>** on switch. Test 7400A data module from front panel.
		.ADU or 7400A not wired correctly	Run **test data <ext>** on the switch. Check wiring.
		Auto answer turned off on the 7400A	Change Front Panel setting to Auto Answer
		Auto answer not administered on the ADU.	Check switch administration
		ADU or 7400A Busied out on switch	Release busy data module
		Modem Turned off or bad	Check Modem. Run self test on modem from front panel
		Data Terminal Ready not set on Modem (DTR light off)	Check the modem configuration from front panel. DTR ACTION should be set to Stndrd_RS232 and LSD Control should be set to WinkWhenDisc. These setting are under the DTE_Interface configuration heading.

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Table 7-11. Error Messages for Mode 2 — *Continued*

Most Recent Test Result (Last Step that Completed)	Most Recent Test Result (Failure)	Possible Problem	Corrective Action
R Starting-DCP	F Connected-Ehup	1. The first extension in the dial string is the modem or modem hunt group extension instead of the DCP data modules/hunt group extension.	1. Correct dial string.
		2. The first extension in the dial string is incorrect, but the call is being answered with data tone	2. Correct the dial string.
R Dialing ATDT9,555…	F Connected-Timout	ADU bad or manufactured prior to 10/94	Replace ADU.
R Dialing Atdt9,555…	F Connected-NoansT	Upper and lower case characters in the AT command string	Change the ATDT to either all upper case or all lower case characters.
R Dialing adtd9,555…	F Connected-Tmout.	Typing error in the **atdt** command	Correct dial string.

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Table 7-11. Error Messages for Mode 2 — *Continued*

Most Recent Test Result (Last Step that Completed)	Most Recent Test Result (Failure)	Possible Problem	Corrective Action
R Dialing atdt9,555…	F Connected-Ehup	No outgoing trunks available	Try test call again
		Incorrect or wrong telephone number in dial string	Correct dial string
		Modular line cord plugged into the wrong jack on back of modem	Plug cord into correct jack
		Modem analog line not connected or wired correctly	Administer modem
		Remote modem not answering	1. Check if remote modem turned on or connected
			2. Check if remote modem has Auto Answer on
			3. Check if remote modem has DTR light on and modem is configured correctly.
			4. Check if remote modem cable is plugged into ADU/7400A or cable is bad
			5. Check if Keyboard Dial is set on the remote ADU. On switch SAT terminal do a **change data <extension>**. Keyboard dial setting is on page 2 of the administration screens.
			6. Check if remote 7400A set to AT command mode. Change from front panel.
			7. Check if remote 7400A/ADU/ modem's modular cords are plugged into correct jacks.

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Table 7-11. Error Messages for Mode 2 — *Continued*

Most Recent Test Result (Last Step that Completed)	Most Recent Test Result (Failure)	Possible Problem	Corrective Action
R Sending BREAK	1. F Connected-Fail	1. The atdt telephone number contains the number for the remote DCP data module/hunt group or the DEFINITY AUDIX networking port/hunt group instead of the remote modem/hunt group.	1. Correct number
		2. Remote ADU or 7400A has multiple speeds set.	2. Change so only the one speed is set
		3. Remote 7400A Interface is set to Answer Only	3. Change 7400A Interface from front panel
		4. Remote 7400A or ADU busied out on switch	4. Release busy the 7400A/ADU
		5. Remote ADU or 7400A line unplugged or wired wrong	5. Check wiring
		6. Remote 7400A busied out from front panel	6. Release busy
		7. Remote ADU or 7400A hardware bad	7. Test ADU and 7400A from switch SAT and selftest on 7400A

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Table 7-11. Error Messages for Mode 2 — *Continued*

Most Recent Test Result (Last Step that Completed)	Most Recent Test Result (Failure)	Possible Problem	Corrective Action
R Sending BREAK	F Connected-Ehup	1. Remote 7400A and remote AUDIX networking port still active after previous call dropped (remote modem disconnected from trunk)	1. Check if the remote 7400A DTR Lead setting is IGNORE. Change to FOLLOW under the set options on the front panel
		2. Parity not set to SPACE on the remote 7400A or ADU	2. Change Parity setting. Parity is set on the front panel for the 7400A (Change Options) and on the switch SAT terminal for the ADU
		3. Remote 7400A failure	3. Run 7400A self-test command.
		4. Remote 7400A set for wrong speed	4. Change to correct speed setting
R Dialing 12345	F Connected-Ehup	Transmission speed set in the remote AUDIX screen (add/change machine <machine name>) differs from the speed set on the modems and 7400A/ADU	Change to correct speed settings.
R Dialing 12345	F Connected-NoansT or Connected-Tmout	1. The “B” break command left out of the dial string	1. Change dial string
		2. The remote AUDIX network port/hung group extension is incorrect but the extension is valid on the remote switch	2. Change dial string
R Dialing B″1234	F Connected-NoansT or F Connected-Tmout	Missing double quotes between the wait command and the break command (″W″B″). AUDIX is trying to dial the B.	Change dial string

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Table 7-11. Error Messages for Mode 2 — *Continued*

Most Recent Test Result (Last Step that Completed)	Most Recent Test Result (Failure)	Possible Problem	Corrective Action
R Dialing 12345	F Connected-Busy	1. active on another call.	1. Wait and try again.
		2. Remote AUDIX Network port(s)hunt group administered on Switch, but the network pors are not administered on the remote AUDIX.	2. Check the networking administration on AUDIX.
		3. Remote ADUIX Network port(s) busied out on switch	3. Release busy.
R Dialing 12345 R Ringing	F Connected-Ehup	Remote AUDIX is down or Rebooting	Wait and try call again.
R Dialing 12345	F Connected-Denied	F Connected-Busy 1. Remote AUDIX network port/hunt group extension incorrect and dialing an invalid extension on remote switch.	1. Correct number in dial string
		2. Remote AUDIX port/hunt group extension not administered on remote switch	2. Check remote switch administration for AUDIX networking ports and hunt group
		3. Remote ADU bad or manufactured before 10/94	3. Replace ADU.

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Table 7-11. Error Messages for Mode 2 — *Continued*

Most Recent Test Result (Last Step that Completed)	Most Recent Test Result (Failure)	Possible Problem	Corrective Action
R Starting Datalink	F Connected-Ehup	1. Password being sent is incorrect 2. Far End AUDIX network port extension is incorrect and call was answered	1. Check and correct password. 2. Correct extension.
R Starting Datalink	F Connected-Fail	Remote machine name incorrect	Check that the actual machine name and the machine name entered in the ADD MACHINE screen are the same. If the machine names agree, check that the dial string is for that machine and not another machine in the network.

Table 7-12 shows test results for normal mode 1 and 3 calls.

Table 7-12. Test Results for Normal Mode 1 and 3 Calls S

Most Recent Test Result (Last Step that Completed)	Most Recent Test Result (Failure)	Possible Problem	Corrective Action
R Seizing Pass	F Dialing-Denied	Number of the Remote AUDIX Networking Port incorrect	Check the number in the dial string.
R Seizing Pass	F Dialing-Disconnect	Remote AUDIX networking ports busied out (either on the Switch or AUDIX).	Release busy the networking port.
R Seizing Pass	F Dialing-Tmout	Dialed a remote AUDIX networking port number that did not answer	Check the dialed number in the dial string. The remote AUDIX networking port may be administered on the switch but not on the DEFINITY AUDIX System
R Seizing Pass	F Dialing-Busy	Remote AUDIX network port(s) busy	Wait and try call again.
R Starting Data Link	F Connected-Ehup	Called an incorrect number that was answered with data carrier tone (Possibly a modem or 7400A)	Correct number in the dial string
R Starting Data Link	F Connected-Fail	64K Mode 3 data call made over a T1 facility that can only handle 56K Mode 1 calls.	Check the administration on the T1 facility or change the call rate to 56k.

Table 7-13 shows test machine results.

Table 7-13. Test Machine Results

Test Name	Test Result	Repair Action
Test connection	P Test Done-Pass	na (Test done successfully)
	R port busy, waiting	Use other port or continue waiting.
	R Starting	Starting the test
	A port is OOS-F	Fix network port alarm, try again.
	A port is OOS-R	Fix MF-BD or software alarms, try again.
	A port is OOS-C	Use other port or release busyout, try again.
	A port is busy	Try again later.
	A port is busied out	Use other port or release busyout and try again.
	A another call active	Wait for other call to same machine to complete.
	A port in loopback	Stop loopback testing and run again.
	A system error	Try again, run long port test, reboot, call RSC.
	R Seizing-Pass	Successfully seized local networking port
	F Seizing-Busy	The port is not IDLE or has been busied out.
	F Seizing--Efail	Could not seize the port (raise alarm).
	A Seizing-Abort	While seizing the port, the port is busied out.
	F Seizing-Fail	Unknown reason (system error)
	R Dialing-Pass	First stage dialing passed.
	F Dialing-Busy	Received busy tone.
	F Dialing-Denied	Received intercept tone.
	F Dialing-Reorder	Received reorder tone.
	F Dialing-Tmout	Got timeout on dialing the port.
	F Dialing-Disconnect	Received disconnect.
	F Dialing-Abort	While dialing the port, the port is busied out.
	F Dialing-Fail	Unknown reason (system error)
	R Connecting	Initiating remote connection sequence

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Table 7-13. Test Machine Results — *Continued*

Test Name	Test Result	Repair Action
Test connection	R Starting DSP	Like is says, “starting DSP”
	R Dialing xxx	Each dial stage is displayed as it is sent to the modem.
	R Ok	Displays if the modem accepts the init string.
	R Sending BREAK	Sending break to remote data module prior to last dial stage
	R Connected	Local modem is connected to remote modem.
	R Ringing	Remote AUDIX or modem is ringing.
	R Answered	Remote AUDIX has answered.
	R Starting Datalink	Setting up networking protocol
	R Connected-Pass	Connection to the remote machine passed
	F Connected-Reject	Rejected (wrong password)
	F Connected-Ehup	Received disconnect.
	A Connected-Abort	While connecting the port, the port is busied out.
	F Connected-Fail	Check adm. log for the reason.
	R Sending Test File	Starting file transfer
	R File Transfer-Pass	File transfer passed.
	F File Transfer-Fail	Connection dropped during transfer.

Filesystems

8

Minor and major alarms against the filesystems generally require system initialization. If a serious problem occurs during normal system operation, an alarm is raised and no corrective action is taken until the system is rebooted. The alarm is retired by the reboot.

If the filesystem cannot be repaired during initialization, more drastic repair action will be required, such as restoring the filesystem from backup or replacing the disk.

A DEFINITY AUDIX System does not allow for automatic filesystem growth. Filesystem size is set at the factory.

Customer filesystems are made up of:

- Master Data (M_DATA)
  - — Backed up nightly
- System Data (S_DATA)
  - — Backed up nightly
- Storage (STORAGE)
  - — Voice text backed up on demand
  - — Announcements backed up on demand
  - — Names backed up Sunday mornings

The customer is not responsible for creating filesystem free space. Low free space situations are noted on the administration terminal status line and in the administration log. The system will not notify the RSC of this situation.

All customer filesystems must be accessible for the system to successfully reach the AUDIX state.

Customer filesystems appear on the CHANGE FILESYSTEM screen.

Customer Storage Problems

Refer to Table 8-1, Storage Filesystem Alarms and Repair Procedures, for a list of alarms and repair procedures addressed to the storage filesystem. Perform dashed repair actions one at a time until the problem is solved. Alarms appear in the DISPLAY ALARMS screen under the resource type:

STORAGE

Table 8-1. Storage Filesystem Alarms and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	No free space. Occurs if earlier filesystem threshold warnings to the administrator are ignored. Will cause serious problems with system operation.	WARNING	STORAGE	— Ask subscribers to delete unnecessary messages or greetings. Message retention time for old and filed messages may also be shortened via the "class of service" screens. — Remove unused announcements or announcement sets. — Decrease the number of subscribers with recorded names. Delete unnecessary remote subscribers. — Install bigger disk.
1	The filesystem is corrupted. Detected by the filesystem driver after the system is up and running. Operations continue but the filesystem will be marked unclean when unmounted.	MINOR	STORAGE	Invoke the RESET SYSTEM REBOOT screen which will cause *fsck* to run against the filesystem and clean it up.

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Table 8-1. Storage Filesystem Alarms and Repair Procedures — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
2	No free i-nodes	WARNING	STORAGE	This is a symptom of some other problem in the system. Invoke the RESET SYSTEM REBOOT screen which will cause *fsck* to run against the filesystem and clean it up.
3	Free space low	No alarm	STORAGE	Used internally. Alarm is never active.
4	Active announcement set is inaccessible or nonexistent.	MAJOR	STORAGE	Use the CHANGE SYSTEM-PARAMETERS FEATURES screen to activate another announcement set. If the desired announcement set is saved on tape, use the RESTORE BACKUPS screen to restore all announcement sets. To restore, the system must be in the OA&M state. If the desired announcement set is not saved on tape, restore generic.

Table 8-2, Storage Filesystem Errors, lists the errors logged in the DISPLAY ERRORS screen. If these errors exceed a certain threshold, they may generate the above alarms. Note that pseudonyms of listed error resources may appear in the error log; these *hidden* resources are listed in parenthesis with their related resources.

Table 8-2. Storage Filesystem Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
STORAGE	81	Periodic MP 32 failed (check file thresholds)	STORAGE	3
FILESYSTEM	132	System FS driver—Filesystem corrupted	STORAGE	1
FILESYSTEM	133	System FS driver—no free space	STORAGE	0
FILESYSTEM	134	Filesystem is out of free i-nodes	STORAGE	2
FILESYSTEM	135	System FS driver—internal s/w error	STORAGE	1
FILESYSTEM	137	In-core filesystem i-node table overflow	STORAGE	2
STORAGE	210	Active announcement set not available	STORAGE	0
STORAGE	211	Active announcement set not active	STORAGE	4
(STORAGE)				
FILESYSTEM	8181	Disk I/O error	STORAGE	none

Master Data Problems

Refer to Table 8-3, Master Data Filesystem Faults and Repair Procedures, for a list of alarms and repair procedures addressed to the Master Data filesystem. Alarms appear in the DISPLAY ALARMS screen under the resource type:

M_DATA

The system must be brought to the OA&M state before repair on this filesystem can begin.

Table 8-3. Master Data Filesystem Faults and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	No free space. Occurs if earlier filesystem threshold warnings to the administrator are ignored. Will cause serious problems with system operation.	MINOR	M_DATA	Decrease the size of the log files (admin, activity, error logs, and so forth). If the filespace threshold continues to be exceeded, a bigger disk must be installed.
1	Free space is low	MINOR	M_DATA	Decrease the size of the log files (admin, activity, error logs, and so forth). If the filespace threshold continues to be exceeded, a bigger disk must be installed. If this problem is neglected, fault code 0 may appear.
2	The filesystem is corrupted. Detected by the filesystem driver after the system is up and running. Operations continue but the filesystem will be marked unclean when unmounted.	MINOR	M_DATA	Invoke the RESET SYSTEM REBOOT screen which will cause *fsck* to run against the filesystem and clean it up.
3	No free i-nodes	WARNING	M_DATA	This is a symptom of some other problem in the system. Invoke the RESET SYSTEM REBOOT screen which will cause *fsck* to run against the filesystem and clean it up.

Table 8-4, Master Data Filesystem Errors, lists the errors logged in the DISPLAY ERRORS screen. If these errors exceed a certain threshold, they may generate the above alarms. Note that pseudonyms of listed error resources may appear on the error log; these "hidden" resources are listed in parenthesis with their related resources

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Table 8-4. Master Data Filesystem Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
M_DATA	81	Periodic MP 32 failed (check file thresholds)	M_DATA	1
FILESYSTEM	132	System FS driver — Filesystem corrupted	M_DATA	2
FILESYSTEM	133	System FS driver — no free space	M_DATA	0
FILESYSTEM	134	Filesystem is out of free i-nodes	M_DATA	3
FILESYSTEM	135	System FS driver — internal s/w error	M_DATA	2
FILESYSTEM	137	In-core filesystem i-node table overflow	M_DATA	3
(STORAGE)				
FILESYSTEM	8181	Disk I/O error	M_DATA	none

System Data Problems

Refer to Table 8-5, System Data Faults and Repair Procedures, for a list of alarms and repair procedures addressed to the System Data filesystem. Alarms appear in the DISPLAY ALARMS screen under the resource type:



Except for fault code 4, the system must be brought to the OA&M state before repair can begin.

Table 8-5. System Data Faults and Repair Procedures

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	No free space. Occurs if earlier filesystem threshold warnings to the administrator are ignored. Will cause serious problems with system operation.	WARNING	S_DATA	Ask subscribers to delete unnecessary messages. Shorten the message retention time via the *class of service* screens. If the filespace threshold continues to be exceeded, a bigger disk must be installed.
1	The filesystem is corrupted. Detected by the filesystem driver after the system is up and running. Operations continue but the filesystem will be marked unclean when unmounted.	MINOR	S_DATA	Invoke the RESET SYSTEM REBOOT screen which will cause *fsck* to run against the filesystem and clean it up.
2	No free i-nodes	WARNING	S_DATA	This is a symptom of some other problem in the system. Invoke the RESET SYSTEM REBOOT screen which will cause *fsck* to run against the filesystem and clean it up.
3	Free space is low	No alarm	S_DATA	Used internally. Alarm is never active.
4	Switch transfer dial plan	MINOR	S_DATA	Re-administer transfer dial plan information using CHANGE TRANSFER-DIAL PLAN

Table 8-6, System Data Filesystem Errors, lists the errors logged in the DISPLAY ERRORS screen. If these errors exceed a certain threshold, they may generate the above alarms. Note that pseudonyms of listed error resources may appear on the error log; these *hidden* resources are listed in parenthesis with their related resources.

Table 8-6. System Data Filesystem Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
S_DATA	81	Periodic MP 32 failed (check file thresholds)	S_DATA	1
FILESYSTEM	132	System FS driver — Filesystem corrupted	S_DATA	1
FILESYSTEM	133	System FS driver — no free space	S_DATA	0
FILESYSTEM	134	Filesystem is out of free i-nodes	S_DATA	2
FILESYSTEM	135	System FS driver — internal s/w error	S_DATA	1
FILESYSTEM	137	In-core filesystem i-node table overflow	S_DATA	2
(STORAGE)				
S_DATA	213	Transfer dial plan is o.k.	S_DATA	4
S_DATA	212	Transfer dial plan is corrupted	S_DATA	4
FILESYSTEM	8181	Disk I/O error	S_DATA	none

Software

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Refer to Table 9-1, Software Alarms and Repair Actions, for a list of alarms and repair procedures addressed to the DEFINITY AUDIX System software. Alarms are grouped in increments of 100. Perform dashed repair actions one at a time until the problem is solved. Perform all numbered repair actions in order as shown. They appear in the DISPLAY ALARMS screen under the resource type:

SOFTWARE

Table 9-1. Software Alarms and Repair Actions

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	Process death	MAJOR	ADATA	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU
1	Process initialization failure	MAJOR	ADATA	
2	Process sanity failed	MAJOR	ADATA	
3	Process error reported	No alarm	ADATA	Used internally. Alarm is never active

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
100	Post box library timeout	MAJOR	ADATA_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU
101	Cannot make post box	MAJOR	ADATA_PBOX	
102	Post box is not present	MAJOR	ADATA_PBOX	
200	Dead process	MAJOR	ADM	
201	Process error reported	No alarm	ADM	Used internally. Alarm is never active
300	Post box library timeout	MAJOR	ADM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU
301	Post box library timeout	MAJOR	ADM_PBOX	
400	Process death	MAJOR	AFIO	
401	Process initialization failure	MAJOR	AFIO	
402	Process sanity failed	MAJOR	AFIO	
403	Process error reported	No alarm	AFIO	Used internally. Alarm is never active
500	Post box library timeout	MAJOR	AFIO_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU
501	Cannot make post box	MAJOR	AFIO_PBOX	
502	Post box is not present	MAJOR	AFIO_PBOX	
600	Dead process	MAJOR	AIM	
601	Non-standard system software in use	MINOR	AIM	Alert the RSC.
602	A system process has core dumped	MINOR	AIM	— Alert the RSC to inspect the core-dump files. — (RSC) Remove `/var/audix/core saved` and `/var/audix/*.core` files. The alarm will be cleared in approximately five minutes.

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
700	Post box library timeout	MAJOR	AIM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
701	Post box library timeout	MAJOR	AIM_PBOX	
800	Dead process	MAJOR	AKSRV	
801	Process error reported	No alarm	AKSRV	Used internally. Alarm is never active.
900	Process death	MINOR	ANET	Process restarts automatically twice, then reboots twice. If this fails, restore from generic.
901	Process initialization failure	MINOR	ANET	Process restarts automatically twice, then reboots twice. If this fails, restore from generic
902	Process sanity failed	MAJOR	ANET	Process restarts automatically twice, then reboots twice. If this fails, restore from generic
903	Process error reported	No alarm	ANET	Used internally. Alarm is never active.
1100	Process death	MAJOR	APM	
1101	Process initialization failure	MAJOR	APM	
1102	Process sanity failed	MAJOR	APM	
1103	Process error reported	No alarm	APM	Used internally. Alarm is never active.
1300	Process death	MAJOR	DM	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
1301	Process initialization failure	MAJOR	DM	
1302	Process sanity failed	MAJOR	DM	
1303	Process error reported	No alarm	DM	Used internally. Alarm is never active.
1400	Post box library timeout	MAJOR	DM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
1401	Cannot make post box	MAJOR	DM_PBOX	
1402	Post box is not present	MAJOR	DM_PBOX	

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
1500	**OA&M** state caused by system initialization error	MAJOR	STATE	Restore generic filesystems using STU.
1501	Need generic restore	MAJOR	STATE	
1502	Need a restore backup	MAJOR	STATE	Restore filesystems from customer backup.
1503	Rebuild is in progress. If system is in **OA&M** state, this indicates the automatic rebuild audit failed during initialization	MAJOR	STATE	Restore generic filesystems using STU.
1504	Cannot make AFIO tables	MAJOR	STATE	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
1600	Process death	MAJOR	ELIP	
1601	Process initialization failure	MAJOR	ELIP	
1602	Process sanity failed	MAJOR	ELIP	
1603	Process error reported	No alarm	ELIP	Used internally. Alarm is never active.
1700	Post box library timeout	MAJOR	ELIP_PBOX	
1701	Cannot make post box	MAJOR	ELIP_PBOX	
1702	Post box is not present	MAJOR	ELIP_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
1800	Process death	MAJOR	EPM	
1801	Process initialization failure	MAJOR	EPM	
1802	Process sanity failed	MAJOR	EPM	
1803	Process error reported	No alarm	EPM	Used internally. Alarm is never active.
1804	Operating system stream buffers full	MAJOR	EPM	The system automatically reboots and resolves the alarm.

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
1900	Post box library timeout	MAJOR	EPM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
1901	Cannot make post box	MAJOR	EPM_PBOX	
1902	Post box is not present	MAJOR	EPM_PBOX	
2000	Unable to kill process	MAJOR	ER	
2001	Unable to make process	MINOR	ER	
2002	Too many process errors	WARNING	ER	
2100	Post box library timeout	MAJOR	ER_PBOX	
2101	Post box library timeout	MAJOR	ER_PBOX	
2200	Dead process	MAJOR	FC	
2201	Process error reported	No alarm	FC	Used internally. Alarm is never active.
2300	Post box library timeout	MAJOR	FC_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
2301	Cannot make post box	MAJOR	FC_PBOX	
2302	Post box is not present	MAJOR	FC_PBOX	
2400	Dead process	MAJOR	FSA	
2401	Process error reported	No alarm	FSA	Used internally. Alarm is never active.
2500	Post box library timeout	MAJOR	FSA_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
2501	Post box library timeout	MAJOR	FSA_PBOX	
2600	Dead process	MAJOR	MCM	
2601	Process error reported	No alarm	MCM	Used internally. Alarm is never active.

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
2700	Post box library timeout	MAJOR	MCM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
2701	Post box library timeout	MAJOR	MCM_PBOX	
2800	Dead process	MAJOR	MPM	
2801	Process error reported	No alarm	MPM	Used internally. Alarm is never active.
2900	Post box library timeout	MAJOR	MPM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
2901	Post box library timeout	MAJOR	MPM_PBOX	
3100	Dead process	MAJOR	RCM	
3101	Non-standard process path	MINOR	RCM	Alert the RSC.
3102	Process error reported	No alarm	RCM	Used internally. Alarm is never active.
3200	Post box library timeout	MAJOR	RCM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
3201	Post box library timeout	MAJOR	RCM_PBOX	
3300	Dead process	MAJOR	ROOTM	
3301	Process error reported	No alarm	ROOTM	Used internally. Alarm is never active.
3400	Post box library timeout	MAJOR	ROOTM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
3401	Post box library timeout	MAJOR	ROOTM_PBOX	
3500	Process death	MAJOR	SD	
3501	Process initialization failure	MAJOR	SD	
3502	Process sanity failed	MAJOR	SD	
3503	Process error reported	No alarm	SD	Used internally. Alarm is never active.

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
3600	Post box library timeout	MAJOR	SD_PB0X	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
3601	Cannot make post box	MAJOR	SD_PB0X	
3602	Post box is not present	MAJOR	SD_PB0X	
3700	Process death	MAJOR	TRACE	
3701	Process initialization failure	MAJOR	TRACE	
3702	Process sanity failed	MAJOR	TRACE	
3703	Process error reported	No alarm	TRACE	Used internally. Alarm is never active.
3800	Post box library timeout	MAJOR	TRACE_PB0X	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
3801	Cannot make post box	MAJOR	TRACE_PB0X	
3802	Post box is not present	MAJOR	TRACE_PB0X	
3900	Process death	MAJOR	TRAF	
3901	Process initialization failure	MAJOR	TRAF	
3902	Process sanity failed	MAJOR	TRAF	
3903	Process error reported	No alarm	TRAF	Used internally. Alarm is never active.
4000	Post box library timeout	MAJOR	TRAF_PB0X	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
4001	Cannot make post box	MAJOR	TRAF_PB0X	
4002	Post box is not present	MAJOR	TRAF_PB0X	
4100	Operating system error detected at initialization	MINOR	AUDIX	(RSC) Examine the `nvram_err` file to determine the cause for the alarm.Remove it to clear the error log. The `sysdump` file will be on disk if you have a 1 gigabyte disk drive.
4101	Auto-attendant routing tables bad	WARNING	AUDIX	Readminister tables using *change auto-attend routing routing-table*

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
4102	Auto-attendant shared memory problems	MINOR	AUDIX	Restart AUDIX as soon as practical
4103	Auto-attendant schedules missing or corrupted	WARNING	AUDIX	Restore data from nightly backup or readminister using *change auto-attend-routing...*
4200	Unable to add server	MAJOR	FILE_SERVER	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
4300	FS_THRESH MP failed	MAJOR	FS_THRESHOLDS	
4400	Dead process	MAJOR	AOM	
4401	Process error reported	No alarm	AOM	Used internally. Alarm is never active.
4500	Post box library timeout	MAJOR	AOM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
4501	Post box library timeout	MAJOR	AOM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
4800	Dead process	MAJOR	TAPEM	
4801	Process error reported	No alarm	TAPEM	Used internally. Alarm is never active.
4900	Post box library timeout	MAJOR	TAPEM_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
4901	Post box library timeout	MAJOR	TAPEM_PBOX	
5000	No free space in filesystem. Occurs if earlier filesystem threshold warnings to the administrator are ignored. Will cause serious problems with system operation	MINOR	UNIX_FS	— Invoke the RESET SYSTEM REBOOT screen which will cause *fsck* to run against the filesystem and clean it up — Install a bigger disk.
5001	Low free space	MINOR	UNIX_FS	

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
5002	The filesystem is corrupted. Detected by the filesystem driver after the system is up and running. Operations continue but the filesystem will be marked unclean when unmounted	MINOR	UNIX_FS	Invoke the RESET SYSTEM REBOOT screen which will cause *fsck* to run against the filesystem and clean it up.
5003	No free i-nodes	WARNING	UNIX_FS	This is a symptom of some other problem in the system. Invoke the RESET SYSTEM REBOOT screen which will cause *fsck* to run against the filesystem and clean it up.
5100	Script virtual address	MAJOR	KERNEL	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
5101	SCSI non-maskable interrupt	MAJOR	KERNEL	
5102	Kernel memory allocation	MAJOR	KERNEL	
5103	Pass through address	MAJOR	KERNEL	
5104	Disk driver error	MAJOR	KERNEL	
5105	SCSI host adapter	MAJOR	KERNEL	
5106	SCSI hardware driver	MAJOR	KERNEL	
5107	Tape driver initialization fail	MINOR	KERNEL	
5108	Tape driver error	MINOR	KERNEL	
5109	Tape driver SDI error	MINOR	KERNEL	
5110	Link for driver-level in line errors and events down	MINOR	KERNEL	

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
5111	Red LED turned on	MINOR	KERNEL	Switch has detected problem with MFB. Use switch maintenance procedures to determine problem. 1. If the wrong board is inserted, switch and AUDIX System disagree about control link operation versus display set operation. Fault 4 on AUDIX should be active for each voice port. Correct the mismatch. 2. Alert the RSC for any other problem.
5200	Process death	MAJOR	ALOG	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
5201	Process initialization failure	MAJOR	ALOG	
5202	Process sanity failed	MAJOR	ALOG	
5203	Process error reported	No alarm	ALOG	Used internally. Alarm is never active.
5204	Unable to open the activity log file. The activity log feature is not available	MINOR	ALOG	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
5205	Unable to read the activity log file. The activity log feature is not available	MINOR	ALOG	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
5206	Unable to write the activity log file. The activity log feature may not be available	MINOR	ALOG	
5207	Unable to seek in the activity log file. The activity log feature may not be available	MINOR	ALOG	
5300	Post box library timeout	MAJOR	ALOG_PBOX	
5301	Cannot make post box	MAJOR	ALOG_PBOX	
5302	Post box is not present	MAJOR	ALOG_PBOX	
5400	Process death	MAJOR	AUDIT	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
5401	Process initialization failure	MAJOR	AUDIT	
5402	Process sanity failed	MAJOR	AUDIT	
5403	Process error reported	No alarm	AUDIT	Used internally. Alarm is never active.
5500	Post box library timeout	MAJOR	AUDIT_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
5501	Cannot make post box	MAJOR	AUDIT_PBOX	
5502	Post box is not present	MAJOR	AUDIT_PBOX	
5600	Post box library timeout	MAJOR	PHANT	
5601	Process error reported	No alarm	PHANT	Used internally. Alarm is never active.

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
5700	Process death	MAJOR	PHANT_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
5701	Process initialization failure	MAJOR	PHANT_PBOX	
5702	Process sanity failed	MAJOR	PHANT_PBOX	
5800	Process death	MINOR	AIS (or AISN)	System automatically reinitializes software process. If this fails, — Examine data on system-parameters IMAPI screen. — Manually reboot system — Restore generic filesystems using STU
5801	Process initialization failure	MINOR	AIS (or AISN)	
5802	Process sanity failed	MINOR	AIS (or AISN)	
5803	Process error reported	No alarm	AIS (or AISN)	Used internally. Alarm is never active.
6000	SHT_ON_ERR_MP failed	MAJOR	ADXSTATE	— Invoke RESET SYSTEM RESTART.
6001	Initialization state failed	MAJOR	ADXSTATE	— Invoke RESET SYSTEM REBOOT.
6100	SHT_ON_ERR_MP failed	MAJOR	OAMSTATE	— Invoke RESET SYSTEM RESTART.
6101	Initialization state failed	No alarm	OAMSTATE	— Invoke RESET SYSTEM REBOOT.
6102	(Alarm code not used)	No alarm	OAMSTATE	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
6103	Sanity update failed	MAJOR	OAMSTATE	— Restore from the generic tape — If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace the MFB.
6104	NVRAM battery too high	MAJOR	OAMSTATE	Shut down the system via the console or by using the shutdown button, and replace the MFB.
6105	NVRAM battery too low	MINOR	OAMSTATE	
6106	Angel problems	MAJOR	OAMSTATE	— Boot from the generic tape. — If system does not return to AUDIX state, or error/fault reoccurs, shut down the system via the console or by using the shutdown button, and replace the MFB.

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
6107	386 flashware reprogramming aborted	WARNING	OAMSTATE	The RSC should inspect the /usr/add-on/audix/lib/pumpware/fw386/reprog.out file. This file will contain the reason code for why the reprogramming aborted or failed. The reason code and corresponding repair action are listed in the Flashware Reprogramming Failures section of the maintenance engineers' Maintenance manual.
6108	386 flashware reprogramming failed	MINOR	OAMSTATE	
6109	FAC flashware reprogramming aborted	WARNING	OAMSTATE	The RSC should inspect the /usr/add-on/audix/lib/pumpware/fac/reprog.out file. This file will contain the reason code for why the reprogramming aborted or failed. The reason code and corresponding repair action are listed in the Flashware Reprogramming Failures section of the maintenance engineers' Maintenance manual.
6110	FAC flashware reprogramming failed	MINOR	OAMSTATE	
6200	Process death	MAJOR	VIP	System automatically restarts twice, then reboots twice.If this fails, restore generic filesystems using STU.
6201	Process initialization failure	MAJOR	VIP	
6202	Process sanity failed	MAJOR	VIP	
6203	Process error reported	NONE	VIP	Used internally. Alarm is never active.
6204	Sync port driver failed	MAJOR	VIP	Restore generic filesystems using STU.
6400	Process death	MAJOR	CLT	System automatically restarts twice, then reboots twice. If this fails, —Restore generic filesystems using STU.
6401	Process initialization failure	MAJOR	CLT	
6402	Process sanity failed	MAJOR	CLT	
6403	Process error reported	No alarm	CLT	Used internally. Alarm is never active.
6500	Post box library timeout	MAJOR	CLT_PBOX	System automatically restarts twice, then reboots twice. If this fails, — Restore generic filesystems using STU.
6501	Cannot make post box	MAJOR	CLT_PBOX	
6502	Post box is not present	MAJOR	CLT_PBOX	

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Table 9-1. Software Alarms and Repair Actions — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
9997	Recovered resolved alarm log by audit	WARNING	ER	Alarm is never active.
9998	Recreated resolved alarm log during initialization	WARNING	ER	
9999	Resolved alarm log was manually cleared	WARNING	ER	

Table 9-2, Software Errors, lists the errors logged in the DISPLAY ERRORS log. These errors generate the above faults. Note that pseudonyms of listed error resources may appear on the error log; these "hidden" resources are listed in parenthesis with their related resources.

Table 9-2. Software Errors

Error Resource15	Error Code	Description	Fault Resource	Fault Code
ADATA	80	Initialization MP 13 aborted (make a process)	SOFTWARE	1
ADATA	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	2
ADATA	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	2
ADATA	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	3
ADATA	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	0
ADATA	81	Initialization MP 13 failed (make a process)	SOFTWARE	1
ADATA	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	2
ADATA	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	2
ADATA	112	Process died	SOFTWARE	0
ADATA	116	Process error	SOFTWARE	3
ADATA_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	101
ADATA_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	101
ADATA_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	102

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
ADATA_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	100
ADATA_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	101
ADATA_PBOX	282	Postbox library access timeout	SOFTWARE	100
ADM	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	200
ADM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	201
ADM	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	201
ADM	112	Process died	SOFTWARE	200
ADM	116	Process error	SOFTWARE	201
ADM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	301
ADM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	300
ADM_PBOX	282	Postbox library access timeout	SOFTWARE	300
ADXSTATE	80	Initialization MP 85 aborted (actions during initiation)	SOFTWARE	6000
ADXSTATE	80	Initialization MP 85 aborted (actions during initiation)	SOFTWARE	6001
ADXSTATE	81	Diagnostic MP 99 failed (force graceful error shutdown)	SOFTWARE	6000
ADXSTATE	81	Initialization MP 85 failed (actions during initiation)	SOFTWARE	6000
ADXSTATE	81	Initialization MP 85 failed (actions during initiation)	SOFTWARE	6001
AFIO	80	Initialization MP 13 aborted (make a process)	SOFTWARE	401
AFIO	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	402
AFIO	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	402
AFIO	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	403
AFIO	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	400
AFIO	81	Initialization MP 13 failed (make a process)	SOFTWARE	401
AFIO	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	402
AFIO	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	402
AFIO	112	Process died	SOFTWARE	401
AFIO	116	Process error	SOFTWARE	403
AFIO_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	501

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
AFIO_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	501
AFIO_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	502
AFIO_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	500
AFIO_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	501
AFIO_PBOX	282	Postbox library access timeout	SOFTWARE	500
AIM	81	Diagnostic MP 133 failed (check core dump)	SOFTWARE	602
AIM	112	Process error	SOFTWARE	600
AIM	116	A process has core dumped	SOFTWARE	602
AIM	270	Non-standard pathname for file	SOFTWARE	601
AIM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	701
AIM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	700
AIM_PBOX	282	Postbox library access timeout	SOFTWARE	700
AIS_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	5801
AIS_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	5801
AIS_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	5801
AIS_PBOX	282	Postbox library access timeout	SOFTWARE	5800
AISN_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	5801
AISN_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	5801
AISN_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	5801
AISN_PBOX	282	Postbox library access timeout	SOFTWARE	5803
AKSRV	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	800
AKSRV	112	Process error	SOFTWARE	800
AKSRV	116	Process error	SOFTWARE	801
ALOG	64	Activity log open error	SOFTWARE	5204
ALOG	65	Activity log read error	SOFTWARE	5205
ALOG	66	Activity log write error	SOFTWARE	5206
ALOG	70	Activity log seek error	SOFTWARE	5207
ALOG	71	Activity log open succeeded	SOFTWARE	5204
ALOG	72	Activity log read succeeded	SOFTWARE	5205
ALOG	73	Activity log write succeeded	SOFTWARE	5206

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
ALOG	74	Activity log seek succeeded	SOFTWARE	5207
ALOG	80	Initialization MP 13 aborted (make a process)	SOFTWARE	5201
ALOG	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	5202
ALOG	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	5202
ALOG	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	5203
ALOG	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	5200
ALOG	81	Initialization MP 13 failed (make a process)	SOFTWARE	5201
ALOG	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	5202
ALOG	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	5202
ALOG	112	Process died	SOFTWARE	5201
ALOG	116	Process error	SOFTWARE	5203
ALOG_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	5301
ALOG_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	5301
ALOG_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	5302
ALOG_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	5300
ALOG_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	5301
ALOG_PBOX	282	Postbox library access timeout	SOFTWARE	5300
AFIO_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	501
ANET	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	902
ANET	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	902
ANET	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	903
ANET	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	900
ANET	81	Initialization MP 13 failed (make a process)	SOFTWARE	901
ANET	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	902
ANET	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	902
ANET	112	Process died	SOFTWARE	901
ANET	116	Process error	SOFTWARE	903
ANET_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	1001
ANET_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	1001

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
ANET_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	1002
ANET_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	1000
ANET_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	1001
ANET_PBOX	282	Postbox library access timeout	SOFTWARE	1000
AOM	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	4400
AOM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	4401
AOM	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	4401
AOM	112	Process died	SOFTWARE	4400
AOM	116	Process error	SOFTWARE	4401
AOM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	4501
AOM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	4500
AOM_PBOX	282	Postbox library access timeout	SOFTWARE	4500
APM	80	Initialization MP 13 aborted (make a process)	SOFTWARE	1101
APM	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	1102
APM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	1102
APM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	1103
APM	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	1100
APM	81	Initialization MP 13 failed (make a process)	SOFTWARE	1101
APM	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	1102
APM	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	1102
APM	112	Process died	SOFTWARE	1101
APM	116	Process error	SOFTWARE	1103
AUDIT	80	Initialization MP 13 aborted (make a process)	SOFTWARE	5401
AUDIT	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	5402
AUDIT	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	5402
AUDIT	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	5403
AUDIT	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	5400
AUDIT	81	Initialization MP 13 failed (make a process)	SOFTWARE	5401
AUDIT	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	5402

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
AUDIT	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	5402
AUDIT	112	Process died	SOFTWARE	5401
AUDIT	116	Process error	SOFTWARE	5403
AUDIT_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	5501
AUDIT_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	5501
AUDIT_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	5502
AUDIT_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	5500
AUDIT_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	5501
AUDIT_PBOX	282	Postbox library access timeout	SOFTWARE	5500
AUDIX	81	Diagnostic MP 133 failed (check core dump)	SOFTWARE	4100
AUDIX	3	Auto-attendant schedules missing or corrupted	SOFTWARE	4103
AUDIX	4	Auto-attendant routing tables administered	SOFTWARE	4101
AUDIX	9	Auto-attendant routing tables bad	SOFTWARE	4101
AUDIX	13	Auto-attendant routing software error	SOFTWARE	none
AUDIX	14	Auto-attendant shared memory problems	SOFTWARE	4102
AUDIX	27	Auto-attendant routing software error	SOFTWARE	none
CLT	80	Initialization MP 13 aborted (make a process)	SOFTWARE	6401
CLT	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	6402
CLT	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	6402
CLT	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	6403
CLT	81	Diagnostic MP 73 aborted (restart the system)	SOFTWARE	6400
CLT	81	Initialization MP 13 failed (make a process)	SOFTWARE	6401
CLT	112	Process died	SOFTWARE	6401
CLT	116	Process error	SOFTWARE	6403
CLT_PBOX	80	Initialization MP 10 aborted (make a postbox)	SOFTWARE	6501
CLT_PBOX	81	Diagnostic MP 10 failed (make a postbox)	SOFTWARE	6501
CLT_PBOX	81	Diagnostic MP 12 failed (check if postbox is operational)	SOFTWARE	6502
CLT_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	6500
CLT_PBOX	81	Initialization MP 10 failed (make a postbox)	SOFTWARE	6501
CLT_PBOX	282	Postbox library access timeout	SOFTWARE	6500

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
DM	80	Initialization MP 13 aborted (make a process)	SOFTWARE	1301
DM	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	1302
DM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	1302
DM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	1303
DM	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	1300
DM	81	Initialization MP 13 failed (make a process)	SOFTWARE	1301
DM	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	1302
DM	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	1302
DM	112	Process died	SOFTWARE	1300
DM	116	Process error	SOFTWARE	1303
DM	117	Error indication in nvram sh_reason	SOFTWARE	4100
DM_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	1401
DM_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	1401
DM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	1402
DM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	1400
DM_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	1401
DM_PBOX	282	Postbox library access timeout	SOFTWARE	1400
ELIP	80	Initialization MP 13 aborted (make a process)	SOFTWARE	1601
ELIP	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	1602
ELIP	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	1602
ELIP	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	1603
ELIP	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	1600
ELIP	81	Initialization MP 13 failed (make a process)	SOFTWARE	1601
ELIP	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	1602
ELIP	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	1602
ELIP	112	Process died	SOFTWARE	1601
ELIP	116	Process error	SOFTWARE	1603
ELIP_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	1701
ELIP_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	1701

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
ELIP_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	1702
ELIP_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	1700
ELIP_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	1701
ELIP_PBOX	282	Postbox library access timeout	SOFTWARE	1700
EPM	80	Initialization MP 13 aborted (make a process)	SOFTWARE	1801
EPM	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	1802
EPM	81	Diagnostic MP 135 failed (reboot system)	SOFTWARE	1804
EPM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	1802
EPM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	1803
EPM	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	1800
EPM	81	Initialization MP 13 failed (make a process)	SOFTWARE	1801
EPM	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	1802
EPM	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	1802
EPM	112	Process died	SOFTWARE	1801
EPM	116	Process error	SOFTWARE	1803
EPM	279	Cannot do streams putmsg	SOFTWARE	1804
EPM_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	1901
EPM_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	1901
EPM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	1902
EPM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	1900
EPM_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	1901
EPM_PBOX	282	Postbox library access timeout	SOFTWARE	1900
ER	53	Unable to write the chrono-log	SOFTWARE	2002
ER	54	Unable to seek the chrono-log	SOFTWARE	2002
ER	55	Unable to unlink chrono-log	SOFTWARE	2002
ER	58	Unable to write the administration alarm log	SOFTWARE	2002
ER	59	Unable to seek the administration-log	SOFTWARE	2002
ER	62	Unable to write the resolved alarm log	SOFTWARE	2002
ER	63	Unable to seek in the resolved-alarm-log	SOFTWARE	2002
ER	66	Unable to write the active alarm log	SOFTWARE	2002

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
ER	67	Unable to open temporary chrono-log	SOFTWARE	2002
ER	68	Unable to write to temporary chrono-log	SOFTWARE	2002
ER	69	Unable to unlink administration-log	SOFTWARE	2002
ER	81	Diagnostic MP 13 failed (make a process)	SOFTWARE	2001
ER	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	2000
ER	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	2002
ER	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	2002
ER	112	Process died	SOFTWARE	2001
ER	116	Process error	SOFTWARE	2002
ER_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	2101
ER_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	2100
ER_PBOX	282	Postbox library access timeout	SOFTWARE	2100
FC	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	2200
FC	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	2201
FC	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	2201
FC	112	Process error	SOFTWARE	2200
FC	116	Process error	SOFTWARE	2201
FC_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	2301
FC_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	2301
FC_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	2302
FC_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	2300
FC_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	2301
FC_PBOX	282	Postbox library access timeout	SOFTWARE	2300
FILE_SERVER	80	Initialization MP 33 aborted (initiate fileserver)	SOFTWARE	4200
FILE_SERVER	81	Diagnostic MP 73 failed (restart system)	SOFTWARE	4200
FILE_SERVER	81	Initialization MP 33 failed (initiate fileserver)	SOFTWARE	4200
FILESYSTEM	8181	Disk I/O error	SOFTWARE	none
FSA	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	2400
FSA	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	2401
FSA	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	2401

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
FSA	112	Process died	SOFTWARE	2400
FSA	116	Process error	SOFTWARE	2401
FSA_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	2501
FSA_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	2500
FSA_PBOX	282	Postbox library access timeout	SOFTWARE	2500
FS_THRESHOLDS	81	Periodic MP 32 failed (check file thresholds)	SOFTWARE	4300
KERNEL	2	Invalid script virtual address	SOFTWARE	5100
KERNEL	17	SCSI non-maskable-interrupt	SOFTWARE	5101
KERNEL	26	Kernel memory allocation failed	SOFTWARE	5102
KERNEL	27	Virtual-to-physical translation failed	SOFTWARE	5106
KERNEL	28	Pass-through-address problem	SOFTWARE	5103
KERNEL	28	Pass-through-address problem	SOFTWARE	5106
KERNEL	32	Host adapter initialization failed	SOFTWARE	5106
KERNEL	33	Host adapter failed after initialization	SOFTWARE	5106
KERNEL	34	SCSI MKEDT failed	SOFTWARE	5106
KERNEL	36	Bad pass through completion code	SOFTWARE	5106
KERNEL	37	Invalid SIOP address	SOFTWARE	5106
KERNEL	38	Invalid interrupt return code	SOFTWARE	5106
KERNEL	43	Scatter/gather list too large	SOFTWARE	5106
KERNEL	238	Red LED turned on by switch	SOFTWARE	5111
KERNEL	241	Red LED turned on by switch	SOFTWARE	5111
KERNEL	123	Disk driver error	SOFTWARE	5104
KERNEL	129	SCSI host adapter error	SOFTWARE	5105
KERNEL	130	Disk driver resource error	SOFTWARE	5104
KERNEL	170	Tape driver SW error	SOFTWARE	5108
KERNEL	171	Tape driver saw SDI error	SOFTWARE	5109
KERNEL	173	Tape driver failed initialization	SOFTWARE	5107
KERNEL	271	ER failed to bind to kernel	SOFTWARE	5110
(SC_HW_DRV)				
(SDISK_DRV)				

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
(STAPE_DRV)				
MCM	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	2600
MCM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	2601
MCM	112	Process error	SOFTWARE	2600
MCM	116	Process error	SOFTWARE	2601
MCM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	2701
MCM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	2700
MCM_PBOX	282	Postbox library access timeout	SOFTWARE	2700
MPM	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	2800
MPM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	2801
MPM	112	Process error	SOFTWARE	2800
MPM	116	Process error	SOFTWARE	2801
MPM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	2901
MPM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	2900
MPM_PBOX	282	Postbox library access timeout	SOFTWARE	2900
OAMSTATE	80	Initialization MP 103 aborted (check FAC reprogramming)	SOFTWARE	6109
OAMSTATE	80	Initialization MP 104 aborted (check 386 reprogramming)	SOFTWARE	6107
OAMSTATE	80	Initialization MP 106 aborted (test FAC reprogramming)	SOFTWARE	6110
OAMSTATE	80	Initialization MP 107 aborted (test 386 reprogramming)	SOFTWARE	6108
OAMSTATE	80	Initialization MP 115 aborted (check process sanity)	SOFTWARE	6106
OAMSTATE	80	Initialization MP 85 aborted (actions during initiation)	SOFTWARE	6100
OAMSTATE	81	Diagnostic MP 115 failed (initiate an angel) (check process sanity)	SOFTWARE	6106
OAMSTATE	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	6102
OAMSTATE	81	Diagnostic. MP 97 failed (FW shutdown on pressing **BOOT/SHUTDOWN** button)	SOFTWARE	6101
OAMSTATE	81	Diagnostic MP 99 failed (force graceful error shutdown)	SOFTWARE	6100

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
OAMSTATE	81	Initialization MP 0 aborted (test MP)	SOFTWARE	6107
OAMSTATE	81	Initialization MP 0 aborted (test MP)	SOFTWARE	6108
OAMSTATE	81	Initialization MP 0 aborted (test MP)	SOFTWARE	6109
OAMSTATE	81	Initialization MP 0 aborted (test MP)	SOFTWARE	6110
OAMSTATE	81	Initialization MP 115 failed (initiate an angel) (check process sanity)	SOFTWARE	6100
OAMSTATE	81	Initialization MP 85 failed (actions during initiation)	SOFTWARE	6100
OAMSTATE	81	Periodic MP 102 failed (update sanity driver)	SOFTWARE	6103
OAMSTATE	90	NVRAM battery voltage not too low	SOFTWARE	6105
OAMSTATE	90	Obviously the voltage is not too high	SOFTWARE	6104
OAMSTATE	90	Obviously the voltage is not too low	SOFTWARE	6105
(RT_ANGEL)				
(MF_BD)				
OAMSTATE	118	**BOOT/SHUTDOWN** button pressed	SOFTWARE	6101
OAMSTATE	224	No response from angel	SOFTWARE	6106
OAMSTATE	226	Error reading angel DPRAM	SOFTWARE	6106
OAMSTATE	227	Illegal angel interrupt code	SOFTWARE	6106
OAMSTATE	228	Angel reported bad board ID	SOFTWARE	6106
OAMSTATE	231	Invalid angel DPRAM message	SOFTWARE	6106
OAMSTATE	234	SAKI reset detected (restart AUDIX)	SOFTWARE	6106
OAMSTATE	321	NVRAM battery voltage too high	SOFTWARE	6104
OAMSTATE	322	NVRAM battery voltage too low	SOFTWARE	6105
OAMSTATE	323	NVRAM battery voltage not too high	SOFTWARE	6104
OAMSTATE	329	**BOOT/SHUTDOWN** button pressed	SOFTWARE	6101
PHANT	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	5600
PHANT	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	5601
PHANT	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	5601
PHANT	112	Process error	SOFTWARE	5600
PHANT	116	Process error	SOFTWARE	5601
PHANT_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	5701
PHANT_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	5701

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
PHANT_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	5702
PHANT_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	5700
PHANT_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	5701
PHANT_PBOX	282	Postbox library access timeout	SOFTWARE	5700
RCM	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	3100
RCM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	3102
RCM	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	3102
RCM	112	Process error	SOFTWARE	3100
RCM	116	Process error	SOFTWARE	3102
RCM	270	Non-standard pathname for file	SOFTWARE	3101
RCM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	3201
RCM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	3200
RCM_PBOX	282	Postbox library access timeout	SOFTWARE	3200
ROOTM	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	3300
ROOTM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	3301
ROOTM	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	3301
ROOTM	112	Process died	SOFTWARE	3300
ROOTM	116	Process error	SOFTWARE	3301
ROOTM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	3401
ROOTM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	3400
ROOTM_PBOX	282	Postbox library access timeout	SOFTWARE	3400
SD	80	Initialization MP 13 aborted (make a process)	SOFTWARE	3501
SD	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	3502
SD	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	3502
SD	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	3503
SD	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	3500
SD	81	Initialization MP 13 failed (make a process)	SOFTWARE	3501
SD	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	3502
SD	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	3502

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
SD	112	Process died	SOFTWARE	3500
SD	116	Process error	SOFTWARE	3503
SD_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	3601
SD_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	3601
SD_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	3602
SD_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	3600
SD_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	3601
SD_PBOX	282	Postbox library access timeout	SOFTWARE	3600
STATE	80	Initialization MP 31 aborted (make AFIO shared memory table)	SOFTWARE	1504
STATE	80	Initialization MP 86 aborted (is restore from generic needed?)	SOFTWARE	1501
STATE	80	Initialization MP 87 aborted (is restore from customer backup needed?)	SOFTWARE	1502
STATE	80	Initialization MP 88 aborted (is rebuild needed?)	SOFTWARE	1503
STATE	81	Diagnostic MP 31 failed (make AFIO shared memory table)	SOFTWARE	1504
STATE	81	Diagnostic MP 83 failed (go to OAM)	SOFTWARE	1500
STATE	81	Diagnostic MP 89 failed (do rebuild operation)	SOFTWARE	1500
STATE	81	Diagnostic MP 89 failed (do rebuild operation)	SOFTWARE	1503
STATE	81	Initialization MP 31 failed (make AFIO shared memory table)	SOFTWARE	1504
STATE	81	Initialization MP 86 failed (is restore from generic needed?)	SOFTWARE	1501
STATE	81	Initialization MP 87 failed (is restore from customer backup needed?)	SOFTWARE	1502
STATE	81	Initialization MP 88 failed (is rebuild needed?)	SOFTWARE	1503
TAPEM	81	Diagnostic MP 14 failed (kill a process)	SOFTWARE	4800
TAPEM	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	4801
TAPEM	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	4801
TAPEM	112	Process died	SOFTWARE	4800
TAPEM	116	Process error	SOFTWARE	4801
TAPEM_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	4901

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
TAPEM_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	4900
TAPEM_PBOX	282	Postbox library access timeout	SOFTWARE	4900
TRACE	80	Initialization MP 13 aborted (make a process)	SOFTWARE	3701
TRACE	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	3702
TRACE	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	3702
TRACE	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	3703
TRACE	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	3700
TRACE	81	Initialization MP 13 failed (make a process)	SOFTWARE	3701
TRACE	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	3702
TRACE	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	3702
TRACE	112	Process died	SOFTWARE	3701
TRACE	116	Process error	SOFTWARE	3703
TRACE_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	3801
TRACE_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	3801
TRACE_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	3802
TRACE_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	3800
TRACE_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	3801
TRACE_PBOX	282	Postbox library access timeout	SOFTWARE	3800
TRAF	80	Initialization MP 13 aborted (make a process)	SOFTWARE	3901
TRAF	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	3902
TRAF	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	3902
TRAF	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	3903
TRAF	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	3900
TRAF	81	Initialization MP 13 failed (make a process)	SOFTWARE	3901
TRAF	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	3902
TRAF	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	3902
TRAF	112	Process died	SOFTWARE	3900
TRAF	116	Process error	SOFTWARE	3903
TRAF_PBOX	80	Initialization MP 10 aborted (make a post box)	SOFTWARE	4001
TRAF_PBOX	81	Diagnostic MP 10 failed (make a post box)	SOFTWARE	4001

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Table 9-2. Software Errors — *Continued*

Error Resource15	Error Code	Description	Fault Resource	Fault Code
TRAF_PBOX	81	Diagnostic MP 12 failed (check if post box is operational)	SOFTWARE	4002
TRAF_PBOX	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	4000
TRAF_PBOX	81	Initialization MP 10 failed (make a post box)	SOFTWARE	4001
TRAF_PBOX	282	Postbox library access timeout	SOFTWARE	4000
UNIX_FS	81	Periodic MP 32 failed (check file thresholds)	SOFTWARE	5001
FILESYSTEM	132	AUDIX FS driver — Filesystem corrupted	SOFTWARE	5002
FILESYSTEM	133	AUDIX FS driver — no free space	SOFTWARE	5000
FILESYSTEM	134	Filesystem is out of free i-nodes	SOFTWARE	5003
FILESYSTEM	135	AUDIX FS driver — internal s/w error	SOFTWARE	5002
FILESYSTEM	137	In-core filesystem inode table overflow	SOFTWARE	5003
VIP	80	Initialization MP 13 aborted (make a process)	SOFTWARE	6201
VIP	80	Initialization MP 15 aborted (check process sanity)	SOFTWARE	6202
VIP	81	Diagnostic MP 135 failed (reboot system)	SOFTWARE	6204
VIP	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	6202
VIP	81	Diagnostic MP 15 failed (check process sanity)	SOFTWARE	6203
VIP	81	Diagnostic MP 73 failed (restart the system)	SOFTWARE	6200
VIP	81	Initialization MP 13 failed (make a process)	SOFTWARE	6201
VIP	81	Initialization MP 15 failed (check process sanity)	SOFTWARE	6202
VIP	81	Periodic MP 15 failed (check process sanity)	SOFTWARE	6202
VIP	112	Process died	SOFTWARE	6200
VIP	116	Process error	SOFTWARE	6203
VIP	369	Unable to open sync port driver	SOFTWARE	6204

Audits, Shutdown Codes

10

Audits

The audits that automatically keep the DEFINITY AUDIX System sane, consistent, and clean are alarmed according to whether they are performed nightly or weekly. Table 10-1, Periodic Audits, lists the types of audits that run during system operation. Most of the audits can also be performed on a demand basis as indicated below and described in Chapter 1.

Table 10-1. Periodic Audits

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

When the system is operating normally, demand audits need not be run. Only the RSC would run an audit should the system crash, or to observe problems concerning voice space, filesystem thresholds, remote message addressing, subscriber login difficulties, and so forth. Note in Table 9-2, Software Errors, that it would be permissible for the customer to run Selected Audits in an attempt to clear an alarm.

Refer to Table 10-2 for a list of alarms and repair procedures addressed to audits. Perform each dashed step one at a time until the problem is resolved. Alarms appear in the DISPLAY ALARMS screen under the resource type:

AUDIT

Table 10-2. Audit Alarms

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
0	Nightly audit failed	MINOR	NIGHT_AUD	— Resolved if the next nightly general audit passes — Run RESET SYSTEM REBOOT at the next convenient time. Be prepared to restore from generic or backup tapes if the *generic restore* or *restore backup* alarms are raised. — If this alarm is raised during the next nightly audit, alert the RSC.
1	Delivery data audit failed	MINOR	NIGHT_AUD or WEEKLY _AUD	— Resolved if the next nightly delivery data audit passes — Run AUDIT MAILING-LISTS. — If this alarm remains, alert the RSC.
2	Switch names audit failed	MINOR	NIGHT_AUD	— Resolved if the next nightly switch-names audit passes — Run AUDIT SWITCH-NAMES. — If this alarm remains, alert the RSC.
3	Message waiting audit failed	MINOR	NIGHT_AUD	— Resolved if the next nightly message waiting audit passes — Run RESET SYSTEM RESTART at the next convenient time. Be prepared to restore from generic or backup tapes if the *generic restore* or *restore backup* alarms are raised. — If this alarm is raised during the next nightly audit, alert the RSC.

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Table 10-2. Audit Alarms — *Continued*

Fault Code	Fault Description	Alarm Level	Error Log Resource	Repair Action
4	Switch translation audit failed	MINOR	NIGHT_AUD	Resolved if the next nightly switch translation audit passes. Run audit switch translations.
5	Mailbox audit failed	MINOR	NIGHT _AUD or WEEKLY_AUD	— Resolved if the next nightly audit passes — Run audit mailboxes. — If the alarm remains, alert the RSC.
6	Network data audit failed	MINOR	NIGHT_AUD or WEEKLY_ AUD	— Resolved if next nightly network date audit passes — Run AUDIT NETWORK.DATA — If the alarm remains, alert the RSC.
7	Delivery Manager Network data audit failed	MINOR	WEEKLY _AUD	— Resolved if next weekly DM network data audit passes — Run AUDIT NETWORK DATA — If the alarm remains, alert the RSC.
8	Weekly audit failed	MINOR	WEEKLY _AUD	— Resolved if next weekly general audit passes — Run RESET SYSTEM REBOOT at next convenient time. Be prepared to restart from generic or backup tapes if the *generic restart* or restore *backup options* are raised. — If this alarm is raised during next weekly audit, alert the RSC.
9	Maintenance logs audit failed	MINOR	WEEKLY _AUD	— Resolved if the next weekly maintenance logs audit passes — Run audit maintenance logs at the next convenient time. Be prepared to restore from generic or backup tapes if the generic restore or restore backup alarms are raised — If this alarm is raised during the next weekly audit, alert the RSC.

Table 10-3, Audit Errors, lists the errors that may trigger the above alarms.

Table 10-3. Audit Errors

Error Resource	Error Code	Description	Fault Resource	Fault Code
NIGHT_AUD	81	Scheduled MP 37 failed (get names directory from switch)	AUDIT	2
NIGHT_AUD	81	Scheduled MP 38 failed (audit message waiting indicators)	AUDIT	3
NIGHT_AUD	81	Scheduled MP 39 failed (audit delivery queues)	AUDIT	1
NIGHT_AUD	81	Scheduled MP 43 failed (perform nightly audits)	AUDIT	0
NIGHT_AUD	81	Scheduled MP 79 failed (audit SD switch translations)	AUDIT	4
WEEKLY_AUD	81	Scheduled MP 39 failed (audit delivery queues)	AUDIT	102
WEEKLY_AUD	81	Scheduled MP 40 failed (audit logs)	AUDIT	105
WEEKLY_AUD	81	Scheduled MP 50 failed (perform weekly audits)	AUDIT	101
WEEKLY_AUD	81	Scheduled MP 77 failed (audit SD switch translations)	AUDIT	104
WEEKLY_AUD	81	Scheduled MP 78 failed (audit subscriber mailbox data)	AUDIT	103
WEEKLY_AUD	81	Scheduled MP 80 failed (audit DM copies of machine translations)	AUDIT	100

Table 10-4, Demand Audit Test Results, lists demand audits, individual tests that are performed, and any actions that need to be performed.

NOTE:
A demand audit and the *TEST TAPE* function cannot be run at the same time.

Table 10-4. Demand Audit Test Results

Test Name	Test Result (Passed)	Test Result (Failed)	Test Result (Aborted)	Action
Audit Mailboxes			A Aborted	
Audit Mailbox Data				
Audit Mail Lists				
Audit Delivery Data				
Audit Logs				
Audit Voice Names	P Passed			
Audit Machine Translation				
Audit Personal Directories	F Failed			System error (call RSC)
Audit Subscribers				Aborted by user
Audit Network Translations	P Passed			
			A Aborted	Aborted by user
		F Failed		Try audit subscriber and run again. If failure still occurs, call RSC.
Display Set Only Audit Switch Names	P Passed			
			A Aborted	Aborted by user
			A No port avail	Try again later
		F Failed		See admin log
		F Audit is busy		System error (call RSC)
		F Int. audit error #2		System error (call RSC)
Audit Switch Translations	P Passed			
			A Aborted	Aborted by user
		F Failed		System error—try again later. If failure occurs again, call RSC.
Audit Voice Files	P Passed			
			A Aborted	Aborted by user
		F Failed		System error (call RSC)

Shutdown Codes

Fault codes are generated from the DEFINITY AUDIX System flashware whenever the system shuts down and goes into firmware mode. These codes appear automatically on the local and/or remote maintenance terminal, and the faceplate LCD. Whenever the DEFINITY AUDIX System reinitializes, the codes will appear in the event log. Table 10-5, System Shutdown Codes, lists these faults and possible repair actions.

Table 10-5. System Shutdown Codes

Fault Code	Fault Description	Alarm Level	Cause/Repair Action
f020	MFB 386 shuts down when the faceplate SHUTDOWN/BOOT button is pressed	None	Normal — no action
f021	MFB 386 firmware command menu shutdown command	None	Normal — no action
f022	MFB 386 firmware shuts down in reaction to NVRAM fw_bt_ctl BOOT_CTL_STAY_DOWN	None	No action
f023	MFB 386 firmware shuts down in reaction to NVRAM fw_bt_ctl BOOT_CTL_E_SHUT	None	Could be caused by disk, tape, or MFB. Determine repair action from the LCD shutdown code. — d8FF — Do upgrade. — d211 — Restore from generic.
f024	Power failure	None	The problem is with the switch power.
f025	Shutdown when voltage goes out of range	None	Carrier voltage is bad.
f026	Shutdown when sensor goes out of range	None	The system is too hot. Check the airflow around the board and the fans.
f027	Shutdown when FAC boot timer expires	None	— Reboot the system. — If the problem reoccurs, reinstall the generic software. — If the problem still persists, replace the MFB.
f028	Shutdown on the SAKI reset.	None	Indicates that the switch reset the board. Reboot the system. If this happens three consecutive times, replace the MFB.
f029	Shutdown when boot loader aborts back to firmware	None	If this occurs when attempting to boot from R3.0 or later tape, check *scsi status* from firmware command mode. If the disk is not Lucent-certified and is larger than six hours, the customer must purchase an Lucent-certified disk.

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Table 10-5. System Shutdown Codes — *Continued*

Fault Code	Fault Description	Alarm Level	Cause/Repair Action
f02a	Shutdown from software	Major	Look at the old shutdown reason on the LCD display. The only codes needing repair actions are: da01 — Restore from generic. d7xx — Failed installation. Attempt reinstallation.
f02b	Software system error	Major	Contact Lucent services
f050	15 consecutive disk failures or system failed to boot from disk	MAJOR	1. Check board — If MFB or ALB FW diagnostics fail: — Replace the indicated board. 2. Check disk/software — Attempt an automatic boot: a. If you get a bad boot loader message, the disk is OK but software is bad: — Reinstall from generic tape and restore backups. b. If you get a Disk 0 not present or not ready message, the disk could not be accessed; the problem is either the disk drive or SCSI: — Attempt a manual boot from *backup* tape (device 1) c. If boot from backup tape fails with a bad tape message, the tape drive is accessible and the SCSI bus is OK; the trouble is probably with the disk: — Check the disk cabling. If OK, replace the disk. d. If the boot from backup tape fails with a message other than bad tape (e.g., failed manual boot), the SCSI bus is not working and the disk is probably OK. — Check the SCSI cabling. e. If the cabling looks OK: — Replace the ALB, SCSI cable, and the MFB, in that order.
f051	System failed to boot from tape	MAJOR	Verify that a tape is in the drive. Verify that the tape is a valid bootable one. Check the SCSI cabling. If the system still does not boot, replace the tape drive.
f052	Bad SCSI bus	MAJOR	This could be any number of problems. Check the following: cable between alarm board and MFB, the ALB, the MFB, the disk drive, and the tape drive.
f053	Manual boot failed	None	Verify that all parameters given to the manual boot were correct. If they were, invoke an automatic boot. If this fails, replace the MFB.

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Table 10-5. System Shutdown Codes — *Continued*

Fault Code	Fault Description	Alarm Level	Cause/Repair Action
f054	Bad disk drive or SCSI connection	MAJOR	— Check the SCSI cabling. — Replace the disk, alarm board, SCSI cable, and the MFB, in that order.
f055	Bad loader/partition or boot control	MAJOR	Reinstall from generic tape and restore backups.
f056	Tape device not ready	MAJOR	Insert a tape cartridge.
f057	Non-generic tape cartridge	MAJOR	Remove this tape and insert the generic tape cartridge.
f060	Core hardware bad	MAJOR	Verify that all parameters given to the manual boot were correct. If they were, invoke an automatic boot. If this fails, replace the MFB.
f070	Shutdown on unexpected sanity non-maskable-interrupt	MAJOR	
f072	Unexpected parity non-maskable-interrupt	MAJOR	
f073	Unexpected bus timeout non-maskable-interrupt	MAJOR	
f074	Unexpected hog non-maskable-interrupt	MAJOR	
f076	Unexpected shutdown non-maskable-interrupt	MAJOR	
f078	Unexpected 386 vector	MAJOR	
f079	Unused 386 vector	MAJOR	

Utilities, Upgrades, On-Site Diagnosis

11

This chapter describes the utilities and upgrades provided for the DEFINITY AUDIX System. It also describes how the faceplate and alarm panel can be used for quick diagnosis and response to problems. Note that most of the utility and upgrade procedures should be done by the on-site technician and not attempted by the customer.

Standalone Tape Utilities

Stored on the generic tape, the Standalone Tape Utilities (STU) is used when the system will not boot to the OA&M state. This may be caused by a disk crash, a sudden power loss when essential filesystems are not saved, or by damaged or corrupted filesystems, partition maps or disk bootstrap programs. The system must be in an error shutdown (E_SHUT) or maintenance (M_SHUT) state to access the STU.

Table 11-1, STU Options, lists the options that are provided:

Table 11-1. STU Options

Option	Description
Initialize Disk *(5 seconds)*	■ Creates a valid disk boot block and writes it to the disk ■ Builds a default partition map and writes it to the disk
Modify Partition Map *(5 seconds)*	— Create Default Partition Map (Will fit on the smallest system available). — Add a Single Partition. — Remove a Single Partition. — Increase a Single Partition (Note that the *root* filesystem cannot be split over a fragmented partition). — Display Current Partition Map (Shows values of partition map currently in memory). — Save Partition Map to Disk. — Exit Back to Main Menu (Interrupting above options anytime during operation will leave the original partitions intact).
Copy Generic Partitions *(8 minutes)*	■ Creates a correct boot block if one does not already exist ■ Creates a default partition map if one does not already exist. If one exists but has insufficient space, certain partitions will be increased if possible. ■ Copies the boot program and basic partitions to disk, then reboots the system
Additional Commands 0. Return To Main Menu 1. Retention Tape *(2 minutes)*	Spaces to the end of the tape, then rewinds to the beginning to ensure there are no loose spots which might cause medium errors.
1. Display Tape Volume Label *(10 seconds)*	Shows the contents of the volume label on the tape that was booted from. Before this option is run, this tape is rescanned each time to allow a different tape to be inserted.
2. Reassign Bad Blocks *(5 seconds)*	Sends a SCSI *reassign blocks* command to the disk for a specified block. Will reassign a single block at a time, and attempts to save data.
3. Format Disk *(1 hour for 420 Mbyte)*	Lays low-level screen at tracks on the disk and, for remapping, checks for any bad blocks.
4. Disk I/O Tests *(1 second)*	Runs a disk read/write/verify test on the disk. The number of iterations can be specified. The non-destructive mode writes/reads at the end of the disk in the diagnostic cylinder. The destructive mode writes and reads an active disk.
5. Copy Boot Program Only *(15 seconds)*	Reads the disk boot program from the tape and copies it to the disk. If it cannot find the disk boot program, read the tape, or write the disk, it will fail.

The following situations may arise that call for use of the STU.

Unbootable System

The system is stable in the FW state but will not boot the operating system (OS). This may include cases where information on the disk is lost for any reason. In this scenario, no customer data is available.

1. While the system is in the FW state running flashware tests, insert the generic tape and invoke command mode by pressing CONTROL C twice.
2. Select option 7 (Manual Boot), then answer questions: 2 (boot from tape), and 1 (device number for the tape).
3. Select the menu action 3 (Copy Generic Partitions to disk).
4. After the generic partitions are copied, the system automatically reboots. The system should reach the OS state, invoking the Installation script.
5. Select the option that *recovers* an existing system. This will use data on the disk only.
6. The crash audit is automatically invoked. This will attempt to assess the extent of the damage. Decide from this information whether or not to do a *restore* from a backup tape.
7. Remove the generic tape, insert the backup tape, and run ADD TAPE to equip the tape.
8. Invoke the RESTORE BACKUPS screen. Select the most recent backup for restoration. The backup data is read and all files are restored. Should this backup turn out not to be complete (for instance, if names in the names file are missing), you may have to try restoring an earlier backup.
9. Any customized announcements are normally stored on a separate tape. Load this tape. Restore these announcements by invoking the RESTORE BACKUPS screen. Normally this restoration should take approximately 20 minutes. If it takes longer, see the note below.
10. After all files have been recovered, the initialization proceeds to take the system to the AUDIX state.
11. Run AUDIT SUBSCRIBER DATA and AUDIT MAILBOXES to clean up any headers that have no messages to play back.

12. If the system will not initialize because the disk did not pick up the customer data, do a disk *reinstall*. Follow steps 5 through 10 in *Disk Upgrade/Replacement* at the end of this section.

    NOTE:
    If restoring customized announcements takes much longer than 20 minutes, the announcement filesystem on the disk may be running out of space (you are adding the customized announcements with the standardized announcements just restored). To resolve this:

    — Cancel the *restore* operation. This gets you out of the screen although restoration continues in the background.

    — Invoke the DISPLAY ADMINISTRATION-LOG screen. Look for administration messages concerning low filespace.

    — Invoke RESET SYSTEM RESTART. This kills the current *restore* process.

    — Remove all announcements.

    — Invoke RESET SYSTEM OA&M.

    — *Restore* the announcements from the customized announcement tape.

Lost Generic Files

The system is stable in the OA&M state. Either inline errors or the crash audit indicate that generic files or data has been lost. All customer data is intact.

NOTE:
Ensure that the customer knows you will be shutting down the system.

1. Run REMOVE TAPE.
2. Shut down the system by pressing the BOOT/SHUTDOWN button, or by invoking the RESET SYSTEM SHUTDOWN screen.
3. Remove the backup tape. Insert the generic tape and invoke command mode by pressing CONTROL C twice.
4. Select option 7 (Manual Boot), then answer questions: 2 (boot from tape), and 1 (device number for the tape).
5. Select the menu action 3 (Copy Generic Partitions to disk).
6. After the generic partitions are copied, the system automatically reboots. The system should reach the OS state and invoke the *Installation* script.
7. Select the option that *recovers* an existing system.
8. The crash audit is automatically invoked. This attempts to assess the extent of the damage.

9. After all files have been recovered, the initialization process takes the system to the AUDIX state.
10. Remove the generic tape, insert the backup tape, and run ADD TAPE to equip the tape.

Disk Upgrade/Replacement

When a DEFINITY AUDIX System requires a larger disk, the following procedure will be followed. This includes replacing a 6-hour disk drive with a 15-hour disk drive, or a 15-hour disk drive with a 40-hour disk drive.

NOTE:
Ensure that the customer knows you will be shutting down the system.

1. Enter the OA&M state using the **RESET SYSTEM OA&M** command on the RESET SYSTEM OA&M screen.
2. Insert the backup tape.
   - — Execute the following backups:
   - — Voice data using the **SAVE** command on the SAVE VOICE screen
   - — Recorded names (weekly) using the **SAVE** command on the SAVE WEEKLY screen
   - — Customer data (nightly) using the **SAVE** command on the SAVE NIGHTLY screen
3. Gracefully shut down the AUDIX System to the MSHUT state using the BOOT/SHUTDOWN button or the **RESET SYSTEM SHUTDOWN** command on the RESET SYSTEM SHUTDOWN screen. Remove the system from the carrier. Replace the present disk drive with the larger-capacity disk drive (see the hardware replacement procedures in Chapter 4).
4. Clean the tape-drive heads with the supplied cleaning kit, unless you are also replacing the tape drive.
5. Insert the generic tape, insert the system into the carrier, and wait for firmware boot messages to appear. Then enter command mode by pressing CONTROL C twice.
6. Select option 7 (Manual Boot), then answer questions: 2 (boot from tape), and 1 (device number for the tape).
7. When the next menu appears, enter **1** to select *Initialize Disk*.
8. Select the menu action 3 (Copy Generic Partitions to disk). Enter **0** (the default) for the SCSI ID.

9. After the generic partitions are copied[1], the system automatically reboots if the version is 3.1 or later. The system default announcements must be loaded if the version is 3.1 or earlier. The system should reach the OS state, invoking the Installation script. Select option 2 to *install* a new system.
10. After the system enters the AUDIX state, enter the OA&M state using the **RESET SYSTEM** command on the RESET SYSTEM OA&M screen.
11. Insert the backup tape and invoke ADD TAPE to equip the tape.
12. Check the status of the ADD TAPE operation using the **DISPLAY** command on the STATUS TAPE screen. When the ADD TAPE operation is complete, the STATUS TAPE screen will show `In service, idle`.
13. At the Enter command, enter RESTORE BACKUPS and press `Enter`. The RESTORE BACKUPS screen is displayed. Restore files in the following order:
    — *Voice* (voice data)
    — *Weekly* (recorded names)
    — *Nightly* (customer data)
14. Enter `backup number to restore` from the restore backups screen. Press `Enter`
15. At the Enter command, enter RESET SYSTEM REBOOT and press Enter.
16. Verify that service is restored.
17. Run AUDIT SUBSCRIBER DATA and AUDIT MAILBOXES to clean up any headers that have no messages to play back.

System Change to Native Mode

In R1V3 and R1V4 (*non-native mode*) switches, the TN566B or TN567 Multifunction board on the DEFINITY AUDIX System emulates a TN754 or TN2181 Digital Line circuit pack, or a TN746B. This does not allow the service technician to identify the circuit pack on the switch of a DEFINITY AUDIX System. A *native mode* software upgrade in the DEFINITY G3i or G3s switch recognizes the DEFINITY AUDIX System and the five slots it occupies in the carrier. (Note that native mode cannot be applied to the G3r switch).

When upgrading the system to a switch with native mode, perform steps 1 to 12, then 14 to 19.

When simply moving the DEFINITY AUDIX System from one native-mode switch to another, perform steps 1 to 10, then 13 to 19.

1. Log in and verify the current switch release on the switch.
2. Make a call from one station to another. Verify that the switch answers.

1. The system default announcements have to be loaded if this is a version 3.1 or later.

3. Ensure that the switch and the DEFINITY AUDIX System are stable and sane.
4. Log in to the DEFINITY AUDIX System.
5. Busy out the DEFINITY AUDIX System voice group.
6. Gracefully shut down the AUDIX System to the MSHUT state with the BOOT/SHUTDOWN button or the RESET SYSTEM SHUTDOWN screen.
7. Remove the system from the carrier.
8. Release the system voice ports on the switch administration terminal.
9. Change stations for each member of the voice group. Change the location to X if a G1 or G3 switch. Otherwise, remove all ports totally.
10. On the *circuit pack* screen, remove the circuit pack at the location of the DEFINITY AUDIX System. Verify the pack can be removed without a problem.
11. Perform a switch upgrade.
12. Reinsert the board into the proper location.
13. Verify that the DEFINITY AUDIX System reboots and all ports are in the OOS state.
14. Verify that the reserved slots (and the TN566B or TN567 slot) are displayed properly.
15. Using the CHANGE VOICE GROUP screen, change the DEFINITY AUDIX voice-group port locations to match the new switch port location.
16. On the switch administration terminal, use the switch screen CHANGE STATIONS to change all voice-ports stations. Change the voice-group stations back to the new locations. At the same time, change the station type to AUDIX. Verify that the system allows this to be done on each station screen. (If not a G1 or G3 switch, readminister.)
17. Check for any system or port alarms.
18. Do a RESET SYSTEM REBOOT from the DEFINITY AUDIX System terminal.
19. Call the DEFINITY AUDIX System main number. Verify that the system answers with the *Welcome to AUDIX* greeting.

Using the LCD Status Mode Display

The LCD display on the DEFINITY AUDIX System front panel, shown in Figure 11-1, System Front Panel, provides a quick display of system operation and problems.

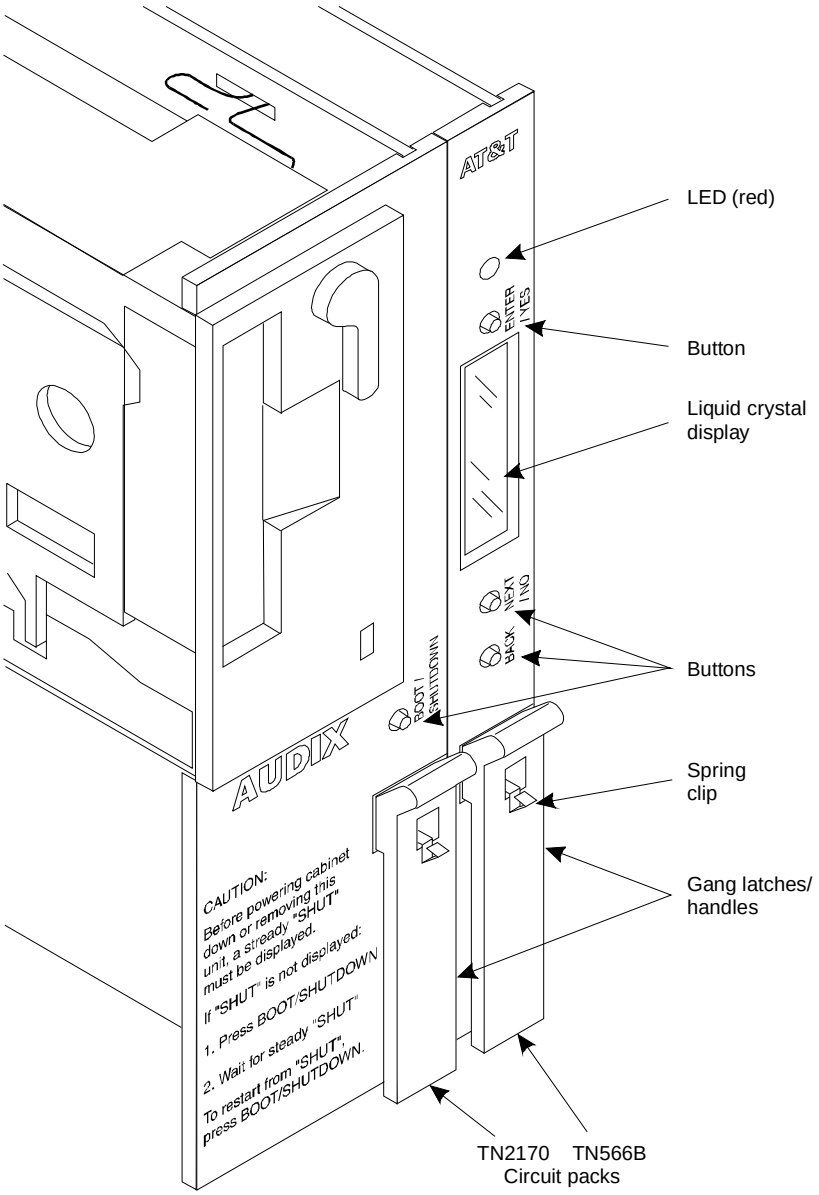


Figure 11-1. System Front Panel

Refer to Table 1-4, System States, which lists the status mode displays indicating states of operation, alarms, and heartbeats.

For the displayed menu structure of the LCD when it is put into interactive mode, go to Figure 11-2 and Figure 11-3, Figure 11-4 and Figure 11-5, and Figure 11-6. Use the faceplate buttons in the following way:

- Press the NEXT/NO button to enter the interactive mode from the status mode, to scroll downward through each level, or to respond negatively to LCD display questions.
- Press the BACK button to scroll upward.
- Press the ENTER/YES button to respond affirmatively to LCD display questions.
- Press the NEXT and BACK button simultaneously to return to the status mode from anywhere in the menu. Keep the two buttons pressed for more than two seconds to test the operation of the LED and LCD; the LED and all segments of the LCD should remain lit until the buttons are released.
- To cause a hardware reset of the MFB 80386SX circuit, press the NEXT, BACK, and ENTER buttons simultaneously for four seconds.

WARNING:
Pressing the NEXT, BACK, and ENTER buttons simultaneously can be destructive to the system. This emergency action should only be taken when the system is in the FW state, or as a last resort when the system is completely unresponsive, that is, when all terminals are locked and no service is being provided.

Refer to Table 11-2, Faceplate LCD Readings, for definitions and repair actions of the LCD readouts when the menu is scrolled with the above buttons.

Note that the diagnostic tests listed in Table 11-2 are those run in the flashware command (CMD) mode on the remote or local terminal (see Table 1-4, System States).

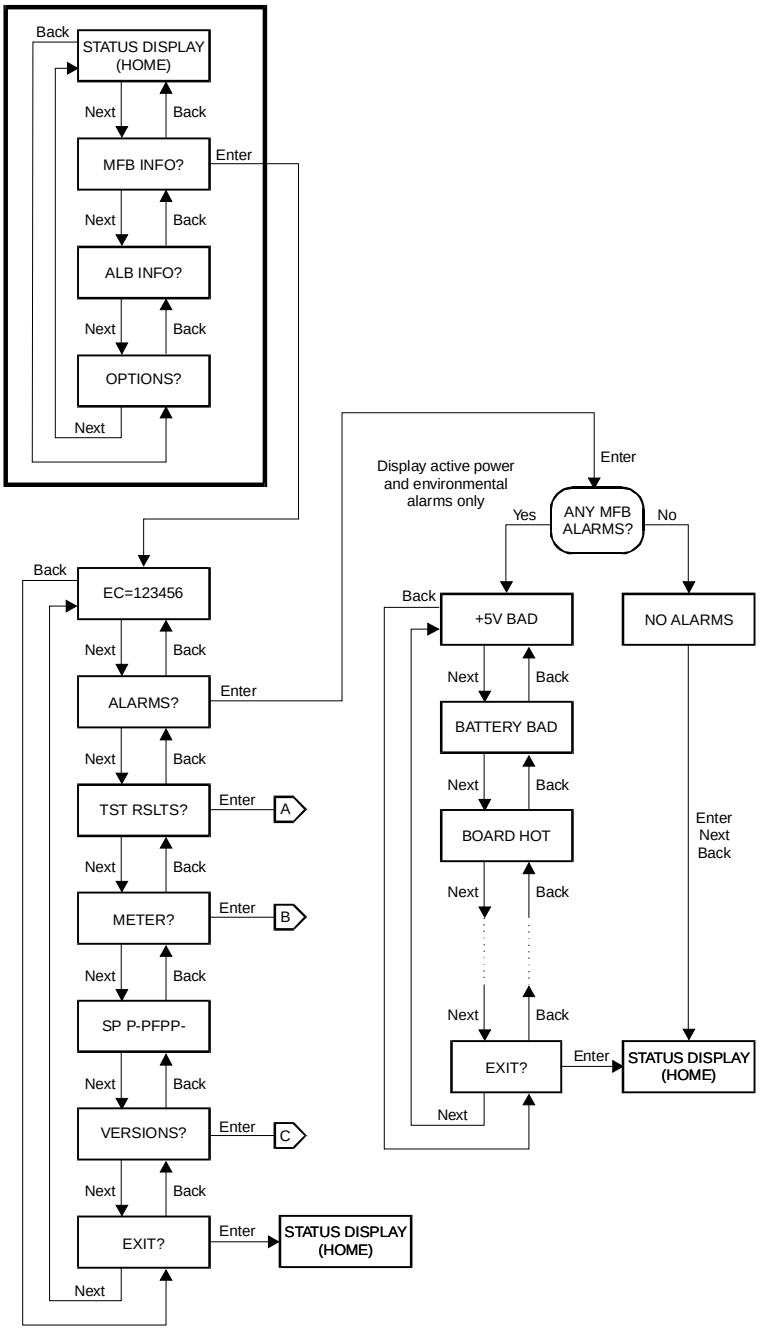


Figure 11-2. LCD MFB Information Menu (Part 1 of 2)

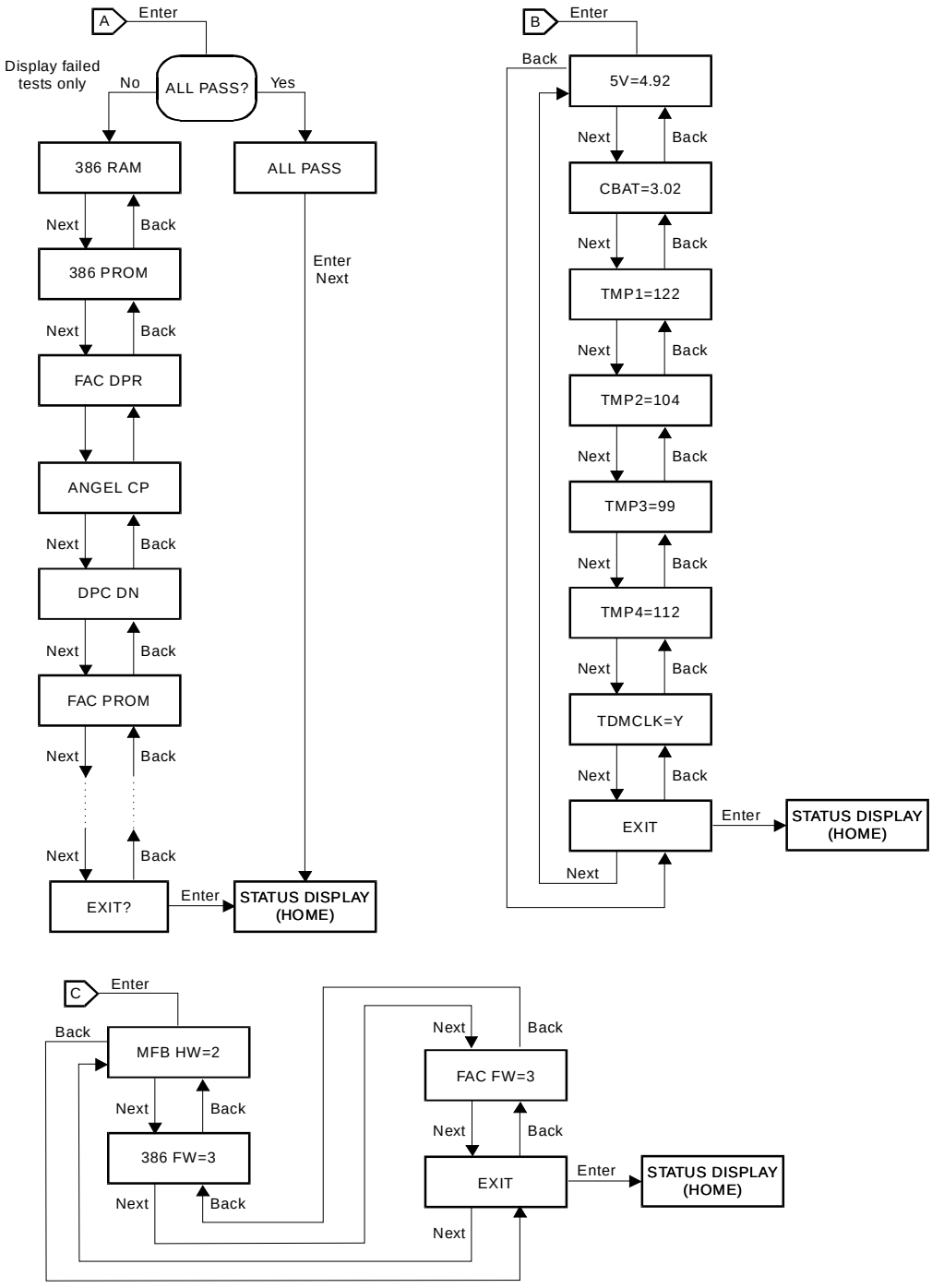


Figure 11-3. LCD MFB Information Menu (Part 2 of 2)

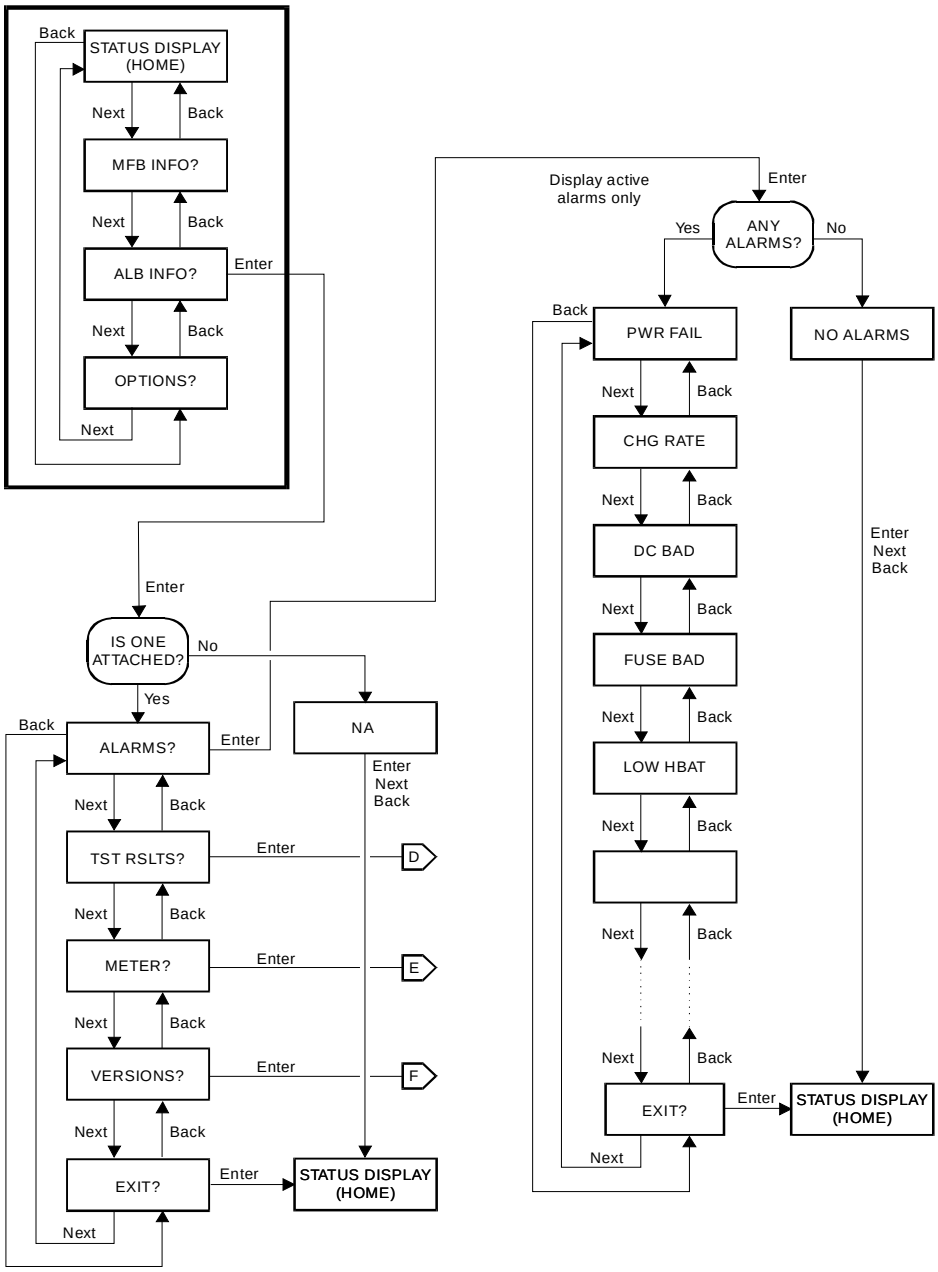


Figure 11-4. LCD Alarm Board Information Menu (Part 1 of 2)

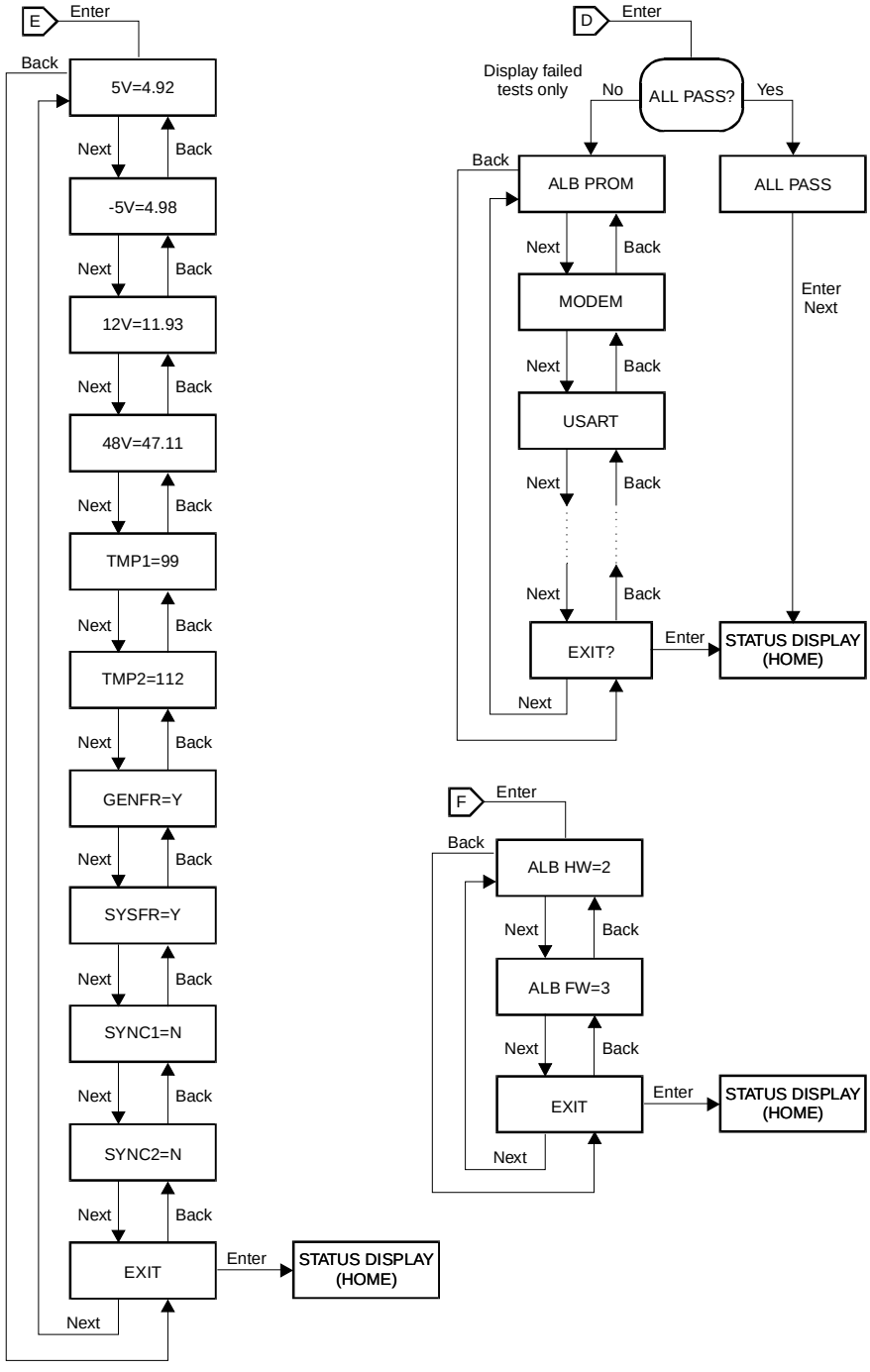


Figure 11-5. LCD Alarm Board Information Menu (Part 2 of 2)

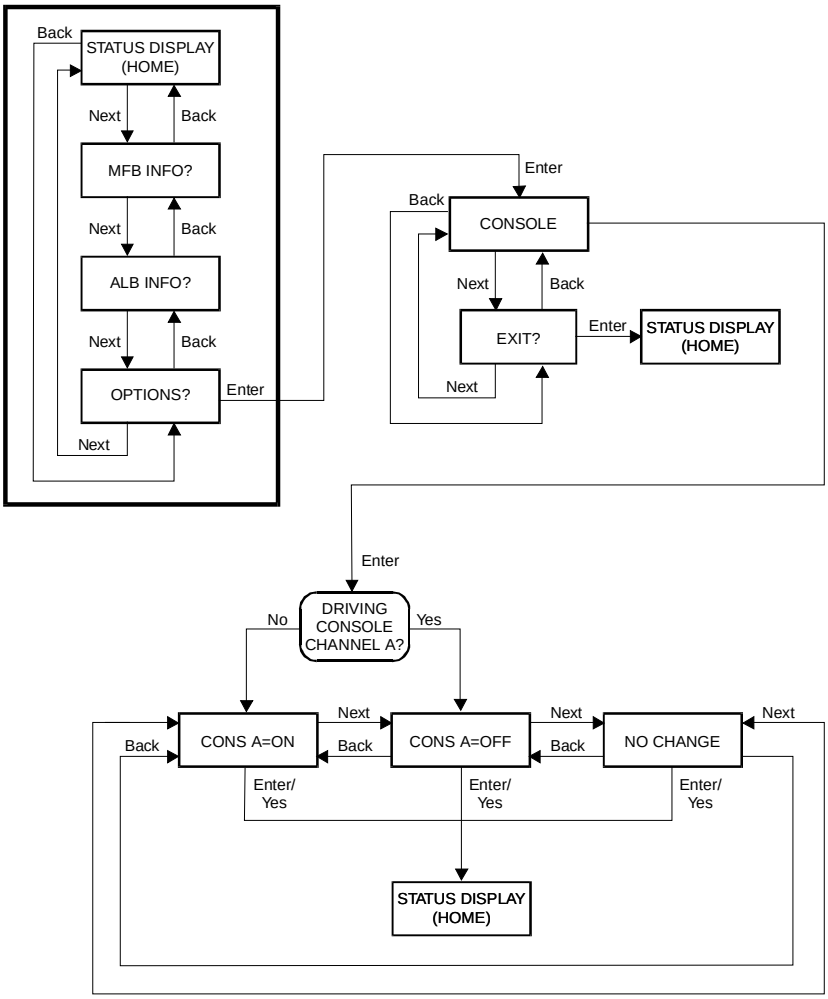


Figure 11-6. LCD Options Menu

Refer to Table 11-2, Faceplate LCD Readings, for a list of LCD readouts that concern the DEFINITY AUDIX System hardware.

Table 11-2. Faceplate LCD Readings

LCD Readouts	Definition	Repair Action
MFB 386 Diagnostic Tests		
386 RAM	Normal 386 RAM test failed	
386 ROM	Normal 386 ROM test failed	
FAC DPR	FAC Dual Port RAM test failed	
FAC INT	FAC interrupt test failed	
RT CLOCK	Real Time Clock test failed	
NVRAM	Non-volatile RAM test failed	
ANGEL	Angel test failed	
BUS TIMOUT	Bus timeout test failed	
PARITY	RAM parity generation/checking test failed	
SHUT NMI	Shutdown non-maskable-interrupt generation test failed	
82370 TMR	Initialization tests for timer/s failed	
8254 TMR	8254 timer chip test failed	
SCSI	SCSI device access test failed	
DIS NMI	Disable non-maskable-interrupts test failed	See Chapter 3, Table 3-1, MF_BD alarm 304
MLAPD	Link access procedure chip test failed	
ANGEL CP	Angel dual port RAM copy test failed	
ANGEL DL	Angel dual port RAM download test failed	
DSP-1	Digital Signal Processor—1 test failed	
DSP-2	Digital Signal Processor—2 test failed	
DSP-3	Digital Signal Processor—3 test failed	
DSP-4	Digital Signal Processor—4 test failed	
DSP-5	Digital Signal Processor—5 test failed	
DSP-6	Digital Signal Processor—6 test failed	
DPC DL	DSP Parallel Controller download test failed	
MLAPD LOC	MLAPD local loopback test failed (internal to chip)	
MLAPD EXT	MLAPD external loopback test failed (to PPE and back)	
DUSCC	Dual USART test failed	
HOG NMI	Bus hog test failed	
386 EX RAM	Extensive RAM test failed	

Continued on next page

Table 11-2. Faceplate LCD Readings — *Continued*

LCD Readouts	Definition	Repair Action
MFB Alarms BOARD HOT	Temperature sensors A, B, C, or D above limits	See Chapter 5, Table 5-1: THERMAL alarms 0 and 1.
+5V BAD	+5V out of bounds (Acceptable range: +4.85V to +5.15V)	See the DISPLAY EVENTS log. No errors or alarms are set.
BATTRY BAD	Battery power out of range	
+12V BAD	+12 volts out of bounds (Acceptable range: +11V to +13V)	
Angel Diagnostic Tests		
ANG CHKSUM	Angel code checksum failed	See Chapter 3, Table 3-1: MF_BD alarms 304 and 305.
ANG I RAM	Angel internal RAM test failed	
ANG E RAM	Angel external RAM test failed	
ANG DPR	Dual port RAM angel test failed	
TSC RAM	Time slot controller DPR angel test failed	
SCOTCH	SCOTCH/NPE angel test failed	
PPE BIST	Packet processing element built-in test failed	
PPE FIFO	PPE First In/First Out test failed	
Alarm Board Diagnostic Tests		
ALB ROM	Alarm board ROM processor test failed	See Chapter 3, Table 3-2: ALARM_ BD alarms 0 and 3.
ALB I RAM	Alarm board internal RAM processor test failed	
ALB E RAM	Alarm board external RAM processor test failed	
ALB I2C	Alarm board processor Iu2dC bus test failed	See Chapter 3, Table 3-2: ALARM_ BD alarm 2.
ALB E I2C	Alarm board external Iu2d bus test failed	
ALB MODEM	Alarm board internal modem test failed	See Chapter 3, Table 3-4: ALARM_ ORIG alarm 2.

Continued on next page

Table 11-2. Faceplate LCD Readings — *Continued*

LCD Readouts	Definition	Repair Action
ALB +5V	+5 volt supply out of bounds (Acceptable range: +4.85V to +5.15V)	See the DISPLAY EVENTS log. No errors or alarms are set.
ALB -48V	-48 volt supply out of bounds (Acceptable range: -54.0V to -44.0V)	
ALB -5V	-5 volt supply out of bounds (Acceptable range: -5.2V to -4.8V)	
ALB TMP A	Temperature sensor A above limits	See Chapter 5, Table 5-1: THERMAL alarms 2 and 3.
ALB TMP B	Temperature sensor B above limits	
ALB M LP	Alarm board modem loopback test failed	See Chapter 3, Table 3-4: ALARM_ORIG alarms 0, 1, and 2
ALB MD INT	Alarm board modem interrupt test failed	
ALB M I LP	Alarm board modem internal loopback test failed	
ALB M E LP	Alarm board modem external loopback test failed	
ALB M PRO	Alarm board modem loopback programming failure	
ALB UART	Alarm board Universal Asynchronous Receiver Transmitter test failed	See Chapter 3, Table 3-2: ALARM_BD alarm 1.
ALB UR LP	Alarm board UART loopback test failed	
ALB UR INT	Alarm board UART interrupt test failed	
Faceplate and Alarm Controller Diagnostic Tests		
FAC ROM	FAC ROM test failed	See Chapter 3, Table 3-2: ALARM_BD alarms 0 and 3.
FAC I RAM	FAC internal RAM test failed	
FAC E RAM	FAC external RAM test failed	
FAC I2C	FAC Iu2dC bus test failed	See Chapter 3, Table 3-2: ALARM_BD alarm 2.
FAC DPRAM	FAC dual port RAM test failed	See Chapter 3, Table 3-2: ALARM_BD alarm 0
FAC TPA	FAC temperature sensor A test failed	See Chapter 5, Table 5-1: THERMAL alarms 0 and 1.
FAC TPB	FAC temperature sensor B test failed	
FAC TPC	FAC temperature sensor C test failed	
FAC TPD	FAC temperature sensor D test failed	
FAC 5V	+5 volt supply out of bounds (Acceptable range: +4.85V to +5.15V)	See the DISPLAY EVENTS log. No errors or alarms are set.
FAC BAT	Battery power out of bounds	

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Table 11-2. Faceplate LCD Readings — *Continued*

LCD Readouts	Definition	Repair Action
SCSI Peripheral Connectivity		
SP P	SCSI peripheral (Tape) pass—answers inquiries without errors	See Chapter 4, Table 4-1: TAPE alarms 0 and 1.
SP F	SCSI peripheral (Tape) fail—answers inquiries with errors	
SP -	SCSI peripheral (Tape) does not answer inquiry	
SP P	SCSI peripheral (Disk) pass—answers inquiries without errors	See Chapter 4, Table 4-2: DISK alarms 0 and 1.
SP F	SCSI peripheral (Disk) fail— answers inquiries with errors	
SP -	SCSI peripheral (Disk) does not answer inquiry	

Administration Log Entries

The ADMINISTRATION LOG screen lists codes and messages that can be used as a search string to spot trouble that may be occurring with the DEFINITY AUDIX System, its features, or the switch. The system administrator should monitor this log whenever the A appears on the status line, and take proper action. Table 11-3, *Administration Log Entries*, lists these log entries and gives any repair actions that may correct the problem.

Table 11-3. Administration Log Entries

Search String	Message	Action
aabe	`Invalid attendant, sub=<name> ext=<extension>`	Readminister attendant: change button assignment to a valid extension on the CHANGE SUBSCRIBER screen.
aanb	`No buttons for attendant, sub=<name> ext=<extension>`	Assign buttons or delete the unneeded attendant by executing the CHANGE SUBSCRIBER or the REMOVE SUBSCRIBER screen.
aand	`Auto-attendant schedules and routing information missing, using defaults`	Readminister auto-attendant data

Continued on next page

Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
adm	Guest password is less than the minimum required length. Please change it	Change guest password by invoking the SYSTEM-PARAMETERS FEATURES screen.
apib	Break-in Attempt into mailbox owned by <name>, <extension> from API	Check into this — Could be an indication of toll fraud!
atpg	Attendant <extension> does not have a personal greeting recorded	Record the attendant menu.
attm	Auto Attendant calls itself, <extension>	Invoke the CHANGE SUBSCRIBER screen and change the Auto Attendant timeout extension to something other than the attendant's extension.
attm	Attendant %s has no buttons defined. Should this be a bulletin board?	Define the extension as a bulletin board.
attm	Menu choice <button> (ext. <extension1>) for attendant <extension2> is an invalid subscriber	Invoke the CHANGE SUBSCRIBER screen and remove this menu choice, or make a mailbox for extension 1 using the ADD SUBSCRIBER screen.
attm	Default menu choice <button> (ext. <extension1>) for attendant.<extension2> is an invalid subscriber	Invoke the CHANGE SUBSCRIBER screen and remove this menu choice, or make a mailbox for extension 1 using the ADD SUBSCRIBER screen.
attm	Menu choice <button> (ext. <extension1>) for attendant. <extension2> does not have proper permission	Invoke the CHANGE SUBSCRIBER <ext2> screen and give Call Answer or Guest Greeting permission to subscriber assigned to extension 1.
attm	Default menu choice <button> (ext. <extension1>) for attendant. <extension2> does not have proper permission	Invoke the CHANGE SUBSCRIBER <ext2> screen and give Call Answer or Guest Greeting permission to subscriber assigned to extension 1.
attm	Attendant <extension> choice has invalid treatment <type>	Invoke the CHANGE SUBSCRIBER screen to repair the Auto Attendant problem.
attx	Transfer not allowed and attendant <extension> allows transfer	Turn on transfer using the CHANGE SYSTEM-PARAMETERS FEATURES screen.
attx	Transfer not active and attendant <extension> uses transfer	Turn on transfer using the CHANGE SYSTEM-PARAMETERS FEATURES screen.

Continued on next page

Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
bsxt	Call answer, non-subscriber <owner's extension>	Someone without an AUDIX mailbox either has coverage to AUDIX or is invoking Call Forwarding to AUDIX. Give them a mailbox, remove coverage, or tell them not to use Call Forwarding to AUDIX. Each time a call comes to an AUDIX port for this subscriber, the port cannot take another call until the call hangs up.
bver	Invalid AMIS version from remote system	AMIS messages could not be transmitted to or from a remote machine because a different protocol was used.
cbnm	Local number missing from callback number	Correct the AMIS translations using the CHANGE MACHINE screen.
clrd	Administration log manually cleared	None
clrd	Administration log recovered during audit	None
clrd	Administration log recreated during audit	None
clrd	Administration log recreated during initialization	None
cmty	Network machine (machine-name) has illegal community ID. Set default to 1	Administer the machine's community ID by executing the CHANGE MACHINE screen.
cmwl	Corrupt message waiting light, extension <extension>	This indicates a disagreement between the AUDIX System and the switch about a subscriber's MWL. Could be caused by a race condition. If the subscriber complains often, contact the RSC.
cpas	Copy announcement set from announcement set:annc-set_1 to announcement set annc-set_2, interrupted by shutdown. Recopy	Invoke the COPY ANNOUNCEMENT-SET screen to recopy.
ctna	Covering extension assigned while Call Transfer out of AUDIX is not active	Invoke the CHANGE SYSTEM-PARAMETERS FEATURES screen to activate Call Transfer. Then reexecute the CHANGE SUBSCRIBER screen.
dupt	duplicate touch tones	Change name of duplicate mailbox.
dups	duplicate subscriber	Change name of duplicate mailbox.
fsot	Space threshold exceeded	Check the DISPLAY SYSTEM-PARAMETERS THRESHOLDS screen.

Continued on next page

Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
fsut	Space threshold resolved	None
ftwa	Error obtaining system profile. Flash transfer delay set to 2 (default)	None
gpcf	Guest password conflict: <name> <extension>	Change the guest password so a conflict no longer exists, then inform the subscriber.
ilbm	Loopback message from <cb_ number>, cannot reply	Correct the AMIS translations using the CHANGE SYSTEM-PARAMETERS ANALOG-NETWORK screen.
inva	Invalid AMIS analog dial string <_____>	Correct the AMIS translations using the CHANGE MACHINE screen.
isum	Invalid digit in AMIS sum string	Call the RSC.
laom	Maintenance port busy, Alarm Origination calls blocked	Log off the maintenance port.
laom	Alarm Origination line disconnected	Call the RSC.
laom	Alarm Origination call failed	Call the RSC.
laom	No answer to an Alarm Origination call at the far end	Call the RSC.
laom	No acknowledgement of transmission of an Alarm Origination call	Call the RSC.
lfmb	Full mailbox for <extension>	If this happens frequently, talk with the subscriber. A larger mailbox may be needed, or you can suggest they clear out their mailbox more often.
lfmb	Broadcast mailbox is full	If you have an important broadcast message to deliver, log into the special broadcast mailbox and delete an old one. Then resend your message.
lnnr	Name not recorded for <name> extension <extension>	Record a name for the subscriber specified in the log message.
lpba	Break-in attempt into mailbox owned by <name>, <owner's extension> from <originating_ extension>	Check into this — Could be an indication of toll fraud!
lpba	Break-in attempt into mailbox owned by <name>, <owner's extension> from outside call	Check into this — Could be an indication of toll fraud!

Continued on next page

Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
lsos	System out of space	Inform subscribers to delete unnecessary messages or greetings. (You can use the login announcement to do this effectively. Make the announcement non-dial through.) If you get little response, lower the retention time on the class of service screens for old and filed messages and then execute. Run AUDIT MAILBOXES. Unused announcements and announcement sets can also be removed. Or you can decrease the number of subscribers, or delete unnecessary remote subscribers.
lsxl	Mixed local subscriber extension lengths	Fix subscriber database so all subscribers have the same extension lengths.
mnod	Multiple nodes for AMIS address <address>	Check the DISPLAY ADDRESS-RANGES screen. Then correct the AMIS translations using the CHANGE SYSTEM-PARAMETERS ANALOG-NETWORK screen.
mnod	Multiple nodes for AMIS addresses	Correct the AMIS translations.
msot	Message space threshold - upper	Check the DISPLAY SYSTEM-PARAMETERS THRESHOLD screen. Inform subscribers to delete unnecessary messages or greetings. (You can use the login announcement to do this effectively. Make the announcement non-dial through.) If you get little response, lower the retention time on the class of service screens for old and filed messages and then execute. Run AUDIT MAILBOXES. Unused announcements and announcement sets can also be removed. Or you can decrease the number of subscribers, or delete unnecessary remote subscribers. If the *upper* threshold continues, consider buying a larger disk.
msot	Message space threshold - middle	
msot	Message space threshold - lower	
msut	Message space threshold - retired	None — Indicates the time when the threshold was resolved.
ncol	name conflict	Change name of duplicate mailbox or remote machine, then rerun GET REMOTE.

Continued on next page

Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
noci	No transmission cycle intersection with outcalling for node: <node number> name: <node name>	This concerns AMIS networking. AMIS networking uses the outcalling cycles on the SYSTEM-PARAMETERS OUTCALLING screen. In this case the cycles on the MACHINE screen for the given node do not intersect with the outcalling cycles. One or both cycles must be changed for AMIS messages to be sent.
ncyc	Network machine (machine-name) has no transmission cycles	Administer transmission cycles by executing the CHANGE MACHINE screen.
ndig	Network machine (machine-name) has illegal extension size	Administer the machine's extension size by executing the CHANGE MACHINE screen.
ndsd	Remote subscribers are deleted	None
nloc	Local node record missing, default inserted	Administer the local machine by executing the CHANGE MACHINE screen.
nmtl	Message transmission limit reached for machine <machine_ name>	Consider enlarging the range of times that AMIS messages are sent, changing the outcalling schedule, or both.
nntr	Send to nonadministered remote node. Set field to y for machine (machine-name)	Administer sending to nonadministered remote subscribers by executing the CHANGE MACHINE screen, or administered users on this node using ADD REMOTE-SUBSCRIBER.
nrng	Network machine (machine-name) has no address ranges	Administer the address ranges by executing the CHANGE MACHINE screen.
nsmb	No voice space available to add new mailbox	Inform subscribers to delete unnecessary messages or greetings. (You can use the login announcement to do this effectively. Make the announcement non-dial through.) If you get little response, lower the retention time for old and filed messages on the class of service screens and then execute. Run AUDIT MAILBOXES. Unused announcements and announcement sets can also be removed. Or you can decrease the number of subscribers, or delete unnecessary remote subscribers.

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Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
pafd	System profile corrupt, Password Aging DISABLED!	To turn on the feature, check the entries for the PASSWORD AGING LIMITS fields on the CHANGE SYSTEM-PARAMETERS FEATURES screen.
pewd	System profile corrupt, password warning DISABLED!	To turn on the feature, check the entries for the PASSWORD AGING LIMITS fields on the CHANGE SYSTEM-PARAMETERS FEATURES screen.
pglt	Automated Attendant menu lost for all calls, extension <called_extension>	Rerecord menu.
pglt	Automated Attendant menu lost for out-of-hours calls, extension <called_extension>	Rerecord menu.
pglt	Automated Attendant menu lost for internal calls, extension <called_extension>	Rerecord menu.
pglt	Automated Attendant menu lost for external calls, extension <called_extension>	Rerecord menu.
pglt	Automated Attendant menu lost for busy calls, extension <called_extension>	Rerecord menu.
pglt	Automated Attendant menu lost for no-answer calls, extension <called_extension>	Rerecord menu.
pglt	Automated Attendant menu lost for unknown calls, extension <called_extension>	Rerecord menu.
pglt	Bulletin Board message lost for all calls, extension <called_ extension>	Rerecord Bulletin Board announcement.
pglt	Bulletin Board message lost for out-of-hours calls, extension <called_extension>	Rerecord Bulletin Board announcement.
pglt	Bulletin Board message lost for internal calls, extension <called_extension>	Rerecord Bulletin Board announcement.
pglt	Bulletin Board message lost for external calls, extension <called_extension>	Rerecord Bulletin Board announcement.
pglt	Bulletin Board message lost for busy calls, extension <called_ extension>	Rerecord Bulletin Board announcement.

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Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
pglt	Bulletin Board message lost for no-answer calls, extension <called_extension>	Rerecord Bulletin Board announcement.
pglt	Bulletin Board message lost for unknown calls, extension <called_extension>	Rerecord Bulletin Board announcement.
pglt	Personal greeting lost for all calls, extension <called_ extension>	Check into this — Could be an indication of toll fraud!
pglt	Personal greeting lost for out-of-hours calls,extension <called_extension>	Notify called extension (subscribers). They will have to rerecord greeting.
pglt	Personal greeting lost for internal calls, extension <called_extension>	Notify subscribers.
pglt	Personal greeting lost for external calls, extension <called_extension>	Notify subscribers.
pglt	Personal greeting lost for busy calls, extension <called_ extension>	Notify subscribers.
pglt	Personal greeting lost for no-answer calls, extension <called_extension>	Notify subscribers.
pglt	Personal greeting lost for unknown calls, extension <called_extension>	Notify subscribers.
pmad	System profile corrupt, minimum password age DISABLED!	To turn on the feature, check the entries for the PASSWORD AGING LIMITS fields on the CHANGE SYSTEM-PARAMETERS FEATURES screen.
rest	Restore failed	Try each of the following in order until the restore succeeds: — Retry the restore using the RESTORE screen. — Clean the heads on the tape drive. — Change the cartridge. — Call the RSC.
rest	Restore passed	None

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Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
rest	Restore aborted	Try each of the following in order until the restore succeeds: — Retry the restore using the RESTORE screen. — Clean the heads on the tape drive. — Change the cartridge. — Call the RSC.
rmtx	Sending matrix <__> missing, default inserted	Administer sending restrictions by executing the CHANGE SYSTEM-PARAMETERS SENDING-RESTRICTIONS screen.
rmtx	Community <__> has illegal entry <__> in sending restriction matrix	Administer sending restrictions by executing the CHANGE SYSTEM-PARAMETERS SENDING-RESTRICTIONS screen.
rmax	Sending restriction matrix file is empty. Default records, which have all entries set to the value PERMIT, were inserted	Administer sending restrictions by executing the CHANGE SYSTEM-PARAMETERS SENDING-RESTRICTIONS screen.
save	Save failed	Try each of the following in order until the restore succeeds: — Retry the restore using the RESTORE screen. — Clean the heads on the tape drive. — Change the cartridge. — Call the RSC.
save	Save passed	None
save	Save aborted	Try each of the following in order until the restore succeeds: — Retry the restore using the RESTORE screen. — Clean the heads on the tape drive. — Change the cartridge. — Call the RSC.
sext	Subscriber name has null extension	Enter the extension for the subscriber using the CHANGE SUBSCRIBER screen.
sext	Remote subscriber name has null extension	Enter the extension for the subscriber using the CHANGE REMOTE-SUBSCRIBER screen.

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Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
spce	Save backup tape failed: tape full	The tape is full.The rewind option must be used.
spce	Automated save nightly causing rewind	None — Indicates that prior backups are not accessible and are being overwritten.
spce	Approaching end of tape - room for <n> more automated save nightlies	If you want to keep these backups, invoke REMOVE TAPE, replace the tape currently in the system, and invoke ADD TAPE.
spwd	System Password changed	None
sxlt	Characters 'to' found more than once	Change the switch station/trunk name so that it does not contain the characters to. Note: Capitalizing the t is sufficient.
sxlt	Name: 'name' (<extension1>) not unique. See <extension2>	Change one of the names associated with *extension1* or *extension2* so they are unique. Note: The names may already be unique, but when the switch sorts them for the directory, they may end up looking the same. When this happens, change them again to make them unique.
sxlt	Too many errors found, logging suspended	Clean up switch administration flaws described in previous log entries, and try the switch names audit again.
sxlt	Name <name> might contain 'to'	If the station name on the switch contains the characters to, remove the characters. Note: Capitalizing the t is sufficient. If the name does not contain to, no errors will occur. But this message will be logged every time the audit runs.
sxlt	Invalid directory display: <____>, port: <port>	Check the switch administration of the port in question. Ensure that the directory feature is administered on the correct button. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.
sxlt	Failed to get name/extension pair from the switch	For some reason, during the switch names audit, the switch did not respond when the AUDIX System pressed the *next* feature button.
sxlt	Too many errors found during audit: <_____>, port: <port>	Fix the errors described in previous log entries, and try the switch names audit again.

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Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
sxlt	Audit failed, no names were found, port: <port>	No names/stations have been administered on this switch (the switch directory is empty). Run the audit again after the switch is administered.
sxlt	Cannot light MWI on AUDIX port <port>	During a port test, AUDIX could not light a message waiting indicator. Ensure that the port extension in question (CHANGE VOICE-GROUP screen) is correct. Also, ensure that the switch administration of the port is correct (especially lwc-store and other fields associated with the leave-word-calling switch feature). See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.
sxlt	Cannot extinguish MWI on AUDIX port <port>	During a port test, AUDIX could not turn off a message waiting indicator. Ensure that the extension of the port in question (AUDIX CHANGE VOICE-GROUP screen) is correct. Then, use the switch coverage-message-retrieval feature (on a display set) to ensure there are no other messages for this AUDIX port. Also ensure that the switch administration of the port is correct (especially lwc-cancel and other fields associated with the Leave Word Calling switch feature). See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.
sxlt	AUDIX port: <port> does not contain 'AUDIX' display: <_____>	Ensure that the extension of the port in question (CHANGE VOICE-GROUP screen) is correct. Also, check switch administration of the AUDIX port and make sure the station name begins with the characters A U D I X. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.
sxlt	Call to port <port> does not cover (all calls), display: <_____>	All AUDIX ports must use a coverage path that covers (all calls) to the AUDIX hunt group. Change switch administration so this is the case, and test the port again. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.

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Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
sxlt	Cannot get dial tone, port: <port>, ret: <_____>	Check in order until you can get a dial tone: — Is port out of service? — Is the system clock set? — Do fileysystems exist? — Is system hardware bad or improperly seated? — If no alarms are present, call the RSC.
sxlt	No called party information on outgoing call display: <_____>	During a port test, the tested port called itself, but did not get any called party information on its display. — Make sure the extension of the port in question (CHANGE VOICE-GROUP screen) is correct. — In the switch translations, the Calling Permission field on the Class of Restriction (COR) screen was set to n. Change to **y** for the port test to pass. — Check switch administration of the AUDIX port and ensure that the station name begins with A U D I X. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.
sxlt	No administered extension on AUDIX port <port>	Check the CHANGE VOICE-GROUP screen and ensure that an extension is administered for the port in question. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509. Note: This message should never be logged.
sxlt	Cannot select call appearance <_ ____> (port <port>)	Check the switch administration of the given AUDIX port. Make sure the port is administered with all the call appearances the documentation requests. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.
sxlt	Display button <_____> (port <port>) might not have directory feature	Check if feature is active. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.

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Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
sxlt	Could not get name/extension pair from the switch.Display button <_____>	Check the switch administration of the port in question. Ensure that the *next* feature button is administered. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.
sxlt	Port (<port>) might not have date-time feature	Check if feature is active. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.
sxlt	Unable to correctly parse time, time data: <_____>	Check the switch administration of the AUDIX ports, especially the date-time button. See *Switch Administration for DEFINITY AUDIX System*, 585-300-509.
sxlt	Invalid month received: <month>	Call the RSC.
sxlt	Invalid weekday received: <weekday>	Call the RSC.
sxlt	Switch names database discarded	Check previous log entries.
sxlt	Bad voice port extension, port <port>	Readminister the voice port extension for <port> on the CHANGE VOICE-GROUP screen.
sxlt	AUDIX subscriber (ext <extension>) may have LWC disabled	Check that LWC is not disabled on the switch's CHANGE STATION screen, or that a subscriber without a corresponding switch station must have switch number set to 0.
syda	System parameters lost, default values inserted	Readminister values on the CHANGE SYSTEM-PARAMETERS FEATURES screen and the CHANGE SYSTEM-PARAMETERS OUTCALLING screen.
syda	Limits parameters lost, default values inserted	Readminister values on the CHANGE SYSTEM-PARAMETERS LIMITS screen.
syda	Threshold parameters lost, default values inserted	Readminister values on the CHANGE SYSTEM-PARAMETERS THRESHOLDS screen.
time	Time synchronization with switch was successful	None — Indicates that someone changed the system time to agree with the host switch. See the SET TIME screen.
time	Set time was successful	None — Indicates that someone changed the system time by using the SET TIME screen.
time	Time zone was changed to time_ zone	Execute RESET SYSTEM REBOOT for the new time zone to take effect.

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Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
tmzs	Time zone is incorrect	Change the time zone by executing the CHANGE SWITCH-TIME-ZONE screen. If that fails, call the RSC.
traf	Subscriber traffic file corrupt	Call the RSC.
traf	Remote message traffic corrupt	Call the RSC.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. Mailbox full	If this happens frequently, ask extension 2 to delete messages, or give them a larger mailbox.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. Subscriber not found	Indicates that a subscriber no longer is administered on the machine. Sender will also be notified.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. Permission denied	The subscriber probably tried to send a private message which is not allowed. (The sender was also notified that the message was not delivered.) Tell the subscriber not to mark remote messages as private. Review the subscriber's community to ensure it is correct on the DISPLAY SUBSCRIBER screen.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. Transmission problems	May indicate that the machine is not working properly or the dialed facilities used to access this machine are not correct.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. Sending restricted	None — Recipient has chosen not to receive messages from sender's restriction community. See the CHANGE SYSTEM-PARAMETERS SENDING-RESTRICTIONS screen.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. Miscellaneous reason	Contact the RSC and report problems with the network.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. Only one active login announcement allowed	None — The sender will also be notified.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. AMIS analog recipient, wrong number	If the logged number is not a wrong number, a system restart is necessary. Otherwise, readministration of the AMIS number may be necessary.

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Table 11-3. Administration Log Entries — *Continued*

Search String	Message	Action
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. Transmission attempt exception for AMIS analog	Check out the AMIS network connections. If trouble persists, call the RSC.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. AMIS returned message	Call the RSC.
undm	Undeliverable message from <extension1> to <machine_name> <extension2>. AMIS message longer than 8 minutes	None — The sender will also be notified.
unod	Incoming AMIS message from an unknown machine [ccc][nxx][yyyzzzz]	Add machine using ADD MACHINE, or ignore message.
wrnm	Received wrong number failure for AMIS outgoing	None — The sender was notified of the error.
xfer	Call Transfer turned on/off by login <login_id> on port <pt_id>	None — Provides change in transfer functionality for subscribers/auto attendants.

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-D05 New paired with 40 hour disk, 5 hour RTU and 2 port RTU 7021-A05 Aftermarket paired with 40 hour disk, 5 hour RTU and 2 port RTU 7021-U05 PBX Upgrade paired with 40 hour disk, 5 hour RTU and 2 port RTU 7021-S05 paired with 40 hour disk, 5 hour RTU and 2 port RTU for try-it, buy-it sales with G3s 7021-T05 paired with 40 hour disk, 5 hour RTU and 2 port RTU for try-it, buy-it sales with G3s 7021-D99 New paired with1.05 Gigabyte Disk, 600 Megabyte Tape Drive, 5 hour RTU, 2 port RTU 7021-A99 Aftermarket 1.05 Gigabyte Disk paired with 600 Megabyte Tape Drive, 5 hour RTU, 2 port RTU 7021-U99 PBX Upgrade 1.05 Gigabyte Disk, paired with 600 Megabyte Tape Drive, 5 hour RTU, 2 port RTU 70730 reserves 5 slots in the G3s PBX for try-it, buy-it sales
G3s Advantage Bundles	PECs: 6308-J8A Analog 1 cabinet 40 hour disk, 5 hour RTU and 2 port RTU for Advantage 6308-J8B Analog 2 cabinet 40 hour disk, 5 hour RTU and 2 port RTU for Advantage 6308-J8C Analog 3 cabinet 40 hour disk, 5 hour RTU and 2 port RTU for Advantage 6308-K8A Digital 1 cabinet 40 hour disk, 5 hour RTU and 2 port RTU for Advantage 6308- K8B Digital 2 cabinet 40 hour disk, 5 hour RTU and 2 port RTU for Advantage 6308-K8C Digital 3 cabinet 40 hour disk, 5 hour RTU and 2 port RTU for Advantage

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Table A-1. Identifiers for Complete System — *Continued*

Description	PECs and Attributes
G3s Premier Bundles	PECs: 6308-L8A Digital 1 cabinet 40 hour disk, 5 hour RTU and 2 port RTU for Premier 6308-L8B Digital 2 cabinet 40 hour disk, 5 hour RTU and 2 port RTU for Premier 6308-L8C Digital 3 cabinet 40 hour disk, 5 hour RTU and 2 port RTU for Premier 6308-L8AU Digital 1 cabinet PBX Upgrade 40 hour disk, 5 hour RTU and 2 port RTU for Premier 6308-L8BU Digital 2 cabinet PBX Upgrade 40 hour disk, 5 hour RTU and 2 port RTU for Premier 6308-L8CU Digital 3 cabinet PBX Upgrade 40 hour disk, 5 hour RTU and 2 port RTU for Premier **NOTE:** Use 5 hour RTU increments for the 15 hour packages. 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)
Packages to Support Larger Disk and Tape Drive	PECS 7021-D99 New paired with 1.05 Gigabyte Disk, 600 Megabyte Tape Drive, 5 hour RTU, 2 port RTU 7021-A99 Aftermarket paired with 1.05 Gigabyte Disk, 600 Megabyte Tape Drive, 5 hour RTU, 2 port RTU 7021-U99 PBX Upgrade paired with 1.05 Gigabyte Disk, or 100 hours, 600 Megabyte Tape Drive, 5 hour RTU, 2 port RTU

Primary Equipment

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

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
TN566B MFB	70494	107 083 651 ED1E54670 G-14	1	Included in basic package listed in Table A-1, or can be ordered separately.
TN567 MFB	70571 70571A	103 281 754 ED1E54670 G-15		
1.05 Gigabyte disk 600 Megabyte Tape Drive	70572 70572A	407 306 851 407 306 851 407 306 984 ED 1E54670-G-9 Cable H600 344 Group 1		New. Up to 100 hours of storage Aftermarket Paired with a cable
40 hour disk drive	70573 70573A	407 260 256 407 260 256 ED 1E54670G-8 Cable H600 344 Group 1		New. Up to 40 hours of storage Aftermarket Paired with a cable
M7U Cable	70574	104 246 616		3 ft. For connection of the 7400A data module and the Paradyne modem
H600-258 Cable	70575	601 448 640		For connection of the ADU and the Paradyne modem
Blank tapes for the 600 Megabyte tape drive	70224	407 307 016		
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	70493	106 433 071 ED1E54670 G(TBD)	1	
160 meg Tape Drive		406 680 884 ED1E54670 G-1	1	Included in basic package listed in Table A-1, or can be ordered separately.

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

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
Tape Drive Shield		846 906 089	1	
SCSI Bus Cable		H 600-344, G1	2	
Interboard Bus Cable		H 600-345, G1	1	
Power Cable		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		H 600-352, G1	1	
ALB (TN2169) Two-Way Splitter Cable		403 864 150 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	403 836 620	1	
104A Connecting Block		103 016 648	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	

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

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
— 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 400 MB disk	70428A	ED1E54670 G-5		
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.

Table A-3. Identifiers for Primary Software

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
RTU Additional Hours of Storage	1253-S10			New 5 hours for 10-29 hours
	1253-S10A			Aftermarket 5 hours for 10-29 hours
	1253-S30			New 5 hours for 30-49 hours
	1253-S30A			Aftermarket 5 hours for 30-49 hours
	1253-S50			New 5 hours for 49+ hours
	1253-S50A			Aftermarket 5 hours for 49+ hours
	1253-VPC			RTU credit for 5 hours Migration of a voice port
	1253 -VSU			RTU indicator for 5 hour blocks used in a DEFINITY AUDIX upgrade
	1253 VHC			Migration of hours of storage for RTU Credit for 5 hours
RTU Digital Networking	1253-NET			New Right to Use for Digital Networking
	1253-NLW			New DEFINITY AUDIX RTU Low Speed Digital Networking Port
	1253-NHI			New DEFINITY AUDIX RTU High Speed Digital Networking Port
RTU DEFINITY AUDIX System R3.2 Software	1253-ADA		1	For existing DEFINITY or System 75 R1V3 switches (without accompanying upgrade to a DEFINITY G3 switch).
RTU DEFINITY AUDIX System R3.2 Software	1253-DDA		1	New or with a PBX upgrade PEC paired with 70570
RTU Upgrade to R3.2 from R1.0, R2.0 or R3.0, R3.1.	1253-ZDA		1	Paired with 70570 (from any prior release)
RTU DEFINITY AUDIX System R3.2 Software	1253-ZDAP			DEFINITY AUDIX upgrade PEC paired with 70570P (for promotions)
AMIS Analog Networking	1253-DAA	107 094 817	1	

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Table A-3. Identifiers for Primary Software — *Continued*

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
Software for new R3.2 systems. Includes program tape, installation, and documentation. (If an upgrade only, pair with 1253-ZDA only. Note that language attributes are different.)	70570		1	R3.2 New program cartridge Paired with either 1253-DDA for a new system, or with 1253-ADA for aftermarket system, or 1253 ZDA, which is the upgrade for R3.2. Includes one primary language, picked from the following by attribute: LAN01 — British English LAN02 — French LAN03 — Canadian French LAN04 — German LAN07 — Dutch LAN09 — Portuguese LAN10 — Latin Spanish LAN15 — Japanese LAN16 — Standard American English (Default) LAN 18 — American English 1-2-3 LAN19 — Polish
Migrations form AUDIX, AUDIX Voice Power, ISIII, Merlin Mail	1253-MVP			Migration of AVP to DEFINITY AUDIX
	1253-DMM			Migration of Merlin Mail to DEFINITY AUDIX
	1253-MI3			Migration of ISII to DEFINITY AUDIX
	1253-MA5			Migration of AUDIX R1V5 to DEFINITY AUDIX
	1253-MA6			Migration of AUDIX R1V6 to DEFINITY AUDIX
	1253-MA7			Migration of AUDIX R1V7 to DEFINITY AUDIX
	1253-MA8			Migration of AUDIX R1V8 to DEFINITY AUDIX
	1253-AMC			Migration of AMIS RTU currently implemented on AUDIX, to be implemented on DA

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Table A-3. Identifiers for Primary Software — *Continued*

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
	1253-NHC			Migration of networking high speed port RTU
	1253-NLC			Migration of networking low speed port RTU
Additional Voice Ports	1253-DVP			RTU for 2 ports on a *new* switch
	1253-DVPA			RTU for 2 additional voice ports on an *existing* switch
	1253-NETA			Aftermarket RTU for Digital Networking
	1253-NLWA			Aftermarket Definity AUDIX RTU Low Speed Digital Networking Port
	1253-NHIA			Aftermarket Definity AUDIX RTU High Speed Digital Networking Port
RTU for Multilingual option	1253-MLF		1	Allows up to nine languages. Language Ruts and tape cartridges must be ordered separately.
RTU American English 123	1253-DNU	107 145 013	1	New systems.
	1253-DNUA		1	Aftermarket addition.
	1253-NUU		1	Upgrades already having this language.
American English 123 cartridge tape	70486		1	Paired with one of the above RTUs (replaces 70416)
RTU Standard American English	1253-DAE		1	New systems.
	1253-DAEA		1	Aftermarket 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	Aftermarket additions.
	1253-BEU		1	Upgrades already having this language.
British English cartridge tape	70489		1	Paired with one of the above RTUs. (replaces 70414)

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Table A-3. Identifiers for Primary Software — *Continued*

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
RTU Canadian French	1253-DCF	107 015 877	1	New systems.
	1253-DCFA		1	Aftermarket additions.
	1253-CFU		1	Upgrades already having this language.
Canadian French cartridge tape	70489		1	Paired with one of the above RTUs.
European French	1253-DFE			
	1253-DFEA			Aftermarket additions
	1253 FEU			Upgrades already having this language
European French cartridge tape	70499			
RTU Latin Spanish	1253-DLS	107 015 885	1	New systems.
	1253-DLSA		1	Aftermarket 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 German	1253-DGE		1	New systems.
	1253-DGEA		1	Aftermarket additions.
	1253-GEU		1	Upgrades already having this language.
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, R3.0, R2.0, or R1.0.
RTU Dutch	1253-DDU		1	New systems.
	1253-DDUA		1	Aftermarket additions.
	1253-DUU		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 R3.0, R2.0, or R1.0.

Continued on next page

Table A-3. Identifiers for Primary Software — *Continued*

Description	PEC	Comcode, ED/H/J Drawing	Qty	Notes
RTU Portuguese	1253-DPO		1	New systems.
	1253-DPOA		1	Aftermarket additions.
	1253-POU		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 R3.0, R2.0, or R1.0.
Japanese	1253-DJA			New Systems
	1253-DJAA			Aftermarket additions
	1253-JAU			Upgrades already having this language
Japanese cartridge tape	70496			
Polish	1253-DPH			New Systems
	1253-DPHU			Aftermarket additions
	1253-PHU			Upgrades already having this language
Polish cartridge tape	70495			
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.

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-4. 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
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 or digital networking
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.
7400C data module	2161-201	106 654 478		Data service unit. High speed link
7400A data module	2171-ADM	105 558 050	1	Optional for remote admin. (paired with 7400B) or digital networking.
7400B data module	2172-101		2	Optional for remote admin. (paired with 7400A)
Power supply for 7400s	21625		2	Required with 7400 data modules
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-2 ADU	2169-002			Optional for digital networking
Z3A-4 female ADU	2169-004		1	Optional for remote admin. (paired with Z3A-1)

Continued on next page

Table A-4. Identifiers for Peripheral Equipment — *Continued*

Description	PEC	Comcode, H/ED Drawing	Qty	Notes
Power supply for ADUs	21691	102599354 102802113 102937620 104‘52558	1	Transformer D6 AP 7 ft. cord Dial up data link adapter 400 B2 adapter PEC alone includes one per ADU pair (includes one 400B2 and 248B adapter in ivory color)
D8AM crossover cord		104 154 430	1	Req. for ADU connection
Parallel printer and cable	6951-417 6950-EB1			Optional printer Printer cable
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

Table A-5. Training

Description	PEC	Comcode, H/ED Drawing	QTY	Notes
INTUITY/DEFINITY AUDIX Networking Class	1466-015			
DEFINITY AUDIX System Administration Class	1253 DAX			

Table A-6. Customer Documentation

Description	PEC	Comcode, H/ED Drawing	QTY	Notes
DEFINITY AUDIX R3.2	70741	ED 1E551-60 Group 19		Customer Documentation Set
		DEFINITY AUDIX Manual on disks J588 889 V31 DEFINITY AUDIX Manual J588 889 VB1 List 11		

Lucent INTUITY Message Manager

Table A-7. Identifiers for Message Manager Release 2.0

Description	PEC	Comcode	Notes
RTU MM interface activation via the *init* screen	1253-IVM	107 244 345	Includes capacities of 32 sessions and up to 500 clients.
MM Upgrade Kit	70493		Includes TN2170, 3-way splitter cable to make the LAN connection, and the upgrade software for MM.
MM Site License (Includes license, 5 sets of application disks and 5 sets of documentation)	7028-300		1 to 25 users
	7028-301		26 to 50 users
	7028-302		51 to 75 users
	7028-303		76 to 100 users
	7028-304		101 to 200 users
	7028-305		201 to 300 users
	7028-306		301 to 400 users
	7028-307		401 to 500 users
Additional Documentation for Lucent INTUITY Message Manager	7028-210		One package of 5 documents
	7028-202		Camera-ready master of MM document for local reproduction

Abbreviations

A

AC
alternating current

ACD
automatic call distribution

ADAP
administration and data acquisition package

ADU
asynchronous data unit

ALT
assembly load and test

AMIS
Audio Messaging Interchange Specification

API
application programming interface

AT&T
American Telegraph and Telephone

AUDIX
Audio Information Exchange

AWG
American wire gauge

B

BIOS
basic input/output system

bps
bits per second

BRI
basic rate interface

BSC
binary synchronous communications

BTU
British thermal unit

C

CCA
call classification analysis

CDH
call data handler process

CELP
code excited linear prediction

CIC
customer information center

CICS
customer information control system

CO
central office

COIN
central office implemented network

COM1
serial communications port 1

COM2
serial communications port 2

COR
class of restriction

COS
class of service

CPU
central processing unit

CSI
called subscriber information

CTS
clear to send

D

DAC
dial access code

DC
direct current

DCE
data communications equipment

DCIU
data communications interface unit

DCP
digital communications protocol

DCS
distributed communications system

DID
direct inward dialing

DIP
data interface process

DMA
direct memory access

DNIS
dialed number identification service

DSP
digital signal processor

DSU
data service unit

DTE
data terminal equipment

DTMF
dual tone multifrequency

DTR
data terminal ready

E

EIA
Electronic Industries Association

ESD
electrostatic discharge

ESS
electronic switching system

F

FIFO
first-in first-out

FOOS
facility out of service

G

GBCS
Global Business Communications Systems

GOS
grade of service

H

Hz
hertz

I

IDI
isolating data interface

IMAPI
INTUITY messaging application programming interface

INADS
initialization and administration system

I/O
input/output

IRQ
interrupt request

ISDN
integrated services digital network

IVC6
integrated voice CELP card (6 channels)

K

Kbps
kilobits per second

Kbyte
kilobyte (1024 bytes)

kHz
kilohertz

L

LAN
local area network

LCD
liquid crystal display

LED
light-emitting diode

LWC
leave word calling

M

MANOOS
manually out of service

Mbyte
megabyte (one million bytes)

MHz
megahertz

modem
modulator/demodulator

MPDM
modular processor data module

ms
millisecond

MT
maintenance (Lucent INTUITY software component)

MTBF
mean time between failures

MWI
message-waiting indicator

N

NW
INTUITY AUDIX Digital Networking

O

OA&M
operations, administration, and maintenance

OS
operating system

P

PBX
private branch exchange

PC
power converter or personal computer

PDM
processor data module

PEC
price element code

POST
power-on self test

R

RAM
random-access memory

REN
ringer equivalence number

ROM
read-only memory

RTS
request to send

RTU
right to use

S

SCSI
small computer systems interface

SID
switch integration device

SIMM
single in-line memory module

SMSI
simplified message service interface

SW
switch integration (Lucent INTUITY software component)

T

TDD
telecommunications device for the deaf

TDM
time division multiplex

T/R
tip/ring

TRIP
tip/ring input process

TSC
Lucent's Technical Services Center

U

UCD
uniform call distribution

UPS
uninterruptible power supply

V

VM
INTUITY AUDIX Voice Messaging

VP
voice platform (INTUITY software component)

VR
INTUITY Intro Voice Response

VROP
voice response output process

Glossary

NUMERIC

10BaseT
A network baseband medium using twisted pair wire, 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 or TN2170) 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 IMAPI.

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.

Analog Port Emulation
One of the two port emulation modes that DEFINITY AUDIX may employ. The other mode is digital port board emulation. When emulating an analog port board (the TN746), only control link (CL) integration is possible.

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. (Used in some digital networking configurations.)

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.

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 this feature 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 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 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 over a DCIU data link. The control messages are transmitted over a separate cable connection and 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, R2.0 or later, is connected to the switch via analog-line card emulation and a digital connection.

D

DCP Mode 1
A Lucent proprietary Digital Communications Protocol (DCP) connection using a data rate of 56 Kbps for AUDIX Digital Networking. DCP Mode 1 uses a DS1 facility on the switch or a dedicated facility on the switch or a dedicated facility on a T1 carrier.

DCP Mode 2
DCP Mode 2 is an asynchronous, low-speed (9600 or 19,200 bps) connection for AUDIX Digital Networking. DCP Mode 2 uses a modem/data module or modem/Asynchronous Data Unit (ADU) arrangement and connects over analog or voice-grade data lines.

DCP Mode 3
A DCP connection using a data rate of 64 Kbps for AUDIX Digital Networking. DCP Mode 3 uses a DS1 or ISDN facility on the switch or a dedicated facility on a T1 carrier.

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

Digital Communications Protocol (DCP)
A Lucent proprietary protocol

Digital-Port (DP) Board Emulation
In R3.1 and earlier releases, this term referred to both the port emulation and to the integration method. In R3.2 and later, it refers to the port emulation only; the integration method can be either control link (CL) or display set (DS).

Digital-Port (DP) Mode
The type of switch-link integration for which the DEFINITY AUDIX System, up through release 3.1, is connected to the switch via digital port board emulation. The type of port board that the DEFINITY AUDIX emulates within the switch (TN754.)

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

Display Set (DS) Integration
A new term that replaces the term digital port integration for R3.2 and later. It refers to the use of the display and other messages sent from the switch to the port board for providing voice mail integration with the switch. Integration with the switch is achieved via display set messages. The messages carry information such as calling party identification and message waiting indicator status and control.

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 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
A PC application that is used for the 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)
A short distance data communications network used to link computers and peripheral devices under some form of standard control

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, 386 version and TN567, 486 version) 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, TN2181 or TN746B, the five slots occupied by the DEFINITY AUDIX assembly are not reserved, and MFB alarms are reported as alarms for a TN754, TN2181, or TN746B.

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

Null Modem Cable
A cable which transposes transmit and receive leads on an RS-232 connection.

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.

Protocol
A set of specific rules, procedures, or conventions relating to forms and timing of data transmission between two devices.

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.

RISC
Reduced Instruction Set Computer. Refers to computers based on an unusually high speed processing technology that uses a far simpler set of operating commands.

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

Technical Service Organization
Includes technical support organizations such as the Technical Service Center (TSC), National Service Assistance Center (NSAC), International Technical Assistance Center (ITAC), Center of Excellence (COE), Design Center (DC), Sales Technical Response Center (STRC), and National Technical Marketing (NTM).

Telecommunications Device for the Deaf (TDD)
A feature providing Call Answering and Personal Greeting capabilities to the hearing-impaired. 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.

Transmission Control Protocol/Internet ProtocolA 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.

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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