Avaya Interchange

Release 5.4

MAP/5P System Maintenance

585-313-809
Comcode 700223803
Issue 4
January 2002

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Every effort was made to ensure that the information in this book was complete and accurate at the time of printing. However, information is subject to change.

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- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

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Comments
To comment on this document, see the section titled "About This Book."

Acknowledgment
This document was prepared by Technical Publications, Avaya Inc., Columbus, OH and Milpitas, CA.

Contents

About This Book

Purpose

This book, *Avaya Interchange Release 5.4 MAP/5P System Maintenance*, 585-313-809, contains information for troubleshooting and diagnosing problems associated with MAP/5P hardware. Component replacement procedures and common system procedures are also included in the book. Appendices contain a system configuration description and a list of component ordering numbers.

Intended Audiences

This book is intended primarily for the onsite service technician and system administrators. Secondary audiences include the following from Avaya:

- Field support — Technical Service Organization (TSO)
- Field support — Global Support Organization (GSO)
- Helpline personnel

We assume that the primary users of this book have completed the MAP/5P hardware installation training course (see Related Resources).

Release History

This is the third release of this book.

How to Use This Book

This book is designed to help you maintain your Avaya Interchange system. Use it as a quick reference to obtain specific information you might need on a particular topic.

For Troubleshooting Information

Basic troubleshooting information is available in Chapter 1, Troubleshooting.

For Diagnostic Information

Instructions for conducting diagnostics are available in Chapter 2, Diagnostics.

For Common System Procedures

Instructions for conducting common system procedures are available in Chapter 3, Common System Procedures.

For Hardware Information

Instructions for replacing or installing hardware components of the MAP/5P are available in Chapter 4, Getting Inside the Computer; Chapter 5, Replacing or Installing Circuit Cards; Chapter 6, Replacing the Hard Disk Drive; and Chapter 7, Replacing Other Components.

For Software Information

Instructions for replacing or installing software components of the MAP/5P are available in Chapter 8, Installing an RFU (Remote Field Update).

Conventions Used in This Book

This section describes the conventions used in this book.

Terminology

The following terms are used in this book:

- The word “type” means to press the key or sequence of keys specified. For example, an instruction to type the letter “y” is shown as

  Type **y** to continue.

- The word "enter" means to type a value and then press ENTER. For example, an instruction to type the letter “y” and press ENTER is shown as

  Enter **y** to continue.

- The word “select” means to move the cursor to the desired menu item and then press ENTER. For example, an instruction to move the cursor to the start test option on the Network Loop-Around Test screen and then press ENTER is shown as

  Select `Start Test.`

- The terms “subscriber” and “user” are interchangeable terms that describe a person administered on the Interchange system. The term “subscriber” is the preferred term in the text and is the command word you must type at the command line, for example, **change subscriber “Jane Doe.”**

- The Avaya Interchange system displays *screens*, *windows*, and *menus.* Screens make up the Interchange user interface through which you can enter data or commands or access windows or menus (Figure 1). Windows show and request system information (Figure 2). Menus present options from which you can choose to view another menu, screen or window (Figure 3).

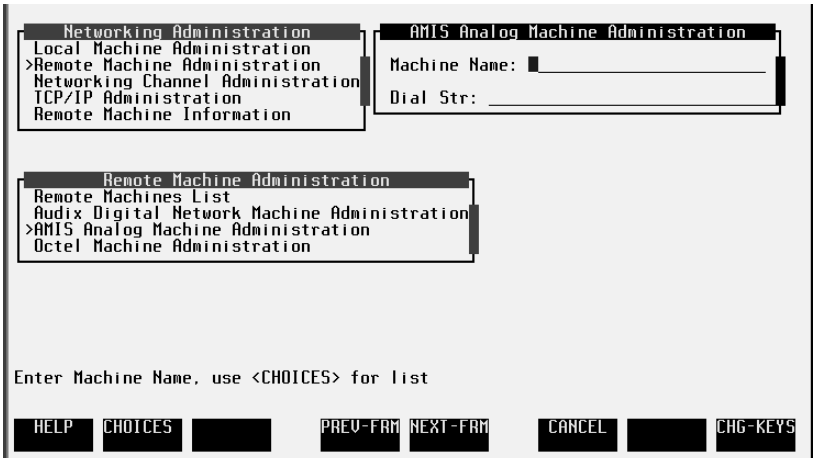

Figure 1. Example of an Avaya Interchange Screen

Feature Options (Read Only)

Feature Option	Current	Maximum
Aria Digital Ports	8	8
Call Detail Recording (CDR)	ON	N/A
Enterprise Lists Administration	ON	N/A
High speed digital ports	2	12
Low speed digital ports	2	12
Max Number of Octel Nodes	6	50
Maximum Number of AMIS Nodes	6	50
Maximum Number of Digital Nodes	20	50
SCSI Disk Mirroring	OFF	N/A
SNMP	ON	N/A
Serenade Digital Ports	8	8
TCP/IP Administration	ON	N/A
TCPIP digital ports	12	12
Text-to-Speech Sessions	0	30
VPIM Ports	5	10
hours_of_speech	200	1114
voice_ports	6	6

Figure 2. Example of an Avaya Interchange Window

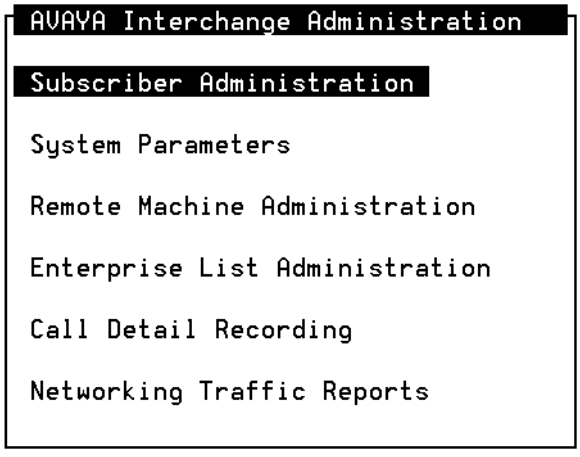

Figure 3. Example of an Avaya Interchange Menu

Terminal Keys

The following list identifies actions you perform on the computer keyboard:

- Keys that you press on the computer *keyboard* are shown as rounded boxes. For example, an instruction to press the Enter key is shown as

  Press ENTER.

- Two or three keys that you press at the same time on the computer *keyboard* (that is, you hold down the first key while pressing the second and third keys) are shown as a series of separate rounded boxes. For example, an instruction to press and hold ALT while typing the letter “d” is shown as

  Press ALT D.

- A combination keystroke is a series of keystrokes that combines two key functions plus a third key. You press and hold down the first key, press the second key, and then release those keys and press a third key. A combination keystroke is represented as an equation. For example, an instruction to press and hold while typing the letter “d” and then typing the number “1” is shown as

  Press ALT– D 1.

- Function keys on the computer keyboard or system screens, also known as *soft keys*, are shown as round boxes followed by the function or value of that key enclosed in parentheses. For example, an instruction to press function key 2 is shown as

  Press F2 (Choices).

- Keys that you press on the *telephone keypad* are shown as square boxes. For example, an instruction to press the first key on your telephone keypad is shown as

  Press [1] to record a message.

Screen Displays

The following list identifies formats used in Interchange screens:

- Values, system messages, field names, and prompts that appear on the screen are shown in typewriter-style `constant-width` type, as shown in the following examples:

  Example 1:

  Enter the number of ports to be dedicated to outbound traffic in the `Maximum Simultaneous Ports` field.

  Example 2:

  ```
  Alarm Form Update was successful.

  Press <Enter> to continue.
  ```

- The sequence of menu options that you must select to display a specific screen or submenu is shown as follows:

  Start at the Avaya Interchange Main Menu and select

  ```
  > Customer/Services Administration
      > Alarm Management
  ```

  In this example, you would access the Avaya Interchange Main Menu and select the Customer/Service Administration menu. From the Customer/Service Administration menu, you would then select the Alarm Management screen.

- Screens shown in this book are examples only. The screens you see on your machine are similar but not exactly the same.

Other Typography

The following list identifies how bold and italic type are used:

- Commands and text you type in or enter appear in **bold type**, as in the following examples:

  Example 1:

  Enter **change-switch-time-zone** at the `enter command:` prompt.

Example 2:

Type **high** or **low** in the Speed: field.

- Command variables are shown in ***bold italic*** type when they are part of what you must type in and *regular italic* type when they are not, for example:

  Enter **ch ma *machine_name***, where *machine_name* is the name of the call delivery machine you just created.

Safety and Security Alert Labels

This book uses the following symbols to call your attention to potential problems that could cause personal injury, damage to equipment, loss of data, service interruptions, or breaches of toll fraud security:

CAUTION:
Indicates the presence of a hazard that if not avoided can or will cause minor personal injury or property damage, including loss of data.

WARNING:
Indicates the presence of a hazard that if not avoided can cause death or severe personal injury.

DANGER:
Indicates the presence of a hazard that if not avoided will cause death or severe personal injury.

SECURITY ALERT:
Indicates the presence of a toll fraud security hazard. Toll fraud is the unauthorized use of a telecommunications system by an unauthorized party.

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- VT100 is a trademark of Digital Equipment Corporation.
- Windows is a trademark of Microsoft Corporation.

Related Resources

This section describes additional documentation and training available for you to learn more about installing the Avaya Interchange system.

Documentation

NOTE:
Always refer to the appropriate book for specific information on planning, installing, administering, or maintaining an Avaya Interchange system.

It is suggested that you obtain and use the following books in conjunction with this installation book:

- *Avaya Interchange Release 5.4 MAP/100P System Installation*, 585-313-809, for a source of installation procedures and troubleshooting information
- *Avaya Interchange Release 5.4 Installation and System Recovery* for a source of procedures related to RFU installation and system recovery

It is recommended that you obtain and use the following book for information on security and toll fraud issues:

- *Avaya Products Security Handbook*, 555-025-600

See the inside front cover for information on how to order Avaya Interchange documentation.

Training

For more information on Interchange training, call the Avaya University at one of the following numbers:

- Organizations within Avaya: (904) 636-3261
- Avaya customers and all others: (800) 255-8988

Technical Assistance

The following resources are available for technical assistance:

- Within the United States:
  - Call 1-800-242-2121, extension 85474.
- Within Canada:
  - For all systems, call 1-800-242-1234.
- Within any other country:
  - For all systems, call your local distributor.

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You may also fax your comments to the attention of the Avaya Interchange writing team at (303) 538-9625.

Product Support

If you have questions about how to use Avaya Interchange, contact one of the following resources:

- Avaya Account Representative
- Avaya Remote Support Center at + 800-242-2121

Troubleshooting

1

Overview

This chapter describes some basic troubleshooting procedures for the most common system problems with the Avaya Interchange.

Purpose

The purpose of this chapter is to provide the on-site technician or system administrator with repair procedures for the most common system procedures. All of the troubleshooting procedures can be performed with a **craft** login.

Modem Does Not Answer

Table 1-1. Modem Does Not Answer

Possible Cause	Check/See	Solution
There is no power to the modem.	Check the power source.	Apply power to the modem.
The modem is not connected.	Ensure that the modem is connected with a D25F cord through a 9-pin to a 25-pin adapter to COM2.	Connect the modem correctly.
The normal D4 conductor cord is not plugged in to the correct port.	Make sure that the normal D4 cord is plugged into the Dial port of the modem. Verify that the cord is *not* plugged into the Phone port.	Plug the normal D4 cord into the Dial port of the modem.

There is no continuity.	Check the Alarm Management window by doing the following:
	1. Start at the Avaya Interchange Main menu window and select
	`> Cstmr./Serv. Admin`
	`> Alarm Management`
		Fill in the Alarm Screen.
		1. Enter the product ID in the `Product ID` field.
		If the product ID is not known, enter **2200000000**.
		2. Enter a valid telephone number in the `Alarm Destination` field.
		3. Press F8 (Chg-Keys).
		4. Press F1 (Test_Alrm).
		5. If the product ID was not known in Step 1, call INADS for the correct number.

The Tape Backup Alarm Is Activated Daily at 3:00 A.M.

Table 1-2. The Tape Backup Alarm Is Activated Daily at 3:00 A.M.

Possible Cause	Check/See	Solution
The tape is not in the drive	Check the position of the tape in the drive.	Position the tape correctly.
The tape is write protected.	Check the read/write dial on the tape.	Place the read/write dial in the Not Safe position. The small dial on the front of the tape should be in the horizontal position.
The tape is not compatible with the drive.	Check the type of tape in the drive. All tapes created in a 2-GB tape drive can be read by a 525-MB tape drive. The only tapes created in a 525-MB tape drive that can be read by a 2-GB tape drive are Avaya Interchange system backup tapes.	Replace the tape with a compatible tape.
The tape is not formatted.	Check the format status.	Format the tape. See Formatting Cartridge Tapes, in Chapter 3, Common System Procedures, for the procedure.
The tape drive is not working correctly.	Check the operation of the tape drive during a backup. If the tape drive is spinning but there is no processor time being allotted to the cpio process, the tape drive is not working correctly.	Replace the tape drive. See Cartridge Tape Drive Replacement, in Chapter 7, Replacing Other Components for the procedure.

Cannot Assign Voice Ports

Table 1-3. Cannot Assign Voice Ports

Possible Cause	Check/See	Solution
Additional port activation has not been purchased by the customer.	Verify the number of ports purchased by the customer. Access Customer/Services Administration from the Avaya Interchange Administration menu. Access the Feature Options screen and see the `voice_ports` line.	Refer the customer to sales personnel.

System Does Not Boot

Table 1-4. System Does Not Boot

Possible Cause	Check/See	Solution
There is a diskette in the A drive.	Check the A drive.	Remove the diskette.
The external SCSI connector circuit card terminating module is not properly connected.	Check the terminating module connection.	Properly connect the terminating module.
If the system displays the following message, the problem could be the diskette cable orientation: `BIOS Not Installed`	Check the diskette cable orientation on the P5 120 MHz CPU circuit card. Make sure that the tracer on the cable is on the right as you look at the P5 120 MHz CPU circuit card.	To fix the problem, do the following: 1. Access the circuit card cage. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for the procedure. 2. Fix the diskette cable orientation. 3. Close the circuit card cage. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for the procedure. 4. Restore power to the system. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for the procedure.

Optional Features Are Not Working

Table 1-5. Optional Features Not Working

Possible Cause	Check/See	Solution
The Avaya Interchange version does not support the optional feature.	Check the Avaya Interchange version.	Refer the customer to their sales representative concerning a migration or upgrade.
The optional feature is not activated.	Check the activated optional features: 1. Start at the Avaya Interchange Main menu. 2. Access `Customer/Services Administration`. 3. Access `Feature Options`.	If customers have purchased the optional feature, activate the optional feature. If customers have not purchased the optional feature, refer them to their sales representative.

The Keyboard Is Not Operating

Table 1-6. The Keyboard Is Not Operating

Possible Cause	Check/See	Solution
The keyboard is not plugged in.	Check the keyboard connection.	Shut down the system and plug in the keyboard.
The keyboard is frozen.	Check the keyboard connection.	Reboot the system.

Monitor Is Not Operating

Table 1-7. Monitor Is Not Operating

Possible Cause	Check/See	Solution
The monitor has not been turned on.	Check the monitor switch.	Turn on the monitor.
The monitor brightness has been turned down.	Check the monitor brightness knob.	Turn up the brightness.

Tip/Ring Circuit Card Is Not Recognized by the Avaya Interchange System

Table 1-8. Tip/Ring Circuit Card Is Not Recognized by the Avaya Interchange System

Possible Cause	Check/See	Solution
The Tip/Ring card has incorrect switch settings.	Check the switch settings on the Tip/Ring cards. See Tip/Ring Circuit Cards, in Chapter 5, Replacing or Installing Circuit Cards, for the correct settings.	Correct the switch settings.

The Tip/Ring cards are incorrectly numbered.	There is nothing to check in this instance. If this is the suspected problem, continue with the solution.	Renumber the Tip/Ring circuit cards by doing the following:
		
		NOTE:
		This action starts and stops the voice system.
		
		1. Start at the Avaya Interchange Main menu and select
		
		`> Voice System Admin.`
		`> Voice Equipment`
		
		2. Press F8 (Chg-Keys).
		3. Select `Renumber`.
		4. Press F2 (Renumber).

The Printer Is Not Operating

Table 1-9. The Printer Is Not Operating

Possible Cause	Check/See	Solution
The printer is not turned on.	Check the power indicator light.	Turn the printer on.
The printer cable is not connected correctly.	Check the printer connection.	Reconnect the printer.
The Avaya Interchange system has not been configured correctly.	Check the system configuration.	Reconfigure the system. See Chapter 4, Connecting Peripherals and Powering Up, in *Avaya Interchange Release 5.4 MAP/5P System Installation*.
The printer has not been configured correctly.	Check the printer configuration.	Reconfigure the printer. See Chapter 4, Connecting Peripherals and Powering Up, in *Avaya Interchange Release 5.4 MAP/5P System Installation*.
The printer is out of paper.	Check the paper supply.	Add paper.
The printer is jammed.	Check the printer operating panel.	Remove the paper jam.

Hard Disk Drive Access Troubleshooting

In the event of a SCSI Bus cable or hard disk drive failure, the system stalls during the boot procedure. When the system stalls, it displays one of several messages. These messages are described in this section.

The System Displays No Boot Device Available Message with Ident-Strings

If the system displays the following message along with one or more SCSI device ident-strings, see the troubleshooting procedures in Table 1-10:

```
SCSI target 0 LUN 0 not found
Target-LUN x-0.....
....
Target-LUN y-0....

No boot device available
Strike F1 to retry boot, F2 for setup utility
```

Table 1-10. The System Displays No Boot Device Available Message with Ident-Strings

Possible Cause	Check/See	Solution
Insufficient power voltages.	Check the power supply output voltage.	1. If the power voltage is not 5V, replace the power supply. 2. Reboot the system.
The power cable is not properly attached to Hard Disk Drive 0.	Check the Hard Disk Drive 0 power cable connection.	1. Correct the power cable connection to Hard Disk Drive 0. 2. Reboot the system.
The SCSI Bus cable is not properly attached to Hard Disk Drive 0.	Check the Hard Disk Drive 0 SCSI Bus cable connection.	1. Correct the SCSI Bus cable connection to Hard Disk Drive 0. 2. Reboot the system.
The SCSI Bus cable is defective.	Check the SCSI Bus cable.	1. Replace the SCSI Bus cable. 2. Reboot the system.

Table 1-10. The System Displays No Boot Device Available Message with Ident-Strings

Possible Cause	Check/See	Solution
A pin on the Hard Disk Drive 0 SCSI Bus cable connector is bent or broken.	Check the pins on Hard Disk Drive 0 by doing the following: 1. Remove the SCSI Bus cable. 2. Check the pins on the hard disk drive.	1. If a pin is bent, straighten the pin. If a pin is broken, replace the hard disk drive. 2. Reboot the system.
A pin on the P5 CPU circuit card SCSI Bus cable connector is bent or broken.	Check the pins on the P5 120 MHz circuit card by doing the following: 1. Remove the SCSI Bus cable. 2. Check the pins on the circuit card.	1. If a pin is bent, straighten the pin. If a pin is broken, replace the circuit card. 2. Reboot the system.
Hard Disk Drive 0 has been corrupted, and the system cannot access the boot image.	Check the status of Hard Disk Drive 0.	Contact the Remote Service Center for use of an emergency boot floppy and file system checks.

(2 of 2)

The System Displays SCSI Target 0 LUN 0 Not Found Message with Several Additional Messages

If the system displays the following series of messages, see the troubleshooting procedures in Table 1-11:

The system displays the following message:

```
Checking for SCSI target 0 LUN 0

After several minutes the system displays the following
messages:

SCSI target 0 LUN 0 not found
Target-LUN x-0.....
....
Target-LUN y-0....

No boot device available
Strike F1 to retry boot, F2 for setup utility
```

Table 1-11. The System Displays SCSI Target 0 LUN 0 Not Found Message with Several Additional Messages

Possible Cause	Check/See	Solution
Hard Disk Drive 0 has been corrupted, and the system cannot access the boot image.	Check the status of Hard Disk Drive 0.	Contact the Remote Service Center for use of an emergency boot floppy and file system checks.

The System Displays SCSI Target 0 LUN 0 Not Found Message and Stalls

If the system displays the following message and stalls, see the troubleshooting procedures in Table 1-12:

```
SCSI target 0 LUN 0 not found
```

At this point the system stalls.

NOTE:
If you press CONTROL ALT DELETE, the system displays the following message:

```
No boot device available
Strike F1 to retry boot, F2 for setup utility
```

Table 1-12. The System Displays SCSI Target 0 LUN 0 Not Found Message and Stalls

Possible Cause	Check/See	Solution
Hard Disk Drive 0 is defective.	Check the status of Hard Disk Drive 0.	Replace Hard Disk Drive 0.

No Ident-Strings Are Displayed During Boot Procedure

If the system does not display ident-strings during the boot procedure, see the troubleshooting procedures in Table 1-13.

NOTE:
Once the system has tried to access the SCSI devices, it then tries to access Hard Disk Drive 0. If the system displays the UNIX logo, Hard Disk Drive 0 has been successfully accessed.

Table 1-13. No Ident Strings Are Displayed During Boot Procedure

Possible Cause	Check/See	Solution
The SCSI Bus cable is not connected properly to the P5 120 MHz CPU circuit card.	Check the SCSI cable connection to the circuit card.	1. Correct the SCSI cable connection to the circuit card. 2. Reboot the system.
A pin on the SCSI Bus cable connection to the P5 120 MHz CPU circuit card is broken or bent.	Check the pins on the P5 120 MHz circuit card by doing the following: 1. Remove the SCSI Bus cable. 2. Check the pins on the circuit card.	1. If a pin is bent, straighten the pin. If a pin is broken, replace the circuit card. 2. Reboot the system.

The System Displays Failure to Load MIP, SIP, or vfs_mount Message

If the system displays one of the following messages, see the troubleshooting procedures in Table 1-14:

NOTE:
Once the system has tried to access the SCSI devices, it then tries to access Hard Disk Drive 0. If the system displays the UNIX logo, Hard Disk Drive 0 has been successfully accessed.

```
Can not load MIP

Can not load SIP

vfs_mount failed
```

WARNING:
A system panic may occur at this point.

Table 1-14. The System Displays Failure to Load MIP, SIP, or vfs_mount Message

Possible Cause	Check/See	Solution
The stand file system is corrupted.	Check the stand file status.	Perform file system checks.

A Working System Displays WARNING Disk Drive HA0 TC0 LUX - Check Condition Message

If the system displays the following message, see the troubleshooting procedures in Table 1-15:

```
WARNING: Disk Drive HA0 TC0 LUx - Check Condition
```

where x is a small integer

Table 1-15. A Working System Displays WARNING Disk Drive HA0 TC0 LUX — Check Condition Message

Possible Cause	Check/See	Solution
Hard Disk Drive 0 is defective.	Check the status of Hard Disk Drive 0.	Replace Hard Disk Drive 0.

The System Is Up But Not Fully Operational or Is Unpredictable

If the system is up, but it is not fully operational or it is unpredictable, see the troubleshooting procedures in Table 1-16.

Table 1-16. The System Is Up But Not Fully Operational or Is Unpredictable

Possible Cause	Check/See	Solution
The input voltage is not correct.	Check the voltage on the line entering the power supply.	1. Shut down the system. 2. Inform the customer of the problem in the wiring.
The power supply output voltage is not correct.	Check the voltage on the power supply output cables.	Replace the power supply.
The file system is partially corrupted.	Check the system file system.	Perform file system checks.

System with Remote Maintenance Circuit Card Displays SCSI Disk Failure Message after POST

If, after you have completed the power-on self test (POST) and memory test, the system stalls and displays messages indicating a remote maintenance circuit card and SCSI hard disk drive failure, see the troubleshooting procedures in Table 1-17.

Table 1-17. System with Remote Maintenance Circuit Card Displays SCSI Disk Failure Message after POST

Possible Cause	Check/See	Solution
The remote maintenance circuit card address is set to `C000-CFFF`.	Check the remote maintenance circuit card address.	1. Place the BEE selector switch in the off position. 2. Shut down the system. 3. Reboot the system. 4. Set the remote maintenance circuit card address to `DC000-DCFFF` via BIOS. 5. Place the BEE selector switch in the On position. 6. Stop the voice system. 7. Start the voice system.

Troubleshooting Defective Blocks on Hard Disk Drives

It is not always necessary to replace a hard disk drive with defective blocks. For example, if the defective blocks do not affect the overall system performance, you do not need to replace the drive. Monitor system performance prior to replacing a hard disk drive.

Diagnostics

2

Overview

This chapter includes the following topics:

- Conducting audits
- Diagnosing AMIS Analog Networking
- Diagnosing digital networking
- Diagnosing multi-port serial circuit cards
- Diagnosing switch integration
- Diagnosing TCP/IP
- Diagnosing voice ports
- Diagnosing Tip/Ring circuit cards

Purpose

The purpose of this chapter is to provide the on-site technician or system administrator with the correct procedures to diagnose trouble with the Avaya Interchange system.

Auditing Networking Databases

You can conduct audits on networking databases. The networking database consists of two parts: the networking administration database and the remote subscriber update status database.

The networking administration database contains data relevant to the following areas:

- Connectivity to other Avaya Interchange systems, AMIS machines and VPIM machines
- Local machine connectivity
- Channel configuration information

The remote subscriber update status database contains the information used by the Avaya Interchange system to request and send remote updates of subscriber information.

Interchange Audit

The Interchange audit consists of a series of internal checks that verify, for example, that files are not corrupted and that values within the files are within the proper ranges.

The Interchange audit is performed automatically nightly, before the nightly unattended backup. This audit occurs whenever the voice system is restarted or the UNIX system is rebooted. You might want to perform this audit on demand when directed to do so by alarm repair actions.

To perform this audit on demand, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1).

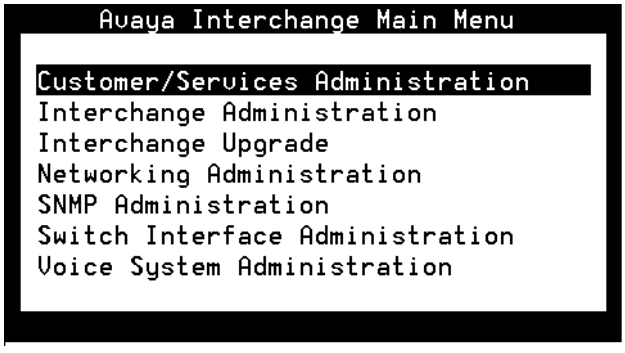


Figure 2-1. Avaya Interchange Main Menu

2. Select

```
> Customer/Services Administration
    > Database Audits
```

The system displays the Database Audits menu (Figure 2-2).

```
        Database Audits
)Interchange Audit
 Networking Audit
 Platform User Database Audit
```

Figure 2-2. Database Audit Menu

3. Make sure the cursor is on `Interchange Audit`.
4. Press F8 (Chg-Keys).
5. Press F1 (Run Audit).

   The system displays a message confirming that the audit is running in the background.
6. Press **y**.

   NOTE:
   The audit takes approximately five minutes.

   CAUTION:
   Running an audit can slow system response or even cause a system failure if the audit is performed during peak usage times.

7. Press F8 (Chg-Keys).

8. Press F4 (View_Res).

   If the audit is successful the system displays the following message:

   ```
   Interchange Audit completed successfully.
   ```

   If the audit fails, the system displays the following message:

   ```
   Interchange Audit failed.
   ```

   If a failure message appears, follow the repair actions for any active alarms as appropriate. See Chapter 1, Getting Started, in *Avaya Interchange Release 5.4 Alarm and Log Messages*, 585-313-809, for additional information.

Conducting Diagnostics

You can diagnose the following:

- Avaya Interchange Digital Networking
- TCP/IP
- Voice circuit cards
- Voice ports

This section also contains a procedure to perform a network snapshot.

Avaya Interchange Digital Networking Diagnostics

Interchange Digital Networking diagnostics allow you to check all aspects of the networking feature including hardware connections, remote and local machine administration, and basic functions of Digital Networking. The Interchange Digital Networking diagnostics include the following tests:

- Remote connection
- Channel internal loop-around
- Modem loop-around
- Networking board reset
- Busy out digital networking channels
- Release digital networking channels

Remote Connection Test

The remote connection test checks the transmission path from the local machine to the remote machine. You can perform a remote connection test for each remote machine with which voice messages are exchanged. The test assumes that all

components of the network, from the ACCX card to the remote machine administration, are operating and complete. If the remote connection test fails, see Network Connections Test.

Requirements

The following requirements are necessary to perform a remote connection test:

- The remote machine name is needed.
- The channel can be DCP or RS-232.
- The channel must be equipped.

Procedure

To perform a remote connection test, do the following:

1. Start at the Avaya Interchange Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > Diagnostics
        > Networking Diagnostics
```

The system displays the Networking Diagnostics window (Figure 2-3).

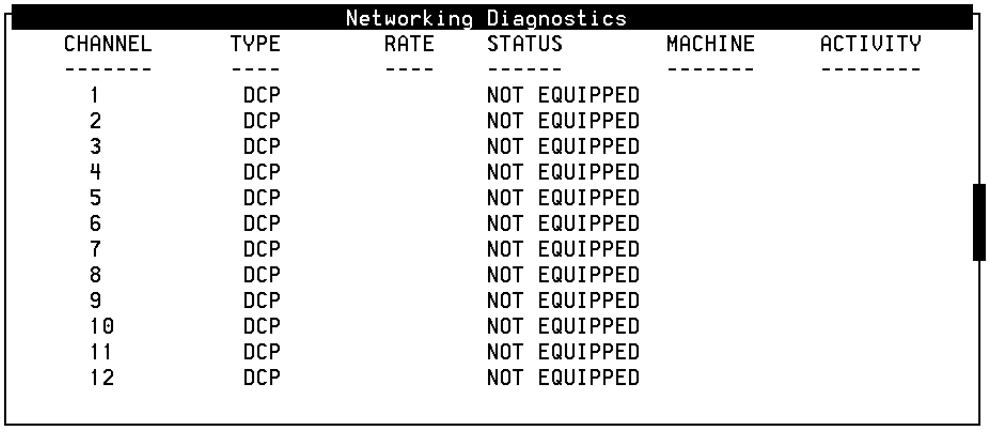


Figure 2-3. Networking Diagnostics Window

2. Press F8 (Chg-Keys).

3. Press F4 (Diagnose).

   The system displays the Networking Diagnostics menu (Figure 2-4).

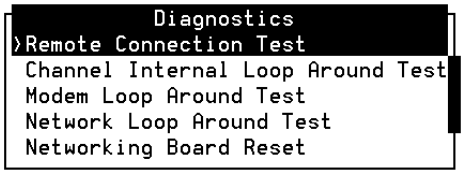


Figure 2-4. Networking Diagnostics Menu

4. Select

   ```
   > Remote Connection Test
   ```

   The system displays the Remote Connection Test window (Figure 2-5).

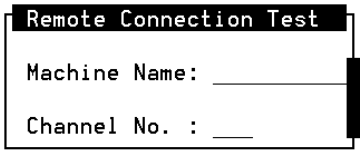


Figure 2-5. Remote Connection Test Window

5. Enter the name of the remote machine to be tested.

   If you do not know the remote machine name, press F2 (Choices) to access a menu of remote machines. Select from the menu by moving the selection bar over a machine name and pressing ENTER.

6. If you are testing a dedicated RS-232 connection, enter the number of the dedicated channel.

   The system displays the message `working...` and attempts to connect with the remote machine.

When the process completes, the system displays the Test Results window (Figure 2-6).

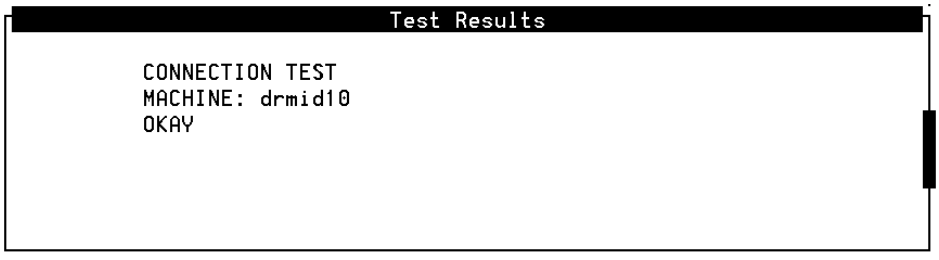


Figure 2-6. Test Results Screen for a Remote Connection Test

7. If the screen contains a message stating that the test completed successfully, continue with Step 8.

   If the screen contains a message stating that the test failed, press F6 (Cancel) to exit the screen and return to the Networking Diagnostics menu (Figure 2-4). See Network Connections Test for the procedure to determine the reason for the remote connection test failure.

8. Press F6 (Cancel) to exit the screen and return to the Networking Diagnostics window (Figure 2-3).

9. Repeat Step 2 through Step 8 for each remote machine to be tested.

The network's abilities to exchange voice messages can also be tested. *Avaya Digital Networking Administration,* 585-310-533, contains instructions for exchanging voice messages with test remote subscribers on each remote machine in the digital network after completing a remote connection test.

Network Connections Test

Use the instructions in this section to test each component of the digital network. Perform the following tests when a remote connection test fails or when voice messages cannot be exchanged with remote subscribers:

- Channel internal loop-around
- Modem loop-around (if applicable)
- Network loop-around

One other test can be performed to test or reset the network: the networking board reset. Do not complete this procedure unless instructed to do so by the remote service center.

Channel Internal Loop-Around Test

The channel internal loop-around test checks the operation of an individual channel on the ACCX board. Perform this test first to make sure the board is operating correctly. If the board does not operate properly, the other acceptance tests fail.

Requirements. The following requirements are necessary to perform a channel internal loop-around test:

- The channel can be DCP or RS-232.
- The channel must be equipped.

Procedure. To perform a channel internal loop-around test, do the following:

1. Start at the Avaya Interchange Menu (Figure 2-1) and select

   ```
   > Customer/Services Administration
   > Diagnostics
   > Networking Diagnostics
   ```

   The system displays the Networking Diagnostics window (Figure 2-3).

2. Press F8 (Chg-Keys).
3. Press F4 (Diagnose).

   The system displays the Networking Diagnostics menu (Figure 2-4).

4. Select

   ```
   > Channel Internal Loop-Around Test
   ```

The system displays the Channel Internal Loop-Around Test window (Figure 2-7).

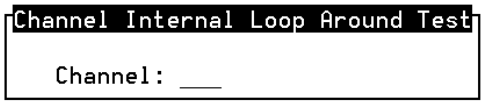


Figure 2-7. Channel Internal Loop-Around Test Window

5. Enter the channel number to be tested.

   The system displays the message `working...` in the upper right corner of the screen and begins the test on the ACCX board channel.

   When the process is complete, the system displays the Test Results window (Figure 2-8).

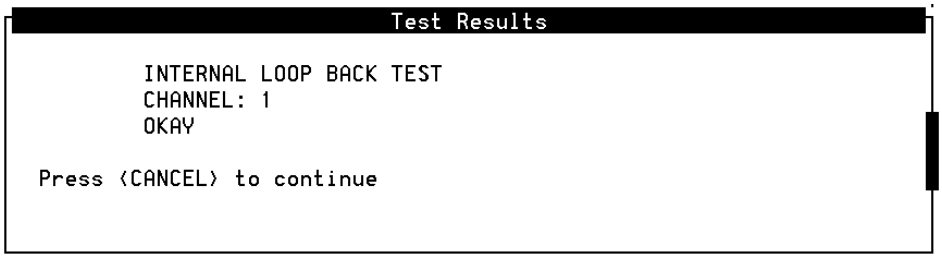


Figure 2-8. Test Results Window for a Channel Internal Loop-Around Test

6. If the screen contains a message stating the test completed successfully, continue with Step 7.

   If the screen shows that the test failed, access the Alarm Log and enter **NW** as the application. Look for alarms related to the networking board. See Chapter 1, Getting Started, in *Avaya Interchange Release 5.4 Alarm and Log Messages*, 585-310-566, for additional information.

7. Press F6 (Cancel) until the system displays the Networking Diagnostics window (Figure 2-3).

8. Repeat Step 2 through Step 7 for each equipped channel on the ACCX board.

Modem Loop-Around Test

The modem loop-around test checks the connectivity between the ACCX board and the modem through a channel configured as RS-232. The test sends a signal from the ACCX board to the modem and back. Perform this test to make sure the board and the modem are communicating and that the modem is configured correctly.

NOTE:
This test does not function with all modems. Before conducting the test, contact the remote service center and verify that the test works for your modem.

Requirements. The following requirements are necessary to perform a modem loop-around test:

- The channel must be in a busyout state. Check the status of the channel on the Networking Diagnostics screen. If the channel is not in a busyout state, see Busy Out and Release Networking Channels in this chapter.
- The channel must be RS-232 with a modem.
- The channel must be equipped.

Procedure. To perform a modem loop-around test, do the following:

1. Start at the Avaya Interchange Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > Diagnostics
        > Networking Diagnostics
```

   The system displays the Networking Diagnostics window (Figure 2-3).

2. Press F8 (Chg-Keys).
3. Press F4 (Diagnose).

   The system displays the Networking Diagnostics menu (Figure 2-4).

4. Select

```
> Modem Loop-Around Test
```

The system displays the Modem Loop-Around Test window (Figure 2-9).

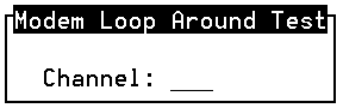


Figure 2-9. Modem Loop-Around Test Window

5. Enter the channel number to be tested. The channel must be RS-232 and have a modem connected.

   The system displays the message `working...` in the upper right corner of the screen. The system begins the test on the channel with the modem connected. When the process completes, the system displays the Test Results screen (Figure 2-8).

6. If the screen contains a message stating the test completed successfully, proceed to Step 7.

   If the screen shows that the test failed, access the Alarm Log and enter **NW** as the application. Look for alarms related to networking modems. See Chapter 1, Getting Started, in *Avaya Interchange Release 5.4 Alarm and Log Messages* 585-313-809, for additional information.

7. Press F6 (Cancel) to exit the screen and return to the Networking Diagnostics screen (Figure 2-3).

8. Repeat Step 2 through Step 7 for each equipped channel that is RS-232 and has a modem connected.

Network Loop-Around Test

The network loop-around test checks the data transmission path that connects the local Avaya Interchange machine with the service office (SO) and the public network. When a channel is in loop-around mode, the channel cannot exchange information with remote machines.

Requirements. This test can be performed only on DCP channels. Coordinate the test with the local SO.

Operation. The test operates in the following manner.

- To perform the test, specify the channel number and data rate and start the channel in network loop-around mode.
- Notify the SO to send information to the channel to be tested.
- The SO sends a message which loops through the Avaya Interchange Digital Network and returns to the SO.
- The SO checks the message to verify that the same information sent was returned by the Avaya Interchange system.

Procedure. To perform a network loop-around test, do the following:

1. Start at the Avaya Interchange Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > Diagnostics
        > Networking Diagnostics
```

   The system displays the Networking Diagnostics window (Figure 2-3)

2. Press F8 (Chg-Keys).
3. Press F4 (Diagnose).

   The system displays the Networking Diagnostics menu (Figure 2-4).

4. Select

```
> Network Loop-Around Test
    > Start Test
```

The system displays the Start Network Loop-Around Test window (Figure 2-10).

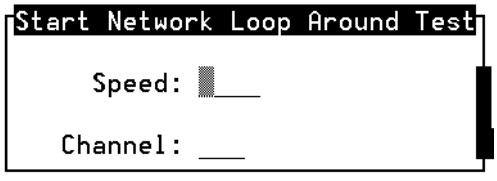


Figure 2-10. Start Network Loop-Around Test Window

5. Enter **High** or **Low** in the `Speed:` field.
   - High speed refers to channels configured as 64 Kbps DCP.
   - Low speed refers to channels configured as 56 Kbps DCP.
6. Enter the channel number to be tested.

   Make sure the channel number corresponds to the channel data rate entered in the previous step.
7. Press F3 (Save).

   The system displays the message `working...` in the upper right corner of the screen, places the channel in loop-around mode, and displays a Test Results window (Figure 2-11).

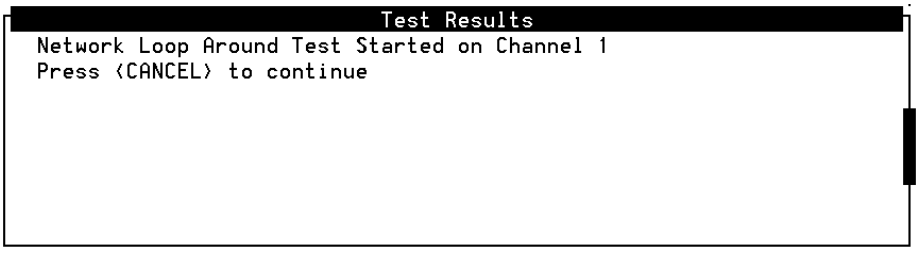


Figure 2-11. Start Test Results Window for a Network Loop-Around Test

8. Press F6 (Cancel) to exit the screen and return to the Networking Diagnostics menu (Figure 2-4).

9. Contact the local telephone SO and instruct the office to place a call to the telephone number assigned to the channel placed in the loop-around mode. If the test is successful, any data sent by the SO passes through the Avaya Interchange channel and returns to the SO.
10. Stop the test and remove the channel from the loop-around mode by completing Step a and Step b:
    a. Select

> Network Loop-Around Test
>Stop Test

The system displays the Stop Network Loop-Around Test window (Figure 2-12).

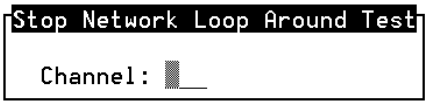


Figure 2-12. Stop Network Loop-Around Test Window

    b. To stop testing the channel, enter the appropriated channel number in the `Channel:` field. This is the same channel number entered in Step 6.

The system displays the message `working...` in the upper right corner of the screen, removes the channel from loop-around mode, and displays the Test Results window (Figure 2-13).

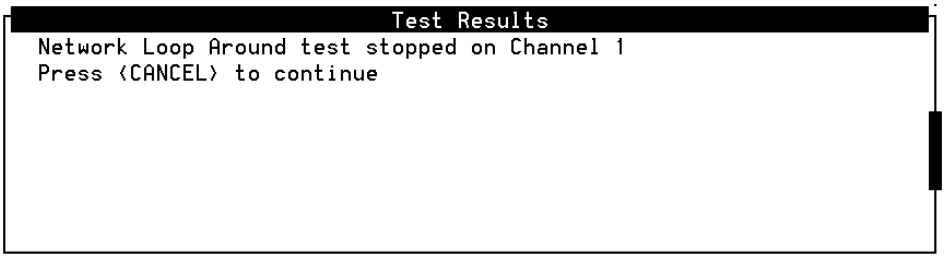


Figure 2-13. Stop Test Results Window for a Network Loop-Around Test

11. Press F6 (Cancel) to exit the screen and return to the Networking Diagnostics menu (Figure 2-4).
12. Repeat Step 2 through Step 11 for each channel to be tested.

Networking Board Reset

This section provides instructions for resetting the ACCX card.

Requirements. The card might need to be reset after other networking diagnostic tests have been performed. In addition, the card might need to be reset as part of an alarm repair procedure.

Procedure. To reset the networking card, do the following:

1. Start at the Avaya Interchange Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > Diagnostics
        > Networking Diagnostics
```

   The system displays the Networking Diagnostics window (Figure 2-3).
2. Press F8 (Chg-Keys).
3. Press F4 (Diagnose).

   The system displays the Networking Diagnostics menu (Figure 2-4).
4. Select

```
> Networking Board Reset
```

   The system displays the Networking Board Reset window (Figure 2-14).

```
Networking Board Reset

Board No.: __
```

Figure 2-14. Networking Board Reset Window

5. Enter the number of the ACCX card to be reset.

The Avaya Interchange system resets the networking card. The process takes several minutes. When the process is complete, the system displays the Test Results window (Figure 2-15).

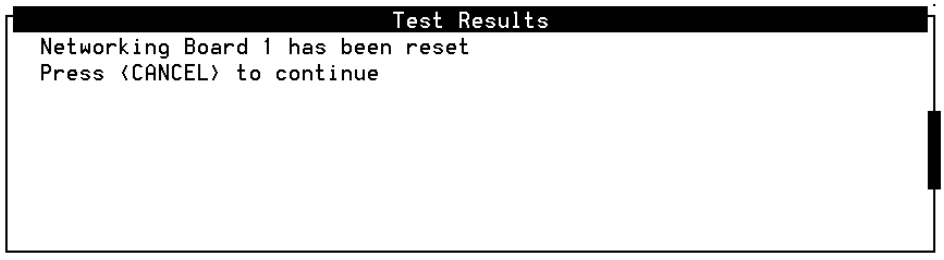


Figure 2-15. Networking Board Reset Results Screen

6. Press F6 (Cancel) to exit the screen and return to the Networking Diagnostics menu (Figure 2-4).
7. Repeat Step 2 through Step 6 for each ACCX card to be reset.

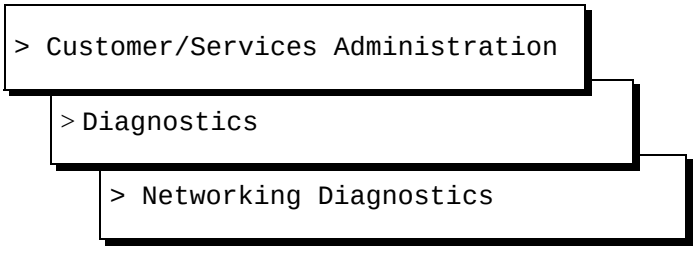
Busy Out and Release Networking Channels

CAUTION:
Do not perform this procedure unless instructed to do so.

Busying out a channel refers to the process of taking a channel out of service so that no data is sent to the channel. *Releasing* a channel refers to the process of making the channel active again and changing the state from *busyout* to *idle*.

Busy Out Networking Channels

1. Start at the Avaya Interchange Menu (Figure 2-1) and select



The system displays the Networking Diagnostics window (Figure 2-3).

2. Press F8 (Chg-Keys).
3. Press F2 (Busyout).

   The system displays the Busyout Networking Channel window (Figure 2-16).

Figure 2-16. Busyout Networking Channel Window

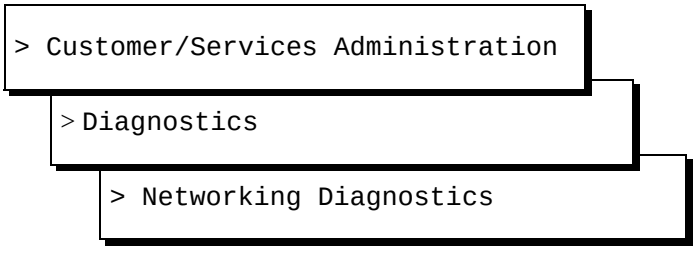
4. Enter the number of the channel to busyout.

   The system displays the message `working...` in the upper right corner of the screen. When the process completes, the Status field on the Networking Diagnostics window (Figure 2-3) updates and shows `busyout` for the channel entered.

5. Repeat Step 2 through Step 4 for each channel to busyout.

Release Networking Channels

1. Start at the Avaya Interchange Menu (Figure 2-1) and select



   The system displays the Networking Diagnostics window (Figure 2-3).

2. Press F8 (Chg-Keys).
3. Press F2 (Release).

   The system displays the Release Networking Channel window (Figure 2-17).

Figure 2-17. Release Networking Channel Window

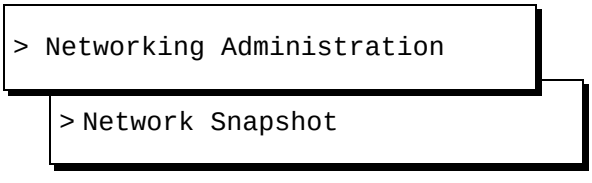
4. Enter the number of the channel to be released.

   The system displays the message `working...` in the upper right corner of the screen. When the process is complete, the Status field on the Networking Diagnostics window (Figure 2-3) is updated and shows `idle` for the channel entered.

5. Repeat Step 2 through Step 4 for each channel to be released.

Performing a Network Snapshot

To perform a network snapshot, start at the Avaya Interchange Main Menu (Figure 2-1) and select



The system displays the Network Snapshot window (Figure 2-18).

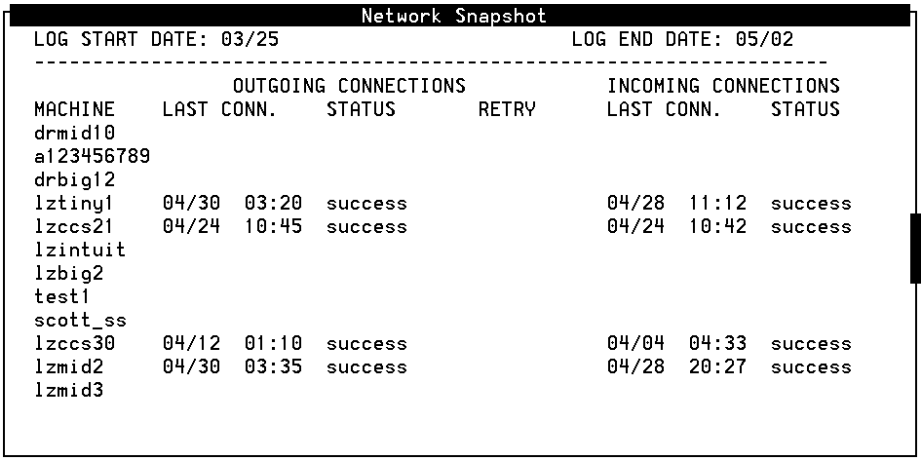


Figure 2-18. Network Snapshot Window

TCP/IP Diagnostics

Use the TCP/IP diagnostics screens when subscribers are experiencing problems with Avaya INTUITY Message Manager. These screens can help diagnose TCP/IP problems and can determine if the Avaya Interchange system is communicating properly with other machines.

You can use the TCP/IP diagnostics screens to do the following:

- Test the Avaya Interchange system's TCP/IP software.
- Test the connection between the Avaya Interchange system and a subscriber's PC.
- View the statistics for the LAN card.

For the two tests, test data (packets) are sent back and forth from the Avaya Interchange system to a networked machine. If no problems exist, the data is returned exactly as it was sent.

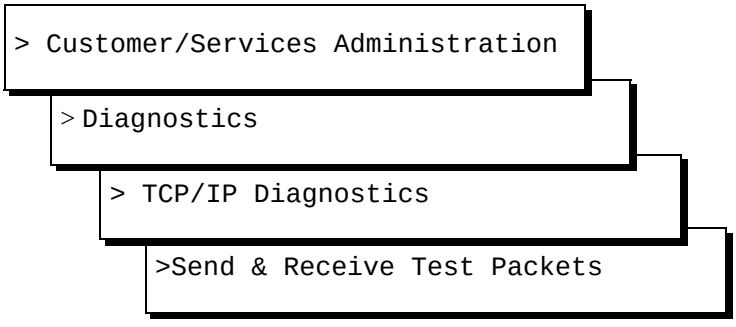
Testing the TCP/IP Software

If subscribers are experiencing difficulties with Avaya INTUITY Message Manager, first ensure that the problem is not with the Avaya Interchange system's UNIX TCP/IP software. For this procedure, run the diagnostic test on the Avaya Interchange system itself. This test does *not* involve the LAN card or the network.

Procedure

To test the TCP/IP software, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select



   The system displays the Send & Receive Test Packets From window (Figure 2-19).

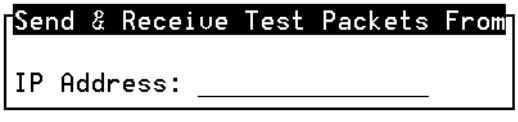


Figure 2-19. Send and Receive Test Packets Window

2. Enter the Internet Protocol (IP) address of the Avaya Interchange system (*not* a PC address).

   For this information, see the TCP/IP Administration screen.

3. Press F3 (Save).

   The system displays the message `working...` in the upper right corner of the screen. While the cursor is flashing, the system is performing the test.

   When the test is finished, the system displays the Test Packets Results window (Figure 2-20). This screen shows the results of sending 10 test packets from the Avaya Interchange system to the Interchange system.

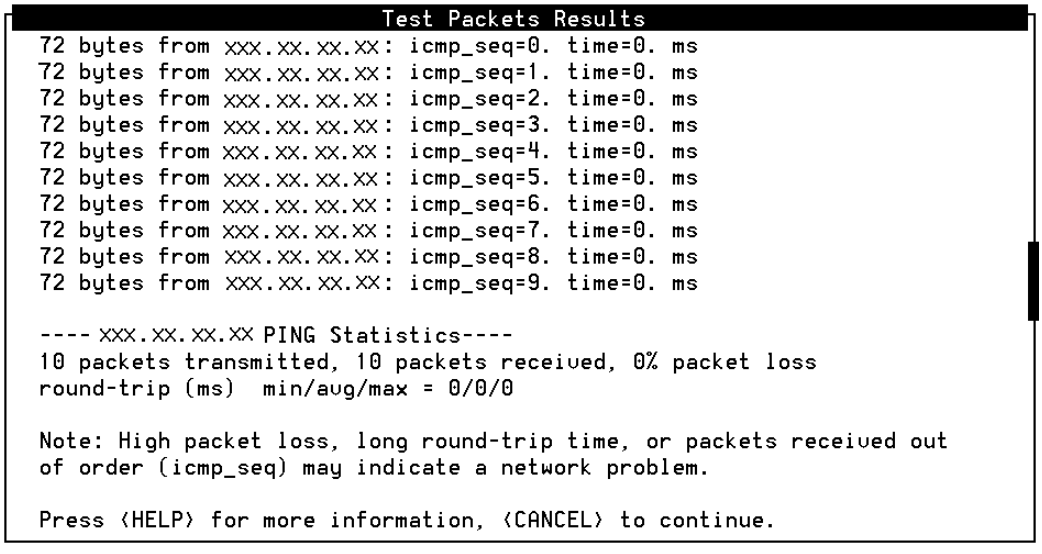


Figure 2-20. Sample Test Packets Results Window

Results

Examine the packet loss values in the `PING Statistics` field displayed on the Test Packets Results screen. The value for this field is either 0% or 100%. The meanings of these values are as follows:

- If 0% packet loss is reported, the test is successful. This result indicates that the problem is *not* with the Avaya Interchange system TCP/IP software; however, the problem might be with the LAN card or the network. To further isolate the problem, test the connection between the Avaya Interchange system and the troubled subscriber's PC. See Testing the Connection Between the Avaya Interchange System and a Subscriber's PC for this procedure.
- If 100% packet loss is reported, the test failed. Check with the customer LAN administrator to ensure that you used the correct IP address for the system. This result might indicate a problem with the Avaya Interchange system's UNIX TCP/IP software. Reboot the system, and repeat this test. If the test still fails, contact your remote services center. See Rebooting the System in Chapter 3, Common System Procedures, for this procedure.

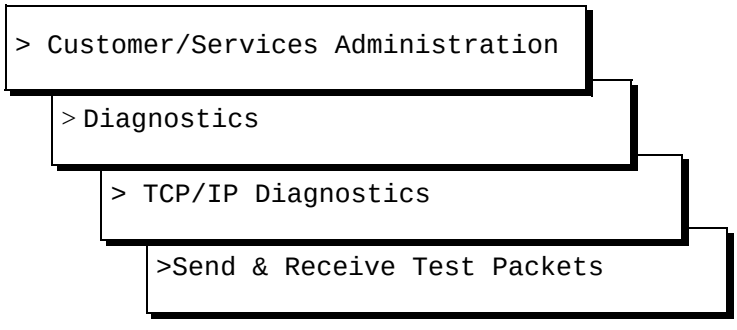
Testing the Connection Between the Avaya Interchange System and a Subscriber's PC

Once it has been determined that the Avaya Interchange system TCP/IP software is functioning correctly (see Testing the TCP/IP Software), you need to determine that the Avaya Interchange system can properly communicate with the troubled subscriber's PC.

Procedure

To test the LAN card and the network, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select



   The system displays the Send & Receive Test Packets From window (Figure 2-19).

2. Enter the Internet Protocol (IP) address for the PC to which you want to have test packets sent and received.

3. Press F3 (Save).

   The system displays `working` and a flashing cursor at the upper right corner of the screen. While the cursor is flashing, the system is performing the test.

   The system displays the Sample Test Packets Results window (Figure 2-20) when the test is finished.

Results

The meaning of the results for the LAN test are described as follows:

- *icmp_seq*. The sequence identifier of the packet. The packets are numbered from 0 to 9, in the order in which they were sent, and are displayed on the screen in the order in which they were returned. If one or two packets are returned out of sequence, the condition is acceptable to the Avaya Interchange system. However, if more than two packets are out of sequence (for example, 0, 2, 5, 3, 1...), inform the LAN or system administrator. Out-of-sequence packets can indicate network congestion or misrouting.

- *time*. The round trip transmission time, in milliseconds (ms), of the packet. Round trip delays greater than 10,000 ms could indicate a network problem.
- *packet loss*. The percentage of packets that were not returned during the test. The number of lost packets varies from network to network. Percentage of loss depends upon the number of users, the number of machines, and the distance between machines.
  - — Consider the test successful if the Avaya Interchange system reports a packet loss percentage of between 0 and 49%. Do, however, inform the LAN or system administrator if the loss is above 10%. Slow response time could be the result of such a loss.
  - — Consider the test a failure if the Avaya Interchange system reports a packet loss percentage of between 50% and 99%. In this range, Avaya INTUITY Message Manager performance is extremely slow or completely fails.
  - — A 100% packet loss indicates that the Avaya Interchange system has not established communication to the test machine address. The test does not report if packets are being sent to an incorrect or non-existent machine. Verify that you used the correct IP address for the PC. To further isolate the problem, repeat the test for a PC *not* experiencing problems with Avaya INTUITY Message Manager. If this test succeeds, the problem is with the first test PC. If this test fails, the problem is likely to be with the Avaya Interchange system's LAN card or the network connection to the Avaya Interchange system.

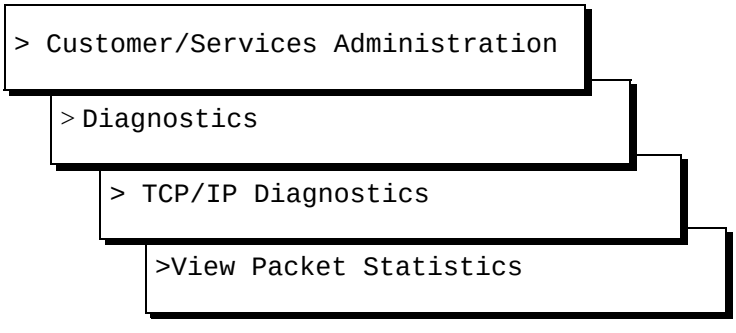
Viewing LAN Circuit Card Packet Statistics

The Packet Statistics screen displays data concerning traffic on the LAN card used for Avaya INTUITY Message Manger. Use this screen to identify problems occurring with the LAN card and the network.

Procedure

To view the packet statistics, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select



The system displays the Packet Statistics window (Figure 2-21).

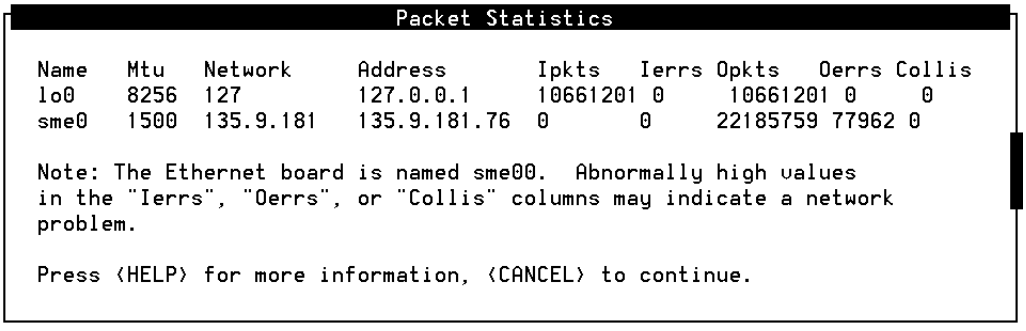


Figure 2-21. Packet Statistics Window

Interpreting the Packet Statistics Window

Table 2-1 explains each field on the Packet Statistics window. Once the system is turned on, packets (data) are sent over the network as interactions occur.

To see the statistics for the LAN card, examine the data for the line beginning with `sme00`. When the data on this screen indicates problems with the network, contact the customer LAN administrator.

Table 2-1. Fields on Packet Statistics Screen

Field	Description
`Name`	The name of the interface. The LAN card is `sme00`. An asterisk (*) in the field indicates that the interface is not enabled.
`Mtu`	The maximum transmission unit in bytes. This field indicates the longest packet that can be transmitted without needing to be split.
`Network`	The network to which the interface provides access. For the LAN card (`sme00`), the value for this field is always `none`.
`Address`	The IP address assigned to this interface. For the LAN card (`sme00`), the value for this field is always `none`.
`Ipkts`	The number of packets received over the network since the Avaya Interchange system was turned on.
`Ierrs`	The number of damaged packets received. A value for this field greater than 10% of the packets received (`Ipkts`) indicates that the network is too busy and performance is slow.

(1 of 2)

Table 2-1. Fields on Packet Statistics Screen

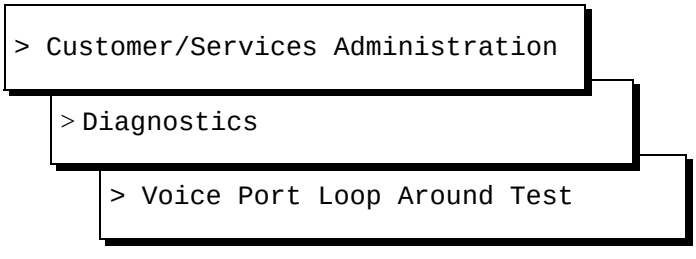
Field	Description
Opkts	The number of packets sent over the network since the Avaya Interchange system was turned on.
Oerrs	The number of packets damaged while being sent. A value for this field greater than 10% of the packets sent (Opkts) indicates that the network is too busy and performance is slow.
Collis	The number of collisions occurring on the network. A collision occurs when two machines on the network attempt to transmit a packet at the same time. Packets are the sent again; however, too many collisions can slow down the network. A value for this field greater than 10% of the packets sent (Opkts) indicates that the network is too busy and performance is slow.

(2 of 2)

Voice Port Diagnostics

To diagnose a voice port without removing the voice card from service, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select



The system displays the Voice Port Loop Around Test window (Figure 2-22).

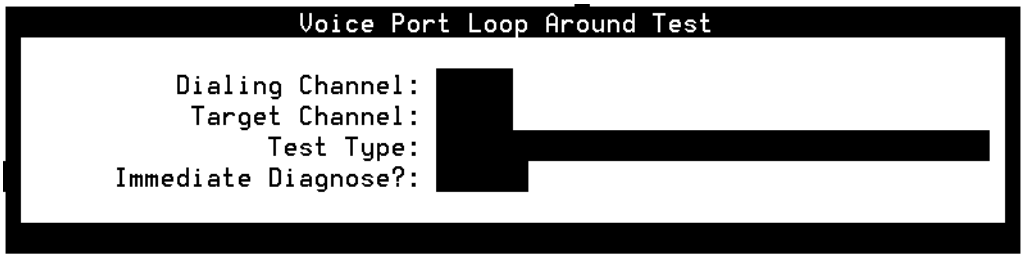


Figure 2-22. Voice Port Loop Around Test Window

2. Enter a channel number in the `Dialing Channel:` field.

   The dialing channel is the channel that sends the signal used to diagnose the target channel.

3. Enter the number of the channel you want to diagnose in the `Target Channel:` field.

4. Enter `all` in the `Test Type:` field.

5. Enter **no** in the `Immediate Diagnose?` field.

   If you enter **yes** in this field, the diagnosis is performed immediately regardless of the current state of the dialing channel.

6. Press F3 (Save).

   The system completes the diagnostics and displays the Voice Port Loop Around Test Results screen (Figure 2-23).

```
              Voice Port Loop Around Test Results


     manipulation of hook state        pass
     gain control                      pass
     speed control                     pass
     ring detection                    pass
     touch tone transmit               pass
     play                              pass
     touch tone receive                pass
     record                            pass
     fax receive                       pass
     fax transmit                      pass
     loop current/dial tone detection  pass

Press Enter to continue.
```

Figure 2-23. Voice Port Loop Around Test Results Screen

7. Press ENTER.

   The system displays the Voice Port Loop Around Test window (Figure 2-22).

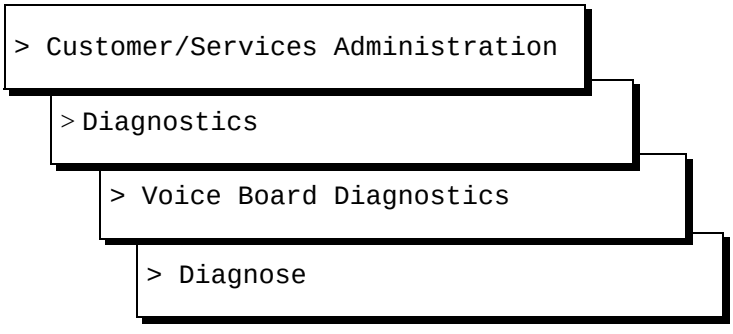
Tip/Ring Circuit Card Diagnostics

To determine which Tip/Ring circuit card is having a problem, look at the alarm log. See Chapter 1, Getting Started, in *Avaya Interchange Release 5.4 Alarm and Log Messages*, 585-310-566, for more information on the alarm log.

Procedure

To diagnose one or more Tip/Ring circuit cards, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select



The system displays the Diagnose Equipment window (Figure 2-24).

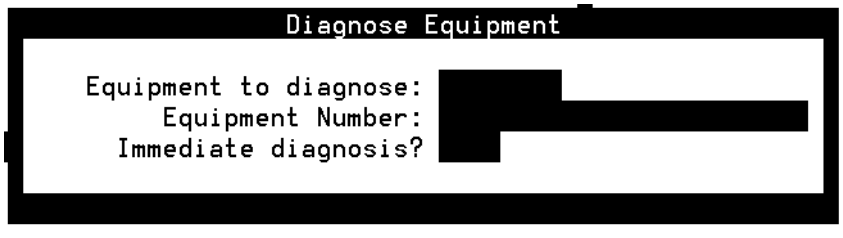


Figure 2-24. Diagnose Equipment Window

Each voice card has a number (0 through 2) that is determined by the card address set by dip switches. A card number is shown on the first line of its display.

2. Enter **card** in the `Equipment to diagnose:` field.
3. Enter the number of the card or cards you want to diagnose in the `Equipment Number:` field.

CAUTION:
Do not diagnose all of the voice cards at once. This could leave no channels available on the system to accept incoming calls.

You can enter card numbers in several forms:

- A single card number (for example, 1)
- A range of card numbers (for example: 0–2)
- A list of single card numbers (for example, 0,1,2)
- A list of single cards and ranges (for example, 0–2)

4. Enter **n** in the `Immediate Diagnosis?` field so that the card is diagnosed when it is free of calls.

CAUTION:
*Diagnosing voice cards immediately by entering **y** in the `Immediate Diagnosis?` field disconnects calls in progress. Do not enter **y** unless call traffic is extremely low. Diagnosing voice cards only when they are free of calls can take longer, but no calls are disconnected.*

5. Press F3 (Save).

   Depending on the number of cards selected, diagnosis can take several minutes. When the diagnosis is complete, the system displays the following message:

   ```
   Request to diagnose Tip/Ring card <number> is
   completed.

   Press Enter to continue.
   ```

6. Press ENTER.

Results

The voice card diagnostics follows the order of these three main steps:

- Each channel (and as a result the entire card) is taken out of service by changing its state to MANOOS (manually out of service).
- Each channel is checked for loop current. Loop current is present on a channel when a live telephone line is physically connected between the IVC6 port and a properly administered switch port.
- Each channel (and, as a result, the entire card) is put back into service by changing its states to INSERV (in service).

If a card and all of its channels pass diagnostics, each channel is returned to its previous state (prior to the diagnostic), and the following message is shown in the Diagnose Equipment Results screen:

`Diag TR` *`number`*`, Passed.`

The following messages are normal outputs of the diagnostic process and do not affect the operation of the card:

- `Diag TR` *`number`*`, Not attempting dial tone training (/vs/switch/analog/noDTtrain exists)`

  For some switches, dial tone training is turned off because if the Avaya Interchange system tries to get a dial tone from many switch ports at one time, failures can occur on the switch side.

- `Found Loop current on channel` *`number`*

  This message indicates that there is a working telephone line attached to the voice port.

- `Request to diagnose Tip/Ring` *`number`* `completed`

  This message indicates that all requested tests have been completed.

The following list shows messages printed in the Diagnose Equipment Results screen that could signal problems.

- `No loop current on channel` *`number`*

  OR

  `Channel number changed to state FOOS`

  The Avaya Interchange system does not detect a working telephone line connected to the voice port. If this occurs, do the following:

  1. Verify that the telephone line is securely connected to the voice card and the switch.
  2. Verify that the analog line is set up properly on the switch. See the switch integration document included with your Avaya Interchange system documentation set for more information.
  3. Verify that the switch port has a dial tone, by removing the analog line, plugging in an analog telephone, and listening with the handset for dial tone. If there is a dial tone, the voice card is likely the problem. If there is no dial tone, the problem is on the switch side. Verify switch wiring and administration.

- `Diag TR` *`number`*`: No dial tone frequencies set`

  The Avaya Interchange system did not detect a dial tone, but it did detect loop current (phone line is attached). Loop current could be a result of excessive load on the switch circuit pack. If this occurs, do the following:

  1. Verify that the Avaya Interchange system analog lines are distributed over several switch circuit packs.

2. Verify that the switch administration for the ports is valid.

- `Channel number changed to state BROKEN`

  OR

  `Card number changed to state BROKEN`

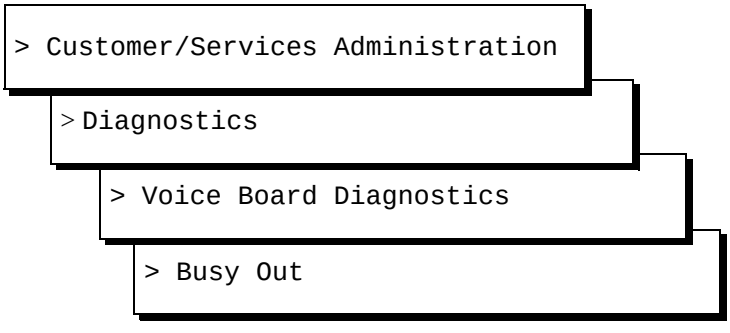
  The channel or card is not working. Replace the Tip/Ring circuit card. See Tip/Ring Circuit Cards in Chapter 5, Replacing or Installing Circuit Cards.

Busying out a Tip/Ring Circuit Card

Busying out a Tip/Ring circuit card takes all channels on that card out of service (MANOOS or manually out of service state) so that calls are not forwarded to those channels. You can also busy out one or more individual channels.

To busy out a Tip/Ring circuit card, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select



The system displays the Busyout of Voice Equipment window (Figure 2-25).

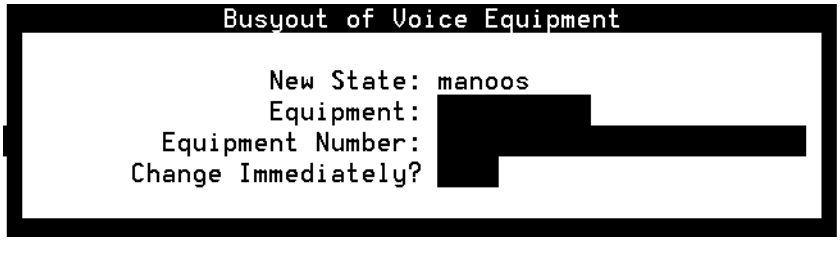


Figure 2-25. Busyout of Voice Equipment Window

The `New State:` field displays `manoos`. This is the state to which the cards or channels selected is changed. This field cannot be changed.

2. Enter **card** or **channel** in the `Equipment:` field.

3. Enter the number of the card(s) or channel(s) you want to busy out in the `Equipment Number:` field.

   CAUTION:
   Do not busy out all of the voice cards at once. This could leave no channels available on the system to accept incoming calls.

   Card numbers range from 0 to 2, channel numbers range from 0 to 17. You can enter card and channel numbers in several forms.

   - A single card number (for example, 1)
   - A range of card numbers (for example, 0–2)
   - A list of single card numbers (for example, 0,1,2)
   - A list of single cards and ranges (for example, 0–2)

4. Enter **n** in the `Change Immediately?` field so that the card or channel can busy out when it is free of calls.

   CAUTION:
   *Busying out voice cards or channels immediately by entering **y** in the `Change Immediately?` field disconnects calls in progress. Do not enter **y** unless call traffic is extremely low. If **n** is entered, the voice cards or channels busy out when they are free of calls. Busying out voice cards and channels only when they are free of calls could take longer, but no calls are disconnected.*

5. Press F3 (Save).

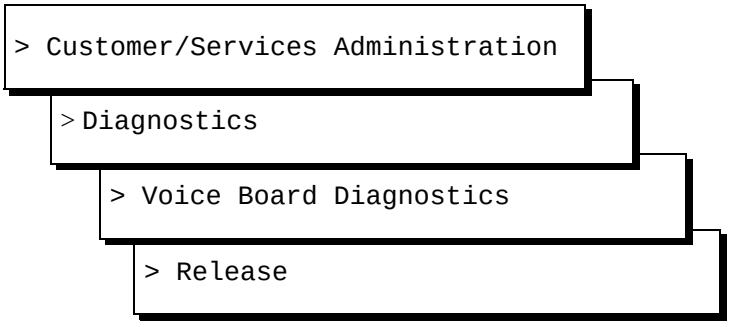
   When the state change is complete, the system displays a Command Output screen.

Releasing a Tip/Ring Circuit Card

Releasing a Tip/Ring circuit card puts all channels on that card in service (INSERV) so that they can accept and process calls. You can also release one or more individual channels.

To release a Tip/Ring circuit card or channels, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select



The system displays the Release of Voice Equipment window (Figure 2-26).

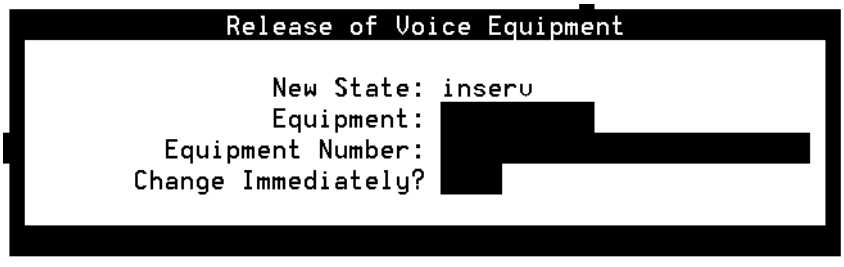


Figure 2-26. Release of Voice Equipment Window

The `New State:` field displays `inserv` (in service). This is the state to which the cards or channels selected are changed. This field cannot be changed.

2. Enter **card** or **channel** in the `Equipment:` field.
3. Enter the number of the card(s) or channel(s) you want to release in the `Equipment Number:` field.

   Card numbers range from 0 to 10, channel numbers range from 0 to 63. The card and channel numbers can be entered in several forms.

   - A single card number (for example, 1)
   - A range of card numbers (for example, 0–2)
   - A list of single card numbers (for example, 0,1,2)
   - A list of single cards and ranges (for example, 0–2)
4. Enter **y** in the `Change Immediately?` field so that the card or channel is released immediately.
5. Press F3 (Save).

Common System Procedures

3

Overview

This chapter describes:

- Cartridge tape and diskette drive operating procedures
- Backup and restore procedures
- Voice system administration procedures

Purpose

The purpose of this chapter is to provide the procedures necessary to perform the most common procedures associated with the Avaya Interchange system.

Accessing the Product IDMain Menu

The product ID is a 10-digit number used to identify each Avaya Interchange system. You must have the product ID when contacting your remote maintenance service center.

To access the product ID, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > Alarm Management
```

   The system displays the Alarm Management window (Figure 3-1).

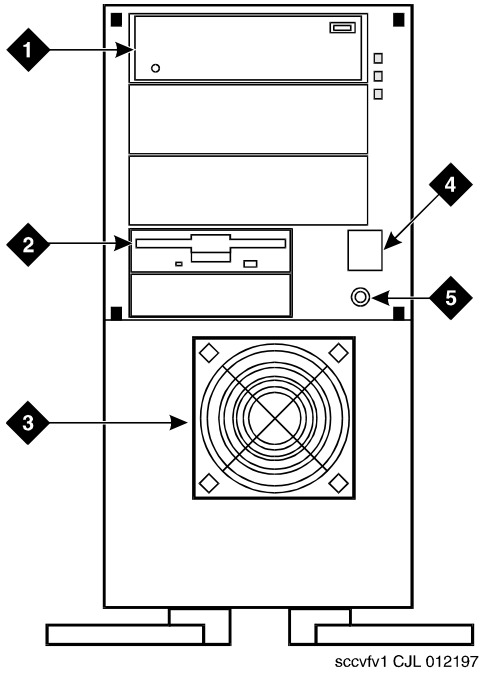
```
                Alarm  Management

Product ID                          2999999999

Alarm Destination

Alarm Origination                   ACTIVE

Alarm Level                         MINOR

Alarm Suppression                   ACTIVE

Clear Alarm Notification            ACTIVE
```

Figure 3-1. Alarm Management Window

2. Record the product ID for use with the remote maintenance center.

About Cartridge Drives and Tapes

Cartridge tapes provide for the storage of information used by the Avaya Interchange system. The MAP/5P reads information from and writes information to cartridge tapes through the tape drive. The tape drive is located in Bay 1 (Figure 3-2).



1. Cartridge tape drive
2. Diskette drive
3. Circuit card cage fan
4. Power button
5. Reset button

Figure 3-2. Front View of the MAP/5P

When to Change Cartridge Tapes

The manufacturers of the cartridge tapes recommend that you replace a tape after approximately 30 full-capacity write or read operations. For example, if two tapes are being alternated for the unattended nightly backup, replace both tapes every two months.

Inserting the Cartridge Tape

To insert a cartridge tape, do the following:

1. Locate the tape drive on the front of the MAP/5P (Figure 3-2).
2. Check the Read/Write dial to make sure that the tape is not write protected. Verify that the small dial on the front of the tape is in the horizontal position.
3. Complete Steps a through c to insert the tape in the drive:
   a. Press the button on the upper right corner of the drive to open the drive door.
   b. Insert the tape (Figure 3-3).
   c. Close the door to push in the tape.

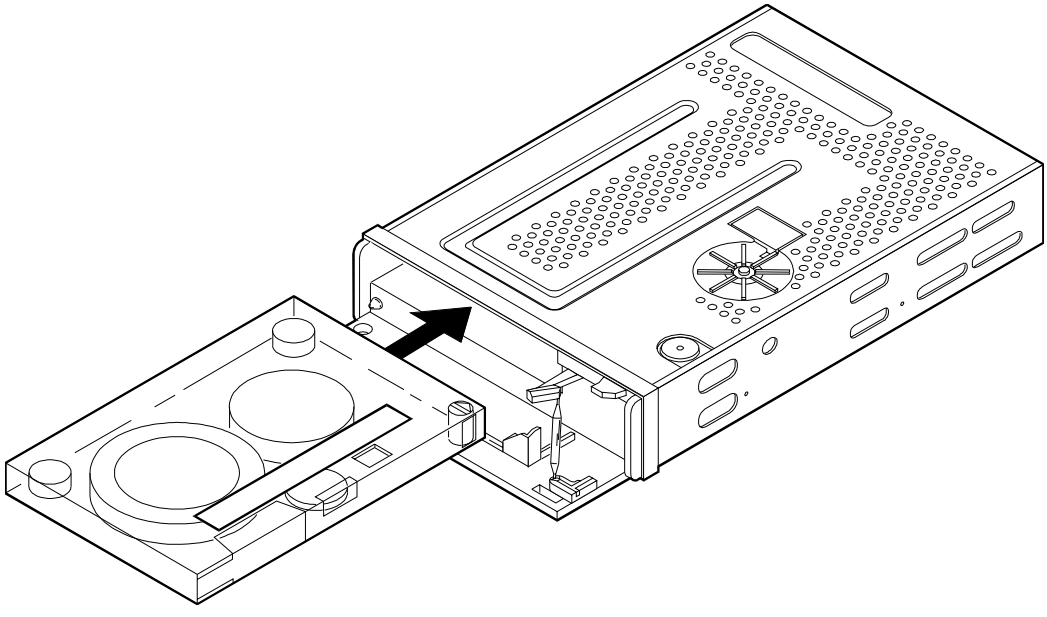


Figure 3-3. Tape Insertion with a Tape Drive

NOTE:
The light on the tape drive blinks when the drive is in use. If the light is lit and not blinking, the tape drive is idle.

Removing the Cartridge Tape

To remove a cartridge tape, do the following:

CAUTION:
*You can remove the tape only when the drive is idle; that is, only when the light is **not** blinking.*

1. Press the button on the upper right corner of the drive to reveal part of the tape.
2. Pull out the tape.

Formatting Cartridge Tapes

Formatting prepares a cartridge tape to receive data. To format a cartridge tape, do the following:

1. Start at the Avaya Interchange Main menu (Figure 2-1) and select

```
> Customer/Services Administration
    > System Management
        > UNIX Management
            >Format UNIX Floppy/Tape
```

The system displays the Format UNIX Floppy/Tape menu (Figure 3-4).

```
        Format UNIX Floppy/Tape
>Format 3.5 inch 1.44 Mbyte (High Density)
 Format 3.5 inch 720 Kbyte (Low Density)
 Format Cartridge Tape
```

Figure 3-4. Format UNIX Floppy/Tape Menu

2. Select `Format Cartridge Tape`.
3. Verify that the tape is not write protected and insert the tape into the tape drive. See About Cartridge Drives and Tapes for more information.

4. Press **y**.

   The system displays a screen stating that the tape has been formatted.

5. Remove the tape from the tape drive.
6. Press ENTER.

About Diskette Drives and Diskettes

Diskettes can provide for the storage of information used by the Avaya Interchange system. If information must be transferred from a Avaya Interchange system without a LAN card, diskettes must be used.

Types of Diskettes

The Avaya Interchange system is not shipped with diskettes. If you need diskettes, use unformatted 3.5-inch disks. The diskettes can be either:

- High density (1.44 MB)
- Low density (720 KB)

Inserting and Removing Diskettes

Inserting the Diskettes

To insert a diskette, do the following:

1. Locate the diskette drive on the front of the MAP/5P (Figure 3-2).
2. Check the Read/Write switch to make sure that the diskette is not write protected.
3. Insert the diskette in the drive.

   NOTE:
   The light on the diskette drive is on when the drive is in use. If the light is *not* on, the diskette drive is idle.

Removing the Diskettes

To remove a diskette, do the following:

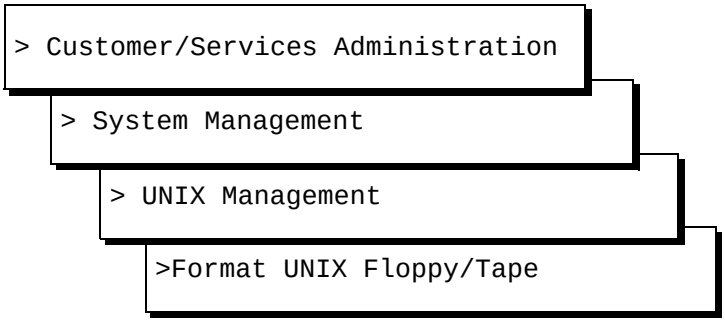
⚠ CAUTION:
You can remove the diskette only when the drive is idle; that is, only when the light is not on.

1. Press the button on the lower right corner of the diskette drive to reveal part of the diskette.
2. Pull out the diskette.

Formatting Diskettes

Formatting prepares a diskette to receive data. To format a diskette, do the following:

1. Start at the Avaya Interchange Main menu (Figure 2-1) and select



   The system displays the Format UNIX Floppy/Tape menu (Figure 3-4).

2. Select `Format 3.5 inch 1.44 MB (High Density)` or `Format 3.5 inch 720 Kbyte (Low Density)`, depending on the type of diskette being used.
3. Verify that the diskette is not write protected and insert the tape into the tape drive. See Inserting the Diskettes for more information.
4. Press **y**.

   The system displays a screen stating that the diskette has been formatted.
5. Remove the diskette from the diskette drive.
6. Press ENTER.

Backing Up (Unattended)

The unattended backup contains all of the information necessary to bring the system back to an operational state after a service affecting event. However, the unattended backup alone cannot completely restore the system to its previous state. The unattended backup can bring the system back to an operational state only. Employ the disaster recovery procedures outlined in Appendix C, Disaster Recovery, to restore a system to the previous state.

Unattended backups do not require supervision and occur automatically. However, for the backup to be successful, you must ensure that a cartridge tape is in the tape drive.

Unattended backups occur nightly at 3:00 a.m. and can take up to four hours. Unattended backups do not degrade service.

After verifying that the unattended backup was successful, remove the tape. Label it with date and backup data type (for example, System Data) and store it. Insert a second tape in the tape drive. See Verifying the Unattended Backup for backup verification procedures.

How to Manage Tapes

CAUTION:
Do not leave the same tape in the tape drive day after day. Once the unattended backup begins, the previous day's data is overwritten and becomes unretrievable. If today's unattended backup fail, neither today's nor yesterday's data will be available.

To better manage the backed-up data, it is recommended that two tapes be used.

These two tapes can be alternated daily, or additional tapes can be used to implement a longer cycle (for example, seven tapes, each one labeled with a day of the week).

What Data Is Backed Up

An unattended backup saves:

- Detailed system data on shared memory, speech file system pointers, and so on
- Alarm management information
- A list of enabled features
- A list of installed software

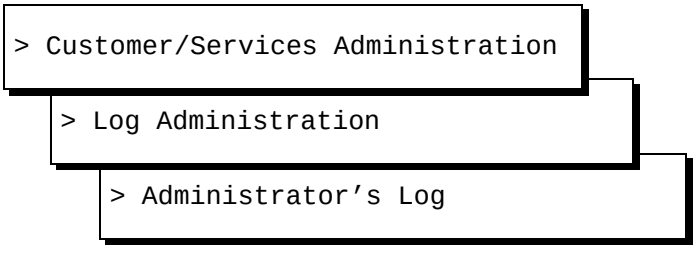
Verifying the Unattended Backup

The system administrator checks the administrator's log daily to ensure that a successful unattended backup occurred. You can check the log by using the Log Administration menu.

Successful Backup Verification Using the Log Administration Menu

To verify a successful unattended backup from the Log Administration menu, do the following:

1. Start at the Avaya Interchange Main menu (Figure 2-1) and select



The system displays the Administrator's Log Display Selection window (Figure 3-5).

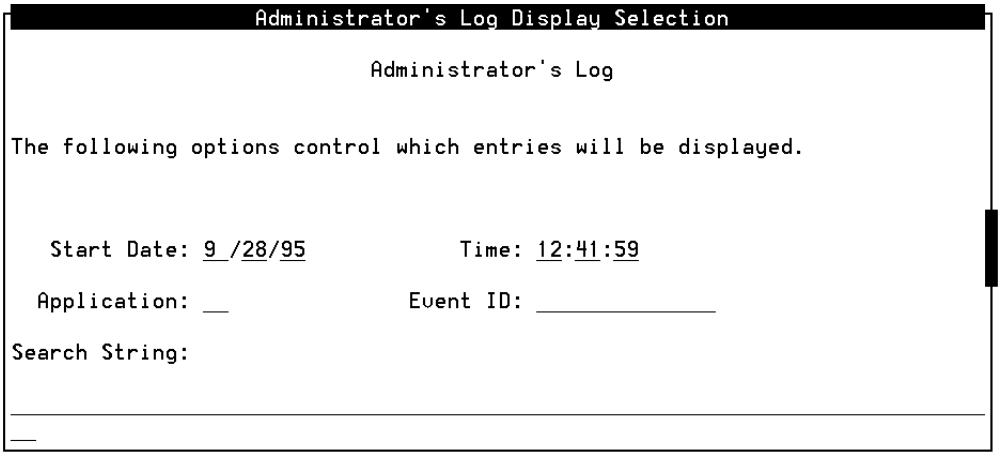


Figure 3-5. Administrator's Log Display Selection Window

2. Place the cursor in the `Event ID:` field.

3. Enter **BKRST001**.
4. Press F3 (Save).

   The system displays the Administrator's Log window (Figure 3-6).

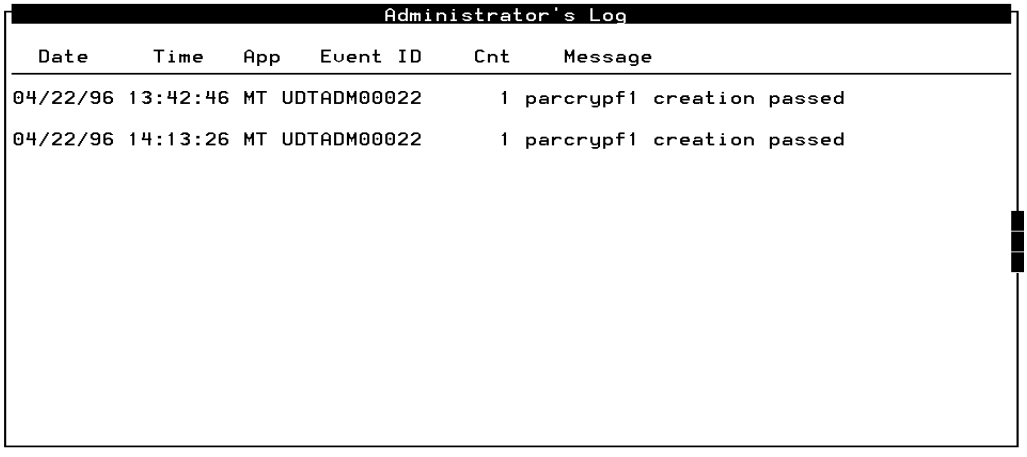


Figure 3-6. Administrator's Log Window

5. Verify that there is an entry with today's date and the following text:

   `Backup process has been completed successfully.`

   If an entry with today's date does not exist, the unattended backup was not successful.

Backing Up (Attended)

Unattended backups do not save everything; therefore, you might want to copy other types of information for security and recovery purposes. The attended backup does not cause a degradation in service. However, for best results, perform these backups at a time when the Avaya Interchange system is experiencing low usage.

Data Types

You can manually back up any combination of system data and voice names data types at any time.

System Data

System data is automatically backed up nightly through the unattended backup commands. See Backing Up (Unattended) for a list of the items included in system data. In addition to the unattended backup, it is recommended that you back up the system data manually whenever you make extensive changes to the subscriber profiles.

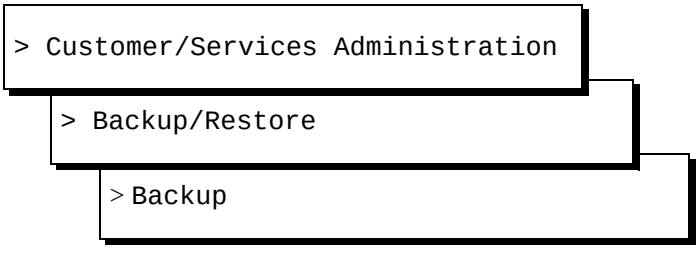
Voice Names

The voice names data type contains voiced subscriber names. After additional subscriber names have been recorded, conduct an attended backup of this file system.

Attended Backup

To perform an attended backup, do the following:

1. Start at the Avaya Interchange Main menu (Figure 2-1) and select



The system displays the Backup window (Figure 3-7).

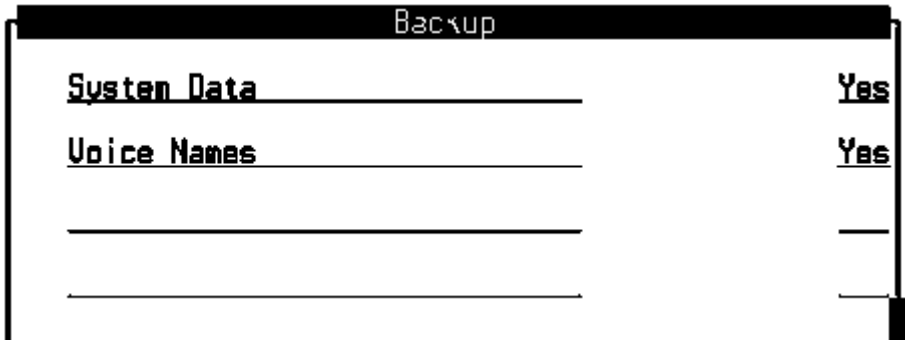


Figure 3-7. Backup Window

2. Enter **y** in the fields to be backed up.

   NOTE:
   The fields displayed on the Backup window are based on the system's configuration. Therefore, the window you see may look different than the one shown here.

3. Press F3 (Save).

   The system displays the following message:

   ```
   backup started
   calculating approximate number of tape(s) required
   please wait
   ```

   ```
   the backup will need approximately:
   x yyy MB cartridge tape(s)
   ```

4. Make sure that there are enough cartridge tapes to accommodate the backup.

   The system displays the following message:

   ```
   Verify whole backup tape(s) will double the amount of
   backup time.
   Do you really want to verify tape(s)?
   (Strike y or n)
   ```

5. The Avaya Interchange system verifies a backup tape by reading back the entire set of data it has just written on the tape.

   NOTE:
   Verifying the backup tape increases the total time for backup from 1-1/2 hours to 3 hours. Verification is not necessary to ensure a good backup tape.

   To verify the backup tape, press **y**. If you do not want to verify the backup tape, press **n**.

   The system displays the following message:

   ```
   please insert a tape into the tape drive to back up
   tape 1
   press <Enter> when tape is inserted
   press <Esc> key to terminate the backup
   ```

6. Insert the first cartridge tape in the tape drive. See Inserting the Cartridge Tape for this procedure.

7. Press ENTER when the tape drive is idle.

   The system displays a series of messages indicating what is being stored on the backup tape.

   NOTE:
   The light on the 2-GB drive blinks when the drive is in use. If the light is *not* blinking, the tape drive is idle.

8. If another tape is necessary:

   a. Remove the current tape. See Removing the Cartridge Tape for this procedure.

   b. Label the tape with the current date and back-up data type(s).

   c. Insert the next tape. See Inserting the Cartridge Tape for this procedure.

   If another tape is not necessary, continue with Step 10.

   When the backup is complete, the system displays the following message:

   ```
   backup process has been completed successfully
   press any key to continue
   ```

9. Press ENTER.

Restoring Backups

The information stored on cartridge tapes during the unattended and attended backup procedures is used to restore the system to an operational state.

If a system problem or failure occurs, backups can be invaluable in returning the system to an operational state. You will likely restore only backups when directed to do so by an alarm repair action.

Depending on the severity of the situation, Avaya Interchange software may have to be reinstalled before any backups are restored. If system software needs reinstalling, see Chapter 4, New Installation and System Recovery Procedures in *Avaya Interchange Release 5.4 Installation and System Recovery* for the procedures.

NOTE:
It takes approximately two hours to restore one tape.
This procedure works for both attended and unattended backups.

To restore the backup, do the following:

1. Stop the voice system. See Stopping the Voice System for more information.

2. Start at the Avaya Interchange Main menu (Figure 2-1) and select

```
> Customer/Services Administration
    > Backup/Restore
        > Restore
```

The system displays the following message:

```
please insert a tape into the tape drive to restore
press <Enter> when tape is inserted
press <Esc> key to terminate the restore
```

3. Insert the cartridge tape that contains the data to be restored into the tape drive. See Inserting the Cartridge Tape for more information.

4. Press ENTER to continue.

The system displays the header information for the tape. That information includes:

- Tape label
- Date
- List of packages (with release and version) installed on the machine when the tape was made
- Data types

The following is an example of tape header information:

```
PRODUCT_ID=2299999999

DATE=09/11/93 09:51

PKG=VM:0:R1.1

PKG=mtce:1.0:1.0-4

PKG=netw:0:1.0-4.3

PKG=vs:1.0:1.0-4

TYPE=System Data:

Press <Enter> to select data type.
Press <Esc> to terminate the restore.
```

5. Check the data types listed under `TYPE=System Data` to verify that this tape contains the appropriate data.

If it does not:

a. Press ESC.

b. Return to Step 3.

c. Try another tape.

If it does, continue with Step 6.

6. Press ENTER to continue.

   The system displays the Restore window.

7. Enter **y** in the fields that display the data types you want to restore.

   NOTE:
   The fields displayed on the Restore window are based on the data stored on the tape.

8. Enter **n** in all of the other fields.

9. Press F3 (Save) to restore the data types selected.

10. Insert subsequent tapes if prompted to do so.

11. Press ENTER when the restore is complete.

    The system displays the following message:

    ```
    restore process has been completed successfully
    press any key to continue
    ```

    If the restore fails, the system displays the following message:

    ```
    Restore Failed.
    ```

    Do the following:

    a. Rewind the tape by removing it from the tape drive and then reinserting it.

    b. Return to Step 4 and attempt the restore again.

    c. If the restore fails a second time, access the alarm log. See Chapter 1, Getting Started, in *Avaya Interchange Release 5.4 Alarm and Log Messages* and follow associated repair actions for any active alarms in the log.

12. Reboot the system. See Shutting Down and Rebooting the Avaya Interchange System for this procedure.

Administering Interchange

The voice system is the Avaya Interchange system base voice processing software.

Starting the Voice System

To start the voice system, do the following:

1. Start at the Avaya Interchange Main menu (Figure 2-1) and select

```
> Customer/Services Administration
    > System Management
        > System Control
            >Start Voice System
```

   The system displays the following message:

```
The Voice System is starting.
The Voice System is initializing cards.

Startup of the Voice System is complete.


Hit acknowledge key to continue.
```

2. Press F1 (Acknowledge).

   The system displays the System Control menu (Figure 3-8).

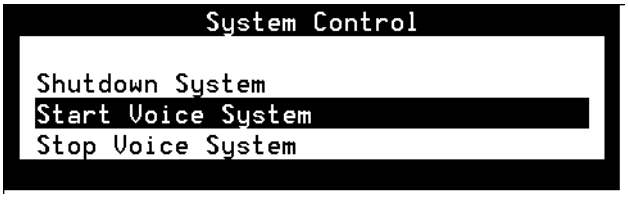


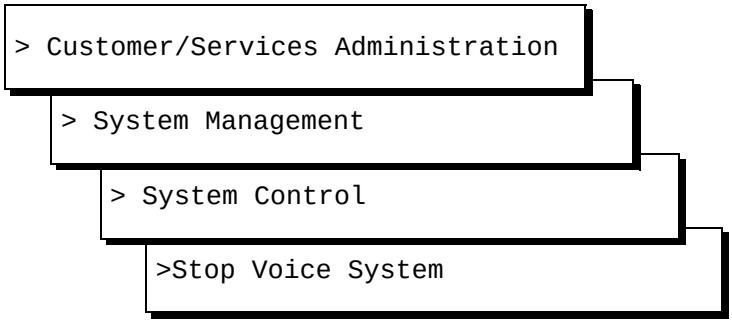
Figure 3-8. System Control Menu

You have completed this procedure.

Stopping the Voice System

To stop the voice system, do the following:

1. Start at the Avaya Interchange Main menu (Figure 2-1) and select



   The system displays the Wait Time window (Figure 3-9).

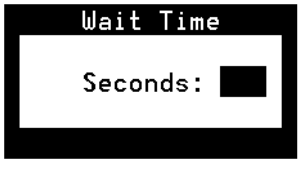


Figure 3-9. Wait Time Window

2. Enter a number between 60 and 600 to designate how long the system waits for calls in progress to finish before stopping the voice system.
3. Press F3 (Save).

   The system displays the following message:

```
The Voice System is now stopping.

Initiating request to clear all calls in the next 60
seconds.

Orderly idling of the system succeeded.

After the Voice System has completely stopped, use the
Start Voice System choice from the System Control menu
to restart the Voice System.
```

```
The Voice System has stopped.

Press Enter to Continue.
```

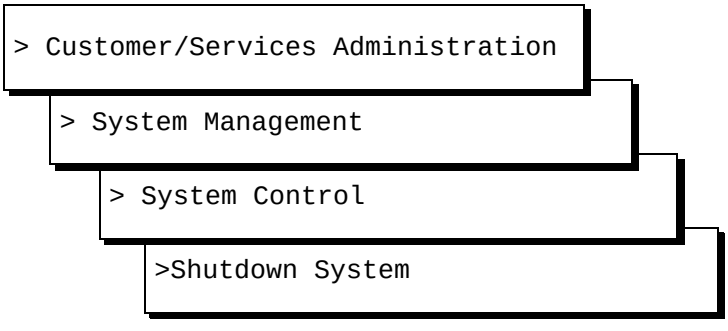
4. Press ENTER.

Shutting Down and Rebooting the Avaya Interchange System

You must shut down the Avaya Interchange system before you perform a reboot. This section describes both procedures.

Shutting Down the Avaya Interchange System

1. Stop the voice system. See Stopping the Voice System for this procedure.
2. Start at the Avaya Interchange Main menu (Figure 2-1) and select



   The system displays the Wait Time window (Figure 3-9).

3. Enter a number between 0 and 60 to designate how long the system is to wait for users to log off.
4. Press F3 (Save).

   The system displays the following message:

   ```
   Shutdown started.
   ```

   When the system is completely shut down, the system displays the following message:

   ```
   The system is down.
   Press Ctrl-Alt-Del to reboot your computer.
   ```

5. Continue with the next procedure, Rebooting the System.

Rebooting the System

Rebooting the system can be done in two ways:

- A *warm reboot* (performed while the computer is on)
- A *cold reboot* (turning the computer off, then back on again)

Performing a Warm Reboot

To perform a warm reboot:

1. Make sure that there is no diskette in the floppy drive.
2. Press Ctrl-Alt-Del.

   The system performs a power-on self test (POST). The screen lists various hardware components and the status of the tests performed on those components.

   When the reboot is complete, the system displays the following prompt:

   ```
   Startup of the Voice System is complete.
   Console Login:
   ```

3. If FAIL appears in the status column for any component do the following:
   a. Record the component name.
   b. Access the alarm log to begin troubleshooting. See Chapter 1, Getting Started, in Avaya Interchange Release 5.4 Alarm and Log Messages for this procedure.

Performing a Cold Reboot

To perform a cold reboot:

1. Make sure that there is no diskette in the floppy drive.
2. Turn the MAP/5P off by pressing the power button on the front of the unit (Figure 3-2).
3. Wait 30 seconds to allow the drives to come to a complete stop.
4. Turn the power on by pressing the power button on the front of the MAP/5P (Figure 3-2).

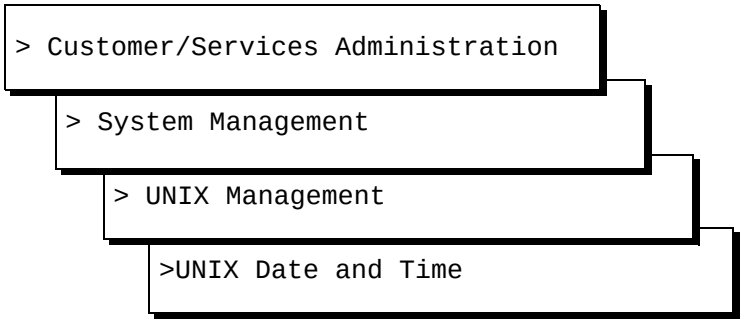
Verifying the Date and Time

This section details:

- Checking the UNIX Date and Time window
- Changing the UNIX Date and Time window

Checking the UNIX Date and Time Window

1. Start at the Avaya Interchange Main menu (Figure 2-1) and select



The system displays the UNIX Date and Time window (Figure 3-10).

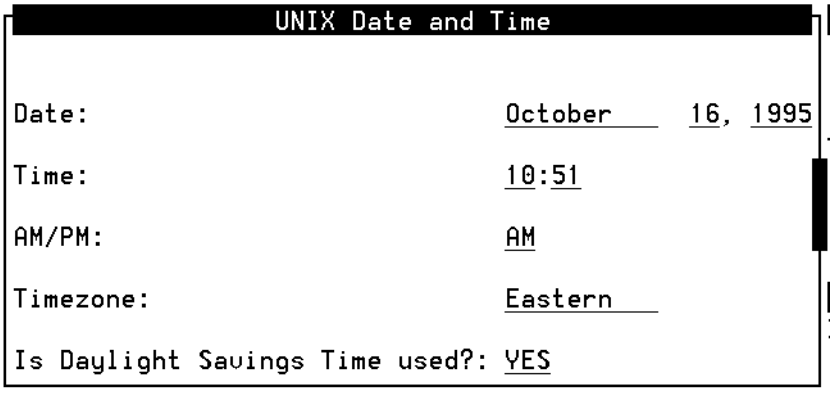


Figure 3-10. UNIX Date and Time Window

2. Review each of the fields under `UNIX Date and Time`.

   If all of the fields are correct, press F6 (Cancel).

   If a field contains incorrect information, continue with the next procedure, Changing the UNIX Date and Time Window.

Changing the UNIX Date and Time Window

The user can change any of the displayed fields. To change one field in the Date and Time window, the user must either change or acknowledge the information in each field.

Changing the Date Field

The date field contains the month, day, and year.

Changing the Month

1. Place the cursor on the `Month` field in the UNIX Date and Time window (Figure 3-10).
2. If the month shown is not correct, complete Step a through Step d:
   a. Press F2 (Choices) to display the months of the year (Figure 3-11).

Figure 3-11. UNIX Month Choices Menu

   b. Use ▲ or ▼ to move the cursor and highlight the correct month.
   c. Press ENTER to place the name of the correct month into the month field.

> **NOTE:**
> The user can also select the current month by entering the corresponding alphabetic abbreviation from this list: **Ja**, **F**, **Mar**, **Ap**, **May**, **Jun**, **Jul**, **Au**, **S**, **O**, **N**, **D**.

   d. Continue with the next procedure, Changing the Day.

   If the month shown is correct, press ENTER for no change and continue with the next procedure, Changing the Day.

Changing the Day

If the day of the month shown is not correct, enter the correct day as a number from 1 to 31 and continue with the next procedure, Changing the Year.

If the day of the month shown is correct, press ENTER for no change and continue with the next procedure, Changing the Year.

Changing the Year

If the year shown is not correct, enter the correct year as a number from 1996 to 2038 and continue with the next procedure, Changing the Time Field.

If the year shown is correct, press ENTER for no change and continue with the next procedure, Changing the Time Field.

Changing the Time Field

If the time shown is not correct, enter the correct time in the form of *hours:minutes* and continue with the next procedure, Changing the AM/PM Field.

NOTE:
Use a 12-hour a.m./p.m. standard. Do *not* use the 24-hour military standard.

If the time shown is correct, press ENTER for no change and continue with the next procedure, Changing the AM/PM Field.

Changing the AM/PM Field

If AM/PM is not correct as shown, type **a** for a.m. or **p** for p.m. and continue with the next procedure, Changing the Time Zone Field.

If AM/PM is correct as shown, press ENTER for no change and continue with the next procedure, Changing the Time Zone Field.

Changing the Time Zone Field

If the time zone shown is not correct, complete the following Steps 1 through 3 and then continue with the next procedure, Changing the Is Daylight Savings Time Used Field.

1. Press F2 (Choices) to display the list of time zones (Figure 3-12).

Figure 3-12. UNIX Time Zone Choices Menu

2. Use ▲ or ▼ to move the cursor and highlight the correct time zone.
3. Press ENTER to place the name of the correct time zone into the `Timezone` field.

If the time zone shown is correct, press ENTER for no change and continue with the next procedure, Changing the Is Daylight Savings Time Used Field.

Changing the Is Daylight Savings Time Used Field

1. Type **y** for yes or **n** for no depending upon whether or not daylight savings time is used at any time during the year.
2. Press F3 (Save) to save the changes and continue with the next procedure, Acknowledging the Changes to the Date and Time Window.

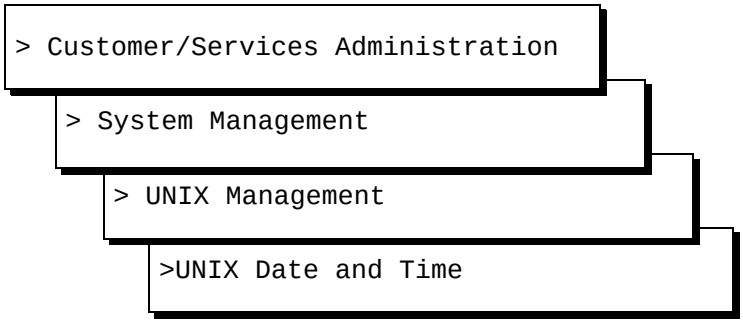
Acknowledging the Changes to the Date and Time Window

After the changes have been made to the Date and Time window, ensure that the system recognizes the new information. To acknowledge the new information, do the following:

1. Reboot the Avaya Interchange system. See Shutting Down and Rebooting the Avaya Interchange System for this procedure.

   At this time, the date and time changes take effect.

2. Start at the Avaya Interchange Main Menu (Figure 2-1) and select



   The system displays the UNIX Date and Time window (Figure 3-10).

3. Check each of the fields under `UNIX Date and Time` to ensure that the changes have been recorded.

Getting Inside the Computer

4

Overview

This chapter describes procedures for:

- Proper electrostatic discharge protection
- Power removal and restoration
- Computer chassis access

Purpose

The purpose of this chapter is to provide the correct procedures for accessing the internal components of the MAP/5P.

Protecting Against Damage from Electrostatic Discharge

CAUTION:
*Read this section before unpacking the MAP/5P. You **must** observe proper grounding techniques to prevent the discharge of static electricity from your body into ESD-sensitive components.*

Circuit cards and packaging materials that contain ESD-sensitive components are usually marked with a yellow and black warning symbol (Figure 4-1).

Figure 4-1. ESD Warning Symbol

To avoid damaging ESD-sensitive components, follow these rules:

- Handle ESD-sensitive circuit cards only after attaching a wrist strap to your bare wrist. Attach the other end of the wrist strap to a ground that terminates at the system ground, such as any unpainted metallic chassis surface.
- Handle a circuit card by the faceplate or side edges only (Figure 4-2 and Figure 4-3).

  CAUTION:
  Ensure that your palm is not in contact with the noncomponent side of the board.

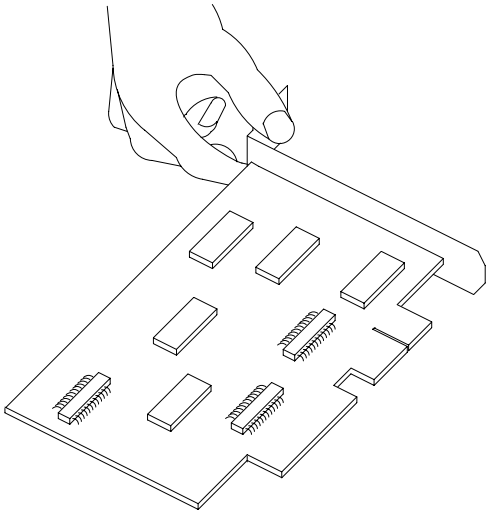


Figure 4-2. How to Hold a Small Circuit Card

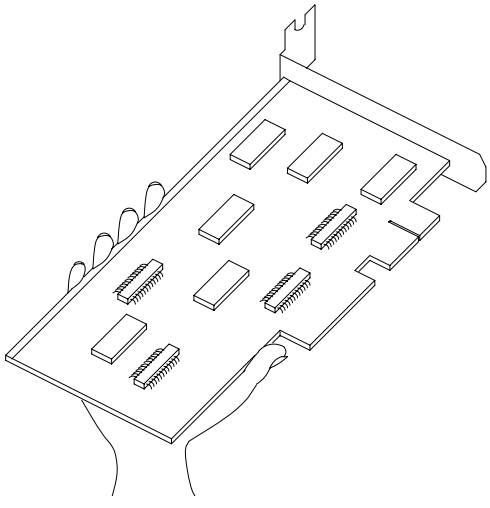


Figure 4-3. How to Hold a Large Circuit Card

- Keep circuit cards away from plastics and other synthetic materials such as polyester clothing.

- Do not hand circuit cards to another person unless that person is grounded at the same potential level.
- Hold devices such as a hard disk, floppy drive, or streaming tape in the same manner as a large circuit card. The ESD-sensitive area of these components is located on the bottom surface (Figure 4-4).

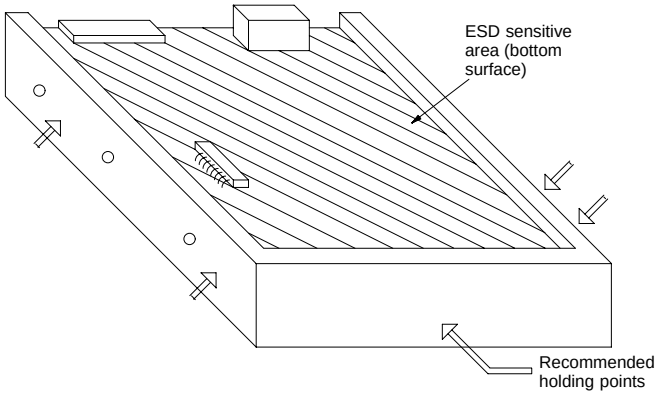
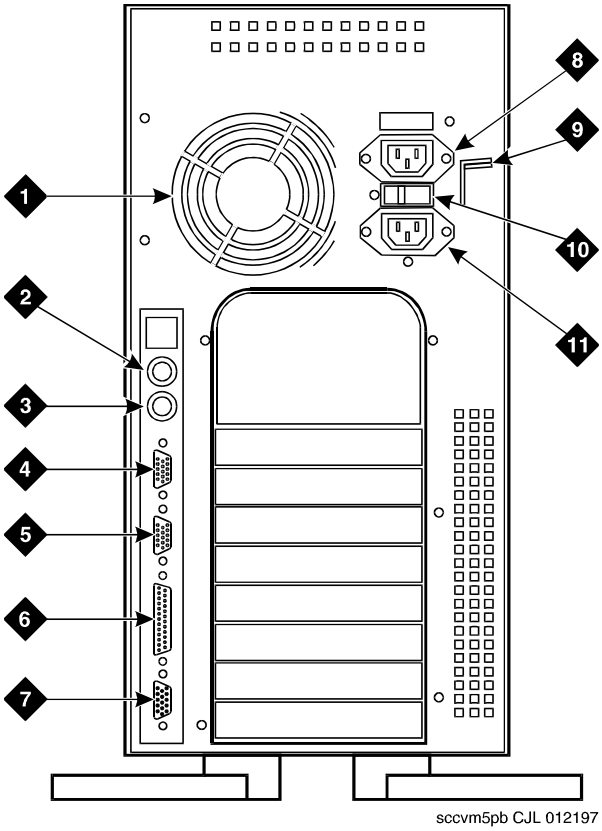


Figure 4-4. ESD-Sensitive Area of an Electronic Component

Removing Power from the MAP/5P

The MAP/5P requires a dedicated circuit with a dedicated circuit breaker. The power cord connects to the rear of the MAP/5P at the point labeled “AC power inlet receptacle” (Figure 4-5). Before you begin any work in the MAP/5P, complete the following procedure to remove power from the MAP/5P.



1. Power supply fan intake
2. Keyboard connector
3. Mouse connector
4. COM1
5. COM2
6. Parallel port
7. Video connector
8. AC power supply outlet
9. Dress cover lock
10. AC voltage selector switch
11. AC power inlet receptacle

Figure 4-5. Back View of the MAP/5P

1. Shut down the Avaya Interchange system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
2. Turn off the power switch for the monitor.

   Verify that green or amber lamp on the front bottom of the monitor is off.
3. Turn off the power switch on the front of the MAP/5P.

   Verify that the green lamp labeled POWER ON on the front of the unit is off.
4. Unplug the MAP/5P from the power outlet.
5. Remove the MAP/5P power cord from the AC receptacle in the wall.
6. Observe the correct lock-out/tag-out precautions for isolating power as outlined in the Avaya lock-out/tag-out procedure.

Removing the Dress Cover

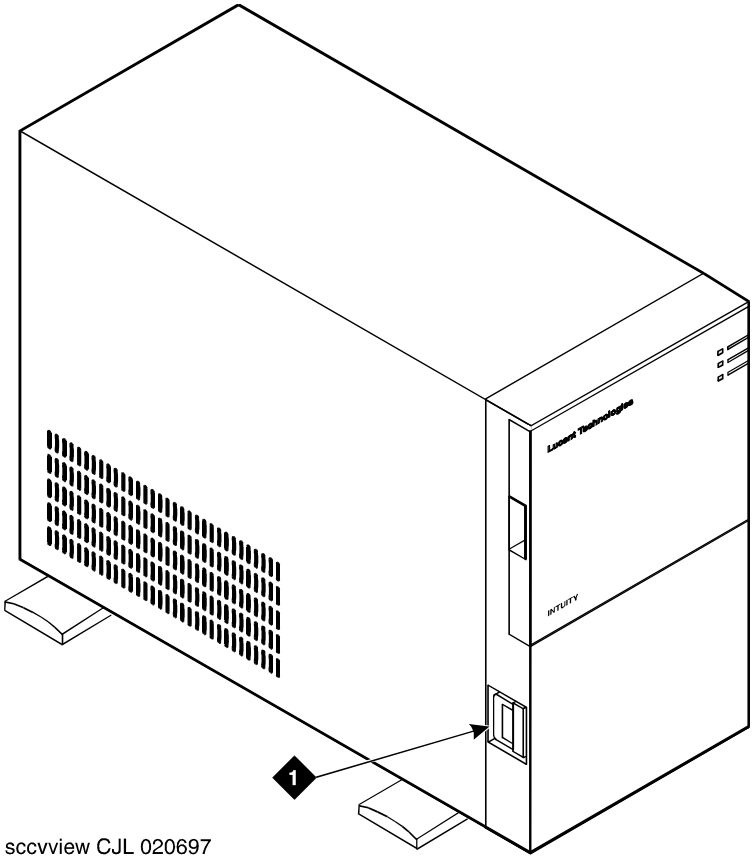
The dress cover provides protection for the internal components of the MAP/5P. You must remove the dress cover to access these components.

DANGER:
Shut power off before removing the dress cover. See Removing Power from the MAP/5P for this procedure.

To remove the dress cover, do the following:

1. Place the dress cover lock (Figure 4-5) in the open position.

   NOTE:
   Figure 4-5 shows the dress cover lock in the locked position.
2. Simultaneously compress the dress cover latches on either side of the MAP/5P (Figure 4-6).
3. Slide the dress cover away from the MAP/5P.



1. Dress cover latch

Figure 4-6. Removing the Dress Cover

Replacing the Dress Cover

To replace the dress cover, do the following:

1. Align the dress cover with the MAP/5P chassis.
2. Slide the dress cover back until it locks into place.
3. Close the dress cover lock on the back of the MAP/5P chassis.

Restoring Power to the MAP/5P

To restore power to the MAP/5P, do the following:

1. Plug the MAP/5P power cord into the designated power outlet.
2. Fasten the power cord to the MAP/5P dress cover lock using a cable tie.

   NOTE:
   Leave some slack in the power cord between the dress cover lock and the back of the MAP/5P.

3. Turn on the power switch for the monitor.

   Verify that the green or amber lamp on the front bottom of the monitor lights up.

4. Press the power switch on the front of the MAP/5P.

   Verify that the green lamp on the front of the unit lights up.

Replacing or Installing Circuit Cards

5

Overview

This chapter describes:

- Configuring circuit cards in the MAP/5P
- Types of circuit cards
- General steps for circuit card installation
- Specific procedures for installation of standard and optional MAP/5P circuit cards
- Settings for resource options

Purpose

The purpose of this chapter is to ensure that:

- Circuit cards are installed correctly.
- Resource options are set correctly.

General Procedures

The general procedures include:

- Removing a Circuit Card
- Installing a Circuit Card

Removing a Circuit Card

CAUTION:
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

To remove a circuit card, you must:

- Remove the Avaya Interchange system from service.
- Access the circuit card.
- Extract the circuit card.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing the Circuit Card

To access the circuit card, remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Extracting the Circuit Card

To extract the circuit card, do the following:

1. Locate the circuit card to be replaced within the card cage.
2. Disconnect any attached cables.

   NOTE:
   Pay close attention to the connectivity of each cable to make it easier to connect them to the replacement circuit card.

3. If there are cables attached to other circuit cards that could impede the removal of the circuit card, disconnect them and place them to the side.

   NOTE:
   Pay close attention to the connectivity of each cable.

4. Remove the retaining screw from the circuit card faceplate and save it.
5. Remove the circuit card from the backplane slot by gently pulling on each corner of the circuit card.

   NOTE:
   Note the slot assignment because you must install the replacement circuit card in the same backplane slot. See Component Assignments in Appendix A, System Configuration, for circuit card slot assignments.

6. Remove the circuit card from the MAP/5P.

   CAUTION:
   Hold the circuit card carefully by the edges and place it on a grounded mat. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer, for detailed electrostatic discharge precautions.

7. If the circuit card being replaced is defective, note all symptoms of failure and include this information with the circuit card when it is returned.

Installing a Circuit Card

CAUTION:
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

To install a circuit card, you must:

- Insert the circuit card.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system to service.

NOTE:
If you are adding an additional circuit card to the Avaya Interchange system, complete the procedures, Removing the Avaya Interchange System from Service and Accessing the Circuit Card.

Inserting the Circuit Card

To insert the circuit card, do the following:

1. Remove the new circuit card from its ESD protective wrapping.

   NOTE:
   Keep the package and all ESD protective wrapping. If you must return a circuit card for repair, use of the replacement unit packaging is necessary to meet the manufacturer's warranty.

2. Verify that the circuit card switch and jumper settings. Ensure address switches and jumpers are set to match the old circuit card.

   NOTE:
   See the specific instructions listed later in this chapter for each type of circuit card being installed. Then continue with Step 3.

3. Holding the circuit card by its upper corners, slide the circuit card into the backplane connector slot position from which you removed the damaged circuit card. If necessary, see Appendix A, System Configuration, to determine the correct slot in which to place the circuit card.
4. Apply even pressure to both corners of the circuit card until it is locked into the backplane.
5. Secure the circuit card faceplate into position by replacing the retaining screw.
6. Replace all cables on the new circuit card. Make sure these cables are attached to their proper terminations.
7. Replace all cables removed from other circuit cards. Make sure these cables are attached to their proper terminations.

Reassembling the MAP/5P

To reassemble the MAP/5P, replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Restoring the Avaya Interchange System to Service

To restore the Avaya Interchange system to service, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify the installation of the circuit card by performing Step a and Step b.

   NOTE:
   This procedure verifies only the installation of Tip/Ring and ACCX circuit cards.

   a. Start at the Avaya Interchange Main Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > System Verification
        > View Installed Hardware
```

   The system displays the View Installed Hardware window (Figure 5-1).

```
                    View Installed Hardware
Installed hardware of asp


 CARD 1 STATE: Manoos CLASS: Signal_Processor(SSP) O.S.INDEX: 8
   NAME: AYC43  OPTIONS: slave,tdm1
   FUNCTION: play+code

Installed hardware of mtce

MAP/5P chassis configured as a Model 5 with:
 o 63 megabytes of memory installed
 o -2032 megabyte hard drive installed at SCSI id 0
```

Figure 5-1. View Installed Hardware Window

   b. Verify that the system has identified the new circuit card. Press the Down ▼ arrow key to view the complete list of installed hardware.

Circuit Card Settings

The following sections list the specific jumper and switch settings for optional circuit cards.

⚠ CAUTION:
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

This section provides the following information on the optional feature circuit cards:

- Switch and jumper settings
- Other installation requirements that are specific to the particular circuit card you are installing

In general, circuit cards are not preset at the factory. You must set the switches and jumpers (resource options) *before* you install the circuit cards. When you set the switches according to the instructions in this book, remember that OFF is equivalent to open and ON is equivalent to closed.

ACCX (AYC22) Circuit Card

The Avaya Interchange system supports up to eight networking channels on the MAP/5P by means of digital and analog remote connections using DCP and RS-232 links respectively from the ACCX circuit card (Figure 5-2). An ACCX circuit card terminates four data channels in one of the following combinations:

- Two DCP lines, each providing two I-channels for data. Depending on the version of the switch you are connecting to, you might be able to use only one of the two I-channels of each DCP circuit as shown in the following list:
  - — System 75 R1V3, DEFINITY® G1 R1V4, and DEFINITY G3i, G3s, or G3vs Version 1 support only one I-channel.
  - — DEFINITY G3i, G3s, and G3vs Version 2 can use both I-channels. The option must be purchased, installed, and administered on the switch before system administration is performed.
- Four RS-232 ports.
- One DCP line (two I-channels) and two RS-232 ports.

You can install a maximum of one ACCX circuit card in the MAP/5P.

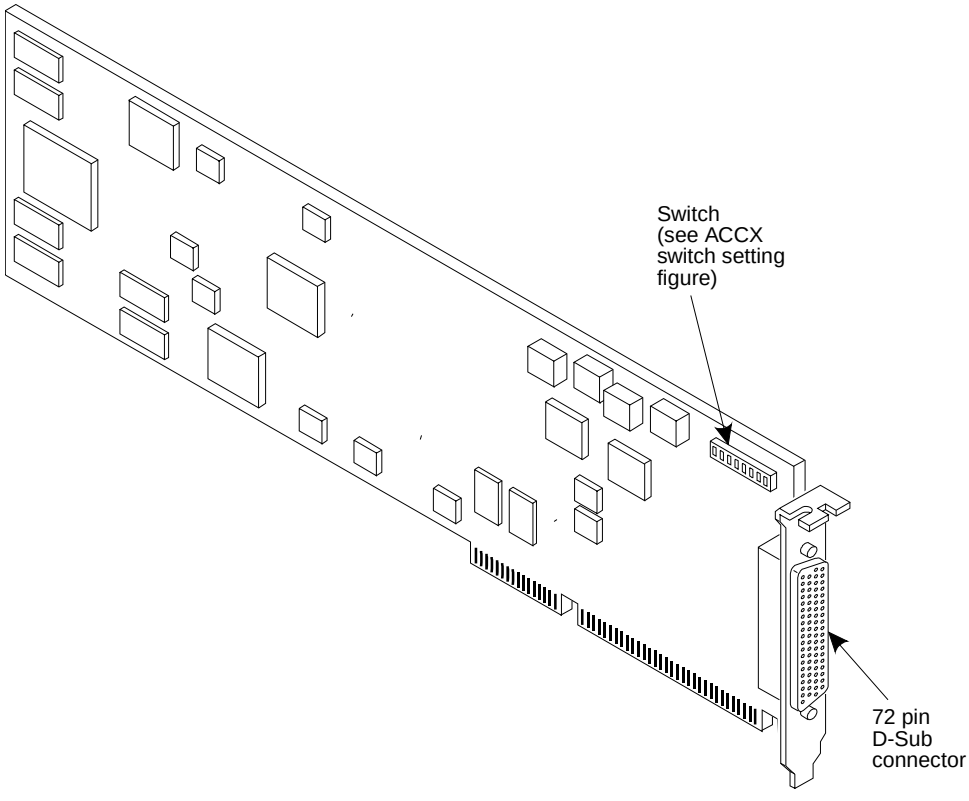


Figure 5-2. ACCX Networking Circuit Card

The ACCX circuit card includes eight dip switches. These switches represent address signals SA4 through SA11 on the ISA Bus and are used to set the address of the circuit card (Figure 5-3).

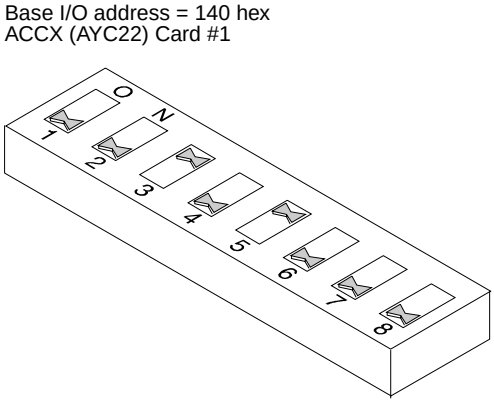


Figure 5-3. Switch Settings for the MAP/5P ACCX Circuit Card

See General Procedures for the ACCX circuit card installation procedure.

Ethernet LAN Circuit Card

The Ethernet LAN circuit card (Figure 5-4) allows you to connect the Avaya Interchange system to your local area network. Only one LAN circuit card can be installed in the MAP/5P.

CAUTION:
Do NOT cable the LAN circuit card until after the system has ben powered up and TCP/IP administration has been completed. This ensures that the customer's LAN is not disrupted. See Chapter 6, Initial Administration and Test for TCP/IP LAN Connectivity, in Avaya Interchange Release 5.4 MAP/5P System Installation for more information on cabling and TCP/IP administration.

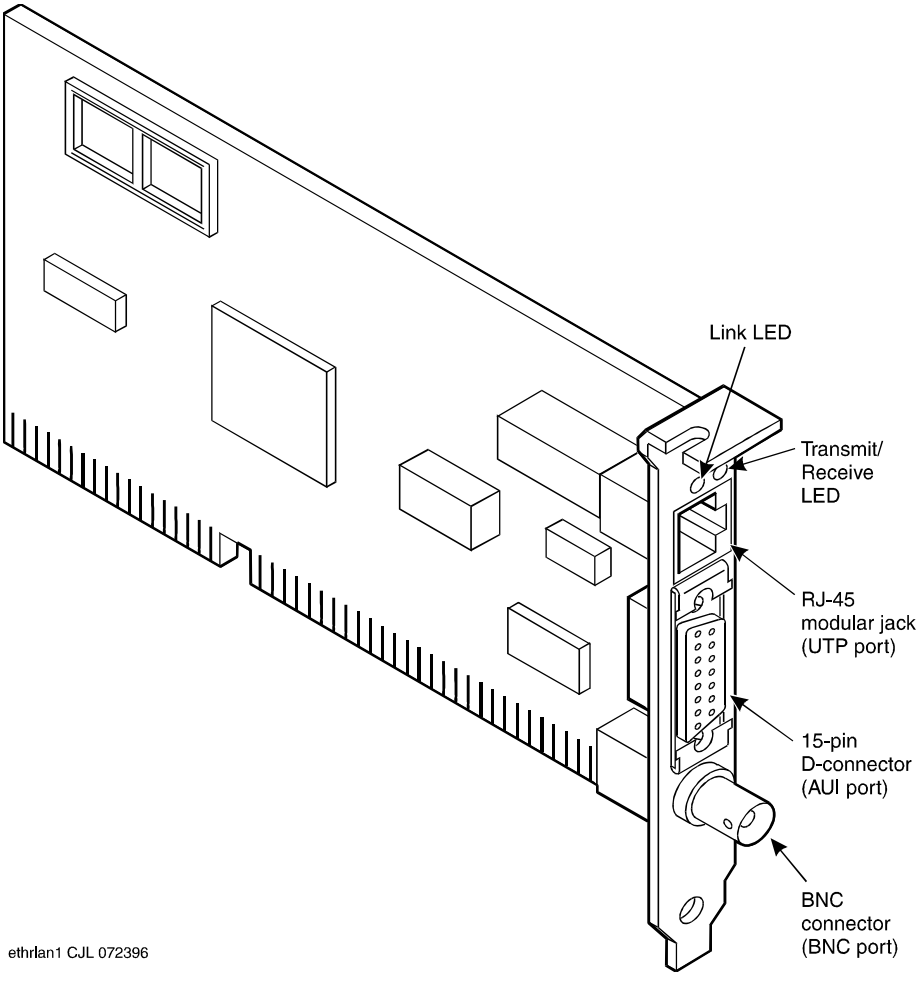


Figure 5-4. Ethernet LAN Circuit Card

The Ethernet LAN circuit card is software configured. The default software configuration is as follows:

- IRQ - 10
- I/O base address - 280
- RAM base address - D8000

See General Procedures for the Ethernet LAN circuit card installation procedure.

Installing the LAN Circuit Card

Installation of the Ethernet LAN circuit card must be done in the following sequence of operation:

1. Install the Ethernet LAN circuit card in the MAP/5P. See Component Assignments in Appendix A, System Configuration, for the correct slot.
2. Restore power to the system. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
3. Administer the TCP/IP. See Chapter 6, Initial Administration and Test for TCP/IP LAN Connectivity, in *Avaya Interchange Release 5.4 MAP/5P System Installation* for more information on TCP/IP administration.
4. Shut down the system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
5. Cable the Ethernet LAN circuit card. See Appendix D, Cable Connectivity, in *Avaya Interchange Release 5.4 MAP/5P System Installation* for more information on TCP/IP administration.
6. Reboot the system. See Rebooting the System in Chapter 3, Common System Procedures, for this procedure.

Configuring the LAN Circuit Card

To configure the LAN circuit card, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select

```
> Networking Administration
    > TCP/IP Administration
```

   The system displays the TCP/IP Administration window (Figure 5-5).

```
            TCP/IP Administration

          UNIX Machine Name: cbdoc2

                 IP Address: 135.7.13.112

                Subnet Mask: 255.255.0.0

Default Gateway IP Address:
```

Figure 5-5. TCP/IP Administration Window

2. Press F8 (Change Keys).
3. Press F2 (Board Configuration).

   The system displays the Ethernet Board Configuration window (Figure 5-6).

```
            Ethernet Board Configuration

Network Interface Type: AUI or 10BASE-T
```

Figure 5-6. Ethernet Board Configuration Window

4. Press F3 (Save).

   The system displays the Ethernet Board Configuration Results window (Figure 5-7).

```
                    Ethernet Board Configuration Results
SMC LAN Adapter Setup Program -- Version 1.21


Board Type:     8216C
Node Address:   0000C09ABDB1

                      Old                New soft
                      Setup              Setup

I/O Base Address      280                280
IRQ                   10                 10
RAM Size              16 K               16 K
WIN Size              16 K               16 K
RAM Base Address      0D8000             0D8000
Add Wait States       Yes                Yes
Network Connection    AutoDetect         AUI or 10BaseT
Link Integrity        Enabled            Enabled

ROM Size              Disabled           Disabled
```

Figure 5-7. Ethernet Board Configuration Results Window

5. Make sure the values displayed are the same as those shown in Table 5-1.

Table 5-1. Ethernet LAN Circuit Card Configuration

Parameter	Setting
I/O Base Address	280
IRQ	10
RAM Size	8 K
RAM Base Address	0D8000
Add Wait States	Yes
Network Connection	TwPr - No Link
Link Integrity	Disabled
ROM Size	Disabled
ROM Base Address	Disabled
Pnpboot	Disabled

6. If the parameters are not the same as those shown in Table 5-1, contact your remote maintenance service center.

Tip/Ring Circuit Cards

Tip/Ring circuit cards provide the channels that are used by the Avaya Interchange system. There are six channel on each Tip/Ring circuit card. The MAP/5P accommodates three Tip/Ring circuit cards.

The Avaya Interchange system supports three types of Tip/Ring circuit cards.

- AYC10 (IVC6) Tip/Ring circuit card
- AYC29 (IVC6A) Tip/Ring circuit card
- AYC30 (NGTR) Tip/Ring circuit card

AYC10 (IVC6) Tip/Ring Circuit Card

Figure 5-8 show the AYC10 Tip/Ring circuit card.

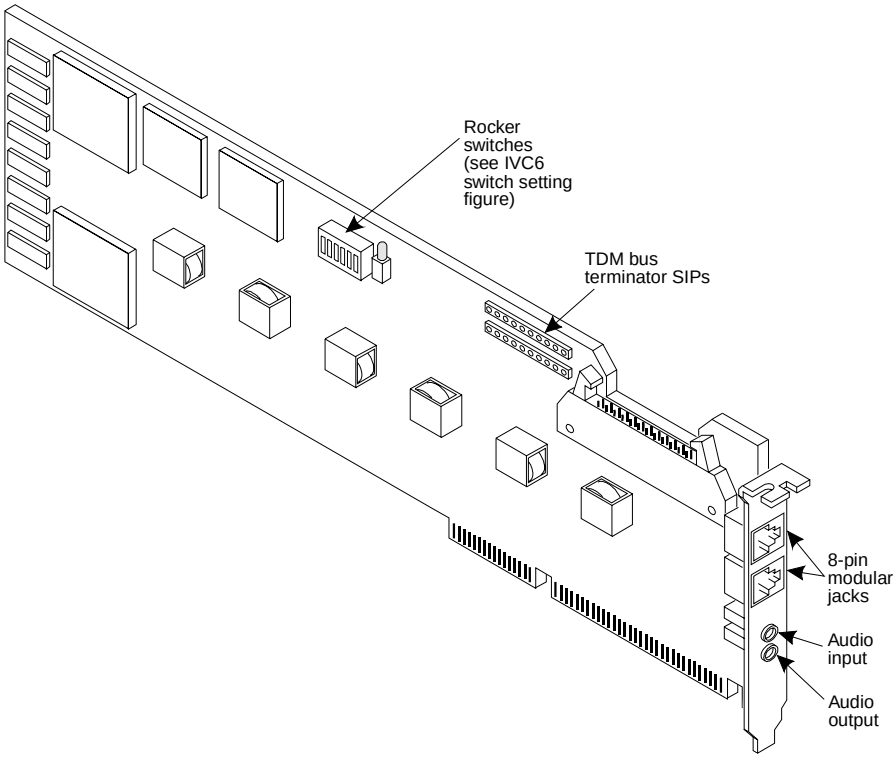


Figure 5-8. AYC10 Tip/Ring Circuit Card

Each of the possible three Tip/Ring circuit cards in the MAP/5P has a unique address. The addresses are set on the circuit card switch bank (Figure 5-9). There are no jumpers to set on the AYC10 Tip/Ring circuit card.

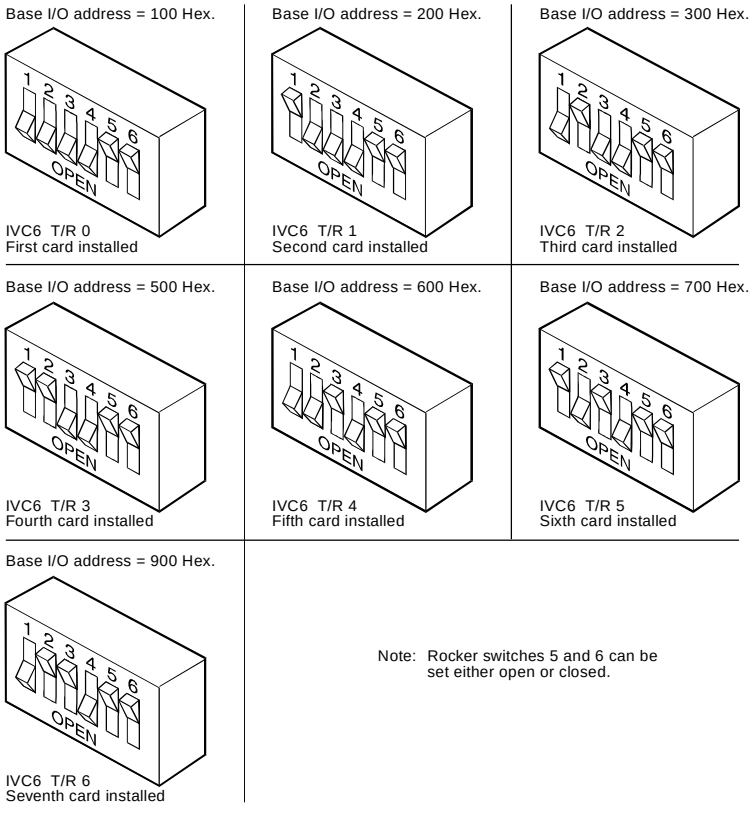


Figure 5-9. AYC10 Tip/Ring Switch Settings

AYC29 (IVC6A) Tip/Ring Circuit Card

The AYC29 Tip/Ring circuit card is the Australian version of the AYC10 Tip/Ring circuit card. See AYC10 (IVC6) Tip/Ring Circuit Card for jumper information.

AYC30 (NGTR) Tip/Ring Circuit Card

Figure 5-10 show the AYC30 Tip/Ring circuit card.

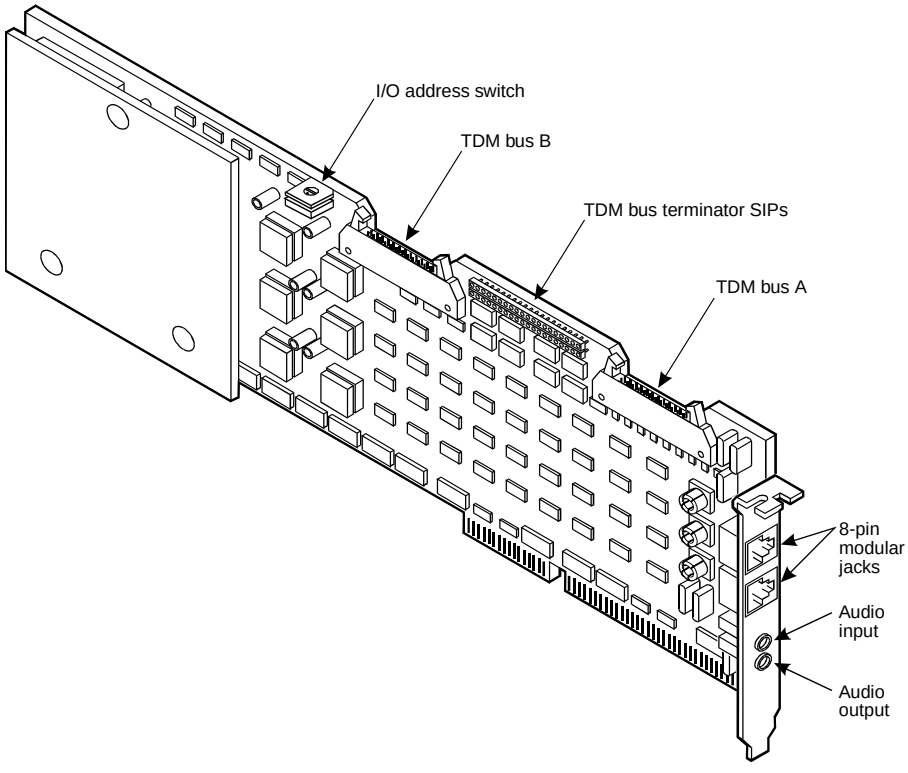


Figure 5-10. AYC30 Tip/Ring Circuit Card

Each of the three AYC30 Tip/Ring circuit cards in the MAP/5P has a unique address. The addresses are set on the circuit card switch bank (Figure 5-11). There are no jumpers to set on the AYC30 Tip/Ring circuit card.

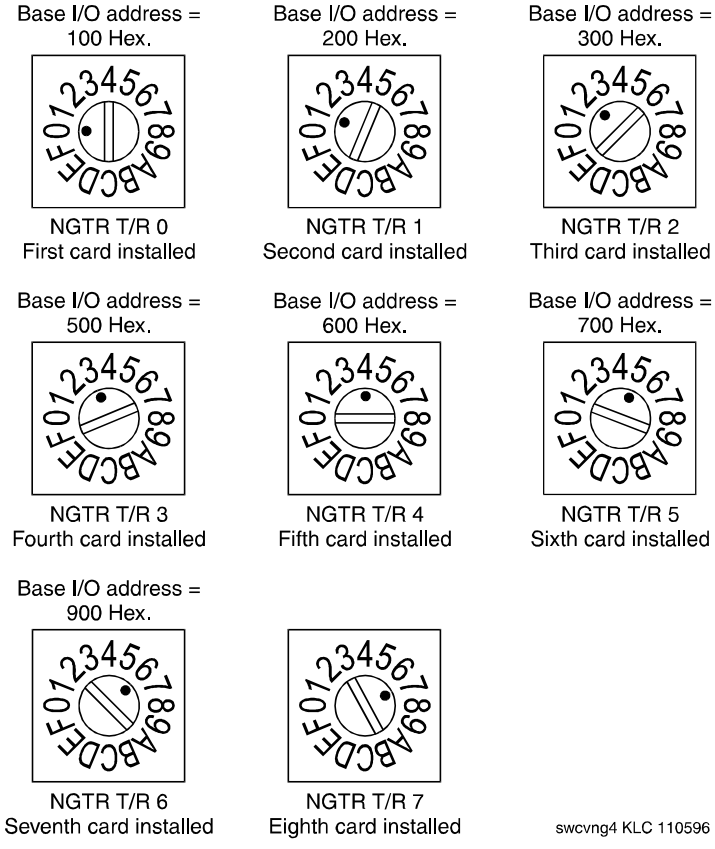
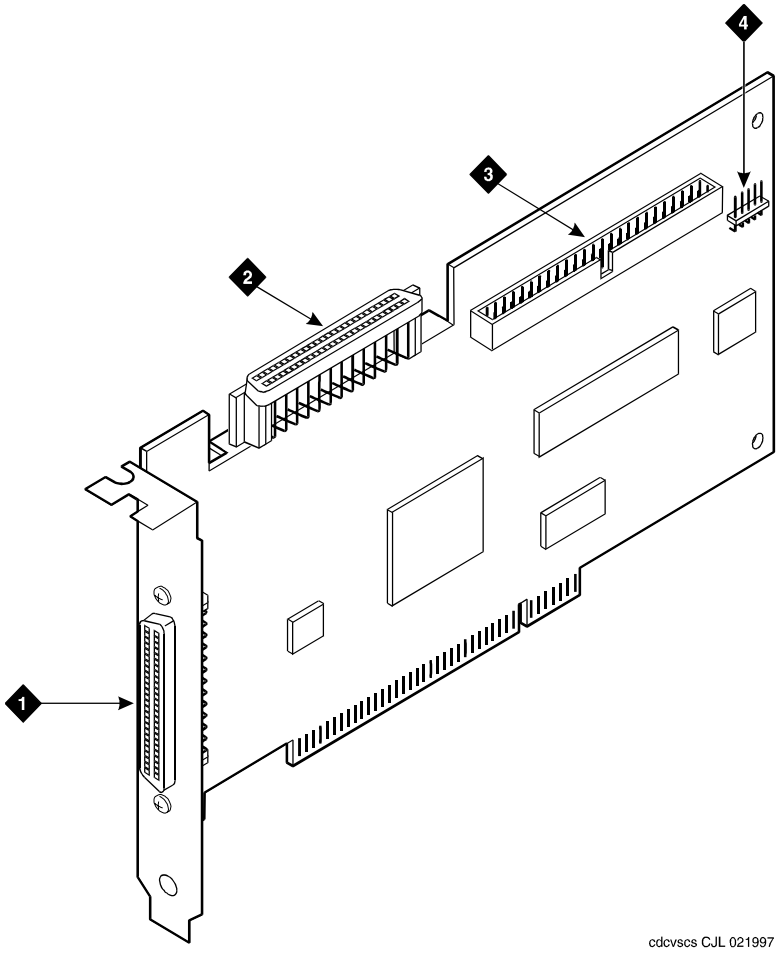


Figure 5-11. AYC30 Tip/Ring Circuit Card Switch Settings

SCSI Controller Circuit Card

The SCSI controller circuit card provides the ability to interface with internal and external SCSI devices. The MAP/5P accommodates one SCSI controller circuit card (Figure 5-12).



1. 68-Pin 16-bit external SCSI connector
2. 68-Pin SCSI cable connector
3. 50-pin cable connector (not used)
4. LED cable connector

Figure 5-12. SCSI Controller Circuit Card

There are no jumpers or switches on the SCSI controller circuit card.

To install the SCSI controller circuit card, do the following:

1. See General Procedures for the SCSI controller circuit card installation procedure.
2. Verify the SCSI Utility settings by completing Step a through Step g:
   a. When prompted during the boot up, press CONTROL - A.

      The system displays the Host Adapter Configuration screen (Figure 5-13).

```
Would you like to configure the Host Adapter, or run the SCSI disk
utilities?  Select the option and press <Enter>.  Press <F5> to switch
between color and monochrome modes.


                         Options
              Configure/View Host Adapter Settings
                        SCSI Disk Utilities
```

Figure 5-13. Host Adapter Configuration Screen

   b. Place the cursor on `Configure/View Host Adapter Settings`. Use the Up ▲ and Down ▼ arrows to move the cursor.
   c. Press ENTER.
   d. Compare the Host Adapter settings with those listed in Table 5-2.

      Use the Up ▲ and Down ▼ arrows to move the cursor between fields. Use the Left ◄ and Right ► arrows to change the value of the field. Use the ESC key to return to the previous menu.

Table 5-2. Host Adapter Settings

Option	Setting
SCSI Bus Interface Definitions	
Host Adapter SCSI ID	7
SCSI Parity Checking	Enabled
Host Adapter SCSI Termination	Automatic
Boot Device Options	
Boot Target ID	0
Boot Lun Number	0
SCSI Device Configuration	
Initiate Sync Negotiation	Yes (Enabled) for all IDs
Maximum Sync Transfer Rate	20 MB/sec for all IDs
Enable Disconnection	Yes (Enabled) for all IDs
Send Start Unit Command	No (Disabled) for all IDs
Initiate Wide Negotiation	Yes (Enabled) for all IDs
Advanced Host Adapter Settings	
Plug and Play SCAM Support	Disabled
Host Adapter BIOS	Enabled
Support Removable Disks Under BIOS as Fixed Disks	Boot only
Extended BIOS Translation for DOS Drives > 1 GB	Enabled
Display <CTRL-A> Message During BIOS Initialization	Enabled
Multiple LUN Support	Disabled
BIOS Support for Bootable CD-ROM	Enabled
BIOS Support for Int 13 Extensions	Enabled
Support for Ultra SCSI Speed	Disabled

e. When you have completed setting the SCSI utility, press ESC.

The system displays the following message:

```
Do you want to save the SCSI Utility changes
    YES                 NO
```

f. Place the cursor on YES.

g. Press ENTER.

Speech and Signal Processor Circuit Card

The SSP circuit card is equipped with 16 MB of memory contained on a dual in-line memory module (DIMM). The DIMM is located in the lower portion of the SSP circuit card. See Figure 5-14. There must be one SSP circuit card installed on the MAP/5P.

CAUTION:
The DIMM is not field serviceable.

There are no jumpers installed on the SSP card.

There are two types of switches on the SSP card:

- Two-position switches, Figure 5-15
- Rotary switch, Figure 5-16

If the SSP card is not located at the end of the TDM bus, set both two-position switches to open. If the SSP circuit card is located at the end of the bus, set the switches to closed.

The rotary switch must be set to zero. See the following procedures:

1. Removing a Circuit Card
2. Installing a Circuit Card

CAUTION:
Use this procedure when adding an SSP circuit card to a system that is not currently equipped with one. Do not use this procedure when replacing a defective circuit card.

To add an SSP circuit card to a Avaya Interchange system:

1. Make sure you have a TDM bus cable. The TDM bus cable connects all of the Tip/Ring circuit cards as well as the SSP circuit card
2. Remove the tip/ring circuit card in Slot 1. See Tip/Ring Circuit Cards.

3. Remove the remaining tip/ring circuit cards. See Tip/Ring Circuit Cards.
4. Remove the TDM us terminator SIPs from the tip/ring circuit cards. See Tip/Ring Circuit Cards.
5. Replace the remaining tip/ring circuit cards. See Tip/Ring Circuit Cards.
6. Verify the two-position selector switches, on the SSP circuit, are set properly. See Tip/Ring Circuit Cards.
7. Determine the proper slot location. See Tip/Ring Circuit Cards.

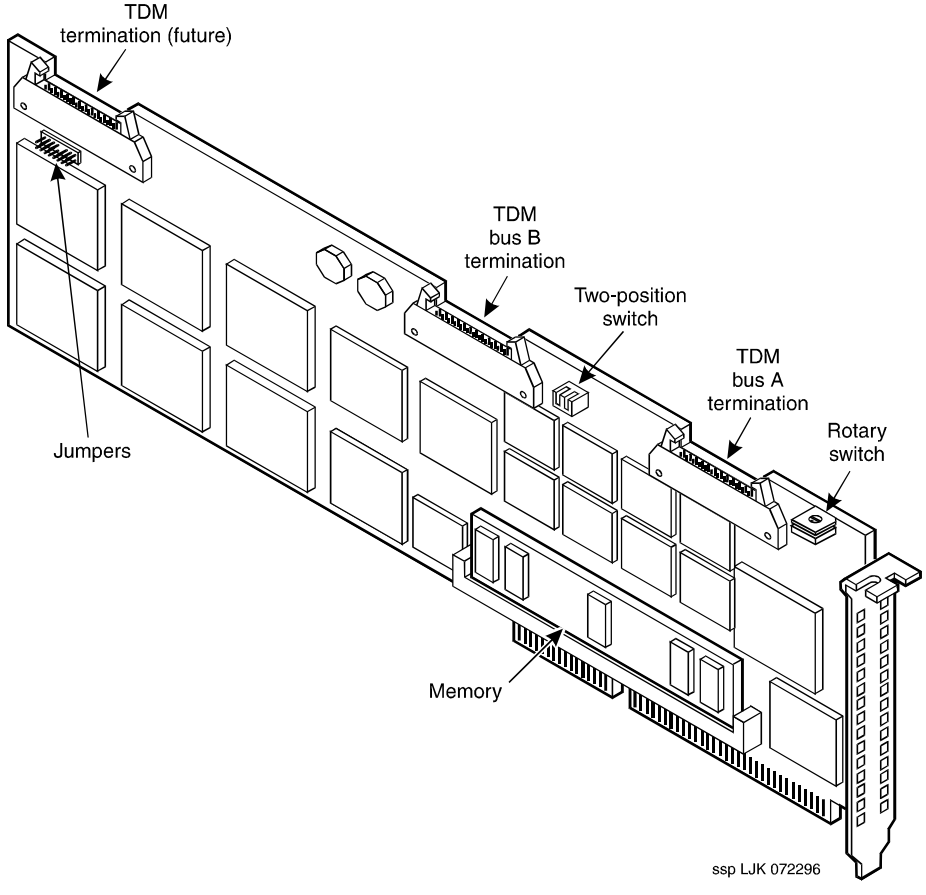
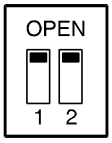
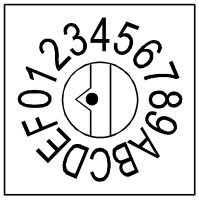


Figure 5-14. AYC43W Speech and Signal Processor Card



ssp-sw LJK 072296

Figure 5-15. SSP Two-Position Switch



sspdial LJK 072296

Figure 5-16. SSP Rotary Switch

Remote Maintenance Circuit Cards

The remote maintenance circuit card provides remote diagnostics of basic MAP/5P components (Figure 5-17). There is one remote maintenance circuit card installed on the system.

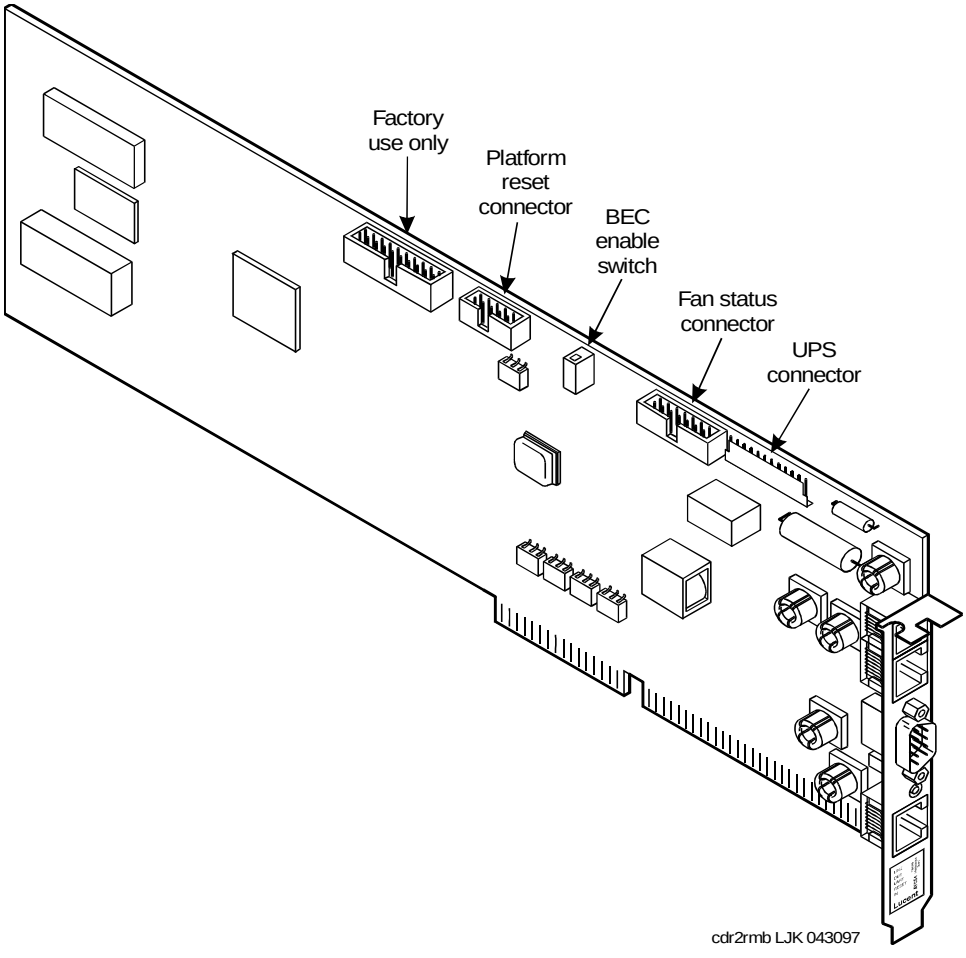


Figure 5-17. Remote Maintenance Circuit Card

Types of Remote Maintenance Circuit Cards

The Avaya Interchange system supports remote maintenance circuit cards:

- With an internal modem (AYC54)
- Without an internal modem (AYC55)

You can determine the type of remote maintenance circuit card installed on your system by viewing the faceplate. Figure 5-18 shows the faceplate of a remote maintenance circuit card with an internal modem (AYC54).

NOTE:
The AYC54 remote maintenance circuit card can be connected to an external modem.

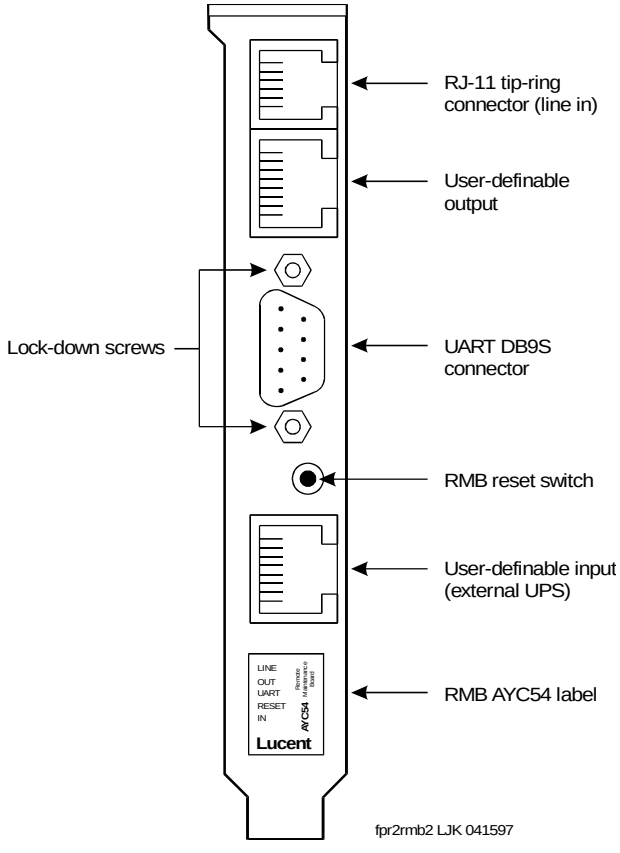


Figure 5-18. AYC54 Remote Maintenance Circuit Card Faceplate

Figure 5-19 shows the faceplate of a remote maintenance circuit card without an internal modem (AYC55).

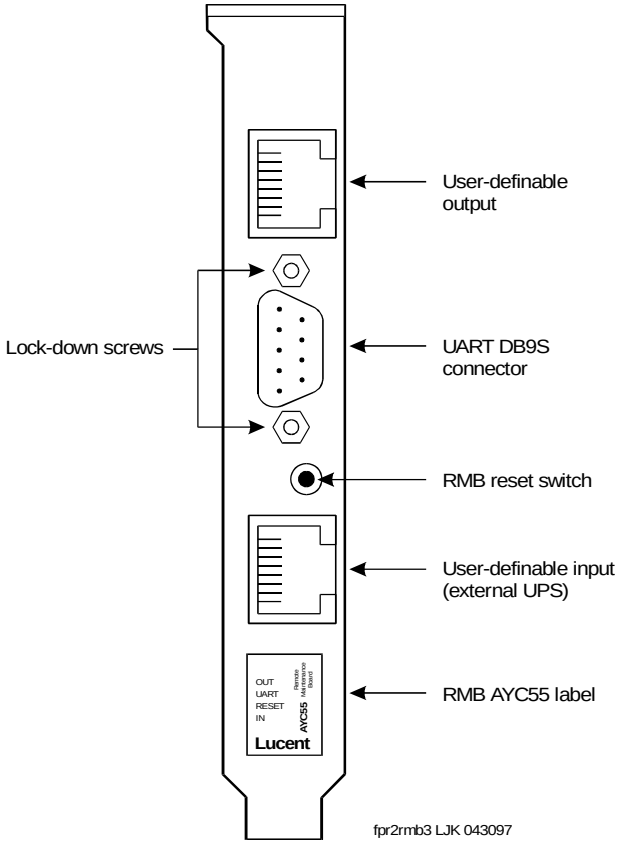


Figure 5-19. AYC55 Remote Maintenance Circuit Card Faceplate

Setting the Resource Options

The remote maintenance circuit card is equipped with a BEC enable switch (Figure 5-17) Ensure that this switch is set to the ON position (Figure 5-20).

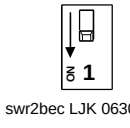


Figure 5-20. BEC Enable Switch

Installing the Remote Maintenance Circuit Card Software Package

To install the remote maintenance circuit card software package, do the following:

1. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
2. Start at the Avaya Interchange Main Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > System Management
        > UNIX Management
            >Software Install
```

The system displays the Software Install menu (Figure 5-21).

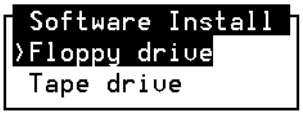


Figure 5-21. Software Install Menu

3. Select `Tape drive`.

   The system displays the following message:

```
Insert a cartridge into Tape Drive 1.
Type [go] when ready,
    or [q] to quit: (default:go)
```

4. Insert the tape labeled RMB Software Set in the tape drive.
5. Press ENTER.

   The system displays the following message:

```
Installation in progress. Do not remote the cartridge
tape.

The following sets are available:
    1    RMBset   Remote Maintenance Board Package
                  (AYC54/55)

Select package(s) you wish to process (or 'all' to
process all packages). (default: all) [?,??,q]
```

6. Press ENTER.

   The system displays the following message:

   ```
   Processing:

   Set: RMB Software Set R2.0 (RMBset) from <ctape1>.

   Intuity RMB Software Set R2.0
   (i486)
   Using </> as the package base directory.

   Please select the country code:

       01 - United States
       02 - International


   Country code [01]:
   ```

7. Enter the appropriate code.

   The system displays the following message:

   ```
   Insert a cartridge into Tape Drive 1.
   Type [go] when ready
       or [q] to quit: (default: go)
   ```

8. Enter **q**.
9. Remove the cartridge tape.
10. Start the voice system. See Starting the Voice System in Chapter 3, Common System Procedures, for this procedure.

Replacing a Defective Remote Maintenance Circuit Card

See General Procedures for procedures on remote maintenance circuit card installation.

1. Complete the procedures listed in Removing a Circuit Card for the defective circuit card.
2. Complete the procedures listed in Inserting the Circuit Card and Reassembling the MAP/5P.

   NOTE:
   Make sure the BEC enable switch on the remote maintenance circuit card is in the ON position (Figure 5-20).

3. Connect the modem line to the remote maintenance circuit card and the switch.
4. Connect the EMI suppression cable to the remote maintenance circuit card and the switch.

5. Complete the procedures listed in Restoring the Avaya Interchange System to Service.
6. Call your remote maintenance center. Inform them that you have replaced the remote maintenance circuit card.

   The remote maintenance center logs in through the remote maintenance circuit card and:

   - Sets the passwords.
   - Verifies the product ID.
   - Verifies the alarm destination.
   - Configures all parameters as specified by the Services Organization.

Replacing a Modem with a Remote Maintenance Circuit Card

See General Procedures for procedures on remote maintenance circuit card installation.

1. If the system is in service, do the following steps.
   a. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
   b. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
2. Remove power from the MAP/5P. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for power removal procedures.
3. Remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for power-removal procedures.
4. Complete the procedures included in Inserting the Circuit Card and Reassembling the MAP/5P.

   NOTE:
   Make sure the BEC enable switch on the remote maintenance circuit card is in the ON position (Figure 5-20).

5. Connect the modem line to the remote maintenance circuit card and the switch.

   CAUTION:
   Step 6 must be completed during the reboot of the system.

6. Disable COM2 by changing the `Serial Ports 16550 Compatible UART 2` to `DISABLED`.

   This setting is located in the CMOS advanced option settings for the CPU. See Verifying the CMOS Settings in Chapter 7, Replacing Other Components, for this procedure.

7. Reboot the Avaya Interchange system. See Rebooting the System in Chapter 3, Common System Procedures, for this procedure.

8. Install the Remote Maintenance Circuit Card Software package. See Installing the Remote Maintenance Circuit Card Software Package for this procedure.

9. Place the BEC enable switch on the remote maintenance circuit card in the ON position (Figure 5-20).

10. Press ENTER.

11. Reboot the Avaya Interchange system. See Rebooting the System in Chapter 3, Common System Procedures, for this procedure.

12. Call the remote maintenance center. Inform them that you have installed the remote maintenance circuit card.

    The remote maintenance center logs in through the remote maintenance circuit card and:

    - Sets the passwords.
    - Verifies the product ID.
    - Verifies the alarm destination.

Replacing a Remote Maintenance Circuit Card with a Modem

To replace a remote maintenance circuit card with a modem, do the following:

1. Call the remote maintenance center. Inform them that you are removing a remote maintenance circuit card and restoring the COM2 Port.

   See Removing a Circuit Card for procedures on remote maintenance circuit card removal.

   The remote maintenance center completes Step a and Step b:

   a. Log in through the remote maintenance circuit card and rested the tsc password.

   b. Log off.

2. Start at the Avaya Interchange Main Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > System Management
        > UNIX Management
            > Software Remove
```

The system displays the Software Remove screen (Figure 5-22).

```
The following packages are available:
  1  APPLset        AUDIX(R) Application Set
                    (AUDIX) 4.0-7
  2  AUDIXset       INTUITY Platform AUDIX Set
                    (i486) unofcl:02/12/96
  3  AUDIXtune      INTUITY Platform AUDIX Tuning
                    (i486) unofcl:02/12/96
  4  INTUNIX        UnixWare 1.1.2 Enhancement Set
                    (486) 1.0
  5  INTUNIX1       UnixWare 1.1.2 Platform Enhancements Extension
                    (486) 1.0
  6  IVC6DI         INTUITY IVC6 Device Interface for softFAX
                    (x86sur4_wicd1) unofcl:02/12/96
  7  TSM            INTUITY Transaction State Machine Package
                    (i486) unofcl:02/12/96
  8  VM             AUDIX(R) Module marker file
                    (AUDIX) NA
  9  VM-dfltdb      AUDIX(R) Default db
                    (AUDIX) 4.0-7
 10  VM-files       AUDIX(R) Files
                    (AUDIX) 4.0-7

... 58 more menu choices to follow;
<RETURN> for more choices, <CTRL-D> to stop display:
```

Figure 5-22. Software Remove Screen

3. Locate and record the numbers for the `RMBset` software package.
4. Press CONTROL D.

   The system displays the following message:

   ```
   Select package(s) you wish to process (or 'all' to
   process all packages). (default: all) [?, ??, q]
   ```

5. Enter the first number you recorded in Step 3.

   The system displays the following message:

```
The following set is currently installed:
<package title>     <package information>

Do you want to remove this set [y, n, q]
```

6. Enter **y**.
7. Repeat Step 5 and Step 6 for all remote maintenance circuit card packages.
8. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
9. Shut down the Avaya Interchange system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
10. Remove the remote maintenance circuit card from the MAP/5P. See Removing a Circuit Card for this procedure.
11. Make sure the COM2 port is correctly connected to the motherboard.
12. Replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for power-removal procedures.
13. Apply power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer for this procedure.
14. Reboot the Avaya Interchange system. See Rebooting the System in Chapter 3, Common System Procedures, for this procedure.
15. Enable COM2 by changing the `Serial Ports 16550 Compatible UART 2` to `02F8, IRQ3`.

    This setting is located in the CMOS advanced option settings for the CPU. See Verifying the CMOS Settings in Chapter 7, Replacing Other Components, for this procedure.
16. Reboot the Avaya Interchange system. See Rebooting the System in Chapter 3, Common System Procedures, for this procedure.
17. Install the modem.
18. Contact the remote maintenance center and inform them that the remote maintenance circuit card has been removed, the COM2 port has been enabled, and the modem has been installed.

    The remote maintenance center then completes the procedure.

    NOTE:
    At this point, verify that the modem has three lit LEDs.

19. Have the remote maintenance center login through the modem and change the **tsc** password back to the original password.

Installing a Remote Maintenance Circuit Card, Version 2

The remote maintenance circuit card provides remote diagnostics of basic components (Figure 5-23). There is one remote maintenance circuit card installed on the system.

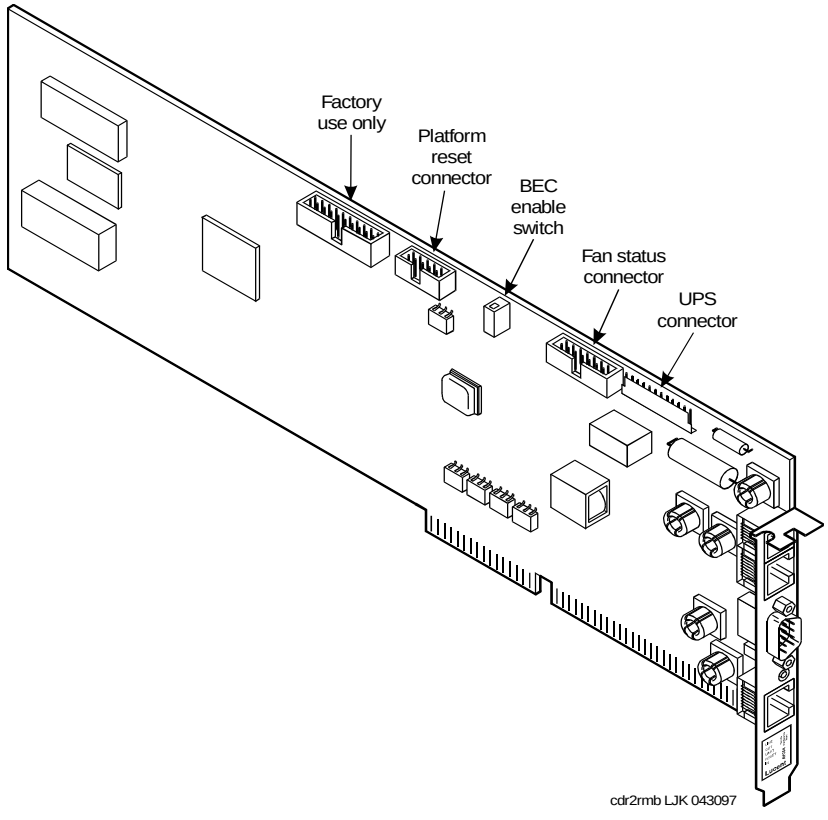


Figure 5-23. Remote Maintenance Circuit Card

Types of Remote Maintenance Circuit Cards

The Avaya Interchange system supports remote maintenance circuit cards:

- With an internal modem (AYC54)
- Without an internal modem (AYC55)

You can determine the type of remote maintenance circuit card installed on your system by examining the faceplate. Figure 5-24 shows the faceplate of a remote maintenance circuit card with an internal modem (AYC54).

NOTE:
The AYC54 remote maintenance circuit card can be connected to an external modem.

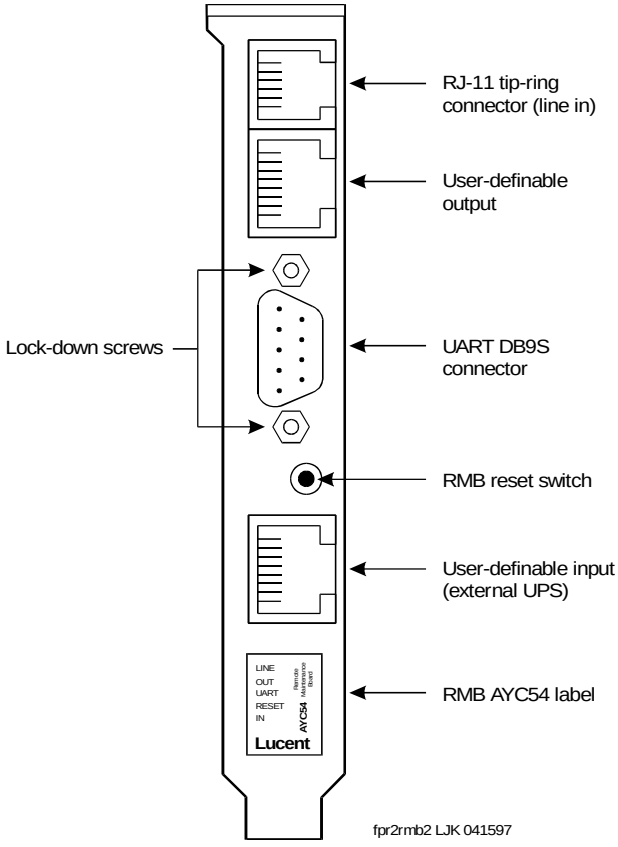


Figure 5-24. AYC54 Remote Maintenance Circuit Card Faceplate

Figure 5-19 shows the faceplate of a remote maintenance circuit card without an internal modem (AYC55).

Setting the Resource Options

The remote maintenance circuit card is equipped with a BEC enable switch (Figure 5-17). Ensure that this switch is set to the ON position (Figure 5-20).

Installing the Remote Maintenance Circuit Card Software Package

To install the remote maintenance circuit card software package, do the following:

1. Stop the voice system.
2. Start at the Avaya Interchange Main Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > System Management
        > UNIX Management
            >Software Install
```

The system displays the Software Install menu (Figure 5-25).

```
 Software Install
>Floppy drive
 Tape drive
```

Figure 5-25. Software Install Menu

3. Select `Tape drive`.

   The system displays the following message:

```
Insert a cartridge into Tape Drive 1.
Type [go] when ready,
    or [q] to quit: (default:go)
```

4. Insert the tape labeled RMB Software Set into the tape drive.
5. Press ENTER.

   The system displays the following message:

```
Installation in progress. Do not remote the cartridge
tape.

The following sets are available:
    1    RMBset   INTUITY RMB V2 set
                  (i486) i.2.2
```

```
Select package(s) you wish to process (or 'all' to
process all packages). (default: all) [?,??,q]
```

6. Press ENTER.

   The system displays the following message:

```
Processing:

Set: RMB Software Set R2.0 (RMBset) from <ctape1>.

Intuity RMB Software Set R2.0
(i486)
Using </> as the package base directory.

Please select the country code:

    01 - United States
    02 - International


Country code [01]:
```

7. Enter the appropriate code.

   The system displays the following message:

```
Insert a cartridge into Tape Drive 1.
Type [go] when ready
    or [q] to quit: (default: go)
```

8. Enter **q**.
9. Remove the cartridge tape.
10. Start the voice system.

Replacing a Defective Remote Maintenance Circuit Card

To replace a defective remote maintenance circuit card, you must:

- Remove the defective remote maintenance circuit card.
- Install the new remote maintenance circuit card.
- Attach external cables to the remote maintenance circuit card.

Removing the Defective Remote Maintenance Circuit Card

To remove the defective remote maintenance circuit card, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.

NOTE:
Note all symptoms of failure and include this information with the remote maintenance circuit card when it is returned.

If the system is in service, do the following:

a. Stop the voice system.

b. Shut down the voice system.

2. Remove power from the computer.
3. Access the circuit card cage.
4. Locate the remote maintenance circuit card.
5. If there are ribbon cables attached to other cards that could impede the removal of the card, disconnect them and place them to the side. Note the connectivity of each cable.
6. Remove the retaining screw from the circuit card faceplate and save it.
7. Remove the circuit card from the backplane slot by gently pulling on each corner of the card.

NOTE:
Make sure to install the replacement remote maintenance circuit card in the same backplane slot.

8. Remove the circuit card from the chassis.

CAUTION:
Hold the circuit card carefully by the edges and place it on a grounded mat.

Installing the New Remote Maintenance Circuit Card

To install the new remote maintenance circuit card, you must:

- Insert the circuit card.
- Attach cables to the circuit card.
- Restore the system.
- Verify the installation.

Inserting the Circuit Card

To insert the new remote maintenance circuit card, do the following:

1. Remove the new circuit card from its ESD protective wrapping.

   NOTE:
   Keep the package and all ESD protective wrapping. If you must return a card for repair, use of the replacement unit packaging is necessary to meet the manufacturer's warranty.

2. Make sure the BEC enable switch on the remote maintenance circuit card is in the ON position (Figure 5-20).
3. Holding the circuit card by its upper corners, slide the card into the backplane connector slot position from which you removed the damaged card.

   Table 5-3 lists the correct slot for each platform.

Table 5-3. Remote Maintenance Circuit Card Slot Locations

Platform	Correct Slot
MAP/5P	ISA Slot 2
MAP/40	Slot 9
MAP/40P	ISA Slot 9
MAP/100	Slot 19

4. Apply even pressure to both corners of the circuit card until it is locked into the backplane.
5. Secure the circuit card faceplate into position by replacing the retaining screw.

Attaching Cables to the Circuit Card

The type and number of cables depend upon the platform. See Figure 5-26 to distinguish among the cables that might be present in each of the platforms. The following list details cabling requirements:

- MAP/5P — MAP/5P reset cable
- MAP/40 — 486 reset cable
- MAP/40P — keyboard cable
- MAP/100 — fan-status cable and 486 reset cable
  (If the MAP/100 has an internal UPS, connect the UPS cable.)

WARNING:

If the UPS cable is connected to a MAP/100 with dual/redundant power supplies, then damage to the RMB results when power is supplied to the platform.

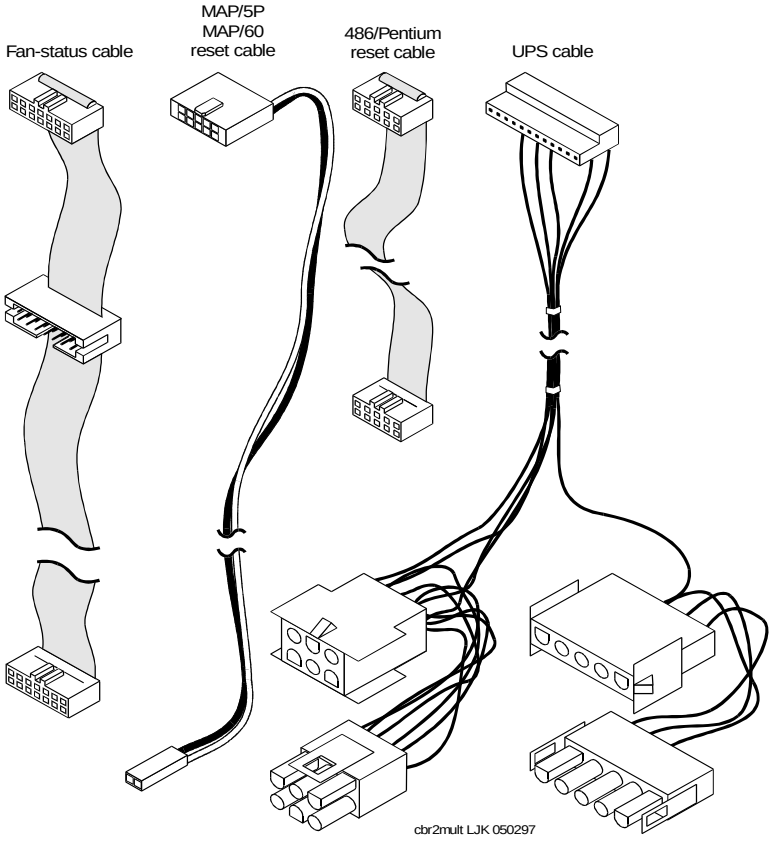


Figure 5-26. RMB Cables

The cable code (printed on the cable) is as follows:

- ED5P 208-30 G 32 — fan status cable
- ED5P 208-30 GR 31 — reset cable

Figure 5-27 and Figure 5-28 show the cable connectors on the remote maintenance circuit card.

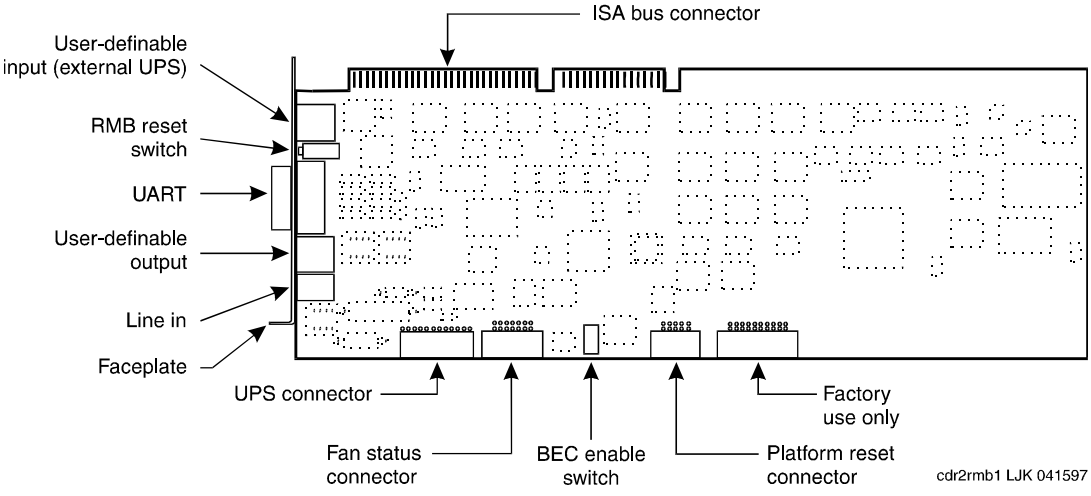


Figure 5-27. RMB Connectors (top view)

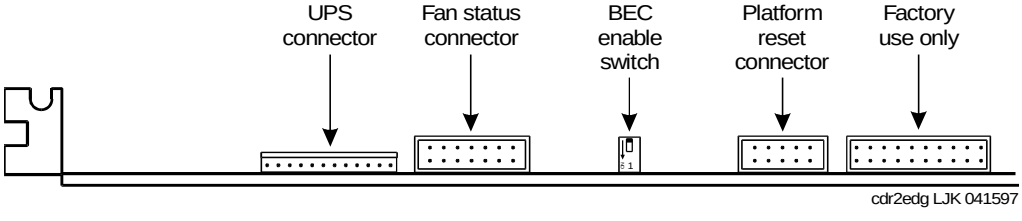
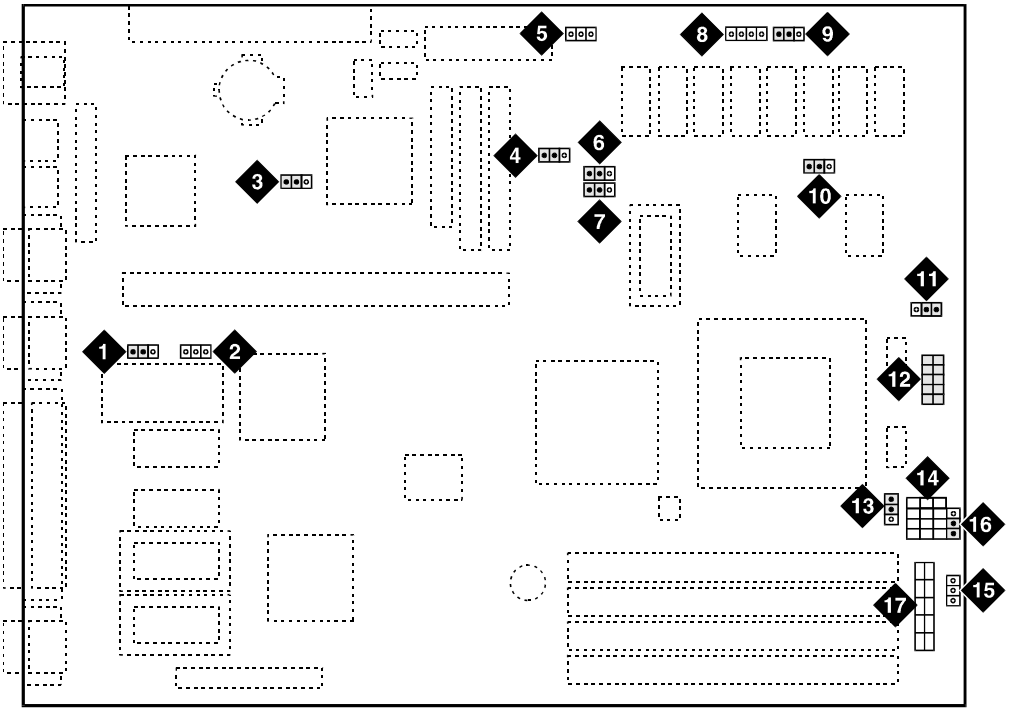


Figure 5-28. RMB Connectors (side view)

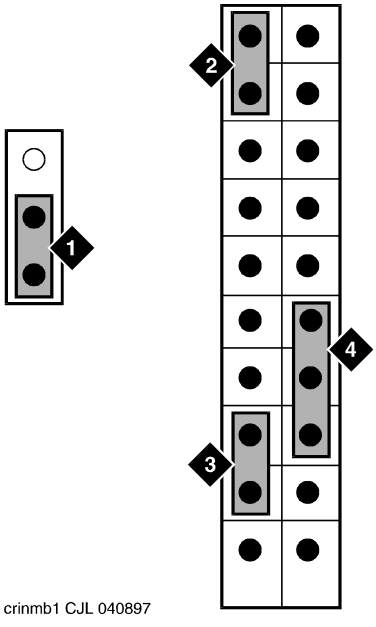
You can dress the cables above or below the RMB. Use your judgement to determine the best way to connect the cables to the board with the least amount of strain on the cables.

MAP/5P Cable Connections. The remote maintenance circuit card connects to CN30, which is located on the motherboard. Figure 5-29 shows the location of CN30. Figure 5-30 shows the cable connection to CN30.



1. JP5 — flash BIOS function
2. JP6 — BIOS ROM type
3. JP1 — BIOS type
4. JP2 — LED function
5. JP15 — standby power connector
6. JP4 — second-level cache
7. JP3 — second-level cache
8. JP30 — external battery connector
9. JP16 — software shutdown
10. JP42 — L2 cache mode
11. JP43 — CPU voltage for I/O
12. JP7 — regulator
13. JP44 — CPU voltage for core
14. JP11 — SMM/reset switch
15. JP14 — power-on switch connector
16. CN30
17. CN19

Figure 5-29. Motherboard Jumper Locations



1. RMB reset cable connector (pins 1 and 2 of CN30)
2. Reset switch connector (pins 19 and 20 of CN19)
3. Turbo LED connector (pins 12 and 13 of CN19)
4. Power LED connector (pins 3, 4, and 5 of CN19)

Figure 5-30. Motherboard Cable Connections

Restoring the System

To restore the system, do the following:

1. Replace all cables removed from other cards.
2. Make sure these cables are attached to their proper terminations.
3. Close the computer.
4. Reboot the voice system.

Verifying the Installation

To verify the installation of the circuit card, do the following:

1. Start at the Avaya Interchange Main Menu (Figure 2-1) and select

```
> Customer/Services Administration
    > System Verification
        > View Installed Hardware
```

The system displays the View Installed Hardware window (Figure 5-31).

```
                    View Installed Hardware
Installed Hardware of mtce

2047 megabyte Hard Drive Installed at SCSI id 0
47 megabytes of memory installed.

Installed Hardware of netw

 Networking Board        Equipped        Version Number
        1                   no                N/A
        2                   no                N/A
        3                   no                N/A
```

Figure 5-31. View Installed Hardware Window

2. Verify that the system has identified the new circuit card.

Attaching External Cables to the Remote Maintenance Circuit Card

To connect the remote maintenance circuit card, do the following:

1. Connect the modem line to the remote maintenance circuit card and the switch.
2. Connect the external UPS line to the modem.
3. Connect the EMI suppression cable to the remote maintenance circuit card and the switch.
4. Restore the system to service.

5. Call the remote maintenance center. Inform them that you have installed the remote maintenance circuit card.

   The remote maintenance center then logs in through the remote maintenance circuit card:

   - Sets the passwords
   - Verifies the product ID
   - Verifies the alarm destination
   - Configures all parameters as specified by the Services Organization

Replacing the Hard Disk Drive

6

Overview

This chapter describes:

- Identifying a failed hard disk drive
- Software procedures for preparing the system for a new hard disk drive
- Hardware procedures for replacing a hard disk drive
- Software procedures for initializing a hard disk drive

Purpose

The purpose of this chapter is to ensure that hard disk drives are installed in the proper manner.

Identifying a Failed Hard Disk Drive

Before a hard disk drive can be replaced, you must identify which drive has failed. This section details how to identify a failed hard disk drive in Avaya Interchange systems with two hard disk drives.

Recovering from a Hard Disk Drive 0 Failure

See the procedures in Chapter 4, New Installation and System Recovery Procedures, in *Avaya Interchange Release 5.4 Installation and System Recovery* for information on how to recover from this type of hard disk drive failure.

Recovering from a Hard Disk Drive 1 Failure

See the procedures in Chapter 4, New Installation and System Recovery Procedures, in *Avaya Interchange Release 5.4 Installation and System Recovery* for information on how to recover from this type of hard disk drive failure.

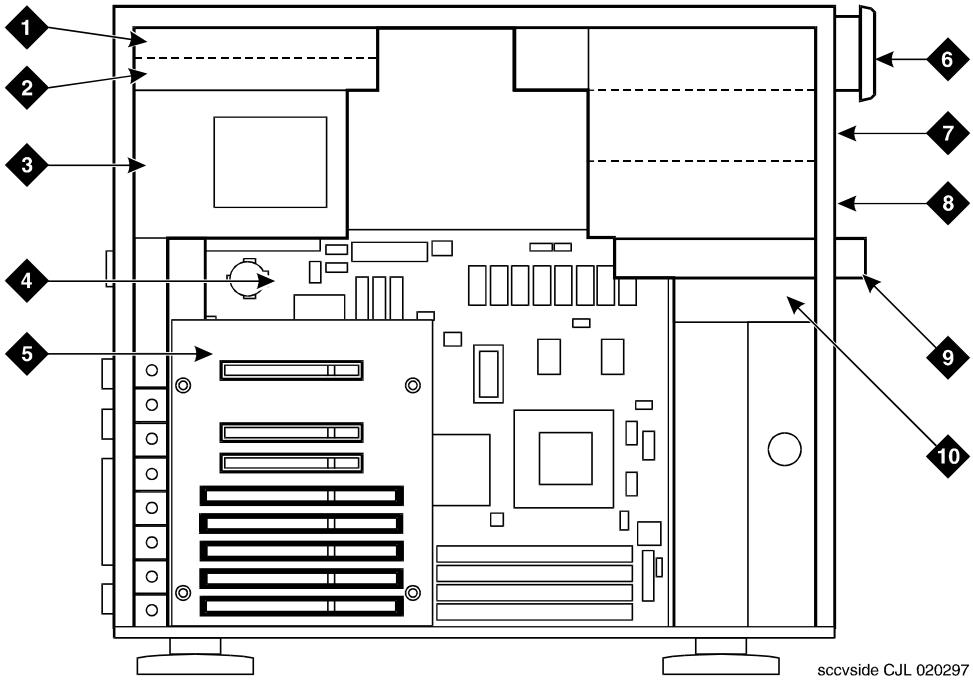
Installing an Avaya Interchange System with Two New Hard Disk Drives

To install an Avaya Interchange system with two new hard disk drives, do the following:

1. Install the hard disk drives. See Hard Disk Drive 0 Installation and Hard Disk Drive 1 Installation for this procedure.
2. Complete the procedures in Chapter 4, New Installation and System Recovery Procedures, in *Avaya Interchange Release 5.4 Installation and System Recovery*.

Replacing a Hard Disk Drive

The MAP/5P can contain two hard disk drives. The first hard disk drive, SCSI ID 0, is located in Bay 6 (Figure 6-1). The second hard disk drive, if provided, is located in Bay 5 (Figure 6-1).



1. Bay 6 — Hard Disk Drive 0
2. Bay 7 — Empty
3. Power supply
4. Motherboard
5. Riser card
6. Bay 1 — Cartridge tape drive
7. Bay 2 — Empty
8. Bay 3 — Empty
9. Bay 4 — Diskette drive
10. Bay 5 — Hard Disk Drive 1 (if used)

Figure 6-1. Internal View of the MAP/5P

Replacing Hard Disk Drive 0

CAUTION:

Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

Hard Disk Drive 0 Removal

To remove Hard Disk Drive 0, you must:

- Remove the Avaya Interchange system from service.
- Access the hard disk drive.
- Extract the hard disk drive.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following.

NOTE:
This procedure is not necessary if Hard Disk Drive 0 has failed on a single-disk system.

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing Hard Disk Drive 0

To access Hard Disk Drive 0, remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Extracting Hard Disk Drive 0

To extract Hard Disk Drive 0, do the following:

1. Remove the SCSI cable from the back of the hard disk drive.
2. Remove the power cord from the back of the hard disk drive.
3. Locate the screws holding Hard Disk Drive 0 to the peripheral bay frame.

   NOTE:
   Pay close attention to the location of the screws in both the peripheral frame and the hard disk drive.

4. Holding the rear of the hard disk drive, remove these screws.
5. Place the hard disk drive assembly, with the printed circuit board facing up, on an ESD-protected surface.
6. Continue with the next procedure, Hard Disk Drive 0 Installation.

Hard Disk Drive 0 Installation

To install Hard Disk Drive 0, you do the following:

- Set the jumper settings.
- Insert the hard disk drive.

Setting the Hard Disk Drive 0 Jumper Settings

The Avaya Interchange system supports the following two types of hard disk drives:

- Seagate (Figure 6-2)
- Capricorn

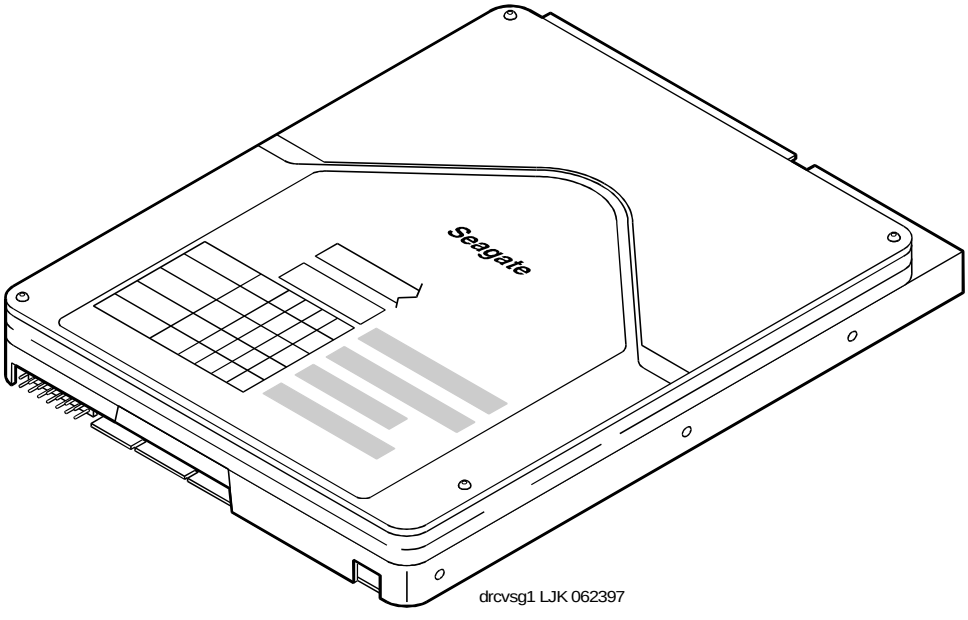


Figure 6-2. Seagate Hard Disk Drive

Figure 6-3 shows the correct jumper settings for the Seagate hard disk drive SCSI ID 0.

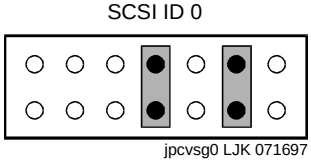


Figure 6-3. Hard Disk Drive 0 Jumper Settings — Seagate

Figure 6-4 shows the correct jumper settings for the Capricorn hard disk drive SCSI ID 0.

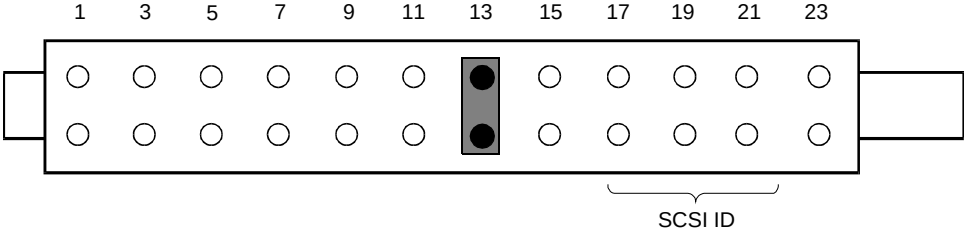


Figure 6-4. Hard Disk Drive 0 Jumper Settings — Capricorn

Inserting Hard Disk Drive 0

To insert the hard disk drive, do the following:

1. Remove the new hard disk drive from its ESD-protective wrapping.

   NOTE:
   Keep the package and all ESD-protective wrapping to return the defective unit. You must use the original replacement unit packaging to meet the manufacturer's warranty.

2. Align Hard Disk Drive 0, with the component side down, with the correct holes in Bay 6.

   NOTE:
   Pay close attention to the location of the screws in both the peripheral bay and the hard disk drive.

3. Attach the hard disk drive to the peripheral bay using the four screws removed in Step 4 of Extracting Hard Disk Drive 0.
4. Attach the power cable to the hard disk drive.
5. Attach the SCSI cable to the hard disk drive.

Replacing Hard Disk Drive 1

CAUTION:

Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

Hard Disk Drive 1 Removal

To remove Hard Disk Drive 1, you must:

- Remove the Avaya Interchange system from service.
- Access the hard disk drive.
- Extract the hard disk drive.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing Hard Disk Drive 1

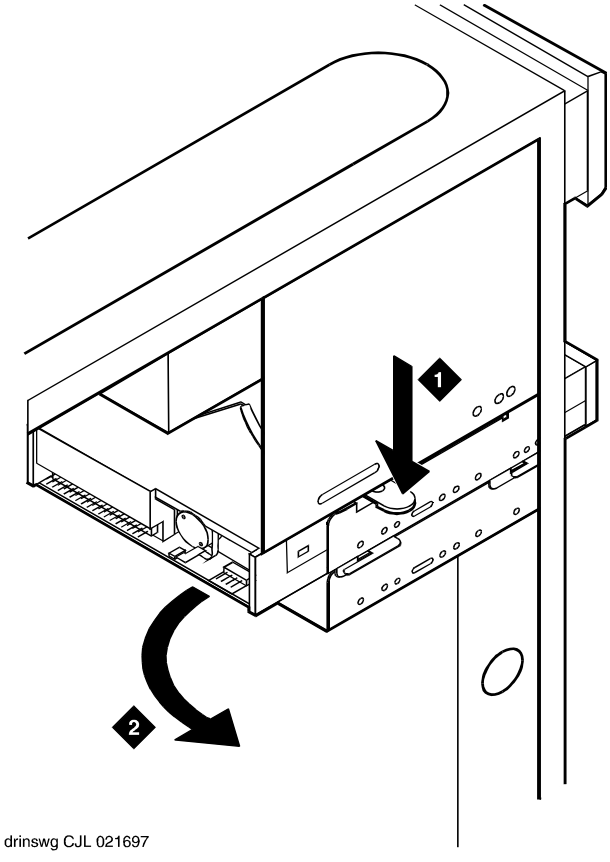
To access Hard Disk Drive 1, remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Extracting Hard Disk Drive 1

To extract Hard Disk Drive 1, do the following:

1. Remove the SCSI cable from the back of the hard disk drive.
2. Remove the power cord from the back of the hard disk drive.

3. Press down on the thumb tab that locks the peripheral frame in place (Figure 6-5).



1. Press down on thumb tab.
2. Rotate frame out of chassis.

Figure 6-5. Removing the Peripheral Frame

4. Pull the peripheral frame toward you (Figure 6-5).

   The frame rotates toward the front of the MAP/5P until the bracing lip is cleared. At this point, you can pull the frame out of the MAP/5P.

5. Locate the screws holding Hard Disk Drive 1 to the peripheral frame.

NOTE:
Pay close attention to the location of the screws in both the peripheral frame and the hard disk drive.

6. Holding the rear of the hard disk drive, remove these screws.
7. Remove Hard Disk Drive 1 from the peripheral frame.
8. Place the hard disk drive assembly, with the printed circuit board facing up, on an ESD-protected surface.
9. Continue with the next procedure, Hard Disk Drive 1 Installation.

Hard Disk Drive 1 Installation

To install Hard Disk Drive 1, you must:

- Set the jumper settings.
- Insert the hard disk drive.

Setting the Hard Disk Drive 1 Jumper Settings

Figure 6-6 shows the correct jumper settings for the Seagate hard disk drive SCSI ID 1.

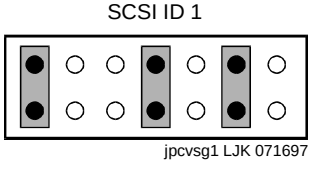


Figure 6-6. Hard Disk Drive 1 Jumper Settings — Seagate

Figure 6-7 shows the correct jumper settings for the Capricorn hard disk drive SCSI ID 1.

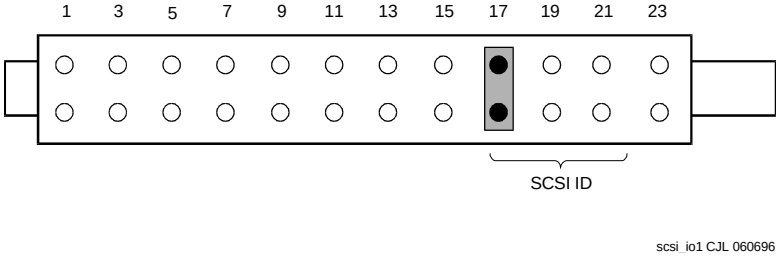


Figure 6-7. Hard Disk Drive 1 Jumper Settings — Capricorn

Inserting Hard Disk Drive 1

To insert the hard disk drive, do the following:

1. Remove the new hard disk drive from its ESD-protective wrapping.

   NOTE:
   Keep the package and all ESD-protective wrapping to return the defective unit. You must use the original replacement unit packaging to meet the manufacturer's warranty.

2. Attach the hard disk drive, with the component side down, to the peripheral frame using the four screws removed in Step 6 of Extracting Hard Disk Drive 1.

   NOTE:
   Pay close attention to the location of the screws in both the peripheral frame and the hard disk drive.

3. Attach the power cable to the hard disk drive.
4. Attach the SCSI cable to the hard disk drive.
5. Place the front of the peripheral frame into the MAP/5P.
6. Align the peripheral frame so that the bracing lip on the MAP/5P chassis is below the guide on the peripheral frame (Figure 6-8).

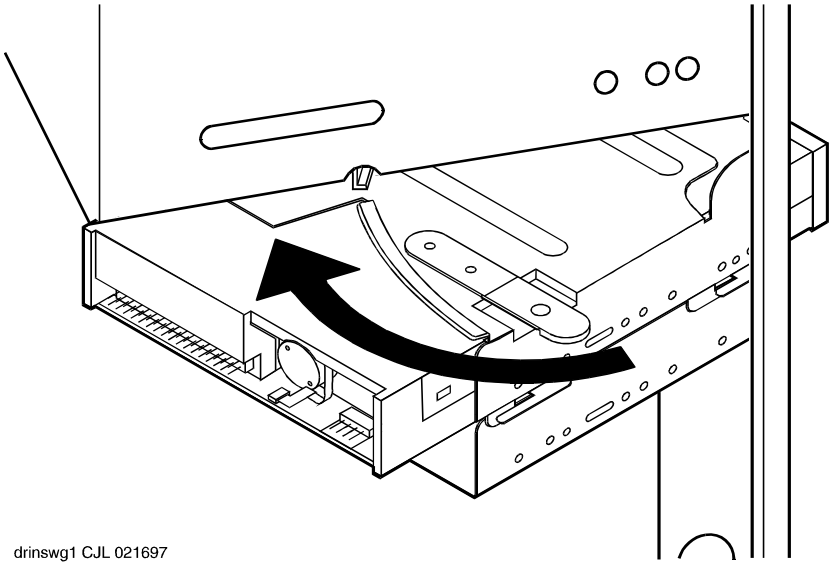


Figure 6-8. Installing the Peripheral Frame

7. Rotate the peripheral frame into the MAP/5P chassis until it is locked in place.
8. Check the cable connections to both the diskette drive and Hard Disk Drive 1.

Cleaning a Hard Disk Drive

A hard disk drive that contains data cannot be installed in a Avaya Interchange system. The hard disk drive must be cleaned before use. The hard disk drives can be cleaned by:

- Using the **fdisk** command
- Performing a low-level format

Using the fdisk Command

To clean a hard disk drive by using the fdisk command, do the following:

1. Log in to the system as root.
2. Enter **fdisk /dev/rdsk/c0t1d0s0**.

CAUTION:
The phrase `c0t1d0s0` is the name of the disk to be cleaned. The phrase `c0t1d0s0` is correct for Hard Disk Drive 1. Hard Disk Drive 0 is named `c0t0d0s0`.

The system displays the Disk Cleaning screen (Figure 6-9).

```
       Total disk size is 2048 cylinders (2048.0MB)



 Partition | Status | Type          | Start | End  | Length | %   | Approx MB
 1         | Active | UNIX System   | 0     | 2047 | 2048   | 100 | 2048.0

       SELECT ONE OF THE FOLLOWING

       0. Overwrite system master boot code
       1. Create a partition
       2. Change Active (Boot from) partition
       3. Delete a partition
       4. Update (Update disk configuration and exit)
       5. Exit (Exit without updating disk configuration)

       Enter selection:
```

Figure 6-9. Disk Cleaning Screen

3. Enter **3**.

   The system displays the following message:

   ```
   Enter the number of the partition you want to delete
   (or enter x to exit)
   ```

4. Enter the number of the partition.

   For the example given in Figure 6-9, you would enter **1**.

   The system displays the following message:

   ```
   Do you want to delete partition X?  This will erase all
   files and programs in this partition (type “y” or “n”).
   ```

5. Enter **y**.

   The system displays the following message:

   ```
   Partition X has been deleted.
   ```

   The system displays the Disk Cleaning screen (Figure 6-9).

6. Enter **4**.

   The system displays the following message:

   ```
   If you have created or altered a partition, you must
   initialize the partition to reflect the new
   configuration. For a UNIX System partition run the
   disksetup(1m) command. For a DOS partiton, run the DOS
   format command.  Changes limited to the “Active” status
   field require no additional action.
   ```

You have completed the procedure for cleaning a hard disk drive.

Performing a Low-Level Format

To low-level format a hard disk drive, do the following:

1. Reboot the system. See Rebooting the System in Chapter 3, Common System Procedures.
2. Press CONTROL-A when prompted.

   The system displays the Host Adapter Configuration screen (Figure 6-10).

```
Would you like to configure the host adapter or run the SCSI disk
utilities?  Select the option and press <Enter>.  Press <F5> to switch
between color or monochrome.


Options
Configure/View Host Adapter Settings
SCSI Disk Utilities
```

Figure 6-10. Host Adapter Configuration Screen

3. Place the cursor on `SCSI Disk Utilities`. Use the Up ▲ and Down ▼ arrow keys to move the cursor.
4. Press ENTER.

The system displays the SCSI Disk Utilities screen (Figure 6-11).

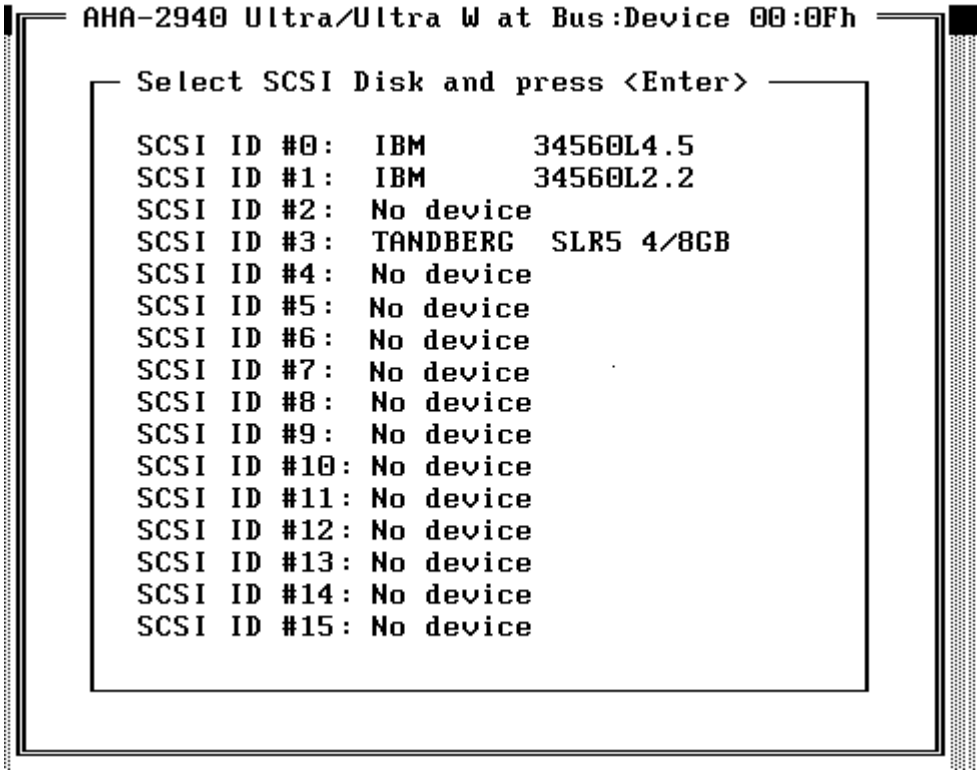


Figure 6-11. SCSI Disk Utilities Screen

5. Place the cursor on the SCSI Disk to be formatted. Use the Up ▲ and Down ▼ arrow keys to move the cursor.

6. Press ENTER.

   The system displays the Configure/Format Disk screen (Figure 6-12).

Figure 6-12. Configure/Format Disk Screen

7. Place the cursor on the `Format Disk`. Use the Up ▲ and Down ▼ arrow keys to move the cursor.
8. Press ENTER.

   The system then asks you to confirm that the disk is to be formatted.
9. Enter **y**.

Replacing Other Components

7

Overview

This chapter describes the procedures for replacing the:

- Cartridge tape drive
- CMOS battery
- Diskette drive
- Fans
- Memory
- Motherboard
- Riser card
- Power supply

Purpose

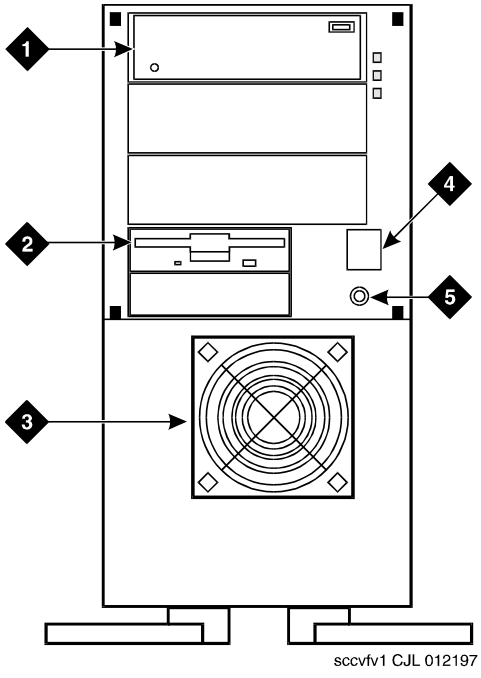
The purpose of this chapter is to ensure that the correct procedures are used to replace the internal components of the MAP/5P. This chapter also provides information on the correct configuration and settings for the individual components.

Cartridge Tape Drive Replacement

CAUTION:

Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

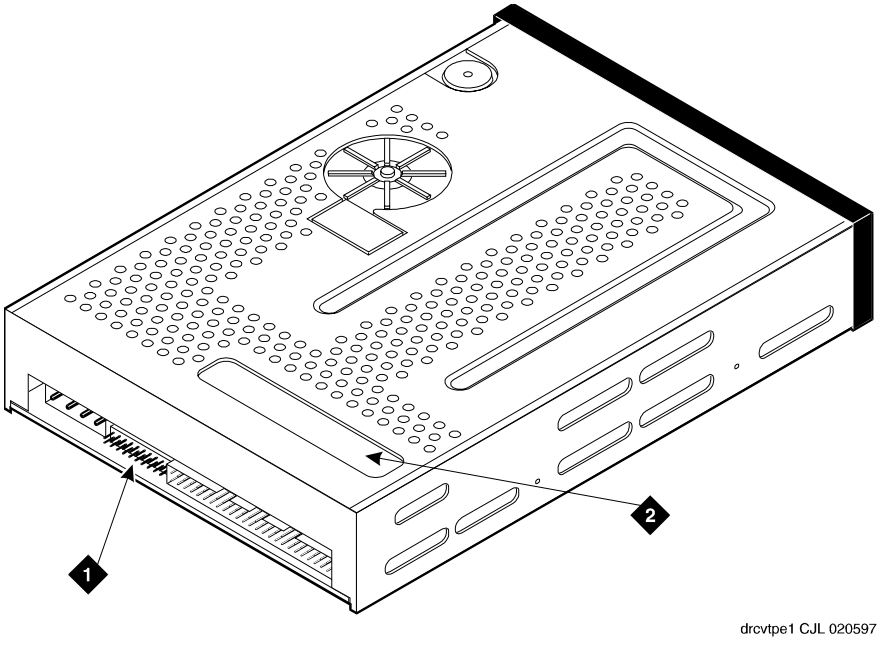
The cartridge tape drive is located in Bay 1 of the MAP/5P (Figure 7-1).



1. Cartridge tape drive
2. Diskette drive
3. Circuit card cage fan
4. Power button
5. Reset button

Figure 7-1. Front View of the MAP/5P

The following procedures detail removal and installation of the cartridge tape drive for the MAP/5P (Figure 7-2).



1. Jumpers
2. Terminating resistors

Figure 7-2. Cartridge Tape Drive

Cartridge Tape Drive Removal

To remove a cartridge tape drive, you complete the following tasks:

- Remove the Avaya Interchange system from service.
- Access the cartridge tape drive.
- Extract the cartridge tape drive.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.

3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing the Cartridge Tape Drive

To access the cartridge tape drive, remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Extracting the Cartridge Tape Drive

To extract the cartridge tape drive, do the following:

1. Remove the SCSI cable from the cartridge tape drive.

   NOTE:
   Make sure the SCSI cable pin adapter remains attached to the SCSI cable.

2. Remove the power cord from the cartridge tape drive.
3. Locate the four screws on peripheral bay chassis that secure the drive in Position 1 of the peripheral bay.

   NOTE:
   Pay close attention to the location of the screws in both the peripheral bay chassis and the cartridge tape drive. If the screws are returned to a different position, the cartridge tape drive could protrude too much from the chassis or be recessed too far into the chassis.

4. Holding the rear of the drive, loosen and remove these mounting screws.
5. Slide the drive forward within the peripheral bay and remove through the front opening of the chassis.

   CAUTION:
   The drive fits tightly in the peripheral bay. Do not scrape the wiring or the components on the underside of the drive.

6. Continue with the next procedure, Cartridge Tape Drive Installation.

Cartridge Tape Drive Installation

To install a cartridge tape drive, you complete the following tasks:

- Verify the resource options.
- Insert the cartridge tape drive.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system.

Verifying the Resource Options

To verify the resource options, do the following:

1. Remove the three terminating resistors on the cartridge tape drive (Figure 7-2).
2. Verify that the settings are correct (Figure 7-3).

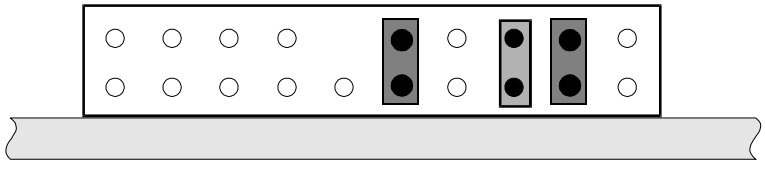


Figure 7-3. Jumper Settings for the Cartridge Tape Drive, SCSI ID = 3

Inserting the Cartridge Tape Drive

To insert the cartridge tape drive, do the following:

1. Remove the new cartridge tape unit from its ESD-protective wrapping.

   NOTE:
   Keep the package and all ESD-protective wrapping to return the defective unit. You must use the original replacement unit packaging to meet the manufacturer's warranty.

2. Place the new drive in the Position 1 of the peripheral bay chassis with the printed circuit board side down.
3. Position the unit so that the cartridge tape drive screw holes line up with the appropriate holes in the peripheral bay.

NOTE:
Pay close attention to the location of the screws in both the peripheral bay chassis and the cartridge tape drive. If the screws are returned to a different position, the cartridge tape drive could protrude too much from the chassis or be recessed too far into the chassis.

4. Secure the drive in the peripheral bay using the four screws removed in Step 4 of the procedure, Extracting the Cartridge Tape Drive.
5. Attach the power cable to the cartridge tape drive.
6. Attach the SCSI cable to the cartridge tape drive.

NOTE:
Make sure the SCSI cable pin adapter is attached to the SCSI cable.

Reassembling the MAP/5P

To reassemble the MAP/5P, replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Restoring the Avaya Interchange System

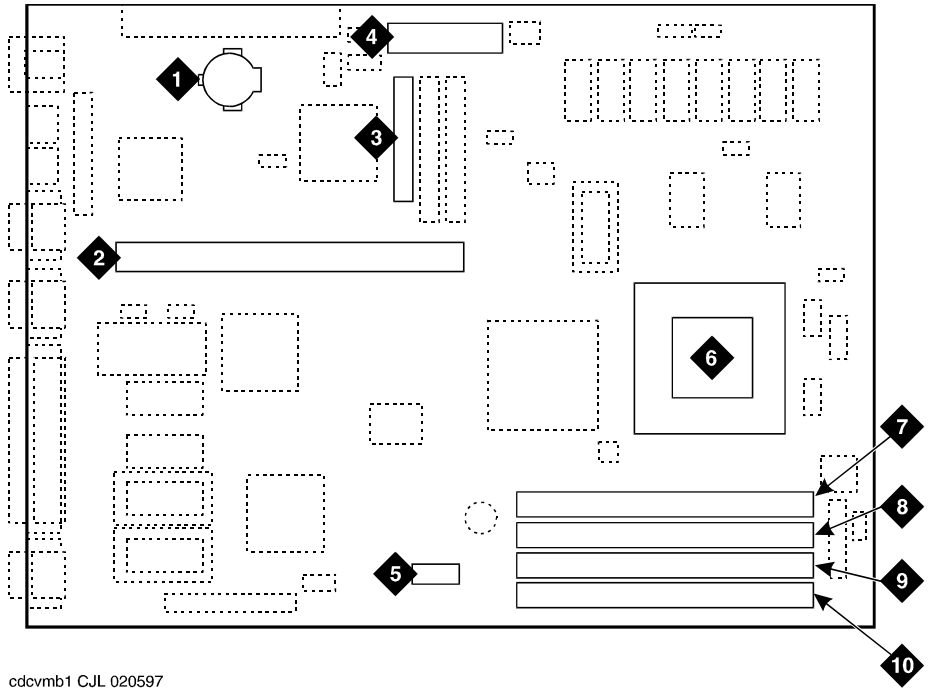
To restore the Avaya Interchange system, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify the Avaya Interchange system operation by placing a call to a user.

CMOS Battery Replacement

CAUTION:
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

The CMOS battery is located on the motherboard (Figure 7-4).



1. CMOS battery
2. Riser card connector
3. Diskette cable connector
4. Power supply connectors
5. Switches
6. CPU fan
7. SIMM4 socket (empty)
8. SIMM3 socket (empty)
9. SIMM2 socket
10. SIMM1 socket

Figure 7-4. Motherboard

CMOS Battery Removal

To remove the CMOS battery, you complete the following tasks:

- Remove the Avaya Interchange system from service.
- Access the CMOS battery.
- Extract the CMOS battery.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing the CMOS Battery

To access the CMOS battery, remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Extracting the CMOS Battery

To extract the CMOS battery, do the following:

1. Gently push the battery to the side, away from the rear of the MAP/5P, until it has cleared the retaining bracket.
2. Pull the battery from the motherboard.

CMOS Battery Installation

To install the CMOS battery, you complete the following tasks:

- Insert the CMOS battery.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system.
- Verify the CMOS settings.

Inserting the CMOS Battery

To insert the CMOS battery, do the following:

1. Gently push the battery to the side, away from the rear of the MAP/5P, until it has cleared the retaining bracket.
2. Push the battery into the motherboard.

Reassembling the MAP/5P

To reassemble the MAP/5P, replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Restoring the Avaya Interchange System

To restore the Avaya Interchange system, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify the Avaya Interchange system operation by placing a call to a user.

Verifying the CMOS Settings

To verify the CMOS settings, see Inserting the Motherboard.

Diskette Drive Replacement

CAUTION:
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

The 1.44-MB. 3.5-inch diskette drive is located in Bay 4 of the peripheral bay, as shown in Figure 7-1. There are no jumpers associated with the diskette drive used in the MAP/5P.

NOTE:
If you are replacing the diskette cable, you must remove the riser card. See Riser Card Replacement for this procedure.

Diskette Drive Removal

To remove the diskette drive, you complete the following tasks:

- Remove the Avaya Interchange system from service.
- Access the diskette drive.
- Extract the diskette drive.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing the Diskette Drive

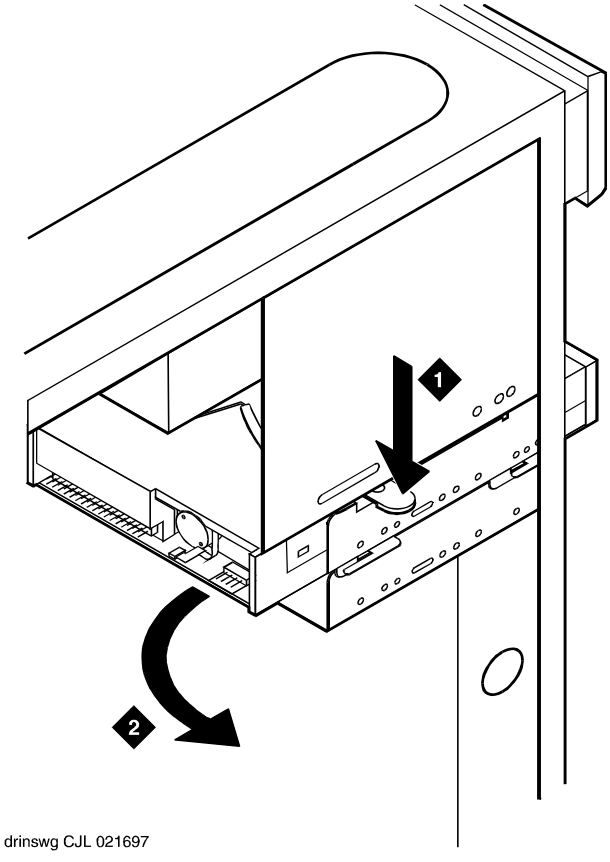
To access the diskette drive, remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Extracting the Diskette Drive

To extract the diskette drive, do the following:

1. Remove the diskette cable from the back of the diskette drive.
2. Remove the power cord from the back of the diskette drive.

3. Press down on the thumb tab which locks the peripheral frame in place (Figure 7-5).



1. Press down on thumb tab.
2. Rotate frame out of chassis.

Figure 7-5. Removing the Peripheral Frame

4. Pull the peripheral frame toward you (Figure 7-5).

   The frame then rotates toward the front of the MAP/5P until the bracing lip is cleared. At this point, you can pull the frame out of the MAP/5P.

5. Locate the screws holding the diskette drive to the peripheral frame.

NOTE:
Pay close attention to the location of the screws in both the peripheral frame and the diskette drive. If the screws are returned to a different position, the diskette drive could protrude too far from the chassis far or be recessed too much into the chassis.

6. Holding the rear of the diskette drive, remove these screws.
7. Remove the diskette drive from the peripheral frame.

CAUTION:
Handle the diskette drive with care. The spindle motor, stepping motor, and printed circuit board are located on the bottom of the diskette drive. Do not place any force or strain on these components and do not touch the surface of the diskette drive printed circuit board.

8. Place the diskette drive assembly, with the printed circuit board facing up, on an ESD-protected surface.
9. Continue with the next procedure, Diskette Drive Installation.

Diskette Drive Installation

To install the diskette drive, you complete the following tasks:

- Insert the diskette drive.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system.

Inserting the Diskette Drive

To insert the diskette drive, do the following:

1. Remove the new diskette drive from its ESD-protective wrapping.

NOTE:
Keep the package and all ESD-protective wrapping to return the defective unit. You must use of the original replacement unit packaging to meet the manufacturer's warranty.

2. Attach the diskette drive to the peripheral frame using the four screws removed in Step 6 of Extracting the Diskette Drive.

NOTE:
Pay close attention to the location of the screws in both the peripheral frame and the diskette drive. If the screws are returned to a different position, the diskette drive could protrude too far from the chassis far or be recessed too much into the chassis.

3. Attach the power cable to the diskette drive.
4. Attach the diskette cable to the diskette drive.
5. Place the front of the peripheral frame into the MAP/5P.

6. Align the peripheral frame so that the bracing lip on the MAP/5P chassis is below the guide on the peripheral frame (Figure 7-6).

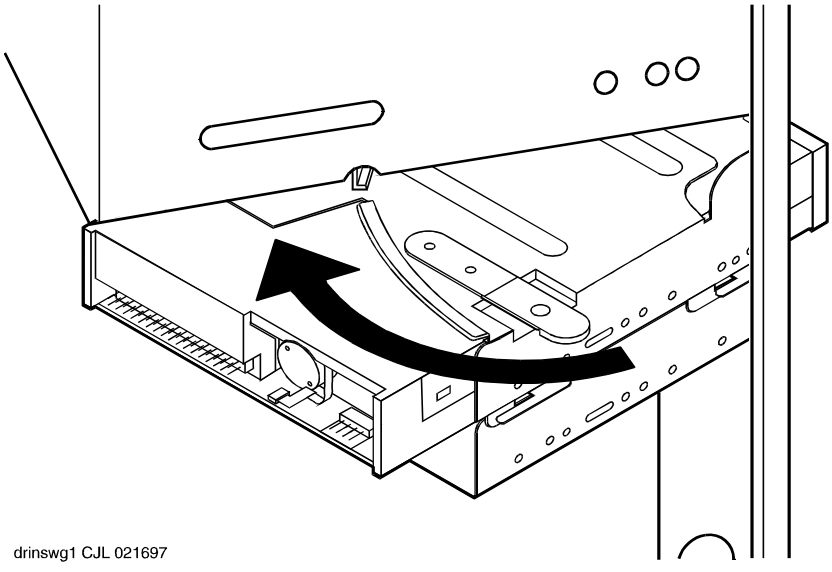


Figure 7-6. Installing the Peripheral Frame

7. Rotate the peripheral frame into the MAP/5P chassis until it is locked in place (Figure 7-6).
8. Check the cable connections to both the diskette drive and Hard Disk Drive 1 (if installed).

Reassembling the MAP/5P

To reassemble the MAP/5P, replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Restoring the Avaya Interchange System

To restore the Avaya Interchange system, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify the Avaya Interchange system operation by placing a call to a user.

Fan Replacement

CAUTION:
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

The MAP/5P contains the following fans that provide cooling inside the unit:

- Power supply fan
- Circuit card cage fan
- CPU fan

The power supply fan is located inside the power supply and is *not* serviceable. *Never* attempt repairs to this fan. If it fails, you must replace the entire power supply. See Power Supply Replacement for more information.

Circuit Card Cage Fan Replacement

The circuit card cage fan is located in front of the card cage, behind the dress cover (Figure 7-1). The circuit card cage fan forces air flow through the MAP/5P chassis, across the circuit cards.

Circuit Card Cage Fan Removal

To remove the circuit card cage fan, you complete the following tasks:

- Remove the Avaya Interchange system from service.
- Access the circuit card cage fan.
- Extract the circuit card cage fan.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing the Circuit Card Cage Fan

To access the circuit card cage fan, do the following:

1. Remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.
2. Remove the protective aluminum screen that holds the circuit card cage fan in the chassis.

Extracting the Circuit Card Cage Fan

To extract the circuit card cage fan, do the following:

1. Lift the circuit card cage fan out of the chassis.
2. Unplug the 12-VDC power lead connector.

CAUTION:
Do not operate the MAP/5P for any length of time without the circuit card cage fan installed and operational.

3. Continue with the next procedure, Circuit Card Cage Fan Installation.

Circuit Card Cage Fan Installation

To install the circuit card cage fan, you complete the following tasks:

- Insert the circuit card cage fan.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system.

Inserting the Circuit Card Cage Fan

To insert the circuit card cage fan, do the following:

1. Attach the 12-VDC connector to the circuit card cage fan.
2. Place the circuit card cage fan in the MAP/5P chassis.

NOTE:
Make sure the air flow is directed into the MAP/5P chassis. There is an air flow direction arrow on the fan.

Reassembling the MAP/5P

To reassemble the MAP/5P, do the following:

1. Replace the aluminum screen.
2. Replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Restoring the Avaya Interchange System

To restore the Avaya Interchange system, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify that the replacement fan is operating by placing a small sheet of paper across the grill on the intake side of the fan. The paper should adhere to the grill.

   If the fan is not operating or is spinning very slowly, check all wiring connections and voltages to ensure that the replacement unit is receiving power.

   CAUTION:
   Do not leave the MAP/5P powered up for any length of time until the circuit card cage fan is fully operational.

3. Verify the Avaya Interchange system operation by placing a call to a user.

CPU Fan Replacement

The CPU fan is located on the motherboard, on top of the CPU (Figure 7-4).

CPU Fan Removal

To remove the circuit card cage fan, you complete the following tasks:

- Remove the Avaya Interchange system from service.
- Access the CPU fan.
- Extract the CPU fan.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing the CPU Fan

To access the CPU fan, do the following:

1. Remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.
2. Remove all of the circuit cards. See Removing a Circuit Card in Chapter 5, Replacing or Installing Circuit Cards, for this procedure.

NOTE:
Pay close attention to the riser card connector slots from which each circuit card is removed. Replace the circuit cards in the same slots in the new riser card. See Component Assignments in Appendix A, System Configuration, for circuit card placement.

Extracting the CPU Fan

To extract the CPU fan, do the following:

1. Remove the two screws that hold the CPU fan to the motherboard.
2. Lift the CPU out of the chassis.
3. Unplug the 12-VDC power lead connector.
4. Continue with the next procedure, CPU Fan Installation.

CPU Fan Installation

To install the CPU fan, you complete the following tasks:

- Insert the CPU fan.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system.

Inserting the CPU Fan

To insert the CPU fan, do the following:

1. Attach the 12-VDC connector to the CPU fan.
2. Place the CPU fan on the motherboard.
3. Replace the two screws that hold the CPU fan to the motherboard.

Reassembling the MAP/5P

To reassemble the MAP/5P, do the following:

1. Replace the circuit cards. See Installing a Circuit Card in Chapter 5, Replacing or Installing Circuit Cards, for this procedure.
2. Replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Restoring the Avaya Interchange System

To restore the Avaya Interchange system, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify the Avaya Interchange system operation by placing a call to a user.

Memory Replacement

Single in-line memory modules (SIMMs) are located in the lower right hand portion of the motherboard (Figure 7-4). The following situations could indicate a missing or defective SIMM:

- The system does not boot up.
- The power-on memory test fails.
- A parity error on the motherboard occurs.

In the case of a defective SIMM, replace both SIMMs.

⚠ CAUTION:
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

SIMM Removal

To remove the SIMMs, you complete the following tasks:

- Remove the Avaya Interchange system from service.
- Access the SIMMs.
- Verify the SIMM seating.
- Extract the SIMMs.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.

3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing the SIMMs

To access the SIMMs, do the following:

1. Remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.
2. Remove the circuit cards in the bottom three slots. See Removing a Circuit Card in Chapter 5, Replacing or Installing Circuit Cards.

Verifying the SIMM Seating

To verify the SIMM seating, do the following:

1. Apply pressure to both SIMMs to ensure they are properly seated.
2. If both SIMMs are properly seated, then replace both. Continue with the next procedure, Extracting the SIMMs.

   If one or more of the SIMMs are not properly installed or seated, complete Step a through Step d:

   a. Properly seat the SIMM.
   b. Replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.
   c. Restore the incoming power. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
   d. Reboot the system. See Rebooting the System in Chapter 3, Common System Procedures, for this procedure.

      If the system shows an amount of memory equal to that installed, the problem has been corrected. Complete the following Steps 1 through 7:

      1. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
      2. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
      3. Remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.
      4. Replace the circuit cards in the bottom three slots. See Installing a Circuit Card in Chapter 5, Replacing or Installing Circuit Cards.

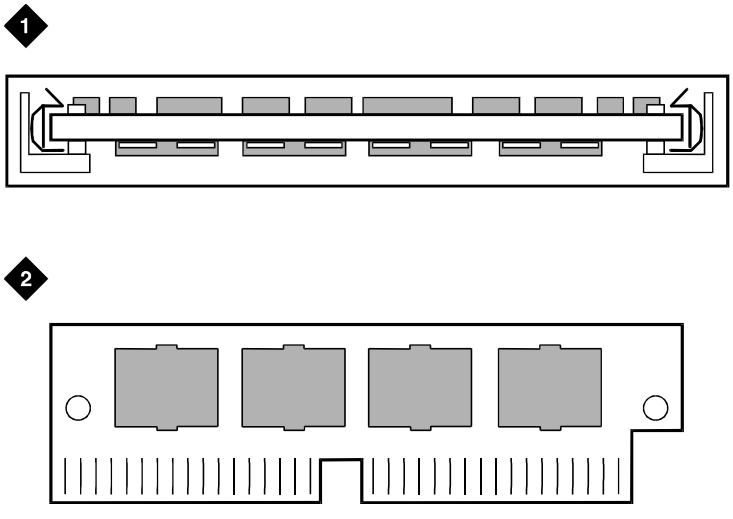
5. Replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.
6. Restore the incoming power. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
7. Reboot the system. See Rebooting the System in Chapter 3, Common System Procedures, for this procedure.

If the system shows an amount of memory less than that installed on the card, replace both of the SIMMs. Continue with the next procedure, Extracting the SIMMs.

Extracting the SIMMs

To extract the SIMMs, do the following:

1. Release the metal snap locks at the edge of the SIMM2 socket by gently pushing the locks to the outside (Figure 7-7).



1. SIMM in socket — top view 2. SIMM — side view

Figure 7-7. SIMM Socket

2. Rotate the SIMM downward to approximately a 45-degree angle.
3. Remove the SIMM.
4. Repeat Step 1 through Step 3 for the SIMM located in the SIMM1 socket.
5. Continue with the next procedure, SIMM Installation.

SIMM Installation

To install the SIMMs, you complete the following tasks:

- Insert the SIMMs.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system.

Inserting the SIMMs

To insert the SIMMs, do the following:

1. Install a SIMM in the SIMM1 socket by positioning the SIMM at approximately a 45-degree angle with respect to the motherboard.

   All SIMMs are keyed to prevent them from being inserted incorrectly.

2. Push down on the SIMM at that angle until the SIMM is reseated in the SIMM carrier.

3. Snap the SIMM into place by rotating it to an upright position.

   The metal snap lock on the ends of the connector for the SIMM are first forced open and then lock when in the upright position.

4. Ensure the connector guide pins are seated in the clearance holes provided at each end of the SIMM.

   When properly seated, the guides are fully extended into the circuit card clearance holes.

5. Repeat Step 1 through Step 4 to install a SIMM in the SIMM2 socket.

Reassembling the MAP/5P

To reassemble the MAP/5P, do the following:

1. Replace the circuit cards in the bottom three slots. See Installing a Circuit Card in Chapter 5, Replacing or Installing Circuit Cards.

2. Replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Restoring the Avaya Interchange System

To restore the Avaya Interchange system, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify the Avaya Interchange system operation by placing a call to a user.

Motherboard Replacement

CAUTION:
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

Motherboard Removal

To remove the motherboard, you complete the following tasks:

- Remove the Avaya Interchange system from service.
- Access the motherboard.
- Extract the motherboard.

Removing the Avaya Interchange System from Service

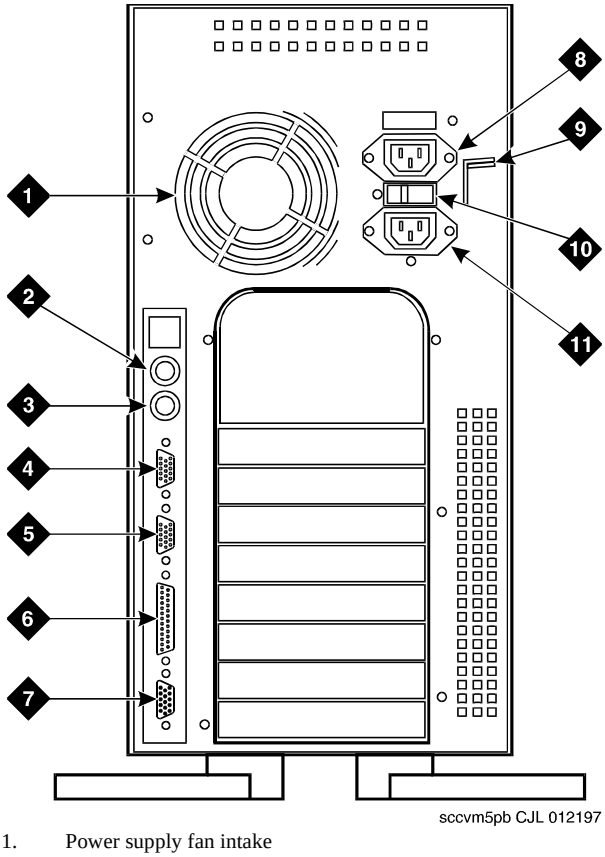
To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing the Motherboard

To access the motherboard, do the following:

1. Disconnect any cables attached to the ports in the back of the MAP/5P (Figure 7-8).



1. Power supply fan intake
2. Keyboard connector
3. Mouse connector
4. COM1
5. COM2
6. Parallel port
7. Video connector
8. AC power supply outlet
9. Dress cover lock
10. AC voltage selector switch
11. AC power inlet receptacle

Figure 7-8. Rear View of the MAP/5P

2. Remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.
3. Remove all of the circuit cards. See Removing a Circuit Card in Chapter 5, Replacing or Installing Circuit Cards.
4. Remove the riser card. See Riser Card Removal for this procedure.

Extracting the Motherboard

To extract the motherboard, do the following:

1. Disconnect the diskette cable from the motherboard (Figure 7-4).
2. Disconnect the power supply connections from the motherboard (Figure 7-4).
3. Push up on the motherboard-retaining bracket.
4. Gently pull the motherboard forward until it has cleared the alignment pegs.
5. Slide the motherboard toward the front of the MAP/5P to allow the cable connectors, in the rear of the MAP/5P, to clear the chassis.
6. Remove the motherboard from the MAP/5P chassis.
7. Remove the memory from the motherboard. See SIMM Removal for this procedure.

   NOTE:
   The new motherboard contains no memory. Use the memory from the defective motherboard to populate the replacement.

8. Continue with the next procedure, Motherboard Installation.

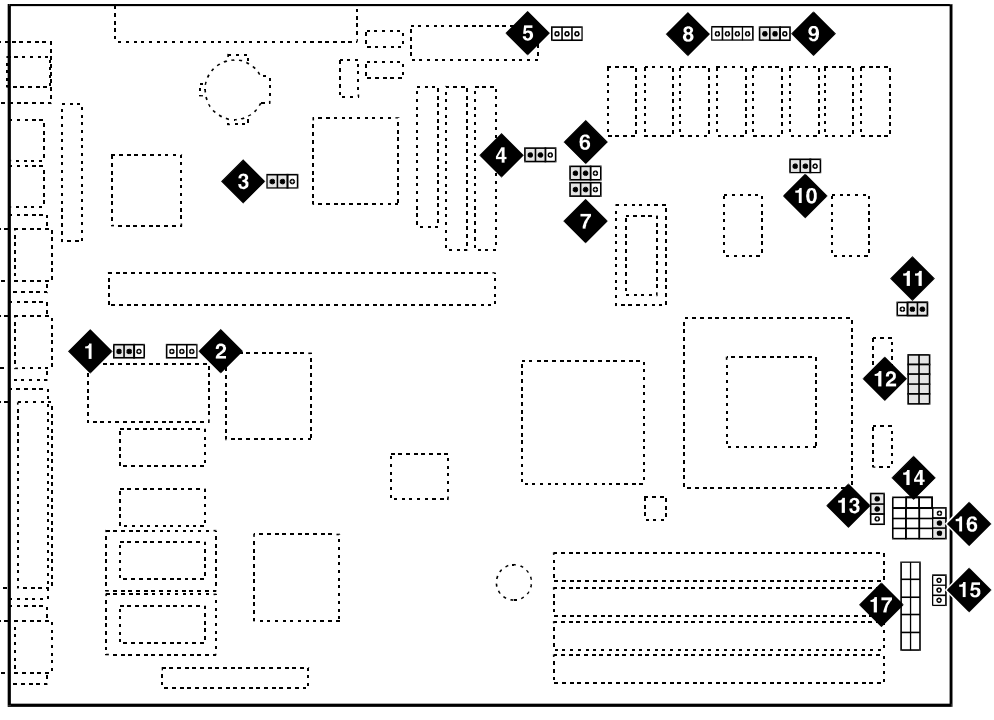
Motherboard Installation

To install the motherboard, you complete the following tasks:

- Verify the resource options.
- Insert the motherboard.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system.

Verifying the Resource Options

The motherboard contains switches and jumpers that you need to verify. Figure 7-4 shows the location of the switches. Figure 7-9 shows the location of the jumpers on the motherboard.



jpcvmb4 CJL 040797

1. JP5 — flash BIOS function
2. JP6 — BIOS ROM type
3. JP1 — BIOS type
4. JP2 — LED function
5. JP15 — standby power connector
6. JP4 — second-level cache
7. JP3 — second-level cache
8. JP30 — external battery connector
9. JP16 — software shutdown
10. JP42 — L2 cache mode
11. JP43 — CPU voltage for I/O
12. JP7 — regulator
13. JP44 — CPU voltage for core
14. JP11 — SMM/reset switch
15. JP14 — power-on switch connector
16. CN30
17. CN19

Figure 7-9. Motherboard Jumper Locations

To verify the resource options, do the following:

1. Verify the jumper settings on the motherboard (Figure 7-10).

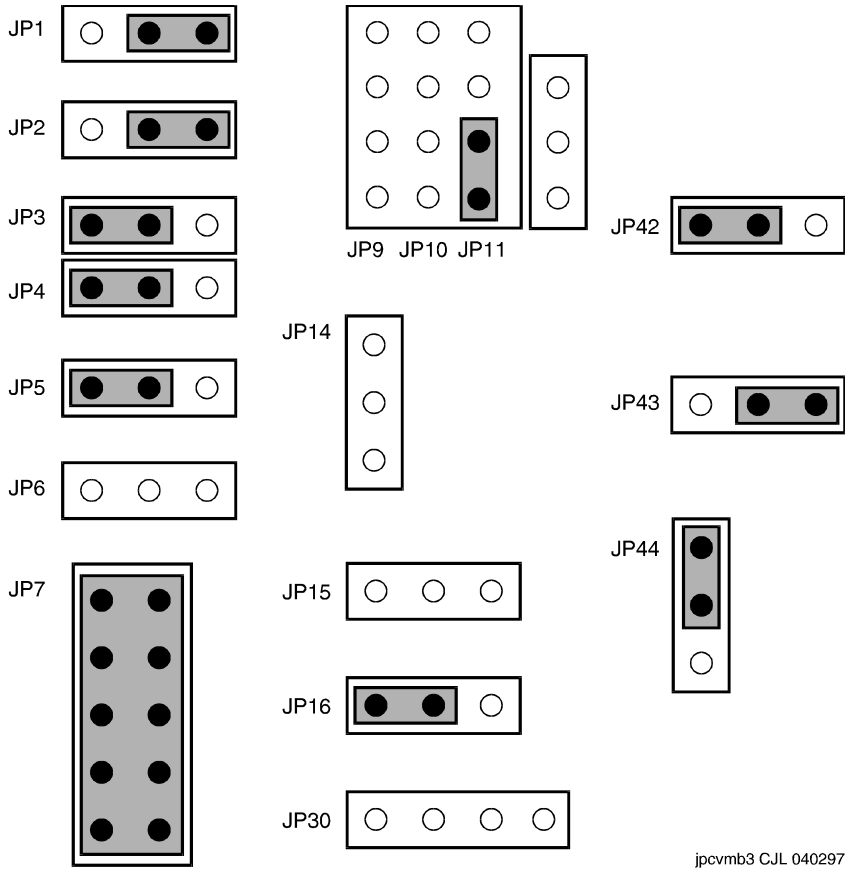


Figure 7-10. Motherboard Jumper Settings

2. Verify the switch settings on the motherboard (Figure 7-11).

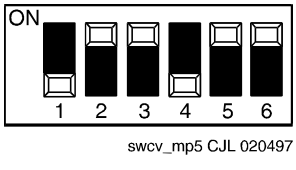


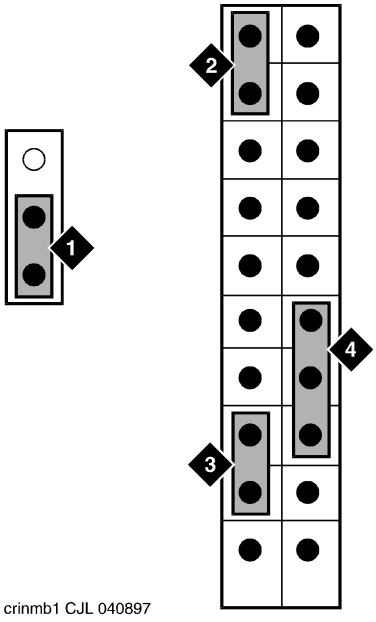
Figure 7-11. Motherboard Switch Settings

Inserting the Motherboard

To insert the motherboard, do the following:

1. Place the SIMMs from the defective motherboard on to the replacement motherboard. See SIMM Installation for this procedure.
2. Place the motherboard in the MAP/5P.
3. Align the external cable connectors on the motherboard with the corresponding holes in the MAP/5P chassis.
4. Slide the motherboard to the rear of the MAP/5P so that the external cable connectors protrude through the rear of the unit.
5. Align the holes in the motherboard with the alignment pegs in the MAP/5P (Figure 7-4).
6. Gently push the motherboard into the MAP/5P until the retaining bracket has snapped into place (Figure 7-4).
7. Attach the diskette cable to the motherboard (Figure 7-4).
8. Attach the power supply connections to the motherboard (Figure 7-4).

9. Attach the reset switch connector to CN19 (Figure 7-12).



1. RMB reset cable connector (pins 1 and 2 of CN30)
2. Reset switch connector (pins 19 and 20 of CN19)
3. Turbo LED connector (pins 12 and 13 of CN19)
4. Power LED connector (pins 3,4, and 5 of CN19)

Figure 7-12. Motherboard Cable Connections

10. Attach the turbo LED connector to CN19 (Figure 7-12).
11. Attach the power LED connector to CN19 (Figure 7-12).
12. Attach the remote maintenance circuit card reset cable to CN30 (Figure 7-12).

Reassembling the MAP/5P

To reassemble the MAP/5P, do the following:

1. Replace the riser card. See Riser Card Installation for this procedure.
2. Replace the circuit cards. See Installing a Circuit Card in Chapter 5, Replacing or Installing Circuit Cards.
3. Replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

4. Attach any cables that were connected to the following ports in the back of the MAP/5P (Figure 7-8).
   - Video port
   - Keyboard port
   - COM1
   - COM2
   - Parallel port
   - I/O port

Restoring the Avaya Interchange System

To restore the Avaya Interchange system, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify the CMOS settings by completing Step a through Step e:
   a. When prompted, press CONTROL - ALT - ESC

      The system displays the CMOS Configuration screen (Figure 7-13).

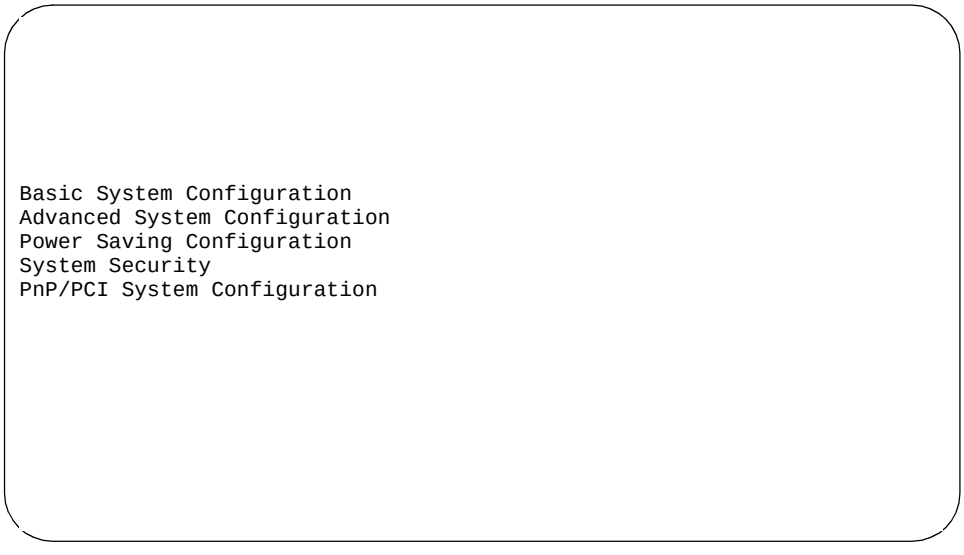


Figure 7-13. CMOS Configuration Screen

b. Compare the CMOS settings with those listed in Figure 7-14 through Figure 7-22.

Use the Up ▲ and Down ▼ arrow keys to move the cursor between fields. Use the Left ◄ and Right ► arrow keys to change the value of the field. Use the ESC key to return to the previous menu.

Press F4 before entering the Advanced Settings; otherwise, you cannot see the last two CMOS setting screens.

```
Basic                          Conf                              Page 1

Date
Time

Diskette Drive A                1.44 MB 3.5 inch
Diskette Drive B               None

IDE Drive 0                     Auto
          1                     Auto
          2                     Auto
          3                     Auto

Onboard IDE Controller          Disabled
total memory                    64 MB
```

Figure 7-14. Basic CMOS Settings Screen, Page 1

```
Basic                       Conf                                 Page 2

Enhanced IDE Features

     HD Block                   Disabled
     Advanced PIO               Disabled
     Hard Disk > 504            Disabled
     Hard Disk 32 bit           Disabled
     Large Memory Support       Normal
     Num Lock After Boot        Enabled
     Memory Test                Enabled
     Quiet Boot                 Enabled
     Configuration Table        Disabled
```

Figure 7-15. Basic CMOS Settings Screen, Page 2

```
Advanced System                                                  Page 1

Internal Cache (CPU cache)      Enabled
External Cache                  Enabled
     Cache Scheme               Write Back

ECC/Parity Mode Sel.            ECC
Memory at 15MB-16MB Receiver    System use
```

Figure 7-16. Advanced CMOS Settings Screen, Page 1

```
Advanced System                                                  Page 2

DRAM config
   EDO Page Mode Read          x-2-2-2
   Page Mode Read              x-3-3-3
   EDO or Page Mode Write      x-3-3-3
   Pipelined Function          Enabled
```

Figure 7-17. Advanced CMOS Settings Screen, Page 2

```
Advanced System                                                  Page 3

PCI config
   CPU to PCI                  Enabled
   Linear – merge              Enabled
   Word – merge                Enabled
   Write – burst               Enabled

Programmable Frame Buffer      Enabled
Size of Programmable
        Frame Buffer           2M
```

Figure 7-18. Advanced CMOS Settings Screen, Page 3

```
Advanced System                                                  Page 4

ISA config
   Clock Select                Auto
   DMA Line Buffer             Enabled
   ISA Line Buffer             Enabled
   I/O Recovery                Enabled
       Period                  1.75US

Miscellaneous
   Refresh Cycle               15US
   6x86 Burst                  1+4
```

Figure 7-19. Basic CMOS Settings Screen, Page 4

```
Power Savings

Power Management              Disabled
   Power Savings              Traditional
   IDE Standby                   Off
   Monitor Savings               Off
   System Standby                Off
   System Suspend                Off

Monitored Activities
   IRP2 – 15                  Disabled
   Quick Start                   Off
   Point Device                  None
```

Figure 7-20. Power Savings Screen

```
System Security

Disk Drive Control
     Diskette                  Normal
     HDD                       Normal
     System Boot               A then C
     Boot from CD              Disabled

Onboard Comm Ports
     S.P.1 base                3F8h
     S.P.2                     Disabled
     P.P.                      378h (IRQ7)
     Operational Mode          SPP
     ECPDMA                     –

Onboard PS/2                   Disabled
     Setup password            None
     Power On password         None
```

Figure 7-21. System Security Screen

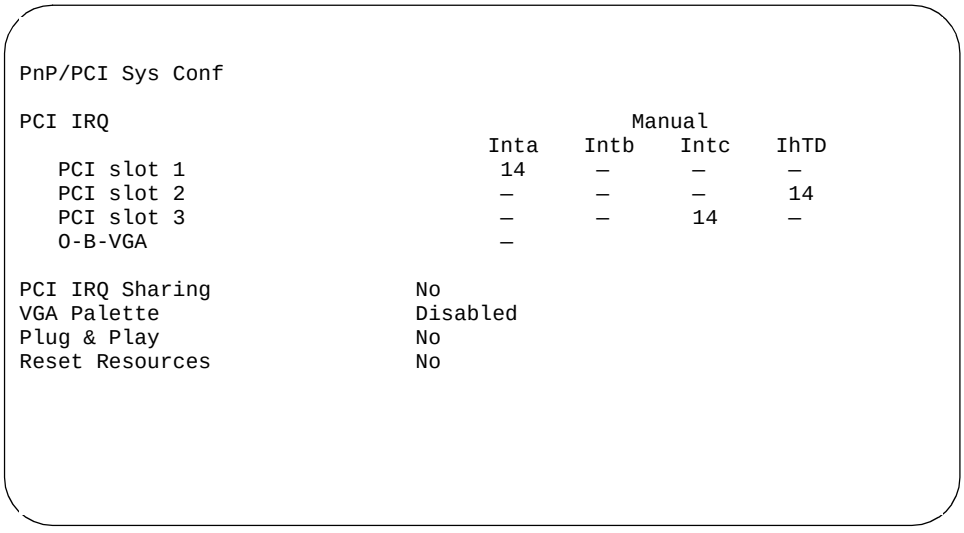


Figure 7-22. PnP/PCI System Configuration Screen

c. When you have completed setting the CMOS, press ESC.

The system displays the following message:

```
Do you want to save the CMOS settings?
    YES                 NO
```

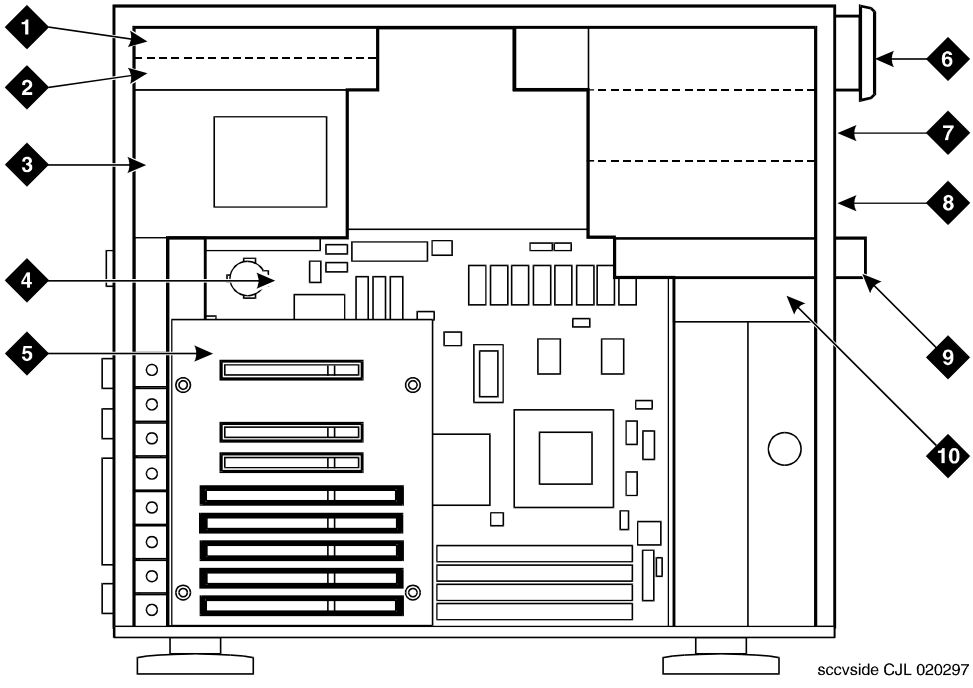
d. Place the cursor on YES.

e. Press ENTER.

3. Verify the Avaya Interchange system operation by placing a call to a user.

Power Supply Replacement

The 110/220-VAC power supply is located in the upper left corner of the MAP/5P as shown in Figure 7-23.



1. Bay 6 — Hard Disk Drive 0
2. Bay 7 — Empty
3. Power supply
4. Motherboard
5. Riser card
6. Bay 1 — Cartridge tape drive
7. Bay 2 — Empty
8. Bay 3 — Empty
9. Bay 4 — Diskette drive
10. Bay 5 — Hard Disk Drive 1 (if used)

Figure 7-23. MAP/5P Internal Layout

Power Supply Removal

To remove the power supply, you complete the following tasks:

- Remove the Avaya Interchange system from service.
- Access the power supply.
- Extract the power supply.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.

3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

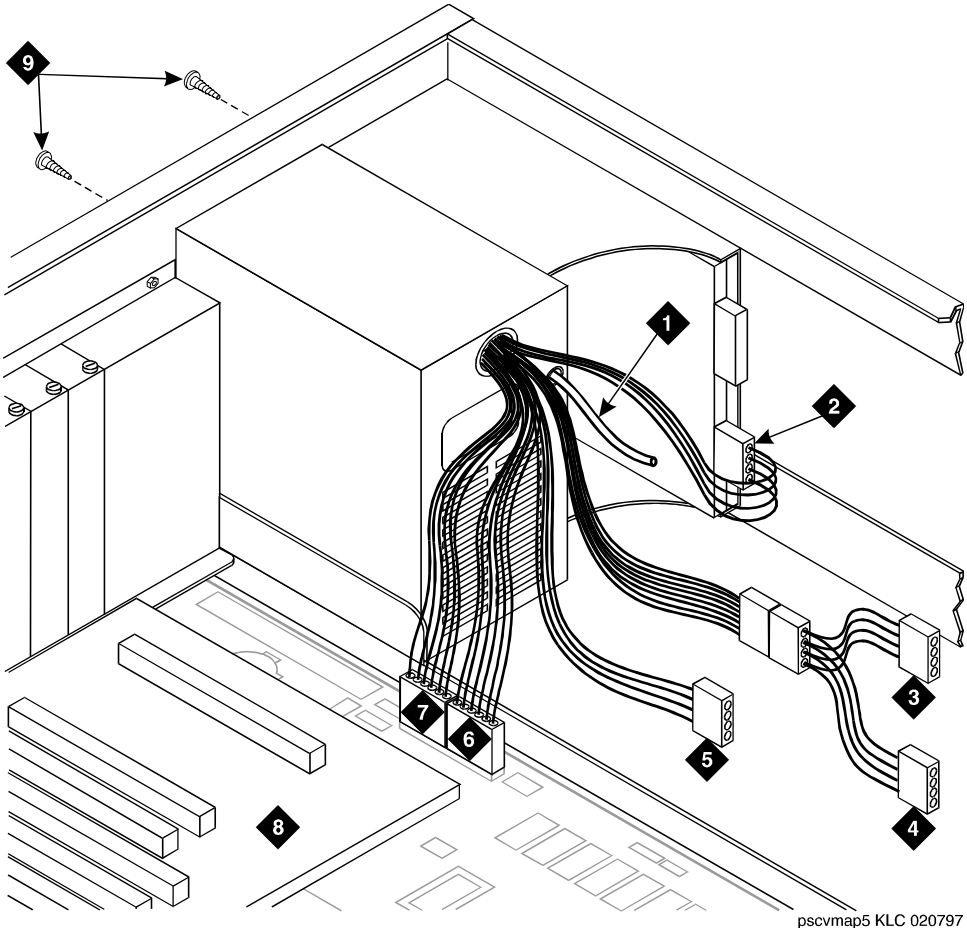
Accessing the Power Supply

To access the power supply, remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Extracting the Power Supply

To extract the power supply, do the following:

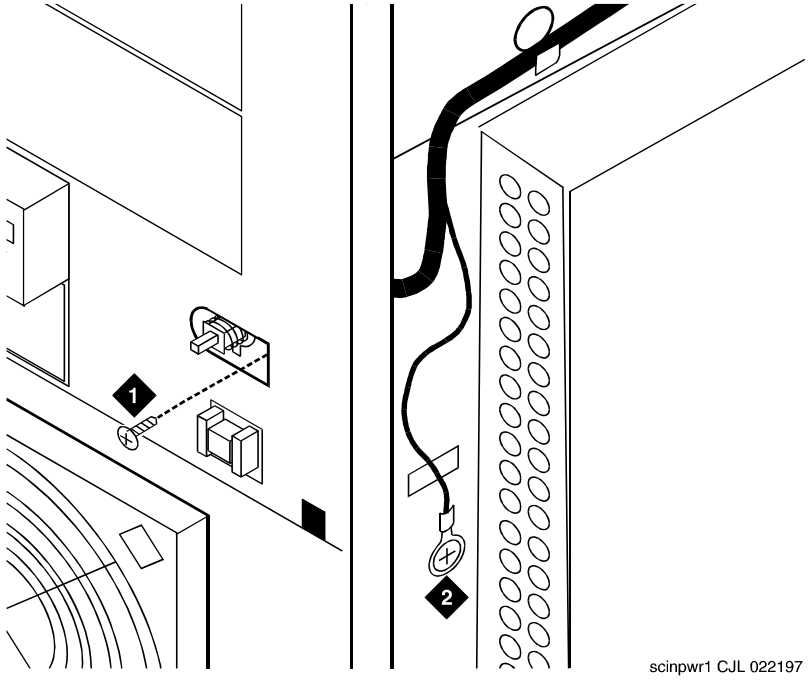
1. Unplug the connector to the cartridge tape drive (Figure 7-24).
2. Unplug the connector to the diskette drive (Figure 7-24).
3. Unplug the connector to Hard Disk Drive 1, if provided (Figure 7-24).
4. Unplug the connector to Hard Disk Drive 0 (Figure 7-24).
5. Unplug both connectors to the motherboard (Figure 7-24).



1. Power-on switch cable
2. Hard Disk Drive 0 connector
3. Diskette drive connector
4. Hard Disk Drive 1 connector
5. Cartridge tape drive connector
6. Motherboard connector
7. Motherboard connector
8. Riser card
9. Power supply retaining screws

Figure 7-24. MAP/5P Power Supply

6. Locate the power supply switch cable, which is mounted to the front of the chassis by a single screw.
7. Remove the screw holding the power supply switch (Figure 7-25).



1. Power supply switch retaining screw
2. Power supply grounding wire and screw

Figure 7-25. Power Supply Switch

8. Remove the screw that holds the grounding wire to the chassis (Figure 7-25).
9. Slide the power supply switch out of the retaining slot.
10. Remove the four screws on the chassis rear area that secure the power supply unit (Figure 7-24).
11. Slide the unit slightly forward towards the front of the MAP/5P and tilt toward the riser card.
12. Lift and remove the power supply.

Power Supply Installation

To install the power supply, you complete the following tasks:

- Insert the power supply.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system.

Inserting a Power Supply

To insert the power supply, do the following:

1. Remove the spare power supply unit from the shipping carton.

   NOTE:
   Keep the package and all ESD-protective wrapping to return the defective unit. You must use the original replacement unit packaging to meet the manufacturer's warranty.

2. Verify the input AC voltage selection switch, located on the chassis side close to the button edge, is in the correct position.

   The switch is a slide type. Printed text on the surface indicates the input voltage requirements, either 115 or 230 volts. The correct position for systems installed in the United States is 115 volts.

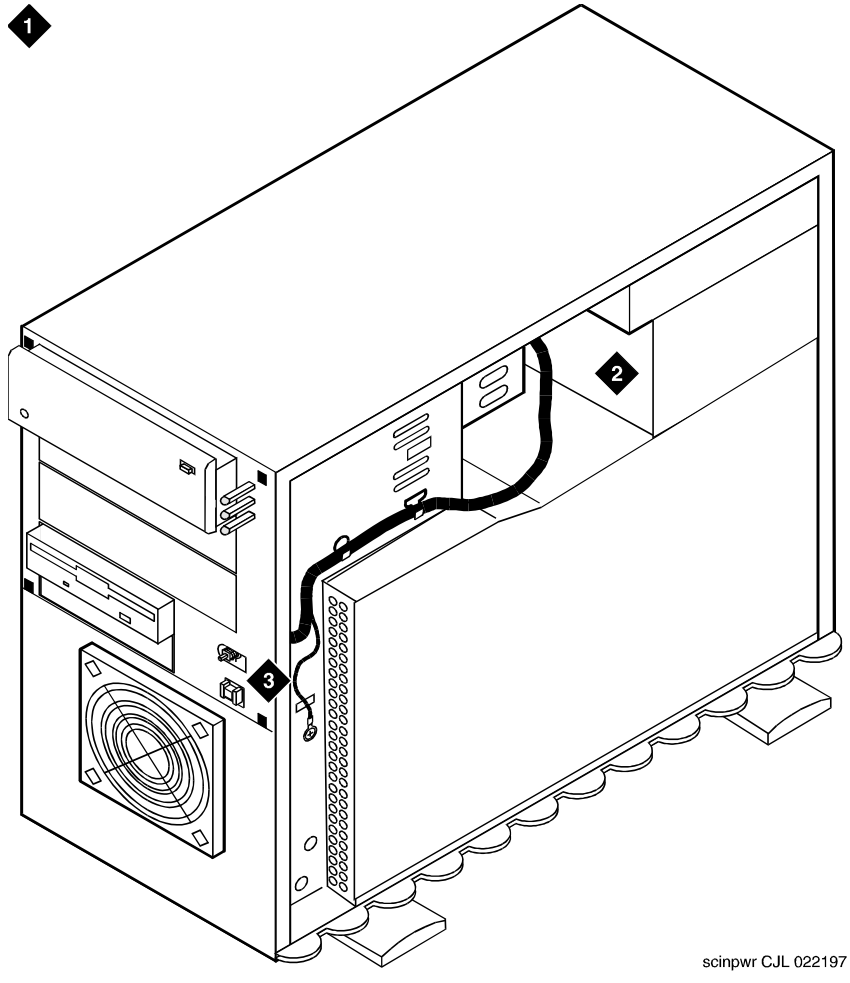
3. Install the power supply unit into the chassis and align the screw holes.
4. Install the four screws on the chassis rear area that secure the power supply unit (Figure 7-24).
5. Attach the power supply DC output connectors to the motherboard (Figure 7-24).

   NOTE:
   These connectors are keyed.

6. Attach the connector to the cartridge tape drive (Figure 7-24).
7. Attach the connector to the diskette drive (Figure 7-24).
8. Attach the connector to the Hard Disk Drive 1, if provided (Figure 7-24).

   If Hard Disk Drive 1 is not installed, dress this lead back out of the way to reduce cable congestion.

9. Attach the connector to Hard Disk Drive 0 (Figure 7-24).
10. Dress the power switch cable around to the front of the MAP/5P (Figure 7-26).



1. MAP/5P side orientation
2. Power supply
3) On/Off Switch

Figure 7-26. Power Switch Cable

11. Slide the power switch into the slot provided (Figure 7-25).
12. Replace the screw you removed in Step 7 of Power Supply Removal.

Reassembling the MAP/5P

To reassemble the MAP/5P, replace the dress cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Restoring the Avaya Interchange System

To restore the Avaya Interchange system, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify the Avaya Interchange system operation by placing a call to a user.

Riser Card Replacement

CAUTION:
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See Protecting Against Damage from Electrostatic Discharge in Chapter 4, Getting Inside the Computer.

The following procedures detail the 6-slot riser card installation and removal. All of the circuit cards are connected to the riser card. The riser card (Figure 7-23) is located in the back of the MAP/5P card cage area. The riser card is connected to the motherboard.

Riser Card Removal

To remove the riser card, you complete the following tasks:

- Remove the Avaya Interchange system from service.
- Access the riser card.
- Extract the riser card.

Removing the Avaya Interchange System from Service

To remove the Avaya Interchange system from service, do the following:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Stop the voice system. See Stopping the Voice System in Chapter 3, Common System Procedures, for this procedure.
3. Shut down the voice system. See Shutting Down the Avaya Interchange System in Chapter 3, Common System Procedures, for this procedure.
4. Remove the incoming power. See Removing Power from the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.

Accessing the Riser Card

To access the riser card, do the following:

1. Remove the dress cover. See Removing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.
2. Remove all of the circuit cards. See Removing a Circuit Card in Chapter 5, Replacing or Installing Circuit Cards, for this procedure.

NOTE:
Pay close attention to the riser card connector slots from which each circuit card is removed. Replace the circuit cards in the same slots in the new riser card. See Component Assignments in Appendix A, System Configuration, for circuit card placement.

Extracting the Riser Card

To extract the riser card, do the following:

1. Remove the screw in the lower left corner of the riser card (Figure 7-23).
2. Gently pull the riser card away from the motherboard until the riser card connector is removed from the slot on the motherboard.
3. Continue with the next procedure, Riser Card Installation.

Riser Card Installation

To install the riser card, you complete the following tasks:

- Insert the riser card.
- Reassemble the MAP/5P.
- Restore the Avaya Interchange system.

Inserting the Riser Card

To insert the riser card, do the following:

1. Remove the new riser card from its ESD-protective wrapping.

NOTE:
Keep the package and all ESD-protective wrapping to return the defective unit. You must use the original replacement unit packaging to meet the manufacturer's warranty.

2. Align the riser card connector with the slot on the motherboard.
3. Gently push the riser card connector into the motherboard.
4. Replace the screw in the bottom left corner of the riser card (Figure 7-23).

Reassembling the MAP/5P

To reassemble the MAP/5P, do the following:

1. Replace the circuit cards removed in Step 1 of Extracting the Riser Card.

   NOTE:
   Be sure to mount these cards in their correct riser card slot. See Component Assignments in Appendix A, System Configuration, for circuit card placement.

2. Replace the Dress Cover. See Replacing the Dress Cover in Chapter 4, Getting Inside the Computer, for this procedure.

Restoring the Avaya Interchange System

To restore the Avaya Interchange system, do the following:

1. Restore power to the MAP/5P. See Restoring Power to the MAP/5P in Chapter 4, Getting Inside the Computer, for this procedure.
2. Verify the Avaya Interchange system operation by placing a call to a user.

Installing an RFU (Remote Field Update)

8

Overview

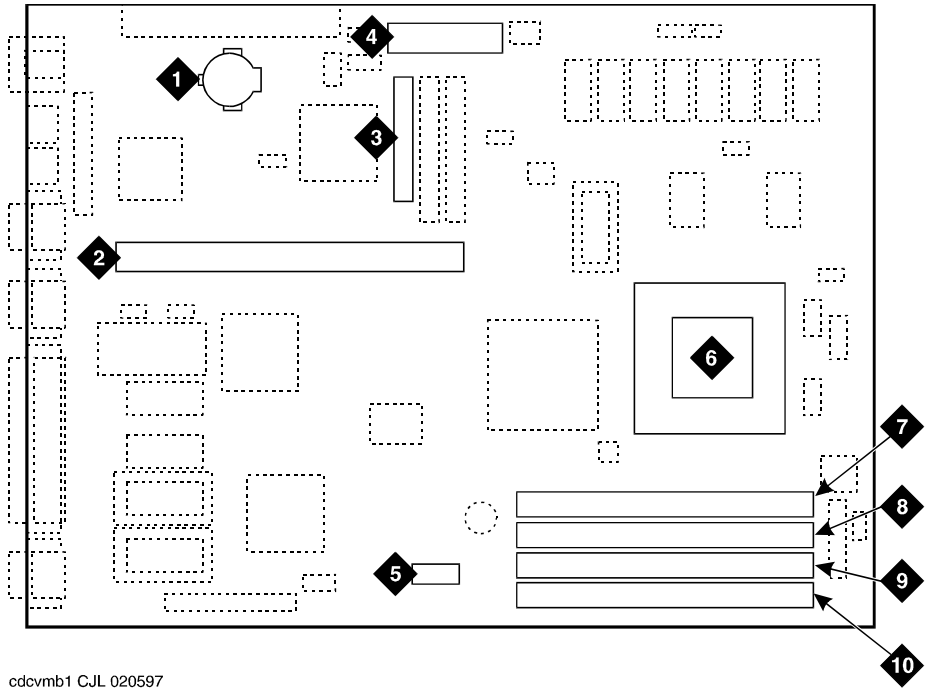
See Chapter 2, RFU Installation, in *Avaya Interchange Release 5.4 Installation and System Recovery*, for the procedures to install a Remote Field Update (RFU).

System Configuration

A

Memory and SIMM Description

The MAP/5P supports 64 MB of memory packaged on two 32-MB single in-line memory modules (SIMM). These modules are placed in sockets located in the bottom right corner of the motherboard (Figure A-1).



1. CMOS battery
2. Riser card connector
3. Diskette cable connector
4. Power supply connectors
5. Switches
6. CPU
7. SIMM4 socket (empty)
8. SIMM3 socket (empty)
9. SIMM2 socket
10. SIMM1 socket

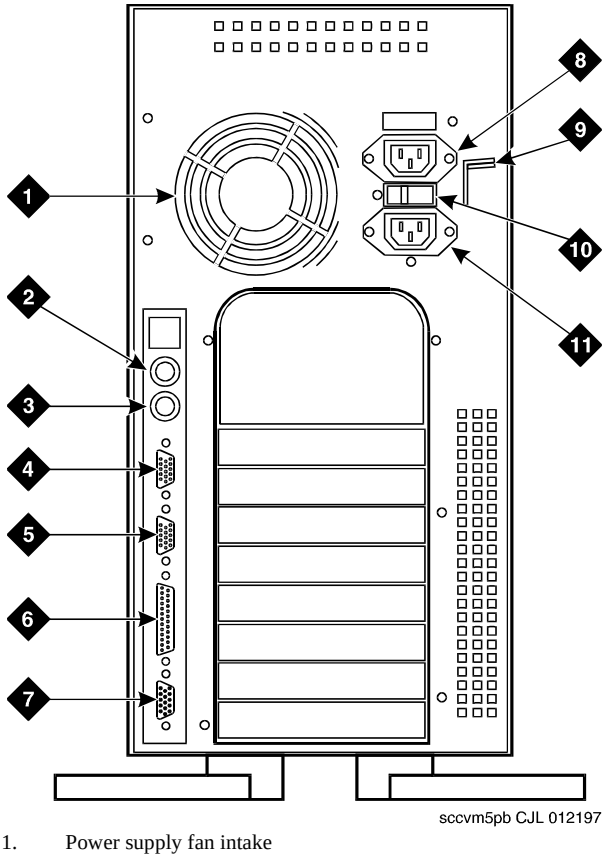
Figure A-1. Motherboard

The motherboard must be equipped with SIMMs in matched pairs.

NOTE:
The Avaya Interchange system does not boot if there is an odd number of SIMMs. In addition, the system does not boot if the SIMM pairs are unmatched.

Component Assignments

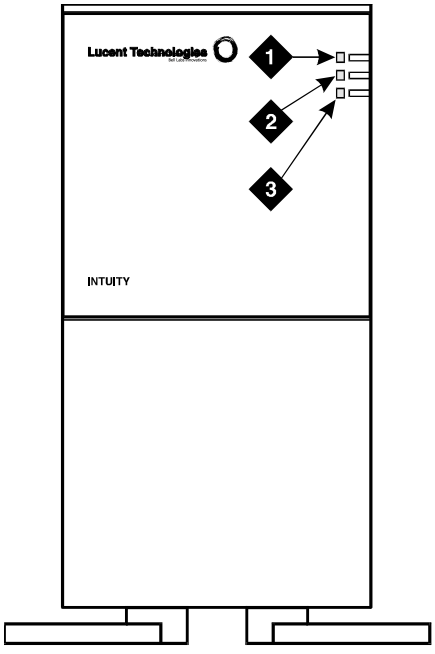
Circuit cards are placed in the MAP/5P in locations called *slots*. Slots are numbered from PCI 1 through PCI 3 and from ISA 2 through ISA 6 from the top of the MAP/5P to the bottom of the circuit card cage. Slots are accessible from the back of the MAP/5P (Figure A-2).



1. Power supply fan intake
2. Keyboard connector
3. Mouse connector
4. COM1
5. COM2
6. Parallel port
7. Video connector
8. AC power supply outlet
9. Dress cover lock
10. AC voltage selector switch
11. AC power inlet receptacle

Figure A-2. Back View of the MAP/5P

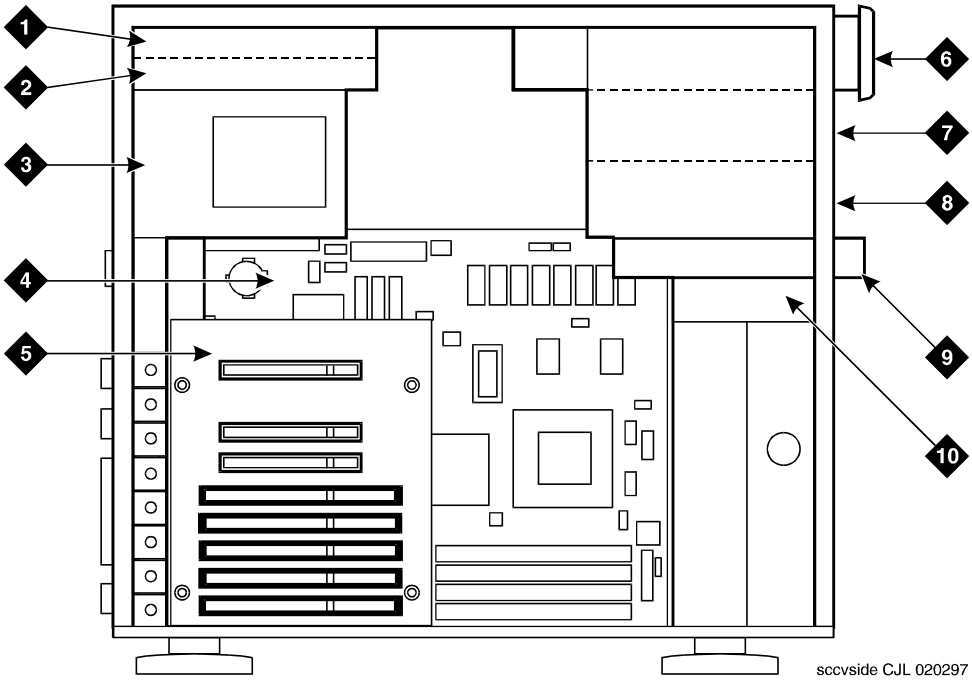
Operating hardware is placed in the MAP/5P in locations called *bays*. Bays are numbered from 1 through 7. Bays 1 through 5 are accessible from the front of the MAP/5P (Figure A-3).



1. INT drive indicator
2. Speed indicator
3. Power indicator

Figure A-3. Front View of the MAP/5P

Bays 6 and 7 are accessible only after the dress cover has been removed (Figure A-4).



1. Bay 6 — Hard Disk Drive 0
2. Bay 7 — Empty
3. Power supply
4. Motherboard
5. Riser card
6. Bay 1 — Cartridge tape drive
7. Bay 2 — Empty
8. Bay 3 — Empty
9. Bay 4 — Diskette drive
10. Bay 5 — Hard Disk Drive 1 (if used)

Figure A-4. MAP/5P Internal Layout

The following sections detail the fixed and variable assignments for circuit cards and other components installed in the MAP/5P.

Fixed Assignments

The following bay assignments are fixed in the MAP/5P:

- Bay 1 — Cartridge Tape drive
- Bay 2 — Empty
- Bay 3 — Empty
- Bay 4 — Diskette drive
- Bay 5 — Hard Disk Drive 1 (if provided)
- Bay 6 — Hard Disk Drive 0
- Bay 7 — Empty

The following slot assignment is fixed in the MAP/5P:

- PCI Slot 1 — SCSI controller circuit card
- ISA Slot 2 — remote maintenance circuit card

Variable Assignments

The Tip/Ring, ACCX, LAN, multi-port, and switch interface circuit cards all have variable assignments in the MAP/5P. These assignments depend on how many cards have been installed. The following rules apply to the placement of optional cards in the MAP/5P. These rules presume that the required circuit cards are placed in the MAP/5P as specified in Fixed Assignments.

- A maximum of three Tip/Ring circuit cards is supported.
- All other circuit cards are supported as one per system.
- Tip/Ring circuit cards are assigned slots sequentially, starting, at the bottom, with slot 6.
- The ACCX circuit card is assigned in the lowest numbered available slot after all Tip/Ring circuit cards have been installed. For example, if Tip/Ring circuit cards are installed in ISA Slot 5 and ISA Slot 6, place the ACCX circuit card in ISA Slot 4.
- The LAN circuit card, if provided, goes in the lowest numbered available ISA slot.
- The switch interface circuit card, if provided, goes in the lowest numbered available ISA slot after the LAN circuit card, if provided, has been installed.
- The multi-port serial circuit card, if provided, goes in the lowest numbered ISA slot after both the LAN and switch interface circuit cards, if provided, have been installed.
- If any ISA slots are unoccupied, they need to be between the set of Tip/Ring and ACCX circuit cards and the set of LAN, switch interface, and multi-port serial circuit cards.

The following tables outline the variable slot locations for optional circuit cards when all of the available slots are to be filled. Each column, with the addition of the required cards listed in Fixed Assignments, is a configuration. In Table A-1, for example, the first column represents a configuration that includes seven Tip/Ring circuit cards in slots 4 through 6, no other optional circuit cards.

Table A-1 lists the variable slot locations for configurations with multiple Tip/Ring circuit cards and one other optional circuit card.

Table A-1. Variable Slot Assignments When System is Equipped with Tip/Ring Circuit Cards and One other Optional Circuit Card

Circuit Card	Slots	Slots	Slots	Slots	Slots
Tip/Ring	4–6	4–6	4–6	4–6	4–6
ACCX (AYC22)	—	3	—	—	—
LAN	—	—	3	—	—
Multi-port serial	—	—	—	3	—
Switch Interface	—	—	—	—	3

Table A-1 lists the variable slot locations for configurations with Tip/Ring circuit cards and multiple other optional circuit cards.

Table A-2. Variable Slot Assignments When System Is Equipped with Tip/Ring Circuit Cards and Multiple other Optional Circuit Cards

Circuit Card	Slots	Slots	Slots	Slots	Slots	Slots	Slots	Slots	Slots	Slots
Tip/Ring	5–6	5–6	5–6	5–6	5–6	5–6	6	6	6	6
ACCX (AYC22)	4	4	4	—	—	—	5	5	5	—
LAN	3	—	—	3	3	—	3	3	—	3
multi-port serial	—	—	3	4	—	4	4	—	4	5
Switch interface	—	3	—	—	4	3	—	4	3	4

Resource Allocation

Table A-3 lists the resource assignments for all devices in the MAP/5P. It includes the circuit cards as well as devices that are included.

Table A-3. MAP/5P Resource Allocation

Device	IRQ	I/O Address	RAM Address	Notes
VGA controller	—	Plug & Play	A0000-BFFFF C0000-C7FFF	128 Kbyte video RAM required 32 Kbyte video BIOS required
System BIOS	—	—	E0000-FFFF	Located on CPU, required
LPT1 port	7	378-37F	—	Located on CPU, required
COM1 port	4	3F8-3FF	—	Located on CPU, required
COM2 port	3	2F8-2FF	—	Disable for remote maintenance circuit card
PCI SCSI	14	Plug & Play	C8000-CBFFF	SCSI ID 7, required
2-GB SCSI disk	—	—	—	1 required, 1 optional
2-GB SCSI tape	—	—	—	SCSI ID 3, 1 required
Diskette drive	6	3F0-3F7	—	DMA 2, controller located on SCSI controller card, required
LAN circuit card	10	280-29F	D8000-D9FFF	1 optional
Tip/Ring circuit card	2	x00-x1F	—	x=1–3; 1 required, 2 optional
ACCX circuit card	5	140-14F	—	1 optional

Table A-3. MAP/5P Resource Allocation

Device	IRQ	I/O Address	RAM Address	Notes
Digital station interface circuit card	12	224-227	—	1 optional, not allowed with DCIU interface circuit card
Remote maintenance circuit card	3	180-187	DC000-DCFFF	Disable COM2 on P5 120 MHz CPU

Component Ordering Numbers

B

Component Ordering Numbers

Table B-1. Component Ordering Numbers

Basic Component Description	Order Number
Adapter, electrical, DCE female	407345776
Adapter, electrical, DCE male (wyse trm, prntrs)	407050111
Adapter, electrical, DTE female	407345768
Adapter, electrical, DTE male (modems)	407050095
Adapter, SCSI, 68-50 pin	407714526
Adapter, SPM port connector	105012645
Cable assembly, ACCX	407027564
Cable assembly, ACCX/DCP, 35-ft, female	601447170
Cable assembly, ACCX/DCP, 35-ft, male	601447188
Cable assembly, diskette drive	407714559
Cable assembly, SCSI, 68-pin	407714542
Cable assembly, remote maintenance circuit card reset	601844400
Cable assembly, octopus, RJ-45, digital station card	407789064
Cable Assembly, TDM Bus, MAP 5/P	ED5P20830 G-2B
Circuit card, ACCX interface	106930944

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Table B-1. Component Ordering Numbers

Basic Component Description	Order Number
Circuit card, DCIU interface	601824956
Circuit card, digital station interface circuit card, Mitel	407780923
Circuit card, digital station interface circuit card, Nortel	407780956
Circuit card, digital station interface circuit card, Rolm	407780949
Circuit card, ethernet LAN interface	601834153
Circuit card, multi-port serial	407009406
Circuit card, remote maintenance, with on-board modem	107725467
Circuit card, remote maintenance without modem	107765109
Circuit card, SCSI controller	407711639
Circuit Card, Speech and Signal Processor (AYC43W)	601835820
Circuit card, Tip/Ring (AYC10)	106406580
Circuit card, Tip/Ring (AYC29)	107213944
Circuit card, Tip/Ring (AYC30)	107224586
Cord, 6-pin modular, 14-ft	102937604
Cord, AC power, United States, 6-ft	407714773
Cord, AC power, Australia, 8-ft	407051630
Cord, AC power, Chile (Italy–style), 6-ft	407515196
Cord, AC power, Germany, 6-ft	407051648
Cord, AC power, India, 8-ft	407406735
Cord, AC power, Japan, 8-ft	407406727
Cord, AC power, United Kingdom, 6-ft	406999243
Cord, power, monitor (PC style)	407714781
Cord, telephone, 25-ft	103623195
Cord, telephone, DW8A-SE, 25-ft	103848800
Cover, dress	407714609
Diskette drive, 1.44-MB	407714765
Disk drive, hard, SCSI, 2.0-GB, Capricorn	407711647
Disk drive, hard, SCSI, 2.0-GB, Seagate	407773555
Door, front	407714617
Fan, card cage	407714807

Table B-1. Component Ordering Numbers

Basic Component Description	Order Number
Fan, CPU	407714815
Hardware, SID, Nor Telcom (Meridian)	407024702
Hardware, SID, Nor Telcom (SL-1)	407024694
Hardware, SID, Mitel	407024728
Hardware, SID, NEAX	407024710
Hardware, SID, Rolm	407024686
IC, 32-MB SIMM	407711654
Interface unit, AYC22 cable	107221467
Interface unit, AYC22 cable	407020510
Keyboard	407681907
Monitor, color, VGA	406504571
Motherboard, 0 MB of memory	407711548
Power supply, AC	407711662
Riser card	407711621
Software, diagnostics diskette	407714799
Tape drive, SCSI streaming, 2-GB	407329937

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Disaster Recovery

C

Overview

See Chapter 4, New Installation and System Recovery Procedures, in *Avaya Interchange Release 5.4 Installation and System Recovery*, for disaster recovery procedures.

MAP/5P Platform Alarms

D

Overview

This appendix contains alarms specific to the MAP/5P hardware platform. These alarms will appear on the console during a system reboot.

NOTE:
These alarms are not generated by the Avaya Interchange system and are not documented in the Avaya Interchange alarm logs.

Purpose

The purpose of this appendix is to provide the service technician with information relating to the platform alarms generated by the MAP/5P.

Platform Alarms

Table D-1 lists the alarms associated with the MAP/5P as well as possible repair actions.

Table D-1. Platform Alarms

Alarm Message	Repair Action
CMOS Battery Error	Replace the battery. See CMOS Battery Replacement in Chapter 7, Replacing Other Components.
CMOS Checksum Error	1. Replace the battery. See CMOS Battery Replacement in Chapter 7, Replacing Other Components. If Step 1 does not work, run setup by pressing **|** or **b+a+^**.
Display Card Mismatch	Run setup by pressing **|** or **b+a+^**.
Diskette Drive Controller Error or Not Installed	Check the diskette cable connections. See Diskette Drive Replacement in Chapter 7, Replacing Other Components.
Diskette Drive Error	Diskette may be defective. If the diskette is good, replace the diskette drive. See Diskette Drive Replacement in Chapter 7, Replacing Other Components.
Diskette Drive A Type Mismatch	Run setup by pressing **|** or **b+a+^** and select the proper drive type.
Diskette Drive B Type Mismatch	Run setup by pressing **|** or **b+a+^**and select the proper drive type.
Equipment Configuration Error.	Check the memory configuration.
Hard Disk Controller Error	Run setup by pressing **|** or **b+a+^**Chapter 7, Replacing Other Components.
Hard Disk 0 Error	Check all cable connections. Replace Hard Disk Drive 0. See Recovering from a Hard Disk Drive 0 Failure in Chapter 6, Replacing the Hard Disk Drive.
Hard Disk 1 Error	Check all cable connections. Replace Hard Disk Drive 1. See Recovering from a Hard Disk Drive 1 Failure in Chapter 6, Replacing the Hard Disk Drive.
Keyboard Error or No Keyboard Connected	Check and connect the keyboard to the MAP/5P.

Table D-1. Platform Alarms

Alarm Message	Repair Action
Keyboard Interface Error	Replace the keyboard.
Memory Error at: MMMM:SSSS:OOO (W:XXXX, R:YYYY) where: M is MB, S is Segment, O is Offset, X/Y are write/read pattern	Replace the SIMMs. See Memory Replacement in Chapter 7, Replacing Other Components.
CPU Clock Mismatch	1. Run setup by pressing **|** or **b+a+^** and check the CPU clock setting. 2. If the clock setting is correct, reboot the system. 3. If the error persists, contact the remote maintenance service center.
Onboard Serial Port 1 Conflict	Run setup by pressing **|** or **b+a+^** and disable the port.
Onboard Serial Port 2 Conflict	Run setup by pressing **|** or **b+a+^** and disable the port.
Onboard Parallel Port Conflict	Run setup by pressing **|** or **b+a+^** and disable the port.
Pointing Device Error	Check the connections on the mouse.
Pointing Device Interface Error	Replace the mouse.
Press | key to continue or b+a+^ for setup.	Press **|** or **b+a+^** to enter setup.
Real Time Clock Error	Replace the battery. See CMOS Battery Replacement in Chapter 7, Replacing Other Components.

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Glossary

5ESS Switch
A central office switch manufactured by Lucent Technologies that can be integrated with the Avaya Interchange system.

A

accessed message
A message that was received and scanned (either the entire message or just the header).

ACA
See *automatic circuit assurance*.

ACD
See *automatic call distribution*.

activity menu
The list of options spoken to users when they first access a messaging system. Selecting an activity is the starting point for all user operations.

ADAP
See *administration and data acquisition package*.

address
INTUITY AUDIX user identification, containing the user's extension and machine, that indicates where the system needs to deliver a message. An address can include several users or mailing lists. Name or number addressing can be selected with the * A (Address) command.

adjunct
A separate system closely integrated with a switch, such as an Avaya Interchange system or a call management system (CMS).

administration
The process of setting up a system (such as a switch or a messaging system) to function as desired. Options and defaults are normally set up (translated) by the system administrator or service personnel.

administration and data acquisition package (ADAP)
A software package that allows the system administrator to transfer system user, maintenance, or traffic data from an INTUITY AUDIX system to a personal computer (PC).

ADU
See *asynchronous data unit*.

alarm log
A list of alarms that represent all of the active or resolved problems on an Avaya Interchange system. The alarm log is stored in a software file on disk and can be accessed either locally or remotely on a terminal connected to the system.

alarms
Hardware, software, or environmental problems that can affect system operation. Alarms are classified as *major*, *minor*, or *warning*.

alphanumeric
Consisting of alphabetic and numeric symbols or punctuation marks.

ALT
See *assemble, load, and test.*

American wire gauge (AWG)
A standard measuring gauge for nonferrous conductors.

AMIS
See *Audio Messaging Interchange Specification*.

AMIS prefix
A number added to the destination number to indicate that it is an AMIS analog networking number.

analog networking
A method of transferring a message from one messaging system to another whereby the message is played back (voiced) during the transfer.

analog signal
In teleprocessing usage, a communications path that usually refers to a voice-grade telephone line.

announcement
A placeholder within the Avaya Interchange system for playing fragments. Each event that may occur within AUDIX has one or more announcement numbers permanently assigned to it. Fragment numbers are then assigned to the announcement numbers.

announcement fragment
A numbered piece of spoken information that makes up a system message or prompt.

antistatic
A treatment for material to prevent the build-up of static electricity.

API
See *application programming interface.*

application
A computer software program.

application identifier
A two-letter code used in the administrator's log to identify the application or subsystem for which an alarm is being generated. There are eight application identifiers as follows: CA (Call Accounting), ML (MERLIN LEGEND), MT (Maintenance), NW (Digital Networking), SW (Switch Integration), VM (Voice Messaging), VP (Voice Processing), and VR (Voice Response).

application programming interface (API)
A set of formalized software calls and routines that an application program can reference to access underlying network services.

assemble, load, and test (ALT)
The Avaya factory process that preloads software, installs hardware, and tests the system prior to shipping.

ASP
advanced signal processor

asynchronous communication
A method of data transmission in which bits or characters are sent at irregular intervals and spaced by start and stop bits rather than by time. See also *synchronous communication*.

asynchronous data unit (ADU)
An electronic communications device that can extend data transmission over asynchronous lines more than 50 feet in length. Recommended ADUs for use with the Avaya Interchange system include Z3A1 or Z3A4.

asynchronous transmission
A form of serial communications where each transmitted character is bracketed with a start bit and one or two stop bits. The Avaya Interchange system provides asynchronous EIA-232 capabilities for INTUITY AUDIX Digital Networking, if required.

attendant console
A special-purpose telephone with numerous lines and features usually located at the front desk of a business or other organization. The front desk attendant uses this telephone to answer and transfer calls.

Audio Messaging Interchange Specification (AMIS)
An analog networking protocol that allows users to exchange messages with any messaging system that also has AMIS Analog Networking capabilities. Messages can be exchanged with users on Avaya Interchange systems as well as with users on remote messaging systems made by vendors other than Avaya.

Audio Information Exchange (AUDIX)
A complete messaging system accessed and operated by touchtone telephones and integrated with a switch.

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 they can be performed on demand.

AUDIX
See *Audio Information Exchange*.

autodelete
An INTUITY AUDIX feature that allows users to designate that faxes be automatically deleted from their mailboxes after they are printed.

automated attendant
An Avaya Interchange system feature that allows users to set up a main extension number with a menu of options that routes callers to an appropriate department at the touch of a button.

automatic call distribution (ACD)
The System 85, Generic 2, or Generic 3 call-distribution group of analog ports that connects Avaya Interchange users to the system. See also *call-distribution group*.

automatic circuit assurance (ACA)
A feature of the switch that keeps records of both very long and very short calls and notifies the attendant when these calls exceed a certain parameter. The logic is that many very short calls or one very long one can suggest a trunk that is hung, broken, or out of order. The attendant can then physically dial into the trunk to check it.

automatic message scan
An INTUITY AUDIX feature that allows users to scan all message headers and messages at the touch of two buttons. With INTUITY FAX Messaging, this feature allows all new faxes to be bundled and transmitted over a single fax call delivery call. Also called *autoscan*.

autoprint
An INTUITY AUDIX feature that allows users to designate that faxes be automatically sent to a specified print destination.

autoscan
See *automatic message scan*.

AWG
See *American wire gauge.*

B

background testing
Testing that runs continuously when the system is not busy doing other tasks.

backplane
A centrally located device within a computer to which individual circuit cards are plugged for communication across an internal bus.

backup
A duplicate copy of files and directories saved on a removable medium such as a floppy diskette or a tape. The backed-up file system can be copied back (restored) if the active version is damaged (corrupted) or lost.

basic input/output system (BIOS)
A system that contains the buffers for sending information from a program to the actual hardware device for which the information is intended.

basic call transfer
The switch-hook flash method used to send the INTUITY AUDIX transfer command over analog voice ports.

basic rate access
See *basic rate interface*.

basic rate interface (BRI)
International standard protocol for connecting a station terminal to an integrated systems digital network (ISDN) switch. ISDN BRI supports two 64-Kbps information-bearer channels (B1 and B2), and one 16-Kbps call status and control (D) channel (a 2B + D format). Also called b*asic rate access*.

binary synchronous communications (BSC)
A character-oriented synchronous link protocol.

BIOS
See *basic input/output system*.

body
The part of an Avaya Interchange voice mail message that contains the actual spoken message. For a leave word calling (LWC) message, it is a standard system announcement.

boot
The operation to start a computer system by loading programs from disk to main memory (part of system initialization). Booting is typically accomplished by physically turning on or restarting the system. Also called *reboot*.

boot filesystem
The filesystem from which the system loads its initial programs.

BRI
See *basic rate interface*.

broadcast messaging
An INTUITY AUDIX feature that enables the system administrator and other designated users to send a message to all users automatically.

BSC
See *binary synchronous communications*.

buffer
A temporary storage area used to equalize or balance different operating speeds. A buffer can be used between a slow input device, such as a terminal keyboard, and the main computer, which operates at a very high speed.

bulletin board
An INTUITY AUDIX feature that allows a message to be played to callers who dial the bulletin board extension. Callers cannot leave a message since this service is a listen-only service. Also called *information service*.

bundling
Combining several calls and handling them as a single call. See also *automatic message scan*.

bus
An electrical connection/cable allowing two or more wires, lines, or peripherals to be connected together.

busy-out/release
To remove an Avaya Interchange device from service (make it appear busy or in use), and later restore it to service (release it). The Avaya Interchange switch data link, voice ports, or networking ports can be busied out when they appear faulty or when maintenance tests are run.

C

CA
Call accounting system application identifier. See *application identifier*.

call accounting system (CAS)
A software device that monitors and records information about a calling system.

call-answer
An INTUITY AUDIX feature that allows the system to answer a call and record a message when the user is unavailable. Callers can be redirected to the system through the call coverage or call forwarding switch features. INTUITY AUDIX users can record a personal greeting for these callers.

call-answer language choice
The capability of user mailboxes to accept messages in different languages. For the INTUITY AUDIX application, this capability exists when the multilingual feature is turned on.

callback number
In AMIS analog networking, the telephone number transmitted to the recipient machine to be used in returning messages that cannot be delivered.

call classification analysis (CCA)
A process that enables application designers to use information available within the system to classify the disposition of originated and transferred calls.

call coverage
A switch feature that defines a preselected path for calls to follow if the first (or second) coverage points are not answered. The Avaya Interchange system can be placed at the end of a coverage path to handle redirected calls through call coverage, send all calls, go to cover, and so on.

call data handler process (CDH)
A software process that accumulates generic call statistics and application events.

call detail recording (CDR)
A switch feature that uses software and hardware to record call data. See also *call detail recording utility*.

call detail recording utility (CDRU)
Applications software that collects, stores, optionally filters, and outputs call detail records for direct or polled output to peripheral devices. See also *call detail recording*.

call delivery
See *message delivery*.

call-distribution group
The set of analog port cards on the switch that connects switch users to the Avaya Interchange system by distributing new calls to idle ports. This group (or split) is called automatic call distribution (ACD) on System 85, Generic 2, and Generic 3 and uniform call distribution (UCD) on System 75, Generic 1, and Generic 3. See also *automatic call distribution* and *uniform call distribution*.

call management system (CMS)
An inbound call distribution and management reporting package.

called tone (CED tone)
The distinctive tone generated by a fax endpoint when it answers a call (a constant 2100-Hz tone).

called subscriber information (CSI)
The identifier for the answering fax endpoint. This identifier is sent in the T.30 protocol and is generally the telephone number of the fax endpoint.

calling tone (CNG tone)
The distinctive tone generated by a fax endpoint when placing a call (a constant 1100-Hz tone that is on for 1/2 second, off for 3 seconds).

call vectoring
A System 85 R2V4, Generic 2, and Generic 3 feature that uses a vector (switch program) to allow a switch administrator to customize the behavior of calls sent to an automatic call distribution (ACD) group.

card cage
An area within the Avaya Interchange hardware platform that contains and secures all of the standard and optional circuit cards used in the system.

cartridge tape drive
A high-capacity data storage/retrieval device that can be used to transfer large amounts of information onto high-density magnetic cartridge tape based on a predetermined format. This tape is to be removed from the system and stored as a backup.

CAS
See *call accouting system*.

CCA
See *call classification analysis.*

CDH
See *call data handler process*.

CDR
See *call detail recording*.

CDRU
See *call detail recording utility (CDRU).*

CED tone
See *called tone*.

CELP
See *code excited linear prediction*.

central office (CO)
An office or location in which large telecommunication equipment such as telephone switches and network access facilities are maintained. In a CO, private customer lines are terminated and connected to the public network through common carriers.

central processing unit (CPU)
The component of the computer that manipulates data and processes instructions coming from software.

channel
A telecommunications transmission path for voice and/or data.

channel capacity
A measure of the maximum bit rate through a channel.

class of restriction (COR)
A feature that allows up to 64 classes of call-origination and call-termination restrictions for telephones, telephone groups, data modules, and trunk groups. See also *class of service*.

class of service (COS)
The standard set of INTUITY AUDIX features given to users when they are first administered (set up with a voice mailbox). See also *class of restriction*.

clear to send (CTS)
A function that is located on Pin 5 of the 25-conductor RS-232 interface. CTS is used in the transfer of data between the computer and a serial device.

client
A computer that not only sends, receives and uses data, but also shares a larger resource whose function is to do most data storage and processing. For INTUITY Message Manager, the user's PC running Message Manager is the client. See also *server.*

CMS
See *call management system*.

CNG tone
See *calling tone*.

CO
See *central office*.

COR
See *class of restriction*.

COS
See *class of service*.

code excited linear prediction (CELP)
An analog-to-digital voice coding scheme.

collocated
An Avaya Interchange system installed in the same physical location as the host switch. See also *local installation*.

collocated adjunct
Two or more adjuncts that are serving the same switch (that is, each has voice port connections to the switch) or that are serving different switches but can be networked through a direct RS-232 connection because of their proximity.

comcode
A numbering system for telecommunications equipment used by Avaya Inc. Each comcode is a 9-digit number that represents a specific piece of hardware, software, or documentation.

command
An instruction or request given by the user to the software to perform a particular function. An entire command consists of the command name and options. Also, one- or two-key touch tones that control a mailbox activity or function.

community
A group of telephone users administered with special send and receive messaging capabilities. A community is typically comprised of people who need full access to each other by telephone on a frequent basis. See also *default community*.

compound message
A message that combines a voice message and a fax message into one unit, which INTUITY AUDIX then handles as a single message.

configuration
The particular combination of hardware and software components selected for a system, including external connections, internal options, and peripheral equipment.

controller circuit card
A circuit card used on a computer system that controls its basic functionality and makes the system operational. The controller circuit card is used to control magnetic peripherals, video monitors, and basic system communications.

COS
See *class of service*.

coverage path
The sequence of alternate destinations to which a call to a user on an Avaya Interchange system is automatically sent when it is not answered by the user. This sequence is set up on the switch, normally with the Avaya Interchange system as the last or only destination.

CPU
See *central processing unit*.

cross connect
Distribution-system equipment used to terminate and administer communication circuits.

cross connection
The connection of one wire to another, usually by first anchoring each wire to a connecting block and then placing a third wire between them so that an electrical connection is made.

CSI
See *called subscriber information*.

CTS
See *clear to send*.

D

DAC
See *dial access code*.

database
A structured set of files, records, or tables. Also, a collection of filesystems and files in disk memory that store the voice and nonvoice (program data) necessary for Avaya Interchange system operation.

data communications equipment (DCE)
Standard type of data interface normally used to connect to data terminal equipment (DTE) devices. DCE devices include the data service unit (DSU), the isolating data interface (IDI), and the modular processor data module (MPDM).

data communications interface unit (DCIU)
A switch device that allows nonvoice (data) communication between an Avaya Interchange system and an Avaya switch. The DCIU is a high-speed synchronous data link that communicates with the common control switch processor over a direct memory access (DMA) channel that reads data directly from FP memory.

data link
A term used to describe the communications link used for data transmission from a source to a destination, for example, a telephone line for data transmission.

data service unit (DSU)
A device used to access digital data channels. DATAPHONE II 2500 DSUs are synchronous data communications equipment (DCE) devices used for extended-local Avaya Interchange system connections. The 2600 or 2700 series can also be used; these support diagnostic testing and the DATAPHONE II Service network system.

data set
Another term for a modem, although a data set usually includes the telephone. See also *modem*.

data terminal equipment (DTE)
Standard type of data interface normally used for the endpoints in a connection. Normally the Avaya Interchange system, most terminals, and the switch data link are DTE devices.

DBP
See *data base processor*.

DCE
See *data communications equipment*.

DCIU
See *data communications interface unit*.

DCP
See *digital communications protocol*.

DCS
See *distributed communications system*.

debug
See *troubleshooting*.

dedicated line
A communications path that does not go through a switch. A dedicated (hard-wired) path can be formed with directly connected cables. MPDMs, DSUs, or other devices can also be used to extend the distance that signals can travel directly through the building wiring.

default
A value that is automatically supplied by the system if no other value is specified.

default community
A group of telephone users administered with restrictions to prevent them from sending messages to or receiving messages from other communities. If a system is administered to use communities, the default community consists of all the users defined on that system.

default print number
The user-administered extension to which autoprinted faxes are redirected upon their receipt into the user's mailbox. This default print destination is also provided as a print option when the user is manually retrieving and printing faxes from the mailbox.

delivered message
A message that has been successfully transmitted to a recipient's incoming mailbox.

demand testing
Testing performed on request (usually by service personnel).

diagnostic testing
A program run for testing and determining faults in the system.

dial-ahead/dial-through
The act of interrupting or preceding INTUITY AUDIX system announcements by typing (buffering) touchtone commands in the order the system would normally prompt for them.

dial string
A series of numbers used to initiate a call to a remote AMIS machine. A dial string tells the switch what type of call is coming (local or long distance) and gives the switch time to obtain an outgoing port, if applicable

dialed number identification service (*DNIS_SVC)
An available channel service assignment on the Avaya Interchange system. Assigning this service to a channel permits the Avaya Interchange system to interpret information from the switch and operate the appropriate application for the incoming telephone call.

DID
See *direct inward dialing*.

digital communications protocol (DCP)
A 64-Kbps digital data transmission code with a 160-Kbps bipolar bit stream divided into two information (I) channels and one signaling (S) channel.

digital networking
A method of transferring messages between messaging systems in a digital format. See also *INTUITY AUDIX Digital Networking*.

digital signal processor (DSP)
A specialized digital microprocessor that performs calculations on digitized signals that were originally analog and then sends the results on.

DIP switch
See *dual in-line package switch*.

direct inward dialing (DID)
The ability for an outside caller to call an internal extension without having to pass through an operator or attendant.

direct memory access (DMA)
A quick method of moving data from a storage device directly to RAM, which speeds processing.

directory
1. An INTUITY AUDIX feature that allows you to hear a user's name and extension after pressing * * N at the activity menu. 2. A group of related files accessed by a common name in software.

display terminal
A data terminal with a screen and keyboard used for displaying Avaya Interchange screens and performing maintenance or administration activities.

distributed communications system (DCS)
A network of two or more switches that uses logical and physical data links to provide full or partial feature transparency. Voice links are made by using tie trunks.

distribution list
See *mailing list*.

DMA
See *direct memory access*.

DNIS
See *dialed number identification service*.

domain
An area where data processing resources are under common control. The INTUITY AUDIX system is one domain, and an e-mail system is another domain.

DSP
See *digital signal processor*.

DSU
See *data service unit*.

DTE
See *data terminal equipment*.

DTMF
See *dual tone multifrequency*.

dual in-line package (DIP) switch
A small switch, usually attached to a printed circuit card, in which there are only two settings: on or off (or 0 or 1). DIP switches are used to configure the card in a semipermanent way.

dual language greetings
The capability of INTUITY AUDIX users to create personal greetings in two different languages — one in a primary language and one in a secondary language. This capability exists when the multilingual feature is turned on and the prompts for user mailboxes can be in either of the two languages.

dual tone multifrequency (DTMF)
A way of signaling consisting of a pushbutton or touchtone dial that sends out a sound consisting of two discrete tones that can be picked up and interpreted by telephone switches.

E

EIA interface
A set of standards developed by the Electrical Industries Association (EIA) that specifies various electrical and mechanical characteristics for interfaces between electronic devices such as computers, terminals, and modems. Also known as *RS-232*.

ELA
Enhanced-List Application

electrostatic discharge (ESD)
Discharge of a static charge on a surface or body through a conductive path to ground. ESD can be damaging to integrated circuits.

electronic mail
See *e-mail*.

electrostatic discharge (ESD)
The discharge of a static charge on a surface or body through a conductive path to ground, ESD can damage integrated circuits.

e-mail
The transfer of a wide variety of message types across a computer network (LAN or WAN). E-mail messages can be text messages containing only ASCII or can be complex multimedia messages containing embedded voice messages, software files, and images.

enabled/disabled
The state of a hardware device that indicates whether it is available for use by the Avaya Interchange system. Devices must be equipped before they can be enabled (made active). See also *equipped/unequipped*.

endpoint
See *fax endpoint*.

enhanced call transfer
An INTUITY AUDIX feature that allows compatible switches to transmit messages digitally over the BX.25 (data) link. This feature is used for quick call transfers and requires a fully integrated digital switch. Callers can transfer only to other extensions in the switch dial plan.

enhanced serial data interface (ESDI)
A software- and hardware-controlled method used to store data on magnetic peripherals.

equipped/unequipped
The state of a networking channel that indicates whether Avaya Interchange software has recognized it. Devices must be equipped before they can be enabled (made active). See also *enabled/disabled*.

error message
A message on the screen indicating that something is wrong with the system and possibly suggesting how to correct it.

errors
Problems detected by the system during operation and recorded in the maintenance log. Errors can produce alarms if they exceed a threshold.

escape from reply
The ability to quickly return to getting messages for a user who encounters a problem trying to respond to a message. To escape, the user presses #.

escape to attendant
A feature that allows users with the call answer feature to have a personal attendant or operator administered to pick up their unanswered calls. A system-wide extension could also be used to send callers to a live agent.

ESD
See *electrostatic discharge*.

ESDI
See *enhanced serial data interface*.

event
An informational messages about the system's activities. For example, an event is logged when the system is rebooted. Events may or may not be related to errors and alarms.

F

facilities restriction level (FRL)
A value that determines which types of calls the users of a switch are allowed to make.

facility out-of-service (FOOS)
State of operation during which the current channel is not receiving a dial tone and is not functioning.

facsimile
1. A digitized version of written, typed, or drawn material transmitted over telephone lines and printed out elsewhere. 2. Computer-generated text or graphics transmitted over computer networks. A computer-generated fax is typically printed to a fax machine, but can remain stored electronically.

fax
See *facsimile*.

fax addressing prefix
Unique prefix that identifies a particular fax endpoint to the Avaya Interchange system. This prefix is used by the system as a template to differentiate all call-delivery machines on the network from each other.

fax endpoint
Any device capable of receiving fax calls. Fax endpoints include fax machines, individual PC fax modems, fax ports on LAN fax servers, and ports on fax-enabled messaging systems.

fax print destination prefix
A dial string that the Avaya Interchange system adds to the fax telephone number the user enters to print a fax. The system takes the full number (fax print destination prefix + fax telephone extension) and hunts through the machine translation numbers until it finds the specific fax endpoint.

field
An area on a screen, menu, or report where information can be typed or displayed.

FIFO
See *first-in/first-out*.

file
A collection of data treated as a basic unit of storage.

filename
Alphanumeric characters used to identify a particular file.

file redundancy
See *mirroring*.

file system
A collection of related files (programs or data) stored on disk that are required to initialize an Avaya Interchange system.

first-in/first-out (FIFO)
A method of processing telephone calls or data in which the first call or data to be received is the first call or data to be processed.

F key
See *function key*.

FNPAC
See *foreign numbering-plan area code*.

FOOS
See *facility out-of-service*.

foreign exchange (FX)
A central office (CO) other than the one providing local access to the public telephone network.

foreign numbering-plan area code (FNPAC)
An area code other than the local area code that must be dialed to call outside the local geographical area.

format
To set up a disk, floppy diskette, or tape with a predetermined arrangement of characters so that the system can read the information on it.

FRL
See *facilities restriction level*.

function
Individual steps or procedures within a mailbox activity.

function key (F key)
A key on a computer keyboard programmed to perform a defined function when pressed. The user interface for the Avaya Interchange system defines keys F1 through F8.

FX
See *foreign exchange*.

G

Generic 1, 2, or 3
Switch system software releases, designed for serving large communities of System 75 and System 85 users.

generic tape
A copy of the standard software and stand-alone tape utilities that is shipped with a new Avaya Interchange system.

GOS
See *grade of service*.

grade of service (GOS)
A parameter that describes the delays in accessing a port on the Avaya Interchange system. For example, if the GOS is P05, 95% of the callers hear the system answer, and 5% hear ringing until a port becomes available to answer the call.

guaranteed fax
A feature of INTUITY FAX Messaging that temporarily stores faxes sent to a fax machine. In cases where the fax machine is busy or does not answer a call, the call is sent to an INTUITY AUDIX mailbox.

guest password
A feature that allows callers who are not INTUITY AUDIX users to leave messages on the system by dialing a user's extension and entering a systemwide guest password.

H

hard disk drive
A high-capacity data-storage and -retrieval device that is located inside a computer. A hard disk drive stores data on nonremovable high-density magnetic media based on a predetermined format for retrieval by the system at a later date.

hardware
The physical components of a computer system. The central processing unit, disks, tape, and floppy drives are all hardware.

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.

help
A command run by pressing HELP or CTRL ? on an Avaya Interchange display terminal to show the options available at your current screen position. In the INTUITY AUDIX system, press * H on the telephone keypad to get a list of options. See also *online Help*.

host switch
The switch directly connected to the Avaya Interchange system over the data link. Also, the physical link connecting an Avaya Interchange system to a distributed communications system (DCS) network.

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

I

I/O
Input/output.

IDI
See *isolating data interface*.

IMAPI
See *INTUITY messaging application programming interface*.

INADS
See *initialization and administration system*.

information service
See *bulletin board*.

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

initialization and administration system (INADS)
A computer-aided maintenance system used by remote technicians to track alarms.

initialize
To start up the system for the first time.

input
A signal fed into a circuit or channel.

integrated services digital network (ISDN)
A network that provides end-to-end digital connectivity to support a wide range of voice and data services.

integrated voice processing CELP (IVC6) card
A computer circuit card that supports both fax processing and voice processing capabilities. It provides two analog ports to support six analog channels. All telephone calls to and from the Avaya Interchange system are processed through the IVC6 card.

interface
The device or software that forms the boundary between two devices or parts of a system, allowing them to work together. See also *user interface*.

internal e-mail
Software on a PC that provides messaging capability between users on the same AUDIX system or to administered remote AUDIX systems and users. Users can create, send, and receive a message that contains multiple media types, specifically, voice, fax, text, or file attachments (software files, such as word processing or spreadsheet files).

interrupt request (IRQ)
Within a PC, a signal sent from a device to the CPU to temporarily suspend normal processing and transfer control to an interrupt handling routine.

INTUITY AUDIX Digital Networking
An Avaya Interchange feature that allows customers to link together up to 500 remote Avaya Interchange machines for a total of up to 500,000 remote users. See also *digital networking*.

INTUITY Message Manager
A Windows-based software product that allows INTUITY AUDIX users to receive, store, and send their voice/FAX messages from a PC. The software also enables users to create and send multimedia messages that include voice, fax, file attachments, and text.

INTUITY messaging application programming interface (IMAPI)
A software function-call interface that allows INTUITY AUDIX to interact with Avaya Interchange Message Manager.

IRQ
See *interrupt request*.

ISDN
See *integrated services digital network*.

isolating data interface (IDI)
A synchronous, full duplex data device used for cable connections between an Avaya Interchange GPSC-AT/E card and the switch data communications interface unit (DCIU).

IVC6
See *integrated voice processing CELP (IVC6) card.*

J

jumpers
Pairs or sets of small prongs or pins on circuit cards and mother boards the placement of which determines the particular operation the computer selects. When two pins are covered, an electrical circuit is completed. When the jumper is uncovered, the connection is not made. The computer interprets these electrical connections as configuration information.

L

label
The name assigned to a disk device (either a removable tape cartridge or permanent drive) through software. Cartridge labels can have a generic name (such as “3.3”) to show the software release, or a descriptive name if for backup copies (such as “back01”). Disk drive labels usually indicate the disk position (such as disk00 or disk02).

LAN
See *local area network*.

last-in/first-out (LIFO)
A method of processing telephone calls or data in which the last call (or data) received is the first call (or data) to be processed.

LCD
See *liquid crystal display*.

leave word calling (LWC)
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.

LED
See *light emitting diode*.

LIFO
See *last-in/first-out*.

light emitting diode (LED)
A light on the hardware platform that shows the status of operations.

liquid crystal display (LCD)
The 10-character alphanumeric display that shows the status of the system, including alarms.

load
The process of reading software from external storage (such as disk) and placing a copy in system memory.

local area network (LAN)
A network of PCs that communicate with each other and that normally share the resources of one or more servers. Operation of INTUITY Message Manager requires that the INTUITY AUDIX system and the users' PCs be on a LAN.

local AUDIX machine
The Avaya Interchange system where a user's INTUITY AUDIX mailbox is located. All users on this home machine are called *local users*.

local installation
A switch, adjunct, or peripheral device installed physically near the host switch or system. See also *collocated*.

local network
A network in which all Avaya Interchange systems are connected to the same switch.

login
A unique code a user must enter to gain approved access to the Avaya Interchange system. See also *password*.

login announcement
A feature enabling the system administrator and other designated users to create a mail message that is automatically played to all INTUITY AUDIX users every time they log in to the system.

Lotus Notes
Information management software for work groups that allows individuals to share and manipulate information over a local or wide area network

LWC
See *leave word calling*.

M

magnetic peripherals
Data storage devices that use magnetic media to store information. Such devices include hard disk drives, floppy disk drives, and cartridge tape drives.

mailbox
A portion of disk memory allotted to each Avaya Interchange system user for creating and storing outgoing and incoming messages.

mailing list
A group of user addresses assigned a list ID# and public or private status. A mailing list can be used to simplify the sending of messages to several users.

maintenance
The process of identifying system errors and correcting them, or taking steps to prevent problems from occurring.

major alarm
An alarm detected by Avaya Interchange software that affects at least one fourth of the Avaya Interchange ports in service. Often a major alarm indicates that service is affected.

MANOOS
See *manually out-of-service*.

manually out-of-service
State of operation during which a unit has been intentionally taken out of service.

MAP
See *multi-application platform*.

mean time between failures
The average time a manufacturer estimates will elapse before a failure occurs in a component or system.

media type
The form a message takes. The media types supported by the Avaya Interchange system are voice, text, file attachments, and fax.

memory
A device that stores logic states such that data can be accessed and retrieved. Memory can be temporary (such as system RAM) or permanent (such as disk).

menu
A list of options displayed on a computer terminal screen or spoken by a voice processing system. Users choose the option that reflects what action they want the system to take.

menu tree
The way in which nested automated attendants are set up.

message categories
Groups of messages in INTUITY AUDIX users' mailboxes. Categories include *new*, *unopened*, and *old* for the incoming mailbox and *delivered*, *accessed*, *undelivered*, *undeliverable* (not deliverable), and *file cabinet* for the outgoing mailbox.

message component
A media type included in a multimedia message. These types include voice, text, file attachments, and fax messages.

message delivery
An optional INTUITY feature that permits users to send messages to any touchtone telephone, as long as the telephone number is in the range of allowable numbers. This feature is an extension of the AMIS analog networking feature and is automatically available when the AMIS feature is activated.

Message Manager
See *INTUITY Message Manager*.

message-waiting indicator (MWI)
An indicator that alerts Avaya Interchange users that they have received new mail messages. An MWI can be an LED or neon lamp, or an audio tone (stutter dial tone).

message waiting lamp (MWL)
See *message-waiting indicator*.

migration
An installation that moves data to the Avaya Interchange system from another type of Avaya messaging system, for example, from AUDIX R1, DEFINITY AUDIX, or AUDIX Voice Power.

minor alarm
An alarm detected by maintenance software that affects less than one-fourth of the Avaya Interchange ports in service but has exceeded error thresholds or may impact service.

mirroring
An Avaya Interchange system feature that allows data from crucial filesystems to be continuously copied to backed-up (mirror) file systems while the system is running. If the system has some problem in which an original filesystem cannot be used, the backup filesystem is placed in service automatically.

ML
MERLIN LEGEND application identifier. See *application identifier*.

mode code
A string of touchtones from a MERLIN LEGEND switch. A mode code may send the INTUITY AUDIX system information such as call type, calling party, called party, and on/off signals for message waiting indicators.

modem
A device that converts data from a form that is compatible with data processing equipment (digital) to a form compatible with transmission facilities (analog), and vice versa.

modular
A term that describes equipment made of plug-in units that can be added together to make the system larger, improve its capabilities, or expand its size.

modular processor data module (MPDM)
A data device that converts RS-232C or RS-449 protocol signals to digital communications protocol (DCP) used by System 75/85, Generic1, and Generic 3 switches. MPDMs can connect the Avaya Interchange system to a switch DCIU or SCI link or connect terminals to a switch port card.

MPDM
See *modular processor data module*.

MT
Maintenance application identifier. See *application identifier*.

MTBF
See *mean time between failures*.

multiapplication platform (MAP)
The computer hardware platform used by the Avaya Interchange system.

multilingual feature
A feature that allows announcement sets to be active simultaneously on the system in more than one language. Mailboxes can be administered so that users can hear prompts in the language of their choice.

MWI
See *message-waiting indicator*.

MWL
See *message-waiting lamp*.

N

networking
See *INTUITY AUDIX Digital Networking*.

networking prefix
A set of digits that identifies an Avaya Interchange machine.

night attendant
The automated attendant created on a MERLIN LEGEND switch that automatically becomes active during off-hours. The night attendant substitutes for one or more daytime attendants.

not deliverable message
A message that could not be delivered after a specified number of attempts, usually indicating that the user's mailbox is full.

NPA
See *numbering plan area*.

NT
Networking application identifier. See *application identifier*.

MWL
See *message waiting lamp*.

Numbering plan area
Formal name for 3-digit telephone area codes in North America. Within an area code, no two telephone lines may have the same 7-digit phone number. The code is often designated as NXX, to indicate the three digits.

O

off-hook
See *switch hook*.

on-hook
See *switch hook*.

online Help
An Avaya Interchange system feature that provides information about user interface windows, screens, and menus by pressing a predetermined key. See also *help*.

open systems interconnection (OSI)
An internationally accepted framework of standards for communication between systems made by different vendors.

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

option
A choice selected from a menu or an argument used in a command line to specify program output by modifying the execution of a command. When you do not specify any options, the command executes according to its default options.

OS
See *operating system*.

OSI
See *open systems interconnection*.

outcalling
An Avaya Interchange system feature that allows the system to dial users' numbers to inform them that they have new messages.

outgoing mailbox
A storage area on the Avaya Interchange system where users can keep copies of messages for future reference or action.

P

parallel transmission
The transmission of several bits of data at the same time over different wires. Parallel transmission of data is usually faster than serial transmission.

password
1. A word or character string recognized automatically by the Avaya Interchange system that allows a user access to his- or /her mailbox or a system administrator access to the system database. 2. An alphanumeric string assigned to local and remote networked machines to identify the machines or the network. See also *login.*

password aging
An INTUITY AUDIX feature that allows administrators to set a length of time after which a user's AUDIX password or the administrator's system password expires. The user or administrator must then change the password.

PBX
See *private branch exchange*.

PC
See *power converter*.

PDM (processor data module)
See *modular processor data module (MPDM)*.

peripheral device
Equipment such as a printer or terminal that is external to the Avaya Interchange cabinet but necessary for full operation and maintenance of the system. Also called a *peripheral*.

personal directory
An INTUITY AUDIX feature that allows each user to create a private list of customized names.

personal fax extension
See *secondary extension*.

PI
See *processor interface*.

PIB
See *processor interface*.

pinouts
The signal description per pin number for a particular connector.

PMS
See *property management system*.

port
A connection or link between two devices that allows information to travel to a desired location. For example, a switch port connects to an Avaya Interchange voice port to allow a caller to leave a message.

POST
See *power-on self -est*.

power-on self-test (POST)
A set of diagnostics stored in ROM that tests components such as disk drives, keyboard, and memory each time the system is booted. If problems are identified, a message is sent to the screen.

priority call answer
An INTUITY AUDIX feature that allows users to designate a call answer message as a priority message. To make a message a priority message, the caller presses 2 after recording.

priority messaging
An INTUITY AUDIX feature that allows some users to send messages that are specially marked and preferentially presented to recipients. See also *priority outcalling*.

priority outcalling
An INTUITY AUDIX feature that works with the priority messaging feature by allowing the message recipient to elect to be notified by outcalling only when a priority message has been received. See also *priority messaging*.

private branch exchange (PBX)
An analog, digital, or electronic telephone switching system where data and voice transmissions are not confined to fixed communications paths but are routed among available ports or channels. See also *switch*.

private mailing list
A list of addresses that only the Avaya Interchange system user who owns it can access.

private messaging
A feature of INTUITY AUDIX that allows a user to send a message that cannot be forwarded by the recipient.

processor data module (PDM)
See *modular processor data module (MPDM)*.

processor interface (PI)
A System 75, Generic 1, Generic 3i, Generic 3s, and Generic 3vs switch data link. Also called *processor interface board (PIB)*.

programmed function key
See *function key.*

property management system (PMS)
A product used by lodging establishments to automate the management of guest records, reservations, room assignments, and billing. In an integrated PMS environment, special software links the PMS to the INTUITY Lodging system so that both systems share a common set of messages and commands.

protocol
A set of conventions or rules governing the format and timing of message exchanges (signals) to control data movement and the detection and possible correction of errors.

public mailing list
A list of addresses that any INTUITY AUDIX user can use if that user knows the owner's list ID number and extension number. Only the owner can modify a public mailing list.

pulse-to-tone converter
A device connected to the switch that converts signals from a rotary pulses to touchtone signals. This device allows callers to use rotary telephones to access options in an Avaya Interchange user's mailbox or in an automated attendant.

R

RAM
See *random access memory.*

random access memory (RAM)
The memory used in most computers to store the results of ongoing work and to provide space to store the operating system and applications that are actually running at any given moment.

read-only memory (ROM)
A form of computer memory that allows values to be stored only once. After the data is initially recorded, the computer can only read the contents. ROM is used to supply constant code elements such as bootstrap loaders, network addresses, and other more or less unvarying programs or instructions.

reboot
See *boot*.

remote access
Sending and receiving data to and from a computer or controlling a computer with terminals or PCs connected through communications (that is, telephone) links.

remote installation
A system, site, or piece of peripheral equipment that is installed in a different location from the host switch or system.

remote maintenance
The ability of Avaya personnel to interact with a remote computer through a telephone line or LAN connection to perform diagnostics and some system repairs. See also *remote service center*.

remote network
A network in which the systems are integrated with more than one switch.

remote service center
An Avaya or Avaya-certified organization that provides remote support to Avaya Interchange customers. Depending upon the terms of the maintenance contract, your remote service center could be notified of all major and minor alarms and could have the ability to remotely log in to your system and remedy problems. See also *remote maintenance.*

remote terminal
A terminal connected to a computer over a telephone line.

remote users
INTUITY AUDIX users whose mailboxes reside on a remote INTUITY AUDIX Digital Networking machine.

REN
See *ringer equivalence number*.

reply loop escape
An INTUITY AUDIX feature that allows a user the option of continuing to respond to a message after trying to reply to a nonuser message.

reply to sender
An INTUITY AUDIX feature that allows users to immediately place a call to the originator of an incoming message if that person is in the switch's dial plan.

request to send (RTS)
One of the control signals on an EIA-232 connector that places the modem in the originate mode so that it can begin to send.

restart
1. An Avaya Interchange feature that allows users who have reached the system through the call answer feature to access their own mailboxes by entering the * R (Restart) command. This feature is especially useful for long distance calls or for users who want to access the Avaya Interchange system when all the ports are busy. 2. The reinitialization of certain software, for example, *restarting* the messaging system.

restore
The process of recovering lost or damaged files by retrieving them from available backup tapes, floppy diskettes, or other disk devices.

retention time
The amount of time messages are saved on disk before being automatically deleted from a user's mailbox.

reusable upgrade kit (RUK)
A package shipped to the customer's site prior to an upgrade that contains materials the technician needs to complete the installation. This package includes an A/B switch box, a keyboard, a 25-foot coaxial cable, two T adapters, and terminations to a LAN circuit card. It remains the property of Avaya once the installation is finished.

right-to-use (RTU) fee
A charge to the customer to access certain functions or capacities that are otherwise restricted, for example, additional voice or networking ports or hours of speech storage. Avaya personnel can update RTU parameters either at the customer's site or remotely via a modem.

ringer equivalence number (REN)
A number required in the United States for registering your telephone equipment with a service provider.

ROM
See *read-only memory*.

RS-232
See *EIA interface.*

RTS
See *request to send*.

RUK
See *reusable upgrade kit*.

S

SCA
See *switch communications adapter.*

scan
To automatically play mail messages, headers, or both.

scheduled delivery time
A time and/or date that an INTUITY AUDIX user can assign to a message that tells the system when to deliver it. If a delivery time is omitted, the system sends the message immediately.

screen
That portion of the Avaya Interchange user interface through which most administrative tasks are performed. Avaya Interchange screens request user input in the form of a command from the `enter command:` prompt.

SCSI
See *small computer system interface*.

secondary extension
A second, fax-dedicated extension that directs incoming faxes directly into a user's mailbox without ringing the telephone. The secondary extension shares the same mailbox as the voice extension but acts like a fax machine. Also called *personal fax extension*.

serial transmission
The transmission of one bit at a time over a single wire.

server
A computer that processes and stores data that is used by other smaller computers. See also *client*.

shielded cables
Cables that are protected from interference with metallic braid or foil.

SID
See *switch integration device*.

SIMM
See *single in-line memory module*.

simplified message service interface (SMSI)
Type of data link connection to an integrated 1A ESS or 5ESS switch in the Avaya Interchange system.

simplified message desk interface (SMDI)
Also known as station message desk interface. Type of data link from the central office that contains information and instructions for the Avaya Interchange system. With SMDI, the caller need not re-enter the called number once the call terminates to the Avaya Interchange system. See also *simplified message service interface*.

single in-line memory module (SIMM)
A method of containing random access memory (RAM) chips on narrow strips that attach directly to sockets on the CPU circuit card. Multiple Sums are sometimes installed on a single CPU circuit card.

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.

SMDI
See *station message desk interface*.

SMDR
See *station message detail recording*.

SMSI
See *simplified message service interface*.

SP
signal processor

SSP
scalable signal processor

station message desk interface (SMDI
See *simplified message desk interface*.

station message detail recording
See *call detail recording (CDR)*.

subscriber
An Avaya Interchange user who has been assigned the ability to access the INTUITY AUDIX Voice Messaging system.

surge
A sudden rise and fall of voltage in an electrical circuit.

surge protector
A device that plugs into the telephone system and the commercial AC power outlet to protect the telephone system from damaging high-voltage surges.

SW
Switch integration application identifier. See *application identifier*.

switch
An automatic telephone exchange that allows the transmission of calls to and from the public telephone network. See also *private branch exchange (PBX)*.

switched access
A connection made from one endpoint to another through switch port cards. This allows the endpoint (such as a terminal) to be used for several applications.

switch hook
The device at the top of most telephones that is depressed when the handset is resting in the cradle (that is, when the telephone is *on hook*). This device is raised when the handset is picked up (that is, when the telephone is *off hook*).

switch-hook flash
A signaling technique in which the signal is originated by momentarily depressing the switch hook.

switch integration
Sharing of information between a messaging system and a switch to provide a seamless interface to callers and system users. A fully integrated INTUITY AUDIX system, for example, answers each incoming telephone call with information taken directly from the switch. Such information includes the number being called and the circumstances under which the call was sent to it, for example, covered from a busy or unanswered extension.

switch integration device (SID)
A combination of hardware and software that passes information from the switch to the Avaya Interchange system, thus allowing it to share information with non-Avaya switches. The operation of a SID is unique to the particular switch with which it interfaces.

switch network
Two or more interconnected switching systems.

synchronized mailbox
A mailbox that is paired with a corresponding mailbox in another domain and linked via software that keeps track of changes to either mailbox. When the contents of one mailbox change, the software replicates that change in the other mailbox.

synchronizer
The name given to the trusted server by the e-mail vendor, Lotus Notes.

synchronous communication
A method of data transmission in which bits or characters are sent at regular time intervals, rather than being spaced by start and stop bits. See also *asynchronous communication*.

synchronous transmission
A type of data transmission where the data characters and bits are exchanged at a fixed rate with the transmitter and receiver synchronized. This allows greater efficiency and supports more powerful protocols.

System 75
An advanced digital switch that supports up to 800 lines for voice and data communications.

System 85
An advanced digital switch manufactured that supports up to 3000 lines for voice and data communications.

system configuration
See *configuration*.

T

T.30
The standard for Group III fax machines that covers the protocol used to manage a fax session and negotiate the capabilities supported by each fax endpoint.

tape cartridge
One or more spare removable cartridges required to back up system information.

tape drive
The physical unit that holds, reads, and writes to magnetic tape.

TCP/IP
See *transmission control protocol/internet protocol*.

TDD
See *telecommunications device for the deaf*.

TDM
See *time division multiplexing*.

telecommunications device for the deaf (TDD)
A device with a keyboard and display unit that connects to or substitutes for a telephone. The TDD allows a deaf or hearing-impaired person to communicate over the telephone lines with other people who have TDDs. It also allows a deaf person to communicate with the INTUITY AUDIX system.

terminal
See *display terminal*.

terminal type
A number indicating the type of terminal from which a user is logging in to the Avaya Interchange system. Terminal type is the last required entry before gaining access to the Avaya Interchange display screens.

terminating resistor
A grounding resistor placed at the end of a bus, line, or cable to prevent signals from being reflected or echoed.

time division multiplexing (TDM)
A method of serving multiple channels simultaneously over a common transmission path by assigning the transmission path sequentially to the channels, with each assignment being for a discrete time interval.

tip/ring
A term used to denote the analog telecommunications interface.

tone generator
A device acoustically coupled to a rotary telephone used to produce touchtone signals.

traffic
The flow of attempts, calls, and messages across a telecommunications network.

translations
Software assignments that tell a system what to expect on a certain voice port or the data link, or how to handle incoming data. Translations customize the Avaya Interchange system and switch features for users.

transmission control protocol/internet protocol (TCP/IP)
A suite of protocols that allow disparate hosts to connect over a network. Transmission control protocol (TCP) organizes data on both ends of a connection and ensures that the data that arrives matches that the data that was sent. Internet protocol (IP) ensures that a message passes through all the necessary routers to the proper destination.

T/R
See *tip/ring*.

troubleshooting
The process of locating and correcting errors in computer programs or systems. Also called *debugging*.

trusted server
A server that uses IMAPI to access an INTUITY AUDIX mailbox on behalf of a user and is empowered to do everything to a user's message that INTUITY AUDIX can do.

TTS
Text-to-Speech

U

UCD
See *uniform call distribution*.

Undelete
An INTUITY AUDIX feature that allows users to restore the last message deleted by pressing * U.

undelivered message
A message that has not yet been sent to an INTUITY AUDIX user's incoming mailbox. The message resides in the sender's outgoing mailbox and can be modified or redirected by the sender.

unequipped
See *equipped/unequipped*.

unfinished message
A message that was recorded but not approved or addressed, usually as the result of an interrupted INTUITY AUDIX session. Also called *working message*.

uniform call distribution (UCD)
The type of call-distribution group (or hunt group) of analog port cards on some switches that connects users to the INTUITY AUDIX system. System 75, Generic 1, Generic 3, and some central office switches use UCD groups. See also *call-distribution group*.

uninterruptable power supply (UPS)
An auxiliary power unit that provides continuous to provide power in cases in which commercial power is lost.

UNIX operating system
A multiuser, multitasking computer operating system.

upgrade
An installation that moves an Avaya Interchange system to a newer release.

untouched message
An INTUITY AUDIX feature that allows a user to keep a message in its current category by using the * * H (Hold) command. If the message is in the new category, message-waiting indication remains active (for example, the message-waiting lamp remains lit).

UPS
See *uninterruptable power supply*.

U. S. 123
An alternate announcement set in U. S. English whose prompts use numbers, not letters, to identify telephone keypad presses. For example, a prompt might say "*Press star three*" instead of "*Press star D*."

user interface
The devices by which users access their mailboxes, manage mailing lists, administer personal greetings, and use other messaging capabilities. Types of user interfaces include a touchtone telephone keypad.

user population
A combination of different types of users on which Avaya Interchange configuration guidelines are based.

V

vector
A customized program in the switch for processing incoming calls.

VM
Voice messaging application identifier. See *application identifier*.

voice link
The Avaya Interchange analog connection(s) to a call-distribution group (or hunt group) of analog ports on the switch.

voice mail
See *voice message*.

voice mailbox
See *mailbox*.

voice message
Digitized information stored by the Avaya Interchange system on disk memory. Also called *voice mail*.

voice port
The IVC6 port that provides the interface between the Avaya Interchange system and the analog ports on the switch.

voice terminal
A telephone used for spoken communications with the Avaya Interchange system. A touchtone telephone with a message-waiting indicator is recommended for INTUITY AUDIX users.

voicing
1. Speaking a message into the Avaya Interchange system during recording. 2. Having the system play back a message or prompt to a user.

VP
Voice platform application identifier. See *application identifier*.

VR
Voice response application identifier. See *application identifier*.

W

WAN
See *wide area network*.

wide area network (WAN)
A data network typically extending a local area network (LAN) over telephone lines to link with LANS in other buildings and/or geographic locations.

window
That portion of the Avaya Interchange user interface through which you can view system information or status.

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