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Issue 1

AT&T FAX Attendant™ Release 2.1.1

Installation and Maintenance Guide

Issue 1
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Notice

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About This Manual

This *AT&T FAX Attendant System™, Release 2.1.1, Installation and Maintenance* manual is designed to assist AT&T field technicians and AT&T Authorized Dealers with installing and maintaining the AT&T FAX Attendant System. It includes procedures on system assembly, hardware and software installation, failure recovery, troubleshooting and maintenance.

The manual is divided into the following chapters and appendices:

- **Chapter 1: Introduction** explains this manual and how to prepare for installation.
- **Chapter 2: Getting Started** explains how to connect system hardware, cabling and peripherals, starting the system module, logging in, verifying software, configuring peripherals, and running basic diagnostics.
- **Chapter 3: Completing the Installation** outlines administering the switch and application software, and performing acceptance testing for proper FAX Attendant operation.
- **Appendix A: Processor Hardware Installation** provides procedures for installing additional processor memory, circuit boards, and cartridge tape drives, and using the SETUP Utility.
- **Appendix B: Software Installation** explains how to install the UNIX® operating system, Integrated Voice Power™ System Software, the AUDIX Voice Power™ application, FAX Attendant, and switch integration software.

- **Appendix C: Troubleshooting** provides information on resolving hardware and application problems with FAX Attendant.
- **Appendix D: Recovering from System Failures** provides procedures for recovering the system from backup in the event of a system failure.
- **Appendix E: Disk Partitioning Calculations** explains how to determine disk partitioning for your application needs.
- **Appendix F: Maintenance** explains the proper maintenance routine for floppy disk and cartridge tape drives.

NOTE:
For details on installing FAX Attendant in an Integrated Solution III (IS-III) environment, refer to the documentation supplied with your IS-III system.

How to Use this Manual

Proper use of this manual depends on whether your system has been pre-assembled (staged) prior to delivery. If it has, read the next section, "Staged Systems." If not, skip to "Non-staged Systems."

The AT&T FAX Attendant System is not fully operational until all of the procedures in Chapters 2 and 3 are completed.

Staged Systems

The AT&T FAX Attendant System consists of an AT&T WGS or Master Controller processor, various hardware components connected to the processor, and several software components. The necessary circuit boards and application software for FAX Attendant may have been installed and tested (staged) before the system was shipped to the customer site. If the system has been staged, proceed with the instructions in the order presented throughout the remainder of this document.

Non-Staged Systems

If circuit boards or other hardware need to be installed in the processor, proceed to **Appendix A: Processor Hardware Installation** after you unpack the system module and before you connect any components to it. You will be reminded in Chapter 2 to do this.

If application software needs to be installed, you will need to refer to **Appendix B: Software Installation** before you can complete the installation. You will be instructed in Chapter 2 when to stop the installation and refer to Appendix B.

Installation Site

Ensure that the selected site for the FAX Attendant processor provides easy access for the cabling and good workspace for the System Manager or operators who will be using the system. The site should be comfortable for the operators and should meet the following environmental requirements:

- temperature: 50 to 100°F (10 to 38°C)
- humidity: 20 to 80% noncondensing
- power: 115 V, 50-60 Hz, 220 Watts

Protect the FAX Attendant processor from sunlight, heat, cold, chemicals, static electricity, magnetic fields, vibration, and dirt.

Use a grounded, nonswitched outlet for the processor. Use of a non-interruptible power supply may also be needed in your area. See your facility planner and your electrical support staff regarding these concerns.

Materials Checklist

Verify that you have all the hardware and software necessary for this installation.

Hardware

NOTE:
Some documentation may refer to the Master Controller II+ as the Applications Controller.

There are five system modules that can be used:

- 6386/25 WGS -25 MHz processor, 135 MB hard disk (minimum), desktop model
- 6386E/33 WGS -33 MHz processor, 135 MB hard disk (minimum), floor model
- Master Controller II (6386/SX) -16 MHz processor, 200 MB hard disk (minimum), desktop model
- Master Controller II+ (80386/SX) -20 MHz processor, 200 MB hard disk (minimum), desktop model

  NOTE:
  The Master Controller II+ is configured with a 100 MB hard disk as part of its standard configuration. If the processor has not been upgraded to a 200 MB hard disk, refer to the *AT&T Applications Controller User's Guide* for hard disk upgrade information.

- Master Controller III (80486/SX) -20 MHz processor, 200 or 500 MB hard disk, floor model

To function as a FAX Attendant System processor, a minimum of 8 MB of random access memory (RAM) is required. Instructions for increasing memory, if necessary, are provided in Appendix A of this document.

The following circuit boards should be present in the system module:

- Integrated Voice Power™ (IVP) boards (one of the following configurations)
  - Up to three Integrated Voice Power (IVP4) 4-port circuit boards for 12 channels, maximum
  - Up to two Integrated Voice Power (IVP6) 6-port circuit boards for 12 channels, maximum
  - One IVP4 and one IVP6 board for a 10 channel configuration
- Integrated Fax Processing (IFP) boards (one of the following configurations)
  - Up to six IFP2 boards for a 12-channel configuration
  - Up to three IFP4 fax boards for an 12-channel configuration

    NOTE:
    IFP2 and IFP4 boards cannot be co-resident in the same processor.

- Digital Communications Protocol (DCP) circuit board for integrated FAX Attendant with System 75/DEFINITY® G1/G3 and System 85/DEFINITY G2 switch configurations only

  NOTE:
  For integrated FAX Attendant with System 75/DEFINITY G1/G3 and the System 85/DEFINITY G2 switch configurations, a DCP port on a TN 754 board is necessary. A port on an existing TN 754 may be used if one is available. Otherwise, an additional TN 754 board must be installed in the switch.

- Video display controller board for 6386/25 WGS, 6386/33 WGS, and Master Controller III only
- Cartridge tape drive and controller
  - 125 MB for Master Controller II+
  - 250 MB for Master Controller III

The following items are connected externally to the system module:

- keyboard (included with the system module)
- AT&T VGA 329D color monitor or AT&T VGA 324 monochrome monitor
- Hayes Optima 2400 (2400 bps modem)
- Remote Maintenance Device - HS (9600 bps modem, Master Controller III only)

The following additional devices may be connected externally to the system module:

- HP® LaserJet® Series II fully-compatible printer and cable for printing fax messages and reports (optional)
- AT&T Application Printer and cable for printing fax reports (optional)

Software

- UNIX Operating System V/386, Version 3.2.2 Foundation Set
  - Base System Package (7 diskettes)
  - FMLI Package (1 diskette)
  - FACE Package (2 diskettes)
  - FACE HELP Package (1 diskette)
  - Remote Terminal Package (1 diskette)
  - Editing Package (1 diskette)
  - Cartridge Tape Utility (1 diskette)
- Common Installation Packages
  - Integrated Voice Power System Software (IVPSS), Release 2.0 (4 diskettes)
  - Integrated Voice Power System Software (IVPSS), Release 2.0, Patch (1 diskette)

NOTE:
Ensure your IVPSS is Release 2.0. No other release is supported.

- AT&T FAX Attendant System with Co-resident AUDIX Voice Power
  - AUDIX Voice Power Application Software, Release 2.1.1 (3 speech diskettes and 2 software diskettes)
  - AT&T FAX Attendant System™ Co-Resident Base Software, Release 2.1.1 (6 diskettes)
  - AT&T FAX Attendant Master Controller III with IFP2 Card Update (1 diskette) (for Master Controller III only)
  - AUDIX Voice Power Switch Integration Software (for AT&T System 75 or DEFINITY G1/G3), R2.1.1 (2 diskettes) (Switch integration only)
  - AT&T FAX Attendant System™ System 75 G1/G3 Switch Integration Software, Release 2.1.1 (3 diskettes) (Switch integration only)
  - AT&T FAX Attendant System™ System 25 Switch Integration Software, Release 2.1.1 (2 diskettes) (Switch integration only)
- AT&T FAX Attendant System (Standalone/Non-co-resident)
  - AT&T FAX Attendant System™ Standalone Base Software, Release 2.1.1 (8 diskettes)
  - AT&T FAX Attendant Master Controller III with IFP2 Card Update (1 diskette) (for Master Controller III only)
  - AT&T FAX Attendant System™ System 75 G1/G3 Standalone Switch Integration Software, Release 2.1.1 (2 diskettes) (Switch integration only)
  - AT&T FAX Attendant System™ 85 G2 Standalone Switch Integration Software, Release 2.1.1 (2 diskettes) (Switch integration only)

System Overview

Figure 1-1 shows a fully-configured AT&T FAX Attendant System co-resident with AUDIX Voice Power. With this configuration, an integrated fax and voice messaging system on a single hardware platform results. This allows a user, with a single call, to access both FAX Attendant and AUDIX Voice Power services.

The AT&T FAX Attendant System processor is either an AT&T Work Group System (WGS) or Master Controller based on either an Intel 80386, 80386/SX, or 80486/SX microprocessor. In a System 75, DEFINITY G1/G3, System 85, and DEFINITY G2 environment, the system module is connected to a switch through a modified DCP board and a port on the switch, as indicated in the dotted portion of the figure. At least one port is required for switch integration. The IVP6 board is connected to the analog ports through an 885A adapter, and the IFP4 boards are connected through the Y-cord adapters supplied with the boards. This particular setup also shows a VGA monitor connected to the system module through a VDC600 board and a printer on LPT1, as well as a modem for remote support and administration through the Com 1 port.

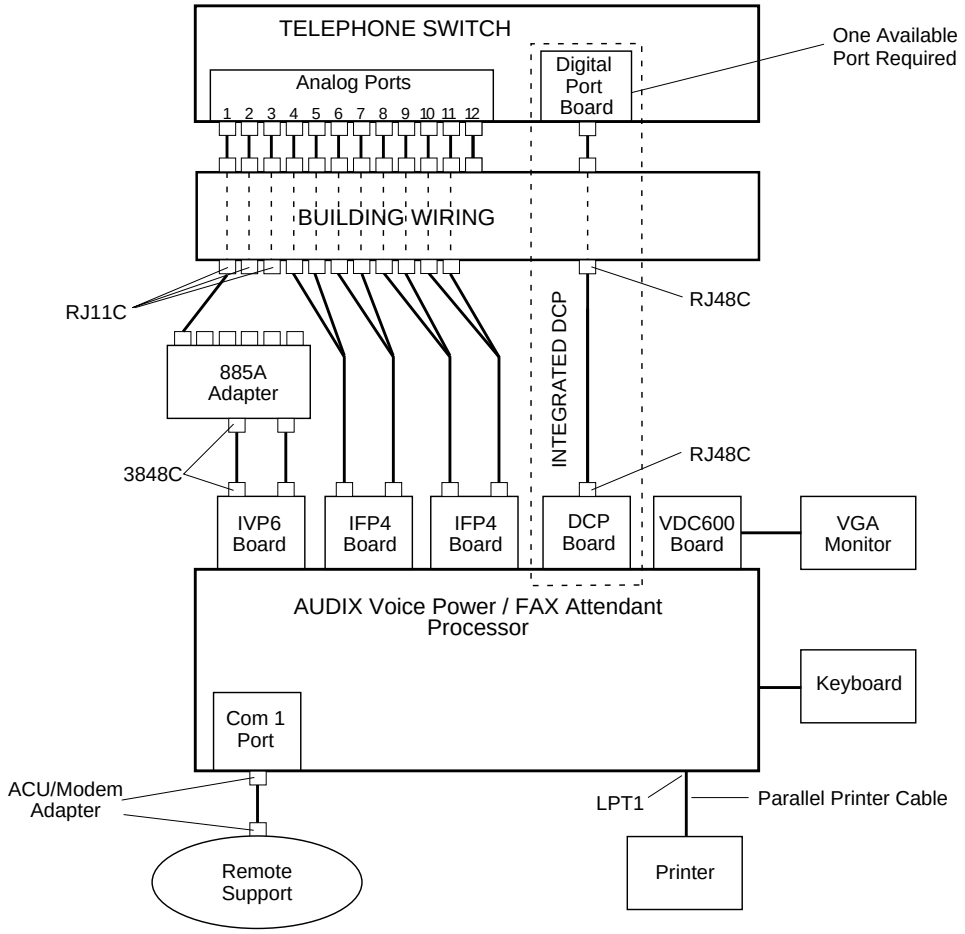

Figure 1-1. Fully-configured AT&T FAX Attendant System

Conventions Used in This Guide

The following conventions have been used throughout this document:

- Commands and text you should type appear

  `in this style of type.`

- Values, instructions, and prompts that appear on the screen are
- Key names that are always located on the keyboard in the same place appear in smooth-cornered boxes, as in Enter.
- Touch-tone keys on the telephone set keypad are enclosed in squares, such as 3 and #.
- A plus sign (+) is used to indicate an operation in which one key is held down while another is pressed. For example, Ctrl + Alt + Del indicates that the Ctrl key should be held down while the Alt and Del keys are pressed.
- Function keys (keys that start with an F, followed by a number), appear in boxes with the current meaning following in parentheses, such as F3 (SAVE).

  The current meanings of the function keys are shown by labels at the bottom of the screen.

Related Documents

The following documents may contain information pertinent to the installation process.

Processor Documents

AT&T 6386/SX WGS User's Guide
Document No. 562-200-100

AT&T 6386/25 WGS Processor User's Guide
Document No. 562-200-103

AT&T 6386E/33 WGS Processor User's Guide
Document No. 562-200-106

AT&T Master Controller III User's Guide
Document No. 560-407-150

AT&T Applications Controller User's Guide
Document No. 585-249-710

AT&T Diagnostic Program User's Guide
Document No. 560-407-151

AT&T FAX Attendant System Documents

AT&T FAX Attendant System™, Release 2.1.1, System Manager's Guide
Document No. 555-007-100

AT&T FAX Attendant System™, Release 2.1.1, Planning and Forms
Document No. 555-007-101

AT&T FAX Attendant System™, Release 2.1.1, User's Guide
Document No. 555-007-102

AT&T FAX Attendant System™, Release 2.1.1, System 75 and DEFINITY® Communications System Generic 1 and Generic 3 Implementation and Switch Notes
Document No. 555-007-201

AT&T FAX Attendant System™, Release 2.1.1, System 85 and DEFINITY® Communications System Generic 2 Implementation and Switch Notes
Document No. 555-007-202

AT&T FAX Attendant System™, Release 2.1.1, System 25 Communications System Implementation and Switch Notes

AUDIX Voice Power Documents

- Non-Integrated Solution Environment:

  AT&T AUDIX™ Voice Power, Release 2.1.1, System Manager's Guide
  Document No. 585-310-520

  AT&T AUDIX™ Voice Power, Release 2.1.1, Installation and Maintenance
  Document No. 585-310-108

  AT&T AUDIX™ Voice Power Switch Notes

  (Separate documents are provided for each supported telephone system. The appropriate document is provided with the switch integration software.)

- Integrated Solution Environment:

  AT&T AUDIX™ Voice Power System Manager's Guide
  Document No. 555-600-723

  AT&T AUDIX™ Voice Power Installation and Maintenance Guide
  Document No. 555-600-722

  (Separate documents are provided for each supported telephone system. The appropriate document is provided with the switch integration software.)

Assistance

If you have questions or difficulties with the AT&T FAX Attendant System that cannot be resolved by the documentation, contact your AT&T Account Team representative or your AT&T Authorized Dealer.

Getting Started

2

NOTE:
Proceed with this chapter only if the required circuit boards and processor hardware have been installed, and the SETUP Utility has been configured to reflect the current hardware.

If you need to install additional hardware, proceed to **Appendix A: Processor Hardware Installation** after you unpack the system module and before you connect any components to it.

General Procedures

Chapter 2 is used to:

- Connect the video display unit and keyboard
- Connect voice, fax and data lines
- Connect a dot-matrix report printer (optional)
- Connect a laser fax message/report printer (optional)
- Connect a modem
- Start the system
- Log in to the system
- Verify installed software
- Administer the printer
- Administer the modem

- Run diagnostics to test basic system integrity
- Run diagnostics to check IVP and IFP boards

After you have completed this chapter, proceed to Chapter 3 where you will perform system administrative procedures to start FAX Attendant and verify its operation. FAX Attendant is not operational until all of Chapter 3 has been completed.

Connecting the VDU and Keyboard

After unpacking the system module and its related components, you must first connect the system's video display unit (VDU) and keyboard. Follow the instructions provided in the *User's Guide* provided with the system.

Connecting Voice, Fax and Data Lines

Voice lines must be connected to the IVP4 and IVP6 voice board(s), fax lines to the IFP2 and IFP4 fax boards, and a data line to a DCP board if the system is integrated with a switch.

Connecting the IVP4 Voice Lines

Each IVP4 board has two 6-pin modular jacks. Each of these modular jacks is used to connect two voice lines in the RJ14C configuration. The top jack is used for line pairs 1 and 2. The bottom jack is used for line pairs 3 and 4.

If the line pairs are run two per jack (RJ14C), use two standard, 4 conductor modular cables.

If the line pairs are run individually (RJ11C), a type 884A adapter may be used to consolidate the four individual line pairs into two pairs (RJ14C) in each of two cables as shown in Figure 2-1.

WARNING:
There is a magnet on the back of the 884A adapter. Be sure that you do **not** place this near the hard disk drive or floppy diskettes.

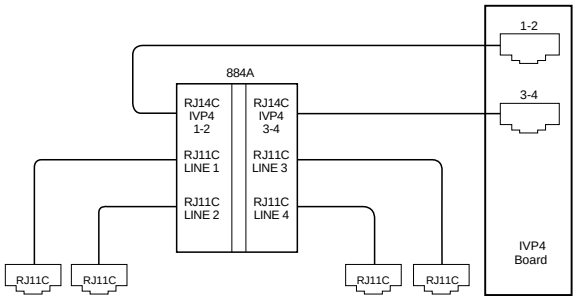

Figure 2-1. IVP4 Board with 884A Adapter for RJ11C

Connecting the IVP6 Voice Lines

Each IVP6 board has two 6-pin modular jacks. Each of these modular jacks is used to connect three voice lines on the three wire pairs. The top jack is used for line pairs 1, 2 and 3. The bottom jack is used for line pairs 4, 5 and 6.

Connect IVP6 boards as follows (refer to Figure 2-2):

1. Connect the IVP6 board to the 885A adapter using the 6-conductor modular cables.
2. Connect the 885A adapter to the RJ11C voice lines using the 2-conductor cables.

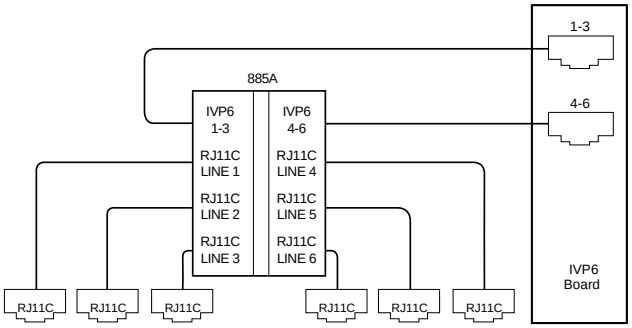

Figure 2-2. IVP6 Board with 885A Adapter for RJ11C

Connecting the IFP2 Fax Lines

Each IFP2 fax board has two modular jacks used to connect two voice lines in the RJ11C configuration. Connect the IFP2 boards using the RJ11C adapters supplied with the board (see Figure 2-3).

1. Plug one end of the modular cable into Line 1 on the IFP2 fax board.
2. Plug the other end of the modular cable into the voice line.
3. Repeat the above steps for the second (Line 2) voice line.

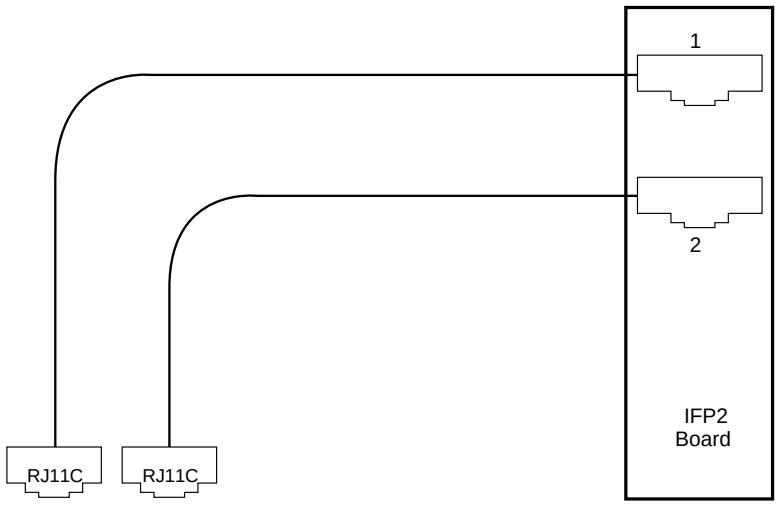

Figure 2-3. IFP2 Fax Board Connections

Connecting the IFP4 Fax Lines

Each IFP4 fax board has two modular jacks used to connect four voice lines in the RJ11C configuration. The top jack is used for Lines 1 and 2; the bottom jack is used for Lines 3 and 4. Each IFP4 board comes with two Y-cord adapters. Use these adapters to connect the IFP4 boards to the voice lines (refer to Figure 2-4).

1. Plug the "combined" end of the Y-cord adapter into Line 1/2 on the IFP4 fax board.
2. Plug one of the "single" ends into a RJ11C voice line.
3. Plug the other "single" end into a second RJ11C voice line.
4. Repeat the above steps for Lines 3 and 4.

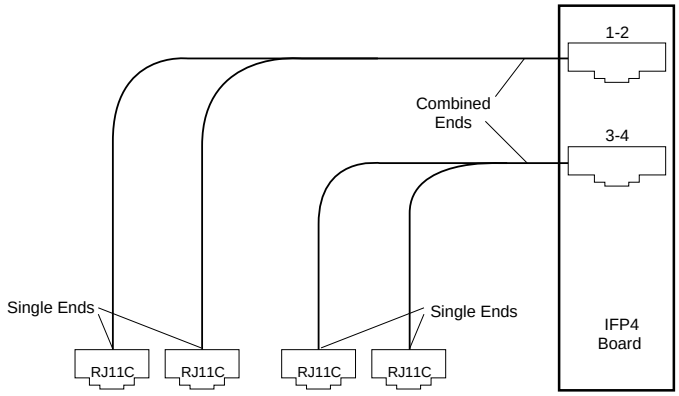

Figure 2-4. IFP4 Fax Board Connections

Connecting the DCP Data Line

The DCP board is used to obtain digital data from the System 75/DEFINITY G1/G3 and the System 85/DEFINITY G2 switches. There are three 8-pin modular jacks on the back of the board labeled "phone", "line," and "other." The data circuit should be connected to the jack labeled "line." Use standard D8W cable.

A single port on a type TN 754 Interface Board on the switch is required to provide the data to the DCP board. An available port on an existing board may be used. Otherwise, an additional TN 754 board must be installed on the switch. Consult the appropriate switch documentation for information on installing boards and wiring in your switch.

Connecting the Dot-matrix Fax Report Printer

The AT&T FAX Attendant System supports the AT&T Applications printer for fax reports.

1. Unpack the printer and install the ribbon according to the instructions in the printer documentation.
2. Load paper into the printer.
3. Plug the printer cord into a grounded electrical outlet.
4. Turn on the printer and follow the test procedures supplied in the printer documentation.
5. Set printer options as indicated.

6. Turn off the power.

The printer uses a 36-position Centronics® connector on one end and a 25-position DB-25P connector on the other. Connect the cable as follows:

1. Plug the 36-position Centronics connector into the matching connector on the rear of the printer and secure.
2. Plug the other end of the cable into the parallel port on the processor and secure.

Connecting the Laser Fax Message/Report Printer

The AT&T FAX Attendant System supports HP LaserJet Series II fully-compatible printers for fax message and report printing.

1. Unpack the printer and install the toner cartridge according to the instructions in the printer documentation.
2. Load paper into the printer.
3. Plug the printer cord into a grounded electrical outlet.
4. Turn on the printer and follow the test procedures supplied in the printer documentation.
5. Set printer options as indicated.
6. Turn off the power.

The printer uses a 36-position Centronics connector on one end and a 25-position DB-25P connector on the other. Connect the cable as follows:

1. Plug the 36-position Centronics connector into the matching connector on the rear of the printer and secure.
2. Plug the other end of the cable into the parallel port on the processor and secure.

Connecting the Modem

The AT&T FAX Attendant System allows remote access for maintenance and administration through either a Hayes Optima 2400 (2400 bps) or Remote Maintenance Device - HS (9600 bps) modem, depending on your processor. See the documentation supplied with the modem for details about the installation.

1. Connect the modem to serial port 1 on the rear of the processor with a RS-232C cable.
2. Connect the modem to the network channel terminating equipment.
3. Connect the modem to an appropriate power source. The modem will power-up automatically.

NOTE:
If you are installing the Remote Maintenance Device - HS 9600 bps modem, make sure you have the version with the correct firmware. Verify this by removing the left side panel from the modem. You should see a label with the following information:

E283000015
V1.40 ATT

If the label says anything else, do not install the modem. You will need to replace it with the correct version. Failure to do so will result in operating difficulties.

Modem Settings

NOTE:
Refer to the UNIX documentation supplied with the system for proper use of the `cu -ltty00` command to configure the modem.

The modem is shipped from the factory with the following default settings:

Option	Setting
Smart Mode	Jumper behind face plate is on Pins 2 & 3
AT&Q0	Asynchronous Mode
AT&K0	No flow control
ATS0=1	Auto Answer on 1 ring
ATS37=0	Match speed of last AT command or incoming call
AT&C1	Cause carrier detect to track actual state of remote modem's carrier
AT&D1	Return to command mode on DTR transmission
ATM0	Speaker off
ATL2	Medium speaker volume
AT&S0	Always assert DSR
ATE1	Echo characters from keyboard to screen
ATQ2	Return result codes in originate mode only
AT&W1	Write user profile 1
AT&Y1	Power up using configuration from user profile 1
AT&V	View all profiles

For the modem to work properly with FAX Attendant, the Smart Mode option must be reconfigured to Dumb Mode by moving the jumper behind the face plate to pins 1 and 2 (leftmost).

If for some reason the modem requires total reconfiguration, the following table lists the proper AT commands to ensure proper operations:

Option	Setting
Smart Mode	Jumper behind face plate is on Pins 2 & 3 (rightmost)
ATZ0	Reset all options to default values
AT&W1	Write user profile 1
AT&Y1	Power up using configuration from user profile 1
Dumb Mode	Jumper behind face plate is moved to Pins 1 & 2 (leftmost)

Starting the System

Once all hardware has been connected to the system module, the system can be started by performing the following procedures:

1. Connect the system power cord to the system module and an appropriate power source.
2. Make sure any packing materials are removed from the system module, particularly the cardboard insert(s) in the floppy disk drive.
3. Turn on the system monitor.
4. Turn on the printer.
5. Turn on the system module.
6. Adjust the system monitor until the screen is readable. You should see the Power On Self Test being executed.

Power On Self Test

When the Power On Self Test (POST) is initiated upon system start, two columns of information appear on the screen. The left column identifies the item being tested; the right column indicates ‘‘PASS’’ or ‘‘FAIL,’’ or the amount of memory allocated.

If any part of POST fails, refer to **Appendix C: Troubleshooting** for details. Do not continue with the installation until all of POST passes.

NOTE:
POST is a processor-dependent test and the display of information may be in a different format than described. Refer to the *User’s Guide* supplied with your processor for complete information as it applies to your system.

Logging into the System

NOTE:
If you are working in an IS-III environment, refer to the IS-III documentation supplied with your system for the IS-III login procedure.

Follow these procedures to log in to the system:

1. At the `Console login:` prompt, log in as ***root***.
   - ► The `password:` prompt appears.
2. At the `password:` prompt, enter the root password. (The password is not echoed on the screen.)
   - ► The # prompt appears.

NOTE:
The remainder of this manual condenses the above procedure to "Log in as ***root***."

Verifying Installed Software Components

NOTE:
If you are working in an IS-III environment, refer to the installation documentation supplied with your system for information on how to display installed packages.

Verify the software components present in your system:

1. Log in as ***root*** (if not already logged in).
2. At the # prompt, type ***displaypkg*** and press Enter.
   - A listing of all software packages installed will be displayed in alphabetical order. The packages listed below must be present.

     NOTE:
     The displayed names in the software differ slightly from the names on the software component diskette labels.

     - *AT&T FAX Attendant Co-resident Application Software, Release 2.1.1* (for FAX Attendant co-resident with AUDIX Voice Power) or
       AT&T FAX Attendant Non-co-resident Application Software, Release 2.1.1
     - *AT&T FAX Attendant Master Controller III with IFP2 Card Update* (for FAX Attendant installed on Master Controller III only)
     - *AUDIX Voice Power Application Software, Release 2.1.1: Speech*
       AUDIX Voice Power Application Software, Release 2.1.1: Software (for FAX Attendant co-resident with AUDIX Voice Power)
     - *Editing Package Version 2.0*

- *FACE HELP Version 1.2*
- *FACE Version 1.2.1*
- *FMLI Version 1.2*
- *Integrated Voice Power System Software, Release 2.0*
- *Integrated Voice Power System Software, Release 2.0, Update*
- *Remote Terminal Package Version 2.0*

If you have a cartridge tape, the following package should display:

- *Cartridge Tape Utilities Version 2.1*

If the AT&T FAX Attendant System is integrated with the System 75, one of the following software packages will be listed:

- *AT&T FAX Attendant System 75/DEFINITY Co-resident Integration Software, Release 2.1.1* (for FAX Attendant co-resident with AUDIX Voice Power)
- *AT&T FAX Attendant System 75/DEFINITY Non-co-resident Integration Software, Release 2.1.1*

If FAX Attendant is integrated with System 75 and is co-resident with AUDIX Voice Power, the following software package will also be listed:

- *AUDIX Voice Power Switch Integration Software Release 2.1.1*

If FAX Attendant is integrated with the System 85, the following software package will be listed:

- *AT&T FAX Attendant System 85/DEFINITY Non-co-resident Integration Software, Release 2.1.1*

If FAX Attendant is integrated with the System 25, the following software package will be listed:

- *AT&T FAX Attendant System 25 Co-resident Integration Software, Release 2.1.1*

If any of the necessary software packages are not listed proceed to **Appendix B: Software Installation** and follow the procedures there to install the missing software. Do not proceed with the installation until all software has been installed.

Administering the Printer

NOTE:
If you are working in an IS-III environment, refer to the IS-III installation documentation supplied with your system for printer setup information.

To adminster the printer, follow these steps:

1. Log in as ***root***.
2. At the # prompt, type ***face*** and press Enter.
   - ► The FACE menu appears.
3. At the FACE menu, select `System Administration` and press Enter.
   - ► The `System Administration` menu appears.
4. At the `System Administration` menu, select `Peripheral Setup` and press Enter.
   - ► The `Peripheral Setup` menu appears.
5. At the `Peripheral Setup` menu, select `Printer Setup` and press Enter.
   - ► The `Printer Setup` menu appears.
6. At the `Printer Setup` menu, select `Parallel Printer Port Setup` and press Enter.
   - ► The `Parallel Printer Port Setup` screen appears.
7. Move the cursor to `Printer Type` and press F2 (CHOICES).
   - ► A screen appears listing all the printers supported by the system.
     a. If you are using the AT&T Application Printer, select `AT&T570` and press Enter.
     b. If you are using a fully-compatible HP LaserJet Series II, select `HPLASERJET` and press Enter.
   - ► The `Parallel Printer Port Setup` screen returns.
8. Move the cursor to `Enter the printer name.` Type ***LP***, and press Enter.
9. Move the cursor to `Should filter be used?` and type ***yes***.
10. Press F3 (SAVE) to save your changes.
11. Press F6 (CANCEL) repeatedly until the main FACE menu appears.
12. Select `Exit` and press Enter.
13. Press F3 (CONT) to confirm that you want to return to the UNIX operating system prompt.

Administering the Modem

Administration procedures for both the Hayes Optima 2400 and the Remote Maintenance Device - HS are identical, with the exception of the device speed selection. If you are administering the Hayes Optima 2400, enter ***2400*** when prompted for `Device Speed`. If you are administering the Remote Maintenance Device - HS, enter ***9600***. You will enter ***Hayes Smartm 2400*** for `Modem Name` regardless of the actual device you are installing.

NOTE:
If you are working in an IS-III environment, refer to the IS-III installation documentation supplied with your system for Remote Maintenance Device information.

Follow these procedures to administer the modem:

1. Log in as ***root*** (if you are not already logged in).
2. At the # prompt, type ***face*** and press Enter.
3. Move the cursor to `System Administration` and press Enter.
4. Move the cursor to `Peripheral Setup` and press Enter.
5. Move the cursor to `Serial Port Setup` and press Enter.
6. Populate the fields as follows:

   `Serial Port Number:` ***01***

   `Device Type:` ***Modem***

   `Device Speed:` ***2400*** or ***9600***
7. Press F3 (SAVE) .
8. Another screen will appear. Populate the fields as follows:
   - For `Modem Name:` press F2 (CHOICES). Select `Hayes Smartm 2400`.
9. For `Device Connection:` Press F2 (CHOICES).
10. Continue pressing F2 (CHOICES) until the field reads `Incoming and outgoing calls only`.
11. Press F3 (SAVE).
12. Press F3 (CONT).
13. Using the F6 (CANCEL) key, move out of FACE to the main menu.
14. Select `Exit` to return to the UNIX operating system.
15. At the # prompt, type ***shutdown -y -g0***.
16. When prompted, remove the diskette from the floppy disk drive. Press the Ctrl + Alt + Del keys simultaneously to reboot the system.

Diagnostics

Diagnostics that can be run at this time are those provided on the *Customer Diagnostics* diskette for testing basic system integrity and IVP and IFP circuit board tests.

NOTE:
If you are using a Master Controller II+ or III processor, use the diskette labeled *Diagnostic Program* provided with the processor. Refer to the *AT&T Diagnostic Program User's Guide* for complete information.

Customer Diagnostics Diskette

To run the *Customer Diagnostics* diskette, follow these steps:

1. Insert the *Customer Diagnostics* diskette supplied with the system into floppy disk drive A.
2. Boot the system by turning power on or by pressing the reset button if power is already on.
   - ► The system boots from the *Customer Diagnostics* disk and displays the `Customer Diagnostics` introduction screen.
3. Press Enter to continue.
   - ► The `Customer Diagnostics` main menu appears.
4. Use the ↓ key to move the highlight bar to `Customization Figure` and press Enter.
5. Set the `Interactive Mode` to on. This enables the speaker test, floppy disk drive test, keyboard keystrokes and typematic tests.
6. Return to the `Customer Diagnostics` main menu by pressing Esc.
7. Use the ↓ key to move the highlight bar to `Test All Modules` and press Enter.
8. Follow the directions on the screen to run the diagnostics.

IVP Board Diagnostics

NOTE:
If you are working in an IS-III environment, refer to the documentation supplied with your system.

Diagnostics for the IVP4 and IVP6 boards are run after initial setup to determine whether everything is connected to the voice lines properly and there is a dial tone. To run these diagnostics, follow these steps:

1. Log in to the system as ***audix***.
2. At the `User Login` menu, move the cursor to `Voice System Administration` and press Enter.
   - ► The `Voice System Administration` window is displayed.
3. Move the cursor to `Configuration Management` and press Enter.
   - ► The `Configuration Management` window is displayed.
4. Move the cursor to `System Control` and press Enter.

- ► The `System Control` window is displayed.

5. Move the cursor to `Diagnose Equipment` and press Enter.
   - ► The `Diagnose Equipment` window is displayed.
6. Fill in the fields as follows:
   - ► `Equipment:` ***ca*** for card
   - ► `Equipment Number:` ***all***
   - ► `Diagnose Immediately?` ***yes***
7. Press ***y*** to continue.
8. Press F3 (SAVE) to begin execution.
   - ► The system searches for dial tones (Loop Current) on the boards and then informs you if the board passes the test. If the board fails, check the installation and any jumpers or switches that were set. Refer to **Appendix A: Processor Hardware Installation** for details. If you determine that the hardware is configured properly, and the board still fails the test, you will have to replace the board. If dial tones are not found, check the Tip/Ring connections.
   - ► For each board that is not present the system responds:

     ```
     Can't Diagnose Card x, It is not present.
     ```
9. Press the F6 (CANCEL) repeatedly until the main FACE menu appears.
10. Select `Exit` to return to the UNIX operating system prompt.

IFP Board Diagnostics

NOTE:
If you are working in an IS-III environment, refer to the documentation supplied with your system.

Fax board diagnostics provide a way to determine, on a per-channel and a per-board basis, whether or not the fax boards installed in your system are working properly. Follow these procedures to diagnose fax boards:

1. Log in to the system as ***audix***.
2. At the `User Login` menu, move the cursor to `Voice System Administration` and press Enter.
   - ► The `Voice System Administration` window is displayed.
3. Move the cursor to `Application Package Administration` and press Enter.
   - ► The `Application Package Administration` window is displayed.
4. Move the cursor to `AUDIX Voice Power/FAX Attendant` (or `FAX Attendant` for a standalone system) and press Enter.

5. Move the cursor to `Fax Equipment Operations` and press Enter.
   - ► The `Fax Equipment Operations` screen appears.
6. From the `Fax Equipment Operations` screen, select `Fax Equipment Diagnostics` and press Enter.
   - ► The `Fax Equipment Diagnostics` screen appears.

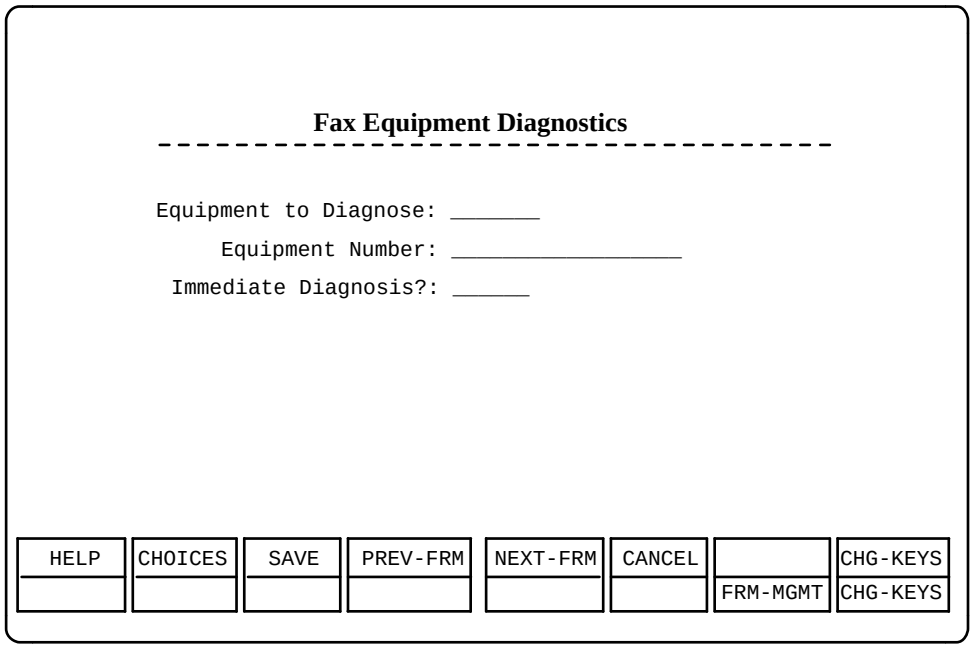

Figure 2-5. Fax Equipment Diagnostics Screen

7. Enter ***ca*** for card or ***ch*** for channel in the `Equipment To Diagnose` field and press Enter. Or, you can make your choice by pressing F2 (CHOICES) when the cursor is in this field.
8. Enter the equipment number in the `Equipment Number` field and press Enter. Acceptable values for card numbers are 0 to n-1, where n is the number of fax cards installed in the system. Acceptable values for channel numbers are 0 to 4n-1 for a IFP4 board, or 0 to 2n-1 for a IFP2 board or ***all***.
9. Enter either `Yes` or `No` in the `Immediate Diagnosis?` field and press Enter. Or, you can make your choice by pressing F2 (CHOICES) when the cursor is in this field. If immediate diagnosis is selected, the cards/boards are immediately seized from whatever they are doing and diagnosed. If the immediate option is not selected, the system waits for the channel to complete its work before it is diagnosed. If you elect to

diagnose immediately, the operation terminates any operations currently underway on the equipment specified. You then have the opportunity to confirm or cancel the operation.

10. After all information is entered press F3 (SAVE) key.

    ► Diagnostic results will appear in the `Fax Equipment Diagnostics–Results` screen.

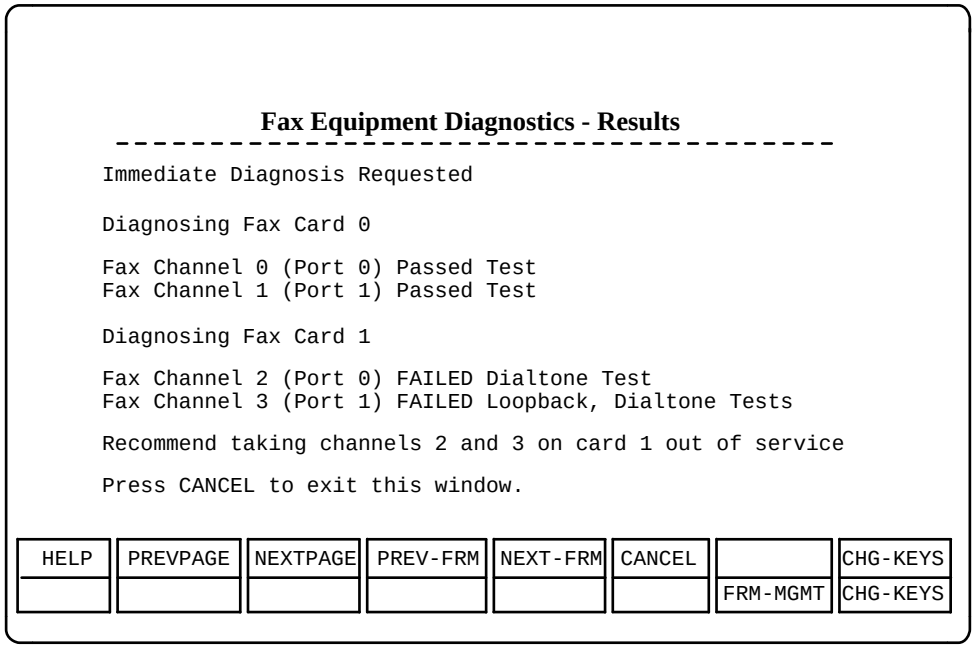

Figure 2-6. Fax Equipment Diagnostics - Results Screen

The tests performed are:

- check dma transfers
- check interrupts
- check onboard RAM
- check the connection pins on the AT bus
- check the CPU
- go offhook and listen for dialtone
- loopback test on analog paths up to the telephone interface
- gate array scanpath testing.

Completing the Installation

3

Procedural Overview

At this point, all of the hardware and software components of the AT&T FAX Attendant System have been installed and tested. However, FAX Attendant is not operational until the switch and application software are administered, and service and channel assignments are completed and verified. Also, acceptance testing should be completed before the system is turned over to the customer. Acceptance testing verifies satisfactory system operation and integrity.

Administration

Administration is divided into three areas: switch administration, AUDIX Voice Power administration (if FAX Attendant is co-resident with AUDIX Voice Power), and FAX Attendant administration. If FAX Attendant is non-co-resident (standalone), you do not need to administer AUDIX Voice Power since it is not present.

Switch Administration

The following administrative tasks must be performed on the System 75/DEFINITY G1/G3:

- Configure Class of Restrictions (switch-integrated systems only)
- Verify Analog channels for connection to FAX Attendant
- Configure the DCP Extension (switch-integrated only)

- Administer hunt groups for multiple channels of the Fax Response service
- Administer call coverage paths
- Perform subscriber administration
- Assign phantom stations for private fax extensions

The following administrative tasks must be performed on the System 85/DEFINITY G2:

- Administer the PC/PBX extension
- Set the DCP boards
- Administer the digital extensions
- Enter all the subscriber voice and private fax extensions
- Set the call coverage paths
- Administer subscriber names
- Administer private fax extensions
- Administer phantom numbers for private fax extensions
- Administer the switch to provide AUDIX notification of fax messages

These tasks are switch-specific and are detailed in the *Implementation and Switch Notes* document appropriate to your installation.

For a checklist of initial switch administration tasks on the System 25, see the *Implementation and Switch Notes* document for System 25.

NOTE:
Do not proceed with the installation until the switch has been administered. Failure to administer the switch will result in inoperation of FAX Attendant.

Be sure the switch is administered for two test users so that you can do acceptance testing as documented at the end of this chapter.

AUDIX Voice Power Administration (co-resident applications only)

If FAX Attendant is co-resident with AUDIX Voice Power, you must administer AUDIX Voice Power before FAX Attendant. If your installation is non-co-resident, skip this section and proceed to "FAX Attendant Administration."

The following administrative tasks must be performed for AUDIX Voice Power:

- Assign services to channels
- Map phone extensions to channels (System 75)
- Administer switch interface parameters

- Administer voice system parameters
- Administer subscribers
- Register the service administrators

These tasks are specific to AUDIX Voice Power and are detailed in the *AUDIX Voice Power, Release 2.1.1, Switch Notes* appropriate for your switch, and the *AUDIX Voice Power, Release 2.1.1, System Manager's Guide*.

Be sure AUDIX Voice Power is administered for two users so that you can do acceptance testing as documented at the end of this chapter.

FAX Attendant Administration

The administrative tasks listed below must be performed on FAX Attendant. For more detailed instructions on these tasks, see Chapters 1 and 2 of the *Implementation and Switch Notes* appropriate for your switch.

- Assign services to channels
- Map channels to extensions (System 75 and System 85)
- Administer trunk names (System 75 and System 85)

The administrative tasks listed below must also be performed on FAX Attendant. For more detailed instructions on these tasks, see Chapter 2 of the *AT&T FAX Attendant System™, Release 2.1.1, Planning and Forms* document and Chapter 3 of the *AT&T FAX Attendant™, Release 2.1.1, System Manager's Guide.*

- Administer general fax parameters
- Administer voice system parameters
- Administer subscribers
- Register the service administrators

NOTE:
Do not proceed with the installation until FAX Attendant has been administered. Failure to administer FAX Attendant will result in inoperation of the system.

Be sure FAX Attendant is administered for two test users so that you can do acceptance testing as documented at the end of this chapter.

Acceptance Testing

NOTE:
FAX Attendant is not operational until the switch and application software are administered, and service and channel assignments are completed and verified. See the beginning of this chapter for an overview of the administrative tasks.

The AT&T FAX Attendant System should be operational at this point. However, before the system is turned over to the customer, ensure that the following procedures can be executed successfully:

1. Call the system and create personal greetings for test users.
2. Call the system and leave messages (fax and voice) for test users. If necessary, see the customer for use of a local fax machine.
3. Verify that fax messages are stored for retrieval, centrally printed, or locally printed for each test user.
4. Call the system and retrieve messages (fax and voice) for test users.

If all of the above procedures have been performed successfully, acceptance testing is complete. The system is ready to be turned over to the customer.

Processor Hardware Installation

A

General Procedures

Procedures are provided here for installing additional memory on the main board and for installing circuit boards in the system module. Also given are procedures to install a cartridge tape drive and controller board.

Procedures for memory upgrades are divided into processor types. Procedures for circuit boards are separated into board type. If you need additional illustrations or details, see the installation guides provided with each item.

Hardware installation requires the following tools:

- a No.1 or No.2 Phillips® screwdriver
- a medium width, flat blade screwdriver
- a 3/16 inch nut driver (recommended)
- an antistatic grounded wrist strap

The basic procedure for installing hardware is as follows:

1. Shut down the UNIX operating system, if running, with the command `shutdown -y -g0` from the root directory.

   NOTE:
   If you are in the Integrated Solution III environment, shut down the system from the Technician or User Maintenance menu.

2. Shut off all power and remove all cables external to the system unit as necessary.

3. Disconnect the power source to the system module.

   WARNING:
   The system unit power supply contains AC voltage at levels that can cause injury or death on contact. Before removing any system unit covers, turn off the system and unplug the power cord from the AC outlet.

4. Connect the wrist strap to a common ground and put it on your wrist.
5. Remove the system module cover.
6. Install or modify hardware as needed.
7. Replace the cover.
8. Reconnect peripherals and external cables.
9. Reconnect the power source to the system module.
10. Run the SETUP Utility to update the hardware configuration.
11. Reboot the system.

CAUTION:
Do not work on equipment unless you are familiar with the necessary procedures for preventing damage caused by electrostatic discharge. Electronic equipment can be damaged by electrostatic discharge. Do not touch any electronic component unless you are properly grounded. Grounding can be established by wearing a properly grounded wrist strap. The wrist strap must have intimate contact with the bare skin and must never be worn over clothing.

AT&T 6386/25 WGS Processor

The procedures for hardware installation vary for each processor. The following procedures are for the 6386/25 WGS processor.

Opening and Closing the 6386/25 WGS

Follow these steps to remove and replace the case:

1. Be sure the system power is turned off, and if any external cables are connected to the system module, disconnect them.
2. Unlock the cover lock. A set of keys is packed in a plastic bag in the carton with the system module.
3. Loosen the five main cover screws (A,B,C,D,E) on the back panel as shown in Figure A-1.

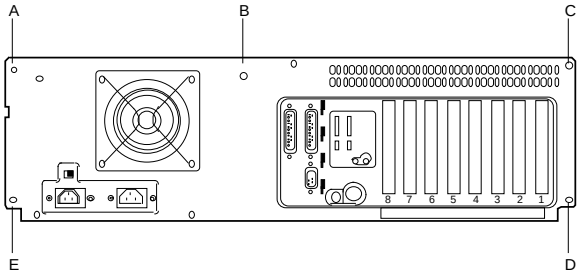

Figure A-1. 6386/25 WGS Outside Cover Removal

4. Remove the cover from the system module by pulling it forward until it clears the back half of the chassis. Tilt the back of the cover up and remove it. Take care not to catch the cover on any internal cables or wire.
5. Perform the necessary hardware installations as described in later sections of this chapter.
6. Reconnect any cabling.
7. Replace the cover and secure it with the cover screws.

Installing Additional Memory in the 6386/25 WGS

The 6386/25 WGS processor must have 8 MB of memory installed on the main board to work with the FAX Attendant system software. Follow these steps to install the additional memory on the main board:

CAUTION:
Use extreme care when installing or removing SIMMs. The plastic retaining clips on the sockets are easily broken by using too much force.

1. Locate the empty SIMM sockets, as shown in Figure A-2.

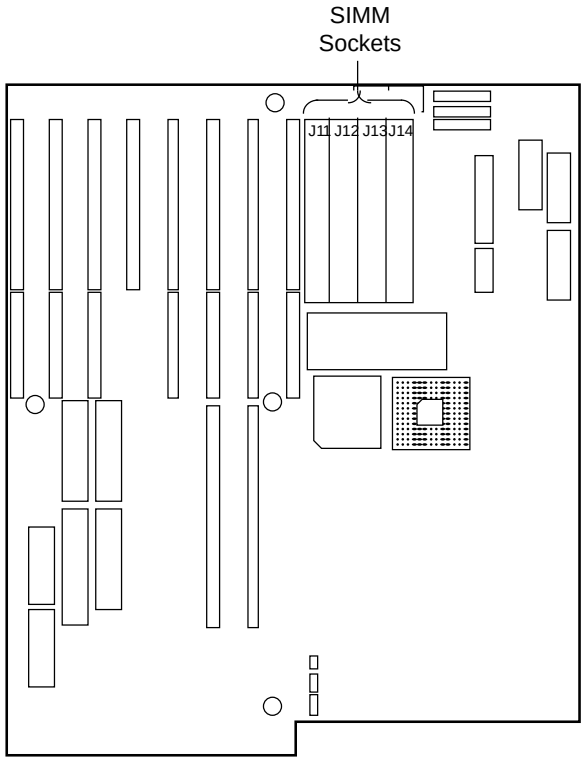

Figure A-2. Location of Memory (SIMM) Sockets on 6386/25 WGS

2. If necessary, remove the cables connected to the hard disk and floppy disk and fold them out of the way near the disk controller circuit card to obtain access to the SIMM sockets. Note the location and proper placement of each cable.
3. Each empty SIMM socket holds two SIMMs. For each socket, insert the first SIMM into the left slot and the second SIMM into the right slot.

4. Refer to Figure A-3. Holding the SIMM only by the edges (A), align the SIMM with its socket (B). The contact edge should be inserted into the socket first. The chips should be on the left side of the SIMM. Press down firmly while maintaining the angle of insertion.

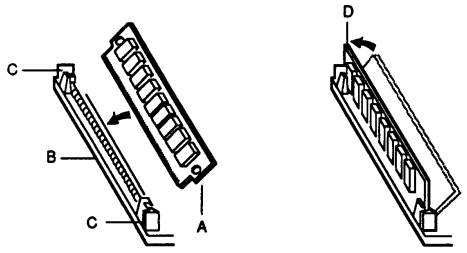

Figure A-3. Inserting the SIMMs into Sockets

5. Make sure that the SIMM is seated correctly. If not, gently spread the retaining clips (C) just enough to permit the top edge of the SIMM to be pulled away from the clips. Then reseat the SIMM.
6. When the SIMM is seated, gently push the top edge back toward the slot retaining clips until it snaps into place (D).
7. Install the remaining SIMMs working from left to right.
8. Refer to Figures A-4 and A-5 to find the main board jumpers. These jumpers need to be changed to provide the correct memory configuration information to the system. It may be necessary to remove circuit boards already installed (for example, the video display controller board) if they are blocking access to the configuration jumper area. Make sure you replace these cards in the correct slots on the main board after you access the jumper settings.

NOTE:
Only change the jumper settings included in this procedure. All other jumpers must be left in the factory configuration.

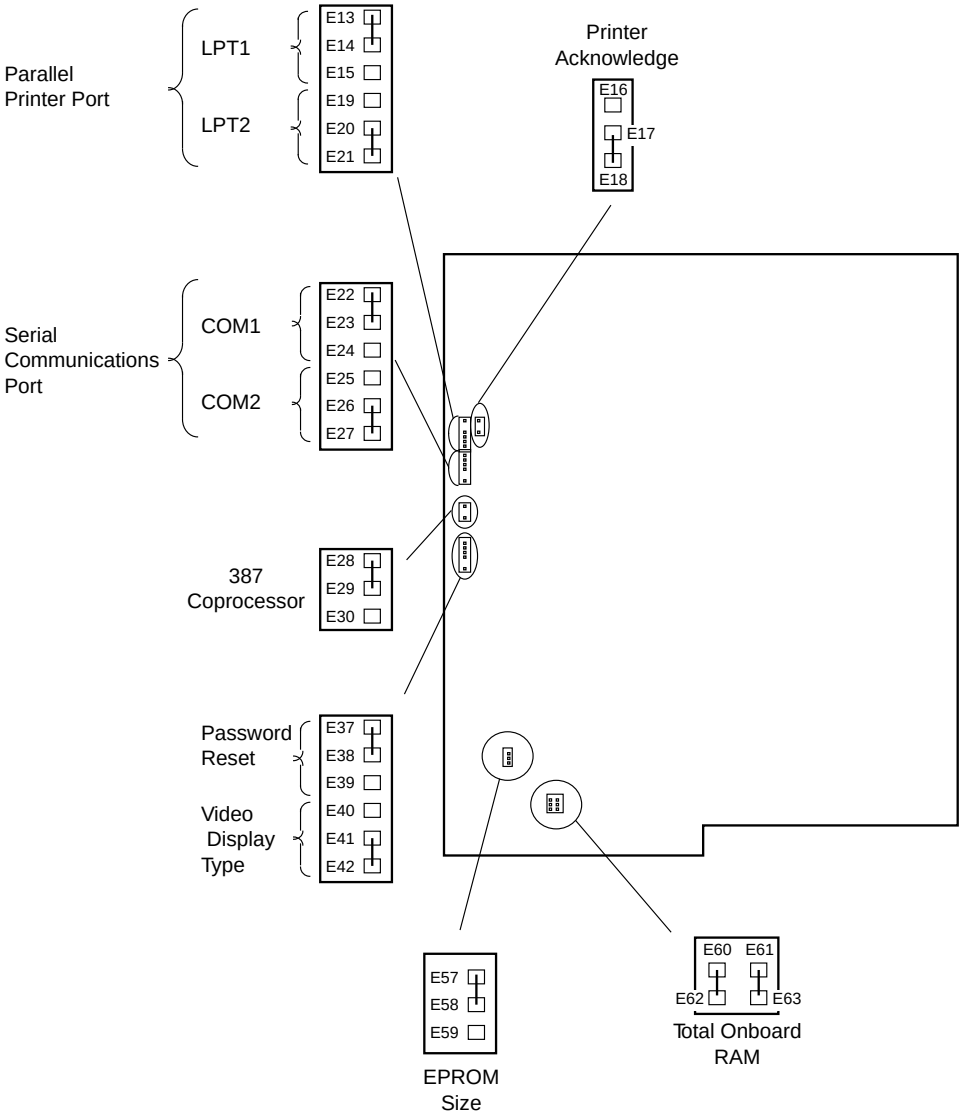

Figure A-4. Location of Jumpers and Settings on 6386/25 WGS (New board)

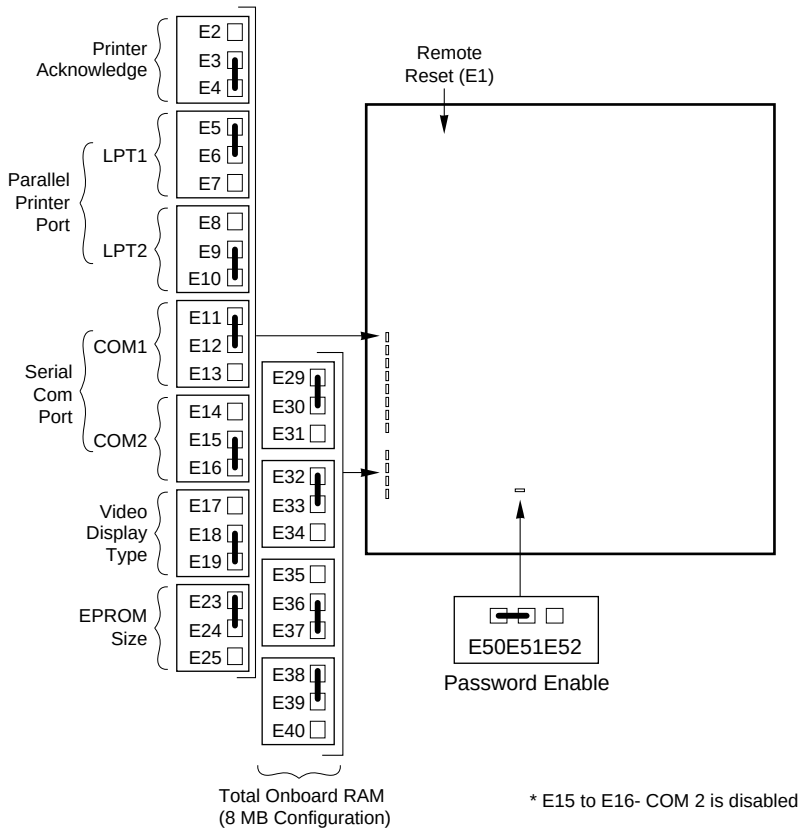

Figure A-5. Location of Jumpers and Settings on 6386/25 WGS (Older board)

9. On the newer board:
    a. Leave the jumper between pins E60 and E62 in place.
    b. Remove the jumper between pins E63 and E65 and place it between pins E61 and E63.
10. On the older board:
    a. Leave the following jumpers in place between pins: E29 and E30; E36 and E37; E38 and E39.
    b. Remove the jumper between pins E33 and E34 and place it between pins E32 and E33.

Memory upgrade is complete.

Disabling Serial Port 2

If your configuration includes a DCP board, serial port 2 must be disabled since its interrupt request (IRQ) will be used by the DCP board.

To disable serial port 2 on the newer main board, remove the jumper between pins E25 and E26 and place it between pins E26 and E27.

To disable serial port 2 on the older board, remove the jumper between pins E14 and E15 and place it between pins E15 and E16.

Continue with other hardware installation or close the processor case.

After all hardware changes have been made, you must run the SETUP Utility to initialize them. Refer to the end of this appendix for details. If you do not run the SETUP Utility, operating difficulties will be encountered.

AT&T 6386E/33 WGS Processor

The procedures for hardware installation vary for each processor. The following procedures are for the 6386E/33 WGS processor.

Opening and Closing the 6386E/33 WGS

Follow these steps to remove and replace the case:

1. Be sure the system power is turned off, and if any external cables are connected to the system module, disconnect them.
2. Unlock the cover lock. A set of keys is packed in a plastic bag in the carton with the system module.
3. Remove the top cover (B) of the system by lifting from the rear.
4. Loosen the cover retaining screw (A) as shown in Figure A-6.
5. Slide the cover off the chassis by moving it forward.

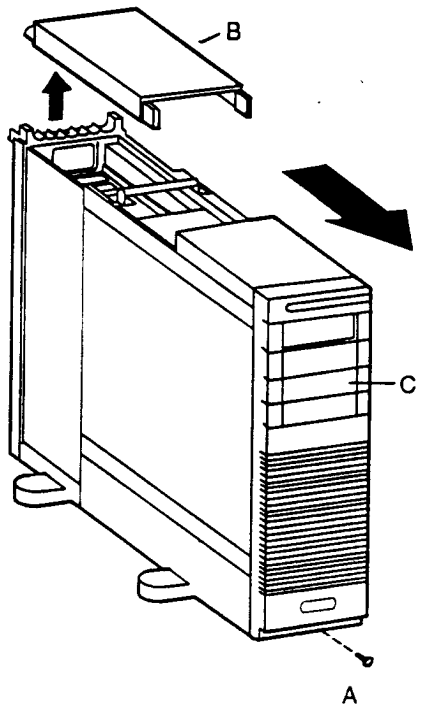

Figure A-6. 6386E/33 WGS Outside Cover Removal

6. Refer to Figure A-7. Remove the four retaining screws (A) from the card cage cover.

7. Slide the card cage cover (B) forward and then away from the chassis.
8. If you are installing additional memory on the main board, disconnect all cables that cover the air deflector (C). Then remove the air deflector by lifting it outward to release it from the chassis.
9. Perform the necessary hardware installations as described in later sections of this chapter.
10. Replace any cabling.
11. Replace the air deflector, the access cover, and the outside cover.

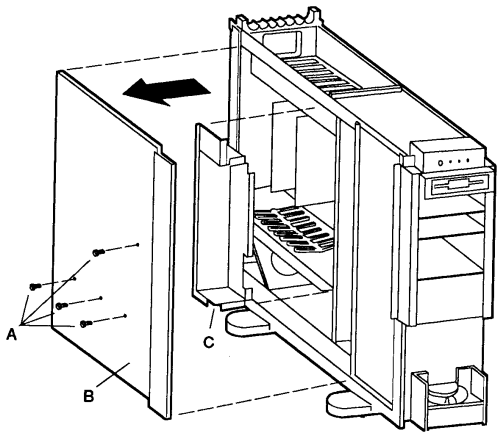

Figure A-7. 6386E/33 WGS Access Cover Removal

Installing Additional Memory in the 6386E/33 WGS

The 6386E/33 WGS processor must have 8 MB of memory installed on the main board to work with the FAX Attendant system software. Follow these steps to install the additional memory on the main board:

1. Locate the empty SIMM sockets, as shown in Figure A-8.

NOTE:
If ribbon cables are blocking access to the SIMM socket area, carefully remove them from the disk controller card that is immediately adjacent to the SIMM socket area. Make sure you know which side of the ribbon cable/connector is pin 1 so that you can later replace the cable/connector in its original configuration. The pin 1 side of the ribbon cable/connector is a different color than the rest of the ribbon cable.

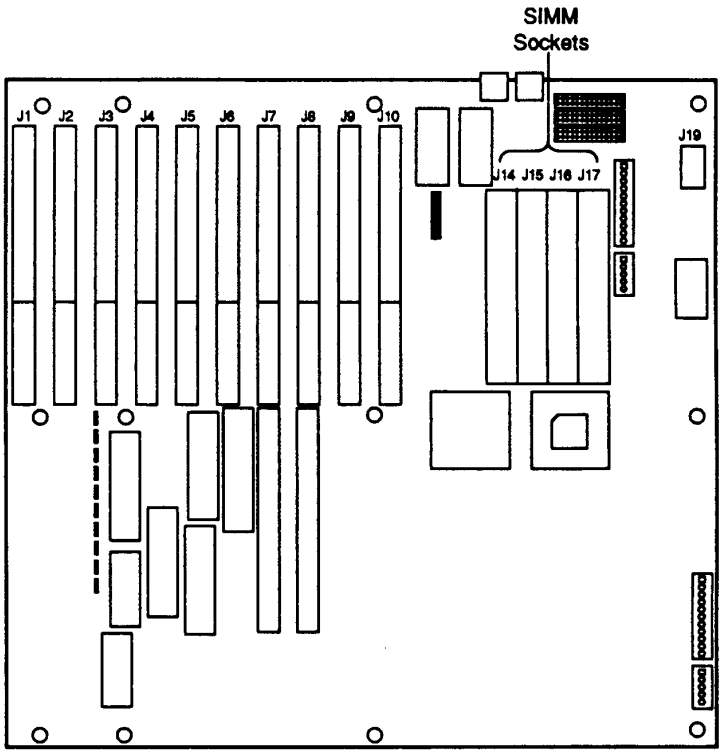

Figure A-8. Location of Memory (SIMM) Sockets on 6386E/33 WGS

2. If necessary, remove the cables connected to the hard disk and floppy disk and fold them out of the way near the disk controller circuit card in order to obtain access to the SIMM sockets.
3. Each empty SIMM socket holds two SIMMs. For each socket, insert the first SIMM into the left slot and the second SIMM into the right slot.

⚠ CAUTION:
Use extreme care when installing or removing SIMMs. The plastic retaining clips on the sockets are easily broken by using too much force.

4. Refer to Figure A-9. Holding the SIMM only by the edges (A), align the SIMM with its socket (B). The contact edge should be inserted into the socket first. The chips should be on the left side of the SIMM. Press down firmly while maintaining the angle of insertion.

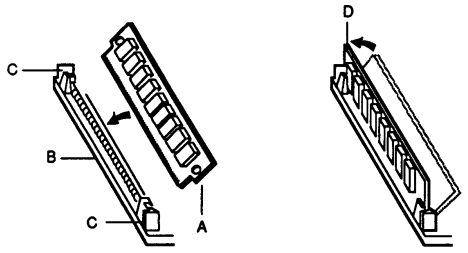

Figure A-9. Inserting the SIMMs into Sockets

5. Make sure that the SIMM is seated correctly. If not, gently spread the retaining clips (C) just enough to permit the top edge of the SIMM to be pulled away from the clips. Then reseat the SIMM.
6. When the SIMM is seated, gently push the top edge back toward the slot retaining clips until it snaps into place (D).
7. Install the remaining SIMMs working from left to right.
8. Refer to Figure A-10 for the location and correct settings for all jumpers. Jumper settings need to be changed to provide the correct memory and communications information to the system. It may be necessary to remove circuit boards already installed (for example, the video display controller board) if they are blocking access to the configuration jumper area. Make sure you replace these cards in the correct slots on the main board after you access the jumper settings.

NOTE:
Only change the jumpers as described in this procedure. All other jumpers must be left in the factory configuration.

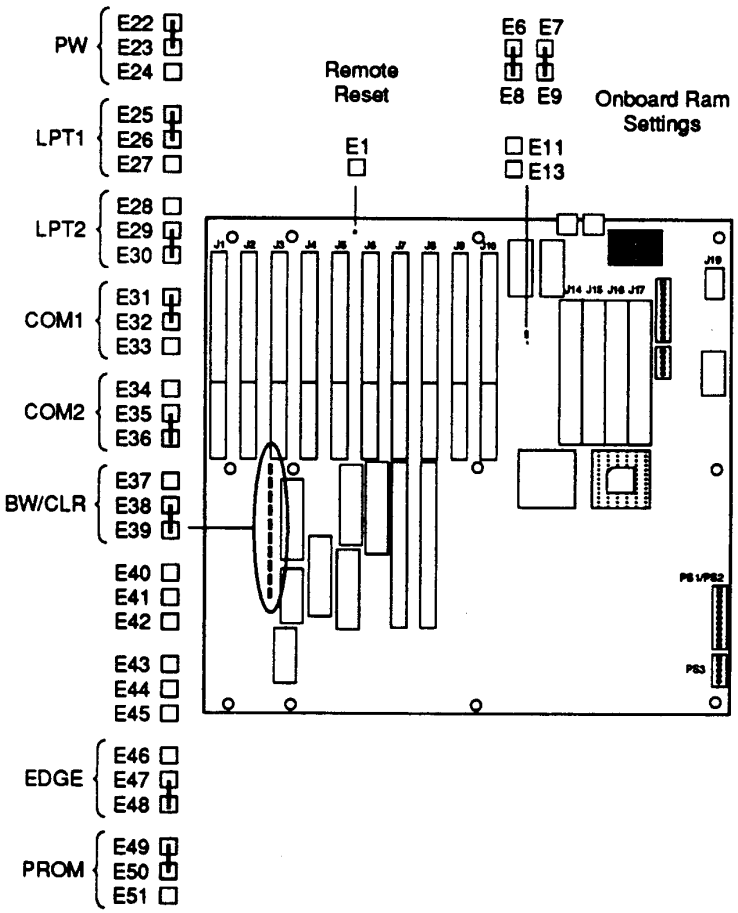

Figure A-10. Location/Settings of Main Board Jumpers on 6386E/33 WGS

9. Leave the onboard RAM jumper between pins E6 and E8 in place.
10. Remove the onboard RAM jumper between pins E11 and E13 and place it between pins E7 and E9.

Memory upgrade is complete.

Disabling Serial Port 2

If your configuration includes a DCP board, serial port 2 must be disabled since its interrupt request (IRQ) will be used by the DCP board.

To disable serial port 2, remove the jumper between pins E34 and E35, and place it between pins E35 and E36.

Continue with other hardware installation or close the processor case.

After all hardware changes have been made, you must run the SETUP Utility to initialize them. Refer to the end of this appendix for details. If you do not run the SETUP Utility, operating difficulties will be encountered.

Master Controller II Processor

The procedures for hardware installation vary for each processor. The following procedures are for the Master Controller II processor.

Opening and Closing the Case

Follow these steps to remove and replace the case:

1. Be sure the system power is turned off. If any external cables are connected to the system module, disconnect them.
2. Unlock the cover lock. A set of keys is packed in a plastic bag in the carton with the system module.
3. Loosen the three main cover screws (A,B,C) on the back panel as shown in Figure A-11.

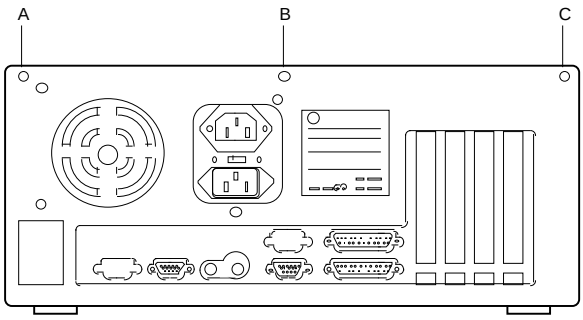

Figure A-11. Master Controller II Cover Removal

4. Remove the cover by pulling it forward until it clears the back half of the chassis. Tilt the back of the cover up and remove it. Take care not to catch the cover on any internal cables or wire.
5. Perform the necessary hardware installations as described in later sections of this chapter.
6. Reconnect any cabling. Route and fold the cables carefully so that they will not interfere with the cover of the unit.
7. Replace the cover and secure with the cover screws.

Installing Additional Memory in the Master Controller II

The Master Controller II processor must have 8 MB of memory installed on the main board to work with the FAX Attendant system software. Follow these steps to install the additional memory on the main board:

1. Locate the empty SIMM sockets, as shown in Figure A-12.

CAUTION:
Use extreme care when installing or removing SIMMs. The plastic retaining clips on the sockets are easily broken by using too much force.

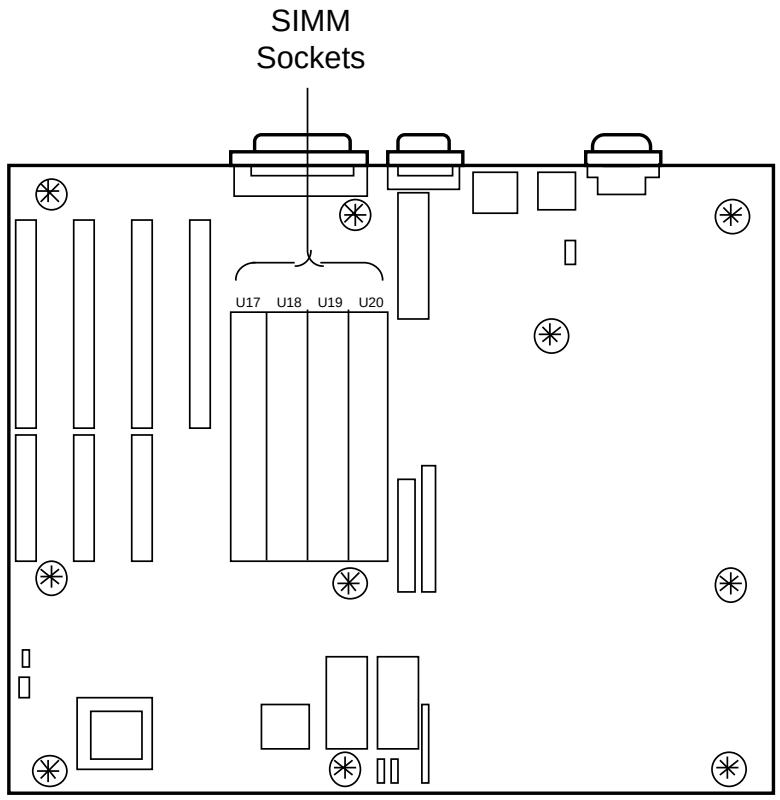

Figure A-12. Location of SIMM Sockets in Master Controller II

2. If necessary, remove the cables connected to the hard disk and floppy disk and fold them out of the way near the disk controller circuit card to obtain access to the SIMM sockets. Note the location and proper placement of each cable.
3. Each empty SIMM socket holds two SIMMs. For each socket, insert the first SIMM into the left slot and the second SIMM into the right slot.
4. Refer to Figure A-13. Holding the SIMM only by the edges (A), align the SIMM with its socket (B). The contact edge should be inserted into the socket first. The memory chips should be on the left side of the SIMM. Press down firmly while maintaining the angle of insertion.

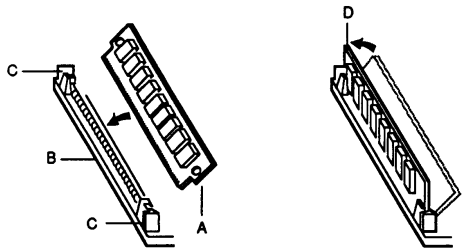

Figure A-13. Inserting the SIMMs

5. Make sure that the SIMM is seated correctly. If not, gently spread the retaining clips (C) just enough to permit the top edge of the SIMM to be pulled away from the clips. Reseat the SIMM.
6. When the SIMM is seated, gently push the top edge back toward the slot retaining clips until it snaps into place (D).
7. Install the remaining SIMMs working from left to right.

Memory upgrade is complete. Continue with other hardware installation or close the processor case.

NOTE:
Main board jumpers do not need to be set for the Master Controller II.

After all hardware changes have been made, you must run the SETUP Utility to initialize them. Refer to the end of this appendix for details. If you do not run the SETUP Utility, operating difficulties will be encountered.

Master Controller II+ Processor

The procedures for hardware installation vary for each processor. The following procedures are for the Master Controller II+ processor.

Opening and Closing the Case

Follow these steps to remove and replace the case:

1. Be sure the system power is turned off. If any external cables are connected to the system module, disconnect them.

2. Unlock the cover lock. A set of keys is packed in a plastic bag in the carton with the system module.
3. Loosen the two main cover screws (A,B) on the back panel as shown in Figure A-14.
4. Remove the cover by pulling it forward until it clears the back half of the chassis. Tilt the back of the cover up and remove it. Take care not to catch the cover on any internal cables or wire.

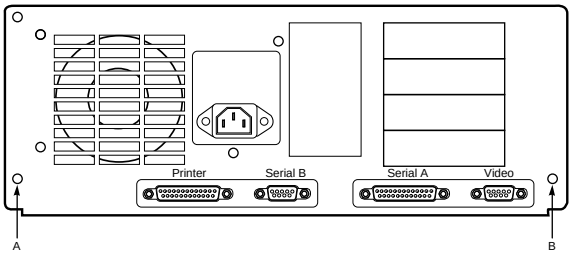

Figure A-14. Master Controller II+ Cover Removal

5. Perform the necessary hardware installations as described in later sections of this chapter.
6. Reconnect any cabling. Route and fold the cables carefully so that they will not interfere with the cover of the unit.
7. Replace the cover and secure with the cover screws.

Installing Additional Memory in the Master Controller II+

The Master Controller II+ processor must have 8 MB of memory installed on the main board to work with the FAX Attendant system software. Follow these steps to install the additional memory on the main board:

1. Locate the empty SIMM sockets, as shown in Figure A-15. They are under any expansion boards that may be installed. You will need to remove these boards to install the SIMMs.

   CAUTION:
   Use extreme care when installing or removing SIMMs. The plastic retaining clips on the sockets are easily broken by using too much force.

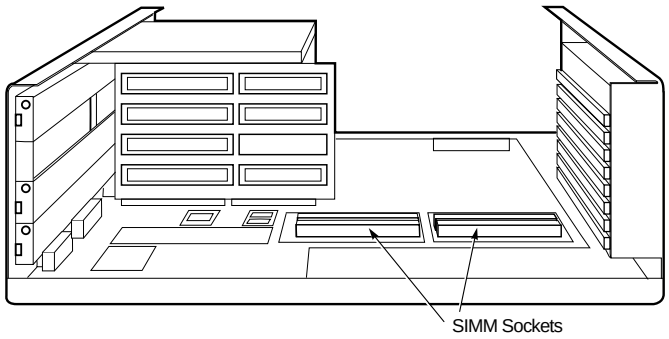

Figure A-15. Location of SIMM Sockets in Master Controller II+

2. Each empty SIMM socket holds one SIMM. To insert a SIMM, start with the sockets nearest to you on each side.
3. Hold the SIMM upright with the components facing away from you, and the cutout notch on the right.
4. Holding the SIMM by the edges, insert it straight down into the center of the socket.
5. Holding the SIMM firmly in place, rotate it toward you until it clicks into place.
6. Be sure the SIMM is seated correctly in its socket and that both ends are held by the retainer clips. If the SIMM is not seated correctly, gently spread the retainers, one end at a time, to allow the SIMM to be pulled away from the clips. Then reseat the SIMM and complete the installation.
7. Install the remaining SIMMs working from left to right.

Memory upgrade is complete. Continue with other hardware installation or close the processor case.

NOTE:
Main board jumpers do not need to be set for the Master Controller II+.

After all hardware changes have been made, you must run the SETUP Utility to initialize them. Refer to the end of this appendix for details. If you do not run the SETUP Utility, operating difficulties will be encountered.

Master Controller III Processor

The procedures for hardware installation vary for each processor. The following procedures are for the Master Controller III.

Removing and Replacing the Side Panel

The side panel must be removed for any access to the inside of the system unit. The top panel should be removed only if it is necessary to replace the power supply, or if you have difficulty connecting or disconnecting the cables on the tape drive or the floppy disk drive. The front panel should be removed only to remove or replace the tape drive, the floppy disk drive, or the power supply.

NOTE:
The Master Controller III comes with 8 MB of RAM as part of its standard configuration. This is enough to support the FAX Attendant system. If you need to reconfigure this memory, refer to the *AT&T Master Controller III User's Guide*.

Main board jumpers do not need to be set for the Master Controller III.

1. Unlock the system unit by inserting the key in the lock and turning it to the unlocked position.
2. Remove the three side panel retaining screws as shown in Figure A-16.

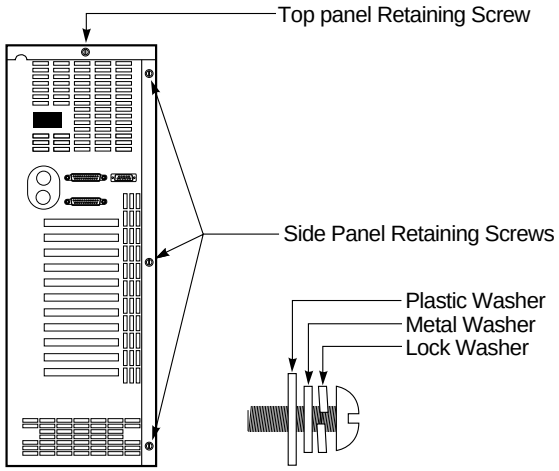

Figure A-16. Side and Top Panel Retaining Screw Locations

3. Slide the side panel back (toward the rear of the system unit) about one-half inch (2 cm).

4. Tilt the side panel outward and lift upward as shown in Figure A-17.

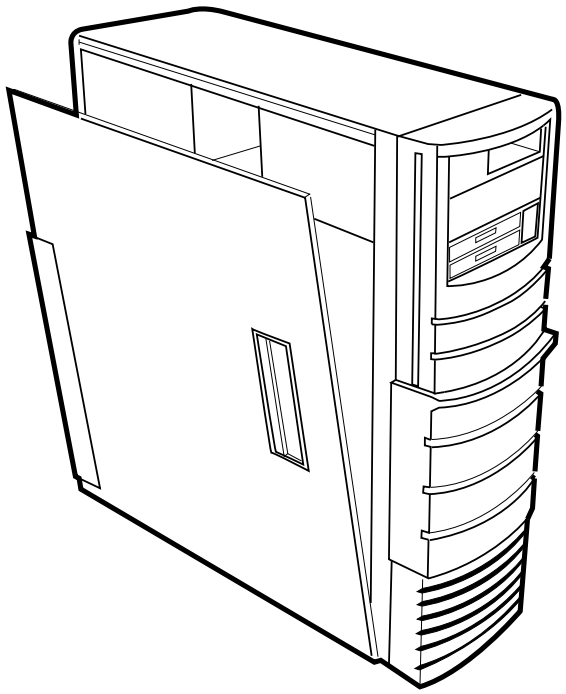

Figure A-17. Removing the Side Panel

5. To replace the side panel, reverse the above instructions.

NOTE:
If the washers come off of the retaining screws, they should be replaced as shown in Figure A-16 with the lock washer first, then the metal washer, and finally the plastic washer.

After all hardware changes have been made, you must run the SETUP Utility to initialize them. Refer to the end of this appendix for details. If you do not run the SETUP Utility, operating difficulties will be encountered.

Installing Circuit Boards

All circuit boards are installed according to the following general instructions. If a specific slot is necessary, it is noted in the section on preparing the individual boards.

Follow these steps to install circuit boards:

1. Open the case and remove any components necessary to expose the expansion slots. Refer to the sections earlier in this appendix on specific processors.
2. Remove the expansion slot cover by removing the screw from the metal cover. Lift out the metal cover and save the screw to secure the board in place later. Save the metal cover for replacement if the board is removed.

   NOTE:
   The metal cover ensures proper cooling of the system module. Do not leave any expansion slots unoccupied without the metal cover in place.

3. Configure any jumpers and switches on the board being installed.
4. Holding the circuit board by its edges, carefully insert the board into the correct slot.
5. When the expansion board is properly seated in the expansion slot, press gently and evenly on the edges of the board to ensure a solid connection.
6. Secure the expansion board in the computer chassis using the screw removed from the slot cover plate.
7. After all expansion boards have been installed, replace the system module cover by following the instructions in the section specific to the processor provided earlier in this Appendix.

After all hardware changes have been made, you must run the SETUP Utility to initialize them. Refer to the end of this appendix for details. If you do not run the SETUP Utility, operating difficulties will be encountered.

VDC Board Configuration and Installation

The Video Display Controller (VDC) provides Video Graphics Array (VGA) analog video signals to the system monitor. The Master Controller II and II+ have a video controller built into the main board. The Master Controller III includes a VDC board.

The AT&T VDC600, VDC600u, or compatible replacement board can be installed into the 6386/25 WGS and the 6386E/33 WGS.

The default settings are used for the DIP switch and jumpers on the Video Display Controller. The locations and settings are shown in Figure A-18. For more information on default settings, see the installation guide packed with the board.

Observe the following when installing the VDC600:

- The VDC600 must be installed in a 16-bit expansion slot.
- The VDC should be installed in the rearmost expansion slot on the 6386E/33 WGS.

- The VDC should be installed in the leftmost expansion slot on the 6386/25 WGS.

Follow the general instructions for installing expansion boards described previously.

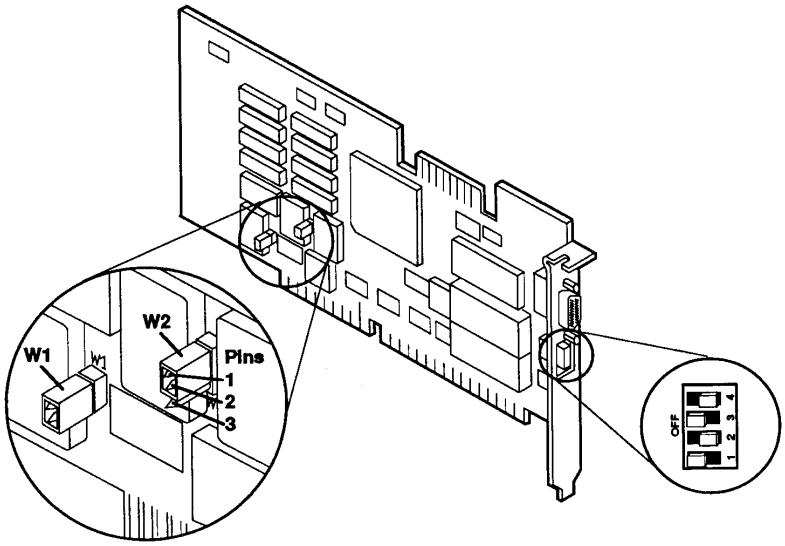

Figure A-18. VDC600 Switch and Jumper Locations and Settings

IVP Board Configuration and Installation

IVP boards must be configured before they are installed. Each IVP board has two banks of switches. The location of jumpers and switches is shown in Figures A-19 and A-20.

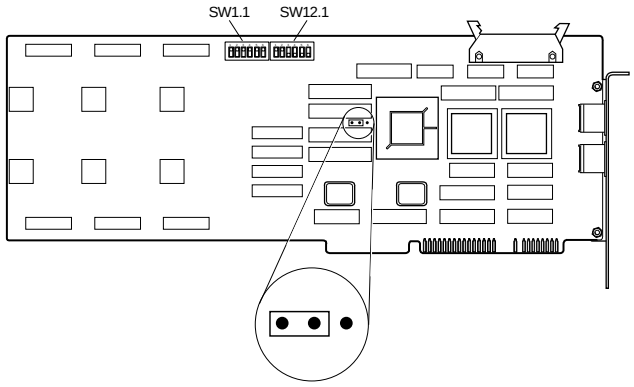

Figure A-19. Location of Jumpers and Switches on IVP4 Boards

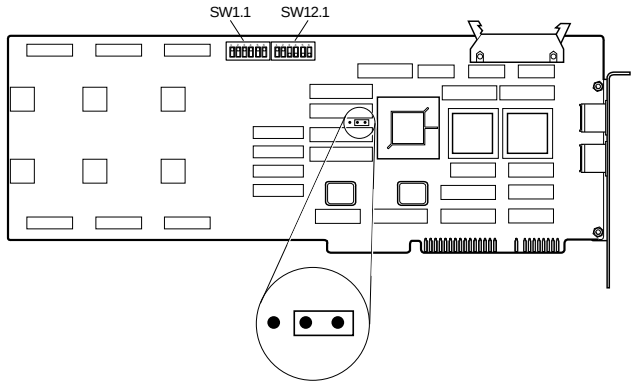

Figure A-20. Location of Jumpers and Switches on IVP6 Boards

Installing IVP Boards

It is recommended that in the Master Controller III, the IVP boards be installed from the lowest available slot upward.

IVP Board Jumper Settings

The jumpers are set at the factory and should not be changed. The jumpers are set differently for the IVP4 and IVP6 boards. Refer to Figure A-19 for the IVP4 board and to Figure A-20 for the IVP6 board. Verify that the jumper is set as shown in the figures.

Mixing IVP4 and IVP6 Boards

IVP4 and IVP6 boards can be mixed in any combination to a maximum of 12 voice channels. Regardless of the board type, set the switches based on the board number.

Changing IVP Board Type

If you replace an IVP4 board with an IVP6 board, or vice versa, or whenever the relationship between channel numbers and board numbers changes, you should renumber the voice channels. Use the procedure provided later in this Appendix.

Identifying the IVP Board Configuration

There are three versions of the IVP4 board that differ only in the type of switches used. To properly set the switches, you must identify which configuration is used on the board. See Figures A-21 and A-22.

- All IVP6 boards have configuration C.
- All new IVP4 boards use configuration C.
- All IVP4 boards with rocker switches use configuration A.
- Existing IVP4 boards with slide switches can be either configuration B or C.

Configuration of Previously Installed Boards

For boards which are already in use, examine the second bank of switches (SW12.1):

- If the board has rocker switches, the configuration is A.
- If the board has slide switches that are marked "OPEN" on the top or bottom (or on the side with an arrow toward the top or bottom), the configuration is B (top) or C (bottom) respectively.
- If the board has unmarked slide switches, the setting of the second switch (SW12.1) should correspond to one of the settings shown in Figure A-22. Use the configuration letter at the top of the column in which the match is found.
- If you are unable to determine the correct configuration by examining the switch settings, you will have to test the board as described later in this section to determine the correct configuration.

Mark the board with the corresponding configuration letter (A, B, or C) for reference in resetting the switches.

Setting Switch SW1.1

The first switch (SW1.1) controls the line impedance. The settings should all be set to the "OPEN" position initially (as shown in Figure A-21 for each configuration). If problems are encountered with TouchTone recognition on any channel, change the switch for the affected channel on the first bank (SW1.1) to the opposite (closed) position.

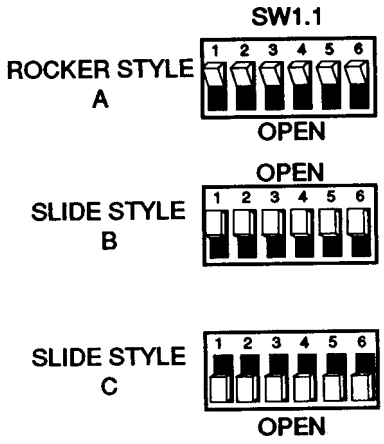

Figure A-21. Settings for SW1.1

Setting Switch SW12.1

The second switch (SW12.1) sets the board address. Figure A-22 shows the correct settings for up to three boards in each of the three configurations.

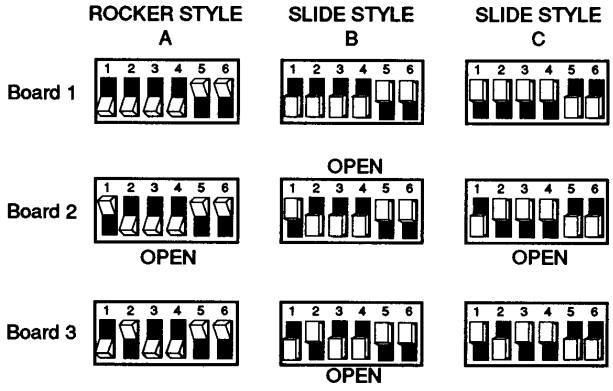

Figure A-22. Settings for SW12.1

Testing the IVP Switch Settings

If you know the board configuration, set the switches on each board correctly and then perform this test to verify the correctness of the switch settings. If the board has slide switches, you can also use this test to determine whether it has configuration B or C.

1. Set the switches for each board according to its configuration and board number. See Figures A-21 and A-22.
2. If you are testing to determine board configuration, set the switches for configuration C the first time, as most boards with slide switches are configuration C.
3. Install the board(s) and close the case.
4. Install the application software, if necessary. (See Appendix B of this guide for instructions on installing all software.)
5. All application software that uses the IVP System Software has a "System Monitor" function available. Open the System Monitor window and examine the Service Status column. If the Service Status is blank, or if the System Monitor window shows no fields at all, the board is either defective, or it has another configuration.

   NOTE:
   Each properly configured IVP4 board uses 4 of the 12 channels.
   Each properly configured IVP6 board uses 6 of the 12 channels.

6. Check the configuration and switch settings and test again. If the board is still not recognized, contact your next level of support.

Renumbering Voice Channels

If you replace an IVP4 board with an IVP6 board, or vice versa, or whenever the relationship between channel numbers and board numbers changes, you should renumber the voice channels. The application software must be installed before renumbering.

To renumber the voice channels, follow these steps:

1. Log in to the system.

   In an Integrated Solution III environment:

   a. Log in as ***maint***.

   b. At the `Status` Screen, type your name and press F3 (SAVE).

   c. At the `Integrated Solution III Maintenance` menu, move the cursor to `Technician Maintenance` and press Enter.

In a Non-Integrated Solution III environment:

a. Log in as ***audix***.

2. At the menu, move the cursor to `Voice System Administration` and press Enter.
3. At the `Voice System Administration` menu, move the cursor to `Configuration Management` and press Enter.
4. At the `Configuration Management` menu, move the cursor to `System Control` and press Enter.
5. At the `System Control` menu, move the cursor to `Renumber Voice Channels` and press Enter.
6. Repeatedly press F6 (CANCEL) and respond to prompts as necessary to exit the system.

Modified DCP Board Configuration and Installation (Integrated System 75 and System 85)

NOTE:
A modified DCP board can be identified by visual inspection of the board. Trace B-17 is cut and IC-18 pins 13 and 14 are jumped.

The system may be shipped with a modified DCP board already installed. If you need to add the DCP board to the system, follow these steps:

1. Check the jumpers on the modified DCP board. The jumpers should be set as shown in Figure A-23.

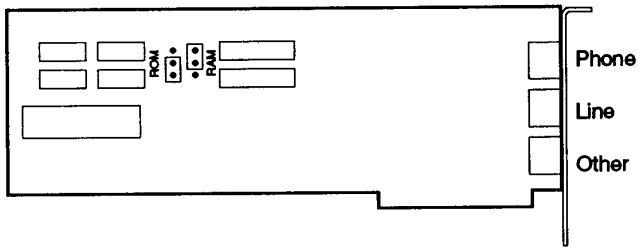

Figure A-23. Location of Jumpers on Modified DCP Board

2. Carefully insert the board in its proper location.

NOTE:
The board goes into the rearmost available slot (after the IVP boards) in the 6386E/33 WGS.

IFP2 Board Configuration and Installation

Your system may be shipped with the IFP2 board(s) already installed. If not, perform the following procedures. Refer to Figures A-24 and A-25 for location and settings of DIP switches and jumpers.

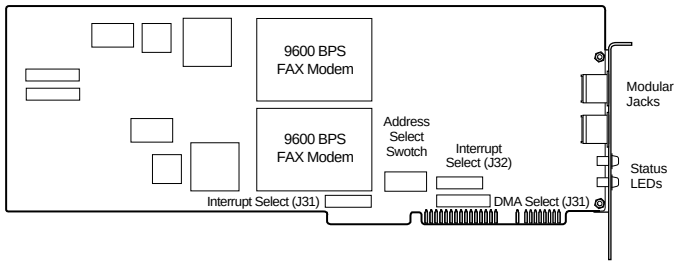

Figure A-24. IFP2 Switch and Jumper Locations

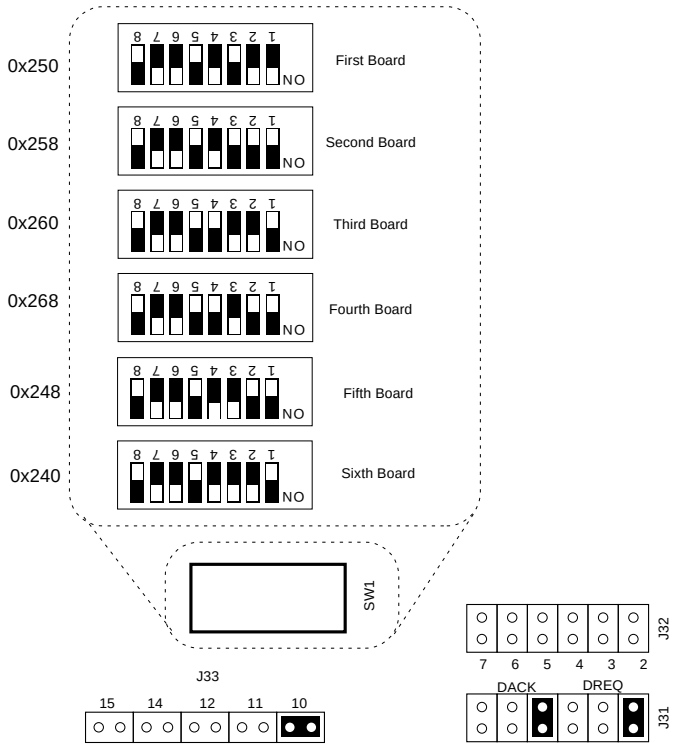

Figure A-25. IFP2 Switch and Jumper Settings

1. Move the interrupt request jumper from position 5 on J32 to position 10 on J33.
2. Check the I/O address DIP switch (SW1) settings on the board. The switches should be set as shown in Figure A-25. The default address is 250 Hex.

   NOTE:
   In the Master Controller III, switch 1 should be OFF for all cards.

3. Carefully insert the board in its proper location. Follow the instructions for installing circuit boards described previously.

IFP4 Board Configuration and Installation

Your system may be shipped with the IFP4 board(s) already installed. If not, perform the following procedures. Refer to Figures A-26 and A-27 for location and settings of DIP switches and jumpers.

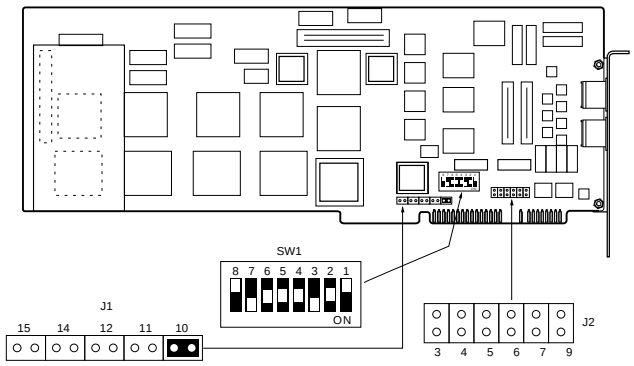

Figure A-26. IFP4 Switch and Jumper Locations

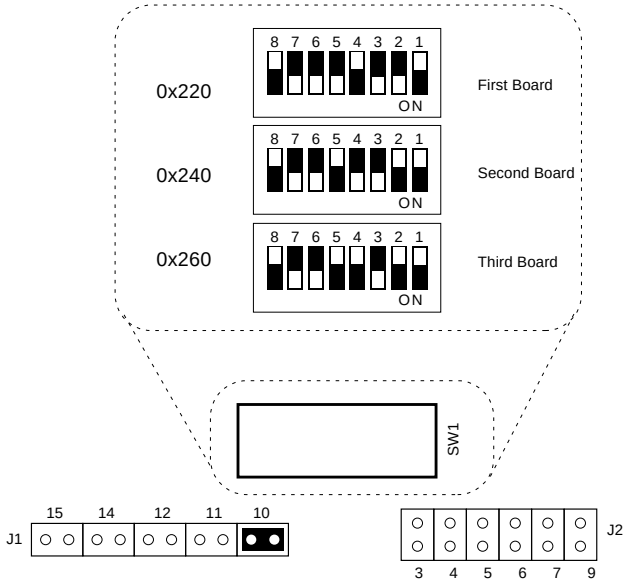

Figure A-27. IFP4 Switch and Jumper Settings

NOTE:
Switch position 1 on DIP Switch 1 must be set ON only on one IFP card. If this is an additional IFP board, change the address setting so it doesn't conflict with other IFP boards in the processor. Refer to the documentation supplied with the board for complete information on addressing and switch settings.

1. If necessary, move the interrupt request jumper from position 5 on J2 to position 10 on J1.
2. Check the I/O address DIP switch (SW1) settings on the board. The switches should be set as shown in Figure A-27.
3. Carefully insert the board in its proper location. Follow the instructions for installing circuit boards described previously.

Installing the Cartridge Tape Drive and Controller

The 125 MB cartridge tape drive installation kit contains the following items:

- a 125 MB cartridge tape drive
- a tape drive controller board
- a flat cable

After all hardware changes have been made, you must run the SETUP Utility to initialize them. Refer to the end of this appendix for details. If you do not run the SETUP Utility, operating difficulties will be encountered.

NOTE:
If you need to replace the already installed tape controller board or tape drive in the Master Controller II+ or the Master Controller III, refer to the *Applications Controller User's Guide* and the *Master Controller III User's Guide*, respectively, for detailed instructions.

Installing the Tape Drive

NOTE:
The jumpers on the tape drive are factory set and should not be changed.

To install the tape drive, follow these steps:

1. For the Master Controller II, the 6386/25, or the 6386E/33:
   a. Remove the brackets attached to the tape drive. Save the screws to secure the new brackets. The new mounting rails are packed in the plastic bag with the power cord.
   b. Attach the new drive mounting rails to the drive as shown in Figure A-28. Use the holes marked **D** and **K** on each side.

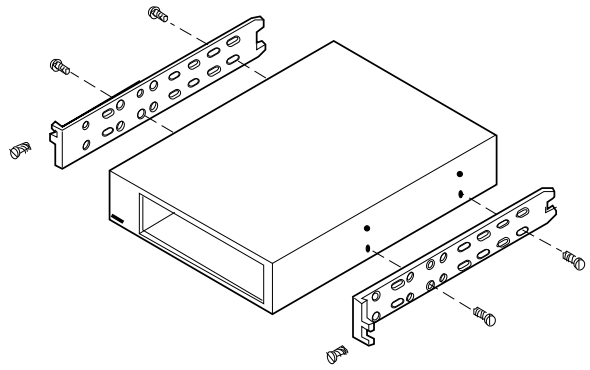

Figure A-28. Attaching the Drive Mounting Rails

2. Remove the metal shield from the bottom right bay of the system module chassis by removing the two mounting screws as shown in Figure A-29.

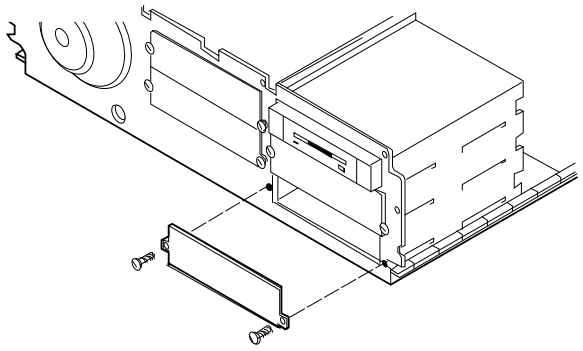

Figure A-29. Removing the EMI/RFI Shield

3. Align the drive with the chassis so that the mounting rails slide into the grooves. Secure the drive in the chassis using the two screws removed from the metal shield as shown in Figure A-30.

CAUTION:
Exercise extreme care so that no exposed components on the underside of the drive are damaged.

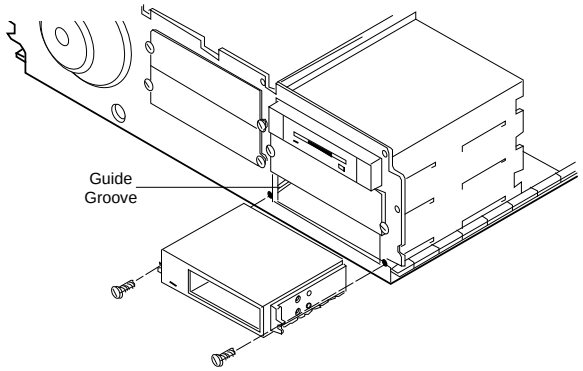

Figure A-30. Inserting the Drive

4. Attach one of the spare ground wires, if present, from the top of the center bay to the ground standoff (A) at the rear of the drive. See Figure A-31.

   NOTE:
   Some models are not equipped with separate ground wires.

5. Attach the edge connector at one end of the flat cable supplied with the kit to the connector at the rear of the tape drive (B). The connector will be marked "This side up" or have a notch in it to prevent incorrect attachment.

   NOTE:
   To connect cables to the tape drive, it may be easier to temporarily disconnect the power and data cables from the top and center drives (if any), then release the drives from the chassis and slide them forward. Proceed by connecting the tape drive first, then reconnecting the other drives.

   If you are installing the tape drive at the same time as additional memory, the cables to the disk drives may already be removed.

6. Connect one of the unused 4-pin power connectors to the power connector at the rear of the tape drive (C). This connector has a notch in it to prevent incorrect attachment.
7. If you removed any other cables and peripherals, reconnect them.

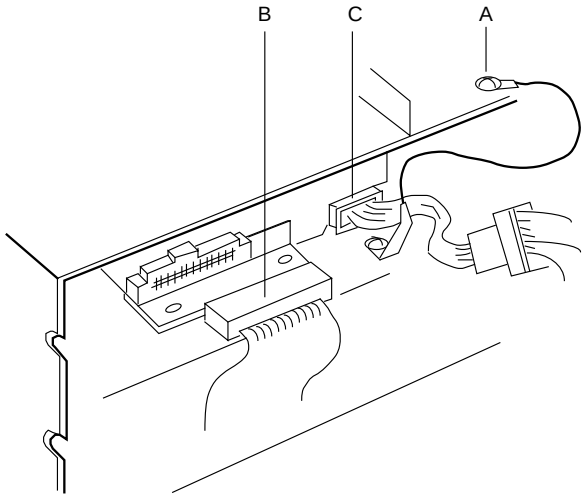

Figure A-31. Connecting the Data and Power Cables

Installing the Tape Controller

The tape controller should be installed in the closest available expansion slot to the tape drive. This is the rightmost available slot on the desktop processors and the frontmost available on floor processors. Follow the instructions for installing expansion boards described previously.

To install the tape drive controller, follow these steps:

1. Set the three jumpers at the bottom of the tape controller to IRQ5, DRQ1, and DACK1 as shown in Figure A-32.
2. Set the 10-position DIP switch on the tape controller as shown.
3. Leave all other jumpers at their factory settings.

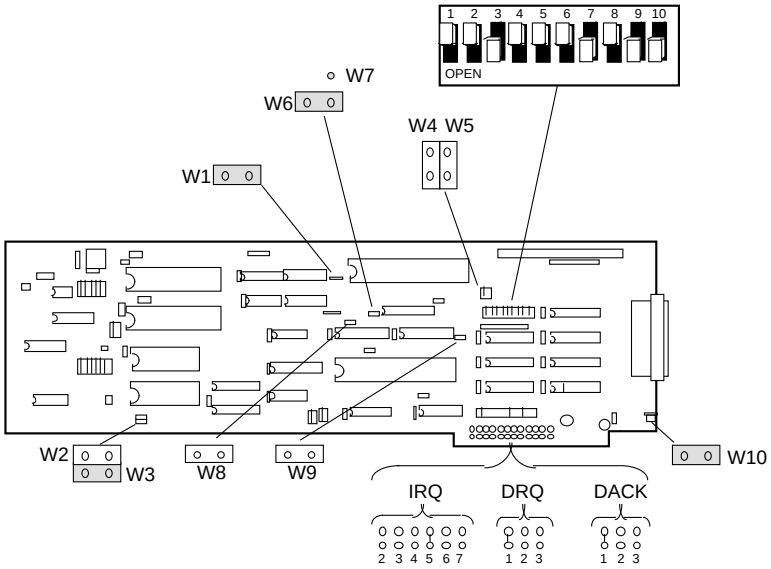

Figure A-32. Tape Controller Jumper and Switch Locations and Settings

4. Attach the connector on the flat cable to the connector on the tape controller board, if it isn't already attached. It is easier to connect this cable before the board is installed. The connector will be marked "This side up" or have a notch in it to prevent incorrect attachment.
5. Route and fold the cable carefully so that it will not interfere with the cover.
6. Replace any other components that may have been disconnected.

The SETUP Utility

When you bring up the system after installing and connecting system components, you can only run the SETUP utility to store the system configuration information in the battery backed CMOS memory. SETUP must be run every time memory is changed. Until this information is stored, the system will not operate properly.

Each time the system is turned on or reset, the Power On Self Test (POST) routine runs automatically and checks the CPU, keyboard, video display, memory, and most peripheral devices. The POST routine checks the information stored in the SETUP utility against the actual hardware configuration. If the stored information does not agree with the actual hardware, POST displays an invalid configuration message.

You must run the SETUP utility whenever:

- the POST routine indicates that the configuration is invalid or specifically requests that the SETUP utility be run
- any hardware component is added, changed, or removed
- the amount of memory is changed
- the system's clock/calendar battery fails or is replaced

Each processor uses a different procedure to invoke and configure the SETUP Utility. Refer to the *User's Guide* supplied with your processor for complete details on the SETUP Utility.

Software Installation

B

NOTE:
If you are installing software in an IS-III environment, you must refer to the IS-III documentation supplied with your system for installation instructions.

General Procedures

Software is installed according to the following steps:

1. Verify hard disk size.
2. Determine partition sizes to be used.
3. Install the UNIX operating system including the FMLI, FACE, HELP, Remote Terminal Package and Editing Package.
4. Verify the UNIX operating system installation.
5. Disable serial port 2 (if DCP card is used for switch integration).
6. Create a login for voice administration.
7. Install the Integrated Voice Power System software and patch.
8. Install the AUDIX Voice Power Application software (if FAX Attendant is co-resident with AUDIX Voice Power).
9. Install the AUDIX Voice Power Switch Integration software (if FAX Attendant is co-resident with AUDIX Voice Power).
10. Install the FAX Attendant Application software (and patch if installing on Master Controller III).
11. Install the appropriate FAX Attendant Switch Integration software.

Verifying Hard Disk Size

Before beginning the software installation, the size of the hard disk should be verified.

NOTE:
If you are using a Master Controller II+ or Master Controller III, use the diskette labeled "Diagnostic Program" provided with the processor. Refer to the *AT&T Diagnostic Program User's Guide* for complete information.

To determine the hard disk size, follow these steps:

1. Insert the Customer Diagnostics diskette supplied with the system into disk drive A.
2. Boot the system by turning power ON or by pressing the reset button if the system is already on.
   - ► The system boots from the Customer Diagnostics diskette and displays the Customer Diagnostics introduction screen.
3. Press Enter to continue.
   - ► The Customer Diagnostics main menu appears.
4. Use the ↓ key to move the highlight to `SETUP Utility` and press Enter.
   - ► The `SETUP Utility` displays the current settings for the system on a scrollable menu.
5. The information displayed will indicate the "hard disk type" or the "hard disk size". Record the size and number of cylinders for use later in allocating file systems.
6. Remove the diskette and follow the instructions on the screen to exit from the `SETUP Utility`.

Determining Partition Sizes

The UNIX operating system divides the hard disk into four partitions that are used to contain independent file systems. The sizes of these partitions limit the amount of each type of data that the system can store. To obtain optimum performance from your system, you must set the partition sizes to reflect the amount of each type of data that you expect to be needed based on the particular pattern of usage and features.

The four partitions are:

- **root** contains the UNIX operating system executable files and the executable files for the application programs. It requires 31 MB of allocated space for either a co-resident or non-co-resident (standalone) system.

- **usr** contains source code for some modules that must be recompiled and system administrative information. It also contains administrative information for menus, fax response messages, subscribers, and stored fax messages. It requires 28 MB of allocated space for either a co-resident or non-co-resident (standalone) system.
- **usr2** contains data for menus, fax response messages, subscribers, and stored voice messages. It requires 13.10 MB of allocated space for either a co-resident or non-co-resident (standalone) system.
- **swap** is a work area used by the UNIX operating system to store program images that are not active while other programs are executing. It requires 6 MB of allocated space for either a co-resident or non-co-resident (standalone) system.

NOTE:
Appendix E provides a worksheet for calculating the disk partitions if you prefer to follow a formula.

It is not necessary for you to calculate the number of cylinders for the **usr2** partition, because **usr2** will always use whatever cylinders are left after allocating the **root, swap** and **usr** partitions. Record the appropriate number of cylinders for **root, swap, and usr** based on your disk size, configuration, use of features, and expected traffic. You will need this information in the next procedure.

Installing the UNIX Operating System

The UNIX Operating System V/386 Release 3.2.2 must be installed (or re-installed) before any other software packages can be loaded. To install the UNIX operating system, follow these steps:

1. Insert diskette 1 of the Base System Package of the UNIX Operating System V/386 Release 3.2.2 Foundation Set into the disk drive.
2. Press the reset button if the system is already on, or turn on the system.
   - ► Resident diagnostics are run on the hardware and the results (PASS or FAIL) are indicated on the monitor.

     NOTE:
     If resident diagnostics fail at any time, remove the diskette. Insert the Customer Diagnostics or Diagnostics Program diskette for a more specific hardware check on the device that failed and perform the recommended corrective actions. The Diagnostics diskette is provided in the back of the *User's Guide* for your processor. When the problem is corrected, restart the procedure for loading the UNIX Operating System.

     When diagnostics are completed, the software on diskette 1 will be run. Diskette 1 is used to prepare the computer for the UNIX Operating System environment by partitioning and reformatting the hard disk.

Wait for the following prompt to display:

```
Strike ENTER to install the UNIX System on your
hard disk.
```

3. Press Enter to proceed with the installation.
   - ► The system prompts you with the message:

```
Is this a new installation or a release upgrade to
your existing system? (Strike n (new) or u
(upgrade) followed by ENTER)
```

4. Type ***n*** and press Enter.
   - ► The system prompts you with the message:

```
WARNING: A new installation of the UNIX System
will destroy all files currently on the system.
Do you wish to continue (y or n)?
```

5. Type ***y*** and press Enter.
   - ► The system prompts you to partition the hard disk with the following messages:

```
                Cylinders
Partition   Status   Type   Start   End   Length    %

---------    ----    ----   ----   ----    ----    -----
---------    ----    ----   ----   ----    ----    -----
THERE ARE NO PARTITIONS CURRENTLY DEFINED

SELECT ONE OF THE FOLLOWING:

  1. Create a partition
  2. Change Active (Boot from) partition
  3. Delete a partition
  4. Exit (Update disk configuration and exit)
  5. Cancel (Exit without updating disk
     configuration)

                  Enter Selection: 1
```

The default, `1`, for `Create a partition` is pre-entered on the screen.

NOTE:
In some situations, you may see a partition definition as shown below:

```
                Cylinders
Partition   Status   Type   Start    End    Length    %

---------    ----    ----   ----    ----    ----    -----
---------    ----    ----   ----    ----    ----    -----

    1       Active   UNIX     0     <end>   <max>    100
```

In this case, it will be necessary for any existing partitions to be deleted and then recreated for the system to work properly. To delete any existing partitions, follow these steps:

a. Type ***3*** for `Delete a partition` and press Enter.

   ► The system prompts you to enter the number of the partition to delete.

b. Type the first partition number listed and press Enter.

   ► Repeat these two steps until all existing partitions have been deleted.

   After all partitions have been deleted, continue with step 6.

6. Type ***1*** for `Create a partition` and press Enter.

   ► The system prompts you to indicate the type of partition to be created.

7. Type ***1*** for a `UNIX partition` and press Enter.

   ► A message similar to the following appears:

   ```
   The UNIX System partition must use at least 15% of
   the hard disk. Indicate the percentage (15-100) of
   the hard disk you want this partition to use (or
   enter "c" to specify in cylinders):
   ```

8. Type ***100*** and press Enter.

   ► The following message displays:

   ```
   Do you want this to become the Active partition?
   If so, it will be activated each time you reset
   your computer or when you turn it on again.
   Please type "y" or "n".
   ```

9. Type ***y*** and press Enter.

   ► The partition menu displays again:

```
                Cylinders
Partition   Status   Type   Start    End    Length    %

---------    ----    ----   ----    ----    ----    -----
---------    ----    ----   ----    ----    ----    -----

    1       Active   UNIX     0     <end>   <max>    100

SELECT ONE OF THE FOLLOWING:

  1. Create a Partition

  2. Change Active (Boot From) Partition

  3. Delete a Partition

  4. Exit (Update Disk Configuration and Exit)

  5. Cancel (Exit Without Updating Disk
     Configuration)

                    Enter Selection:
```

10. Type ***4*** for `Exit (Update the Disk Configuration and Exit)` and press Enter.

    ► The system displays the following message:

    ```
    Hard disk partitioning complete.

    A surface analysis will now be done. This will
    destroy all data on the hard disk. Strike ENTER to
    continue or DEL to abort.
    ```

11. Press Enter.

    ► The surface analysis takes 10 to 60 minutes to complete depending on the size of the disk.

    The system then displays the default file system assignments. They will vary from system to system. The system prompts you to confirm that the default assignments are acceptable.

12. Type ***n*** and press Enter.

    ► The system prompts you to indicate whether you want separate /root and /usr file systems.

13. Type ***y*** and press Enter.

    ► The system prompts you to indicate whether you want an additional /usr2 file system.

14. Type ***y*** and press Enter.

    ► The system displays the following:

```
Do you want to allocate a crash/dump area on your
disk? If you do not, the swap/paging area will be
used to save the memory image in the event of a
system panic (y/n)?
```

15. Type ***n*** and press Enter.

    ► The system prompts you to indicate the number of cylinders you want for the /swap, /root, /usr, and /usr2 areas on the disk.

    Enter the number of cylinders appropriate for the size of your hard disk and your configuration as determined in the section "Determining Partition Sizes" earlier in this appendix when answering these prompts:

    ```
    How many cylinders would you like for swap/paging
    (1-<max>)?
    ```

```
How many cylinders would you like for /root (1-
<remainder>)?

How many cylinders would you like for /usr (1-
<remainder>)?

The remaining <remainder> cylinders will be
assigned to /usr2.
```

Your disk allocation will be displayed and the following prompt will appear:

```
Is this allocation acceptable to you (y/n)?
```

16. If it is correct, type ***y*** and press Enter.

    If it is incorrect, type ***n*** and press Enter, then reallocate the cylinders.

    - ► After allocation, messages report that the UNIX operating system is being built on the hard disk. Diskette 1 takes approximately 15 minutes to copy to the hard disk.

17. When prompted to reboot the system, remove diskette 1 from the floppy disk drive. Press the Ctrl + Alt + Del keys simultaneously to reboot.
18. At the prompt requesting the installation medium, type `f` for `Floppy Diskette` and press Enter.
19. When prompted, insert diskette 2 into the floppy disk drive and press Enter.
20. Continue loading disks as prompted.

    NOTE:
    Each remaining diskette will take 3 to 5 minutes to copy to the hard disk.

    - ► After the last diskette has been loaded, you will be prompted to remove it.

      The following message will display:

      ```
      Enter password for the "root" or super-user.
      ```

21. Type the password that has been selected for root by the System Manager. The password does not appear on the screen. Press Enter after typing the password.
    - ► You will be prompted to re-enter the password.
22. Type the password a second time and press Enter.

    You will be prompted for the *install* password.

23. Type the password that has been selected for *install* by the System Manager. The password does not appear on the screen. Press Enter after typing the password.

    ► You will be prompted to re-enter the password.

24. Type the password a second time and press Enter.

    ► A message appears stating that the UNIX operating system is being rebuilt. This takes approximately two minutes.

25. When you are prompted to reboot the system, be sure that the floppy disk drive is empty and then reboot the system by pressing the Ctrl + Alt + Del keys simultaneously.

26. When you receive a login prompt, log in as ***root*** using the password you entered previously.

27. Insert the FMLI package diskette into the floppy disk drive.

28. At the # prompt, type ***installpkg*** and press Enter.

29. When prompted, press Enter again.

30. When the installation of the FMLI package is complete, place the first diskette of the FACE package into the floppy disk drive. Type ***installpkg*** and press Enter to load it. When prompted, insert the second diskette and continue.

31. When the installation of the FACE package is complete, place the FACE HELP package diskette into the floppy disk drive. Type ***installpkg*** and press Enter to load it.

    ► The FACE HELP package will display the following menu:

    ```
    1. Install Office HELP Files ONLY
    2. Install System Administration HELP Files ONLY
    3. Install Printer Operations HELP Files ONLY
    4. Install ALL HELP Files
    5. Terminate Installation
    ```

32. Select option `4. Install ALL HELP Files` by typing ***4*** and pressing Enter.

33. Now select option `5. Terminate Installation` by typing ***5*** and pressing Enter.

    ► When the installation of the FACE HELP package is complete, you receive the # prompt. Remove the diskette.

34. Insert the Remote Terminal Package diskette. (This is a UNIX system package that comes with the UNIX Operating Systems Foundation Set.)

35. At the # prompt, type ***installpkg*** and press Enter.

36. When prompted, press Enter again.

- ► You are prompted for which option to install.

37. Press ***1*** (`Install terminfo file(s)`) and press Enter.
    - ► You are prompted for which terminfo file(s) to install.
38. Type ***all*** and press Enter.
39. After the terminfo files have been installed, type ***done*** and press Enter.
40. Type ***0*** (`Terminate Installation`) and press Enter.
41. Remove the diskette when the installation is complete.
42. At the # prompt, insert the Editing Package diskette into the floppy disk drive.
43. At the # prompt, type ***installpkg*** and press Enter.
44. When prompted, press Enter again.
    - ► When the installation of the Editing Package is complete, you receive the # prompt. Remove the diskette.

Installation of the UNIX operating system is complete.

Verifying UNIX System Installation

To verify UNIX system installation, follow these steps:

1. Login as root (if not already logged in).
2. At the # prompt, type ***uname -a*** and press Enter.
    - ► The system should display the following message:

```
unix unix 3.2 2.2 i386
```

If you encounter an error, reinstall the UNIX system software. If you continue to encounter difficulty, refer to the section "Assistance" in Chapter 1.

Disabling Serial Port 2

If your system includes a DCP card, you should disable serial port 2 for hardware and in software. Refer to Appendix A for details on disabling hardware.

NOTE:
No hardware modifications are needed on the Master Controller II, Master Controller II+, or Master Controller III.

To disable serial port 2 in the software for the Master Controller II+ and the Master Controller III, follow the instructions in Chapter 3, "Configuration Setup," in the *AT&T Applications Controller Users Guide* and the *AT&T Master Controller III User's Guide*, respectively.

To disable the software for all other processors, follow the steps below:

1. Log in as ***root***. (If you are already logged in, log off and log in again.)
2. At the # prompt, type ***face*** and press Enter.
   - ► The FACE menu appears.
3. At the FACE menu, select `System Administration` and press Enter.
   - ► The `System Administration` menu appears.
4. At the `System Administration` menu, select `Peripheral Setup` and press Enter.
   - ► The `Peripheral Setup` menu appears.
5. At the `Peripheral Setup` menu, select `Enable/Disable Second Serial Port` and press Enter.
   - ► The `Enable/Disable Second Serial Port` menu appears.
6. At the `Enable/Disable Second Serial Port` menu, select `Disable Second Serial Port` and press Enter.
   - ► The second serial port is disabled.
   - ► The system will show a confirmation screen telling you to reboot the system as soon as possible.
7. Press F3 (CONT).
8. When prompted for a shutdown, press Enter to shut down the system.
9. When prompted to reboot, press Ctrl + Alt + Del simultaneously.

Creating a Login for Voice Administration

Before installing the application software, you must create a login for voice administration through FACE.

1. Log in as ***root***.
2. At the # prompt, type ***face*** and press Enter.
   - ► The FACE menu appears.
3. At the FACE menu, select `System Administration` and press Enter.
   - ► The `System Administration` menu appears.
4. At the `System Administration` menu, select `User Logins` and press Enter.
   - ► The `User Logins` window appears.
5. At the `User Logins` window, select `ADD` to add a user.
   - ► A login screen appears.

6. For the login name, use ***audix*** and for the full name, use `AUDIX Voice Adm`.
7. Next, allow FAX Attendant to have system administrative privileges by changing ***No*** to ***Yes*** in this field.
8. Press F3 (SAVE).
   - ► A confirmation window appears confirming the information entered.
9. Press F3 (CONT) to confirm.
   - ► The system now asks for the `New Password` for login `audix`.
10. Enter the new password to be used for voice administration and press Enter.
    - ► The system then prompts you to re-enter the password.
11. Re-enter the same password and press Enter to verify that the system accepted it.

    NOTE:
    Be sure to provide the password to the customer.

12. Press Enter to continue.
    - ► A confirmation message appears stating that `User AUDIX` has been added to the system.
13. Press F6 (CANCEL) key, repeatedly until the main `FACE` menu appears.
14. Select `Exit` and press Enter.
15. Press F3 (CONT) to confirm that you want to return to the UNIX operating system prompt.

Installing Cartridge Tape Utility Software

If you have a cartridge tape drive, you must install the cartridge tape utility software supplied with the kit. Otherwise, proceed to the next section, "Installing Integrated Voice Power System Software."

Use the following procedures to install the cartridge tape utility software:

1. Log in as ***root*** (if you are not already logged in).
2. Insert the Cartridge Tape Utility Package diskette in the floppy disk drive. (This is a UNIX package that comes with the UNIX Operating System Foundation Set.)
3. At the # prompt, type ***installpkg*** and press Enter.
4. When prompted for the interrupt number, type ***5*** and press Enter.
5. Remove the diskette when the installation is complete.

6. At the # prompt, type ***shutdown -y -g0*** .
7. When instructed, remove the diskette from the drive. Press the Ctrl + Alt + Del keys simultaneously to reboot the system.

The cartridge tape can now be used.

Installing Integrated Voice Power System Software

NOTE:
Ensure that you have IVPSS Release 2.0. No other release is supported.

To install the Integrated Voice Power (IVP) System software, follow these steps:

1. Log in as ***root*** (if you are not already logged in).
2. Insert diskette 1 of the IVP System Software into the floppy disk drive.
3. At the # prompt, type ***installpkg*** and press Enter .
   - ► Status messages are displayed as sections of the installation are completed.
4. After reading the last diskette, the system prompts you to enter information on serial port configuration.

```
First serial port uses interrupt level 4
Second serial port uses interrupt level 3
Parallel port uses interrupt level 7
If you wish to reclaim some of these interrupts for
other devices, you may DISABLE some of these ports.
However, at least ONE serial port must be enabled at
all times.

For serial ports, would you like to:
1) ENABLE both first and second serial ports.
2) DISABLE first and ENABLE second serial port.
3) ENABLE first and DISABLE second serial port.

Please enter your selection
[1,2,3]:
```

   - ► Type ***3*** and press Enter to enable the first and disable the second serial port. The system confirms your selection.
5. The system then requests information on parallel ports.

```
For the parallel port (interrupt level 7), would you
like to:
1) ENABLE the parallel port
2) DISABLE the parallel port

Please enter your selection [1 or 2]:
```

- ► Type ***1*** and press Enter to enable the parallel port.

6. The system then prompts you for information on interrupts.

```
Select interrupt number for IFP boards.  Press <Enter>
for default value [2] or one of [2, 3, 5, or 15] or q
to quit.
```

   - ► Type ***15*** and press Enter. The system responds with

```
Interrupt number 15 will be used for IFP boards.
Press <Enter> to confirm or any other key to
reject.
```

   NOTE:
   Although the hardware jumper is set to 10 on the board, the software should be set to 15.

   - ► Press Enter to confirm your choice.

7. The system then asks you about your monitor type.

```
Select the monitor type:
1. Color (AT386)
2. Monochrome (at386-m)

Enter selection:
```

   - ► Type ***1*** for color or ***2*** for monochrome. If you're not sure of your monitor type, refer to the *User's Guide* supplied with the system.
   - ► The system confirms your selection. Type ***y*** if the selection is correct, then press Enter.

8. The system then prompts you for the time zone you are in.

```
Select the time zone for this installation:
  1. Eastern
  2. Central
  3. Mountain
  4. Pacific
```

   - ► Enter your selection number and press Enter. You will receive the following message:

```
Confirm: the installation time zone number is
<selected number> (y/n)
```

   - ► Type ***y*** if the number matches the correct time zone and press Enter.

9. The system now asks you if daylight savings time is used.

```
Is daylight savings time ever used? (y/n)
```

- ► Type ***y*** or ***n*** as appropriate.

10. The names of files are displayed as they are copied to the hard disk, then the following prompt appears:

```
Reserving a disk slice for speech.
Disk 0 Slice 4 will be reserved for speech (y/n)?
```

- ► Type ***y*** and press Enter.

NOTE:
If a speech filesystem already exists, it will be overwritten.

The following message appears:

```
A speech filesystem does not exist on slice 0s4.

Confirm: A speech filesystem will now be built on
slice 0s4. (y/n)
```

- ► Type ***y*** and press Enter.

11. The following messages appear:

```
Building speech filesystem on slice 0s4.

Do you want to overwrite slice /dev/rdsk/0s4 on your
disk? (y/n)
```

- ► Type ***y*** and press Enter.
- ► The following messages appear:

```
Inittab successfully rebuilt.

Voice System successfully installed.

The UNIX Operating System will now be rebuilt.
This will take approximately 2 minutes.  Please
wait.

The UNIX Kernel has been rebuilt.
```

12. When the installation is complete, the IVP System Software package is installed, but not running. Take out the last diskette when complete. The system will prompt you for shutdown.
13. Press Enter to shut down the system.
14. When prompted, press Ctrl + Alt + Del to reboot the system.

Installing Integrated Voice Power System Software R2.0: Patch 1

This patch enables the Fax Call Answer and AUDIX Voice Power Automated Attendant services to recognize the Fax (CNG) tone. To install the patch software, do the following:

NOTE:
If the voice system is running when you begin the installation, it will be returned to the running state when the installation is complete.

1. Login as ***root*** if you are not logged in.
2. Insert the Integrated Voice Power System Software R2.0: Patch 1 diskette into the floppy disk drive.
3. Type ***installpkg*** and press Enter. Follow the instructions displayed on the monitor.
4. While the patch is being installed, a series of messages are displayed. When the patch installation completes, remove the diskette.
5. Press Enter to return to the UNIX prompt. If the voice system was running, it will take about three minutes to become functional.

Installing AUDIX Voice Power Application Software

NOTE:
If your FAX Attendant is not co-resident with AUDIX Voice Power, skip this section.

Loading the AUDIX Voice Power Application software takes approximately 15 minutes to complete.

Prior to AUDIX Voice Power Application software installation, the "audix" login should have been created for the AUDIX Voice Power System Manager. If this has not been done, refer to the section, "Creating a Login for Voice Administration" provided earlier in this appendix.

To install the AUDIX Voice Power Application software, follow these steps:

1. Login as ***root*** (if not already logged in).
2. Insert diskette 1 of the AUDIX Voice Power Application Software: Speech into the floppy disk drive.

   NOTE:
   The Speech section of the application software must be installed before the Software section.

3. At the # prompt, type ***installpkg*** and press Enter.
   - ► A confirmation message appears on the screen.
4. Press Enter again. You are prompted to insert the next diskette into the floppy disk drive.
5. Insert the next diskette and press Enter to continue.
   - ► A confirmation message appears on the screen. You are then prompted to insert each additional diskette into the floppy disk drive.
6. Insert the requested diskette and press Enter to continue.
   - ► A series of dots will appear on the screen, signifying the number of phrases added to the speech database. There are approximately 500 phrases.
   - ► You are prompted to remove the diskette.
7. Remove the last diskette from the disk drive.
   - ► An installation confirmation message appears.
8. Insert diskette 1 of the AUDIX Voice Power Application Software: Software into the floppy disk drive.
9. At the # prompt, type `installpkg` and press Enter.
   - ► A confirmation message appears on the screen.
10. Press Enter again.
    - ► You are prompted to insert the next diskette into the floppy disk drive.
11. Insert the requested diskette and press Enter to continue.
    - ► After the last disk has been entered, you are prompted to enter the login of the Voice System Administrator.
12. Type ***audix*** and press Enter.
    - ► You will be asked to confirm.
13. Press Enter.
    - ► A series of file names will appear on the screen, signifying the number of files moved.
14. When prompted, remove the last diskette from the disk drive.
    - ► An installation confirmation message appears.

The AUDIX Voice Power Application software is now installed.

Installing AUDIX Voice Power Switch Integration Software

NOTE:
If your FAX Attendant is not co-resident with AUDIX Voice Power, or if the AUDIX Voice Power system does not include switch integration, skip this section.

The next step is to install the AUDIX Voice Power Switch Integration Software. The diskettes are labeled *AT&T AUDIX Voice Power Switch Integration Software (for AT&T System 75 or DEFINITY G1/G3) R2.1.1.*

CAUTION:
Do not use the diskette included with the DCP board. It is for MS-DOS only.

1. Log in as ***root*** (if not already logged in).
2. Insert the first diskette into the floppy disk drive.
3. At the # prompt, type ***installpkg*** and press Enter.
   - ► You will be prompted to enter which version of the switch you are using.
4. If asked, indicate the version of the switch and press Enter.
5. When prompted, insert the second diskette into the drive.
   - ► Files are listed on the screen as they are moved to the hard disk. When all copying has been completed, you will be prompted to remove the diskette.

   NOTE:
   If the package will not load because another device (e.g., second serial port) is already using interrupt level 3, disable the device both in hardware and software.

6. After the installation has completed, remove the diskette.
7. When prompted, press Enter to shutdown the system.
8. When prompted to reboot, press the Ctrl + Alt + Del keys simultaneously to reboot the system.

Installing FAX Attendant Application Software

Loading the FAX Attendant application software takes approximately 15 minutes to complete. The type of diskettes in the application software set depends on whether the FAX Attendant is co-resident with AUDIX Voice Power. For FAX Attendant co-resident with AUDIX Voice Power, use the set of diskettes labeled: *AT&T FAX Attendant System™ Co-Resident Base Software R2.1.1* (6 diskettes). For FAX Attendant without AUDIX Voice Power, use the set of diskettes labeled:

AT&T FAX Attendant System™ Standalone Base Software R2.1.1 (8 diskettes).

NOTE:
Prior to FAX Attendant application software installation, the "audix" login should have been created for the FAX Attendant System Manager. If this has not been done, refer to the section "Creating a Login for Voice Administration" provided earlier in this appendix.

To install the FAX Attendant Application software, follow these steps:

1. Login as ***root*** (if not already logged in).
2. Insert diskette 1 of the FAX Attendant application into the floppy disk drive.
3. At the # prompt, type ***installpkg*** and press Enter.
   - ► A confirmation message appears on the screen.
4. Insert the next diskette and press Enter to continue.
   - ► A confirmation message appears on the screen.
5. After the last diskette is loaded, you are prompted to enter the login id of the system administrator.
6. At the prompt type the sytem administrator login ***audix*** and press Enter.
   - ► Several confirmation messages followed by a series of dots will appear on the screen, signifying the number of phrases added to the speech database. This is followed by a series of file names that are also being moved. This takes approximately 10 minutes.
7. When prompted, remove the last diskette from the floppy disk drive.
   - ► An installation confirmation message appears.
8. At the # prompt shut down the system by typing ***shutdown -y -g0*** and pressing Enter.
9. When prompted to reboot, press the Ctrl + Alt + Del keys simultaneously to reboot the system.

The FAX Attendant application software is now installed.

Installing the FAX Attendant Switch Integration Software

The next step is to install the FAX Attendant Switch Integration software package.

NOTE:
If your FAX Attendant System is not integrated with the switch, skip this section.

If your FAX Attendant System is co-resident with AUDIX Voice Power, the

diskettes are labeled *AT&T FAX Attendant System™ System 75 G1/G3 Switch Integration Software R2.1.1* (3 diskettes). If your FAX Attendant System does not include AUDIX Voice Power, the diskettes are labeled *AT&T FAX Attendant System™ System 75 G1/G3 Standalone Swtich Integration Software R2.1.1* (2 diskettes), or *AT&T FAX Attendant System™ System 85 G2 Standalone Switch Integration Software R2.1.1* (2 diskettes).

CAUTION:
Do not use the diskette included with the DCP board. It is for DOS only.

1. Login as ***root*** if you are not logged in.
2. Insert the first diskette into the floppy disk drive.
3. At the # prompt, type ***installpkg*** and press Enter.
   - ► For System 75/DEFINITY G1/G3, you will be prompted to enter which version of the switch you are using. Type the proper number and press Enter.
   - ► Files are listed on the screen as they are moved to the hard disk.

   NOTE:
   If the package will not load because another device (e.g., second serial port) is already using interrupt level 3, disable the device both in hardware and software.
4. When prompted, remove the diskette, and insert the next diskette and press Enter.
5. After the installation has completed, remove the last diskette.
   - ► An installation confirmation message appears.
6. If prompted to shut down the system, press Enter to shut it down.
7. When prompted to reboot, press Ctrl + Alt + Del simultaneously.

FAX Attendant Switch Integration software is now installed.

Installing FAX Attendant 2.1.1 Patch Software

If you are installing FAX Attendant application software on a Master Controller III processor, it is necessary to install the patch software supplied with the application software. Follow these steps:

1. Login as ***root*** if you are not logged in.
2. Insert the floppy diskette into the disk drive and type ***installpkg*** and press Enter.
   - ► A series of messages appear.
3. When complete, remove the diskette from the disk drive.

Patch software installation is complete.

Verifying Software Components

After installation is complete, you should verify that all software components are present in the system. To do this, refer to the procedure provided in the section "Verifying Installed Software Components" in Chapter 2.

Troubleshooting

C

General Information

Troubleshooting is limited to two areas:

- Hardware
  Hardware troubleshooting is limited to the Power-On Self Test (POST), system module diagnostics provided on the *Customer Diagnostics* or *Diagnostic Program* diskette, and diagnostics for additional boards that have been installed.
- Switch and application administration
  When the system does not operate as anticipated, there may be problems in the administration of the application or the switch.

If problems cannot be resolved through the documentation, refer to the section on assistance in Chapter 1.

Hardware Troubleshooting

Hardware troubleshooting consists of the Power On Self Test (POST), system module diagnostics provided on the *Customer Diagnostics* or *Diagnostic Program* diskette, and diagnostics for additional boards that have been installed.

Power On Self Test

When the Power On Self Test (POST) is initiated upon system start, two columns of information appear on the screen. The left column identifies the item being tested; the right column indicates ‘‘PASS’’ or ‘‘FAIL,’’ or the amount of memory allocated.

The following table shows the item being checked and indicates possible causes for failure. If there is more than one cause listed, try to resolve the problem starting with the first item listed.

Screen Item	Cause of Failure
CPU	Main board problem
CMOS RAM	- Battery backup problem - Main board problem
ROM checksum	- ROM failure - replace ROM - Main board problem
Memory refresh	Main board problem
DMA controllers	Main board problem
Interrupt controller	Main board problem
Keyboard	- Pressed key while booting - reboot system - Keyboard bad - replace keyboard - Main board problem
Dedicated memory	If not 0384 KB, then - Memory problem - replace memory - Main board problem
Base memory	If not 0640 KB, then - Memory problem - replace memory - Main board problem
Extended memory	If not 7188 KB or more, then - Memory problem - replace memory - Main board problem - Add memory if needed
Total memory	- Memory problem - replace memory - Main board problem
Clock/Calendar	Main board problem
Floppy disks	- Poor connection - Bad drive - Bad controller - Main board problem
Hard disk	- Poor connection - Bad drive - Bad controller - Main board problem

Use the *Customer Diagnostics* or *Diagnostic Program* diskette provided with the system to help diagnose any problems. For additional information refer to the *User's Guide* supplied with the system.

NOTE:
If you are using a Master Controller II+ or III processor, you may be asked to check your configuration setup parameters as described in Chapter 3 of the *AT&T Applications Controller User Guide* or the *AT&T Master Controller III User Guide.* To fully diagnose any problems, use the diskette labeled *Diagnostic Program* provided with the processor. Refer to the *AT&T Diagnostic Program User's Guide* for comprehensive instructions on how to use the program.

Hard Disk Failure

If the hard disk fails, follow these procedures:

1. Check all internal connections and reboot the system.
2. If the hard disk still fails, replace the disk controller. Refer to the *User's Guide* supplied with the system for details.
3. If the hard disk fails again, replace the hard disk. Refer to the *User's Guide* supplied with the system for details.

If you replace the hard disk, it is necessary to restore all operating system and application software. Refer to **Appendix B: Software Installation** for information on reinstalling the software. If the system has been in use, it will also be necessary to recover the system data files from disk or tape. Refer to **Appendix D: Recovery from System Failures** for information on recovering system data files.

Main Board Failure

If the main board fails, follow these procedures:

1. Insert the *Customer Diagnostics* diskette and run tests for each item whose status is ''FAIL.''

   NOTE:
   If you are using a Master Controller II+ or III processor, use the diskette labeled *Diagnostic Program* provided with the processor. Refer to the *AT&T Diagnostic Program User's Guide* for complete information.

2. Replace the main board (if defective). Refer to the *User's Guide* supplied with the system for details.
3. Boot the *Customer Diagnostics* diskette and run the SETUP utility. Refer to the *User's Guide* supplied with the system for details.

Data Corruption

If the screen is garbled, or the system is running and error messages are displayed from the UNIX operating system or one of the installed applications, it may mean that there is corrupt data. If this is the case, you should obtain assistance from your next level of support.

Diagnostics

Diagnostics you can run include the *Customer Diagnostics* diskette and the individual IFP and IVP circuit board tests. These procedures are covered in "Diagnostics" in Chapter 2. If you are still unable to resolve your problem, refer to the section on assistance in Chapter 1.

NOTE:
If you are using a Master Controller II+ or III processor, use the diskette labeled *Diagnostic Program* provided with the processor. Refer to the *AT&T Diagnostic Program User's Guide* for complete information.

Switch and Application Administration Troubleshooting

This section will assist you in identifying and locating problems that occur with the switch or application rather than with the hardware. If a symptom in the ''Trouble Indication'' column occurs, check the solution given in the ''Corrective Action'' column. If you are still unable to resolve your problem, refer to the section on assistance in Chapter 1.

Trouble Indication	Corrective Action
During installation of the AT&T FAX Attendant package, you are prompted for a login for the voice administrator; however, one has not been created.	Stop the installation process by pressing the Delete key and create a login for the voice administrator.
Message Waiting Lamp will not turn on or off.	For all telephone systems except System 25, check the switch administration of the Message Waiting Lamp for that extension to verify that it was enabled. Also, make sure the Message Waiting Lamp fields in the Voice System Parameter Administration window are correctly filled in. Check to see whether the code to turn on the lamp on the Voice System Parameter screen matches the code to turn on Leave Word Calling on the switch. The codes to turn off Message Waiting Lamp must be the same as the code to turn off Leave Word Calling on the switch. For switch-integrated configurations on all telephone systems also check that a service has been assigned to channel 0 and that channel 0 is in an "in service" state.
Messages cannot be left because mailboxes are full.	Message Space Usage reports for both Voice Management and Fax Management should be performed regularly. Check for subscribers

Trouble Indication	Corrective Action
Messages cannot be left because mailboxes are full (continued).	who are approaching or exceeding the message space limit. Have subscribers delete old messages regularly. Also, make sure the Message Drop service is checked and cleared on a regular basis.
System is not performing call transfers properly.	Check to see if the user is transferring to a valid extension. Make sure the person being transferred to is registered on the system. If not, check to see whether the system is administered to allow transfers to non-registered numbers. If the problem involves transferring to an operator, check to see if an operator has been defined on the system.
Caller hears a ring, but receives no answer.	Check to see if the telephone line is properly connected to the channel. Make sure a service has been assigned to the channel and that it is in the INSERV state. If it is in the facility-out-of-service (FOOS) state, change it to the manual-out-of-service (MANOOS) state. Diagnose the IVP4/6 card and then change it to the INSERV state. Also, check the PBX administration of that channel.

Trouble Indication	Corrective Action
Caller hears a ring, but receives no answer (continued)	For switch-integrated configurations on all telephone systems except System 25, make sure that channel to phone number mapping has been done correctly. For System 75, DEFINITY G1 and G3, check to make sure no ambiguous extensions have been assigned to the FAX Attendant channels.
User's messages appear to be truncated. System terminates recording of name or greeting and message before user is finished.	A portion of the speech in the message being spoken by the user or played back by the system is simulating a touch tone. The false touch tone stops the playback or recording which is in progress. If recording of a name or greeting still causes a problem after several attempts, try using a different telephone or have someone else record your name or greeting.
Unable to log in to the Fax Mail Service.	Check to see if the password being used is correct, or if the user has been denied access (e.g., the System Manager changed the password). Verify that the individual logging in is registered on the system.

Trouble Indication	Corrective Action
Unable to leave messages.	Check to see if there is space available in the user's mailbox. If not, have the user clean up the mailbox. Also check to see if there is space available on the disk. Run the Message Space Usage Report and page down to the last page to determine the space left on the disk.
Occasional busy signals received when attempting to call into Fax Mail service.	Maintenance is in the process of diagnosing equipment or all lines are currently in use. Please wait.
Constantly receiving a busy signal when attempting to call into the Fax Mail service.	The switch interface software is not loaded or incorrectly loaded. The second serial port is not disabled (for DCP integrated systems only). The DCP Board or TN-754 board is bad or the switch administration is not correct (for DCP integrated systems only).
Service hour administration does not work properly.	The system date or time has been changed. Use the date command to verify and if necessary, correct the system date and time. Then reset the voice system by stopping and restarting it. After Daylight Saving Time changes, stop and restart the voice system.

Trouble Indication	Corrective Action
Outcalls not being made reliably.	The system date or time has been changed. Outcalls will work properly for messages left after the date or time change. Outcalls for messages left before the date or time change have the previous time stamp and may not work properly.
Indication that maximum simultaneous ports exceed the number of ports available when changing the outcalling parameters.	Check that the total number of Fax Mail, Fax Call Answer, and Automated Attendant ports is greater than or equal to the number of maximum simultaneous outcalling ports requested. If not, lower the number of simultaneous outcalling ports.
Many subscribers get messages about multiple logins to their mailboxes.	Stop and start the voice system.
Fax messages are not received by the system during either Fax Mail or Fax Call Answer.	Check fax equipment administration. Make sure that the extension numbers assigned to fax boards as shown by the Fax Channel Administration screen are accurate. Try unhooking the phone lines going into fax boards and test their validity by connecting a phone to them and calling that extension. Run fax diagnostics on fax cards.

Trouble Indication	Corrective Action
The FAX Attendant is failing to make calls outside the switch.	1. Check that the correct "Dial String for Outside Call" has been entered in the General Fax Parameter Administration screen. 2. Check that the "Fax Mail Telephone Number" entered in the above screen has the correct area code. 3. Check to see if switch account code entry field is set to "yes" in the Account Code Parameter Administration screen. If it is set to "yes": a. Check that the correct Feature Access Code is entered and is terminated by a # sign if termination is required. This code must be the same as set on the switch. b. Be sure the account code length on the Account Code Parameter Administration screen matches the SMDR account code length set on the switch.

Trouble Indication	Corrective Action
Fax messages cannot be loaded in Fax Response.	Check to make sure that extensions entered for fax channels on the Fax channel Administration screen are correct as described above.
Fax messages cannot be printed using the PRINT key in Fax Response.	Check to make sure that a valid fax machine extension (or lp if you have a laser printer connected to your system) is entered in the "Destination for Printing" field in the General Fax Parameter Administration screen. Also be sure the printer is administered and enabled.
Fax message left in the system through Fax Call Answer does not appear in the correct mailbox.	When the mailbox of a subscriber is filled, the FAX Attendant deposits the message in the Fax Call Answer administrator's mailbox or in the General Mailbox if it is enabled. Check to see if the mailbox of the would be recipient is filled. This can be done by generating the Subscribers Over Mailbox report.
The system complains about extension size while adding subscribers.	You must enter the desired extension size in the "Maximum Extension Length" field in the Voice System Parameter Administration screen.

Trouble Indication	Corrective Action
In a switch-integrated system, voice call answer service is provided to the caller when Fax Call Answer should be provided, or other difficulties are experienced while trying to get Fax Call Answer.	Check to make sure that the fax extension being covered to the FAX Attendant for call coverage is administered on the switch with the name field left blank.
Reception and/or transmission of fax messages fails under high traffic.	One of the lower numbered fax channels is failing: 1. The association of extension numbers with fax channels may be incorrect. Check the Fax Channel Administration screen to ensure all fax channels can be reached on the extension numbers associated with them. 2. One or more fax channels may be defective. 3. The extension connected to a fax card is dead or cannot be reached by transferring from one or more of the extensions connected to the voice cards.

Trouble Indication	Corrective Action
Recipients of fax messages receive both a Leave Word Calling message and an AUDIX voice mail message.	The FAX Attendant has been configured to use both outcalling and Leave Word Calling to notify subscribers upon receipt of a fax message. Outcalling should not be used when AUDIX is available for message notification. In the case of notification through AUDIX, a Leave Word Calling signal is used to alert the recipient and turn on their message waiting lamp.
The System Manager cannot print reports, and/or fax mail messages from subscribers cannot be printed.	1. The printer has not been administered or enabled on the FAX Attendant. 2. The printer is turned off, out of paper, not on line, or defective.
After requesting retrieval of fax messages or after making selections from the Fax Response service, no fax messages are received. There is otherwise no indication to the caller that something is wrong.	1. If this only happens when making the call from a specific fax machine, the problem may be the fax machine itself. Some fax machines must be in manual mode in order to receive a fax message on the same call. They work fine if the fax message arrives via a separate call.

Trouble Indication	Corrective Action
After requesting retrieval of fax messages or after making selections from the Fax Response service, no fax messages are received. There is otherwise no indication to the caller that something is wrong (continued).	2. The association of extension numbers with fax channels may be incorrect. Check the Fax Channel Administration screen and ensure that all fax channels can be reached on the extension numbers associated with them. 3. One or more fax channels may be defective. 4. The extension connected to a fax channel is dead or cannot be reached by transferring from one or more of the extensions connected to the voice channels. 5. Caller may be calling from a non-Group 3 fax machine. 6. A wrong number may have been entered. 7. The caller may not have correctly followed the FAX Attendant instructions.

Trouble Indication	Corrective Action
After requesting retrieval of fax messages or after making selections from the Fax Response service, no fax messages are received. There is otherwise no indication to the caller that something is wrong (continued).	8. Under normal operating conditions, it is not unusual to experience some failed transmissions, as that is inherent to fax communications. This is exacerbated when users are requesting fax messages on the same call because retry is not possible in this mode of operation, since the caller's fax number is not known.
The FAX Attendant fails to accept fax messages via either Fax Mail or Fax Call Answer.	This is much the same problem as the previous one, except that the make/model of a fax machine is not likely the cause. (Fax machines must be Group 3 machines.)
Calls to the FAX Attendant are not answered.	1. The voice system is not turned on. 2. Be sure all voice channels that are to receive calls are assigned a service.

Trouble Indication	Corrective Action
Calls to the FAX Attendant are not answered (continued).	3. Call each voice channel directly (not through a hunt or calling group) to determine if the problem is restricted to a specific channel or card. a. One or more channels on a voice card may be defective. b. One or more of the lines connected to the voice channels is dead. c. Ensure each voice channel is associated with the correct extension number. This information is administered through Voice Equipment under Configuration Management. 4. If the problem only occurs when calls are made to a hunt or calling group (as opposed to calling each voice line directly), the problem is likely to be incorrect administration of the hunt or calling group (i.e., switch administration).

Trouble Indication	Corrective Action
The wrong fax service is being provided; for example, Fax Response instead of Fax Call Answer or Fax Mail.	On a system with switch integration: check that the correct service is configured to run on each channel. Fax Response or Fax Mail (Fax Mail provides for both Fax Mail and Fax Call Answer in this case). If Voice Call Answer is being provided in place of Fax Call Answer to a specific subscriber, the Voice and Fax extensions may have been reversed when administering the profile for that subscriber. Every subscriber profile must contain a voice number. If a real extension does not exist, a unique imaginary one must be used. On a system without switch integration: Fax Mail will only provide mail service, a separate channel must be used to provide Fax Call Answer service.
Fax reception/transmission failed in the middle of a job.	1. If the failure is consistently at one place on a given page, the file containing the fax is likely corrupted or otherwise unreadable. 2. If failures are random or confined to a single fax channel, the line connected to the fax channel may be noisy or otherwise unreliable, or the fax channel may be unreliable.

Recovery from System Failures

D

About this Appendix

NOTE:
Depending on the version of the software you have installed on your system, there may be some minor differences in the system messages that appear on the screen as compared to the examples given.

This appendix provides procedures for recovering system administrative and voice files. Before you can recover the system after a crash, you must first determine what caused the crash and try to correct it. There are three possible problems that might have occurred:

- hard disk failure
- main board failure
- data corruption

Refer to **Appendix C: Troubleshooting** to determine what the problem is and how to resolve it. Once the cause has been determined and corrected, proceed with this appendix.

Recovery from Hard Disk Crash

If you are recovering the system from a hard disk crash, you must:

1. Correct the hard disk failure. See Appendix C.
2. If you replace the hard disk, reinstall the UNIX operating system and application software. See Appendix B.

3. Restore system administrative and voice files from backup, if available. If backup files are not available, you must restart the system from scratch. See the *Implementation and Switch Notes* document appropriate for your switch for initial implementation procedures, and the *AT&T FAX Attendant System™, Release 2.1.1, System Manager's Guide* for administration procedures.

Recovering from Main Board Failure

If you are recovering from main board failure, you must replace the main board. It is not necessary to restore the administrative and voice files. See the *User's Guide* supplied with the processor for information on replacing the main board.

Recovering from Data Corruption

If you are recovering the system from data corruption, you must restore system administrative and voice files from backup files, if available. If backup files are not available, you must restart the system from scratch. See the *Implementation and Switch Notes* document appropriate for your switch for initial implementation procedures, and the *AT&T FAX Attendant System™, Release 2.1.1, System Manager's Guide* for administration procedures.

Depending on the reason for the data corruption, you may also have to follow the hard disk recovery procedure.

Restoring Files

NOTE:
If you are working in an IS-III environment, refer to the IS-III documentation supplied with your system for file restoration.

If the hard disk crashes, or if your disk data becomes corrupted, you must restore all or part of your system. Since you can only restore what you have previously backed up, it is beneficial to back up the administrative and voice files according to the instructions given in the *AT&T FAX Attendant System™, Release 2.1.1, System Manager's Guide.*

Follow these procedures:

1. Reinstall the UNIX operating system and application files as described in **Appendix B: Software Installation**. The voice system will start automatically when the system is rebooted.
2. Restore all administrative and speech files using the "Restoring Administrative and Speech Files" procedure, described next.
3. Reset the voice system by logging in as ***audix***.
   - ► The `User Login` menu appears.

4. At the `User Login` menu, move the cursor to `Voice System Administration` and press Enter.
   - ► The `Voice System Administration` menu appears.
5. At the `Voice System Administration` menu, move the cursor to `Configuration Management` and press Enter.
   - ► The `Configuration Management` menu appears.
6. At the `Configuration Management` menu, move the cursor to `System Control` and press Enter.
   - ► The `System Control` menu appears.
7. At the `System Control` menu, move the cursor to `Stop Voice System` and press Enter.
   - ► The voice system will stop.
8. At the `System Control` menu, move the cursor to `Start Voice System` and press Enter.
   - ► The voice system will start.
9. Press F6 (CANCEL) repeatedly to return to the `User Login` menu.
10. At the `User Login` menu, move the cursor to `Exit` and press Enter.
    - ► A confirmation screen appears.
11. Press F3 (CONT) to return to the `Console Login` prompt.

Restoring Administrative and Speech Files

The voice system should be running before restoring files. Both the administrative files and the speech files must be restored together. You cannot restore the system without both.

To restore the administrative and speech files, follow these steps:

1. Log in as ***root***.
2. At the # prompt, type ***face*** and press Enter.
   - ► The `AT&T FACE` menu appears.
3. At the `AT&T FACE` menu, move the cursor to `System Administration` and press Enter.
   - ► The `System Administration` menu appears.
4. At the `System Administration` menu, move the cursor to `Restore from Removable Media` and press Enter.
   - ► The `Restore from Removable Media` menu appears.
5. At the `Restore from Removable Media` menu, move the cursor to `Personal Restore` and press Enter.

- ► The `Personal Restore` menu appears.

6. On the `Personal Restore` menu, move the cursor to `Restore Files` and press Enter.
   - ► If you have more than one floppy disk drive the `Select Removable Media` menu appears. Make your choice and press Enter.

     The `Disk Restore` form appears asking if existing files on disk should be overwritten with files being restored.
7. Type ***yes*** and press Enter.
8. Press F3 (SAVE).
   - ► A restore confirmation message appears telling you to insert the diskette containing the files that you want to restore.
9. Insert the diskette and press Enter.
   - ► After the restore starts, the following message displays:

     `Restore in progress`.
10. When the system informs you that it has completed the restore, remove the last diskette and press Enter.
11. At the `Restore from Removable Media` menu, move the cursor to `Speech Restore` and press Enter.
    - ► The `Speech Restore` menu appears.
12. At the `Speech Restore` menu, move the cursor to `Restore All Talkfiles and Phrases` and press Enter.
    - ► If you have more than one floppy disk drive, the `Select Removable Media` menu appears. Make your choice and press Enter.

      A restore confirmation message appears telling you to insert the diskette containing files you want to restore.
13. Insert the diskette and press Enter.
    - ► After the restore starts, the following message displays:

      `Restoring speech`.
14. When the system informs you that it has completed the restore, remove the last diskette and press Enter.
15. Press F6 (CANCEL) repeatedly to return to the `AT&T FACE` menu.
16. At the `AT&T FACE` menu, move the cursor to `Exit` and press Enter to return to the `Console Login` prompt.

Disk Partition Calculations

E

Introduction

For FAX Attendant to operate properly, the hard disk must be partitioned according to system requirements. To calculate the disk partitions for FAX Attendant the following questions must be answered:

1. Is the system co-resident with AUDIX Voice Power R2.1.1 or is it standalone?
2. What is size of the hard disk in MB?
3. To what extent are the Fax Response and/or Automated Attendant services going to be used in this system: none, few, medium, or maximum?
4. How many cylinders are there in the complete disk?

The answer to the first three questions determines which line in Table E-1 to use. Use the size in the table that is closest to the actual disk size in MB. The answer to questions 2 and 4 are used to determine the number of cylinders required for each partition.

Disk Partition Worksheet

The following formula is used to calculate the *swap, root, usr*, and *usr2* disk partitions:

$$\frac{\textit{total number of cylinders}}{\textit{actual disk size in MB}} * \frac{\textit{partition size in MB}}{1}$$

The following worksheet will permit the installer to determine the system's disk partitions in cylinders:

Total number of cylinders on disk =

Actual disk size in MB =

swap disk partition in MB =

root disk partition in MB =

usr disk partition in MB =

usr2 disk partition in MB =

Using the formula indicated above, calculate the disk partition sizes in cylinders. Round off the results to the nearest whole cylinder.

swap disk partition in cylinders:

$$\frac{\_\_\_\_\_}{\_\_\_\_\_} * \frac{\_\_\_\_\_}{1} =$$

root disk partition in cylinders:

$$\frac{\_\_\_\_\_}{\_\_\_\_\_} * \frac{\_\_\_\_\_}{1} =$$

usr disk partition in cylinders:

_____ * _____ =
1

usr2 disk partition in cylinders:

total cylinders — root — swap — usr =

Table E-1. Disk Partition Table

Configuration	Disk (MB)	FR & AA menus (See note)	swap (MB)	root (MB)	usr (MB)	usr2 (MB)
AVP Co-resident	500	Maximum	6	31	28	13
	304	Maximum	6	31	117	162
	200	Maximum	6	31	28	13
	141	Medium	6	31	51	55
		Few or None	6	31	39	67
Standalone	500	Maximum	6	31	28	13
	304	Maximum	6	26	117	157
	200	Maximum	6	31	28	13
	141	Maximum	6	26	84	27
		None	6	26	91	20

NOTE:
The Fax Response (FR) and Automated Attendant (AA) menus column indicates the number of menus and faxmenus in the Fax Response tree structure and the number of menus in the Automated Attendant tree structure (AUDIX Voice Power co-resident only). Table E-2 indicates the limitation of each description.

Table E-2. Maximum Value of FR and AA Menus and FR Messages

	Maximum Value of			
Description	FR Faxmenus	FR Menus	FR Fax Messages	AA Menus
Maximum	99	100	1000	100
Medium	49	50	470	50
Few	19	20	270	20
None	0	0	0	0

Example Calculations

The customer has indicated that the system will

1. be AUDIX Voice Power Co-resident
2. have a 141 MB disk
3. have a "Medium" amount of Fax Response and Automated Attendant services.

For this example system, the number of cylinders is 949, and the actual disk size is 141.

The work sheet values then are the following:

Total number of cylinders on disk = 949

Actual disk size in MB = 141

swap disk partition in MB = 4

root disk partition in MB = 21

usr disk partition in MB = 51

usr2 disk partition in MB = 62

The calculations (rounding up to the nearest whole cylinder) for the disk partitions are as follows:

swap disk partition in cylinders:

$$\frac{949}{141} * \frac{4}{1} = 27$$

root disk partition in cylinders:

$$\frac{949}{141} * \frac{21}{1} = 142$$

usr disk partition in cylinders:

$$\frac{949}{141} * \frac{51}{1} = 344$$

usr2 disk partition in cylinders:

$$949 - 27 - 142 - 344 = 436$$

Maintenance

F

Only two parts of the system require preventative maintenance to ensure operating integrity: the floppy disk drive and the cartridge tape drive.

Maintaining the Floppy Disk Drive

If frequent data backups are performed, the floppy disk drive should be cleaned on a regular basis. Clean the disk drive when any of the following conditions are met:

- after 100 hours of use with the indicator light on
- whenever a floppy diskette has been removed that has magnetic oxide residue
- whenever read or write errors occur when using the floppy disk drive

A special floppy diskette that cleans floppy disk drives is available wherever computer supplies are sold.

Maintaining the Cartridge Tape Drive

Periodic cleaning of the head assembly is the only preventive maintenance required on the cartridge tape drive. It should be cleaned after every 24 hours of actual tape operation or when a tape error is reported. When a new tape is used, the head assembly should be cleaned after the first two hours of use.

Since the cartridge tape drive is used primarily as a backup device, the cleaning schedule should be based on the amount of time the tape drive is used during backup and how often backup is performed.

As a precautionary measure, do not leave the plastic insert engaged in the tape.

This can result in damage to the head mechanism.

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