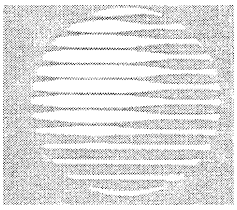

AT&T

AUDIX™ Voice Power
Release 2.1
Installation and
Maintenance Guide

Printed in USA
Issue 1, October 1991

NOTICE

While reasonable effort was made to ensure that the information in this document was complete and accurate at the time of printing, AT&T cannot assume responsibility for any errors. Changes and/or corrections to the information contained in this document may be incorporated into future issues.

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Ž This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manuals, may cause interference to radio communications.

- It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against interference when operated in a commercial environment.
- Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

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About This Guide

Purpose and Scope

AT&T Service Technicians should already be familiar with the contents of this guide. Customer technical personnel performing their own installation should read this entire guide before attempting an initial installation.

If an existing system is to be upgraded, follow the instructions in Chapter 2 for upgrading the hardware, and see Chapter 5 for guidelines on upgrading the software.

Other chapters should be referred to as necessary for troubleshooting and recovery. The guide is divided into the following chapters:

Preface: About This Guide explains how to use this guide.

Chapter 1: Introduction explains how to prepare for installation.

Chapter 2: Hardware Installation explains how to set up an 80386SX-based processor to support AUDIX™ Voice Power. This process includes installing circuit board hardware and connecting to the switch.

Chapter 3: Software Installation explains how to install AUDIX Voice Power software and complete the installation process.

Chapter 4: Configuration Testing and Troubleshooting explains how to test your system for proper operation after all hardware and software has been installed, or if you suspect problems.

Chapter 5: Upgrade Guidelines provides general guidelines you should consider before doing an upgrade.

Intended Audience

This guide is intended for technical personnel at customer sites and for AT&T Service Technicians. This guide should be used as a guide for system installation and as a reference for system maintenance.

Assistance

If you have questions or problems with AUDIX Voice Power, please try to resolve them by using this guide and the other AUDIX Voice Power documents. If you are still unable to resolve the problem, then contact your AT&T Account Representative or AT&T Authorized Dealer.

Conventions Used in This Guide

The following conventions are used in this guide:

- Commands and text you should type appear ***in this style of type.***
- Values, instructions, and prompts that appear on the screen are `in this style of type.`
- Key names that are always located on the keyboard in the same place appear in round-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. On the actual screen, one of two sets of labels will appear. The first label is the meaning of the function key when the screen first appears. These meanings have been selected to be the most useful for that screen.

  The second set of labels appears after the [F8] (CHG-KEYS) key has been pressed. Pressing [F8] (CHG-KEYS) again restores the first set of labels.

Some of the screens and prompts used in this guide are samples used for illustration purposes only. Keep this in mind if the information shown in this guide differs from the actual prompt or message.

Information Conventions

The following conventions are used in this guide to describe the different types of data that appear on your monitor.

Menus	A menu is a list of options, usually numbered in sequential order, which appears on your screen or is spoken. By selecting an option, you can access a submenu or a form.
Forms	Forms which appear on your screen are similar to the paper forms. Forms appear when you enter or edit data for the database. They contain information that you can change and blanks for you to provide new information.
Fields	The areas in a form where you change or provide information.
Choice List	In some forms, in addition to the cursor highlighting a field, a list of logical choices appears on the monitor for that field. This list may show previously entered data or the default values for the field.
Window	A box of text that appears on the screen for informational purposes. A typical information window will instruct you to perform a certain action such as `Press any Key to continue.` No data is entered in a window.

Related Documents

The following documents contain information pertinent to the installation process.

- *AT&T* 6386/SX *WGS Processor User's Guide*
  (Packaged with your AT&T Master Controller II processor)
- *AT&T Applications Controller User's Guide*
  (Packaged with your AT&T Master Controller II+ processor)
- *AT&T 570/571 Printer User's Guide*
  (Document No. 999-300-561)
- *AT&T AUDIX™ Voice Power System Manager's Guide*
  (Document No. 555-600-723)
- *AT&T AUDIX™* Voice *Power Planning Guide and Forms*
  (Document No. 555-600-721)
- *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.)
- *AT&T Integrated Solution II Installation and Maintenance Guide*
  (Document No. 555-600-720)

A glossary for AUDIX Voice Power is included in the *AT&T AUDIX™ Voice Power Planning Guide and Forms* document.

Introduction

1

This *AT&T AUDIX™ Voice Power Installation and Maintenance Guide* includes procedures for installing and maintaining new AUDIX Voice Power systems. Technical personnel at customer sites and AT&T Service Technicians should use this guide as a guide for system installation and as a reference for system maintenance.

Preassembled Systems

The AUDIX Voice Power system includes an 80386SX-based processor. Add-in circuit boards and separate software must be installed. The additional circuit boards and software may be installed and tested by AT&T before the system is shipped to the customer site. If your system has been preassembled, you can skip the instructions for installing circuit boards and memory at the beginning of Chapter 2 and proceed directly to the instructions for *Connecting Peripherals and Cables* later in Chapter 2. Similarly, if your system has been preconfigured, you can skip the instructions for installing software given at the beginning of Chapter 3 and proceed directly to the instructions for *Completing Installation* and *Acceptance Testing* later in Chapter 3. You should then continue with the *Hardware Verification* section of Chapter 4.

Physical Requirements

Before you begin to setup your equipment or to install the software, you should verify that you have selected an appropriate site and have received the materials necessary for installation.

Selecting a Site

Select a site for the AUDIX Voice Power processor that provides easy access for the cabling and also provides 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 (1 O to 38 “C)
- Humidity: 20 to 80% noncondensing
- Ž Power: 115 V, 50-60 Hz, 220 Watts

Protect your AUDIX Voice Power processor from sunlight, heat, cold, chemicals, static electricity, magnetic fields, vibration, and grime.

Be sure to use a grounded, nonswitched outlet for the processor.

Materials Checklist

Use the following checklist tables to verify that you have all the hardware and software necessary for your configuration First, check the type of System Module you have in the following table.

Description	Check
AT&T Master Controller II (6386/SX WGS, 16 MHz) System Module with 2 MB memory and 3 l/2-inch floppy disk drive	
AT&T Master Controller II System Module with 4 MB memory and 3 l/2-inch f loppy disk drive	
AT&T Master Controller II+ (80386SX-based, 20 MHz) System Module with 2 MB memory and 3 l/2-inch floppy disk drive	
AT&T Master Controller II+ System Module with 4 MB memory and 3 1/2-inch floppy disk drive	

Next, check that you have the following minimum hardware to complete your system.

Description	Check
One 2 MB memory kit for AT&T Master Controller II System Module, or One 2 MB memory kit for AT&T Master Controller II+ System Module, or One 4 MB memory kit for AT&T Master Controller II+ System Module.	
Keyboard, included	
80 MB hard disk (minimum), included	
AT&T 329D VGA color monitor, or AT&T 324LN VGA monochrome monitor	
One to three Integrated Voice Power (IVP4) boards	
Modem for remote support (System 25)	
Modem cable (5-ft D25F-87) (System 25)	
Optional AT&T 570/571 Printer (473/474 also supported)	
Printer cable (7-ft 36-25 pin) for optional printer	
Optional Cartridge Tape Drive	

Check that the following software is included in your system.

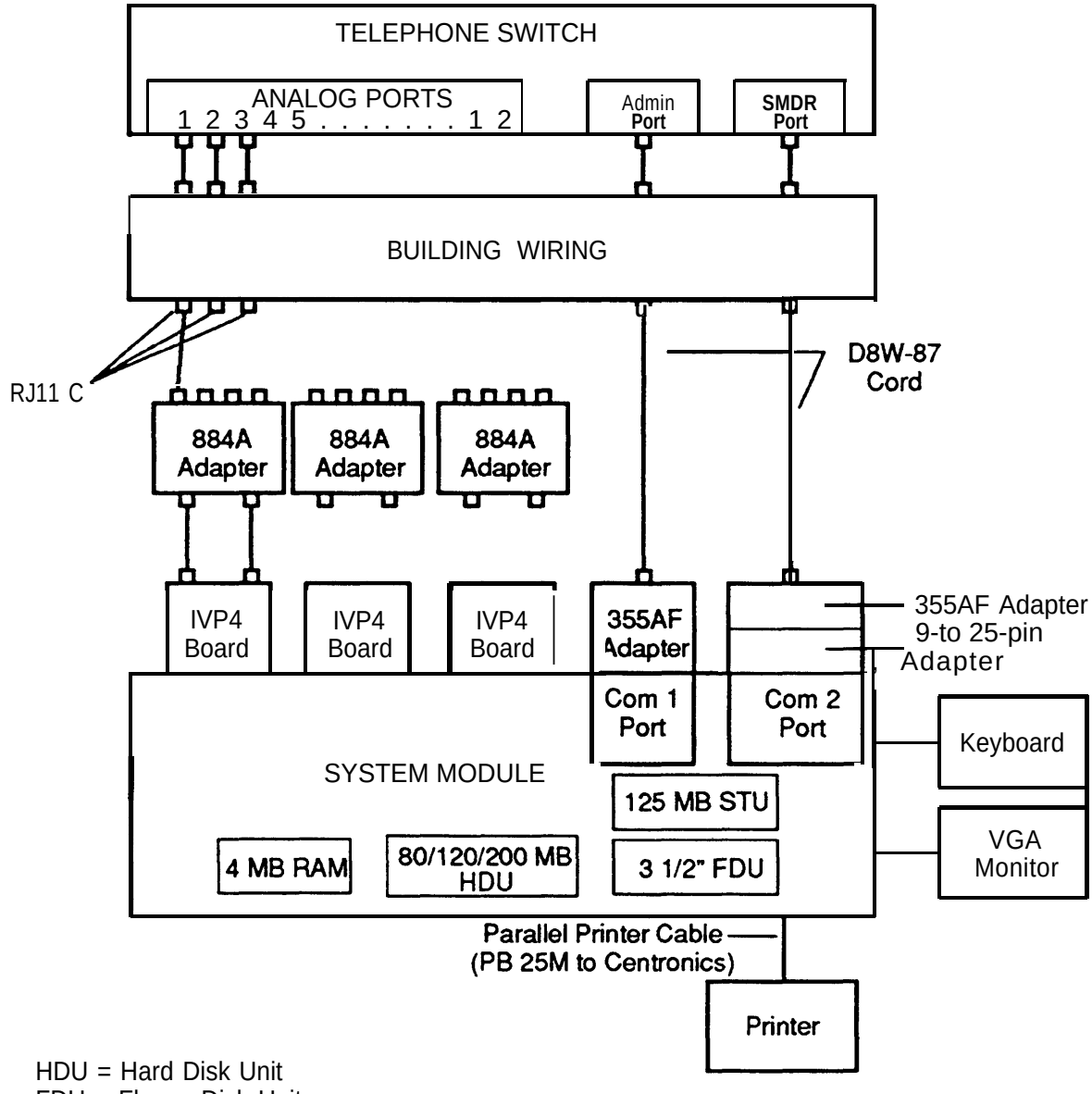
Description	Check
AT&T UNIX® Operating System V/386, Version 3.2.2	
Integrated Voice Power (IVP) System Software, R1.2	
AUDIX Voice Power Application Software, R2.1	
AUDIX Voice Power Switch Integration Software (Please see the *AT&T AUDIX™ Voice Power Switch Notes* for your telephone system for the exact name and release number for this component.)	

Check that the following software is included if you are doing a system upgrade.

Description	Check
AUDIX Voice Power Application Software, R2.O (If you are upgrading from AUDIX Voice Power RI .1)	
AUDIX Voice Power Switch Integration Software, R2.O (If you are upgrading from AUDIX Voice Power R1.1)	

System Diagram

Figure 1-1 is a representation of an AUDIX Voice Power system configuration.



HDU = Hard Disk Unit
FDU = Floppy Disk Unit
STU = Streaming Tape Unit

Figure 1-1. Integrated Solution II System Diagram

Hardware Installation

2

This chapter explains how to setup the AUDIX Voice Power processor. This process may include adding memory to the main circuit board (motherboard) or to auxiliary circuit boards, installing additional circuit boards, and connecting peripheral devices.

The additional circuit boards and memory may have been installed and tested by AT&T before the system is shipped to the customer site. If your system has been preassembled, you can skip the instructions for installing circuit boards and memory at the beginning of this chapter and proceed directly to the instructions for *Connecting Peripheral and Cables* later in the chapter.

Hardware Overview

The AUDIX Voice Power processor is based on an 80386SX microprocessor. Two models can be used in the Integrated Solution II environment.

- AT&T Master Controller II—16 MHz processor, small footprint desktop configuration
- AT&T Master Controller II+ —20 MHz processor, small footprint desktop configuration

For a processor to be used for AUDIX Voice Power, a minimum of 4 MB of memory is required and at least a 80 MB hard disk is required. Instructions for increasing system memory are included in this document. If it is necessary to replace the hard disk, please see the service guide or user's guide for the appropriate model.

Memory expansion kits may be installed on the motherboard or on a special memory circuit board to meet the required system memory of 4 MB.

One to three IVP4 4-port circuit boards maybe installed in the system module.

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 324 monochrome monitor

The following devices may be connected to the system module:

- A remote access facility may be provided by a modem built into the switch for this purpose, or by an external modem. Please see the *Switch Notes* for your switch to determine exact requirements.
- AT&T 570/571 printer for report printing (AT&T 473/474 printers are also supported).
- Optional cartridge tape drive

General Installation Instructions

Procedures are provided here for installing additional memory on the motherboard and for installing circuit boards in the system module.

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
- Ž a medium-width, flat-blade screwdriver
- a 3/16-inch nut driver (recommended)
- an antistatic grounded wrist strap
- an antistatic grounded work mat

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

The basic procedure for installing hardware is as follows:

1. Shut off all power and remove all cables.
2. Ground the work mat and wrist strap, and put on the wrist strap.
3. Place the equipment on the grounded work mat.
4. Remove the system module cover.
5. install or replace circuits on the motherboard.
6. Prepare new circuit boards for installation.
7. Install or replace circuit boards.
8. Replace the cover.
9. Reconnect peripherals and cables.

Opening and Closing the Case

The procedures for opening and closing the case vary from model to model. The procedures for opening the case for the various models are described on the following pages. Find and follow the instructions to open the case of the model you have, then reverse those procedures to close the case.

Opening the Master Controller II

Follow these steps to remove the cover:

1. Be sure the system power is turned OFF. If any cables have been 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-securing screws (**A**, **B**, and **C**) on the back panel as shown in Figure 2-1.

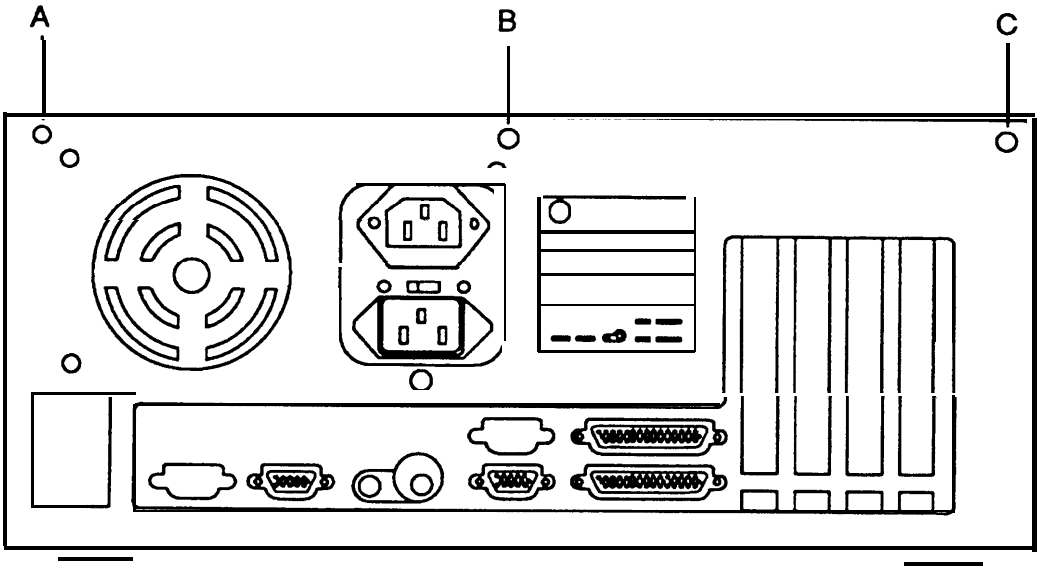


Figure 2-1. Master Controller II Main Cover-Securing Screws

4. Slide the cover off the system module by pulling it forward until it clears the back half of the chassis. Then tilt the back of the cover up and remove it. Take care not to catch the cover on any internal cables or wires.

Opening the Master Controller II+

Follow these steps to remove the cover:

1. Be sure the system power is turned OFF. If any cables have been connected to the system module, disconnect them.
2. If necessary, 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-securing screws **(A** and **B)** on the back panel as shown in Figure 2-2.

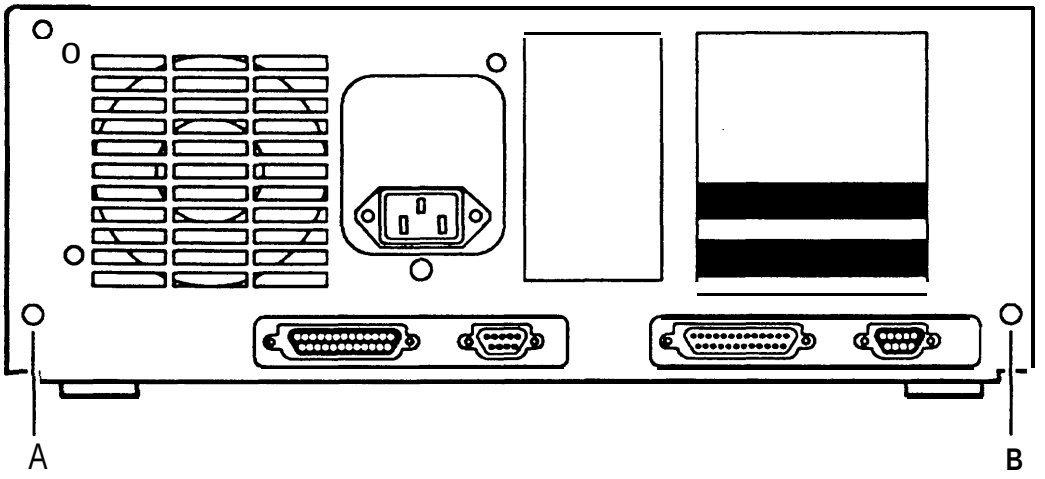


Figure *2-2* Master Controller II+ Main Cover-Securing Screws

4. Slide the cover off the system module by pulling it completely forward until it clears the front of the chassis. Then tilt the back of the cover up and remove it. Take care not to catch the cover on any internal cables or wires.

General Instructions for Installing Circuit Cards

All expansion boards are installed according to the following general instructions. The expansion slot to be used is described in the section on preparing the individual boards.

Follow these steps to install an expansion board:

1. Refer to Figures 2-3 or 2-4. Remove the slot cover by removing the screw (A) from the metal cover (B). Then lift out the metal cover. Save the screw to secure the board in place later.
2. Holding the expansion board by its edges, insert the board into the correct slot as shown in Figure 2-5 or Figure 2-6.

   Be sure that the bracket on the expansion board is at the back of the chassis and fits into the space left by the slot cover. Be sure that the connector edge of the board is properly aligned with the socket on the adapter board.

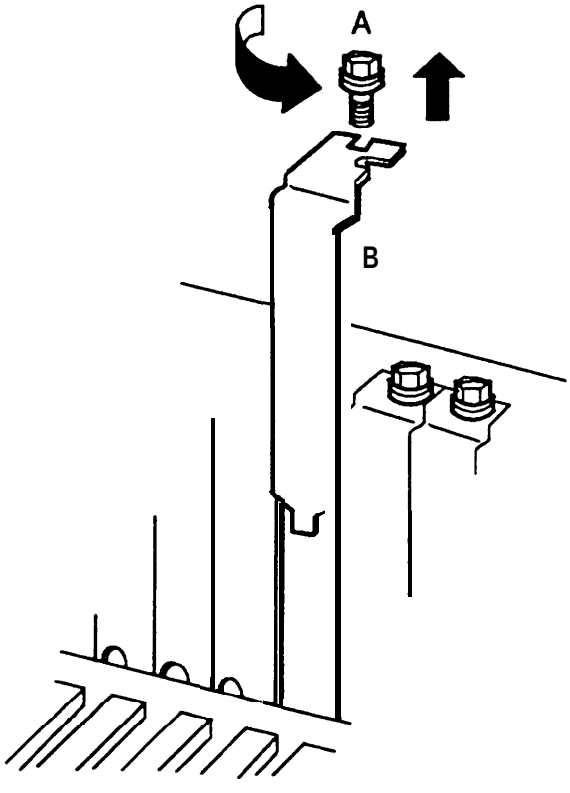


Figure 2-3. Removing Slot Cover (Vertical Slots)

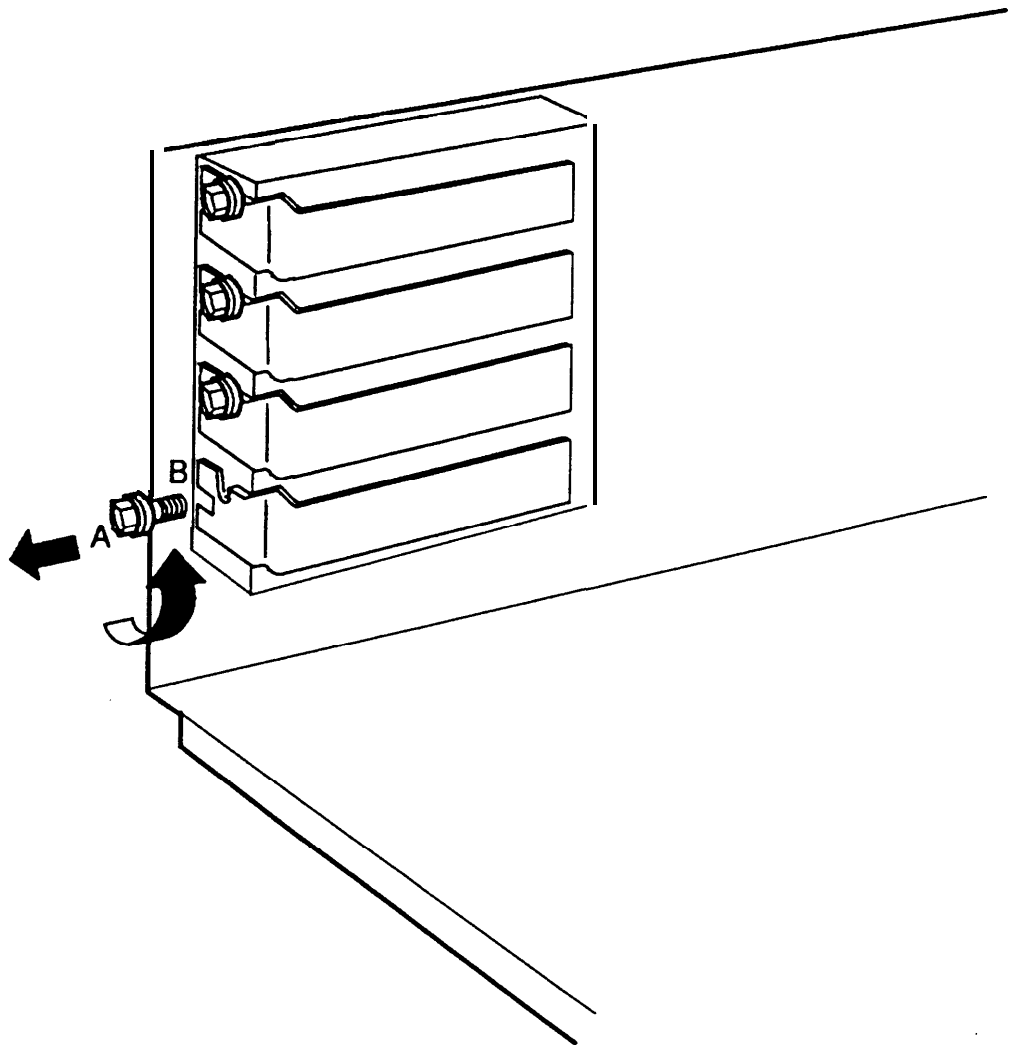


Figure 2-4. Removing Slot Cover (Horizontal Slots)

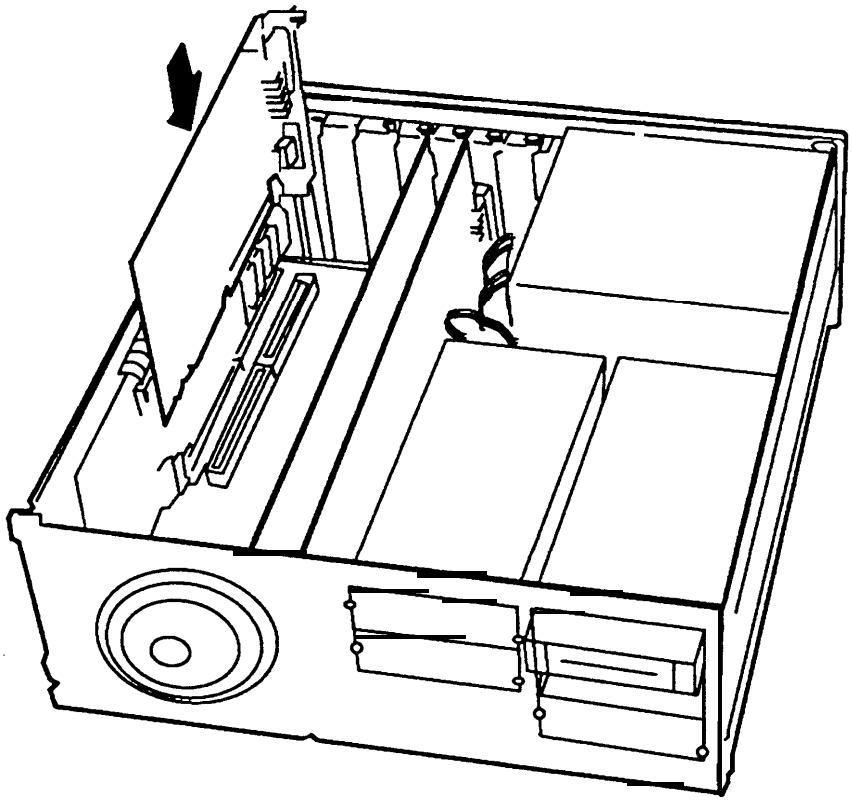


Figure 2-5. Inserting a Circuit Board into an Expansion Slot (Vertical Slot)

3. When the expansion board is properly seated in the expansion slot, press down evenly on the edges of the board to ensure a solid connection.

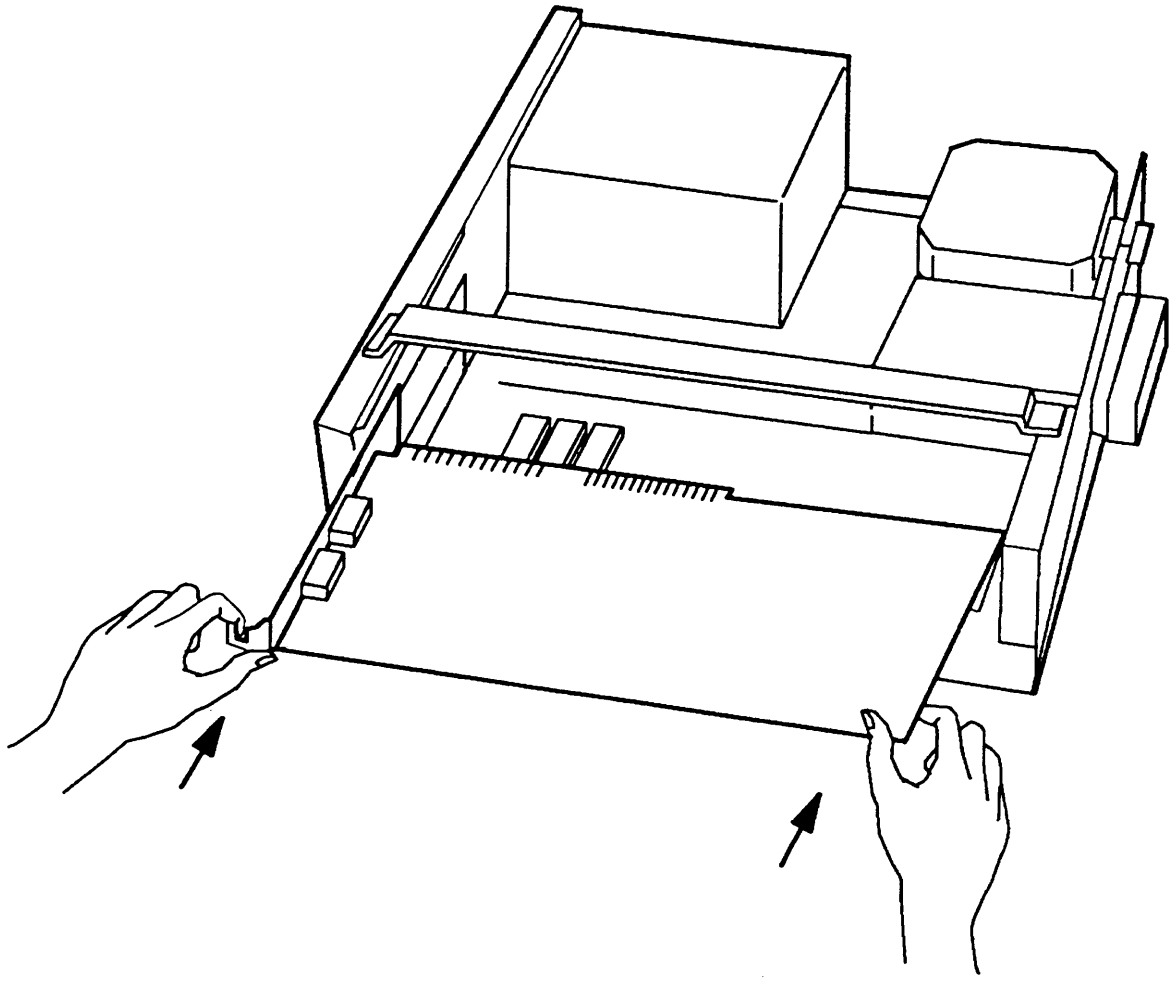


Figure 2-6. Inserting a Circuit Board into an Expansion Slot (Horizontal Slot)

4. Secure the expansion board in the computer chassis using the screw removed from the slot cover plate, as shown in Figure 2-7.
5. After all expansion boards have been installed, replace the system module cover.

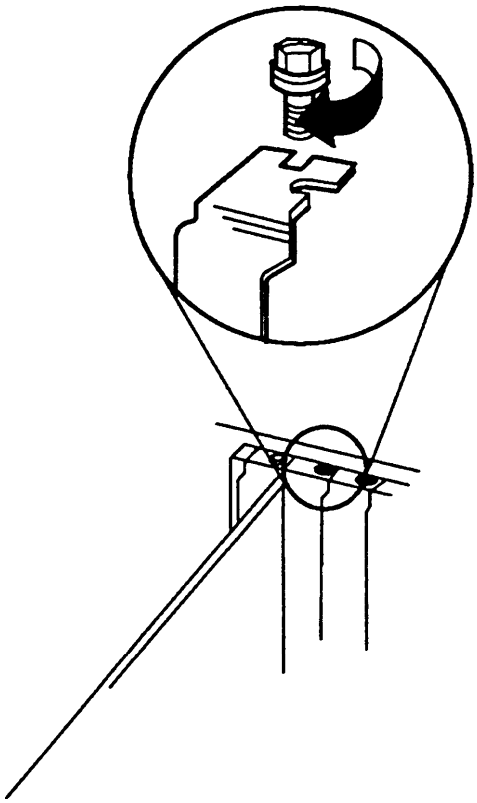


Figure 2-7. Securing the Board

Installing Additional Memory

It maybe necessary to install additional memory on Master Controller II and Master Controller II+ processors to bring the system total up to a minimum of 4 MB. It maybe desirable to install additional memory on all models to increase the total system memory beyond 4 MB. Instructions are provided for adding memory to all configurations.

Installing Additional Memory in the Master Controller II (6386/SX WGS) Processor

The Master Controller II processor can have up to 8 MB of memory installed on the motherboard.

Follow these steps to install additional memory on the motherboard:

1. Locate the empty Single In-line Memory Module (SIMM) sockets for the processor that you are working on, as shown in Figure 2-8.

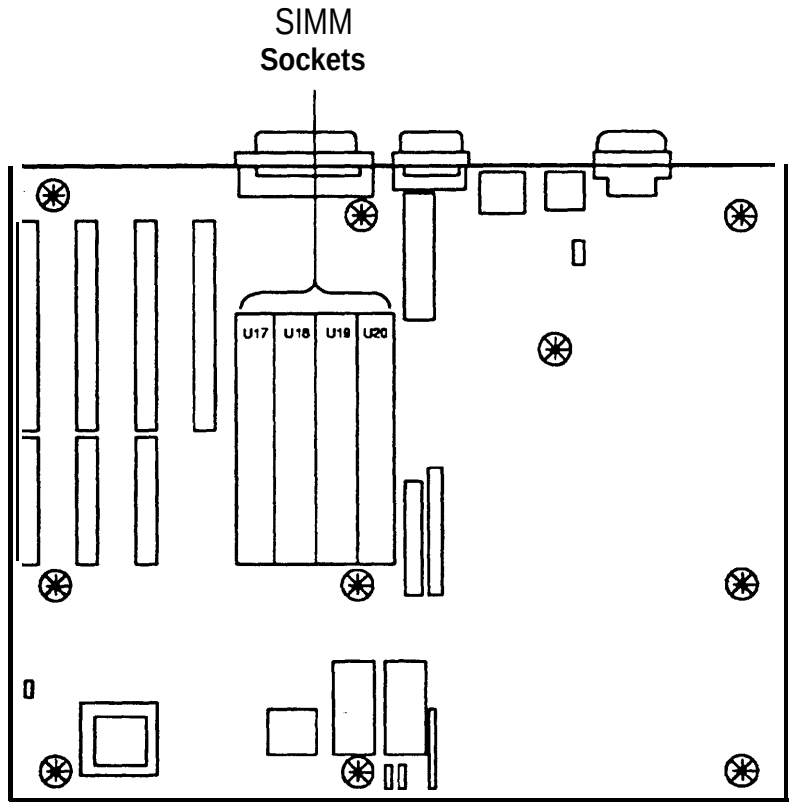


Figure 2-8. Location of Memory (S W) Sockets on the Master Controller II

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.
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 2-9. 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.

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

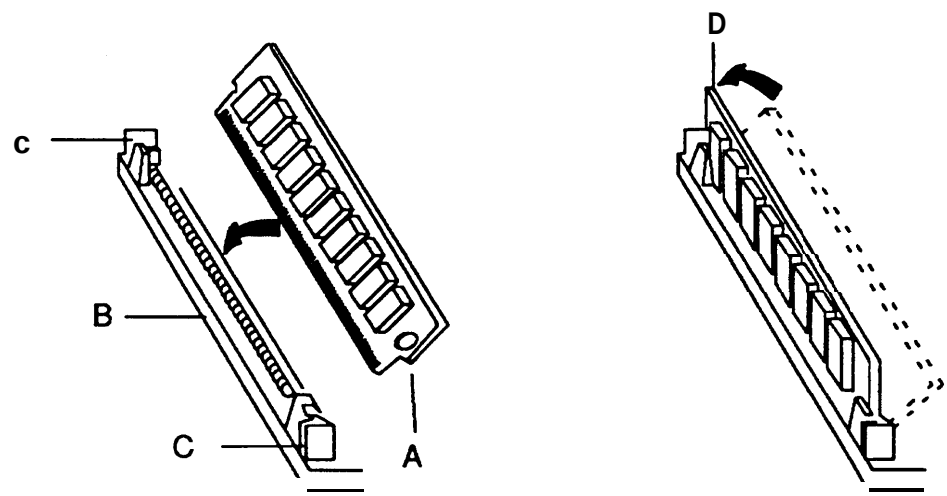


Figure 2-9. Inserting the SIMMs into Sockets

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 toward the slot retaining clips until it snaps into place (D).
7. Install the remaining SIMMs, working from left to right.

Installing Additional Memory in the Master Controller II+ (80386SX-based, 20 MHz) Processor

The Master Controller II+ processor can have up to 8 MB of memory installed on the motherboard.

Follow these steps to install additional memory on the motherboard:

1. Locate the empty Single In-line Memory Module (SIMM) sockets as shown in Figure 2-10
2. Each empty SIMM socket holds one SIMM. For each socket, insert the SIMM into the slot. Make sure you completely fill the entire bank.

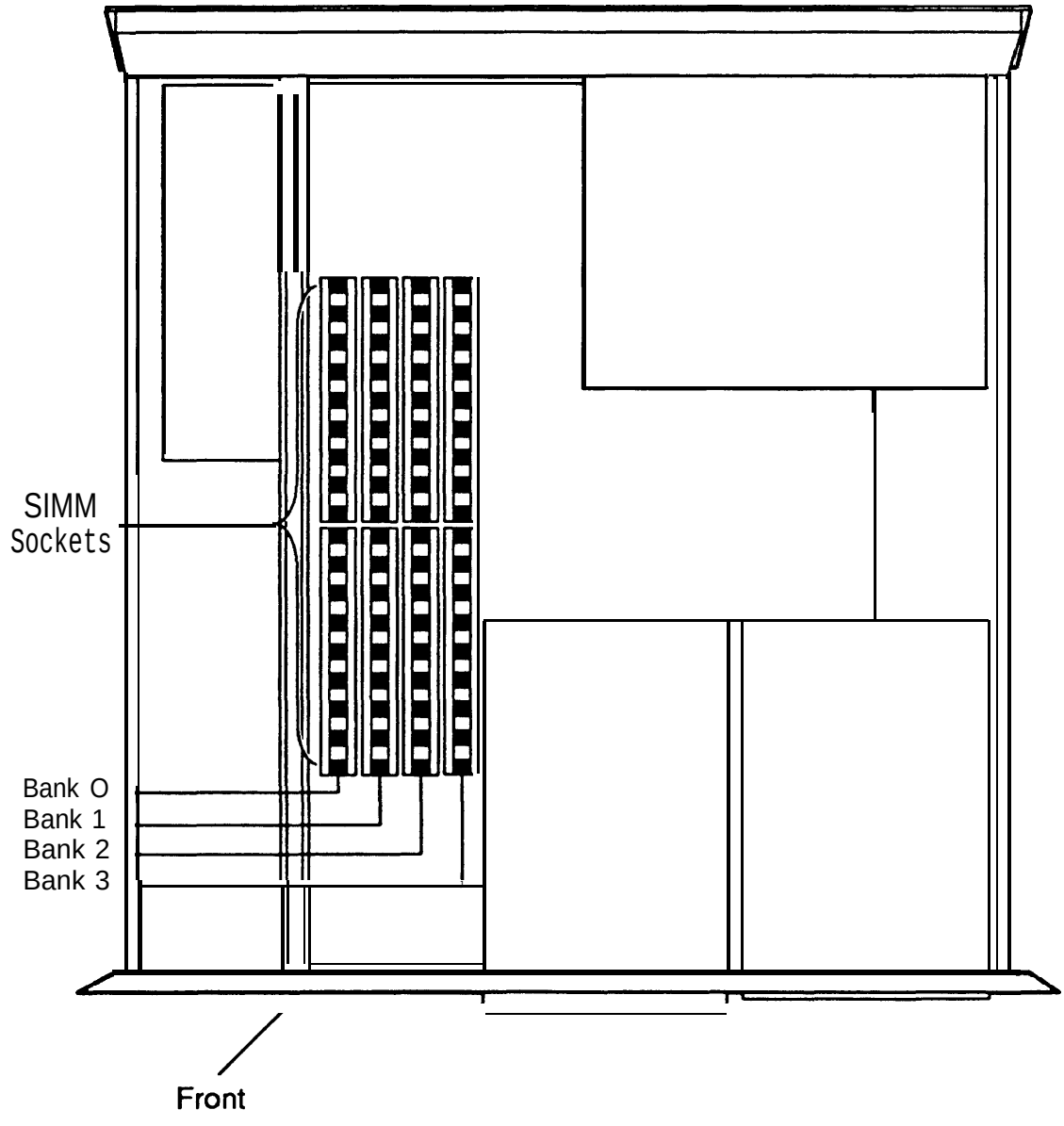


Figure 2-10. Location of Memory (SIMM) Sockets on the Master Controller II+

3. Refer to Figure 2-11. 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 top of the SIMM circuit board. Press down firmly while maintaining the angle of insertion.

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

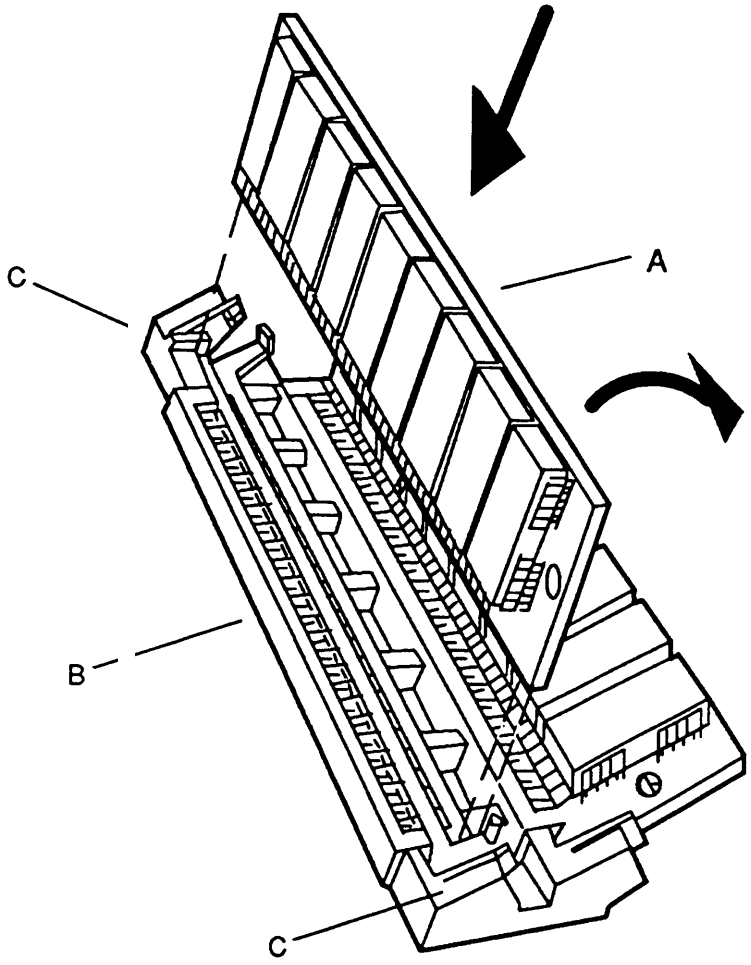


Figure 2-11. Inserting the SIMMs into Sockets

4. Make sure that the SIMM is seated correctly and that both ends are locked in with the card retainers (C).
5. Install the remaining SIMMs, working from left to right.

Replacing Disk Drive Cables

If the disk drive cables on the Master Controller II have been disconnected either to allow insertion of additional memory or to make it easier to install the tape drive, they should be reconnected as follows:

1. The wide gray cable with two connectors attached near the back of the disk controller board is the hard disk data cable. Attach either connector (whichever fits better) to the matching connector on the hard disk.
2. The narrow gray cable next to the wide gray cable is the hard disk control cable. Attach the connector to the matching connector on the hard disk.
3. The yellowish-green cable with two connectors attached near the middle of the disk controller board is the floppy control and data cable. Attach the end connector to the matching connector on the floppy disk drive.

NOTE:
Route and fold the cables carefully so that they will not interfere with the cover.

IVP4 Board Configuration and Installation

AUDIX Voice Power can use up to three IVP4 boards. Your system may be shipped with the IVP4 boards installed. If you need to add IVP4 boards to the system, the IVP4 board(s) must be configured before they are installed.

Each IVP4 board has two banks of switches. The location of the switches is shown in Figure 2-12.

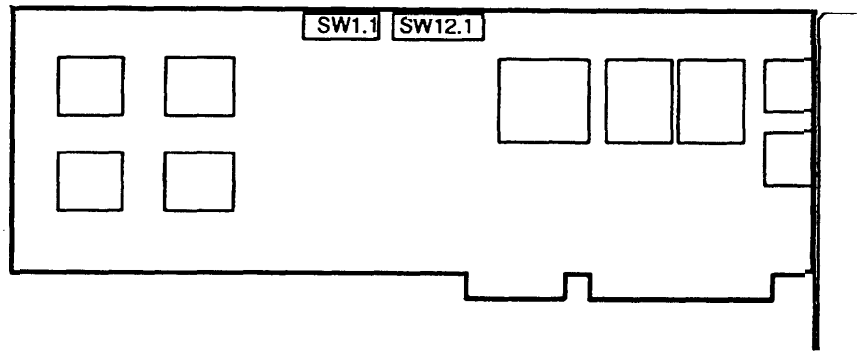


Figure 2-12. Location of Switches on IVP4 Board

Identifying the IVP4 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.

Configuration of New Boards

If your IVP4 board is new and is still packed in the factory box, *take note of the type of switch and the factory switch settings.* The board should be shipped from the factory with the switches correctly set for use as board 1 (the first board in the system). If the board has rocker switches, it is always configuration A as shown in Figure 2-13. If the board has slide switches, it will have one of the configurations (B or C) shown in Figure 2-13. *Mark the board with a small label to indicate whether configuration* A, B, or C is used. If you do not mark the board, it maybe difficult to determine the correct configuration for future changes.

NOTE:
Verify that the factory switch settings match one of the configurations shown in Figure 2-13. If the settings do not match, see *Determining the IVP4 Board Configuration by Testing* section later in this chapter.

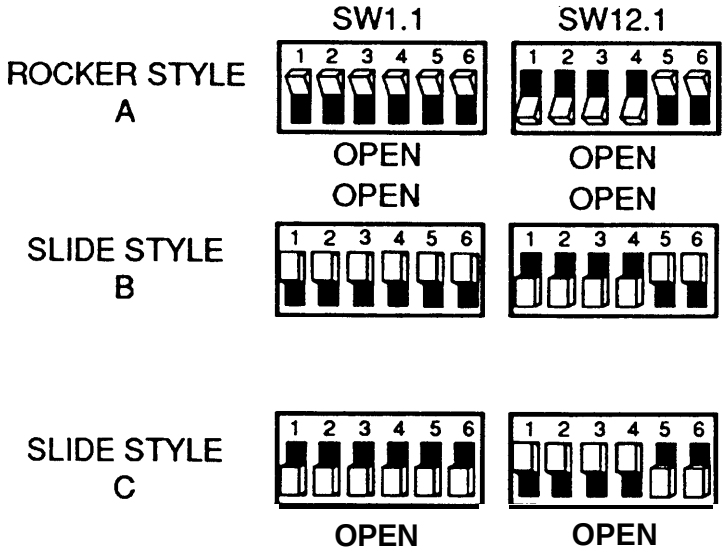


Figure 2-13. Factory Switch Configurations

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.**
- Ž 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 2-15. 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 2-14 for each configuration). If problems are encountered with Touch-Tone recognition, change *all* of the switches on the first bank (SW1.1) to the opposite (closed) position.

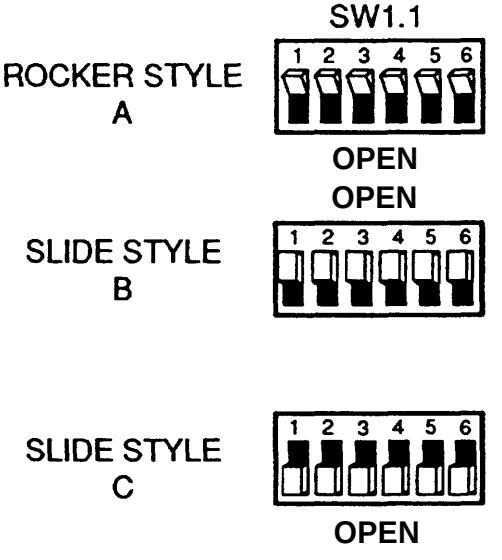


Figure 2-14. Settings for SW1.1

Setting Switch SW12.1

The second switch (SW12.1) sets the board address. Figure 2-15 shows the correct settings for up to three boards in each of the three configurations.

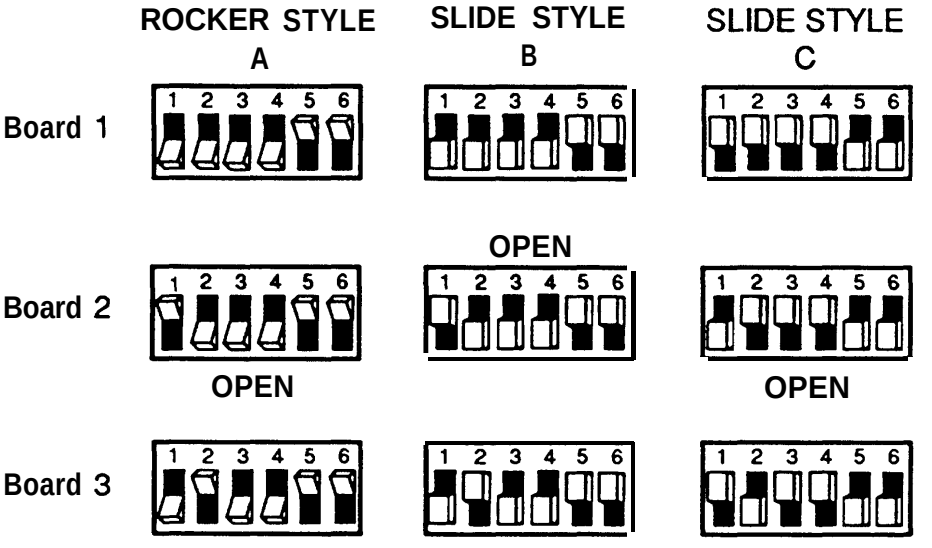


Figure 2-15. Settings for SW12.1

Determining the IVP4 Board Configuration by Testing

If the board has slide switches, it maybe necessary to test the board to determine if it has configuration **B** or **C.** If you already know the configuration, use the test in the next section to confirm board operation.

To determine the configuration by testing:

1. Set the switches to match configuration **B** in Figure 2-13.
2. Install the board and close the case.
3. Install the application software.

   NOTE:

   The application software has not been installed at this time. See Chapter 3 of this guide for instructions on installing all software.

4. All application software that uses the IVP System Software will have a *System Monitor* 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 the other configuration. For instructions on using the System Monitor, see the section, *Displaying the System Monitor,* in Chapter 5 of the *AT&T AUDiX™ Voice Power System Manager's Guide.*
5. Shut down the system, turn the power off, open the case, and change the switches to match configuration C in Figure 2-13. Then reboot the system.
6. Test again. If the board is still not recognized, contact the next tier of AT&T Services support.

Connecting Peripherals and Cables

Before connecting peripherals and cables, close the system module case by reversing the directions provided earlier for opening the case.

All peripherals and cables connect to the back panel of the system module. The position of each connector is shown in Figures 2-16 and 2-17.

Refer to the appropriate figure while connecting the cables as follows:

1. Connect the line cord to the AC power-in socket (A).
2. For the Master Controller II, connect one end of the video monitor power cord to the video monitor and the other end to the monitor power outlet (B).

   For the Master Controller II+, connect the video monitor power cord to an AC outlet.
3. Connect the video monitor signal cable to the VDC board connector (C).
4. Connect the keyboard to the keyboard interface port (D). On the Master Controller II+ processor, the keyboard is connected into the bottom port on the left side of the chassis, near the f rent. Refer to the *User's Guide* packaged with your processor for the exact location.
5. Connect the mouse (if any) to the mouse port (E). On the Master Controller II+ processor, the mouse is connected into the middle port on the left side of the chassis, near the front. Refer to the *User's Guide* packaged with your processor for the exact location.
6. Connect a parallel printer (if any) to the parallel port (F).
7. Connect a remote-access modem (if any) to serial port 1 (G).
8. Connect a switch administration port (if any) to serial port 1 (G).
9. Connect SMDR port (if any) to serial port 2 (H).

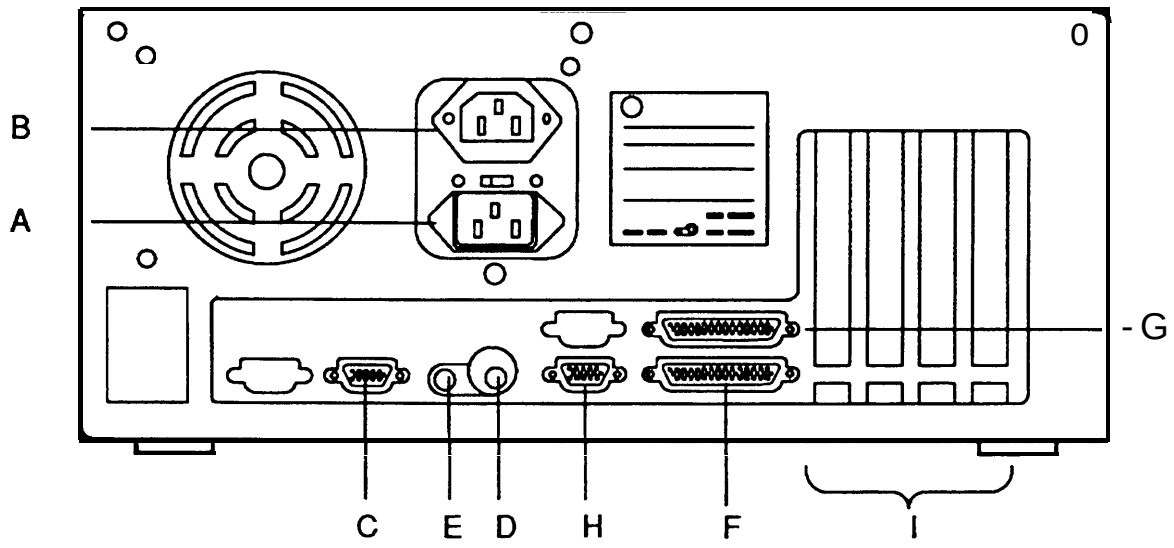


Figure 2-16. Master Controller II System Module Back Panel

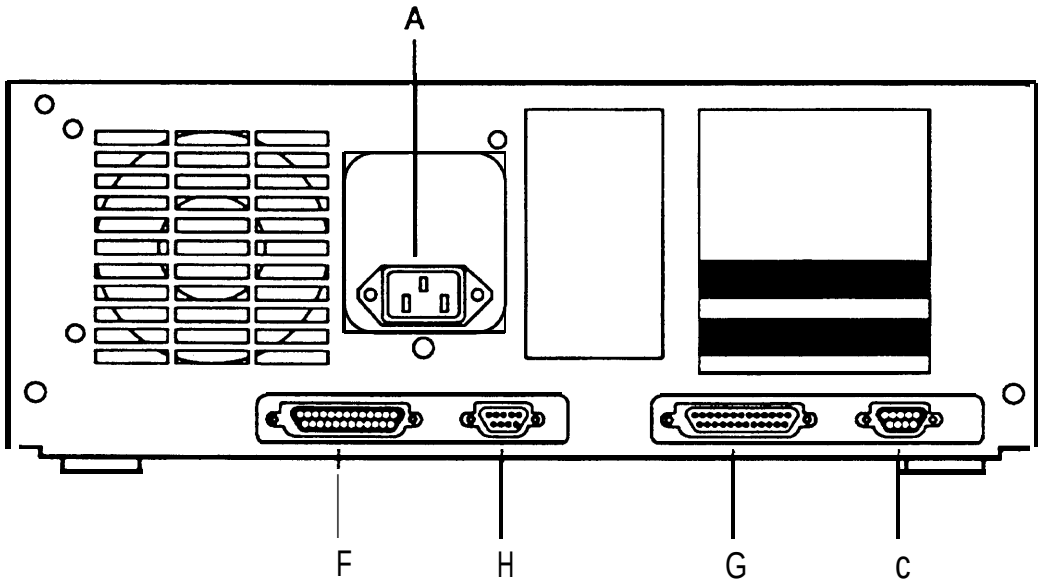


Figure 2-17. Master Controller II+ System Module Back Panel

Configuration The SETUP Utility

When you bring up the system after installing hardware, you must run the SETUP utility to store the system configuration information in the battery-backed CMOS memory. 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 stored setup information against the hardware configuration. If the stored configuration does not agree with the hardware found, 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

Running SETUP On the Master Controller II

With the Master Controller II, the SETUP program can be accessed in one of two ways: from the Customer Test diskette, or by executing (Ctrl) + (Alt) + (Ins) at System bootup. The suggested way is to run SETUP using (Ctrl) + (Alt) + (Ins). Run the SETUP program from the Customer Test diskette if diagnostics need to be run.

Running Setup Using (Ctrl) + (Alt) + (Ins)

To run the SETUP program using (Ctrl) + (Alt) + (Ins), follow these steps:

1. Shut down the UNIX system before rebooting.
2. Boot the system by pressing the (Ctrl) + (Alt) + (Del) keys simultaneously.

   — The system runs a series of self-checks and displays status messages.

3. As soon as the amount of system memory displays and you hear a beep, press the (Ctrl) + (Alt) + (Ins) keys simultaneously.

NOTE:
If you fail to enter the SETUP utility because the [Ctrl] + [Alt] + [Ins] keys were not pressed in time, shut down the system again and reboot.

— SETUP displays the current settings for the system on a scrollable menu. The settings (except for date, time, floppy disk drive, and hard disk drive) should be similar to the following:

Page 1.

```
System Configuration Setup Version x.x

Time                        10:52:59
Date                        11-27-98 Mon

Floppy Drive A:               3.5 inch, 1.44 MB
Floppy Drive B:               Not Present
Hard Disk #1                  Type 36
Hard Disk #2                  Not Installed
Base Memory                   640 kB
Extended Memory               3072 kB
Display                       EGA or VGA
Keyboard                      Installed
CPU Speed                     Fast
Coprocessor                   Not Installed

PgDn for additional options. Up/Down Arrow to
select. Grey +/- to change. F10 to exit and save
changes. Esc to reboot for changes to take
effect.
```

Page 2:

```
System Configuration Setup
Additional Options

Time                          10:52:59
Date                          11-27-98 Mon

Enter SETUP                   Pre-boot
Speaker:                      Enabled
On-board Video Controller     Primary
Monochrome Startup Mode       Color Mode (3+)
Video Timing Register Lock    Normal
Video Interleave              Standard
Monitor Type                  VGA Display
Onboard Video BIOS Mapping    To EOOOOH
Onboard Peripherals           on-board floppy
                              & Winchester enabled
Password:                     Not installed.
                              Press cr to enter.
Parallel Port                 Enabled as LPT1
Serial Port #1                Enabled as Corn 1
Serial Port #2                Enabled
Console Redirection           COM1: Disabled
                              COM2: Disabled

PgUp for Main Menu and PgDn for additional
options. Up/Down Arrow to select. Grey +/- to
change. F1O to exit and save changes. Esc to
reboot for changes to take effect.
```

Page 3:

```
System Configuration Setup
Additional Options

Time                          10:52:59
Date                          11-27-98 Mon

Shadow BIOS ROM                 Disabled
Base Memory Configuration       All enabled
Offboard Video Shadow           Disabled
Memory Roll:                    Enabled

PgUp for Main Menu and PgDn for additional
options. Up/Down Arrow to select. Grey +/- to
change. F1O to exit and save changes. Esc to
reboot for changes to take effect.
```

You may find it necessary to modify the `Extended Memory, Serial Port #2,` and `Shadow RAM Control` entries, and you should set the correct date and time.

4. To change any settings, use the cursor keys to highlight the desired item and use the grey (+/-) key to s elect the desired setting.
5. To access other pages of information, use the (PgUp) or (PgDn) keys.
6. When all necessary changes have been made, use the (Esc) key to exit from the SETUP program.

For additional information, see the *User!s Guide* packed with the system.

Running SETUP from the Customer Test Diskette

To run the SETUP program from the Customer Test diskette, follow these steps:

1. Shut down the UNIX system before rebooting.
2. Insert the Customer Test diskette supplied with the system into drive A.
3. 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 Test disk and displays the Customer Test introduction screen.

4. Press (Enter) to continue.

   — The Customer Test main menu appears.

5. Use the (↓) key to move the highlight to `Setup utility` and press (Enter).

   — SETUP displays the current settings for the system on a scrollable menu. The settings (except for date, time, floppy disk drive, and hard disk drive) should be similar to the following:

System Date	11–27–98 Mon
System Time	10:52:59
Base Memory Size	640 kB
Base Memory Configuration	All Enabled
Extended Memory	3072 kB
Floppy Drive A:	3.5 inch, 1.44 MB
Floppy Drive B:	Not Present
Hard Disk #1	ESDI – 142 MB
Hard Disk #2	Not Present
80387 Numeric Coprocessor	Not Present
3167 Numeric Coprocessor	Not Present
Video Display	EGA or VGA
Keyboard	Present
System Serial Port #1	Enabled as Corn 1
System Serial Port #2	Disabled
ROM BIOS Map Address	1 MB Only
Speaker:	On
Redirect Corn 1:	Disabled
Redirect Corn 2:	Enabled
CPU Speed	Fast
Shadow RAM Control	Disabled
Cache Control	Enabled
Power–on Memory Test	On
Parallel Port	Enabled as LPT1

You may find it necessary to modify the `Extended Memory, System Serial Port #2`,and `Shadow RAM control` entries, and you should set the correct date and time.

6. To change any settings, use the cursor keys to highlight the desired item and press the (Enter) key to select the item. A menu appears offering the available selections.

> **NOTE:**
> If you are uncertian about a specific option, select the option and press the [F1] key to display the Help description. After reading the Help information, press the Esc key to return to the setup screen.

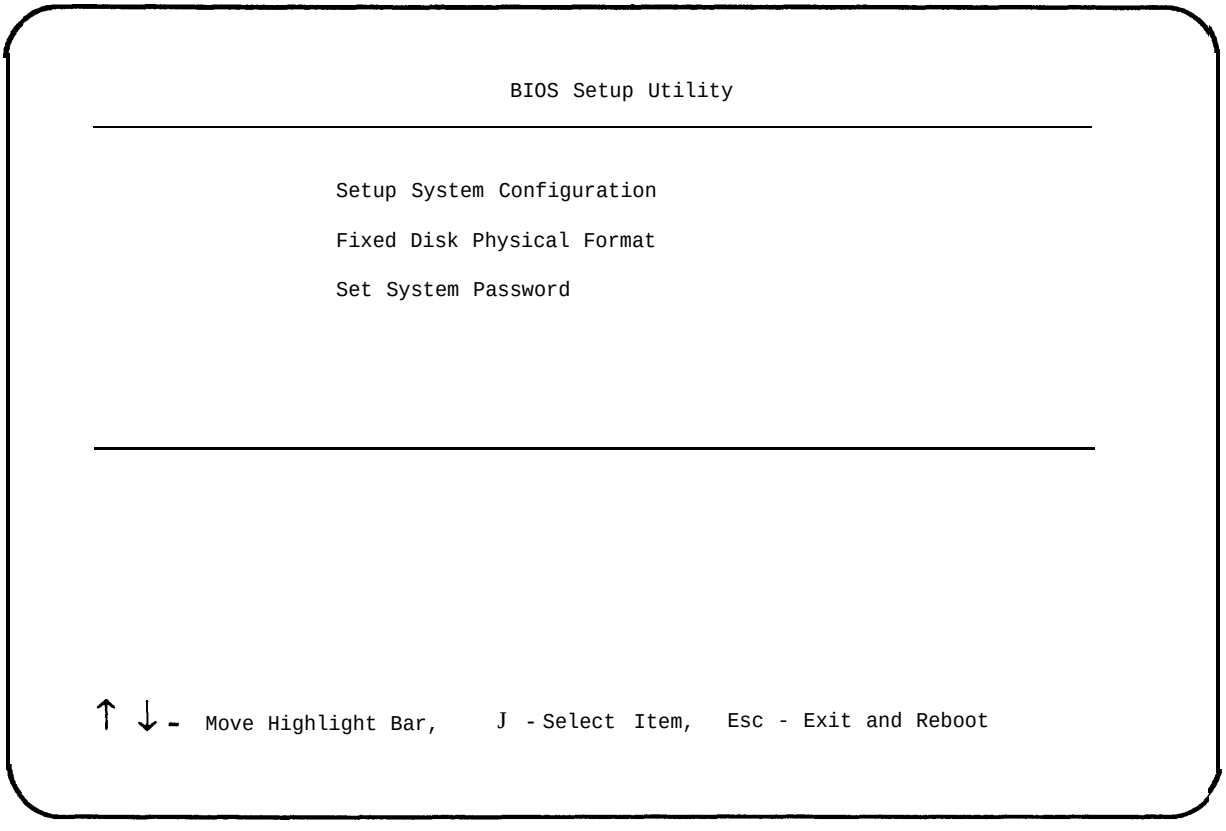
7. When all necessary changes have been made, use the (Esc) key to exit from the SETUP program.

For additional information, see the *User's Guide* packed with the system.

Running SETUP On the Master Controller II+

To run the SETUP program, do the following:

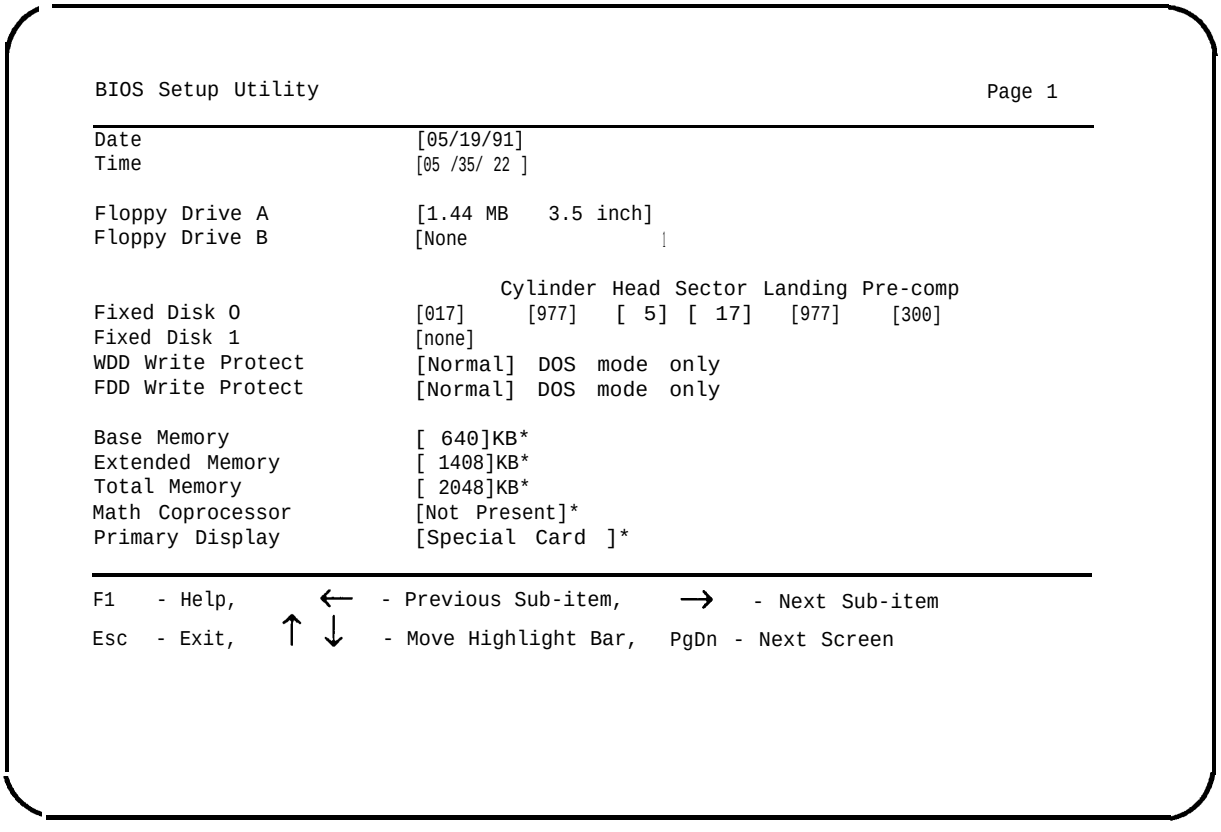
1. Shut down the UNIX system before rebooting.
2. Boot the system by turning the power ON or by pressing the (Reset) button if the system is already on.
   — The system runs a series of self-checks and displays status messages.
3. As soon as the serial port status message displays, press the (Ctrl) + (Alt) + (Esc) keys simultaneously.
   — The SETUP Main Menu displays.



Screen 2-l. SETUP Main Menu

4. Use the (↓) key to move the highlight to Setup System Configuration and press (Enter).

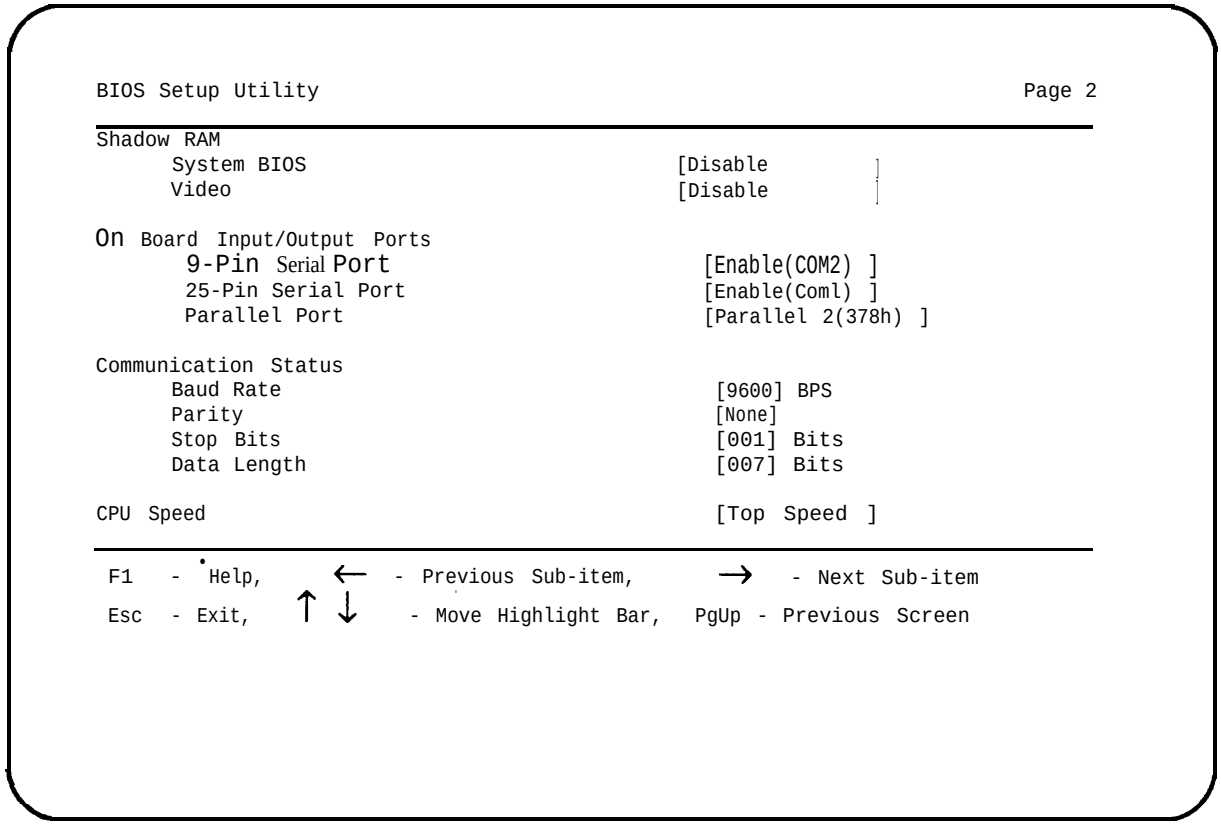
   — The current configuration displays on two pages.



Screen 2-2. SETUP Utility Screen l

NOTE:
The values marked *are system-detected; you cannot change them.

To view the second page of the screen display, press(PgDn).



Screen 2-3. SETUP Utility Screen 2

To return to the first page, press (PgUp).

5. To change any settings:

   a. Use the (↓) and (↑) keys to highlight the desired parameter.

   b. Use the (←) and (→) keys to view the desired settings available for that parameter.

   c. Once the desired setting has been displayed, use the (↓) and (↑) keys to highlight the next parameter.

      — The configuration value is now set for this parameter.

NOTE:
If you are uncertain about a specific parameter, select the parameter and press the F1 key to display the Help description. After reading the Help information, press the (Esc) key to return to the SETUP screen.

6. To view the second page of the screen display, press (PgDn). To return to the first page, press (PgUp).

7. When all necessary changes have been made, use the (Esc) key to exit from the SETUP program.

   — A confirmation prompt appears requesting you to press Y to quit and save the changes, or ***n*** to quit without saving the changes.

8. Press y.

   — The system reboots and the new configuration settings are stored in memory.

For additional information, see the *User's Guide* packed with the system.

Connecting Voice Lines

Voice lines must be connected to the IVP4 board(s).

Connecting the IVP Voice Lines

Each IVP4 board has two 6-position 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 (Figure 2-18).

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 (RJ114C) in each of two cables.

WARNING:
There may be a magnet on the back of the 884A Adapter. Be sure that you *do not* place this near the hard disk drive or floppy disks.

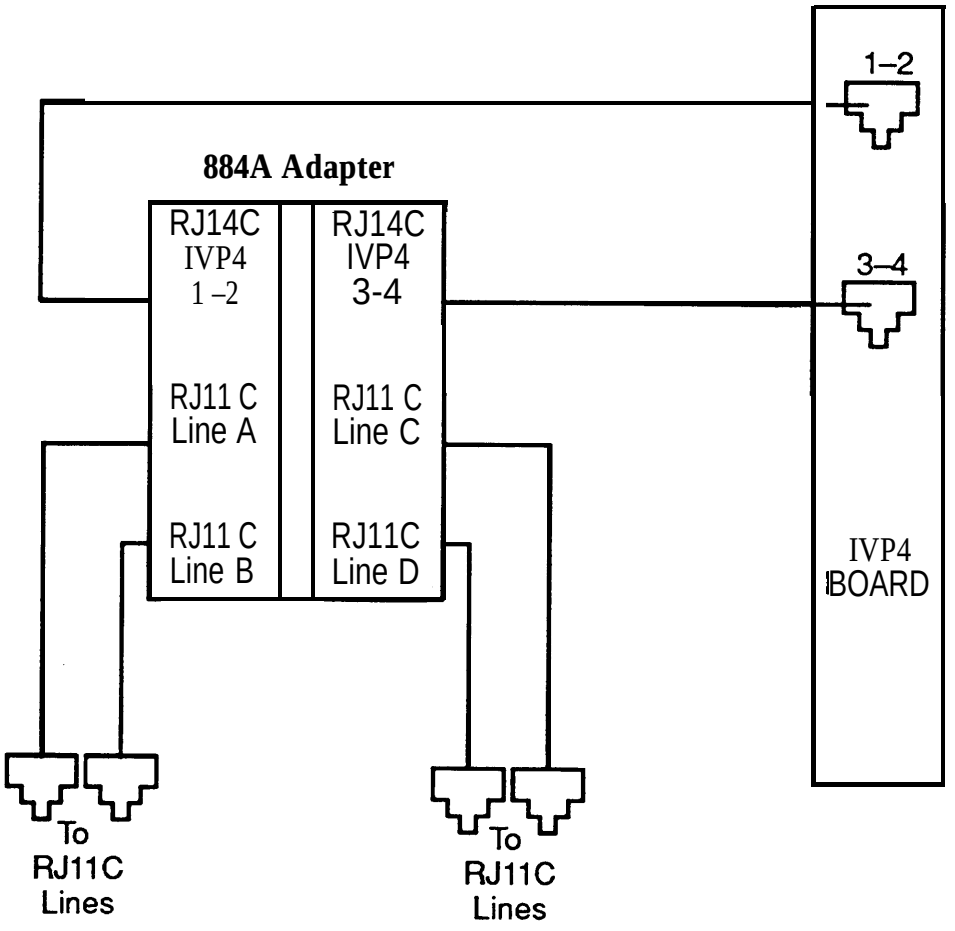


Figure 2-18. IVP4 Board with 884A Adapter for RJ11C

Setting Up a Report Printer

The AT&T 473/474 and 570/571 printers are supported by AUDIX Voice Power. This section describes the setup of the AT&T 570 (80 column) or 571 (132 column) printer. For other printers, please refer to the documentation received with the printer.

The switches and lamps have different meanings in *Set Up Mode* than they do in *Normal Print Mode.* The printer operation panel is shown in Figure 2-19.

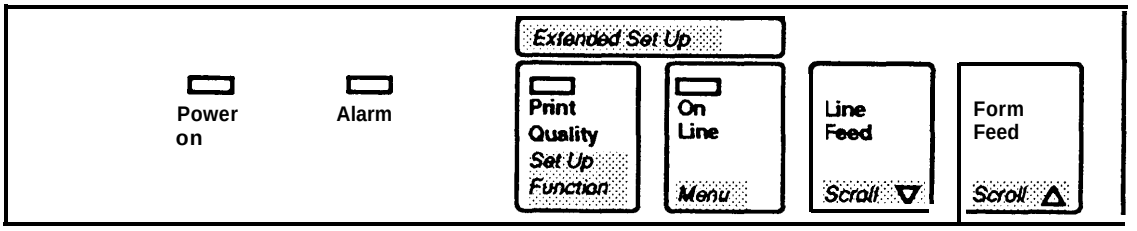


Figure 2-19. Printer Operation Panel

In the *Setup Mode,* the switches have the following functions:

Set Up Function	When pressed while turning power ON, causes the printer to enter *Set Up Mode.* (The printer will be in *Function Mode* with function 01 selected. Also pressing Scroll ▽ when the power is ON causes the printer to be in *Function Mode* with function 99 selected.) When pressed while in *Function Mode,* causes the printer to return to */Vormal Print Mode.* When pressed while in *Menu Mode,* causes the printer to store the selected value for the selected function.
Menu	When pressed, causes the printer to enter *Menu Mode* for the function selected.
Scroll V	When pressed in *Function Mode,* causes the next function to be selected. When pressed in *Menu Mode,* causes the next menu selection to be displayed for the selected function.
Scroll A	When pressed in *Function Mode,* causes the previous function to be selected When pressed in *Menu Mode,* causes the previous menu selection to be displayed for the selected function.

Setting the Control Values

Follow this procedure to set the control values on the report printer:

1. Unpack and set up the printer according to the instructions in the documentation supplied with the printer.
2. Be sure that the printer has paper, that the ribbon is properly installed, and that the cover is closed. The printer will not enter *Set Up Mode* if it is out of paper or if the cover is open.
3. Set the default values by following these steps:
   a. While holding down the [Function] and [Scroll ∇] switches, turn the power ON. When the SELF TEST functions complete, setup function number 99 is automatically displayed.
   b. Press the [Scroll Δ] switch to select setup function number 98 (set default values).
   c. Press the [Menu] switch to enter *Menu Mode.*
   d. Press the [Scroll ∇] switch to select menu item 02.
   e. Press the [Function] switch once to set the default values.
   f. Turn the power OFF.

Connecting the Printer

One parallel printer cable is required to connect the printer.

Follow these steps to connect the printer:

1. Unpack and set up the printer according to the instructions in the documentation supplied with the printer. Do *not* plug in the printer.
2. Connect the 25-pin DB25 connector end of the parallel printer cable to the parallel port on the system module. The cable connector has pins and the connector has sockets. Secure the connector with the captive screws.
3. Connect the other end of the parallel printer cable to the matching Centronics port (Amphenol connector) on the printer. Use the spring clips to secure it.
4. Plug in the printer.

Diagnostics

The only diagnostics that can be run at this time are those provided on the Customer Test diskette for testing the basic system integrity. Additional diagnostics for the IVP4 boards cannot be run until the software is installed.

To run the Customer Test diagnostics, follow these steps:

1. Insert the Customer Test disk supplied with the system into floppy disk drive A.

   NOTE:
   Be sure to shut down the UNIX system before rebooting.

2. Boot the system by turning power ON or by pressing the (Reset) button if the power is already on.

   The system boots from the Customer Test disk and displays the Customer Test introduction screen.

3. Press (Enter) to continue.

   The Customer Test main menu appears.

4. Use the (↓) key to move the highlight bar to `System Checkout` or `Test All Modules` (the command displayed depends on the processor that you are using) and press (Enter).

   NOTE:
   If `Test All Modules` appears on the main menu, `Customization Screen` will also appear. On the Customization Screen the *interactive* mode must be set to ***on*** before you select `Test All Modules` if the speaker test, floppy disk drive test, keyboard keystrokes and typematic tests, and mouse tests are to be performed. If the *interactive mode* is ***off,*** these tests will not be performed.

5. Follow the directions on the screen to run the diagnostics.

Installing a Remote-Access Modem

On systems that do not provide an internal modem in the switch for remote access, you must connect an external modem to serial port 1 for remote dial-up access. On systems that provide an internal modem in the switch, the use of an external modem is not necessary.

Installation may be accomplished by:

1. Placing the modem in a convenient place, and near enough to the system module, a power source, and access to a phone line.
2. Connect one end of the modem cable to the modem connector labeled **RS-232C** on the back panel of the modem.
3. Connect the other end of the cable to the communications port on your system module.
4. Using an RJ11 telephone cable, plug one end into the telephone wall jack.

5. Plug the other end of the RJ11 telephone cable into the jack labeled **TO LINE** on the back panel of the modem.
6. If you plan to use a telephone at this position, using another RJ11 telephone cable, plug one end of the cable into the plug labeled **TO PHONE** on the back panel of the modem. Plug the other end of the telephone cable into your telephone set.
7. Plug the rounded end of the supplied power cord into the jack labeled **POWER** on the back panel of the modem.
8. Plug the other end of the power cable into an AC outlet.
9. Refer to the documentation that accompanied your modem for further details.

Software Installation

3

Preparing to Install AUDIX Voice Power

There are two instances in which you will need to install AUDIX Voice Power application software: in the event of a catastrophic failure and when the customer adds AUDIX Voice Power after the initial system purchase. If you are installing an upgraded release of AUDIX Voice Power, see Chapter 5, *Upgrade Guidelines,* in this guide and the *Updating IS II and Applications* section in Chapter 7 of the *AT&T Integrated Solution II Installation and Maintenance Guide.*

If you are installing application software after a catastrophic failure, all basic IS II software must have been reinstalled before you can install any application package. (See Chapter 6, *Recovering from Catastrophic Failure,* in the *AT&T Integrated Solution II Installation and Maintenance Guide.)*

If you are simply adding the AUDIX Voice Power application package to an existing system, continue with the instructions in this chapter.

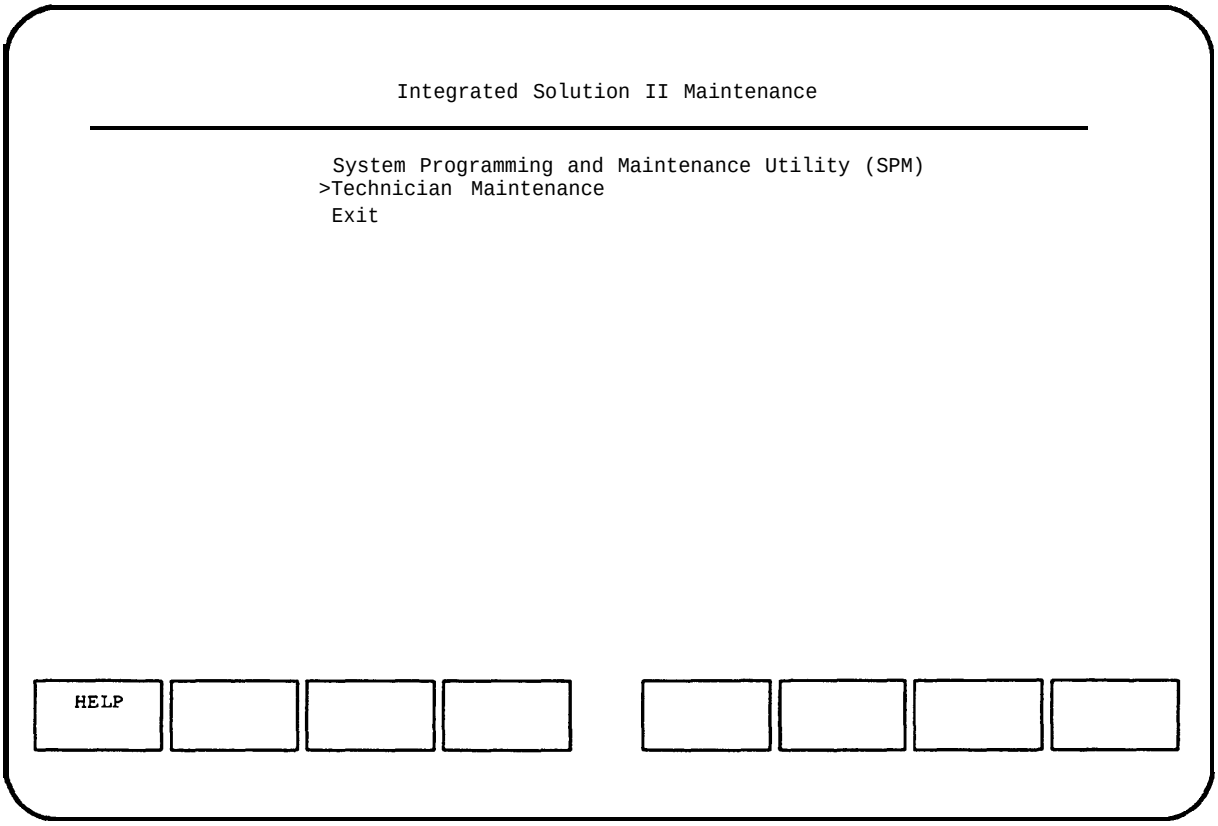
NOTE:
If you attempt to install AUDIX Voice Power and it already exists on the system, an Error Message Screen appears.

1. At the IS II `Login:` prompt, type ***maint*** and then press (Enter).

2. At the `Password:` prompt, type the password and then press (Enter).

   — The Integrated Solution II Maintenance menu displays.

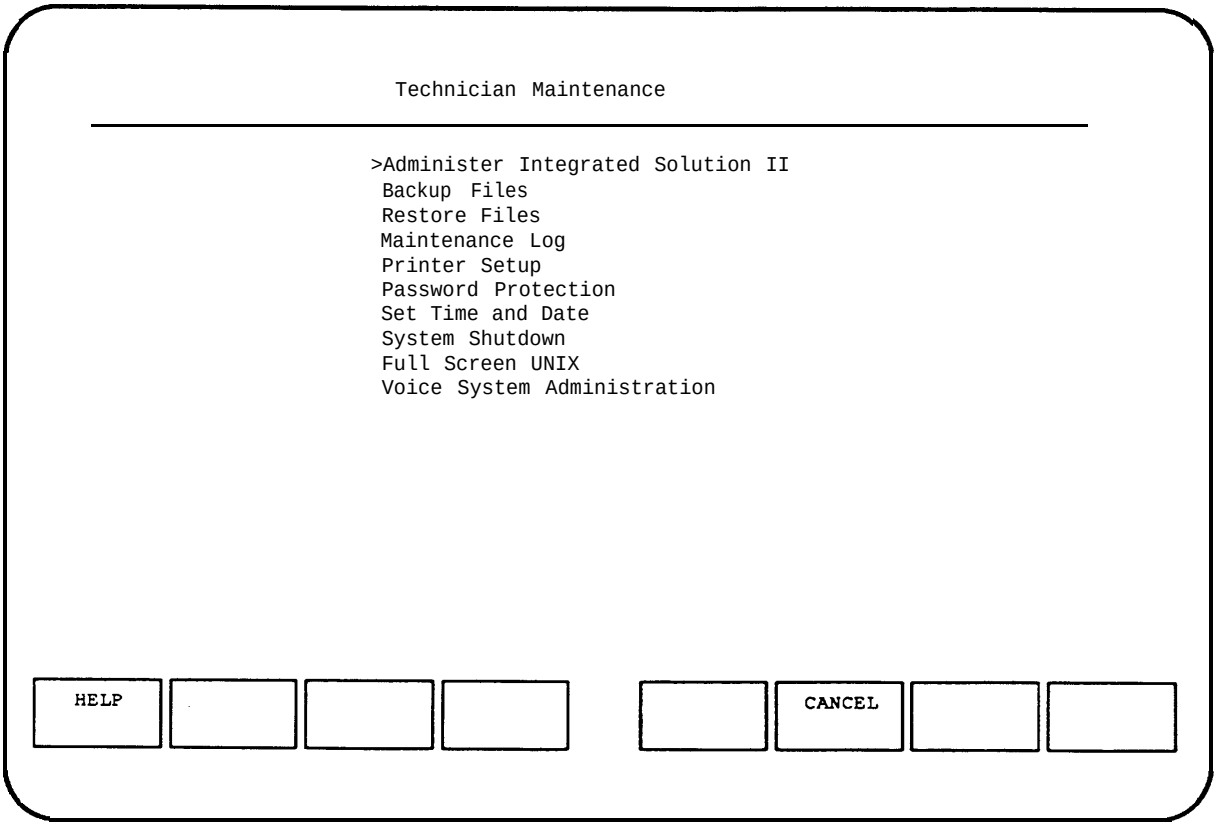
NOTE:
If any applications are already installed, their names will appear on this screen.



Screen 3-1. Integrated Solution II Maintenance Menu

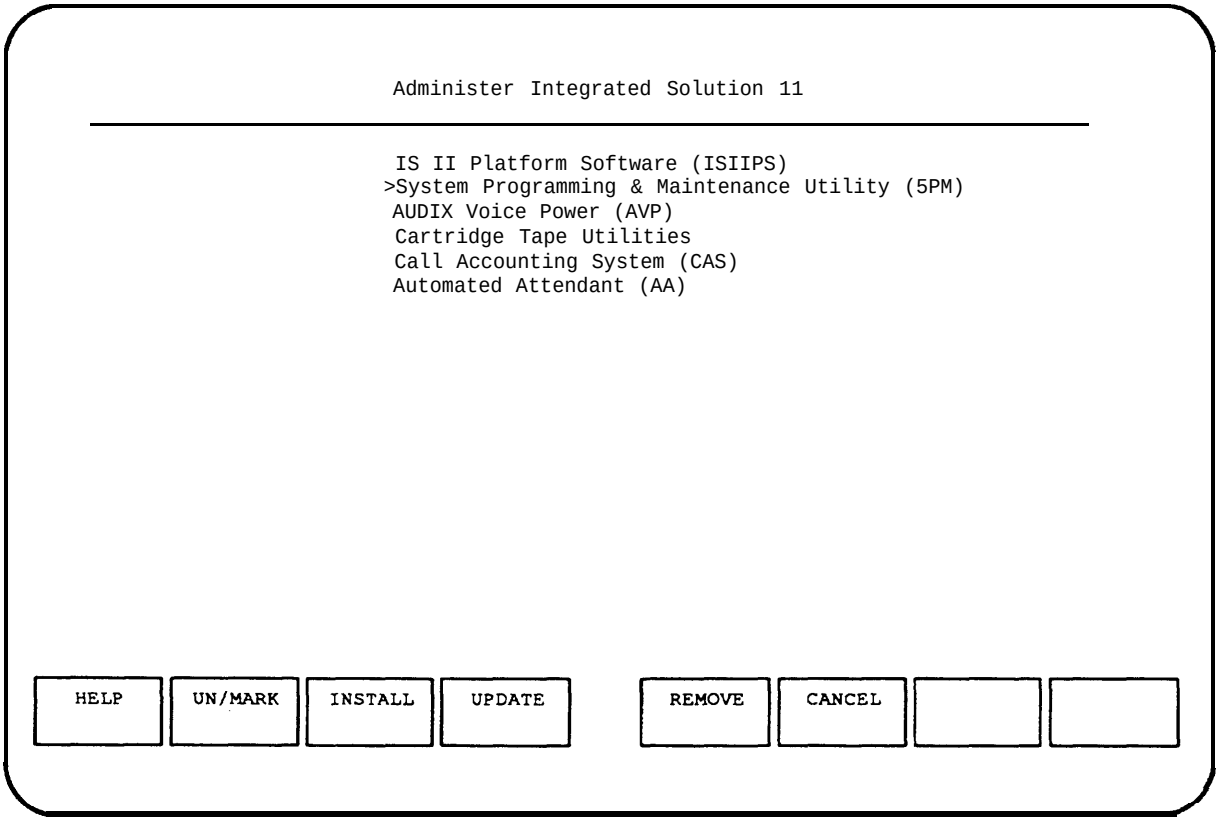
3. Select `Technician Maintenance` and then press (Enter).

   — The Technician Maintenance menu displays.



Screen 3-2. Technician Maintenance Menu

4. Select `Administer Integrated Solution II` and then press (Enter).
   - The Administer Integrated Solution II menu appears.



Screen 3-3. Administer Integrated Solution II Menu

5. Move the cursor to the AUDIX Voice Power application package and press [F2] to mark it.

> **NOTE:**
> You can select AUDIX Voice Power only if Automated Attendant is not installed. If you already have Automated Attendant installed, a note will appear on your screen indicating that this package is already present.

   If you marked an application by error, move the cursor back to that application and press [F2] again to undo the selection.

6. When you have finished making your selection, press [F3] to begin the installation procedure.

You are now ready to install AUDIX Voice Power.

Installing AUDIX Voice Power

In order to install AUDIX Voice Power, you must first have the IS II Platform Software installed, which is already installed unless a catastrophic failure has occurred. Installation consists of five steps, which must be completed in the following order:

1. Install the Integrated Voice Power (IVP) System software.
2. Install the AUDIX Voice Power (AVP) application software.
3. Install the Switch Integration software.
4. Reboot the system (by pressing (Enter) when prompted) for the changes to take effect.
5. Confirm that the installation was successful.

The software you need for installing this application consists of the following:

- Integrated Voice Power System software (four diskettes)
- AUDIX Voice Power application software (five diskettes)
- Switch Integration software (one diskette)

When you have logged onto the IS II system and marked the AUDIX Voice Power application (as described in *Preparing to Install AUDIX Voice Power* at the beginning of this chapter), the following messages appear:

```
Insert first diskette of Integrated Voice Power
System Software.

Strike ENTER when ready.
```

You are now ready to install this application.

Step 1: Install IVP System Software

1. Insert diskette #1 and press (Enter).

   — The screen shows:

   ```
   Verifying Integrated Voice Power System
   Software diskette.
   ```

   — If you insert the wrong diskette or forget to put the diskette in, the system responds:

   ```
   Confirm

   Incorrect, missing, or damaged diskette.
   Please correct.

   Strike ENTER when ready or ESC to stop.
   ```

   — When you have the correct diskette inserted, the system responds:

   ```
   Copying Integrated Voice Power System
   Software to hard disk.
   Do not remove diskette.

   Reached end of medium on input.
   You may remove this diskette.
   Insert diskette number 2 and strike the
   <ENTER> key.
   ```

2. Remove diskette #I, insert diskette #2, and press (Enter).

   — When the process is complete, the system responds:

   ```
   Reached end of medium on input.
   You may remove this diskette.
   Insert diskette number 3 and strike the
   <ENTER> key.
   ```

3. Remove diskette #2, insert diskette #3, and press (Enter).

   — When the process is complete, the system responds:

```
Reached end of medium on input .
You may remove this diskette.
Insert diskette number 4 and strike the
<ENTER> key.
```

4. Remove diskette #3, insert diskette #4, and press (Enter).

   — When the process is complete, the screen shows the following:

```
You may now remove the diskette from the
drive.

Installing Integrated Voice Power System
Software.
. . . . . .
```

   — A series of dots prints, indicating that the files are being moved from a temporary to a permanent area.

5. Remove the diskette from the drive.

NOTE:
Do not quit at this point.

Step 2: Install AVP Application Software

When the IVP System Software has been completely loaded, you will be prompted to install the AVP application software.

1. Insert the first AVP application software diskette when you see the following message:

```
Insert first diskette of AUDIX Voice Power
Application Software .

Strike ENTER when ready.
```

2. Press (Enter).

   — The following messages display:

```
Verifying AUDIX Voice Power Application
Software diskette.
Copying AUDIX Voice Power Application
Software to hard disk.
Do not remove diskette.

Reached end of medium on input.
You may remove this diskette.
Insert diskette number 2 and strike the
<ENTER> key.
```

3. Remove diskette #I, insert diskette #2, and then press (Enter).

   — When the process is complete, the system responds:

```
Reached end of medium on input.
You may remove this diskette.
Insert diskette number 3 and strike the
<ENTER> key.
```

4. Remove diskette #2, insert diskette #3, and then press (Enter).

   — When the process is complete, the system responds:

```
Reached end of medium on input.
You may remove this diskette.
Insert diskette number 4 and strike the
<ENTER> key.
```

5. Remove diskette #3, insert diskette #4, and then press (Enter).

   — When the process is complete, the system responds:

```
Reached end of medium on input.
You may remove this diskette.
Insert diskette number 5 and strike the
<ENTER> key.
```

— When the process is complete, the system responds:

```
You may now remove the diskette from the
drive.

Installing AUDIX Voice Power Application
Software.

. . . . . .
```

— A series of dots prints, indicating that the files are being moved from a temporary to a permanent area.

NOTE:
If you are not successful in installing the application software, the system responds:

```
AUDIX Voice Power Application Software
installation failed.

Strike ENTER when ready.
```

7. When the software has been loaded successfully, the system will indicate that it is ready for the Switch Integration Software diskette.

NOTE:
Do not quit at this point.

Step 3: InstaIl Switch Integration Software

1. Wait for the following message to appear:

```
Insert first diskette of XXX Switch Integration
Software.

Strike ENTER when ready.
```

2. Insert the Switch Integration software diskette and then press (Enter).

   — The system displays other messages and then copies the switch integration software.

Step 4: Reboot the System

1. Wait until the following message appears.

```
Confirm
To complete the install/remove process a
shutdown is now being initiated automatically.
Make sure your diskette drive is empty. If you
are installing or removing controller boards,
you may power down the system after the shutdown
has completed.
Strike ENTER when ready or ESC to stop.
```

2. Be certain the drive is empty; then press (Enter).

3. The system continues to send messages; when you see the following message,

```
The system is down.
Reboot the system now.
```

   press (Ctrl) + (Alt) + (Del) or the (Reset) button. The system gives you diagnostic information and notifies you that it is booting the UNIX system.

Step 5: Confirm AUDIX Voice Power Installation

When the login prompt appears, you are ready to confirm that the AUDIX Voice Power application software has been installed on the Master Controller II.

1. Log into the system using the ***maint*** login and the password.

   — The IS II Main Menu should include AUDIX Voice Power as an item.

2. Select `Technician Maintenance` from the Integrated Solution II Maintenance menu.
3. Select `Maintenance Log` from this menu.
   — The Maintenance Log menu is displayed.
4. Select `Display Installed Applications.`
   — The list should include

```
Integrated Voice Power System Software
Release x
AUDIX Voice Power Application Software Rx
XXX Switch Integration Software Rx
```

5. To exit, back out of the menus by pressing [F6] (CANCEL).

Completing Installation

At this point, all of the hardware and software components of the AUDIX Voice Power system are installed. However, the AUDIX Voice Power system is not operational until AUDIX Voice Power and the switch are administered.

Acceptance Testing

Acceptance testing demonstrates that the system works. It consists of running hardware diagnostics to verify that the hardware is installed properly and that the hardware works, and then using a small sample population of users to verify that the software is installed properly and that the software works properly.

To perform the acceptance testing, you need to have the switch and AUDIX Voice Power administered. The administration of the switch, and of the AUDIX Voice Power system, must be arranged so as not to interfere with the customer's business. The administration of any new AUDIX Voice Power system should be undertaken jointly with the customer so as to familiarize the customer with the process.

Acceptance testing should follow these steps:

1. Run any diagnostics available on the analog and digital switch boards and lines including verification of dial tone at the jacks where AUDIX Voice Power will be connected, and including ring checks to verify the assigned extension numbers.
2. Run the Power On Self-Test on the processor by turning it on. See *Power On Se/f-Test* in Chapter 4.
3. Run the general diagnostics on the Customer Test diskette according to the instructions given in *General Diagnostics* in Chapter 4.
4. Establish that dial tone can be detected on all IVP channels by running the IVP4 diagnostics according to the instructions given in *IVP4 Board Diagnostics* in Chapter 4.
5. Verify the IVP4 switch settings are correct using the procedure *Testing the IVP4 Switch Settings* that follows this section.
6. Administer the switch for two test users for voice (Voice1 and Voice2).

   NOTE:
   The customer may supply real names and extension numbers for testing if this is more convenient.

7. Administer AUDIX Voice Power for the two test voice users. See the section *Subscriber Administration* in the AT&T *AUDIX™ Voice Power System Manager's Guide* for instructions.
8. Run call through tests on all analog ports.
9. Call the system and create personal greetings for test users.
10. Call the system and leave messages for test users.
11. Call the system and retrieve messages for test users.
12. Send and receive voice mail between test users.

These tests provide a good measure of overall system operation.

Testing the IVP4 Switch Settings

After setting the switches on each board correctly, perform this test to verify the correctness of the switch settings.

1. Set the switches for each board according to its configuration and board number. See Figures 2-14 and 2-15 in Chapter 2.
2. Install the board(s) and close the case.
3. The AUDIX Voice Power application 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 should have another configuration.
4. Check the configuration and switch settings and test again. If the board is still not recognized, contact the next tier of AT&T Services support.

Configuration Testing and Troubleshooting

4

Troubleshooting is limited to two areas:

- **Hardware verification**

  Hardware tests are limited to the Power-On Self Test (POST), the system diagnostics provided on the Customer Test diskette, and diagnostics for additional boards that have been installed as part of the software packages.

  After your system has been assembled, it should be tested before being put into service.

  The same techniques are used for troubleshooting when you suspect hardware problems.

- **Application operation problems**

  When the system does not operate as anticipated, there maybe problems in the administration of the application or in the administration of the switch.

  If the application problem is described in the troubleshooting tables, you may be able to fix the problem by taking the action indicated.

Hardware Verification

Power-On Self Test

When the Power-On Self Test (POST) is initiated upon booting the system, 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	Motherboard problem
CMOS RAM	a. Battery backup problem b. Motherboard problem
ROM Checksum	a. ROM failure - replace ROM b. Motherboard problem
Memory Refresh	Motherboard problem
DMA Controllers	Motherboard problem
Interrupt Controller	Motherboard problem
Keyboard	a. Pressed key while booting - reboot system b. Keyboard not plugged in c. Keyboard bad - replace keyboard d. Motherboard problem
Dedicated memory	If not 0384 kB, a. Memory problem - replace memory b. Motherboard problem
Base memory	If not 0640 kB, a. Memory problem - replace memory b. Motherboard problem
Extended memory	If not 3072 kB or more, a. Memory problem - replace memory b. Motherboard problem
Total memory	a. Memory problem - replace memory b. Motherboard problem
Clock/Calendar	Motherboard problem
Floppy disks	a. Poor connection b. Bad drive c. Bad controller d. Motherboard problem
Hard disks	a. Poor connection b. Bad drive c. Bad controller d. Motherboard problem

Please use the Customer Test diskette that was provided with the system to fully diagnose any problems. See the following sections for more information.

For additional information, refer to the following guides:

- *AT&T WGS Service Guide* (for the appropriate processor), especially Chapters 5-7
- *AT&T WGS User's Guide* (for the appropriate processor), especially Chapter 5
- *AT&T Applications Controller User's Guide*

Recovery from System Failures

You may be responsible for recovering the system, using cartridge tape and/or diskettes, after a system failure at the customer site.

Before you can recover the system after a crash, you must first determine what caused the crash to occur and then try to fix it.

There are three possible problems that might have occurred:

- Hard disk failure
- Motherboard failure
- Data corruption

Use this chapter to determine what the problem is and how to resolve it. Chapter 8, *Troubleshooting,* in the *AT&T Integrated Solution II Installation and Maintenance Guide* also provides information on displaying the Disk Usage Report to determine if there is a shortage of available disk space for voice messages.

Procedures for recovering IS II software appear in Chapter 6, *Recovering from Catastrophic Failures,* in the *AT&T Integrated Solution II Installation and Maintenance Guide.*

Hard Disk Failure

If the hard disk fails, do the following:

1. Check all connections.
2. Reboot the system.
3. If the hard disk still fails, run diagnostic tests on the hard disk using the appropriate diagnostic diskette.
4. If the hard disk still fails, replace the hard disk.
5. If you replaced the hard disk, it will be necessary to recover the system from disk or tape.

Motherboard Failure

If the motherboard fails, do the following:

1. Insert the appropriate diagnostic diskette.
2. Run tests for each item whose status is "FAIL." See the section *General Diagnostics* in this chapter for more information. If necessary, refer to the *Problem Solving* chapter in the *AT&T 6386/SX WorkGroup System User's Guide.* If you are using the Master Controller II+, see the *AT&T Applications Controller User's Guide.*
3. Replace the motherboard (if bad). Refer to the above-mentioned guides.
4. Reboot the system and run the ROM-based SETUP Program as described in Appendix B of *AT&T 6386/SX WorkGroup System User's Guide* to set the system configurations listed below. If you are using the Master Controller II+, see the *AT&T Applications Controller User's Guide.*

NOTE:
Refer to the section *Configuration: The SETUP Utility* in Chapter *2* for instructions on how to access the SETUP program after booting up.

a. Set up fixed-disk drive type and parameters for your hard disk size, according to the following table, using SETUP screen 1. Set up "monitor type" to ***VGA Display*** using SETUP screen 2.

Size	Type	Cyl	Hd	Pre	LZ	Sec	Size (MB)
40 MB	48	965	5	–1	965	17	40
80 MB	48	965	10	–1	965	17	80
100 MB	40	761	8	None	762	39	115
200 MB	48	684	16	–1	685	38	203

b. Disable shadow BIOS ROM, using SETUP screen 3, for all systems. Set option to ***Disabled.***

c. Exit the SETUP program by following the instructions on the screen.

d. Press (Esc) to reboot the system so that the changes will take effect.

NOTE:
You do not need to perform the catastrophic failure recovery procedure when replacing the motherboard.

Data Corruption

If the screen is garbled and/or the system is running, but error messages are displayed from the UNIX system or one of the installed applications, it may mean that there is corrupt data. If this is the case, you must restore the entire system. Refer to the section *Restoring from Data Corruption* in Chapter 6 of the *AT& T Integrated Solution II Installation and Maintenance Guide.*

Whenever the files are restored, you should run the confidence test described in the following section.

Confidence Test

These tests provide a good measure of overall system operation.

1. Administer the switch for two test users for voice (Voice 1 and Voice 2).

   NOTE:
   You may use real names and extension numbers already administered if this is more convenient.

2. Administer AUDIX Voice Power for the two test voice users. See the section *Subscriber Administration* in the *AT&T AUDIX™ Voice Power System Manager's Guide* for instructions.

   NOTE:
   You may use real names and extension numbers already administered if this is more convenient.

3. Call the system and create personal greetings for the test users.
4. Call the system and leave messages for the test users.
5. Call the system and retrieve messages for the test users.
6. Send and receive voice mail between the test users.

General Diagnostics

The only general diagnostics other than the POST are those provided on the Customer Test diskette for testing the basic system integrity. Additional diagnostics for the IVP4 boards run under the application software.

To run the Customer Test diagnostics, follow these steps:

1. Insert the Customer Test disk supplied with the system into floppy disk drive A.

   NOTE:
   Be sure to shut down the UNIX system before rebooting.

2. Boot the system by turning power ON or by pressing the (Reset) button if the power is already on.

   The system boots from the Customer Test disk and displays the Customer Test introduction screen.

3. Press (Enter) to continue.

   The Customer Test main menu appears.

4. Use the (↓) key to move the highlight bar to `System Checkout` or `Test All Modules` (the command displayed depends on the processor that you are using) and press (Enter).

   NOTE:
   If `Test All Modules` appears on the main menu, `Customization Screen` will also appear. On the Customization Screen the *interactive* mode must be set to *on* before you select `Test All Modules` if the speaker test, floppy disk drive test, keyboard keystrokes and typematic tests, and mouse tests are to be performed. If the *interactive mode* is ***off,*** these tests will not be performed.

5. Follow the directions on the screen to run the diagnostics.

IVP4 Board Diagnostics

Diagnostics for the IVP4 boards can be run after initial setup to determine whether everything is connected properly and there is a dial tone.

To run the IVP4 board diagnostics in the IS II environment, follow these steps:

1. Log into the system as ***maint.***
2. At the `Password:` prompt, type the password and press (Enter).

   The AT&T Integrated Solution Maintenance menu is displayed.

3. **Using the (↓) and (↑) keys, move the cursor to** `Technician Maintenance` and press (Enter).

   The Technician Maintenance menu is displayed.

4. Move the cursor to `Maintenance Log` and press (Enter).

5. Move the cursor to `IVP Board Diagnostics` and press (Enter).

   The system searches for dial tones (Loop Current) on the boards and then informs you if the IVP4 board passes the test. If the IVP4 board fails, you will have to replace the board. If dial tones or loop current are not found, check the phone line connections.

   NOTE:
   The diagnostic checks for up to eight boards (0-7). For each board that is not present the system responds:

   ```
   Can't Diagnose Card x, it is not present .
   ```

6. Press [F6] (CANCEL) repeatedly until the AT&T Integrated Solution Maintenance menu appears.

7. Select `Exit` to return to the UNIX Operating System prompt.

Application Operation Problems

This section assists you in identifying and locating problems that occur with the application rather than with the hardware. If a symptom in the "Trouble Indication" column occurs, check the solution given in the "User Response" column.

If problems continue, contact a field service representative for assistance.

Trouble Indication	User Response
Message Waiting Lamp will not turn on or off.	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 System Parameter Administration form are correctly filled in.
Messages cannot be left because mailboxes are full.	Message Space Usage reports should be performed regularly. Check for subscribers 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.
Incoming fax calls are not being transferred to the fax extension.	Check to see if the fax number is defined. Check to see if the calling machine is an autodial model that generates the CNG tone.

(continued)

Trouble Indication	User Response
Caller hears a ring, but receives no answer.	Check to see if each telephone line is properly connected to each channel. In addition, make sure the correct service has been assigned to each channel and that each channel is in the INSERV state. If any channel is in the FOOS (Facility Out Of Service) state, change it to the MANOOS (Manually Out Of Service) state. Diagnose the IVP4 card and then change the channel's status to the lNSERV state. Also check the switch administration of each channel. For telephone systems that require channel-to-phone mapping, make sure that channel-to-phone mapping has been done correctly. (See the *AT&T AUDIX™ Voice Power Switch Notes* for your telephone system to determine if channel-to-phone mapping is required for your system.)
Users' 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 is simulating a Touch-Tone. The false Touch-Tone stops the 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 the user's name or greeting.

(continued)

Trouble Indication	User Response
Unable to log into the Voice Mail service.	Verify that the individual logging in is registered on the system. Check to see if the password being used is correct. If the password is incorrect, determine whether the user has been denied access (System Manager changed password) before allowing access.
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 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 the Voice Mail service.	Maintenance is in the process of diagnosing equipment or all lines are currently in use. Please wait.
Problems with Touch-Tone recognition.	Change all switches on SW1.1 on IVP4 boards to the opposite state. (See Chapter **2** of this guide.)
Constantly receiving a busy signal when attempting to call into the Voice Mail service.	The switch integration software is not loaded or is incorrectly loaded.
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.

(continued)

Trouble Indication	User Response
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 Voice Mail, Call Answer, and Automated Attendant ports is greater than or equal to the number of simultaneous ports requested. If not, lower the number of simultaneous ports. During system startup, this may occur if ports are still being initialized. Wait a few minutes and try again.
Many subscribers get messages about multiple logins to their mailboxes.	Stop and restart the voice system.
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 call transfer is to an operator, check to see if an operator has been defined on the system.

Upgrade Guidelines

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As new releases of AUDIX Voice Power become available, you should update the customer system to make the latest features available, and to simplify maintenance and troubleshooting.

Before any upgrade takes place (either for R2.0 or R1.1 systems), you should consider the following items:

- Ask subscribers to remove any unwanted voice mail, and the System Manager to remove any inactive subscribers. This helps ensure that there is enough room on the hard disk for the installation of AUDIX Voice Power, Release 2.1.
- The extension numbers 9999 (general mailbox) and 9998 (maintenance mailbox) are special in Release 2.1. If these extensions are in use for subscribers, the subscribers must be moved to different extensions.
- The name addressing feature of Release 2.1 makes it desirable for all subscribers to have a recorded name that is used to verify addressing of voice mail and that the correct person has been dialed when leaving a call answer message. Either the System Manager can record all names, or the subscribers can be asked to record their own names.

To upgrade from AUDIX Voice Power Release 1.1 to Release 2.1, it is necessary to first upgrade from Release 1.1 to Release 2.0, and then to upgrade from Release 2.0 to Release 2.1.

CAUTION:
Files that have been backed up using Release 2.0 cannot be restored once the system has been upgraded to Release **2.1.**

For complete upgrade procedures in the Integrated Solution II environment, follow the directions in the *AT&T Integrated Solution// Installation and Maintenance Guide.*

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