**Multi-Application Platform 100C
Voice Processing**

Hardware Installation and Upgrade

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Acknowledgment
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About This Book

Purpose

This book, *Multi-Application Platform 100C Voice Processing Hardware Installation and Upgrade, 585-350-102*, describes the procedures for installing the Multi-Application Platform C (MAP/100C) hardware.

Intended Audiences

This book is intended primarily for the on-site AT&T service technician and customer technical personnel as well as the value-added reseller. Secondary audiences include the following from AT&T: field support, the Technical Service Center (TSC); provisioning project managers, the Sales and Technical Resource Center (STRC); helpline personnel; and factory assemble, load, and test (ALT) personnel.

Prerequisite Skills and Knowledge

We assume that the primary users of this book have completed an AT&T MAP/100C Hardware Installation training course.

Organization of This Book

This book is organized as follows:

- Chapter 1 — Preparing the Site

  Discusses environmental, space, and power requirements, how to prewire for pin outs, and how to work with the local telephone company.

- Chapter 2 — Getting Started

  Discusses all warnings pertaining to installing the system, required tools, how to unpack the MAP/100C, factory information regarding your system, how to install the cable tie-down bracket, how to install the unit in a rack, and descriptions of the MAP/100C platform, hardware components, and peripheral bay features.

- Chapter 3 — Connecting Peripherals and Powering Up

  Describes how to connect the peripherals: monitor, keyboard, printer, and modem, and how to power up the system.

- Chapter 4 — Running the Configuration Program

  Describes how to configure the system, that is allocate system resources, add additional circuit cards and hardware, etc., by using a software program developed for this purpose.

- Chapter 5 — Getting Inside the Computer

  Describes how to access the peripheral bay and card backplane.

- Chapter 6 — Installing Circuit Cards — Introduction and Types

  Classifies and groups circuit cards used in the MAP/100C. These groups are further detailed in later chapters. This chapter also describes the general procedure to be used to install all types of circuit cards.

- Chapter 7 — Installing CONVERSANT Circuit Cards

  Describes how to set jumpers, I/O addresses and connect cables for circuit cards associated with CONVERSANT software applications.

- Chapter 8 — Installing Optional Feature Circuit Cards

  Describes how to set jumpers, I/O addresses and connect cables for circuit cards used for optional features such as local area network.

- Chapter 9 — Installing MAP/100C-Provided Circuit Cards

  Describes how to set jumpers, I/O addresses and connect cables for the up to four circuit cards that are always included with the MAP/100: video controller card, hard disk controller card, cartridge tape controller card, and the CPU.

■ Chapter 10 — Adding Additional Hardware

   Describes how to add more memory, how to add a SCSI or ESDI hard
   disk drive, how to install a floppy disk drive, and how to install a SCSI or
   ESDI cartridge tape drive.

■ Chapter 11 — Finishing Up

   Describes how to check or troubleshoot the hardware should the
   MAP/100C not power-up correctly after installation. This chapter also
   includes information on how to clean the equipment and the air filter.

■ Appendix A — Moving the System

   Describes how to safely move the MAP/100C to a differenct location after
   it has been in operation.

■ A list of abbreviations used, a glossary, and an index are included
   following the last appendix.

How to Use This Book

This book accommodates either the user who has purchased a system that has
been assembled, loaded, and tested (ALT) at the factory or the user that intends
to assemble and load the MAP/100C as well as install the unit.

The book chapters are placed in order of steps to be followed to install the
system as if the system has not yet been assembled. If you are installing this
type of system, begin with the first chapter and follow the chapters consecutively
through the book.

If you are installing an ALT system, use only the first three chapters to complete
the installation. The remaining chapters are then available for reference.

To assure that you have followed all the steps required for your type of
installation, use *CONVERSANT Voice Information System Version 3.1
Installation Checklists, 585-350-106*.

Should you need to add circuit cards or additional hardware to an ALT system,
following the chapters from Chapter 4 forward assists you in doing this.

Conventions Used in This Book

The following conventions are used in this book:

- Terminal keys that you press are shown in rounded boxes. For example, an instruction to press the enter key is shown as

    Press (ENTER).

- The word "enter" means to type a value and press (ENTER). For example, an instruction to type y and press (ENTER) is shown as

    Enter **y** to continue.

- Two or three keys that you press at the same time (that is, you hold down the first key while pressing the second and/or third key) are shown as two separate rounded boxes connected together by "and". For example, an instruction to press and hold (ALT) while typing the letter **d** is shown as

    (ALT) and (d).

- Commands and text you type or enter appear in **bold**.

- Values, instructions, and prompts that appear on the screen are shown in traditional typewriter type as

    ```
    constant-width
    ```

- The number zero is shown in this book as Ø when you are asked to enter the number zero.

Trademarks and Service Marks

The following trademarked products are mentioned in this book:

- CONVERSANT® is a registered trademark of AT&T.

- UNIX® is a registered trademark of UNIX System Laboratories, Inc.

- Phillips® is a registered trademark of the Phillips Screw Co.

- Hayes® is a registered trademark of Hayes Microcomputer Products, Inc.

- Smartmodem™ is a trademark of Hayes Microcomputer Products, Inc.

Related Resources

Always refer to the appropriate book for specific information on planning, installing, administering, or maintaining a CONVERSANT Voice Information System (VIS). The *CONVERSANT Voice Information System Documentation Guide, 585-350-001*, describes all of the books included in the CONVERSANT documentation set. The documentation guide is included with the set. The following books are expected to be used in conjunction with the hardware installation book:

- *CONVERSANT Voice Information System Version 3.1 Installation Checklists, 585-350-106*

- *CONVERSANT Voice Information System Version 3.1 Software Installation and Upgrade, 585-350-104*

- *CONVERSANT Voice Information System Version 3.1 Maintenance, 585-350-105*

- *CONVERSANT Voice Information System System Description, 585-350-201*

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> Denver, Colorado 80234

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Preparing the Site

1

What's in This Chapter

This chapter describes site preparation steps that should be taken prior to installing the MAP/100C. These steps include:

- Verifying environmental, space, and power requirements for the MAP/100C

- Prewiring for pinout connections

- Reviewing FCC guidelines

- Reviewing telephone company requirements

This information can be found in the planning document for your application, for example, *CONVERSANT Voice Information System Verison 3.1 Planning, 585-350-601*.

System Arrangement

Floor Units

The unit should be positioned with approximately a six-inch clearance on all sides of the equipment to provide for adequate cooling.

VIS MAP/100Cs are shipped to the customer preassembled except as noted in this book.

Rack-Mount Units

When installing the MAP/100C in a rack, it must be installed in a cabinet frame that is 26 inches wide by a minimum of 18 inches deep.

⇒ **NOTE:**

Before installing the MAP/100C in a frame or cabinet, ensure that the frame is adequately secured to the floor in accordance to AT&T Central Office Common ESS Switching-Single Bay Frame mounting instructions to prevent accidental tipping.

See "Installing the MAP/100C in a Rack" in Chapter 2, "Getting Started," in this book.

Environmental Considerations

Place the MAP/100C in an area where the following environmental requirements are maintained:

- Temperature

    — Operating: +10 to +38°C (+50 to +100°F)

    — Non-Operating: -40 to +60°C

- Humidity

    — Continuous Operating: 20% to 55%, non-condensing

    — Short Term Operating: 20% to 80%, non-condensing

    — Non-Operating: 5% to 92%, non-condensing

Installation Area Considerations

Consider the following attributes when deciding where to place the MAP/100C:

- Install the MAP/100C in an area that provides protection from excessive sunlight, heat, cold, chemicals, static electricity, magnetic fields, vibration, dust, and grime.

- Do *not* install the unit in the same area as copier machines, because of the paper particles created by such equipment.

- Enclose the equipment room to maintain an air distribution system that provides adequately cooled, filtered, and humidity-controlled air.

- Do *not* install the unit in an area with high-power electrical equipment.

- Provide surge protection and power backup in an area with volatile power (brown-outs or frequent power surges).

- Provide additional grounding if necessary in a multiple-system installation to facilitate a radio-frequency noise free environment.

Space Requirements

Table 1-1 lists the weight and size of the major MAP/100C components:

Table 1-1. Space Requirements

Equipment	Weight (lbs.)	Height (inches)	Width (inches)	Depth (inches)
MAP/100C (No Monitor)	140	24	23	14.5
Monitor	15	13.5	13	14.5
Keyboard	5	2.5	19	8
Printer	20	5	16	11

Power Requirements

The MAP/100C powers the monitor through an interface cable.

Make the following power requirements available. Note that a receptacle is provided on the rear of the MAP/100C to supply power for the monitor.

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Table 1-2. Power Requirements

Attributes	MAP/100C	Printer	Monitor
Volts AC (for AC units) -48 VDC input power (for DC units)	110-230 VAC +/- 5%	115 VAC +/- 5%	110-240 VAC
Hertz (Hz)	60 Hz	50-60 Hz	50-87 Hz
Phase	Single	Single	Single
Amps (RMS)	20 (for AC units) 25 (for DC units)	2	1
Input Cordage	NEMA* 5-15P Plug 3-meter (9 feet) length	NEMA 5-15P Plug 2-meter (6 feet) length	Included with Monitor 1-meter (3 feet)
Unit Input Receptacle	IEC-320 Inlet	IEC-320 Inlet	IEC-320 Inlet

In addition:

- Locate each unit and printer within 9 feet of its power receptacle.

- Ensure that communication cables are kept separate from power cables.

- Install communication and power cables in accordance with National Electric Codes.

- *Only* use the AC power output receptacle on the back of the unit for a video monitor. Never plug any other device into this receptacle. For DC units, use an external AC power source.

⚠ **CAUTION:**
Use only shielded cables and shielded equipment with the MAP/100C.

_____

* National Electrical Manufacturer's Association.

Site Prewiring for Pinout Connections

Pinout connections for telephone lines, central office trunk connections, and asynchronous and synchronous host connections are described in this section.

Telephone Line Connections — T/R Circuit Cards

Contact the telephone company to provide the required telephone lines prior to the installation of MAP/100C equipment if it is to be connected directly to the central office or a communication system or other customer-premise equipment. These lines are necessary to perform the operational tests developed for VIS applications.

⟹ **NOTE:**

If your applications do a large amount of flash-hook transfers, you need to be sure that there are enough dial tone registers available. You will need to ensure that switch engineering has equipped the switch to handle the additional load placed on it by the VIS.

Connections to attendant telephones are provided over telephone lines that may come from the local private branch exchange (PBX) or the local telephone company central office. The customer must arrange with the local provider of telephone service to install the correct number and type of lines required for system operation.

Connecting the Tip/Ring Lines

The IVP6 and VRS6 Tip/Ring (T/R) Distribution Panel allows a maximum of 48 channels (eight T/R cards) to be connected to the local customer-premise equipment or the building connecting block provided by the central office via two 25-pair, high density cables. This distribution panel is attached to the top of the unit and comes factory-assembled on initial orders. The T/R distribution panel is documented in Chapter 10, "Adding Additional Hardware." Figures 1-1 illustrates typical T/R line connections. Figures 1-2 and 1-3 respectively show an exploded view of the USOC RJ25C (for IVP6/VRS6) and USOC RJ14C (for IVP4).

NOTE:
Please be aware that Figures 1-1 and 1-4 are *examples*. The slot numbers for T/R and T1 placement in your system may be different from those shown in the figures. Your card placement will be determined by the output from the configuration software program.
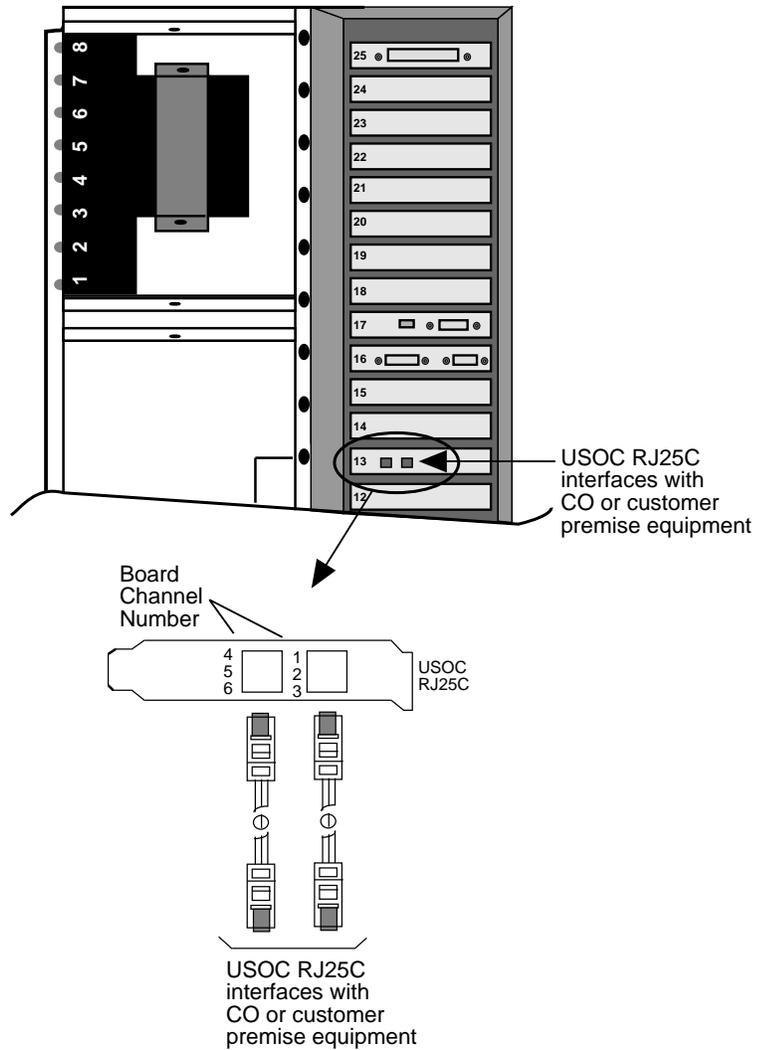
Figure 1-1. Typical Line Connection from T/R Board

USOC: RJ25C
used with IVP6 and VRS6

T1
R1
T2
R2
T3
R3

To
Network

To Other
Equipment

Miniature
6-position
jack

| 1 | 2 | 3 | 4 | 5 | 6 |

Miniature
6-position
plug

T3 T2 R1 T1 R2 R3

To Registered
Terminal Equipment
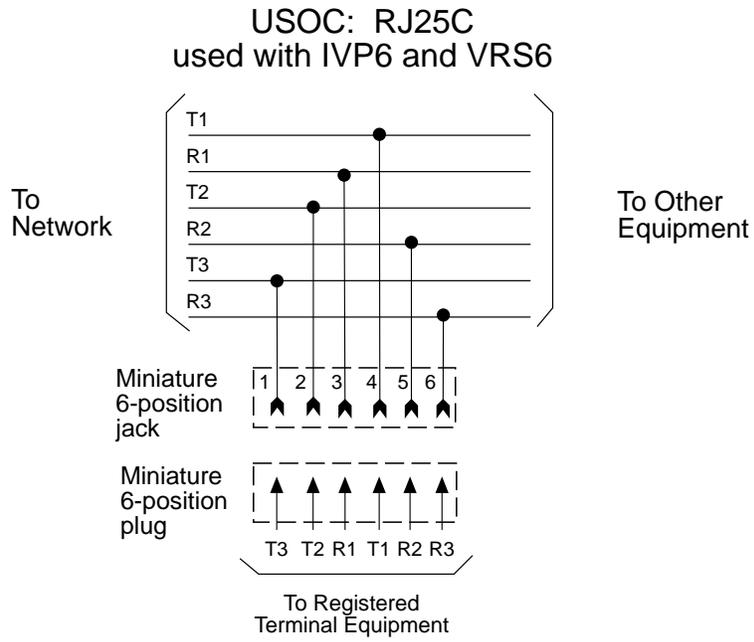
USOC: RJ25C – Surface or flush mounted jack

Mechanical Arrangement: Miniature 6-position jack

Figure 1-2. Wiring Diagram for AYC5/AYC5B T/R Cards

USOC: RJ14C
used with IVP4

To
Network

T1
R1
T2
R2

To Other
Equipment

Miniature
6-position
jack

| 1 | 2 | 3 | 4 | 5 | 6 |

Miniature
6-position
plug

T2 R1 T1 R2

To Registered
Terminal Equipment
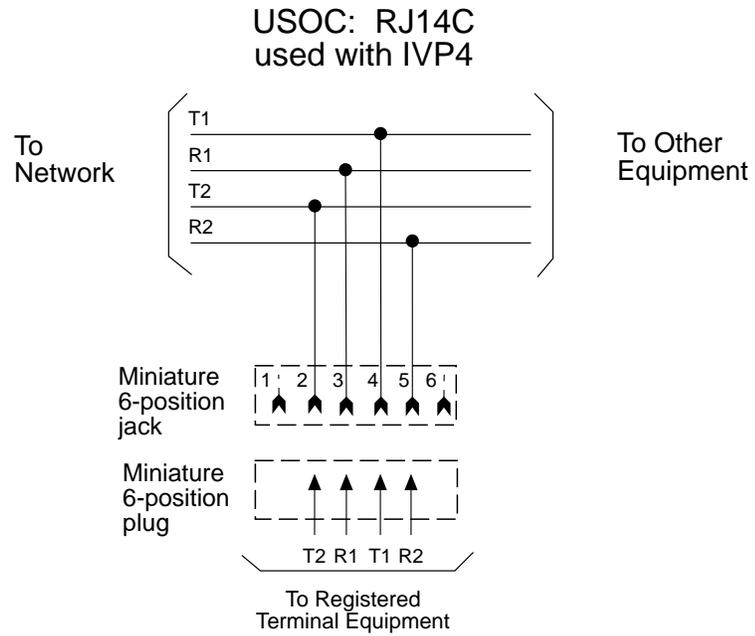
USOC: RJ14C – Surface or flush mounted jack

Mechanical Arrangement: Miniature 6-position jack

Figure 1-3. Wiring Diagram for AYC6/AYC6B T/R Cards

Table 1-3. Pinout Connections for T/R Cards

Signal	15 Pin D Sub Connector Pin Number
T	3
R	11
T1	1
R1	9
Cable Shield Ground	To CSU or DS-1 & Conn. Hood

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Central Office Trunks Connections — T1
Circuit Cards

The CONVERSANT Voice Information System T1 circuits are connected to the standard T1 carrier through a Channel Service Unit (CSU), ACD, PBX, or directly to a DS1 terminal block. All of this equipment is customer-provided premise equipment.

When establishing T1 card connections, determine whether a Channel Service Unit (CSU) may or may not be required. A CSU is required if *one* of the following situations applies to your system setup:

- The VIS is more than 650 feet from the signal source. The signal source may be a DSX or the last T1 repeater. Here, the CSU regenerates the received signal and properly attenuates the transmitted signal to prevent crosstalk.

- The T1 trunk from outside the building is being terminated by the VIS. Here, the CSU provides the primary lightning and surge protection as required by FCC Part 68.

- The T1 loop is not dry (that is, is powered by 130 or 48 VDC).

- Remote loopback and/or extended super frame maintenance features are desired. Here, the CSU recognizes the in-band bit patterns that signal it to loopback the incoming signal or to perform other maintenance functions.

The VIS T1 circuit card connector is a 15-pin, D-subminiature male connector equipped with slide locks. See Figure 1-4.

Order an extension cable if the CSU is 75 feet away from the MAP/100C. The cable can be daisy-chained up to 655 feet.

The CONVERSANT T1 cable (ED5P208-30-G1) plugs into the CONVERSANT T1 card via a connector through the faceplate and terminates via a 15 pin D-subminiature connector to a CSU of either Western Electric or Verilink 551V type.

If your installation is connected directly to the telephone network, then the cable end with the plug and slide latch should be cut off and the wires stripped and connected using the following information.

⇒ **NOTE:**
Transmitter connections are identified as T or R and receiver connections are identified as T1 or R1. Reverse connections to any equipment. This means an equipment's references "T" and "R" must connect to another equipment's references "T1" and "R1" respectively.

Table 1-4. T1 Circuit Card Cable Wire Connections

Wire Color	Connection Type	Signals to/ from CONVERSANT	Connects To
Orange	T1	To	CSU or Network T
White-Orange	R1	To	CSU or Network R
Green	T	From	CSU or Network T
White-Green	R	From	CSU or Network R1
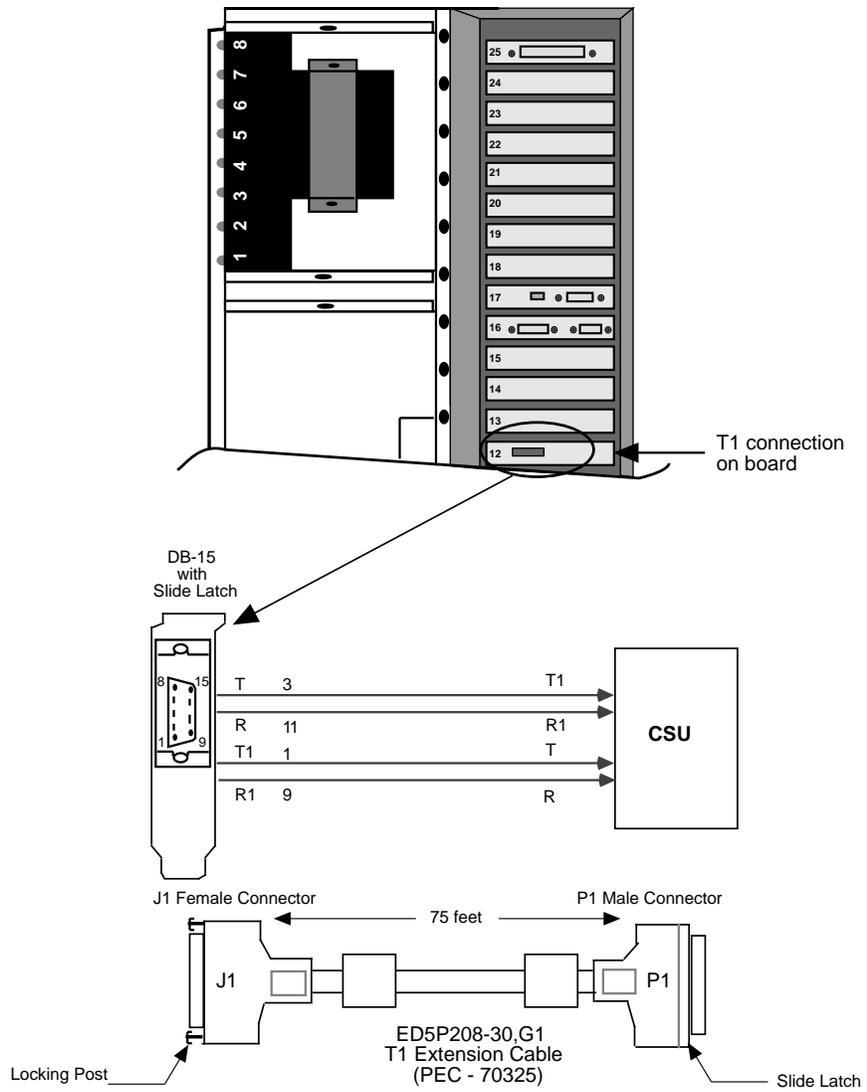
Figure 1-4. Typical Trunk Connection from T1 Card

Host Channels — Asynchronous/Synchronous

Any required host computer logical units should be operational before the MAP/100C equipment is installed in order to perform the functional tests that are developed for VIS scripts. This includes any data facilities that may be required.

Connecting the System to an Asynchronous Host

The MAP/100C can be connected to a terminal, modem, or host computer via an asynchronous link in one of several methods. These include:

- An asynchronous port, COM1, on the CPU card

- An asynchronous port, COM2, on the rear, upper left of the MAP/100C

- Additional asynchronous ports on an optional eight-port card

COM1 and COM2

Two asynchronous ports, COM1 and COM2, are provided in every MAP/100C. A 9-pin D-subminiature male connector, located on the faceplate of the CPU card (slot #16), is provided for COM1. A similar connector is provided on the rear, upper left corner of the unit for COM2.

These ports support asynchronous host connections running at 300-9600 BAUD. The pinouts for both of these connectors are illustrated in the following table.

Table 1-5. COM1 and COM2 Pinouts

Pin	Signal Name	Signal Flow
1	Data Carrier Detect (DCD)	Input
2	Receive Data (RX)	Input
3	Transmit Data (TX)	Output
4	Data Terminal Ready (DTR)	Output
5	Signal Ground (GND)	Bidirectional
6	Data Set Ready (DSR)	Output
7	Request to Send (RTS)	Output
8	Clear to Send (CTS)	Input
9	Ring Indicator (RI)	Input

Optional Eight-Port Card

If you are using an optional eight-port card, additional asynchronous ports are available. The T-adapter on the eight-port card has 8 RJ-45 type modular jacks; each jack representing one of the eight ports. The figure below shows the RJ-45 type modular jack connector pin identification.
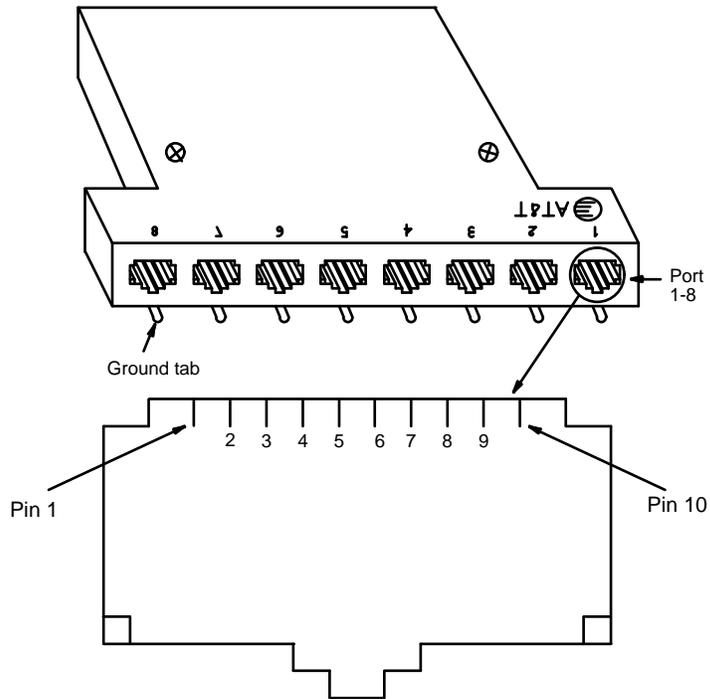
Figure 1-5. RJ-45 Type Modular Jack Connector Pin Identification

The table below shows the pin identification for the T-adapter.

Table 1-6. RJ-45 Type Modular Jack Pin Identification

Pin	Signal Name	Signal Flow
1	Reserved	—
2	Ring Indicator (RI)	Input
3	Data Carrier Detect(DCD)	Input
4	Data Terminal Ready	Output
5	Signal Ground	Bidirectional
6	Receive Data (RD)	Input
7	Transmit Data	Output
8	Clear to Send (CTS)	Input
9	Request to Send (RTS)	Output
10	No Connection	—

Connecting the System to a Synchronous Host

If you are using a synchronous I/O card in the unit, only one synchronous bisync port is available. This card supports up to 32 logical channels that connect to the host computer through a synchronous communication line.

The MAP/100C synchronous card supports either a 3270 bisynchronous line or SDLC protocol line. The synchronous connection to the host communication equipment will be made to a male D-subminiature, RS-232 connector.

Host Cable Specifications

The data links used between the MAP/100C and the host computer are via a shielded RS-232 cable. This cable extends from the synchronous serial card port on the rear of the unit and connects to host equipment.

All cables should be shielded. Data link cables that are provided with the MAP/100C are shielded cables to ensure compliance with the Federal Communications Commission's (FCC) rules and regulations. The cabling is available in increments of 25 feet. A 25-foot cable is packaged with this feature.

Also, note that limited distance modems should be used when data links exceed 100 feet in length.

The data link cable layout or house wiring is engineered on a per job basis. The exact arrangement is site-dependent. The customer order should specify the required number of data link cables. For a direct connection to a host, you need a null modem (modem eliminator).

System Grounding Connections

Customer premise provided outlets should be grounded in accordance with the local and National Electrical Codes (NEC).

To maintain electro-magnetic interference (EMI) protection, personal protection, and circuit noise immunity, each MAP/100C must be grounded to a solid, stable, single point ground.

⚠ CAUTION:
Use extreme care when making power and ground connections.

Regulatory Agency Guidelines

Follow the installation procedures in this document to ensure compliance with the current FCC rules regarding radio frequency devices (FCC Rules, Part 15) and FCC rules regarding connection of terminal equipment to the telephone network (FCC Rules, Part 68).

FCC/CSA Part agency compliance label(s) for the MAP/100C system card and individual network interface cards are located on the chassis rear surface or individual circuit card.

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FCC Guidelines

Follow guidelines listed in this section to connect to the public telephone network and to comply with local telephone company procedures.

Connection to the Public Telephone Network

Before making any connections to the public telephone network, give the local telephone company the following information:

- The telephone and circuit numbers of the lines to which the VIS will be connected.
- The FCC registration number of the MAP/100C which is located on the faceplate of each T/R circuit card and visible at the rear of the unit.
- The ringer equivalence number (REN) of the VIS which is 0.5B.

Type of Telephone Lines Needed

Use the VIS on standard-device telephone line circuits and standard T1 trunks.

Do *not* connect to telephone company-provided COIN (central office implemented systems) service.

Note that connecting to party line service is subject to state tariffs.

If you have any questions about the telephone line(s), such as how many pieces of equipment can be connected to a line, the telephone company provides this information on request.

Telephone Company Changes

Occasionally the local telephone company changes its equipment, operations, or procedures. These changes can affect customer service or the operation of the customer's equipment. If this is the case, the telephone company provides notice, in writing, to allow the customer to make any changes necessary to maintain uninterrupted service.

Telephone Service & Repair Problems

⚠ **WARNING:**
If any of the telephone equipment is not operating properly, remove it immediately from the telephone lines. Malfunctioning equipment can harm the telephone network.

If the telephone company notes a problem with customer equipment, the telephone company:

- Notifies the customer prior to disconnecting service, if practicable
- Discontinues service to the customer temporarily

If advance notice is not feasible, the telephone company:

- Discontinues service to the customer temporarily
- Notifies the customer as soon as possible
- Gives the customer an opportunity to correct the problem
- Informs the customer of the right to file a complaint with the FCC

In the unlikely event that repairs are needed for the VIS MAP/100C, repairs should be performed by an authorized representative. If you are a field service representative and cannot solve a problem, contact the Technical Support Center (TSC) at 1-800-344-9670 for assistance.

When to Notify the Telephone Company

⚠ **WARNING:**
Notify the telephone company immediately if the VIS MAP/100C is to be permanently or temporarily disconnected from its present line circuits. If you are disconnecting power to the MAP/100C, you are disconnecting from present line circuits.

If you continually disconnect without giving notice, the telephone company can disconnect service permanently.

Getting Started

2

What's in This Chapter

This chapter describes how to unpack the MAP/100C, the importance of saving packing materials, how to use factory information regarding your system, how to install the cable tie-down bracket, and where to locate key components of the MAP/100C.

Heeding Warnings

Warnings and cautions appear throughout this book as needed when describing procedures. These admonishments let you know when the actions you are about to perform can harm you or the equipment unless you follow procedure steps as listed.

The warnings that occur within this book are listed here as well for your information.

⚠ **WARNING:**

Notify the telephone company immediately if the MAP/100C is to be permanently or temporarily disconnected from its present line/trunk circuits. (Digital circuits ONLY)

If you are turning off the power to the MAP/100C you are disconnecting from the line circuits.

⚠ **WARNING:**
If you disconnect the MAP/100C from the telephone network on a continuing basis without letting the telephone company know, they can disconnect your service. (Digital circuits ONLY)

⚠ **WARNING:**
If any of the telephone equipment is not operating properly, remove it immediately from the telephone lines. Malfunctioning equipment can harm the telephone network.

⚠ **WARNING:**
Perform a "soft" shutdown of the VIS operating system, if on-line, before shutting off power to the system. See CONVERSANT Voice Information System Version 3.1 Operations, 585-350-701, for information.

⚠ **WARNING:**
Shut main power switch off, only after executing a "soft" system shutdown, and disconnect power cord before removing the dress covers or opening the MAP/100C to work within it.

⚠ **WARNING:**
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap on your bare skin and connect to a ground.

⚠ **WARNING:**
The manufacturer(s) does not accept liability for a damaged unit if the unit is not returned in the original packing materials and carton. The carton has been designed to ensure product warranty and to prevent damage.

Avoiding Electrostactic Discharge
Damage to Circuit Cards

The human body can collect thousands of volts of destructive static electricity from ordinary activities, for example, walking on a rug, handling synthetic materials, or wearing synthetic clothes. When this static electricity discharges onto another surface at a different voltage potential, it is called *electrostatic discharge* or *ESD*.

A person cannot feel ESD below approximately 3500 volts. However, only 30 volts is needed to damage ESD-sensitive electronic components.

Circuit cards and packaging materials that contain ESD-sensitive components are often marked with a yellow and black warning symbol. Proper grounding techniques prevent the discharge of damaging static electricity from your body into these ESD-sensitive components during handling.

There is no quick method of testing for ESD damage. Components that are damaged may simply fail after a brief period of normal operation.

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

- Handle ESD-sensitive circuit cards only after you have attached a wrist strap to the bare skin of your wrist. Attach the other end of the wrist strap to a ground that terminates at the system ground, such as any unpainted metallic chassis surface.

- Handle a circuit card by the faceplate or side edges only. Do *not* touch components, leads, or connector areas (gold finger pins).

- Hold a short circuit card by the faceplate only. See Figure 2-1.
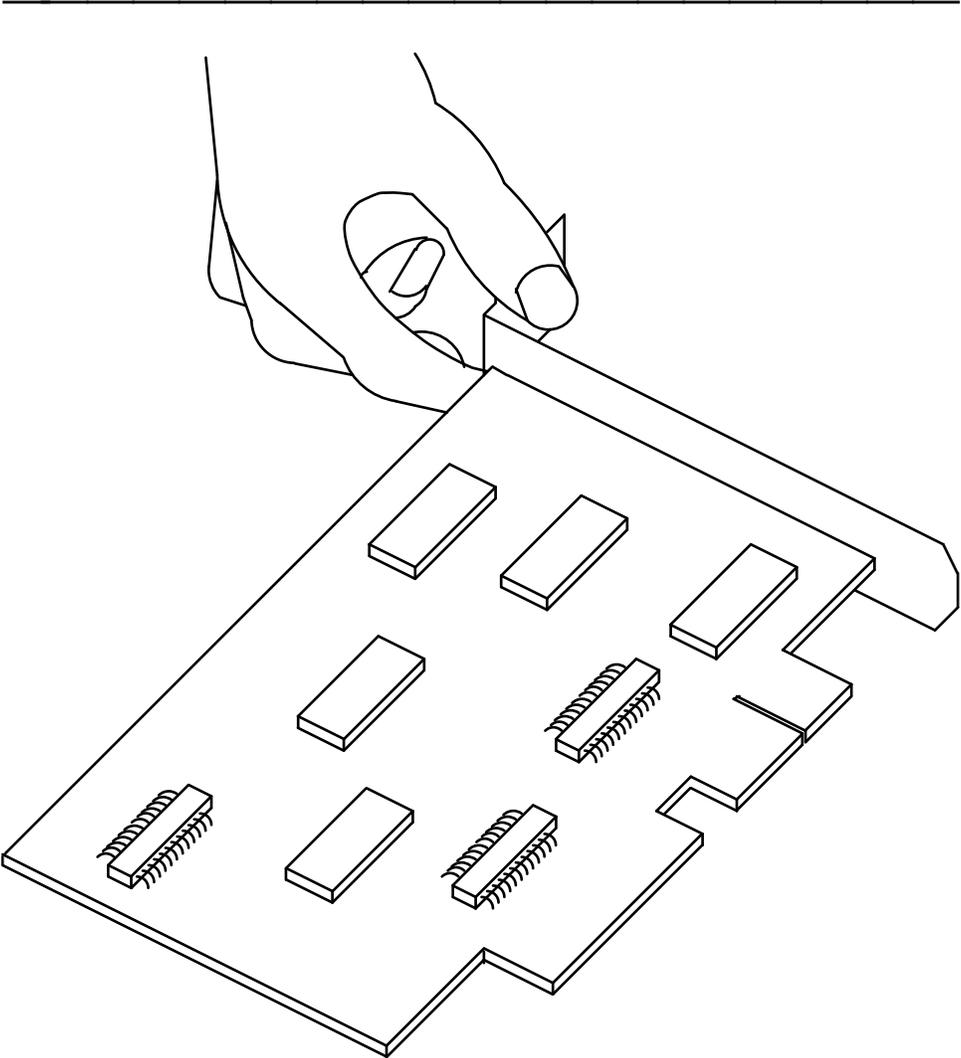
Figure 2-1. How to Hold a Short Circuit Card

■ Hold a larger circuit card as shown in Figure 2-2.
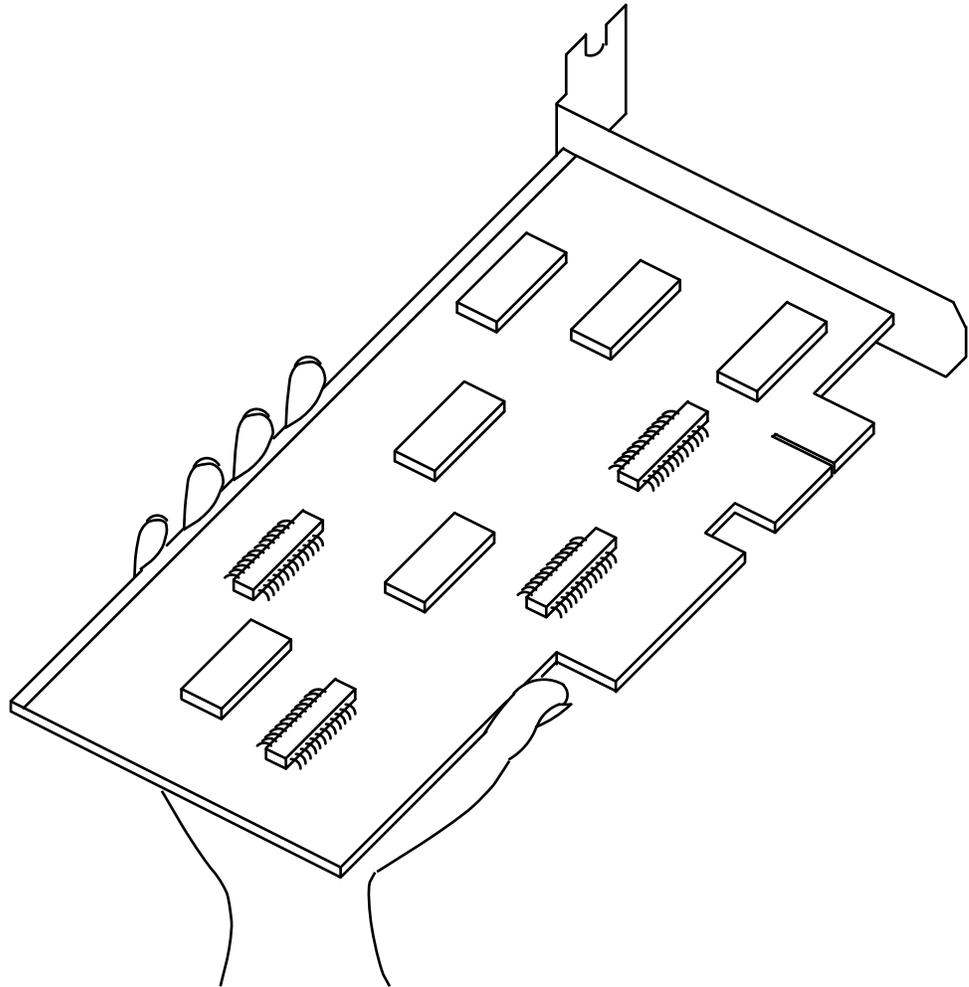
Figure 2-2. How to Hold a Large Circuit Card

⚠ **CAUTION:**
Ensure palm is not in contact with the board wiring side.

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

■ Do *not* hand circuit cards to another person unless that person is grounded at the same potential level.

■ Hold devices such as a hard disk, floppy drive, or streaming tape as you would a large circuit card.

The ESD sensitive area of these components is located on the bottom surface. Hold these drives on the areas recommended below.
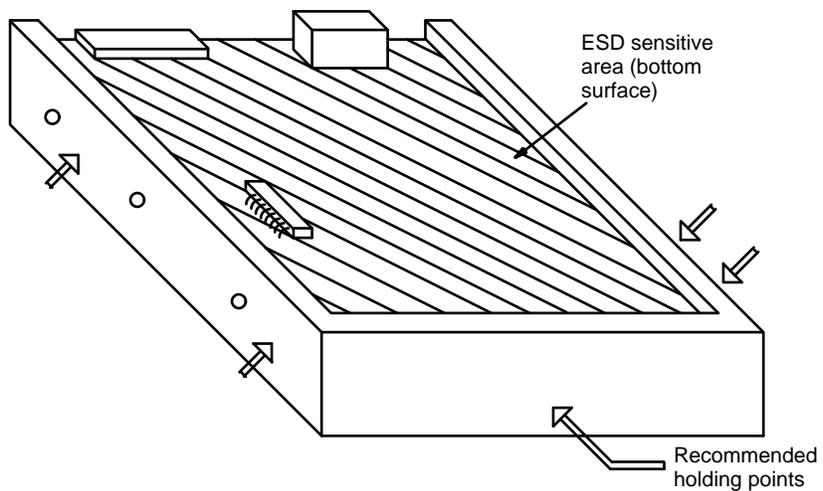
Figure 2-3. Electronic Component ESD Sensitive Area

Ordering Spares

Refer to *CONVERSANT Voice Information System Version 3.1 Planning, 585-350-601*, for information on ordering spares and maintaining spares on premises.

Gathering Tools and Test Equipment

To assemble and disassemble the MAP/100C hardware, you need the following tools:

- Medium width flat-blade screwdriver

- No. 2 Phillips screwdriver

- Small pair of needle-nose pliers

- Small pair of wire cutters

- A sharp, pointed instrument such as a pen

  Do *not* use a lead pencil point. The graphite can damage a circuit card, causing problems such as electrical shorts.

- Antistatic grounded wrist strap

- Antistatic grounded work mat

Standard electronic test equipment such as a digital multi-meter is recommended to be available.

Saving Packing Materials

Save the shipping carton and all packing materials to use in the event the unit needs to be returned to the manufacturer. Packing materials include anti-static bags and bubble wrap as well as cardboard and foam inlays. This also applies to shipping cartons for the keyboard and monitor. If you have ordered multiple MAP/100Cs, saving one carton and packing materials should be sufficient.

⚠ CAUTION:

The manufacturer does not accept liability for a damaged unit if the unit is not returned in the original packing materials and carton. The carton has been designed to ensure product warranty and to prevent damage.

If you do need to return a MAP/100C, complete the yellow GBCS return repair tag and attach it to the unit. The factory information packet included in the MAP/100C carton contains the yellow return repair tag.

Unpacking the System

The MAP/100C's carton is designed to facilitate unpacking. Because of the size and weight of the MAP/100C, the keyboard and monitor are shipped separately.

Follow the steps listed below to unpack the system at the job site.

1. At the job site, cut the bands holding the carton to the wooden pallet and remove the top of the box.

2. Remove the accessory boxes and top foam packing materials.

3. Remove the large cardboard "sleeve" that surrounds the unit. The unit should now be fully exposed, resting on the bottom foam packing material.

4. Remove the plastic bag by "peeling" it around the sides of the unit as far as possible.

5. Using an appropriate lifting system (unit will weigh approximately 140 lbs.), lift the unit from the bottom of the carton. Save all packing materials in case the system must be repacked and transported to a different location.

Installing the MAP/100C in a 5ESS Switching Equipment Single Bay Frame

Use the following procedure to install the MAP/100C in a 5ESS Switching Equipment Single Bay Frame with mounting kit ED5D184:

1. Remove the unit from the box. See the procedure "Unpacking the System" earlier in this section.

   ⇒ **NOTE:**
   If only one unit is to be installed in a frame, it is recommended that you install the single unit central to the frame for easier accessibility and better frame stability.

2. Locate the left and right mounting ear brackets (A10039 and A10038) and attach them to the side plate of the unit as shown in Figure 2-4. Secure them with four #10 screws for each bracket.

3. Install C-channel brackets on the 5ESS Switch frame and on the MAP/100C unit. There are two sets that accompany each unit. The slotted C-channel must be installed onto the frame. See Figure 2-5. These guides aid you in installing in the unit without having to hold it up to secure it to the cabinet.

4. Position the unit by sliding the C-channel brackets located on the each side of the unit inside the channel brackets located on each side of the frame. Use the four eye bolts located on the top of the unit to lift the unit with a mechanical lifting device and slide it onto the C-channel brackets in the cabinet so that the mounting ear brackets are against the cabinet uprights.

5. Secure the mounting ear brackets to the cabinet using 3 #12-24 screws for each bracket.

6. Attach the two cabinet frame dress filler panels (A10070 and A10071) to the frame beneath the mounting brackets (Figure 2-5).

Cabinet mounting bracket

Filler panel
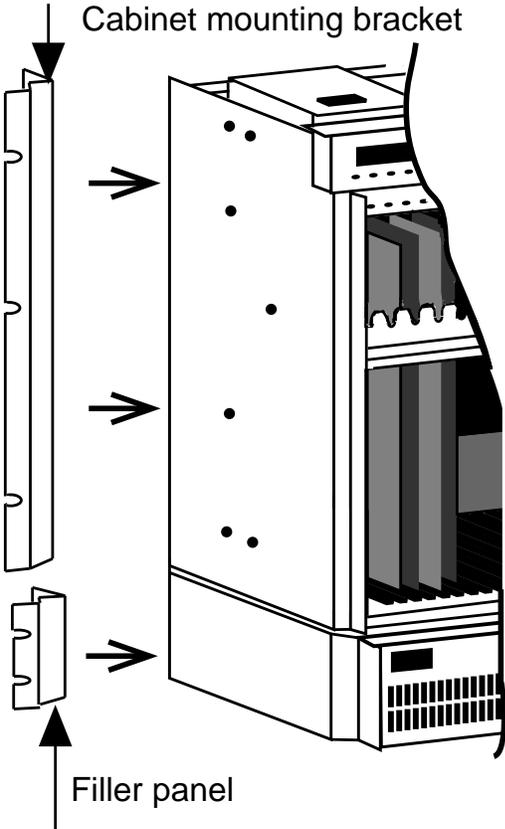
Figure 2-4. Installing Mounting Brackets onto MAP/100C
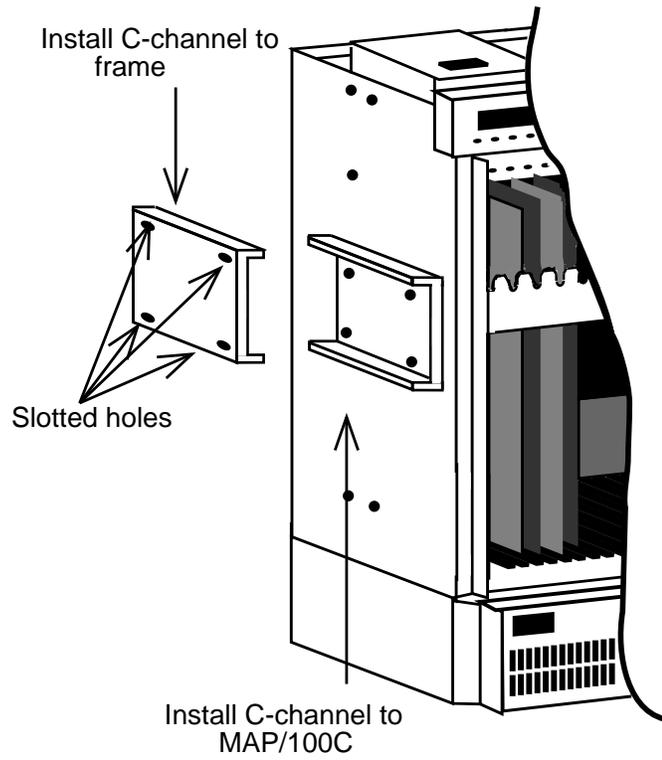
Figure 2-5. Installing C-Channel Brackets onto Frame and MAP/100C

7. Remove and discard the four eye bolts when the unit is secured to the frame.

8. Release the two latches on the front top corners of the unit and slide the unit out the front of the frame to the full extent of the slides. The unit should lock in place.

9. Install the cable restraint bar on the rear of the unit as shown in Figure 2-6. This bar is to be installed in the bottom-most mounting holes on the unit and is secured with 2 #10 screws.

Figure 2-6. Cable Restraint Installation

10. From the front of the unit, release the slide latching mechanism on the sides of the two top slides while simultaneously pushing in on the unit. Secure the unit into its mounting position with the two latches at the front top corners of the unit.

The Figure 2-7 displays the appearance of multiple MAP/100C units in a 5ESS cabinet. Please note the 5ESS can hold one or two units, depending on the type of application being used.
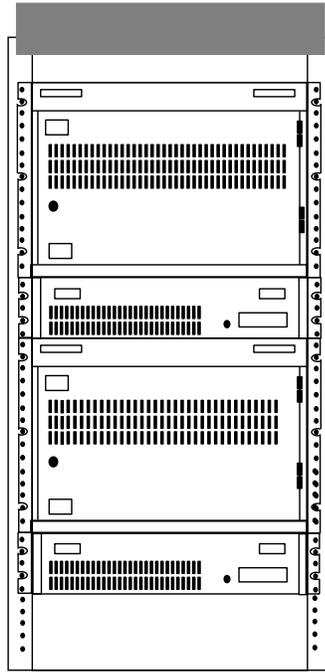
Figure 2-7. MAP/100C Units in a 5ESS Cabinet Front View

Installing the MAP/100C in a
Common ESS Switching Equipment
Single Bay Frame

Use the following procedure to install the MAP/100C in a Common ESS Switching Equipment Single Bay Frame with mounting kit ED5A001:

1. Remove the unit from the box. See the procedure "Unpacking the System" earlier in this section.

   ⇒ **NOTE:**
   If only one unit is to be installed in a frame, it is recommended that you install the single unit central to the frame for easier accessibility and better frame stability.

2. Locate the two support brackets (A10040-B and A10041-B) and attach them to the frame as shown in Figure 2-5 beginning with the lowest frame location. Secure them with 2 #12 screws for each bracket.

3. Locate the left and right mounting ear brackets (A10036-A and A10037-A) and attach them to the side plate of the unit as shown in Figure 2-4. Secure them with four #10 screws for each bracket.

4. Position the unit so that lower edge of the mounting ear brackets (A10036-A and A10037-A) rest on top of the support brackets. Use the four eye bolts located on the top of the unit to lift the unit with a mechanical lifting device and fasten them to the frame using 3 #12-24 screws on each side of the unit.

5. Remove and discard the four eye bolts when the unit is secured to the frame.

6. Release the two latches on the front top corners of the unit and slide the unit out the front of the frame to the full extent of the slides.   The unit should lock in place.

7. Install the cable restraint bar on the rear of the unit as shown in Figure 2-6. This bar is to be installed in the bottom-most mounting holes on the unit and is secured with 2 #10 screws.
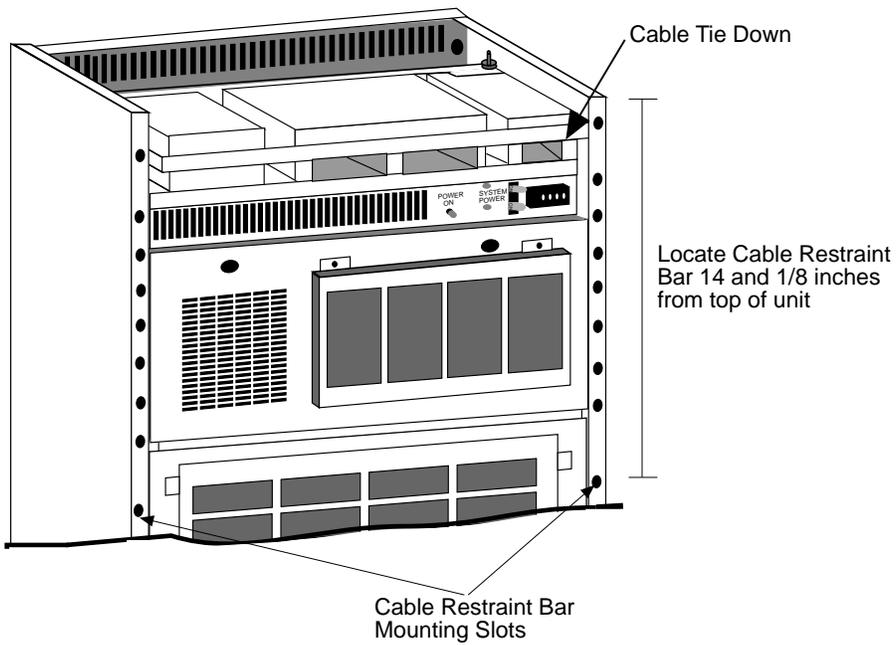
8. From the front of the unit, release the slide latching mechanism on the sides of the two top slides while simultaneously pushing in on the unit. Secure the unit into its mounting position with the two latches at the front top corners of the unit.
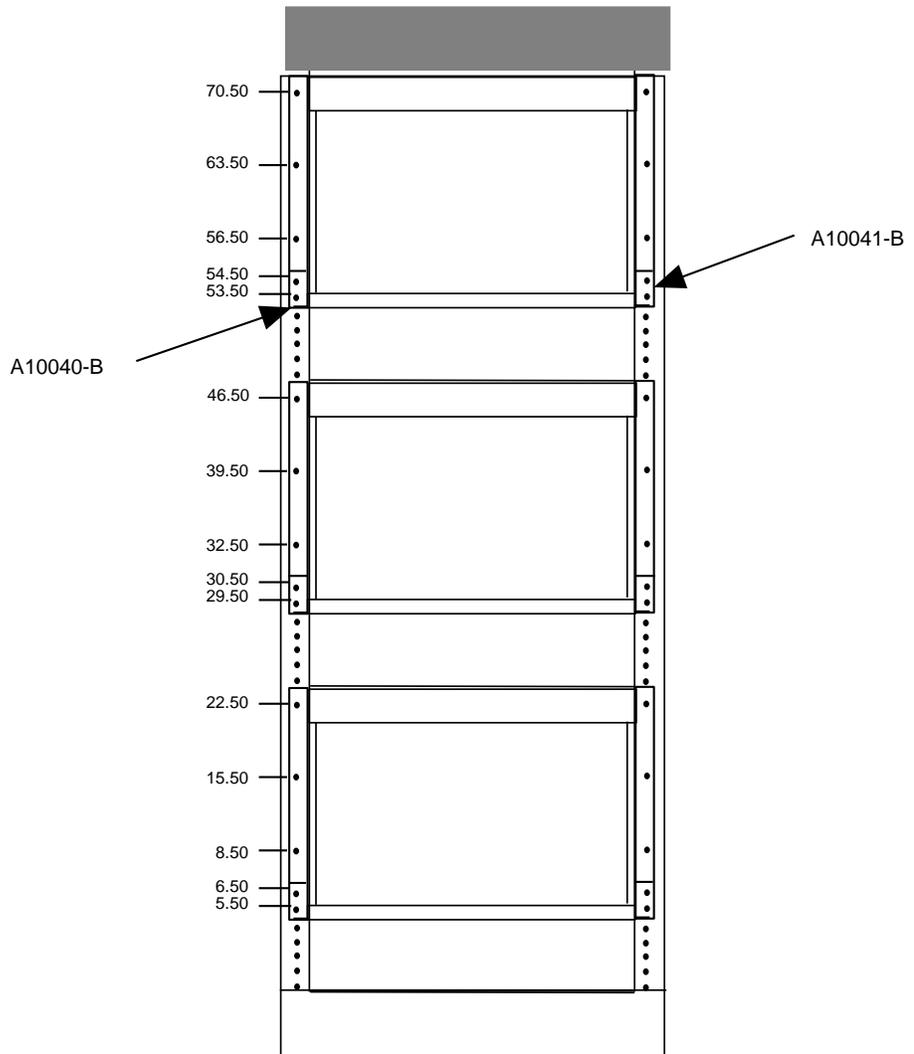
Figure 2-8. Mounting Locations on the Common ESS Frame

Figure 2-9 displays the appearance of multiple MAP/100C units in a Common ESS frame. Please note the Common ESS cabinet can hold one, two, or three units, depending on the type of application being used.
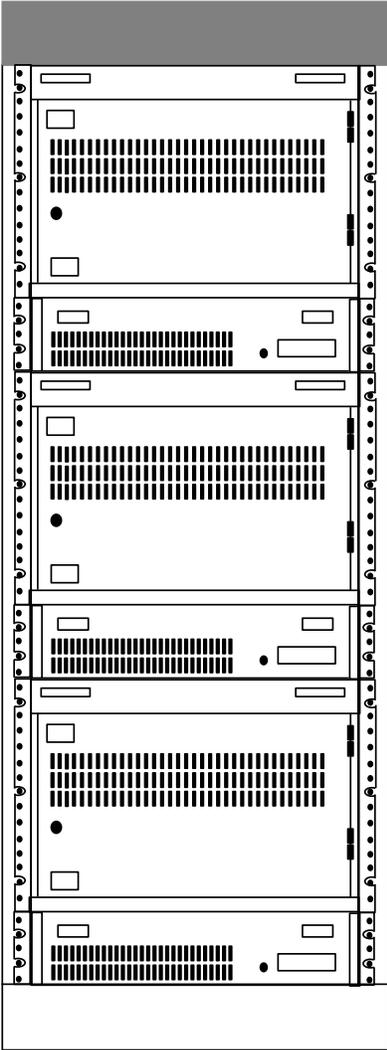
Figure 2-9. MAP/100C Units in a Common ESS Open Frame Front View

Installing the MAP/100C in a Commercial 24-Inch Panel Rack

Use the following procedure to install the MAP/100C in a commercial 24-inch panel rack:

1. Remove the unit from the box. See the procedure "Unpacking the System" earlier in this section.

    ⇒ **NOTE:**
    If only one unit is to be installed in a frame, it is recommended that you install the single unit central to the frame for easier accessibility and better frame stability.

2. Locate the left and right support brackets (A20096 and A20097) and attach them to the rack using the hardware recommended by the rack manufacturer. These support brackets are adjustable in length to accommodate 24, 30, and 36-inch depths.

3. Position the unit in place so that the main side plates of the unit rest on top of the support brackets mounted on the rack. Use the four eye bolts located on the top of the unit to lift the unit with a mechanical lifting device into the enclosure.

4. Slide the unit completely into the enclosure so that the front mounting ears rest against the vertical mounting uprights inside the enclosure. Fasten the mounting to the enclosure using the hardware recommended by the enclosure manufacturer.

5. Locate the two cabinet frame dress filler plates and fasten to the enclosure uprights using the hardware recommended by the enclosure manufacturer.

6. Remove and discard the four eye bolts when the unit is secured to the frame.

7. Release the two latches on the front top corners of the unit and slide the unit out the front of the frame to the full extent of the slides. The unit should lock in place.

8. Install the cable restraint bar on the rear of the unit as shown in Figure 2-6. This bar is to be installed in the bottom-most mounting holes on the unit and is secured with 2 #10 screws.

9. From the front of the unit, release the slide latching mechanism on the sides of the two top slides while simultaneously pushing in on the unit. Secure the unit into its mounting position with the two latches at the front top corners of the unit.

Factory Information Regarding Your System

The manufacturer ships MAP/100Cs from the factory as systems that have already been assembled, loaded, and tested (ALT) according to customer specifications or the unit is shipped only with the generic features and assembly must be completed by the customer.

A plastic packet in the MAP/100C carton contains factory information regarding your system. Keep this information. The packet contains:

- Information explaining which components have been assembled and loaded in your system

  This information is a printout from a configuration software program which has been run on your MAP/100C.

- A floppy disk containing the software configuration program and configuration data if you ordered an ALT system

  Use this floppy disk to configure your system if the system has not already been factory assembled or if you wish to later add to the system.

- A comment sheet to return to the factory with your input regarding the system

- A yellow GBCS return repair tag to attach to a MAP/100C if it needs to be returned to the manufacturer

An example of a factory information sheet appears on the following page. The information sheet is a printout from the software configuration program which was run on your system prior to shipping.

```
         Fri Mar 19 13:37:04  MDT 1993


         ATT ORD NBR:
         CUSTOMER:
         DOSS:

         PLATFORM:  CONVERSANT MAP 100C Platform
         VERSION:   3.1

         PC SLOT ASSIGNMENT
         ------------------


         SLOT   DEVICE                      INTRPT   IOADDR   RAMADDR   DMAC

          25    SCSI Host Adapter Ctrlr Brd
          17    Video Display Ctrlr Brd
          16    CPU Brd
           8
           7
           6
           5
           4
           3
           2
           1



         OTHER EQUIPMENT
         ---------------

         1: 1.2 GB SCSI Disk Drive
         2: 1.44MB 3.5 inch Internal Floppy Drive
         3: 525 MB Internal Tape Drive
         4: TDM BUS CABLE

         NOTES
         -----
         Additional information regarding your system is included here.
```

Locating Key Components on the MAP/100C

Now that you can view the MAP/100C, use the following sections and diagrams to locate key components on the unit. For additional information describing the MAP/100C hardware, see *CONVERSANT Voice Information System System Description, 585-350-201*.

The Front of the Chassis

See Table 2-1 for descriptions and functions of components on the front of the chassis. Figure 2-10 shows the front view of the MAP/100C.

Table 2-1. Chassis Front Components

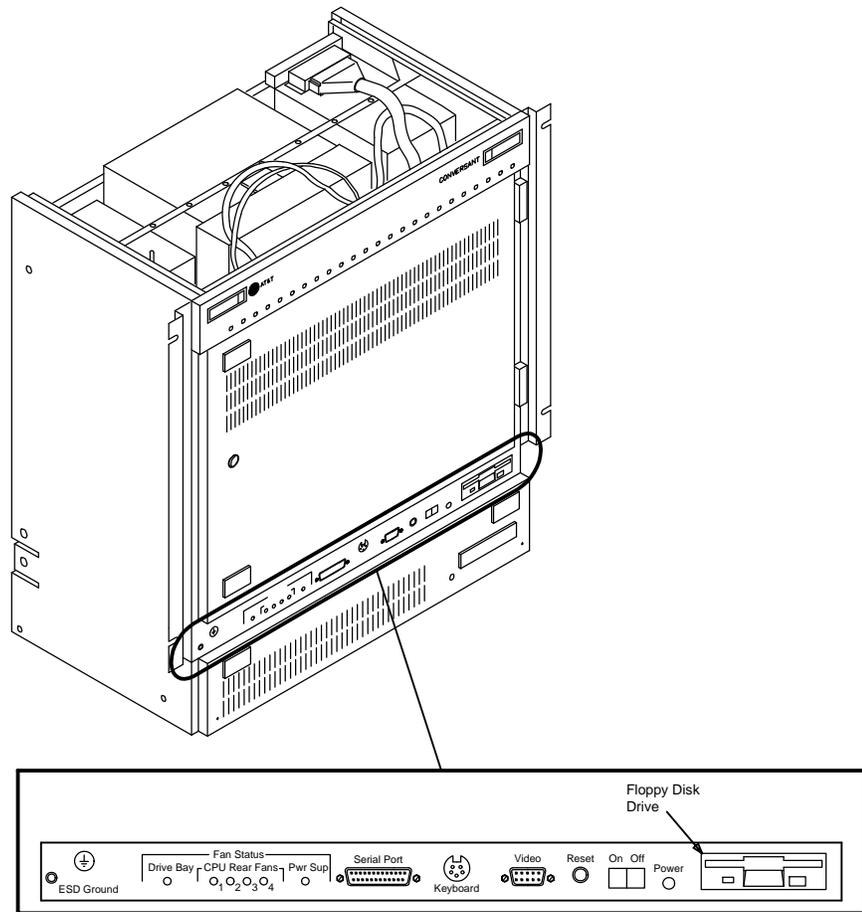| Component	Location	Description	Function
Front door	Upper middle section	Hinged on right, has latch fasteners	Covers peripheral bay and card backplane
Keyboard receptacle	Lower center below front door	5-Pin circular DIN female	Connects keyboard to MAP/100C
Video receptacle	Lower center below front door	15-Pin high density D-subminiature female	Connects video to MAP/100C
Power switch	Lower right side, below front door	Rocker switch	Turns MAP/100C on and off
Reset button	Lower right side, below front door	Recessed button	Depress button to reset MAP/100C
Asynchronous port COM1	Lower center below front door	25-Pin male D-subminiature	Communicates with host computer
Power indicator	Far lower right below front door	LED	Lights green when power is on
Fan status indicator	Lower left below front door	LED	Lights green when fan is working normally

Figure 2-10. Front View of the MAP/100C

Locations of Peripheral Drive Devices

Locate the various drives in the peripheral bay behind the right front door.

Table 2-2. Peripheral Bay Drives

Drive	Description	Function
Cartridge tape	SCSI 525 Mbyte	Backup & restore load system
Floppy	3.5 Inch 1.44MB high density	System config diagnostic testing
Hard disk (optional)	1.2 Gbyte SCSI	Disk mirroring
Hard disk	1.2 Gbyte SCSI	Stores operating system application software speech data

⇒ **NOTE:**

If you are reusing 600 Mbyte ESDI drives from a older MAP/100C, the table above will have following entries:

Drive	Description	Function
Hard disk (optional)	600 Mbyte ESDI	Additional storage
Hard disk	600 Mbyte ESDI	Stores operating system application software speech data

Chassis Cooling System

Seven cooling fans provide forced air cooling for the MAP/100C. Two are located in the peripheral drive bay, and four are located in the rear. The seventh fan is located inside the power supply.

The fans maintain air flow in the unit to prevent components from overheating. Overheating can cause a component to malfunction. Maintain clearance around the unit so that air can circulate.

The Back of the Chassis

Figure 2-11 shows the back view of the MAP/100C. Do not use the monitor and keyboard receptacles for any other purpose than to connect the monitor and keyboard. Only one keyboard at a time can connect to the MAP/100C. See Table 2-3 for the location and description of components on the back of the MAP/100C chassis.

Table 2-3. Components on Rear of Chassis

| Component	Location	Description	Function
Fan panel access door	Lower center	Hinged on the bottom to swing downward	Covers the 4 rear cooling fans
Asynchronous port COM1	Lower center below fan panel door	25-Pin male D-subminiature	Provides access to the CPU card
Keyboard receptacle	Lower center below fan panel door to the right of COM2	5-Pin circular DIN female	Connects keyboard to MAP/100C
Video connector	Lower right below fan panel door to the right of keyboard	15-Pin female D-subminiature	Connects MAP/100C to monitor
Reset button	Lower right below fan panel door	Recessed button	Depress button to reset the MAP/100C
Circuit breakers	Upper right corner	Rocker switches	Turns on/off incoming power to MAP/100C
Power on	Upper right corner next to circuit breakers	LED	Lights green when power is on
AC power inlet receptacle	Upper right corner next to circuit breakers (AC units)	3-Prong 110/220V	Connects MAP/100C with 9-feet power cord to power supply
DC power terminal strip	Upper right corner next to circuit breakers (DC units)	4 Screw lugs	Connects MAP/100C to DC power via -48DC dedicated line
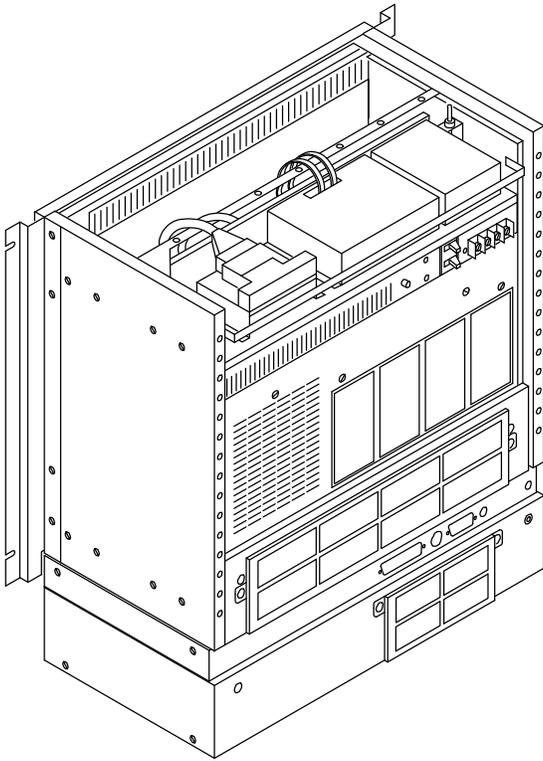
Figure 2-11. Back View of the MAP/100C — DC Unit

Connecting Peripherals and Powering Up

3

What's in This Chapter

This chapter describes how to:

- Connect the monitor
- Connect the keyboard
- Connect the printer
- Connect the modem
- Power up the system

Pinout Connections for the Monitor

A 15-pin, high density D-subminiature, female connector located on the video card (slot #17) is provided for connection to a VGA color monitor. Figure 3-1 details the pin number and corresponding functional description of this connector.

Video Connector Pinout

**15 Pin High Density
D Subminiature Connector**

Pin No.	Function
1	Red video
2	Green video
3	Blue video
4	Monitor ID bit 2 (not used)
5	Ground
6	Red return (ground)
7	Green return (ground)
8	Blue return (ground)
9	Key (no pin)
10	Sync return (ground)
11	Monitor ID bit 0 (not used)
12	Monitor ID bit 1 (not used)
13	Horizontal sync
14	Vertical sync
15	Not used

Figure 3-1. Pinout Connections for Monitor

The monitor is connected to the MAP/100C by a power cable and signal cable. The power cable has a male plug at one end and a female plug at the other end. One end of the signal cable has a video input connector and the other end is permanently attached to the monitor.

Use the following steps for all permanent monitor installations:

1. Plug the signal cable into the video connetor located on the front or rear user interface panel. Tighten the screws on the signal cable connector by hand or with a small screwdriver.

   ⇒ **NOTE:**
      You cannot use both the front and rear video connectors at the same time. You may only use one at a time.

2. Plug the power cable of the monitor into the 115 VAC outlet that you have provided.

Figure 3-2 shows the video (monitor) and keyboard connections provided on the front user interface panel, to the left of the floppy disk drive. The rear connections are provided directly beneath the fan panel access door (see Figure 3-3).

⇒ **NOTE:**

You may unplug the monitor at any time while the system is running. A system shutdown is NOT necessary.
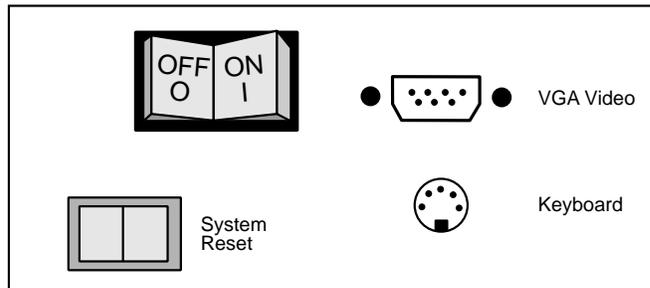

Figure 3-2. Video/Keyboard Connectors on Front User Interface Panel
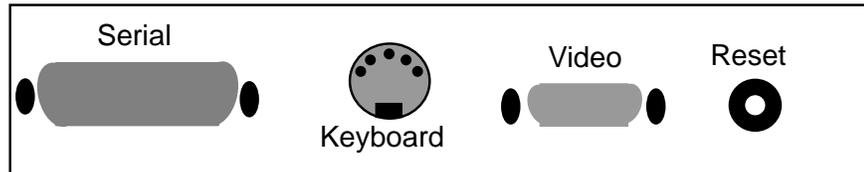

Figure 3-3. Video/Keyboard Connectors on Rear User Interface Panel

3-3

Connecting the Keyboard

A 5-pin female DIN connector receptacle is located on the front and rear user interface panels of the MAP/100C. This connector should be used for all permanent keyboard connections to the unit. Either of the connections may be used, but only one may used at any given time. The pinouts for both of these connector receptacles are the same and are shown in Figure 3-4. Figures 3-2 and 3-3 show the location of the keyboard connections on the front and rear interface panels.
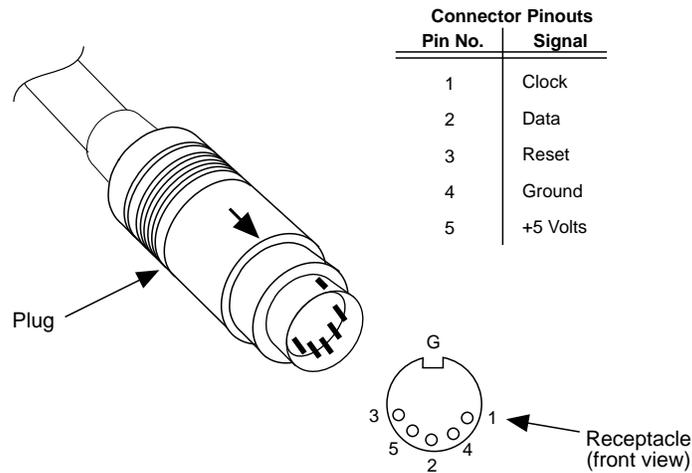

Connector Pinouts

Pin No.	Signal
1	Clock
2	Data
3	Reset
4	Ground
5	+5 Volts

Plug

Receptacle (front view)

Figure 3-4. Pinout Connections for Keyboard— Circular 5-pin DIN

Printer Connection

A 25-pin, D-subminiature, female connector receptacle is located on the CPU card (slot #16) provides a parallel printer interface. Figure 3-5 details the pin number and corresponding functional design of this connector.

Pin	Description
1	- Strobe
2	+ Data bit 0
3	+ Data bit 1
4	+ Data bit 2
5	+ Data bit 3
6	+ Data bit 4
7	+ Data bit 5
8	+ Data bit 6
9	+ Data bit 7
10	- Acknowledge
11	+ Busy
12	+ Paper feed
13	+ Select
14	- Auto feed
15	- Error
16	- Init. printer
17	- Select input
18-25	Ground

Figure 3-5. Pinout Connections for Printer

Use the instructions supplied in the manufacturer's manual, *Users' Guide 570 Printer* or the manual provided with your printer, to unpack and install your printer. The following installation overview supplements the information provided in the printer guide.

1. Unpack your printer according to the steps provided in the printer guide.

2. Install the ribbon cassette and paper as shown in your printer guide.

3. Ensure that the ON-OFF switch of the printer is OFF.

4. Set the options as described in your printer guide.

5. Connect the AC power cable to your printer.

   - If your printer does not have a self-test feature, go to Step 6 and continue.

   - If your printer has a self-test feature, plug the AC power cable into a grounded wall outlet and initiate the self test by following the instructions in the printer guide. When the self-test is completed, turn the printer off and disconnect the power cable from the wall outlet.

3-5

6. Insert the male end of your cable into the parallel port on the top of the CPU card located in Slot #16. Fasten the screws.

7. Insert the other end of your cable to the parallel port on your printer. Press the two wire retaining clips together until you hear them click into the lock slots on either side of the plug.

8. Connect the AC power cable of the MAP/100C-AC version to a grounded wall outlet. The MAP/100C-DC version maintains its central office connections continuously.

⇒ **NOTE:**
Printer software setup using the AT&T FACE utility is described in "Peripherals Setup" section of Appendix A, "FACE Features" of *CONVERSANT Voice Information System Version 3.1 Operations, 585-350-701*.

Connecting a Modem

A modem is required for connection to the unit to enable remote access. A modem is also required at the remote location for connection between the remote terminal and the network. The customer must provide the modems.

The types of modems recommended for remote access are: the AT&T 2224 CEO, AT&T 2400, AT&T 4000, AT&T 4024, Hayes Smartmodem 1200, Hayes Smartmodem 2400, and the Hayes Optima 2400. They provide the following capabilities:

- Data rates from 300 bps to 2400 bps

- Data format of synchronous, binary, asynchronous with 1 or 2 stop bits, 7 data bits with odd, even, or fixed parity or 8 bits with no parity

- Full duplex operation

- Bell 212A line standard for asynchronous communication

- A line interface with a 2-wire direct connection modular plug

- Controller interface (RS-232C) with full modem control

- Auto-answer capabilities

1. Switch or Jumper Settings:

   - AT&T 4000 — No internal switches or jumpers need to be set

   - Hayes Smartmodem 2400 and Hayes Optima 2400 — No internal switches need to be set; a jumper may need to be reset

     — Do *not* change the jumper setting if connecting to COM1 or COM2.

     — Reset the jumper, JP1, to the left position (Pins 1 & 2) if connecting to an asynchronous port, for example IPC-900 or Gemini 1000. Use the following procedure.

       a. Remove the front bezel cover on the modem.
          Lift side tabs and slide the plastic bezel forward.
          You will see JP1 on the left side of the printed wiring board.

       b. Move the jumper to the left to Pins 1 & 2. This places the modem in "dumb mode."

       c. Reinsert the bezel cover.

   - AT&T 4024 with switches on the front — Set switches to the default setting shown in the manual that accompanies the modem.

3-7

- AT&T 4024 with no switches on the front — Set the internal switches as shown below. Refer to the manual that accompanies the modem to see switch locations.

1	2	3	4	5	6
X	O	O	O	X	O

- Hayes Smartmodem 1200 — Set the internal switches as shown below. Refer to the manual that accompanies the modem to see switch locations

Switch	Setting	Meaning
1	UP	Supports DTR lead
2	UP	Word results code
3	DOWN	Results code not displayed
4	DOWN	No echo
5	DOWN	No auto-answer
6	UP	Reads carrier detect (DCD) lead
7	UP	Single telephone line installation
8	DOWN	Enables commands
9	UP	Compatible with Bell 103/212A modems
10	UP	Modem hangs up when DTR goes low

- UDS V.32 9600

  — Follow the manufacturer's manual to set the switch on the front panel to factory setting 3 for a synchronous connection.

2. Connect the modem to the MAP/100C's asynchronous interface port, or to one of the asynchronous card's ports (if you are using an installed asynchronous card).

   The cable used between the unit and the modem should be a straight shielded RS-232C cable with a female connector at one end and a male connector at the other end.

3. Plug a standard telephone cable into the modem and connect the modem to a previously installed telephone line.

4. Plug in the modem's power cord and turn on the modem.

   If you are using the AT&T 2224 CEO, the modem comes on automatically when the power cord is plugged in.

Procedures for setting up the software are provided in the operations guide for your application.

At a location distant from the unit, another telephone line, auto-dial modem, and another PC or terminal are required before you can dial up the remote access modem and attempt to log in.

Powering Up the System

Two power configurations are available on the MAP/100C. One power option is AC power supplying 110-230 VAC +/-5%, 60 Hz, Single Phase, 15 amps equipped with a NEMA 5-15p input connector. The other power option is DC power supplying -48 VDC power supplies with external screw terminators.

Connecting the System to Power Supply for AC Units

Use the following procedure to ensure that the system is connected properly to the power outlet and is receiving power.

1. Loosen the two screws that secure the power input terminal cover located on the upper right corner on the back of the MAP/100C.

2. Remove the power input terminal cover.

3. Plug one end of the MAP/100C's power cord into the input AC.

4. Plug the other end of the MAP/100C's power cord into the designated 115 volt 15 amp power outlet.

5. Plug in the monitor to a standard 115 volt 15 amp power outlet.

6. Place the monitor's power switch in the ON position.

7. After checking to see that the rear panel circuit breakers are on, turn ON the power switch on the front of the unit.

   The green light labeled "POWER" on the front user interface panel should light. Resident diagnostics should be initiated on the monitor.

8. If the light is not lit or diagnostics are not initiated, check the power connections.

Connecting the System to the Power Supply for DC Units

Use the following procedure to ensure that the system is connected properly to the power outlet and is receiving power.

1. Loosen the two screws that secure the power input terminal cover located on the top of the unit on the right hand side if you are at the back of the MAP/100C.

2. Remove the power input terminal cover.

3. Connect the CO -48 DC lines to the unit. The terminals are labeled for -48 DC and return (see Figure 3-6).

4. Replace the power input terminal cover.

5. Plug in the monitor to a standard 115 volt 15 amp power outlet.

6. Place the monitor's power switch in the ON position.

7. After checking to see that the rear panel circuit breakers are on, turn ON the power switch on the front of the unit.

   The green light labeled "POWER" on the front user interface panel should light. Resident diagnostics should be initiated on the monitor.

8. If the light is not lit or diagnostics are not initiated, check the power connections.

-48 VDC 25 AMP
INPUT VOLTAGE

A

-48V   RTN

B

-48V   RTN

Insert wire beneath the
screw table
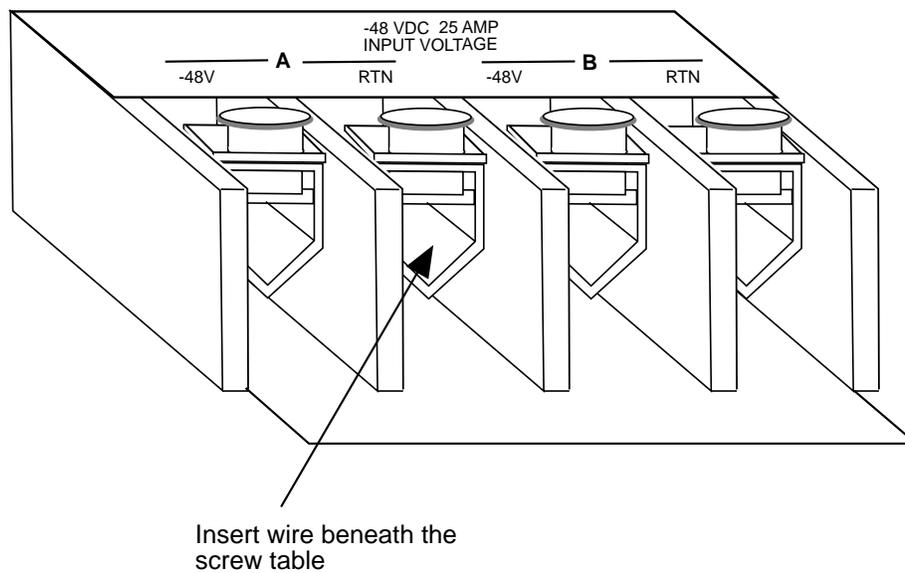
Figure 3-6. DC Power Feed Termination Block

Accessing the Setup Screen

You must run the CPU CMOS SETUP after each of the following:

- Powering-up for the first time

- Disabling/enabling COM ports

- Adding memory

- Changing Time/Date

- Adding a second disk

- Low level formating a hard disk

Use the procedure below to run the CPU CMOS SETUP:

1. Reset the MAP/100C by pressing ⌜CTRL⌝, ⌜ALT⌝, and ⌜DEL⌝ simultaneously or by pressing the RESET button.

2. Simultaneously press ⌜CTRL⌝, ⌜ALT⌝, and ⌜ESC⌝ immediately after the resident diagnostics messages give you the status of COM1 and COM2, but before the screen goes blank. Do this even if the SETUP prompting message does not appear. Follow the directions at the bottom of the screen to modify SETUP entries.

   ⇛ **NOTE:**
   When you enter the memory field, you cannot use the left and right arrow keys to choose available values. You must enter a specific "Type" number, that is, 47 for Type 47.

SETUP should be configured as follows for "normal" operation:

```
Hard Disk 1          TYPE 47
Hard Disk 2          NONE or TYPE 47 if equipped
Diskette 1           1.4M
Diskette 2           None
Video                EGA/VGA
Base Memory          640
Extended Memory            7168
Error Halt           On All Errors
Cache Controller       Enable
Shadow RAM           System & Video
On Board COM 1       Enable
On Board COM 2       Enable
Speed Select         High
```

3. Press the F10 (function key 10) to record the changes and F5 to confirm the update.

4. You have completed this procedure.

3-12

Running the Configuration Program

4

What's in This Chapter

This chapter supplies detailed information on how to use the configuration Program to determine the system's resource allocations.

A Configuration Program package is available with each hardware platform. The software program and all associated commands and files are contained on a single installable package disk. There is also a "CONFIGURATION DATA" disk that is provided to store your system's existing configuration.

The program is installed as a part of the overall generic software installation for the system. The menu-driven Configuration Program enables you to determine the allocation of resources for all devices to be included in your configuration. This program works with any supported hardware platform and can be used to upgrade an existing configuration or to create a new configuration.

The Configuration Program is used by factory installers to determine the initial hardware configuration and resource assignments. The program is also used to determine hardware configuration and resource assignments in an upgrade situation.

⚠ **CAUTION:**
The Configuration Program should be run only by persons familiar with the configurations and hardware platforms.

The Configuration Program

The Configuration Program helps you select the following resource allocation information for your software and hardware application.

- System platform

- System memory

- System devices and their attributes including:

    — Slot number

    — Interrupt level

    — DMA channel

    — IO Address

    — RAM Address

    — Serial port usage

    — Parallel port usage

⇒ NOTE:

This Configuration Program provides an automatic solution to the problem of allocating a finite set of consumable CPU resources to a given set of devices. It also includes some feature-related checking regarding maximum numbers of devices, prerequisites for devices, etc.

However, the program does not guarantee that every configuration that it resolves is a valid configuration. It simply guarantees that for the allocation of resources to the group of selected devices, no conflicts will exist for the parameters above mentioned.

Configuration Data Disk

A floppy disk labeled "CONFIGURATION DATA" accompanies the hardware platform when it is shipped from the factory, Either as a preassembled MAP/100C or a non-assembled MAP/100C. In either case, the "CONFIGURATION DATA" floppy contains the initial configuration information for your hardware at the time it was shipped. Whenever a change is made to the system's configuration, the initial/current configuration information from this floppy must be loaded into the system so changes can be made based on the current configuration.

By using the information stored on the floppy, you will have the correct configuration data on which to base your system changes. Once you have completed any changes, store the information on the "CONFIGURATION DATA" disk so you will have it the next time you make configuration changes. The commands used for retrieving and saving the configuration information from the "CONFIGURATION DATA" floppy are described later in this section.

Be sure to store the "CONFIGURATION DATA" floppy in a safe place.

Configuration Data Files

The following information details the data files associated with the Configuration Program.

All data files reside in the */vs/data* directory. Any reference to data files assume this prefix.

The data files associated with the Configuration Program are:

- *conf_data* — Represents successful configuration. This file is also stored on the "CONFIGURATION DATA" floppy, as well as in */vs/data*, after it has been read into the system.

- *fail_data* — Represents an unsuccessful configuration to be viewed for resource allocation conflicts.

- *conf_MMDDYY* — A copy of the current configuration file (*conf_data*) saved by the configure program before creating a new configuration. This allows for an historical reference by date of previous configurations. The argument in this file represents:

  — MM = Month

  — DD = Day

  — YY = Year

- *device_data* — Stores the table of devices available for use in updating or creating new configurations.

⚠ **WARNING:**
Do not alter the contents of any of the above data files!

4-4

Configuration Commands

All commands are executed at the UNIX system prompt. You must be logged on as **root** to run the commands.

⇒ **NOTE:**
All configuration commands must be used with the /bin/ksh. If you are not running ksh, execute all the configuration commands by entering:

/bin/ksh /vs/bin/util/<command> [options].

Example: /bin/ksh /vs/bin/util/configure new

All commands reside in the /vs/bin/util. This directory must be in your PATH before executing the commands. If you are not running the Configuration Program on a VIS processing machine:

a. Type **vi /.profile** and press ⌐ENTER¬. This opens a file called ".profile."

b. Look for the line that starts "PATH=$PATH:". If you do not find it, go to the last line in the file and add a line by pressing ⌐o¬, and then type **PATH=$PATH:/vs/bin/util**. Press ⌐Esc¬. Go to step d.

If you do find a line that has "PATH=$PATH:", go to step c.

c. Go to the end of the line and press ⌐i¬ to insert new text. Type **/vs/bin/util** and then press ⌐ESC¬.

d. Next type **:wq** and press ⌐ENTER¬. You will return to the system prompt.

e. Type **. .profile** and press ⌐ENTER¬ for the changes to take effect.

All of the configuration commands are interactive and menu-driven. The configuration commands are:

- **configure** — Determines allocation of resources for all devices to be included in a system configuration. It can be used with or without an argument (for example, **configure** OR **configure new**). Upon completion of the **configure** command, the program creates a (new) *conf_data* file.

- **get_config** — Retrieves the latest version of the system configuration (*conf_data*) from the "CONFIGURATION DATA" floppy disk.

- **save_config** — Saves the latest version of the system configuration (*conf_data*) to the "CONFIGURATION DATA" floppy disk.

- **show_config** — Displays and prints the valid system configuration represented by the *conf_data* file OR the incomplete configuration represented by the *fail_data* file.

Get Configuration

The **get_config** command is used to retrieve the *conf_data* file from the "CONFIGURATION DATA" floppy disk. This data file represents the current configuration. The current configuration should be either the original shipped version or the latest upgrade version.

Save Configuration

The **save_config** command is used to save the *conf_data* file to the "CONFIGURATION DATA" floppy disk. This file represents the updated configuration as determined by the configure program.

⇒ **NOTE:**
You should save a configuration after any changes. This insures the newly determined configuration file is accessible for future use.

Show Configuration

The **show_config** command uncompresses the database of the current configuration contained in the *conf_data* OR the *fail_data* file, displays the information to the screen, and creates a file containing the formatted configuration information.

The **show_config** command takes only one argument at a time. The "fail" argument and specification of a file name are mutually exclusive.

The uses of the **show_config** command are as follows:

- Showing a Successful Configuration

  If the configure program was successful at determining a configuration, executing **show_config** with no argument creates a *./configuration* file in the current working directory by expanding the contents of the *conf_data* file. The *./configuration* file then can be printed for a hard copy of the successful configuration.

  If a *./configuration* file already exists, a prompt asks you for permission to overwrite its contents.

- Showing an Unsuccessful Configuration

  If the configure program was unsuccessful at determining a configuration, executing **show_config fail** creates a *./failed_config* file by expanding the contents of the *fail_data* file. The *./failed_config* can be examined to determine what conflicting resource caused the configuration to fail. Astericks for any field value indicates an UNRESOLVED resource conflict.

- Showing a Dated Configuration

  You also may use **show_config** to view a previous configuration file saved by the configure program. To do this, type the command with a file name argument (e.g., **show_config /vs/data/conf_MMDDYY**). This command line expands the contents of the *conf_MMDDYY* file (if it exists) and prints its output to the screen. The program prompts you for an output file name so as to specify the output to this file name rather than the *./configuration* file.

Description of show_config Output

Screen 4-1 shows a sample of the table generated by the **show_config** command for the MAP/100C platform. This table has a section for each device. Within each section is the device name, an explanation of what the device is, and a list of all attributes that the Configuration Program resolves. A second set of --- marks under one of the attribute columns means the attribute does not apply to the device in that section. Otherwise, the value that appears under an attribute heading is the value for that attribute that is assigned to that device. Astericks for any field value indicate an UNRESOLVED resource conflict.

4-7

```
    SYSTEM CONFIGURATION TABLE

    Asterisks (*) for any field value indicate an UNRESOLVED resource conflict.


    PLATFORM


    MAP/100C 386/25
    CONVERSANT MAP/100C Platform

    DEVICES

    Device Name:  ESDI_DISK_CONTROLLER
    Device Description:
    WD 1007V SE2-F001 ESDI Disk Controller, cc406222109 (or equipment)

    CHASSIS   SLOT   INTR   IOADDR   RAMADDR   DMAC   S-PORT   P-PORT
    -------   ----   ----   ------   -------   ----   ------   ------
      MAIN     24     14     ---      c8000     --      --       --
    --------------------------------------------------------------------------------

    Device Name:  IVP6
    Device Description:
    AYC5/AYC5B Tip-Ring Interface Card, IVP6, cc105732267/cc106430861

    CHASSIS   SLOT   INTR   IOADDR   RAMADDR   DMAC   S-PORT   P-PORT
    -------   ----   ----   ------   -------   ----   ------   ------
      MAIN      4      1      200     ------     --      --       --
    --------------------------------------------------------------------------------

    Device Name:  600_MEG_ESDI_DISK
    Device Description:
    600 MEG ESDI Disk Drive, cc405974213

    CHASSIS   SLOT   INTR   IOADDR   RAMADDR   DMAC   S-PORT   P-PORT
    -------   ----   ----   ------   -------   ----   ------   ------
      ----     --     --     ---     ------     --      --       --
    --------------------------------------------------------------------------------
```

Screen 4-1. Partial Table Generated by show_config Command

The following list defines the terms used by the Configuration Program in the output from the **show_config** command:

- PLATFORM — Full description of the hardware platform you chose for configuration.

- Device Name — The mnemonic name of the the device. This will be the same name that was chosen from the device menu in the configure program.

- Device Description — Complete description of the device as contained in the *device_data* file.

- CHASSIS — It will always be MAIN except when using other VIS hardware that would include an expansion cabinet, then EXPN (expansion) would be used. configurations that include an expansion cabinet.

- SLOT — Slot number in the indicated chassis.

- INTR — Interrupt (also known by IRQ) that is to be assigned to this card. Refer to the hardware information on the device itself to determine what switch/jumper settings correspond to this interrupt level.

- IOADDR — Base IO Address that is to be assigned to this card. Refer to the hardware information on the device to determine what switch/jumper settings correspond to this IO address.

- RAMADDR — Base RAM Address that is to be assigned to this card. Refer to the hardware information on the device to determine what switch/jumper settings correspond to this RAM Address.

- DMAC — DMA channel that is to be assigned to this card. Refer to the hardware information on the device to determine what switch/jumper settings correspond to this DMA channel.

- S-PORT — Serial port number assigned to this device. The port number is for allocation purposes only, and in most cases does not directly correspond to any physical port. The exceptions are:

    — Port 1 is always the standard CPU card serial port located on its faceplate.

- P-PORT — Parallel port number assigned to this device. Currently all supported platforms have only one parallel port, so this number will always be 1. Only one device in a configuration can use a parallel port.

Adding Hardware to an Existing Configuration

Modifying an existing configuration may require changing current resource assignments. During the procedure, you may be notified of this possibility by the following message:

```
The new device(s) cannot be added without disturbing the
current
configuration of the system.

PLEASE NOTE:  Proceeding to attempt a new configuration may
make it
necessary to alter some/all card switch settings and/or
reload some
software driver packages.  To determine if any current
assignments are
changed after the new configuration, compare the previous
show_config
output with the new show_config output.  Where there are
differences,
switch settings/driver software will have to be changed.

Press <Enter> to attempt a new configuration...
```

Differences in slot assignments, or serial/parallel port assignments will NOT require switch settings/driver software changes. However, you may need to rearrange the cards/cables to fit the new configuration output.

Differences in INTR, DMAC, IOADDR, or RAMADDR assignments WILL, in most cases, require switch settings to change and driver software to be re-installed for the affected cards.

You should have a hard copy of the existing **show_config** output before attempting an upgrade.

⇛ **NOTE:**
    Use the following procedure whenever the hardware configuration must
    change to ensure synchronization between the actual configuration and the
    "CONFIGURATION DATA" floppy disk.

1. Insert the "CONFIGURATION DATA" floppy disk into the disk drive.

2. Type **get_config** at the UNIX system prompt. Press ⌈ENTER⌋. The
    system's initial/current configuration loads onto the system.

3. Type **configure** with no argument. Press ⌈ENTER⌋.

4. The program informs you of the hardware platform represented in the
    conf_data file.

5. The program saves the current *conf_data* file in *conf_MMDDYY* (e.g.,
    conf_081590).

6. If your current system configuration does not include the maximum
    supported system memory, you are prompted if you wish to upgrade with
    more memory. If yes, select the total amount of memory desired.

7. You are presented with a menu of devices (Screen 4-2).

    ⇛ **NOTE:**
        Not all the devices presented in this table are supported by all the
        platforms.

4-11

```
                --------- DEVICES ---------

  1.  VIDEO_CONTROLLER       2.  TDM_BUS               3.  IVP4
  4.  IVP6                   5.  VRS6                  6.  COSIB
  7.  SP                     8.  MEGASP                9.  T1
 10.  COMPANION             11.  TAPE_CONTROLLER      12.  8_PORT_SERIAL_EXP
 13.  1_PORT_SERIAL_EXP     14.  CLEO_DATATALKER      15.  CLEO_PCXL
 16.  INTERLAN              17.  STARLAN              18.  EXTERNAL_MODEM
 19.  PARALLEL_PRINTER      20.  SERIAL_PRINTER       21.  REMOTE_TERMINAL
 22.  DCP                   23.  DCP_NO_DMA           24.  IPCI
 25.  IPIB                  26.  135_MEG_ESDI_DISK    27.  600_MEG_ESDI_DISK
 28.  VOICE_WORKSTATION     29.  1.2_GIG_SCSI_DISK    30.  SCSI_TAPE_DRIVE
 31.  1.2_GIG_SCSI_MIRROR   32.  200_MEG_IDE_DRIVE    33.  EXTERNAL_ALARM



Enter number to select device, r to remove, s to show, or d for done —
```

Screen 4-2. Available Devices Menu in an Upgrade Procedure

⟹ **NOTE:**
The * denotes the selected devices in the current configuration, or devices that have been selected to be added to the current configuration.

8. When given the devices prompt, press ⒮ at any time to show all currently selected devices. After pressing ⒮, press ⒟ to get back to the devices menu.

   You may also press ⒭ at any time to show all currently selected devices. The program will prompt you to enter the number which corresponds to the device which you wish to remove from your configuration. Press ⒟ to get back to the devices menu.

9. Choose the device(s) with which you wish to add to the current configuration. Enter the number that appears next to the device.

⟹ **NOTE:**
Choose only one (1) device at a time.

10. A prompt asks you how many of the chosen device you wish to add, when more than one is allowed.

11. If you choose only one of a device, and the device uses any of the following attributes:

     ■ Interrupt

     ■ I/O Address

     ■ RAM Address

     ■ DMA Channels

     You are given the opportunity to preset each of the attributes for that device. Refer to "Presetting Device Hardware Resources" in this section.

     Generally, you will not want to preset any of the attributes.

12. Press d to indicate that you are done selecting devices.

     When you press d, the program attempts to allocate resources to the new devices from the pool of resources not currently allocated.

     Where applicable, the program attempts to assign values to the following attributes of each newly chosen device:

     ■ Interrupt

     ■ I/O Address

     ■ RAM Address

     ■ Serial port number

     ■ Parallel port number

        (For Serial and Parallel ports, "number" is used only for allocation purposes and does not indicate a particular port.)

4-13

In an upgrade situation the Configuration Program may require two passes to complete its task. In Pass 1, an attempt is made to fit the newly specified device(s) into the current configuration without disturbing any current devices. If successful, the update is completed and you are informed with the following series of resolution statements:

```
Slot assingments successfully resolved.
Interrupt assignments successfully resolved.
DMA Channel assingments successfully resolved.
IO Address assignments successfully resolved.
RAM Address assingments successfully resolved.
Port assignments successfully resolved.

Configuration complete and successful.

Configuration data written to file /vs/data/conf_data.
Run "show_config" with no arguments to view the
configuration.
```

If Pass 1 was unsuccessful, Pass 2 is started and you will be informed. The following is an example of the message:

```
The new device cannot be added without disturbing the
current configuration of the system.
Your preset values may have created this conflict.

Try "configure new".

Configuration unsuccessful.
Run "show_config fail" to view the incomplete configuration.
```

Pass 2 will begin and attempt the equivalent of a new configuration, unassigning all currently used resources, and pooling the newly selected devices with those already in the configuration. If Pass 2 is successful, settings on some of the cards already in the system may need to be changed. Some driver software may need to removed and re-installed as well. For example, if the tape drive was using Interrupt 5 initially, but a device was added that required Interrupt 5, the tape drive would have to be moved to Interrupt 7. The Cartridge Tape Utilities package then would have to be removed and re-installed, specifying Interrupt 7 for use when prompted by the installation program. The tape controller card jumper setting would also have to be changed. This situation will be true of other cards in the system as well.

If Pass 2 is unsuccessful, the newly specified devices will not fit into the current configuration (that is, the configuration is invalid).

After a successful configuration, type **show_config** to view the new *conf_data* file.

    OR

After an unsuccessful configuration type **show_config fail** to view the *fail_data* file to see the reason for the failure.

➡ **NOTE:**

If the configuration is successful, type **save_config** to store the upgraded configuration on the "CONFIGURATION DATA" floppy disk.

4-**15**

Specifying a New Configuration

If your system is configured at the factory, you should not force a new configuration. The exception is when you wish to remove some device from the system and add another device in its place. This requires selecting all of the devices currently in the configuration, excluding the devices to be removed, yet including any new devices.

Use the following procedure to *force* a new configuration:

1. Type **configure new** and press ENTER. This creates a new configuration even if a *conf_data* file already exists. As with upgrades, the current *conf_data* file is saved in *conf_MMDDYY*.

2. The program presents a menu of hardware platforms (Screen 4-3).

```
          --------- HARDWARE PLATFORMS ---------


1.   MAP/100 386/25


2.   MAP/100C 386/25


3.   MAP/40 386/25



Enter the number beside the platform you wish to configure —
```

Screen 4-3. Hardware Platforms Menu

3. Select the correct platform.

4. Now the program presents a menu of devices that may be configured with the chosen platform (Screen 4-4).

⇒ **NOTE:**
Not all the devices presented in this table are supported by all the platforms.

```
                   --------- DEVICES ---------


  1.  VIDEO_CONTROLLER      2.  TDM_BUS               3.  IVP4
  4.  IVP6                  5.  VRS6                  6.  COSIB
  7.  SP                    8.  MEGASP                9.  T1
 10.  COMPANION            11.  TAPE_CONTROLLER      12.  8_PORT_SERIAL_EXP
 13.  1_PORT_SERIAL_EXP    14.  CLEO_DATATALKER      15.  CLEO_PCXL
 16.  INTERLAN             17.  STARLAN              18.  EXTERNAL_MODEM
 19.  PARALLEL_PRINTER     20.  SERIAL_PRINTER       21.  REMOTE_TERMINAL
 22.  DCP                  23.  DCP_NO_DMA           24.  IPCI
 25.  IPIB                 26.  135_MEG_ESDI_DISK    27.  600_MEG_ESDI_DISK
 28.  VOICE_WORKSTATION    29.  1.2_GIG_SCSI_DISK    30.  SCSI_TAPE_DRIVE
 31.  1.2_GIG_SCSI_MIRROR  32.  200_MEG_IDE_DRIVE    33.  EXTERNAL_ALARM



Enter number to select device, r to remove, s to show, or d for done —
```

Screen 4-4. Available Devices Menu in a Specify New Procedure

5. When given the devices prompt, press ⌐s⌐ at any time to show all currently selected devices. After pressing ⌐s⌐, press ⌐d⌐ to get back to the devices menu.

   You may also press ⌐r⌐ at any time to show all currently selected devices. The program will prompt you to enter the number which corresponds to the device which you wish to remove from those that you have already chosen. Press ⌐d⌐ to get back to the devices menu.

6. Choose the devices you wish to add to the current configuration. Enter the number that appears next to the device.

   ⇒ **NOTE:**
   Choose only one (1) device at a time.

4-17

7. A prompt asks you how many of the chosen device you wish to add, when more than one is allowed.

8. If you choose only one of a particular device, and the device uses any of the following attributes:

    ■   Interrupt

    ■   I/O Address

    ■   RAM Address

    ■   DMA Channels

    You are given the opportunity to preset each of the attributes for that device. Refer to "Presetting Device Hardware Resources" in this section.

    Generally, you will not want to preset any of the attributes.

9. Press ⌷d⌷ to indicate that you are done.

    When you press ⌷d⌷, the program attempts to allocate resources to each device selected. If the configuration specified is valid, the program terminates successfully. If the program is unsuccessful, you will be given the option to remove something and try again. The program creates a *conf_data* if successful OR a *fail_data* if unsuccessful.

    After a successful configuration, type **show_config** to view the new *conf_data* file.
        OR
    After an unsuccessful configuration, type **show_config fail** to view the *fail_data* file to see the reason for the failure.

    ⟹ **NOTE:**
        If the configuration is successful, type save_config to store the new configuration on the "CONFIGURATION DATA" floppy disk.

Presetting Device Hardware Resources

You may want to preset certain resources of a single new device being selected for a configuration (e.g., to force the configure program to select interrupt 6 for a particular device being specified). The purpose of the preset option is to give you more flexibility in using your hardware with more than one application, each with different configurations. The preset option allows you to preset the resources used for a particular card, thereby making it compatible and interchangeable with any of your application set-ups.

Use the following procedure to preset resources:

1. When you specify a single device, the following prompt will appear:

   ```
   Do you wish to preset any hardware options of <device
   name>? [y|(n)]
   ```

2. If you want to preset resources, press ⌐y⌐. You are allowed to preset any of the following hardware attributes of the selected device (where applicable):

   - Interrupt

   - I/O address

   - RAM address

   - DMA address

3. Press ⌐d⌐ to finish. The configure program continues as normal.

Preset Option Used When Adding Hardware

The program attempts Pass 1 as described before. If successful, the program terminates normally. If Pass 1 is unsuccessful, a message displays this information. Pass 2 is not attempted if you have preset any hardware options for any device.

Preset Option Used with a New Configuration

If a valid configuration is determined, the program terminates normally. If a valid configuration is not determined, a message displays this and the program terminates. You are not asked if you wish to remove something and try again if you have preset any hardware options for any device.

4-19

Configuration Device Data

The devices and the attributes for creating a configuration are stored in the *device_data* file. This file is in compressed form.

In most cases, you will not work with this file. The exceptions are when you wish to:

- Add a new device to the *device_data* file by using the **add_device** command.

- Remove a device from the *device_data* file by using the **remove_device** command.

- Display and print to a file all devices and their attributes as represented in the *device_data* file by using the **show_device** command.

- Change the presentation name of a device (the name by which a device appears in the configuration program menus, see Screens 4-2 and 4-4) in the *device_data* file by using the **change_device** command.

⚠ **WARNING:**
Do not alter this file except by using one of the above commands!

Show Devices Command

The **show_devices** command uncompresses the database of devices and their attributes contained in the *device_data* file, and displays the information to the screen. At the same time, a *./devices* file is created so that this information may be sent to a printer.

If a *./devices* file already exists, you are prompted as to whether it is acceptable to overwrite the existing file.

Add Device Command

> **NOTE:**
> Remember when using the **add_device** command that "1" equals yes, and "0" equals no.

It may be desirable from time to time to add a new device to those supported by the configure program. The **add_device** command prompts you for all the necessary attributes required to add the new device. Once it is added to the file, the new device is available for configuration.

> **NOTE:**
> Only devices whose attributes are completely defined by the add_device command may be added successfully to those already supported by the configure program. If a device has "special" attributes that the add_device command does not inquire about, the device cannot be supported successfully by the configure program without making changes to the program software.

Remove Device Command

Devices that you have added to the *device_data* file can also be removed by using the **remove_device** command.

> **NOTE:**
> Only those devices added after the platform was shipped can be removed. The devices supplied originally by the Configuration Program are locked and cannot be removed.

Change Device Command

You may wish to change the presentation names of the devices to be more specific or meaningful to you when they are displayed in the configure program's menus. This is accomplished by using the **change_device** command.

The program prompts you to select the device to be changed, then prompts you to input a new 2-20 character name.

When you next use the configure program, the new name(s) appear in the device selection menu (see Screens 4-2 and 4-4) and in all outputs generated by the program.

Getting Inside the Computer

5

What's in This Chapter

This chapter describes how to open the MAP/100C by opening the front door. This chapter also describes how to access the peripheral bay, card cage, power supply, and cooling fan panel.

⚠ **WARNING:**
Shut power off before opening the MAP/100C. Do this by following the procedure "Removing Power from the MAP/100C," found in this chapter.

Removing Power from the MAP/100C

Use the following procedure to remove power from the system:

1. Notify the telephone company that you are taking down the system if you are currently connected to the telephone network. They will ask you which extensions will be affected.

    ⚠ **WARNING:**
    > *If you take down the system on a continuing basis without notifying the telephone company, they can shut your operation down.*

2. If you are working on an operating VIS, follow these steps to shutdown the system:

    a. Stop the voice system by following the procedure, "Stopping Voice System" found in Chapter 4, "Common Maintenace Procedures," of *CONVERSANT Voice Information System Version 3.1 Maintenance, 585-350-105*.

    b. Shut the system by following the procedure, "Shutting Down the Operating System" found in Chapter 4, "Common Maintenace Procedures," of the maintenance book.

3. Turn *off* both the front panel power switch and the circuit breakers on the rear of the unit.

4. Remove the incoming line. Also disconnect keyboard and video cords.

5. Tag the power plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.

Opening the Front Door

Open the front door by following the steps below:

1. Loosen the 1/4-turn latch on the chassis front door.

2. Disengage the slide latches on the left side of the door.

3. Use the indentations around the slide latches to swing the door open to the right. Open the door as wide as its hinges will allow. See Figure 5-1.
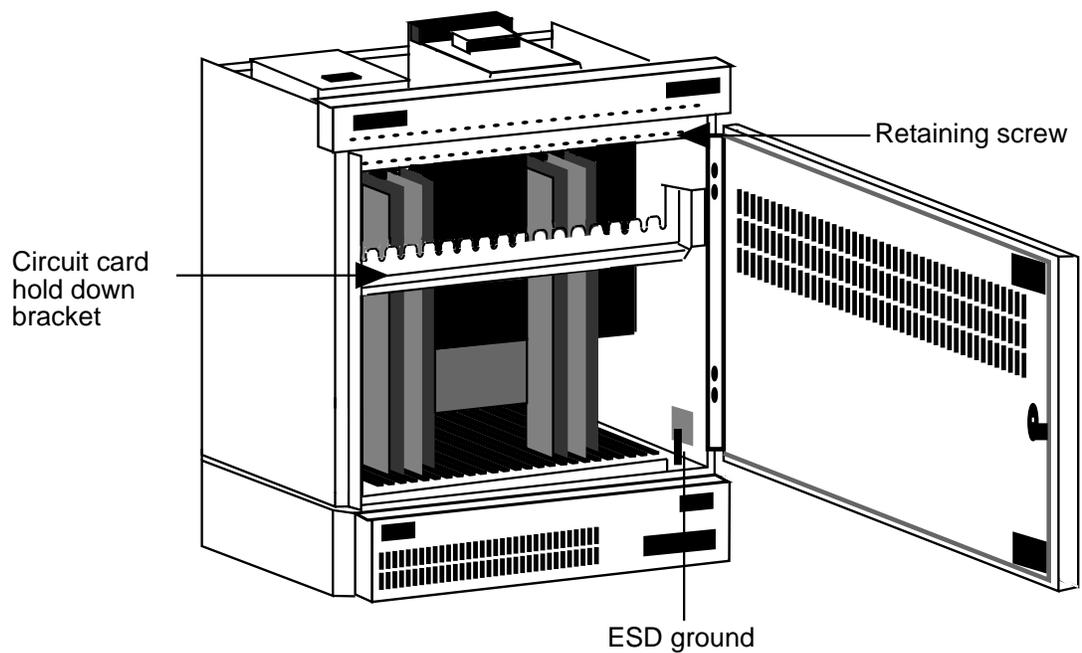
Figure 5-1. MAP/100C with Front Door Open

Accessing the Peripheral Bay

Open the front perhipheral bay access door by following the steps below:

1. Disengage the slide latches on the left and right corners of the door.

2. Use the indentations around the slide latches to swing the door open by allowing the door to fall downward, gently, toward you. See Figure 5-2.
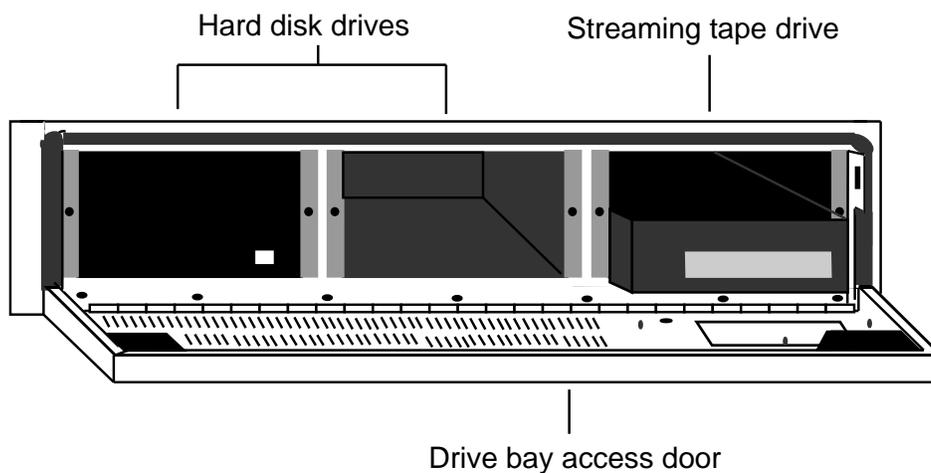
Figure 5-2. Front View — Drive (Peripheral) Bay Door Opened

Accessing the Card Cage

Use the following procedure to gain access to the card cage:

1. Open the front door, as described earlier.

2. If you are going to be installing/removing a circuit card, remove the circuit card hold-down bracket by pulling the spring-loaded release and pulling the bracket toward you out of the unit. Set it aside.

5-4

Accessing the Power Supply

Use the following procedure to gain access to the power supply:

1. Loosen the two captive screws on the power supply access panel on the rear of the unit (Figure 5-3).

2. Open the door.

Power supply
access door

Power supply
fan filter
access door

Power supply access door
captive screws
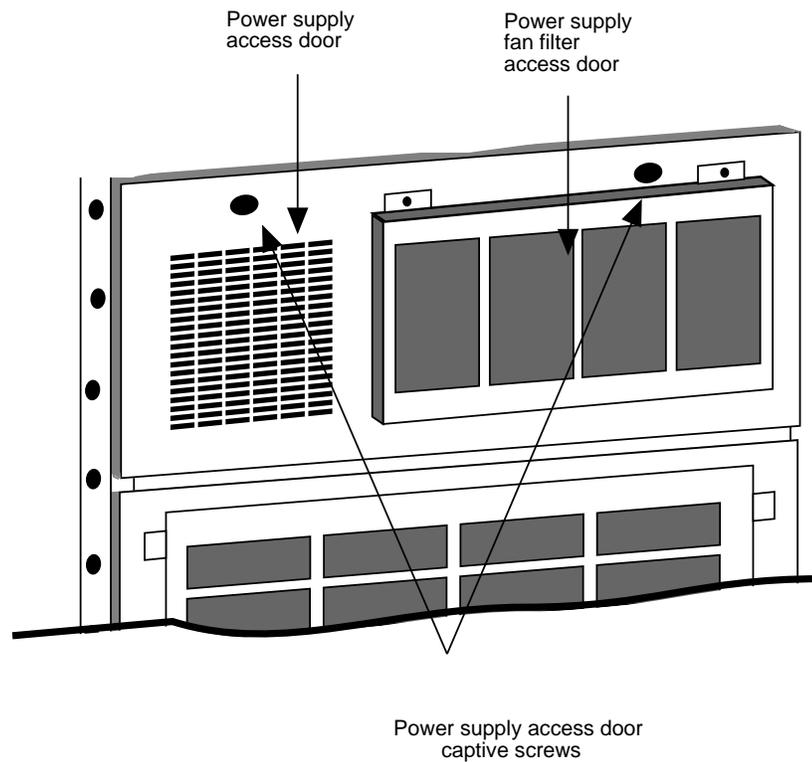
Figure 5-3. Power Supply Access Door

Accessing the Cooling Fan Panel

Access the fan panel by loosening the two captive screws on the chassis fan panel or the drive bay rear access door. Open the appropriate door by letting it "fall" toward you (Figure 5-4).
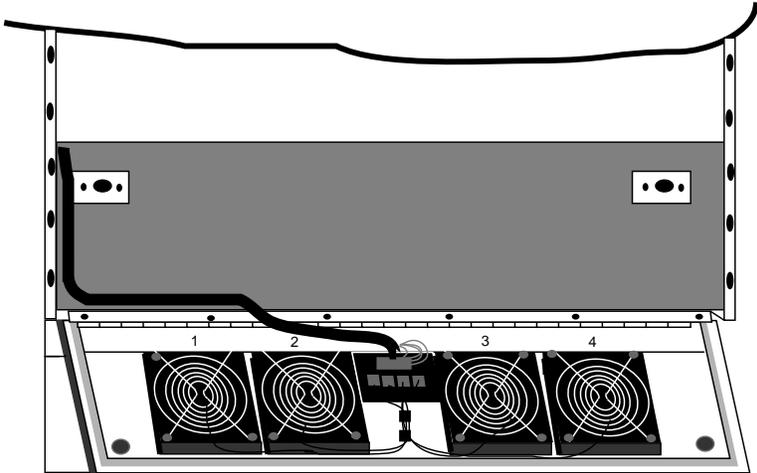
Figure 5-4. Fan Panel Access Door

Installing Circuit Cards — Introduction and Types

6

What's in This Chapter

This chapter serves as an introduction to installing circuit cards and defines the types of circuit cards that can be installed in the MAP/100C.

This chapter also includes "General Steps for Circuit Card Installation" which applies to the installation of all circuit cards, though additional steps may be required for some. Other circuit card chapters refer you back to this generic installation procedure.

See Chapters 7–9 for information on the circuit cards you want to install. There chapters describe how to set addresses and jumpers as well as any specific procedures on installation.

Types of Circuit Cards for the MAP/100C

The MAP/100C can accommodate several different categories of circuit cards. Within this document, circuit cards are grouped according to function. These groups are defined below so that you can select which chapters apply to the type of circuit card installation you want to complete. You can then turn to the appropriate chapter for procedures on how to install a particular circuit card. Circuit cards are grouped as follows:

- CONVERSANT circuit cards — Chapter 7

- Optional Features circuit cards — Chapter 8

- Standard MAP/100C circuit cards — Chapter 9

⇒ **NOTE:**
Before installing circuit cards, you must use the configuration software to determine where the circuit cards can be located in the MAP/100C as well as which circuit cards your system can accommodate.

The MAP/100C is equipped with a backplane providing 25 slots or circuit card mounting positions. The slots are numbered 1 through 25 with position 25 located next to the back cooling fan.

CONVERSANT Circuit Cards

CONVERSANT circuit cards are required for the MAP/100C if you have selected a CONVERSANT application. These cards are key to tying into the telephone network and handling calls. See Chapter 7, "Installing CONVERSANT Circuit Cards," for information on how to set addresses and jumpers and how to install these cards. CONVERSANT Cards include:

- Tip/Ring Circuit Card

- T1 Circuit Card

- Signal Processor Circuit Card

- Companion Circuit Card

⇒ **NOTE:**
As a general rule, the CONVERSANT VIS cards should form a contiguous group so that the VIS Time Division Multiplexing (TDM) bus, signal processor (SP), and companion (CMP) cables do not have to jump over non-cabled cards.

CONVERSANT circuit cards are defined below.

Tip/Ring (T/R) Circuit Card

These card(s) interface between the VIS and the customer premise telephone lines. One T/R card can support up to six lines.

The MAP/100C supports up to eight T/R cards (48 channels), four cards for processing transactions and four cards for outgoing bridged calls. The T/R card can be any of five types:

- IVP6 T/R card (AYC5 and/or AYC5B)
- IVP4 T/R card (AYC6 and/or AYC6B)
- VRS6 T/R card

T1 Circuit Card

The T1 circuit card accepts a single, two-way digital trunk in the standard DS-1 format and then converts it to 24, two-way audio channels.

The MAP/100C supports at most four T1 boards: two cards for incoming calls and two cards for outgoing bridged calls. The T1 card can be either of two types:

- T1 card (AYC3B)
- T1 card (AYC11)

Signal Processor (SP) Circuit Card

The signal processor is used for applications that require sophisticated algorithms, for example, speaker-independent speech recognition, robust call classification, etc. The SP does not connect directly to the telephone network. The SP must be used in conjunction with at least one T1 card or T/R card.

The T1, T/R, and SP boards use the Time Division Multiplexing (TDM) proprietary bus to send digitized speech to other cards in the system.

Companion (CMP) Circuit Card

The companion circuit card is an extension of the signal processor (SP) board and connects to the SP by its own special 44 & 50 conductor flat ribbon bus cables. The MAP/100C powers the companion board through the backplane slot connectors. All the signal interfaces come from the SP board. The CMP board is used only in speech recognition applications.

Optional Circuit Cards for Selected Features

Use these circuit cards for optional features that are not application specific, that is, not required for CONVERSANT. These include:

- PC/XL Communications Circuit Card
    - Supports the 3270 Host Communications Package
    - Up to two of these cards can be used
- EMULEX Communications Circuit Card
    - Supports the 3270 Host Communications Package
    - *Only* one of these cards can be used
- IPC-900 or Gemini 1000 Asynchronous Circuit Card
    - Provides up to 8 asynchronous ports for connection to printers, modems, etc.
- Racal-Interlan Circuit Card
    - Supports a local area network
- StarLAN Circuit Card
    - Supports a local area network
- PC/ISDN Circuit Card
    - Supports ASAI (Adjunct/Switch Application Interface)
- PC/PBX Circuit Card
    - Sets up AUDIX Voice Power as co-resident with CONVERSANT
    - Sets up digital communication with the PBX at the customer site

See Chapter 8 for detailed information on optional feature cards.

Standard MAP/100C Circuit Cards

The standard MAP/100C circuit cards are required for basic platform functionality. The manufacturer always equips the MAP/100C with these cards. See Chapter 9, "Installing MAP/100C-Provided Circuit Cards," for information on how to set addresses and jumpers to install these cards. Standard MAP/100C cards include:

- Small Computer System Interface (SCSI) Host Adapter controller card

  — Interface between the system processor and the SCSI bus via a 16-bit ISA backplane bus

  — Interface to the the SCSI disks via a 40-pin flat ribbon bus cable

  — Interface to the floppy drive via a 40-pin flat ribbon bus cable

- Video Display Controller Card

  — Interface between the system processor and the video monitor

- Central Processing Unit (CPU) Card

  — Computing part of the system which manipulates data and processes instructions

⇒ NOTE:
If you are reusing 600 Mbyte ESDI drives from a older MAP/100C, the list above will have following entries instead of the SCSI entry:

- ESDI Cartridge Tape Controller Card

  — Interface between the system processor and the tape drive via a 40-pin flat ribbon bus cable

    This cable is pre-formed to reduce congestion and improve routability.

- ESDI Hard Disk Controller Card

  — Interface between the system processor, across the 16-bit ISA backplane bus, and the system disk(s)

  — Interface to the floppy drive via a 40-pin flat ribbon bus cable

    These cables are pre-formed to reduce cable congestion and interference between the ESDI controller card and hard disk/floppy drive units.

6-5

General Steps for Circuit Card Installation

⚠️ **WARNING:**
Observe proper ESD precautions when handling computer components. Wear a ground wrist strap on your bare skin and connect to a ground. See Chapter 2, "Getting Started," for more details.

Follow the procedure below whenever you install a circuit card of any kind. You can then follow the specific procedure for cable connection or special settings for that card type found in Chapters 7–9.

Installing a Circuit Card in the MAP/100C

⟹ **NOTE:**
Read Chapter 4, "Running the Configuration Program," and run the configuration software program before installing any card, unless you are replacing a card. You will need the output from the configuration program in order to install your hardware. Your system arrived with output from this program in the shipping carton.

Refer to this printout in order to check addresses of existing cards. Also, if replacing a card, set address switches and jumpers of the new card to match the old card.

You may have to install a circuit card in any of these three following situations:

- You are assembling and installing the MAP/100C yourself rather than receiving a system that has been factory assembled

- You need to replace or verify an existing circuit card

- You are adding a new feature which requires a new card

Follow the steps below to install any circuit card. Get specifics for each card in following chapters.

1. Verify that the card is on site and appears to be in usable condition (that is, no obvious shipping damage, etc...)

2. Refer to the output from the configuration program for this system to confirm that it is the correct type of card for that slot.

   This is not necessary if you are replacing a card and not adding one.

3. If you are currently connected to the telephone network, notify the telephone company that you are disconnecting. They will ask you which extensions are affected.

   ⚠ **WARNING:**
   If you disconnect the MAP/100C from the telephone network on a continuing basis without letting the telephone company know, they can disconnect you permanently. (Digital circuits ONLY)

4. Perform a "soft" shutdown, if you have been operating the MAP/100C as a fully loaded system.

   Remove the configuration floppy disk, if you have had the MAP/100C operating only in order to run the configuration program.

5. Turn *off* both the front panel power switch and the circuit breaker in the rear and remove the incoming line. Also disconnect keyboard and video cords.

6. Tag the power plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.

7. Open the front door and remove the card hold-down bracket.

   See Chapter 5, "Getting Inside the Computer," for more information.

8. Carefully remove any internal connecting cables attached to the circuit card or peripheral to be replaced or installed.

   Use pull tabs when available to reduce damage to the circuit card connector pin fields.

9. If a new card is being installed, removing the filler for the appropriate slot and save the retaining screw.

10. Align the circuit card face plate and the edge of the circuit card with the circuit card guide and the backplane slot position. The is now in front of the expansion slot. Move the card away from you until it touches the slot.

11. Place your thumbs flat on the edge of the card over the connector and push it into the backplane slot. Firmly push on the card until it is completely seated.

12. Reinstall any internal and/or external cable assemblies that were previously removed, making sure the cable connector pin 1 indicator is mated the circuit card or pin header.

    Refer to the appropriate circuit card chapter for additional information on cabling and connections specific to the type of card you are installing.

13. Replace the retaining screw by placing it through the card faceplate opening that is similar to the cover plate previously removed.

14. Replace the card hold-down bracket.

15. Close the card cage access door if you have completed work inside the platform. See Chapter 5, "Getting Inside the Computer," for more information.

16. Power up the MAP/100C.

17. You have completed this procedure.

Installing CONVERSANT Circuit Cards

7

What's in This Chapter

This chapter details the CONVERSANT circuit cards. Included for each card is an illustration of the card, and illustrations of any jumpers and switch settings. The CONVERSANT circuit cards include:

- Tip/Ring (T/R) circuit card

- T1 circuit card

- Signal Processing (SP) circuit card

- Companion (CMP) circuit card

Installing a Tip/Ring Circuit Card

The Tip/Ring (T/R) circuit card is a CONVERSANT circuit card that can be any of the following types:

- VRS6 T/R card

- IVP6 T/R card (AYC5 and/or AYC5B)

- IVP4 T/R card (AYC6 and/or AYC6B)

Where applicable, we generically refer to these cards as T/R cards.

Set the switch and jumper settings (resource options) prior to installing the cards. Use the figures on the following pages to do so.

⚠ WARNING:

Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

Setting the Resource Options

There are two switch banks located on the VRS6, IVP4 (AYC6) and IVP6 (AYC5) circuit cards: A and B (see Figures 7-1, 7-2 and 7-3). The IVP6 (AYC5B) and IVP4 (AYC6B) circuit cards have only one switch bank (see Figure 7-4).
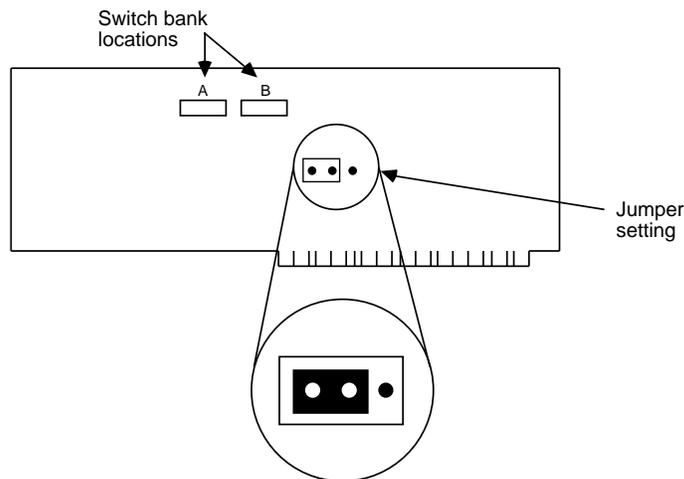
Figure 7-1. IVP4 (AYC6) T/R Card Switch Bank and Jumper Locations

7-2
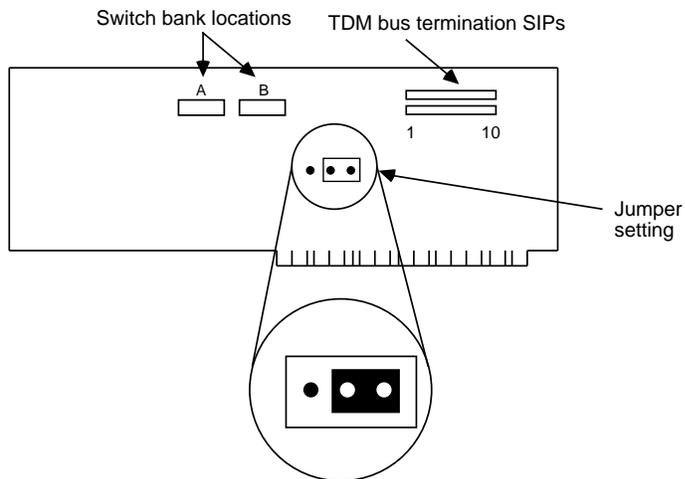
Figure 7-2. IVP6 (AYC5) T/R Card Switch Bank and Jumper Locations
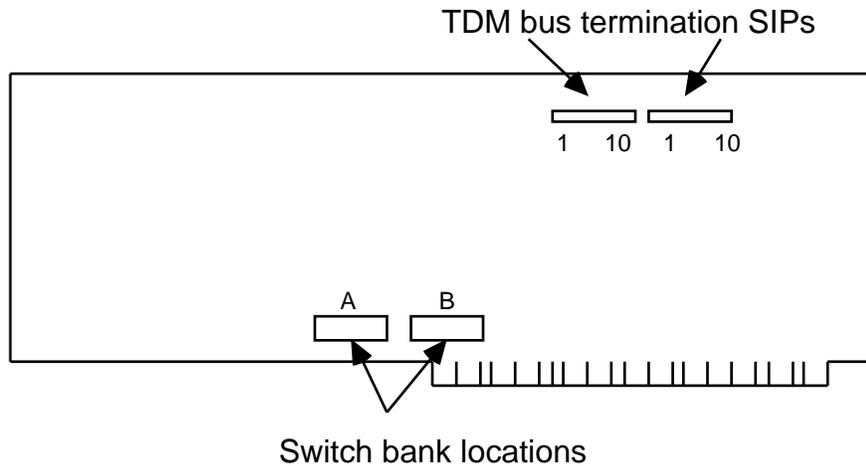
Figure 7-3. VRS6 T/R Card Switch Bank Locations

7-3
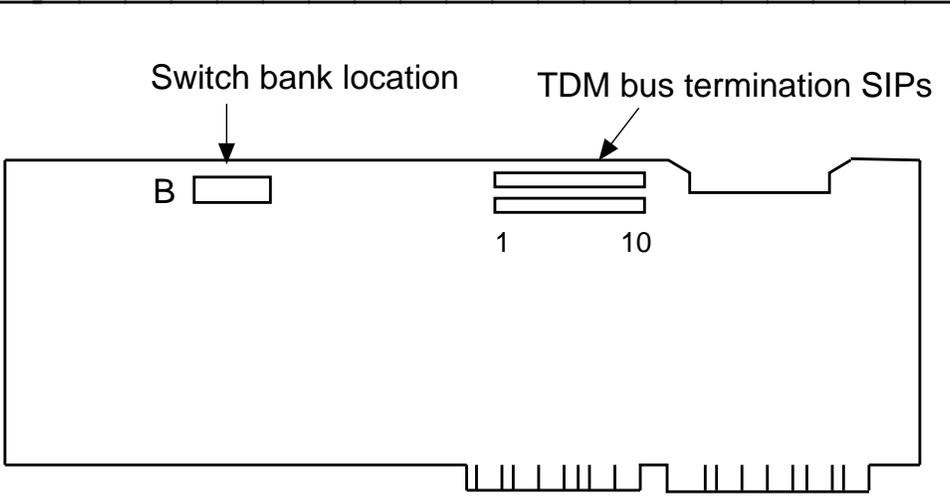
Figure 7-4. IVP6 (AYC5B) and IVP4 (AYC6B) T/R Cards Switch Bank Locations

Network Impedance Matching — Switch Bank A

The switches one (1) through six (6) on Switch Bank A correspond to channels 0-5, respectively, on each T/R card. In general, all switches on Switch Bank A should be left in the factory default "OPEN" position (Figure 7-5).

| | VRS6 T/R
has
rocker switches | IVP4 and IVP6 T/R
have
slide switches |
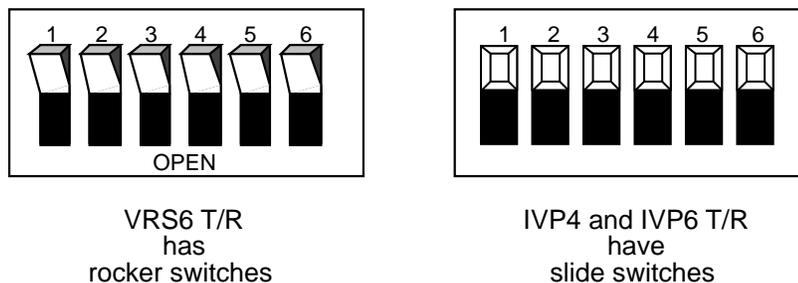
Figure 7-5. T/R Switch Bank A Setting

The six switches on Switch Bank A adjust the termination impedance that each T/R interface presents to the network. This is sometimes necessary to insure an adequate impedance match between the network and the telephone hybrid on the T/R card.

If the system shows problems such as not recognizing touch tones, touch-tone simulation by outgoing speech (speech abruptly stops during playback), or unreliable detection of touch tones during playback (playback does not stop when a touch tone is entered), then moving the switch that corresponds to the channel exhibiting the conditions to the "CLOSED" position may solve the problem.

⇒ **NOTE:**
This function on IVP6 (AYC5B) and IVP4 (AYC6B) circuit cards is accomplished by software instructions. Refer to your *CONVERSANT Voice Information System Version 3.1 Operations, 585-350-701*, book for further information.

Circuit Card Allocation — Switch Bank B

Base I/O address = 100 Hex.

(OPEN)

VRS6 T/R   IVP4 and IVP6 T/R
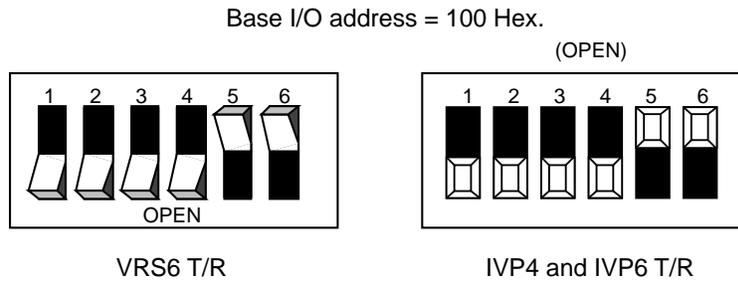
Figure 7-6. T/R 0 Switch Settings

Base I/O address = 200 Hex.

(OPEN)

VRS6 T/R   IVP4 and IVP6 T/R
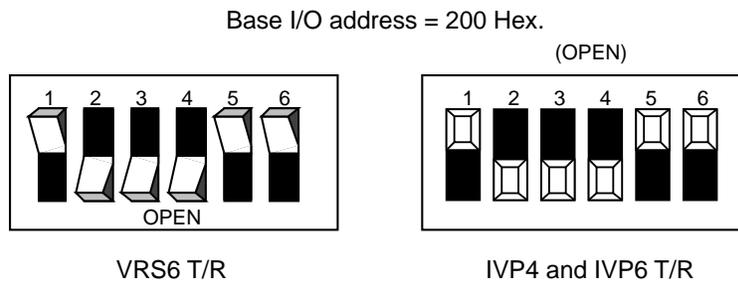
Figure 7-7. T/R 1 Switch Settings

Base I/O address = 300 Hex.

(OPEN)

VRS6 T/R   IVP4 and IVP6 T/R
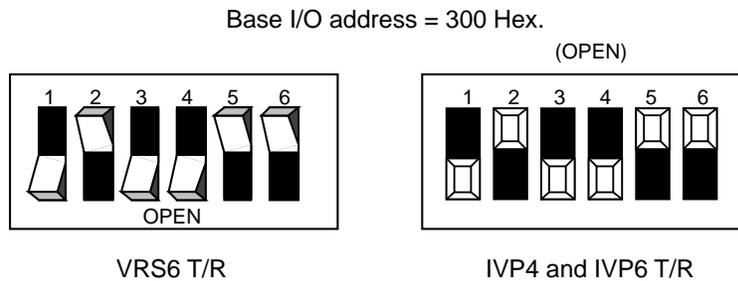
Figure 7-8. T/R 2 Switch Settings

Base I/O address = 500 Hex.

(OPEN)

VRS6 T/R   IVP4 and IVP6 T/R
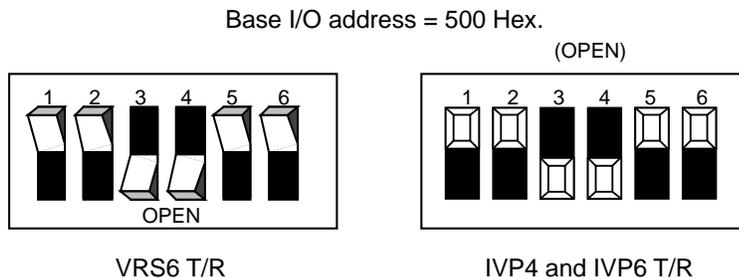
Figure 7-9. T/R 3 Switch Settings

Base I/O address = 600 Hex.

(OPEN)

VRS6 T/R   IVP4 and IVP6 T/R
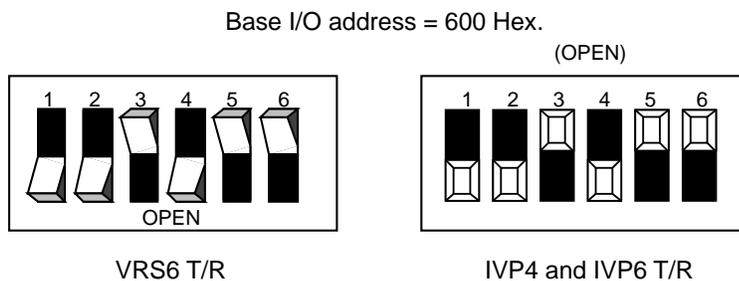
Figure 7-10. T/R 4 Switch Settings

Base I/O address = 700 Hex.

(OPEN)

VRS6 T/R   IVP4 and IVP6 T/R
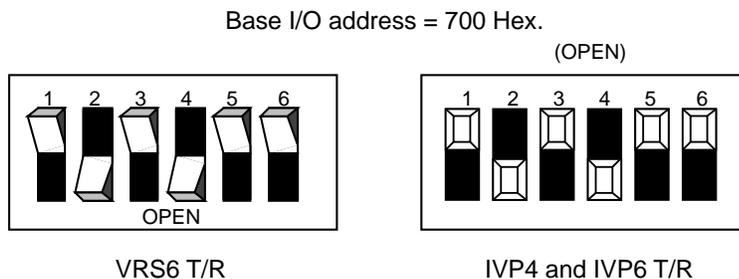
Figure 7-11. T/R 5 Switch Settings

Base I/O address = 900 Hex.

VRS6 T/R

IVP4 and IVP6 T/R
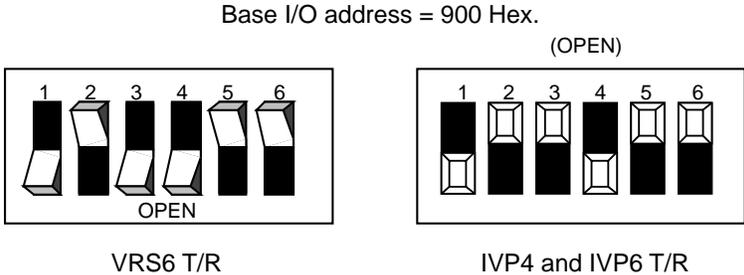
Figure 7-12. T/R 6 Switch Settings

Base I/O address = a00 Hex.

VRS6 T/R

IVP4 and IVP6 T/R
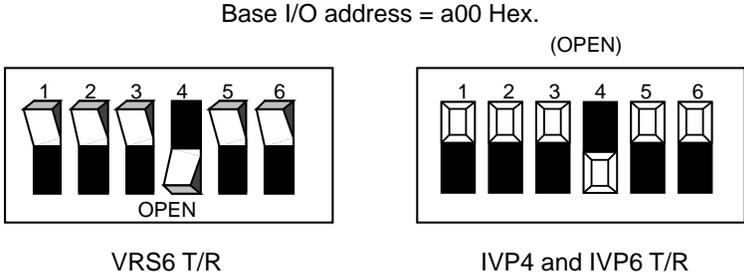
Figure 7-13. T/R 7 Switch Settings

Placing the T/R Card in the MAP/100C

After setting the jumpers and switches, follow the steps under "General Steps for Circuit Card Installation" to place the card in the MAP/100C.

Connect the TDM-Bus cable (ED5P208-30 Group 21) to the card using the appropriate unused connector.

⇒ NOTE:

If the T/R card is connected anywhere except either of the two ends of the TDM Bus, regardless of the TDM cable connector position, remove the TDM Bus terminator SIPs (single in-line packages).

If the T/R card is connected at either end of the TDM Bus, leave the TDM Bus terminator SIPs in place.

If you must replace a terminator SIP, see the figure below for orientation.
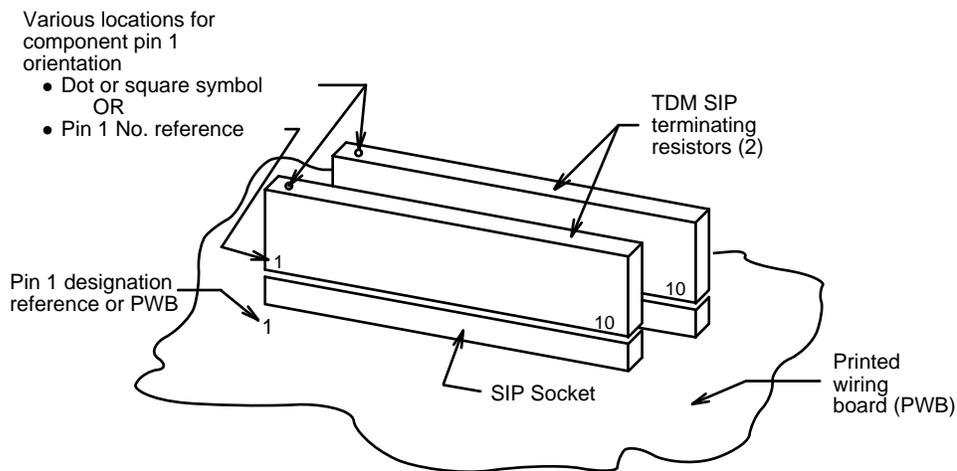
Figure 7-14. Replacing Terminator SIPs on the TDM Bus

Installing a T1 Circuit Card

The T1 circuit card is a CONVERSANT circuit card that can be any of the following types:

- T1 card (AYC3B)

- T1 card (AYC11)

Where applicable, we generically refer to these cards as T1 cards.

Set the switch and jumper settings (resource options) prior to installing the cards. Use the figures on the following pages to do so.

⚠ WARNING:

Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

Setting the Resource Options

There is one jumper and one set of switches that must be set on the T1 circuit cards. Figures 7-15 (AYC3B) and 7-16 (AYC11) show the location and correct setting of the interrupt jumper, and the location of the switches. See Figures 7-17 through 7-20 for *valid* switch settings for T1-0 through T1-3.

7-10
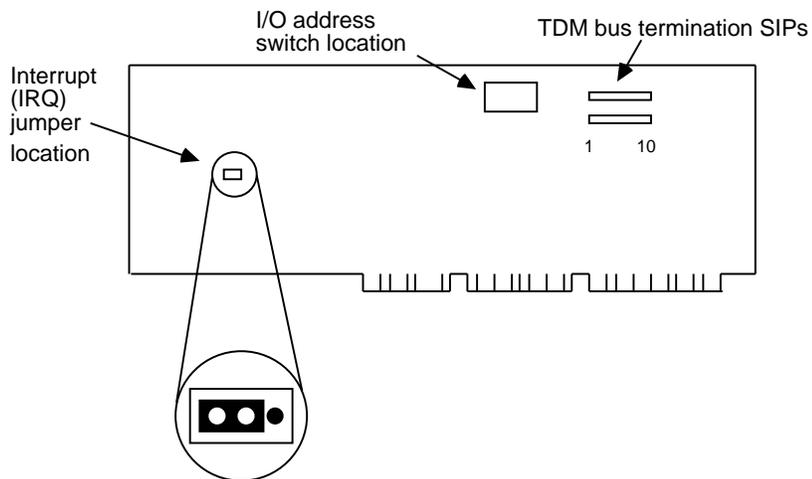
Figure 7-15. T1 (AYC3B) Card Jumper and Switch Locations
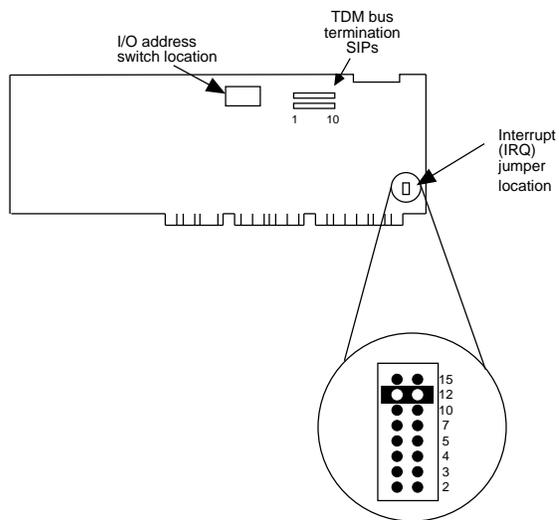
Figure 7-16. T1 (AYC11) Card Jumper and Switch Locations

7-11
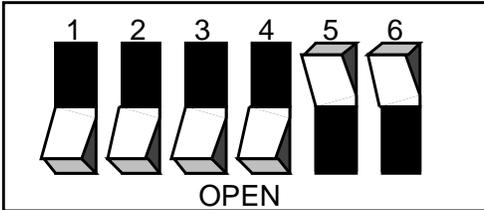
Base I/O Address = 220 Hex

osindex = 0

Figure 7-17. T1-0 Switch Settings
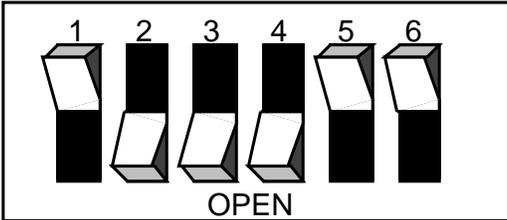
Base I/O Address = 222 Hex

osindex = 1

Figure 7-18. T1-1 Switch Settings
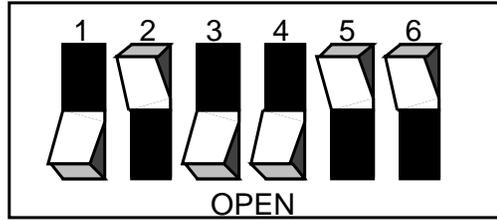
Base I/O Address = 224 Hex

osindex = 2

Figure 7-19. T1-2 Switch Settings
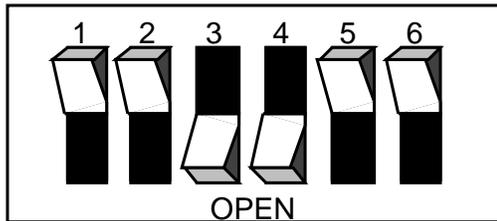
Base I/O Address = 226 Hex

osindex = 3

Figure 7-20. T1-3 Switch Settings

7-13

Placing the T1 Card in the MAP/100C

After setting the jumpers and switches, follow the steps under "General Steps for Circuit Card Installation" to place the card in the MAP/100C.

Connect the TDM-Bus cable (ED5P208-30 Group 21) to the card using the appropriate unused connector.

⇒ **NOTE:**

If the T1 card is connected anywhere except either of the two ends of the TDM Bus, regardless of the TDM cable connector position, remove the TDM Bus terminator SIPs (single in-line packages).

If the T1 card is connected at either end of the TDM Bus, leave the TDM Bus terminator SIPs in place.

If you must replace a terminator SIP, ensure it is oriented as shown in Figure 7-14. Then align the key marking (dot, number, or words) on the terminating resistor to the left, and insert.

7-14

Installing a Signal Processor Circuit Card

> ⚠ **WARNING:**
> *Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.*

Setting the Resource Options

You must set two jumpers and one bank of switches on the Signal Processor (SP) circuit card (AYC2B); see Figure 7-21 for the jumpers and switch locations. The SP cards AYC2C and AYC9 have no jumpers or switch settings. Figures 7-22 through 7-29 show the correct I/O address switch settings for SP-0 through SP-7, respectively.

Notice in Figures 7-22 through 7-29 the switches are numbered one (1) through six (6). Switch 1 is a no option switch. This means its setting is not important. The figures all show this switch as open, but it does not matter if it is open or closed. Switch 2 must be closed. Switch 3 must be open. Each figure also displays the OS index number for the corresponding switch settings. This index number maps I/O registers into UNIX.
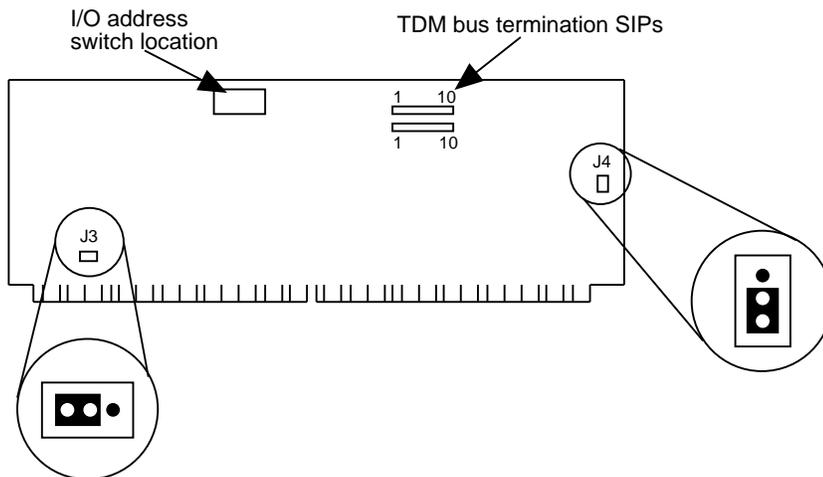
Figure 7-21. Signal Processor Card Jumper (AYC2B only) and Switch Locations (AYC2B, AYC2C, & AYC9)
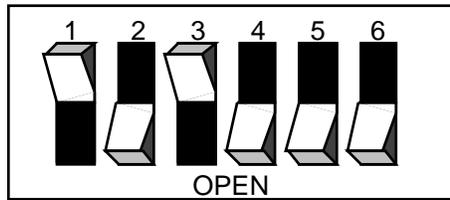
Base I/O Address = 120 Hex.

Base RAM Address = c00000

osindex = 0

Figure 7-22. SP 0 Switch Settings
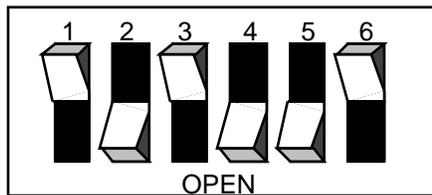
Base I/O Address = 124 Hex

Base RAM Address = c80000

osindex = 1

Figure 7-23. SP 1 Switch Settings
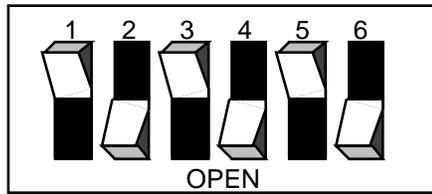
Base I/O Address = 128 Hex

Base RAM Address = d00000

osindex = 2

Figure 7-24. SP 2 Switch Settings
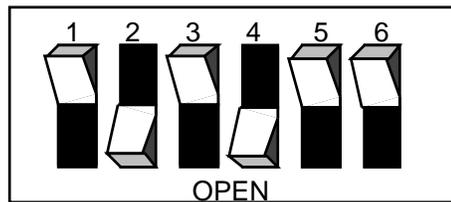
Base I/O Address = 12C Hex

Base RAM Address = d80000

osindex = 3

Figure 7-25. SP 3 Switch Settings
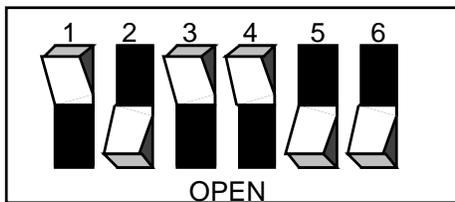
Base I/O Address = 130 Hex

Base RAM Address = e00000

osindex = 4

Figure 7-26. SP 4 Switch Settings
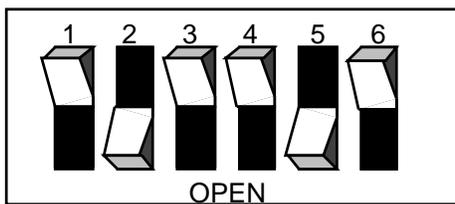
Base I/O Address = 134 Hex

Base RAM Address = e80000

osindex = 5

Figure 7-27. SP 5 Switch Settings
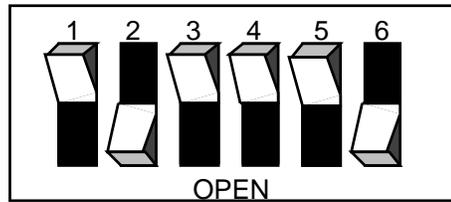
Base I/O Address = 138 Hex

Base RAM Address = f00000

osindex = 6

Figure 7-28. SP 6 Switch Settings
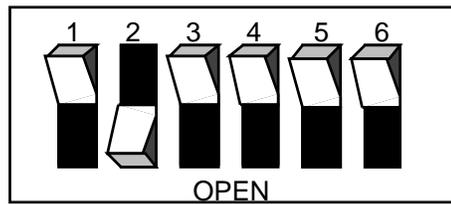
Base I/O Address = 13C Hex

Base RAM Address = f80000

osindex = 7

Figure 7-29. SP 7 Switch Settings

Placing the SP Card in the MAP/100C

After setting the jumpers and switches, follow the steps under "General Steps for Circuit Card Installation" to place the card in the MAP/100C.

Connect the TDM-Bus cable (ED5P208-30 Group 21) to the card using the appropriate unused connector.

⇒ **NOTE:**

If the SP card is connected anywhere except either of the two ends of the TDM Bus, regardless of the TDM cable connector position, remove the TDM Bus terminator SIPs (single in-line packages).

If the SP card is connected at either end of the TDM Bus, leave the TDM Bus terminator SIPs in place.

If you must replace a terminator SIP, ensure it is oriented as shown in Figure 7-14. Then align the key marking (dot, number, or words) on the terminating resistor to the left, and insert.

Installing a Companion Circuit Card

⚠ **WARNING:**
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

The Companion (CMP) circuit card is an extension of the Signal Processor circuit card and is always located next to the SP card with which it is working.

⇒ **NOTE:**
An SP may be configured to support at most 2 CMP cards. The CMP(s) connected to the SP(s) always must start addressing with card 0. For example, if there are four SPs, each with one CMP, each CMP will be addressed as card 0.

The CMP card is used only in Speech Recognition applications. Refer to *CONVERSANT Voice Information System Speech Recognition, 585-350-803*, for more information.

Set the options as described on the following pages and then follow the steps under "Gerneral Steps for Circuit Card Installation," found in Chapter 6, "Installing Circuit Cards — Introduction and Types."

Setting the Resource Options

The companion card is shown in Figure 7-30 with the location of its jumper and switches. The required switch settings are shown in Figure 7-31 and 7-32.
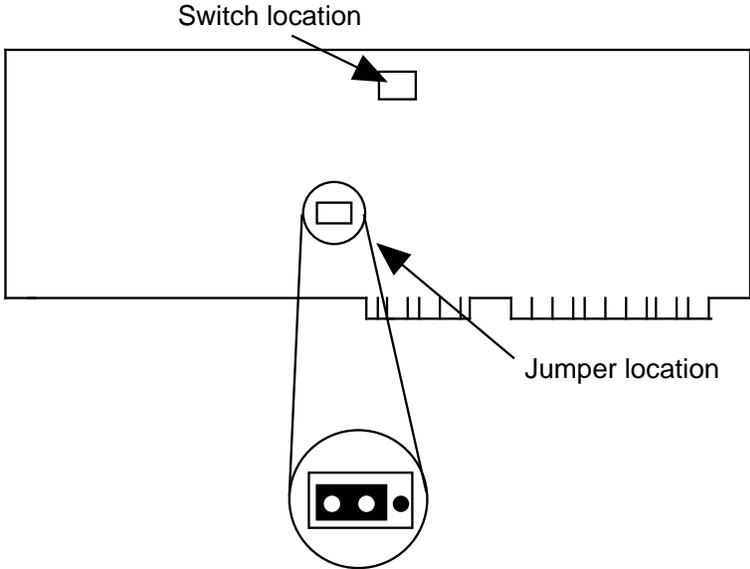
Figure 7-30. Companion Card Jumper and Switch Locations
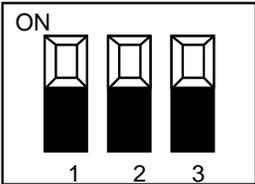
Figure 7-31. Companion Card 0 Switch Settings

7-22
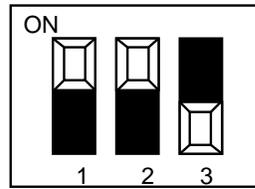
Figure 7-32. Companion Card 1 Switch Settings

Connecting Cables between the SP and CMP Cards

Because of space limitations on the SP and CMP cards, the SP/CMP bus cable arrangement is not designed with ejectors similar to the TDM bus cable. Therefore, great care must be used when installing the SP/CMP cables.

Connect the 2 SP/CMP ribbon cables between the new CMP card(s) and the associated SP card. Insert an index finger into the plastic loop and hold the card steady with your free hand (Figure 7-33). Push with uniform force across the width of the loop to install the connector. One ribbon is a 50-pin conductor cable; the other is a 44 conductor cable. See Figures 7-34 and 7-35 to get the proper cable and card configuration.

Insert index finger
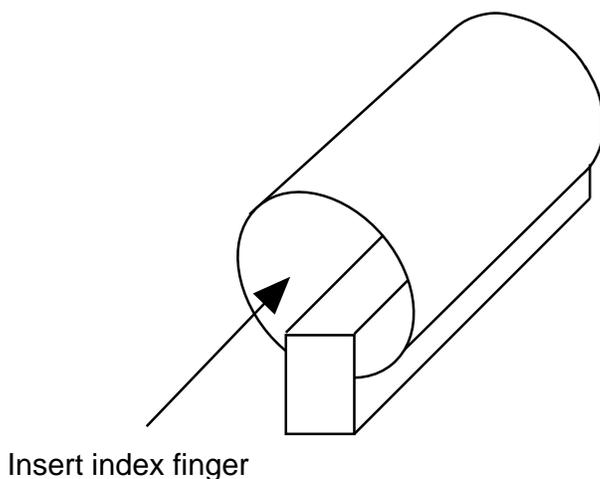
Figure 7-33. SP/CMP Connector Loop
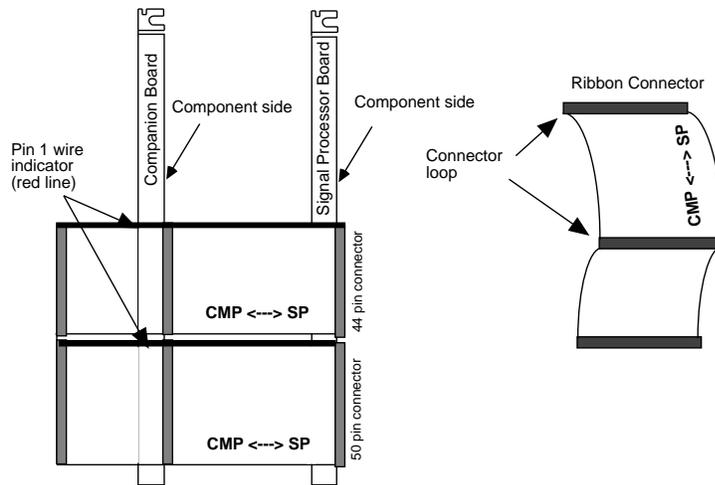
Figure 7-34. Top View of SP/CMP Bus Cables
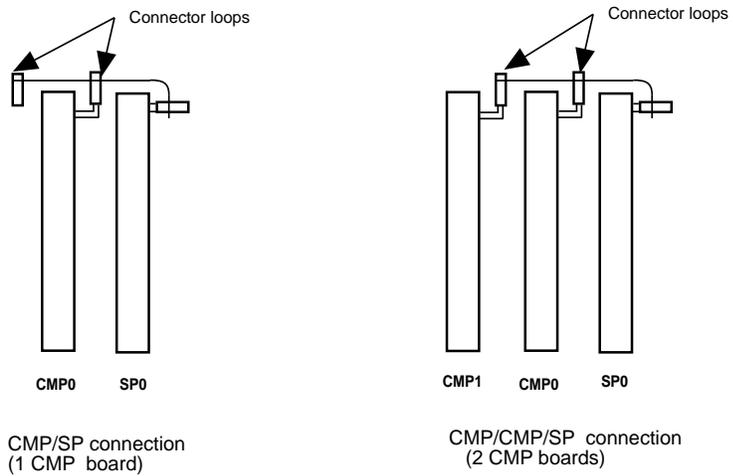
Figure 7-35. End View of SP/CMP Bus Cables

Installing Optional Feature Circuit Cards

8

What's in This Chapter

This chapter details the optional feature circuit cards. Included for each card is an illustration of the card, and illustrations of any jumpers and switch settings.

Optional feature cards include:

- PC/XL synchronous card
- IPC-900 or Gemini-1000 asynchronous serial card
- Racal-Interlan networking card
- StarLAN networking card
- PC/PBX interface card (formerly DCP card)
- PC/ISDN card (formerly IPCI card)

Installing a PC/XL Synchronous Card

⚠ **WARNING:**
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

Follow the steps under "General Steps for Card Installation," referring to the information below for switch and jumper settings.

Setting the Resource Options

The PC/XL communications card is shown below in Figure 8-1; the location of the I/O address switches and IRQ interrupt jumper are identified.
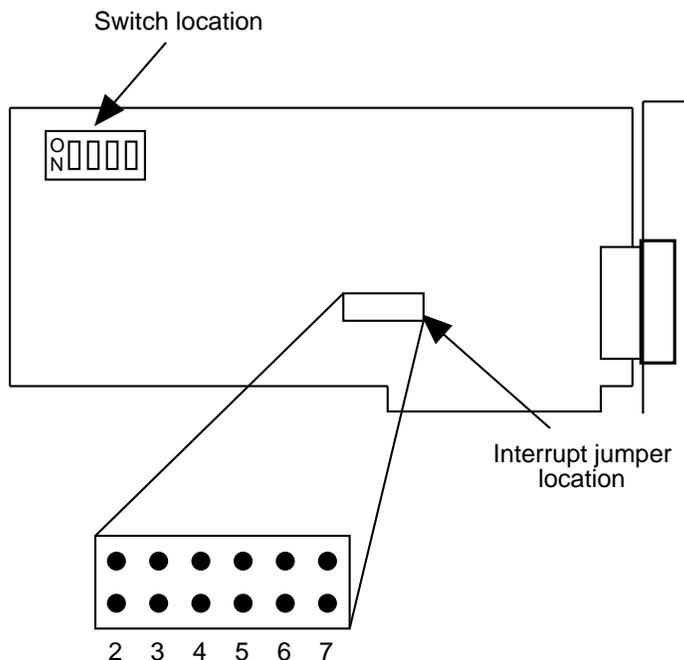
Figure 8-1. PC/XL Synchronous Card

The interrupt request (IRQ) line enables the PC/XL to request service from the processor.

■ Set the IRQ jumper — The default is 5. However, you must set the jumper according to the output from the configuration software program. Figure 8-1 illustrates the interrupt settings.

The important thing is to be sure that no other device in the system uses the same interrupt line.

■ If you are installing multiple PC/XL cards (maximum 2), set both of them to the same IRQ.

The input/output (I/O) address is the door through which the PC/XL accesses the PC data paths. Figure 8-2 illustrates the I/O Address settings.

■ Set the I/O address Dip Switches (switches 1 — 3). The default I/O address is 2A0. Again, you must set the switches according to the output from the configuration software program.

⇒ **NOTE:**
Switch 4 is not used.
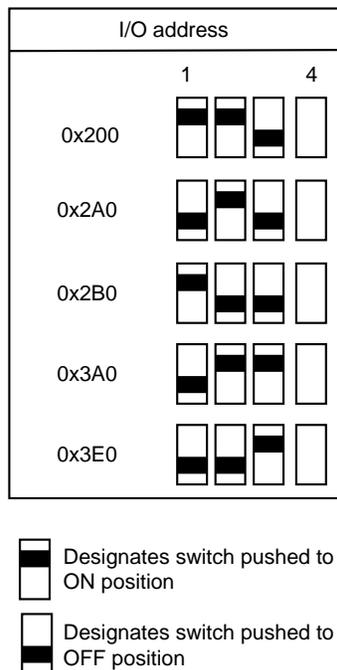
Figure 8-2. Base I/O Address Settings for PC/XL Card

The PC/XL card allows a portion of its on-card memory (RAM) to be accessed (both read and write) by the central processor (CPU). All transactions with the PC/XL card take place through this shared memory window (SMW).

The location of the SMW is set during 3270 software installation. Refer to "Installing the 3270 Host Communication Software" found in Chapter 4, "Installing Software for Optional Features in *CONVERSANT Voice Information System Version 3.1 Software Installation and Upgrade, 585-350-104*. The SMW is 16K is size and may reside at any available 16K boundary below 1Mbyte. The location is controlled by software, so there are *no* jumpers to adjust for this aspect.

If you are adding PC/XL to the system with EMULEX, make sure the SMW for PC/XL does not overlap with the SMW of the EMULEX card or any other card in the system. Also, note that the SMW for the EMULEX card is set via the hardware switch and the same SMW must be selected during software installation for the EMULEX card. The EMULEX card requires 64K of SMW.

Installing an EMULEX Synchronous Card

Follow the steps under "General Steps for Card Installation," referring to the information below for switch and jumper settings.

Setting the Resource Options

Figure 8-3 shows the switch positions on the EMULEX synchronous card. Figure 8-4 illustrates the interrupt settings. Figure 8-5 illustrates the I/O address settings. Figure 8-6 illustrates the memory address settings.
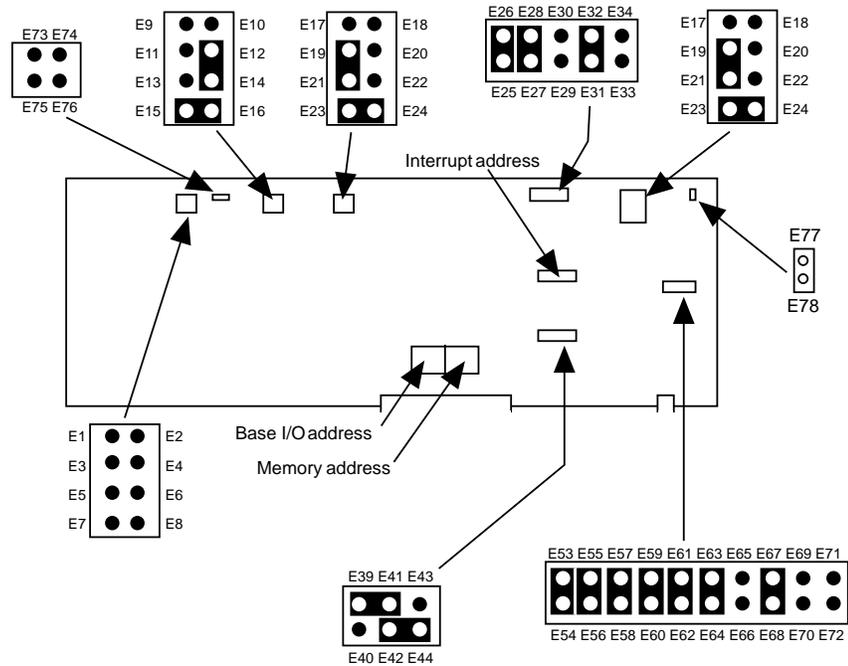
Figure 8-3. EMULEX Synchronous Card
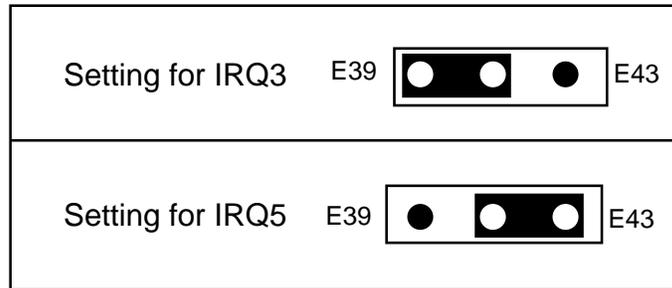
Figure 8-4. Interrupt Settings for EMULEX Card
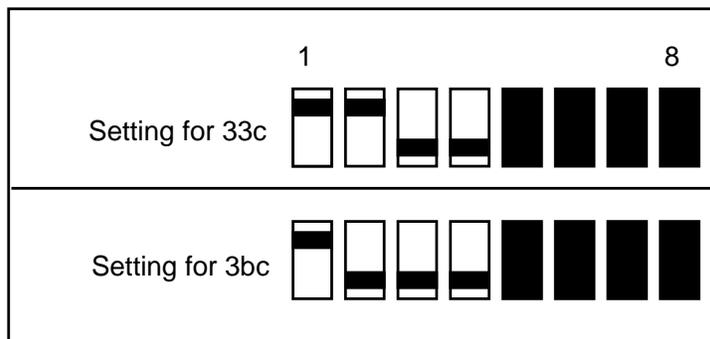
Figure 8-5. Base I/O Address Settings for EMULEX Card
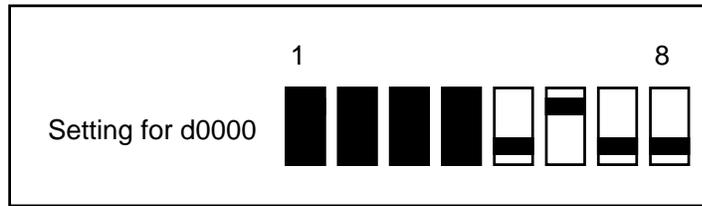
Figure 8-6. Memory Address Settings for EMULEX Card

Installing an Asynchronous Card

⚠ WARNING:
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

Follow the steps under "General Steps for Circuit Card Installation," referring to the information below for switch and jumper settings.

Setting the Resource Options

Figure 8-7 shows the IPC-900 or Gemini-1000 asynchronous serial card with its switches and jumper locations. Check and set the interrupt (IRQ) settings, I/O switches, and memory switches on the asynchronous card before installation.

Use information from the configuration program to properly set interrupts and switches. The default settings may not apply to your configuration. See Figures 8-8 through 8-10.
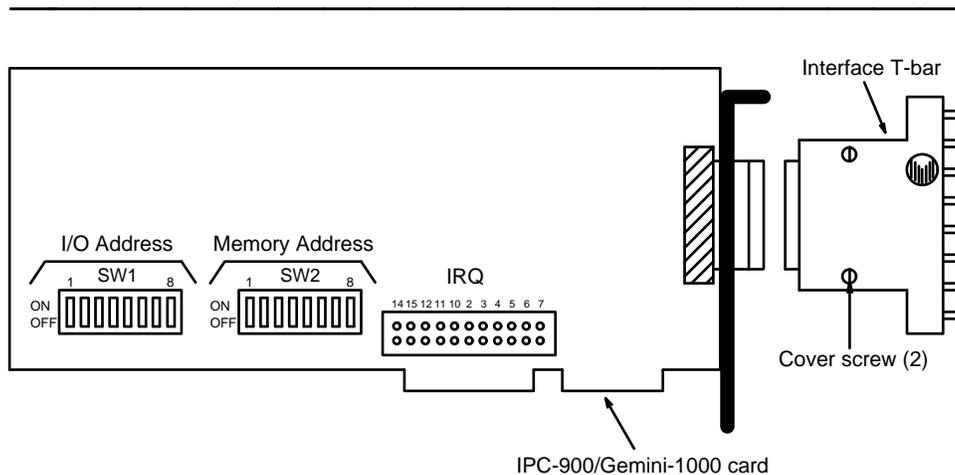
Figure 8-7. IPC-900 or Gemini-1000 Asynchronous Card
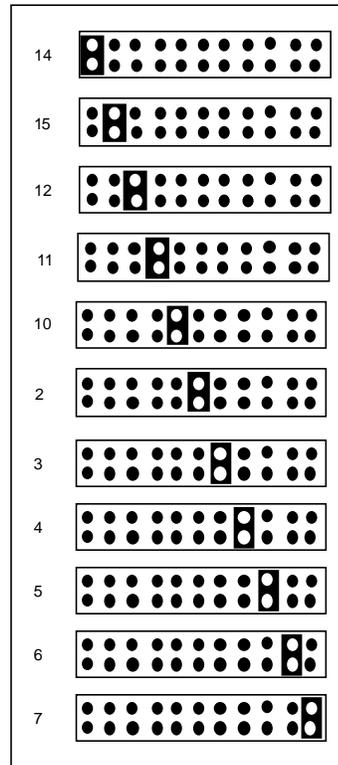
Figure 8-8. Interrupt Jumper Settings for IPC-900 or Gemini-1000 Asynchronous Card
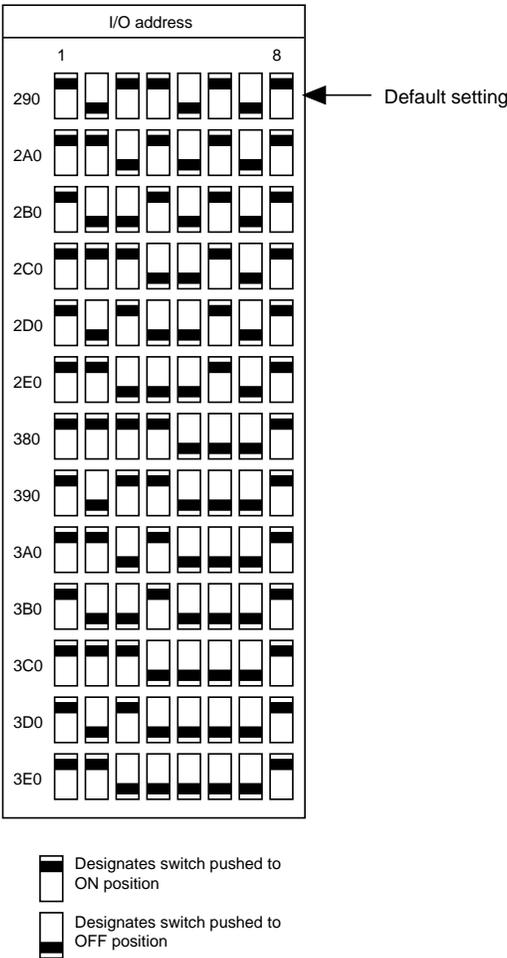
Figure 8-9. Base I/O Address Settings for IPC-900 or Gemini-1000 Asynchronous Card
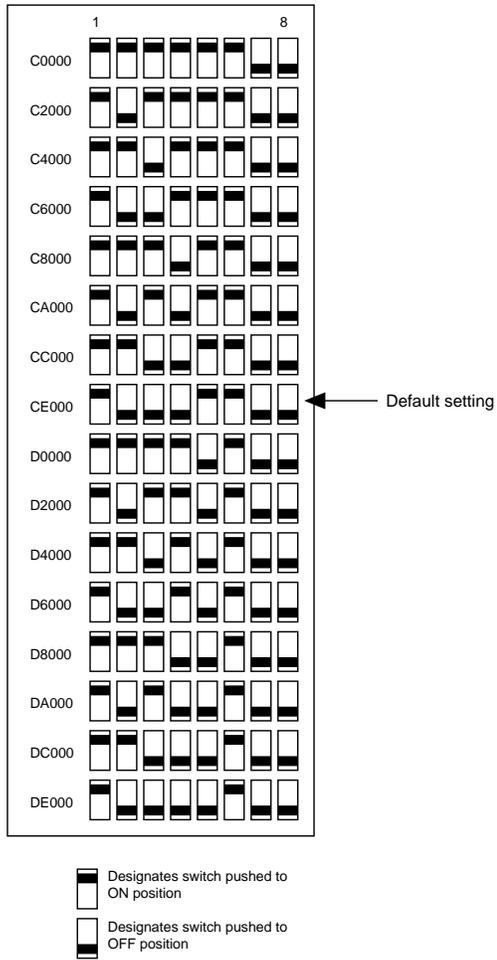
Figure 8-10. Memory Address Settings (8K byte) for IPC-900 or Gemini-1000 Asynchronous Card

Assembling the IPC-900 or Gemini-1000 Interface T-Bar

After installing the card and securing the faceplate, assemble the interface T-bar. The manufacturer places the two mounting screws needed to secure the T-bar to the circuit card faceplate inside the T-bar. You must open the T-bar to locate these screws. Use the following procedure.

1. Use a Phillips #2 screwdriver to remove the two T-bar cover screws.

2. Carefully open the T-bar so as not to drop the screws inside.

3. Locate the screws and set aside.

4. Plug the interface T-bar into the circuit card faceplate 34-pin connector.

5. Secure the T-bar in place with the two screws.

6. Reassemble and secure the interface T-bar cover.

7. You have completed this procedure.

Installing a Racal-Interlan Networking Card

⚠ **WARNING:**
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

You can have only one (1) networking card in a MAP/100C, either a Racal-Interlan or StarLAN card.

Follow the steps under "General Steps for Circuit Card Installation," referring to the information below for switch and jumper settings.

Setting the Resource Options

The Racal-Interlan card is shown in Figure 8-11. Figure 8-11 also illustrates the location and settings for all but the interrupt jumpers. Figure 8-12 shows the settings for the interrupt jumper.
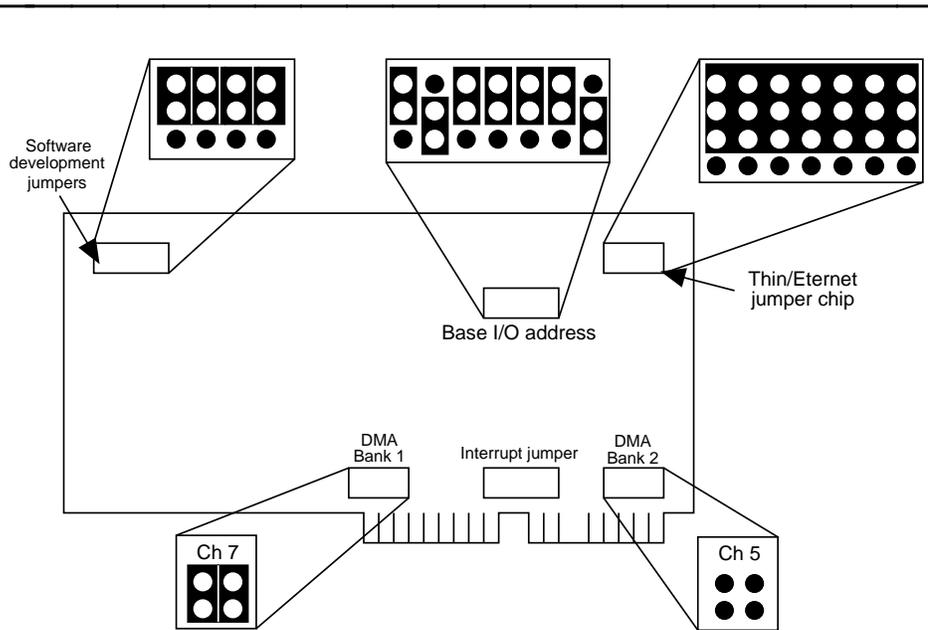
Figure 8-11. Racal-Interlan Card Jumper Locations
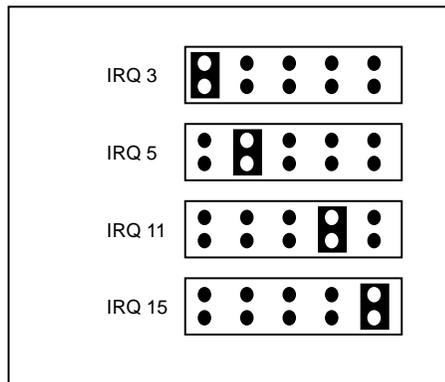
Figure 8-12. Interrupt Option (IRQ) Settings on Racal-Interlan Card

8-13

Installing a StarLAN Card

⚠️ **WARNING:**

Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

You can have only one (1) networking card in a MAP/100C, either a Racal-Interlan or StarLAN card.

Follow the steps under "General Steps for Card Installation," referring to the information below for switch and jumper settings.

Setting the Resource Options

The StarLAN card is shown in Figure 8-13. Figure 8-13 also illustrates the location of the jumpers. Figure 8-14 shows the settings for the I/O address jumpers. Figure 8-15 shows the settings for the interrupt jumpers. Figure 8-16 shows the settings for the memory address jumpers.
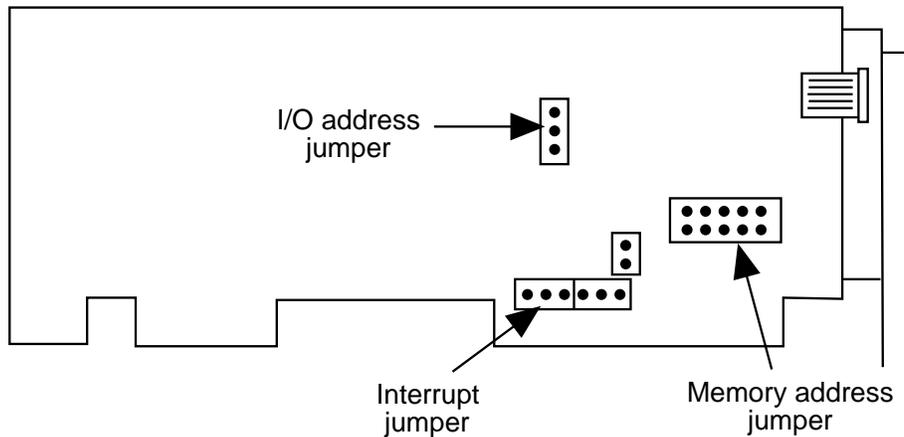
Figure 8-13. StarLAN Card Jumper Locations
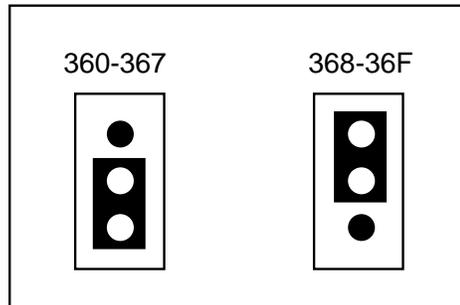
Figure 8-**14. Base I/O Address Jumper Settings for StarLAN Card**
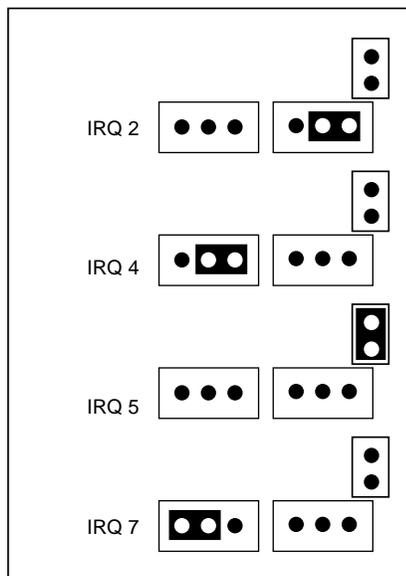
Figure 8-**15. Interrupt Request (IRQ) Jumper Settings for StarLAN Card**
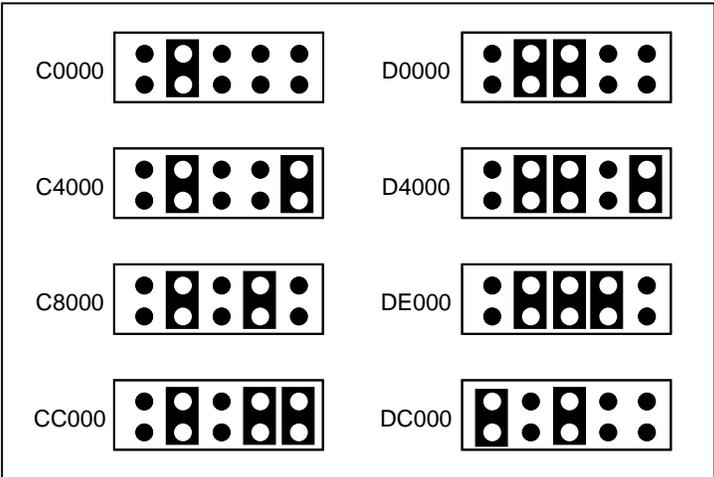
Figure 8-16. Memory Address Jumper Settings for StarLAN Card

Installing a PC/PBX Interface Card
(Formerly DCP Card)

> ⊫> **NOTE:**
> The instructions provided here include the installation of the PC/PBX
> interface card. Other AT&T documents may refer to the card as the
> PC/PBX Platform or Expansion or Digital Communications Protocol (DCP)
> card. All of these names refer to the same card.

> ⚠ **WARNING:**
> *Observe proper electrostatic discharge precautions when handling
> computer components. Wear a ground wrist strap against your bare skin
> and connect to an earth ground.*

If your system is going to be co-resident with AUDIX Voice Power, directly
interfacing with System 75 or DEFINITY G1 & G2, then you need a PC/PBX
interface circuit card in the MAP/100C.

Follow the steps under "General Steps for Circuit Card Installation," referring to
the information below for switch and jumper settings.

In addition, disable the CPU COM2 serial port to prevent IRQ address conflict.
Refer to Chapter 9, "Installing MAP/100C-Provided Circuit Cards," the section,
"Installing the Central Processing Unit Circuit Card" for more information.

Setting the Resource Options

The jumpers on the PC/PBX interface card should remain in the factory default
positions as shown in Figure 8-17.
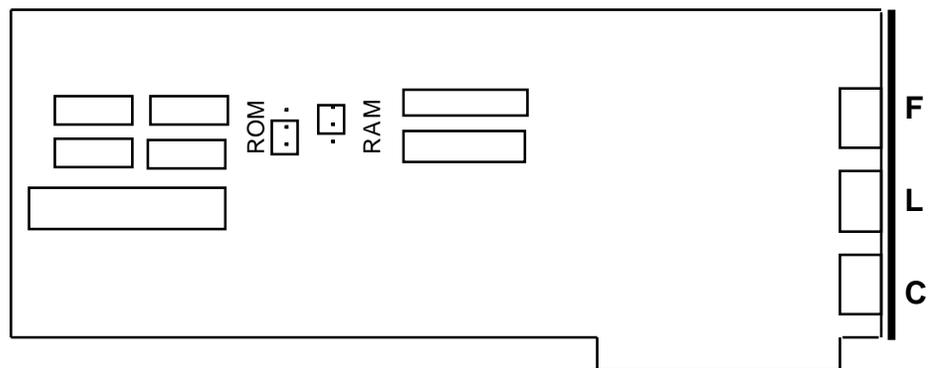
Figure 8-17. Location of Jumpers on a PC/PBX Interface Card

Installing a PC/ISDN Card (Formerly IPCI Card)

⚠ WARNING:

Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

Follow the steps under "General Steps for Circuit Card Installation," referring to the information below for switch and jumper settings.

Setting the Resource Options

The PC/ISDN card is shown in Figure 8-18 with the location of its switches. The switch settings are shown in Figure 8-19.
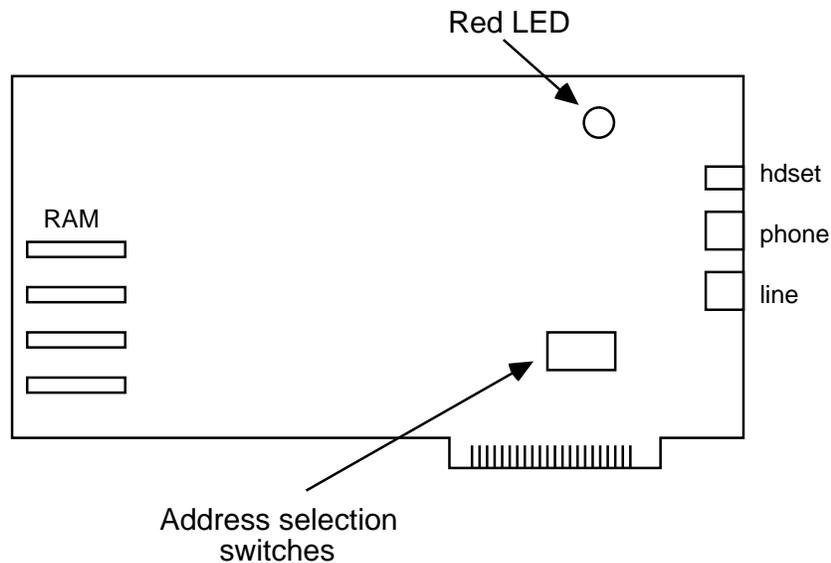
Figure 8-18. PC/ISDN Card

Address Space	Base Address	Set These Switches			
		1	2	3	4
1	0c8000h	ON	OFF	OFF	ON
2	0cc000h	OFF	OFF	OFF	ON
3	0d0000h	ON	ON	ON	OFF
4	0d4000h	OFF	ON	ON	OFF
5	0d8000h	ON	OFF	ON	OFF
6	0dc000h	OFF	OFF	ON	OFF

Figure 8-19. PC/ISDN Card Address Switch Settings

Installing MAP/100C-Provided Circuit Cards

9

What's in This Chapter

This chapter details the standard MAP/100C circuit cards. Included for each card is an illustration of the card, and illustrations of any jumpers and switch settings.

The manufacturer provides the MAP/100C cards in every unit shipped. Refer to this chapter if you need to replace a card. If you need to add memory to the CPU card, refer to Chapter 10, "Adding Additional Hardware."

Standard MAP/100C circuit cards include:

- Central Processing Unit (CPU) circuit card

- SCSI Host Adapter controller card

- Video controller card

➡ NOTE:
If you are reusing 600 Mbyte ESDI drives from a older MAP/100C, the list above will have following entries instead of the SCSI entry:

- ESDI Cartridge Tape Controller Card

- ESDI Hard Disk Controller Card

Installing the Central Processing Unit Circuit Card

⚠ **WARNING:**
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

The manufacturer packages the central processing unit (CPU) in the MAP/100C on a single PC/AT compatible circuit card that plugs into the passive backplane located inside the unit.

There are several hardware options available to the CPU:

1. Jumper settings which enable or disable the serial and parallel ports

2. Keyboard and serial port ribbon cable connections

3. Memory Additions (see Chapter 10)

The first two options are described on the following pages.

Setting the Jumpers

The CPU contains seven jumper blocks, as shown in Figure 9-1. Locate the jumper on the right two pins of JP21, pins 2 and 3.
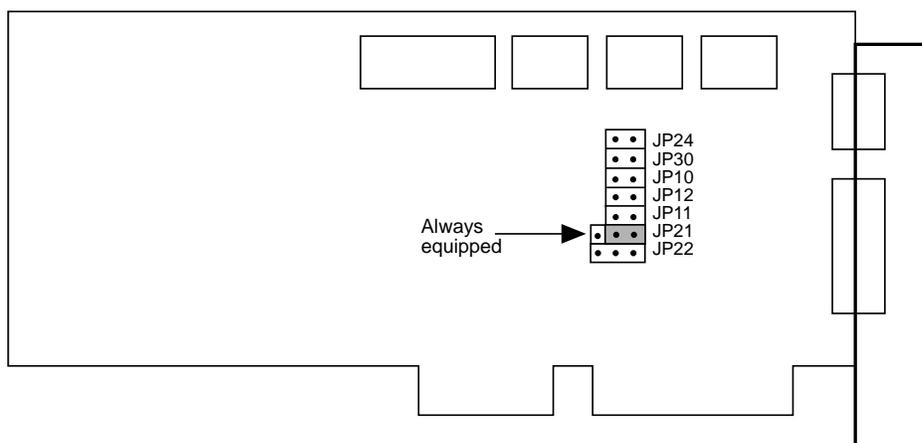
Figure 9-1. Jumper on the CPU Circuit Card

Jumpers JP24, JP30, and JP22 are never equipped with any jumpers in the MAP/100C. Jumper JP21 always has a jumper on pins 2 and 3, as shown. JP11, JP10, and JP12 are used to physically connect interrupts 4, 3, and 7 respectively to the PC/AT Bus.

When these jumpers are installed, you *MUST* disable COM1 and COM2 in the MAP/100C SETUP table. See section,"Accessing the Setup Screen Setup," in Chapter 3, "Connecting Peripherals and Powering Up," for more information on using SETUP.

Most applications will have all of these ports enabled and NO jumpers will be equipped. However, applications which use adapter cards that require interrupts 4, 3, and 7 should configure these jumpers by following the table in Figure 9-2.

Port	Jumper	Jumper In/Out	IRQ	Disposition
COM1	JP11	In	4	COM1 must be disabled in SETUP, IRQ4 available for other use
COM2	JP10	In	3	COM2 must be disabled in SETUP, IRQ3 available for other use
Parallel Port	JP12	In	7	Parallel Port cannot be used, IRQ7 available for other use

Figure 9-2. Jumper Settings on the CPU Circuit Card

Making Header Connections for Keyboard and Serial Ports

The MAP/100C includes cables that connect to the CPU circuit card inside the unit. These cables connect to the keyboard port and second asynchronous port (COM2). Locate the two pin header connectors on the CPU card and the keyboard and COM2 cables inside the MAP/100C. The pin header connectors are located near the top edge of the CPU as shown in Figure 9-3.
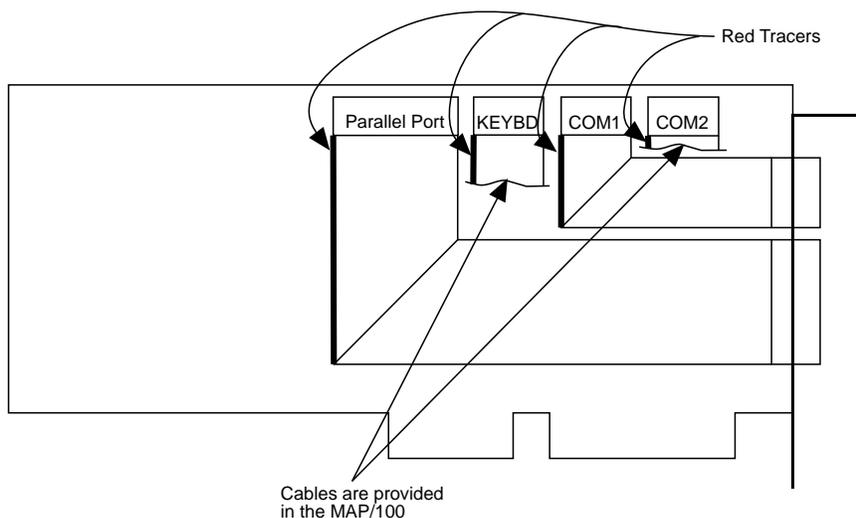
Figure 9-3. Header Connectors on the CPU Circuit Card

The header connector numbers are written on the circuit card from right to left. The header connectors are numbered as follows:

- COM1 — P301
- COM2 — P302
- Keyboard — P303
- Parallel — P304

The parallel printer port (P304) cable (the largest of the four connectors) and the COM1 cable (P301) are internally connected to the faceplate with the red wire tracer located as shown in the figure. The cables are preassembled on the CPU card and you do not have to connect them.

You have to reconnect the other two ports, keyboard (P303) and COM2 (P302), to their cables after installing the CPU in the MAP/100C. Complete the following steps:

1. Align the face plate and edge of the circuit card with the circuit card guide and the backplane slot position.

   The card is now in front of the expansion slot.

2. Move the card away from you until it touches the slot.

3. Place your thumbs flat on the edge of the card over the connector and push it into the backplane slot.

   Ensure that the card is firmly seated in the slot by gently pushing on it; it will not give when firmly seated.

4. Align the red marker on the keyboard cable (smaller in width) with pin 1 in the third connector from the CPU face plate.

   Pin 1 is printed on the circuit card.

5. After prefolding the cable neatly and dressing the excess across the CPU card top edge towards the rear I/O mounting, press the connector into place.

6. Align the red marker on the COM2 cable (larger in width) with pin 1 in the closest connector to the faceplate.

7. After prefolding the cable, neatly dress the excess down against the CPU card and press the connector into place.

8. Ensure the two cables that are part of the CPU circuit card are pressed firmly against the card.

   The adjacent video card can easily pullout the cables when it is removed if the cables are not pressed firmly against the CPU circuit card.

9. Secure the outer retaining bracket (faceplate) of the circuit card with the screw.

10. You have completed this procedure.

Installing a SCSI Host Adapter Controller Card

⚠ **WARNING:**
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

The SCSI controller card controls both hard disk drives, the floppy disk drive, the cartridge tape drive, as well as the SCSI Bus LED front chassis panel indicators for these drives. The information outlined in this section describes the card only for use with one hard disk drive, one floppy disk drive, and one cartridge tape drive.

⇒ **NOTE:**
Follow instructions to install this card as shown here. Do *NOT* use the instructions shipped by the manufacturer with the card.

Follow the steps under "General Steps for Card Installation," referring to the information below for switch and jumper settings.

Setting the Resource Options

Install the terminating resistors SIPS. To avoid any confusion when installing them, first make sure that your card is oriented as shown in Figure 9-4. Then align the key marking (dot, number, or words) on the terminating resistor to the left and insert it.

Set the jumpers using the proper jumper settings as shown in Figure 9-4.

Attach all the cabling to the card, including the SCSI cable, the floppy cable, and the visual indicator cable.
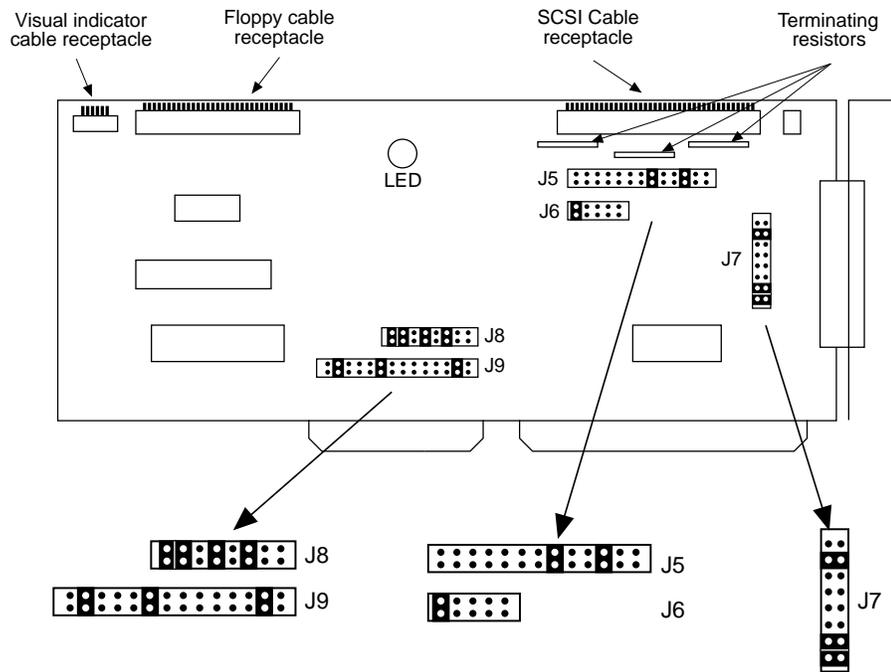
Figure 9-4. SCSI Host Adapter Controller Card Jumper Settings

Installing an ESDI Hard Disk Drive Controller Card

⚠ WARNING:
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

The ESDI card controls both hard disk drives and the floppy disk drive as well as the ESDI Bus LED front chassis panel indicators for these drives.   The information outlined in this section describes the card only for use with one hard disk drive and one floppy disk drive.

⇒ NOTE:
Follow instructions to install this card as shown here. Do *NOT* use the instructions shipped by the manufacturer with the card.

Follow the steps under "General Steps for Card Installation," referring to the information below for switch and jumper settings.

Setting the Resource Options

The ESDI hard disk controller card requires jumper settings to be configured as shown in Figure 9-5.

Attach all the cabling to the card, including the floppy cable and the visual indicator cable.
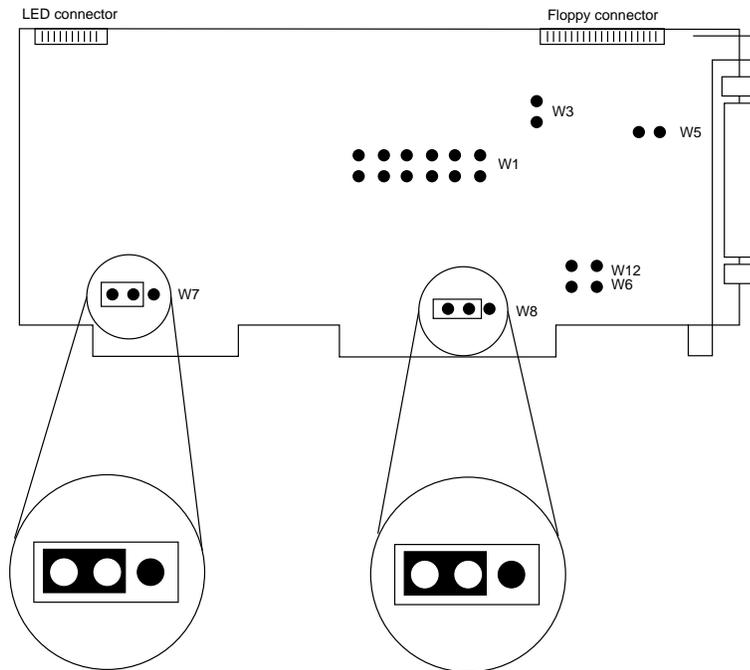
Figure 9-5. ESDI Hard Disk Controller Card Jumper Settings

Installing an ESDI Cartridge Tape Controller Card

⚠ **WARNING:**
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

Setting the Resource Options

Complete the following procedures to set option switches on the circuit card:

1. Attach a ground strap and connect to an appropriate ground.

2. Remove the card from its shipping carton, saving the carton and packing materials should the card need to be returned.

3. Set the switches and jumpers as indicated in the Figures 9-6 and 9-7.

4. You have completed this procedure.

   Continue with the next procedure, "Making Cable Connections and Placing Card into the MAP/100C."
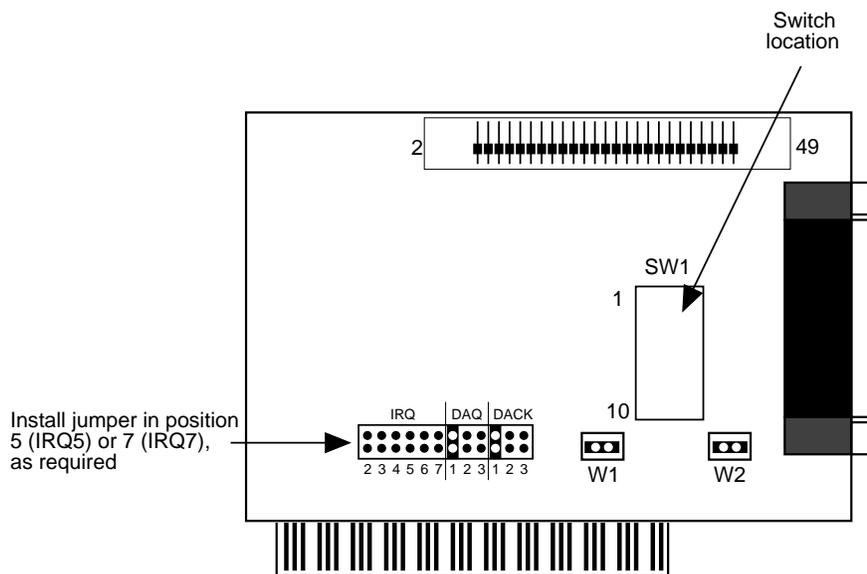
Figure 9-6. Cartridge Tape Controller Card

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

OPEN
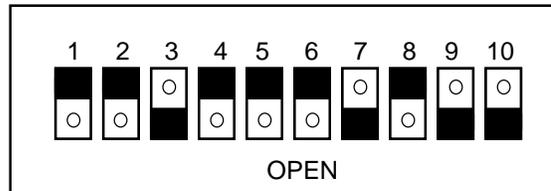
Figure 9-7. Tape Controller Card Switch Settings

Making Cable Connections and Placing the Card in the MAP/100C

Follow "General Guidelines for Circuit Card Installation" in Chapter 6 and the steps below to install the card.

1. Install the cartridge tape interface cable assembly (ED5P208-30 Group 24) into the board.

   Ensure the cable assembly pin 1 tracer interconnects to the connector pin 1 as shown in Figure 9-8.

Pin 1 wire tracer

Connector
pin 1
indicator

1

ED5P203-30
group 24
cable assembly
(pre-formed to
dress across
circuit card)
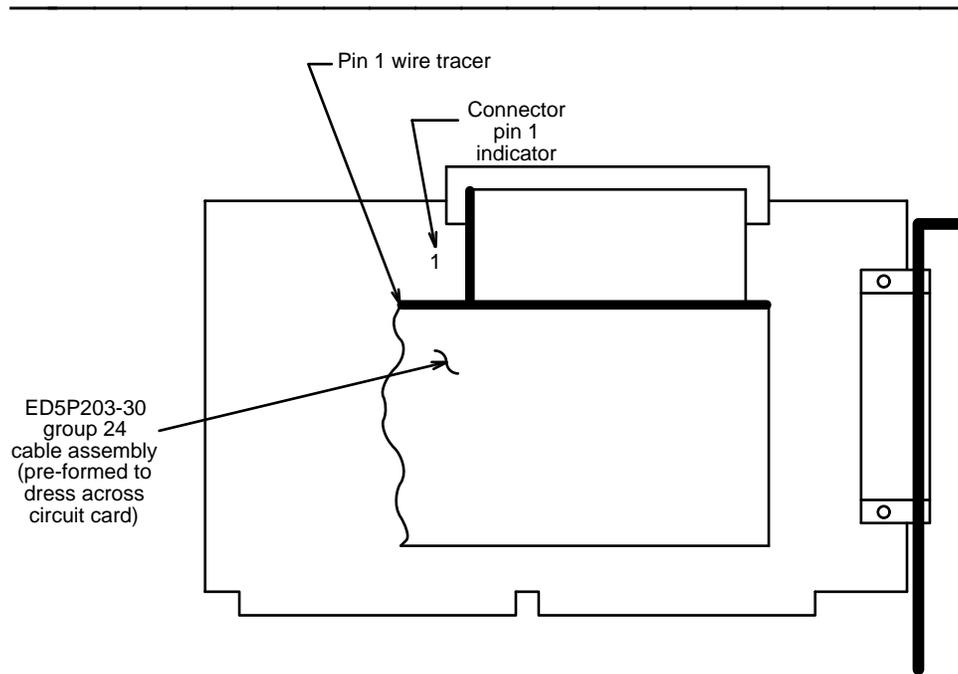
Figure 9-8. Cartridge Tape Interface Cable Pin Connections

2. Replace the cover plate retaining screw by placing it through the card faceplate opening.

3. Route the cable assembly down against the card to reduce congestion from the cartridge tape magnetic peripheral to the card.

   The cable routes between the card and the side of the power supply backplane cables. The cable is prefolded and keyed. See Figure 9-9. The cable assembly code number is ED5P208-30, G24.

4. You have completed this procedure.

⇒ **NOTE:**
The cable is designed with a pull tab on the circuit card cable end. If you have to remove the cable from the connector, grab with thumb and forefinger in the center and pull quickly.

Installing a Video Controller Card

⚠️ **WARNING:**
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

Setting the Resource Option Switches

Complete the following procedures to set option switches on the circuit card.

1. Attach a ground wrist strap and connect to an appropriate ground.

2. Remove the card from its shipping carton, saving the carton and packing materials should the card need to be returned.

3. Set the dip switch as indicated in the following figure.

4. Set the jumpers as described below.

   See the following figure for jumper locations.

5. You have completed this procedure.

JP4

3

JP3

Video
cabling
interface

SW1
DIP
switch

System
expansion slot
connectors

OFF

1 2 3 4 5
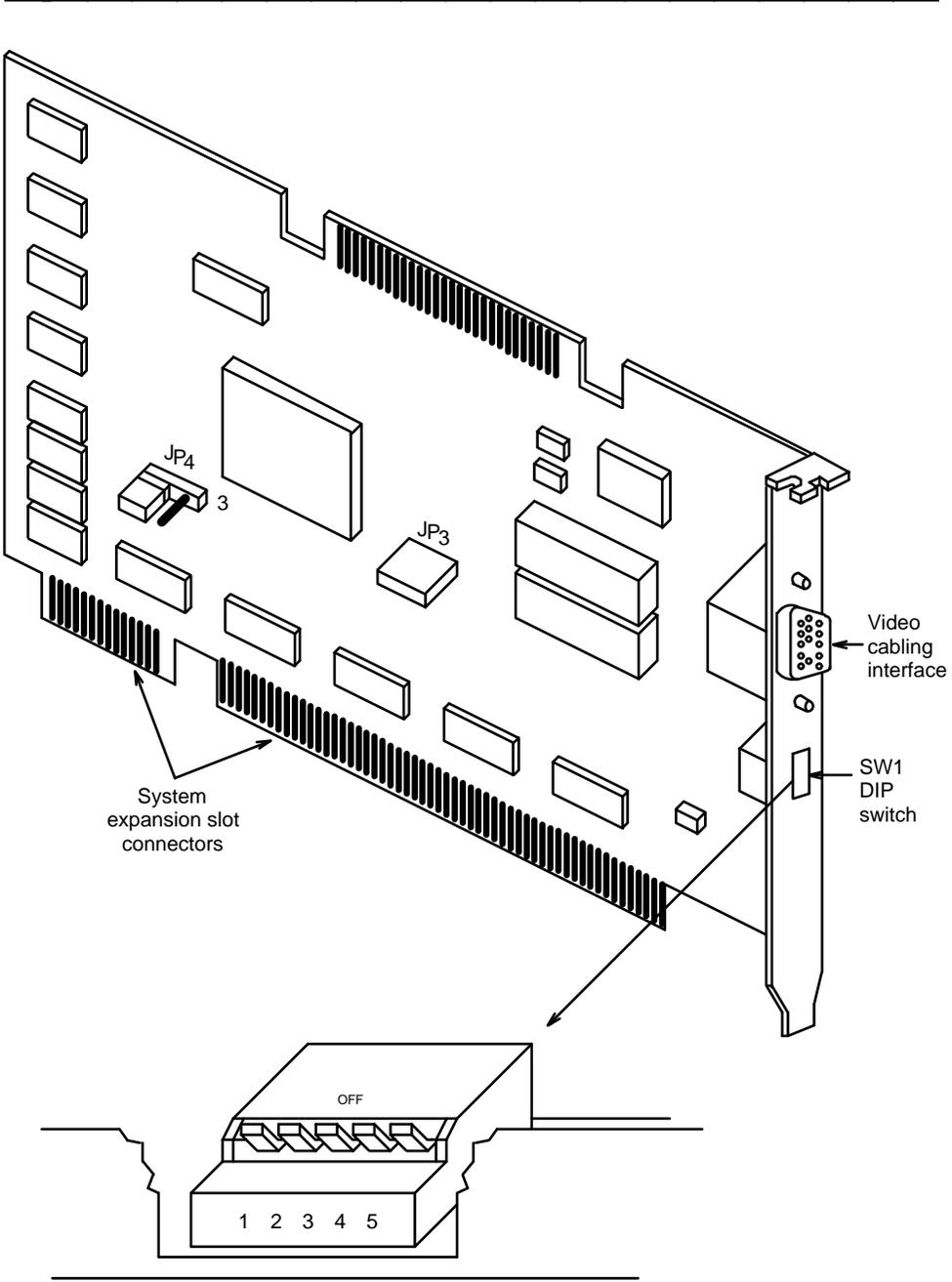
Figure 9-9. Video Display Card Switch and Jumper Locations

Setting the Jumpers

The manufacturer sets the jumpers. The JP3 jumper enables the controller card to operate at zero wait state.

The JP4 jumper enables the address latch and should be pre-installed on pins 1 and 2.

Setting SW1 Dip Switches

All dip switches should be set to the off position and all the switches should be pointed upward. Use the point of a pen or similar instrument to set the switches.

Do not use a lead pencil. The graphite can damage the card.

These switches control the monitor's mode and vertical and horizontal retrace/scan rate. See Figure 9-9 for location on the video card.

Placing the Card in the MAP/100C

Follow the procedures in "General Steps for Circuit Card Installation" in Chapter 6 and the steps listed below.

1. Hold the card by its top corners.

2. Align the circuit card face plate and edge of the circuit card with the circuit card guide and the backplane slot position against the CPU card.

   The card is now in front of the expansion slot.

3. Move the card away from you until it touches the slot.

4. Carefully try not to pinch or damage any cable.

5. Place your thumbs flat on the edge of the card and push it into the backplane slot.

6. Ensure that the card is firmly seated in the slot by gently pushing on it; it will not give when firmly seated.

7. Replace the cover plate retaining screw by placing it through the card faceplate opening.

8. You have completed this procedure.

Adding Additional Hardware

10

What's in This Chapter

This chapter describes how to add the following hardware:

- Additional memory on the CPU circuit card

- A second hard disk drive

- A speech production unit

Adding More Memory

⚠ **WARNING:**
Observe proper ESD precautions when handling computer components. Attach a wrist ground strap and connect to an appropriate ground. See Chapter 2, "Getting Started," for details.

Memory and SIMM Description

The CPU circuit card can support up to 12 MB of memory packaged on single in-line memory modules (SIMMs). The SIMMs are 4 MB modules (406666727). A minimum of 12 MB (3 — 4 MB SIMMs) is always equipped. SIMM sockets are provided at the end of the circuit card as shown in Figure 10-1.

⇒ **NOTE:**
12 Mbytes of memory is the *only* memory configuration that CONVERSANT supports.

Determining if SIMMs Are Damaged

A damaged SIMM can be determined in two ways:

■ When the system comes up, the correct amount of memory should scroll on the screen. If the amount of memory has dropped, a SIMM is not functioning properly.

■ UNIX requires over 4 MB of memory to operate. If UNIX cannot operate, more than one SIMM may be damaged. The system will give you an error message, indicating that UNIX cannot function.
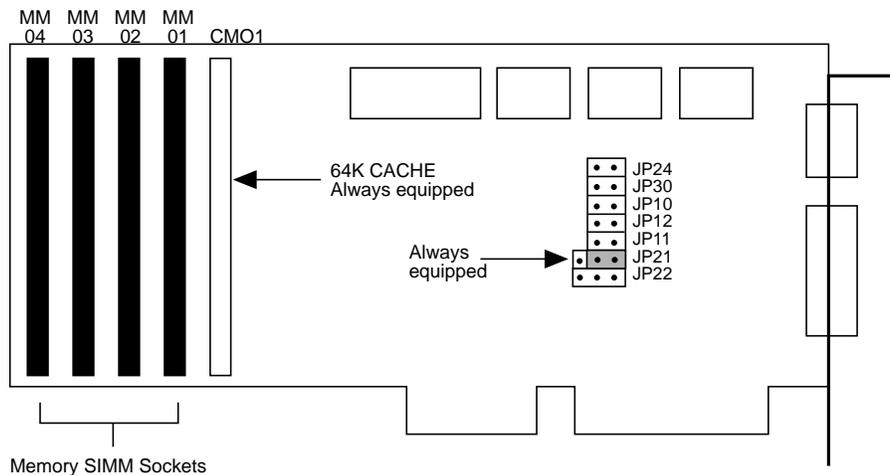
Figure 10-1. SIMM Sockets on the CPU Circuit Card

Adding/Replacing SIMMs

⚠ **WARNING:**
Observe proper electrostatic discharge precautions when handling computer components. Wear a ground wrist strap against your bare skin and connect to an earth ground.

SIMMs must be equipped in the following order: Memory Module-01 (MM01), MM02, MM03 and MM04. To add additional memory:

1. Verify that the new or replacement SIMMs are on site and appear to be in usable condition, that is, no obvious shipping damage, etc.

2. If you are currently connected to the telephone network, notify the telephone company that you are disconnecting. They will ask you which extensions will be affected.

⚠ **WARNING:**
If you disconnect the MAP/100 from the telephone network on a continuing basis without letting the telephone company know, they can disconnect you permanently. (Digital circuits ONLY)

3. Perform a "soft" shutdown of the system if you have been operating the MAP/100 as a fully loaded system.

4. Turn *off* both the front panel power switch and the circuit breakers on the back and remove the incoming line. Also disconnect keyboard and video cords.

5. Tag the power plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.

6. Remove the parallel port (printer) and COM1 conncetor from the CPU card.

7. Open the front door to access card cage.

   See Chapter 5, "Getting Inside the Computer," for more information.

8. Remove the screws in the circuit card hold-on bracket and remove the bracket. Do *not* lose the screws, place them where you can relocate them.

9. Carefully remove any internal connecting cables attached to the CPU card.

   Use pull tabs when available to reduce damage to the connector pin fields.

   ⚠ **CAUTION:**
   The CPU COM2 port and keyboard ribbon cable connected to the chassis' rear area need to be disconnected before completing removal. Even though some cable slack is provided, it is better to remove these connector cables before attempting to remove the CPU card.

10. Remove the retaining screw of the face plate for slot #16, saving the retaining screw.

11. Gently remove the CPU card from the slot.

12. Lay the CPU card on an appropriate flat, clean ESD surface.

13. To remove an existing SIMM, gently release the metal snap locks at the edge of the SIMM connectors.

    Rotate the SIMM downward to a 60 degree angle and remove.

14. To install: position the new SIMM at approximately a 60 degree angle with respect to the circuit card.

    All SIMMs are keyed to prevent them from being inserted incorrectly.

15. Push down at that angle until you feel the the SIMM reset into the SIMM carrier.

16. Snap the SIMM into place by rotating it to an upright position.

    The metal snap locks on the ends of the connector for the SIMM will open and then lock when in the upright position.

17. Ensure the connector guide pins are seated into the clearance holes provided at the end of each SIMM. When properly seated, the guides should be fully extended into the circuit card clearance holes.

18. Place the card in the slot. Align the circuit card face plate and edge of the circuit card with the circuit card guide and the backplane slot position. The card is now in front of the expansion slot. Move the card away from you until it touches the backplane slot connector.

19. Place your thumbs flat on the edge of the card over the connector and push it into the backplane slot. Ensure that the card is firmly seated in the slot by gently pushing on it; it will not give when firmly seated.

20. Reinstall the keyboard and COM2 ribbon cable connectors by following the instructions given below. See Chapter 9, "Installing MAP/100C-Provided Circuit Cards," for more information on CPU connectors.

    a. Align the red marker on the keyboard cable with pin 1 in the third connector (P303) from the CPU faceplate.

       Pin 1 is printed on the circuit card.

    b. After prefolding the cable neatly and dressing the excess across the CPU card top edge (towards the rear I/O mounting), press the connector into place.

    c. Align the red marker on the COM2 cable with pin 1 in the closest connector (P302) to the faceplate.

    d. After prefolding the cable, neatly dress the excess down between the CPU and video card and press the connector into place.

    e. Ensure the two cables that are part of the CPU circuit card are neatly dressed to reduce congestion and interference if adjacent cards are removed.

21. If you have completed work in the card cage and in the computer, complete the following steps.

    a. Replace the cover plate retaining screw by placing it through the card faceplate opening.

    b. Replace the card hold-down bracket.

    c. Close the front door.

       See Chapter 5, "Getting Inside the Computer" for more information.

    d. Reconnect the input power cord, keyboard, and monitor cords.

    e. Replace the parallel port (printer) and COM1 connectors to the CPU faceplate.

    f. Reconnect the phone lines or trunk connections.

    g. Power up the computer.

22. You have completed this procedure.

$\Longrightarrow$ **NOTE:**
The quantity of installed memory is sensed automatically during the card's initial setup and requires no additional hardware setup.

Adding a Second Hard Disk

A second SCSI 1.2 Gbyte hard disk may be added to accomplish SCSI disk mirroring. See *CONVERSANT Voice Information System SCSI Mirroring, 585-350-204*, book for more information on supported SCSI disk configurations and the purpose of SCSI disk mirroring.

A second ESDI 600 Mbyte hard disk may be is added to provide additional space for speech storage, although it can be used to store any type of information. Depending on the applications running on the VIS, you may want to use the additional hard disk for call data information, user files, etc.

⚠ **CAUTION:**
    You CANNOT mix ESDI and SCSI hard disk drives on your MAP/100C!

Readying the MAP/100C for Disk Installation

1. Notify the telephone company that you are disconnecting the system if you are currently connected to the network. They will ask you which extensions are affected.

   ⚠ **WARNING:**
       If you shut down your system on a continuing basis without notifying the telephone company, they can permanently disconnect your system from the network. (Digital circuits ONLY)

2. Perform a "soft" shutdown of the system.

3. Turn *off* both the front panel power switch and the circuit breakers on back and remove the incoming power line. Also disconnect keyboard and video cords.

4. Tag the power plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.

5. Open the front door.

6. Open the access door to the peripheral bay.

   See Chapter 5, "Getting Inside the Computer," for more information.

7. Locate the filler panel just below the control panel.

8. Remove one screw on each side of the filler panel.

9. Reach through front door opening to the inside of the MAP/100C peripheral bay to behind the filler panel.

10. Push out filler panel and discard.

11. You have completed this procedure.

Readying a SCSI Disk for Installation

1. Remove the installation kit and bag of screws from the top of the hard disk carton. Open the box containing the hard disk.

   Cut top seam and side seams so that the box can be used again should you need to return the hard disk to the factory.

   ### ⚠ WARNING:
   Return any piece of equipment in the original shipping carton and packing materials to ensure warranty.

2. Remove the disk from the anti-static bag, keep the bag with the shipping carton.

3. Place the disk on its back, a black solid plastic surface, circuitry up.

4. Verify that all jumpers are correctly positioned as shown in Figure 10-2.
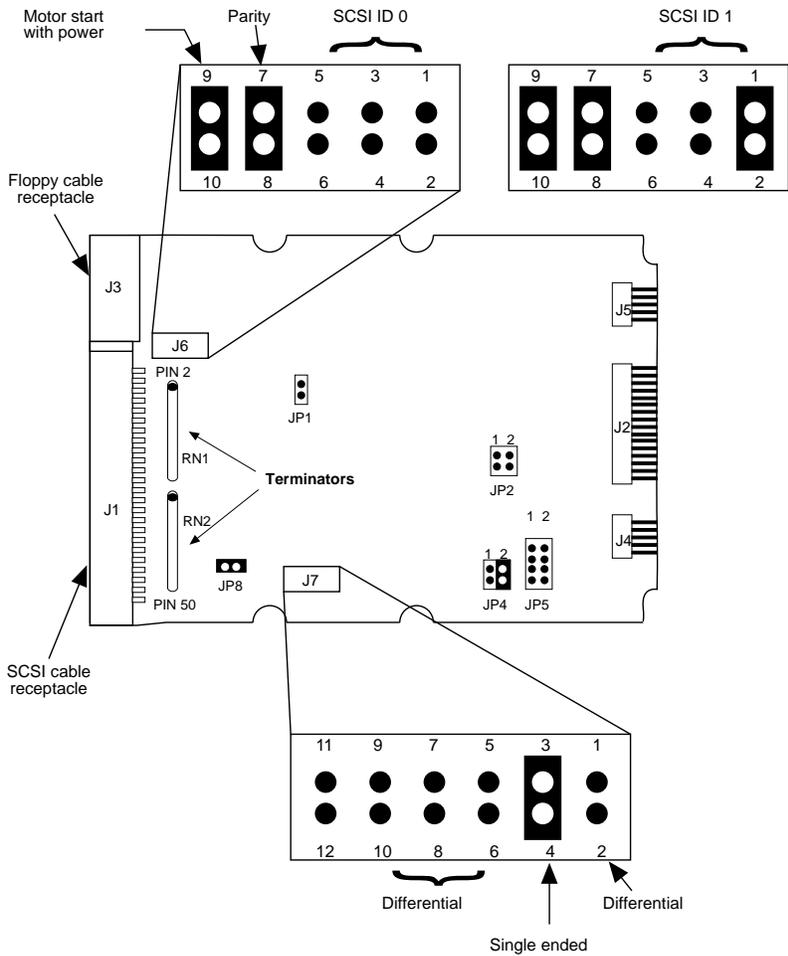
Figure 10-2. Jumper Settings for the SCSI Hard Disk Drive

5. Set the disk aside and open the Universal Installation Kit which contains the installation hardware.

   The kit contains two bags. One bag contains the LED lenses, the LED with the connector cable assembly, and the faceplate. The second bag contains the mounting rails, spacer bar, and a bag of screws needed for assembly and mounting.

6. Discard the LED lenses, the LED connector cable assembly, the faceplate, and the spacer bar.

   These items are not needed to assemble the hard disk.

7. Assemble the installation kit according to directions on its box.

   See Figure 10-3.

8. Place the mounting rails parallel to each other with the smaller of the two flanges of the rails on the inside.

9. Locate the drive with the metal face up between the rails; the connector end of the drive unit should be flush with the ends of the mounting rails as illustrated in Figure 10-4.

10. Align the mounting holes of the drive and the mounting rails.

11. Insert #6-32 x 3/16 in. screws (two screws per side) and tighten.

    The back connector edge of the drive should be flush with the rail ends as shown in the instructions.

12. Mount the plastic faceplate and secure it to extended bracket ends using two #6-32 x 3/16 in. screws.

13. You have completed this procedure.

Continue with the next procedure, "Mounting a SCSI Disk in the MAP/100C."
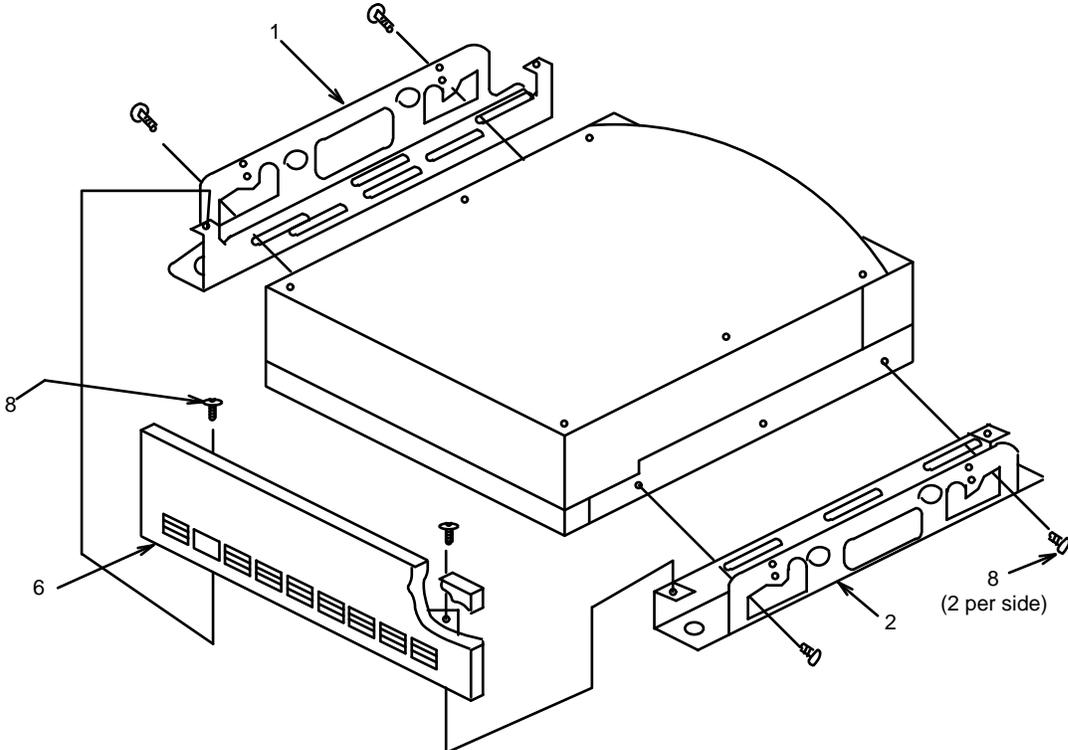
**DRIVE 1
Mounting Hardware**

Discard list:

LED lense (2)

Item 4 & 5

LED cable assembly (1)
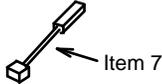
Item 7

Support bracket (1)

Item 3

Mounting screws (2)
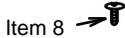
Item 8

Figure 10-3. Universal Installation Kit Assembly Instructions

Top metallic surface of disk drive

Rear of disk

Bracket(s) shall be even with rear of drive/components
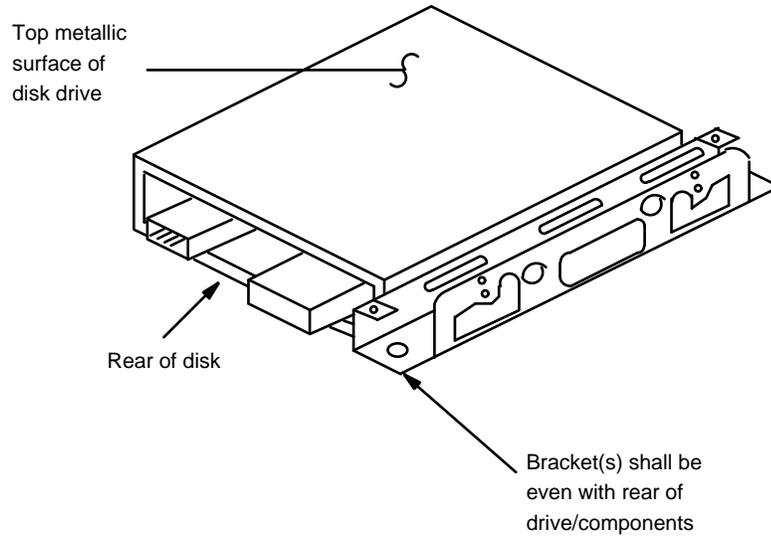
Figure 10-4. Drive Unit Flush with Mounting Rail Ends

Mounting a SCSI Disk in the MAP/100C

1. Position the drive.

   The black metallic backing of the drive should be face up. The mounting rails prevent the circuitry from touching the work table and adjacent chassis components once the disk is mounted in the MAP/100.

2. Locate the slot in the peripheral bay next to the cartridge tape drive.

   Screws provided with the bracket kit will be used through the bottom rails to secure the drive to the MAP/100C peripheral bay area.

3. Place the drive in the MAP/100C, sliding it through the front entry area.

   Hold the drive unit from inside the peripheral bay area when aligning the bracket with the holes.

4. Insert two screws on each side of the disk in the first bottom mounting hole.

   Lock screw in place, but do not tighten.

5. Lift up the drive from the back and position so you can see the back bottom mounting holds through the bottom slot position.

6. Lock screws in place on either side, but do not tighten.

7. Adjust the bracket depth so the face plate is even with back edge of the bezel or flush with the adjacent cartridge tape drive bezel.

   Loosen the two front side screws if necessary.

   The face plate should have a flushed appearance, similar to the cartridge tape unit.

8. Now lock screws in firmly in place.

9. You have completed this procedure.

Continue with the next procedure.

Connecting Cables to the SCSI Drive

1. Attach the SCSI cable by aligning it with the gold fingers on the cable receptacle and pushing it on. All connectors are "keyed" to prevent incorrect installation (see Figure 10-6).
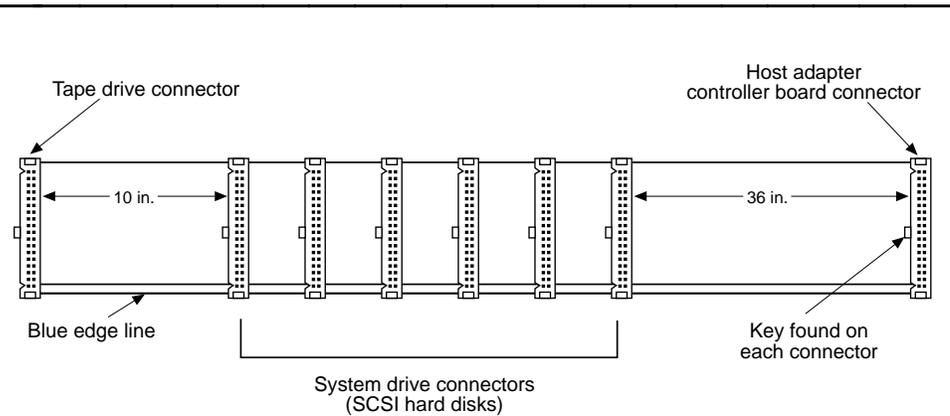
Figure 10-5. SCSI Cable for SCSI Peripherals

2. Attach the power cable to the hard disk in the same manner.

   All disk cables are held in place by this retainer as shipped from the factory. Pull on the tab at the top of the retainer to release it. Press on the retainer to secure it.

3. Go to "Finishing Up" found at the end of this chapter.

4. You have completed this procedure.

Readying an ESDI Disk for Installation

1. Open the box containing the hard disk.

   Cut top seam and side seams so that the box can be used again should
   you need to return the hard disk to the factory.

   ⚠ **WARNING:**
   *Return any piece of equipment in the original shipping carton and
   packing materials to ensure warranty.*

2. Remove the disk from the anti-static bag, keep the bag with the shipping
   carton.

3. Place the disk on its back, a black solid plastic surface, circuitry up.

4. Verify that all jumpers are correctly positioned as shown in Figure 10-6.

   Both drives (0 and 1) will have identical jumper settings except for DS1
   and DS2. Drive 0 should have DS1 jumper installed. Drive 1 should have
   DS2 installed and the RN13 and RN14 terminators removed.

5. You have completed this procedure.

   Continue with the next procedure, "Mounting an ESDI Disk in the MAP/100C."
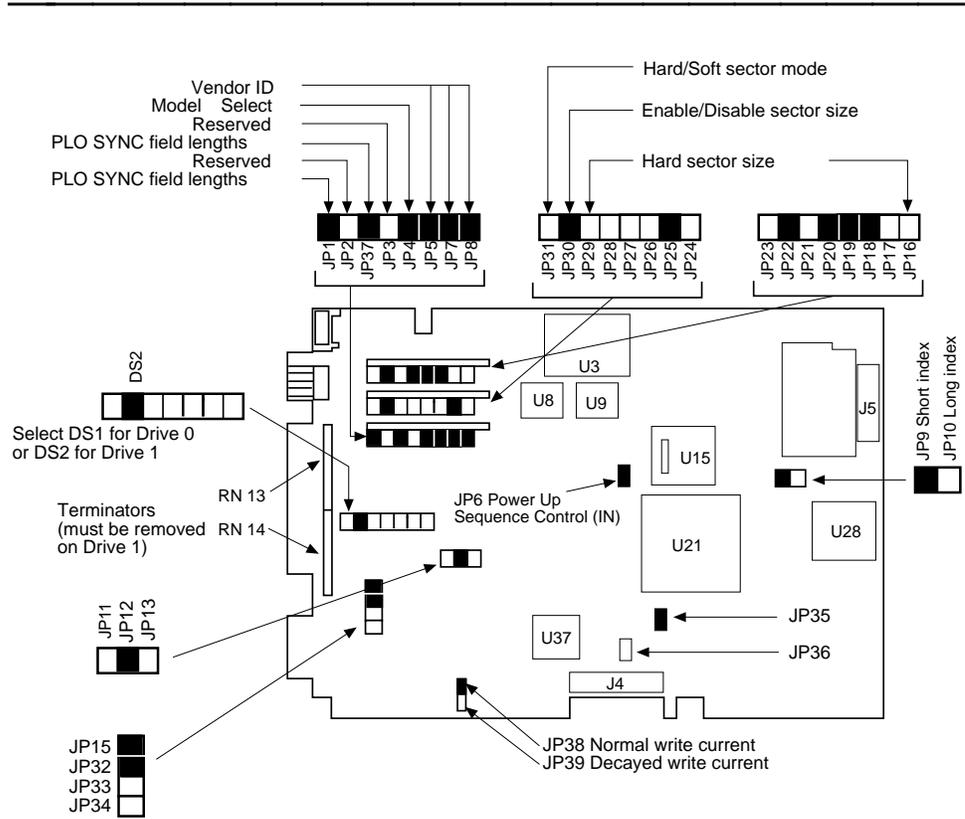
Figure 10-6. Jumper Settings for the ESDI Hard Disk Drive

Mounting an ESDI Disk in the MAP/100C

1. Position the drive.

   The black plastic backing should be face up. The mounting rails prevent the circuitry from touching the work table or drive 1, once the drive is mounted in the MAP/100C.

2. Locate the slot in the peripheral bay next to the cartridge tape drive.

3. Place the drive in the MAP/100C, sliding it through the front entry area.

   Push it in so that only the plastic faceplate of the drive protrudes from the peripheral bay framework.

4. Fasten the drive to the MAP/100C with the 4 screws provided; 2 screws on each side of the drive.

5. You have completed this procedure.

Continue with the next procedure.

Connecting Cables to the ESDI Drive

All cabling for the second ESDI disk is provided in every MAP/100C.

1. Attach the large controller cable (this connector is daisy-chained to the first disk) to the second disk by aligning it with the gold fingers on the disk PC card and pushing it on. All connectors are "keyed" to prevent incorrect installation.

2. Attach the data cable (the smaller of the two ribbon connectors) to the hard disk drive in the same manner.

3. Attach the power cable to the hard disk in the same manner.

4. "Dress" all cabling together neatly and affix it to the peripheral bay assembly by adjusting the plastic cable retainer that is part of the assembly. This cable retainer can be seen by looking through the right side door.

   All disk cables are held in place by this retainer as shipped from the factory. Pull on the tab at the top of the retainer to release it. Press on the retainer to secure it.

5. Go to "Finishing Up" found at the end of this chapter.

6. You have completed this procedure.

Installing a Floppy Disk Drive

1. Notify the telephone company that you are taking down the system if you are currently connected to the telephone network. They will ask you which extensions will be affected.

   ⚠ **WARNING:**
   If you disconnect the MAP/100C from the telephone network on a continuing basis without letting the telephone company know, they can disconnect you permanently. (Digital circuits ONLY)

2. Turn *off* both the front panel power switch and the circuit breakers on the back and remove the incoming power line. Also disconnect keyboard and video cords.

3. Tag the power plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.

4. Open the front door and the access door to the peripheral bay.

   See Chapter 5, "Getting Inside the Computer," for more information.

5. Slide the floppy disk drive into position in the peripheral bay, and secure it with the 4 screws (2 on each side).

6. Connect the controller cable and power cable to the floppy disk drive.

7. Complete Steps 1 through 3 in "Finishing Up" found at the end of this chapter.

Installing a Cartridge Tape Drive

The cartridge tape unit allows you to load, back up and restore files using a tape cartridge instead of, or in addition to, floppy disks.

Readying the MAP/100C for Cartridge Tape Drive Installation

1. Notify the telephone company that you are taking down the system if you are currently connected to the telephone network. They will ask you which extensions will be affected.

   ⚠ **WARNING:**
   If you disconnect the MAP/100C from the telephone network on a continuing basis without letting the telephone company know, they can disconnect you permanently. (Digital circuits ONLY)

2. Turn *off* both the front panel power switch and the circuit breakers on the back and remove the incoming power line. Also disconnect keyboard and video cords.

3. Tag the power plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.

4. Open the front door and the access door to the peripheral bay.

   See Chapter 5, "Getting Inside the Computer," for more information.

Continue with "Mounting a SCSI Cartridge Tape Drive in the MAP/100C" or "Mounting an ESDI Cartridge Tape Drive in the MAP/100C."

Mounting a SCSI Cartridge Tape Drive in the MAP/100C

1. See Figure 10-7 to set the jumpers for the SCSI cartridge tape drive.

2. Slide the cartridge tape drive into the furthest right position in the peripheral bay, and secure it with the 4 screws (two on each side).

3. Connect the controller cable and power cable to the cartridge tape drive.

4. Complete Steps 1 through 3 in "Finishing Up" found at the end of this chapter.

There are some SCSI cartridge tape drive compatibility issues of which you need to be aware. You can find this information in the "Disk Operations" section of Appendix A, "FACE Features" in *CONVERSANT Voice Infomration System Version 3.1 Operations, 585-350-701*.
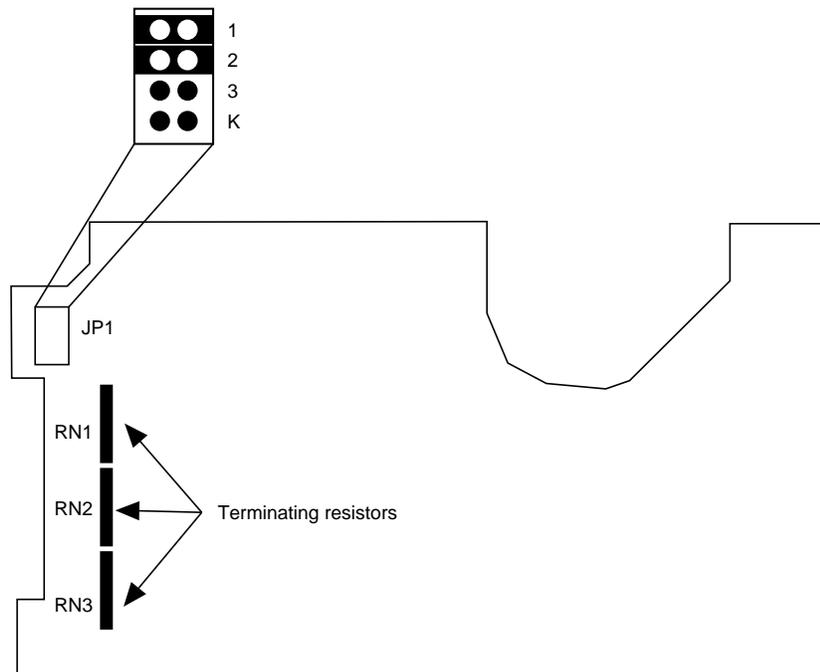
Figure 10-7. Jumper Settings for SCSI Cartridge Tape Drive

Mounting an ESDI Cartridge Tape Drive in the MAP/100C

1. Slide the cartridge tape drive into the furthest right position in the peripheral bay, and secure it with the 4 screws (two on each side).

2. Connect the controller cable and power cable to the cartridge tape drive.

3. Complete Steps 1 through 3 in "Finishing Up" found at the end of this chapter.

Installing the Tip/Ring Distribution Panel

⚠ **WARNING:**
Observe proper ESD precautions when handling computer components. Attach a wrist ground strap and connect to an appropriate ground. See Chapter 2, "Getting Started," for details.

As the number of lines served by the VIS increases, the number of 6-pin conductor modular cords connecting the system with the customer-premise equipment or the on-premises terminal block provided by the central office also increases. In an effort to simplify this wiring scheme, an optional T/R Distribution Panel is available. The T/R Distribution Panel allows a maximum of 48 channels (eight T/R Boards) to be connected to the local customer-premise equipment or building connecting block provided by the central office via two 25-pair, high density cables (USOC RJ21X). This panel may be ordered and installed in the field using the following procedure:

1. Verify that the Distribution Panel is on site and appear to be in usable condition, that is, no obvious shipping damage, etc.

2. Verify that the following components are included in the kit:

   ■ Distribution Panel Circuit Pack Assembly

   ■ 25-foot Interface Cable

   ■ Five 6-32 X.25 inch screws and lock washers

3. If you are currently connected to the telephone network, notify the telephone company that you are disconnecting. They will ask you which extensions will be affected.

   ⚠ **WARNING:**
   If you disconnect the MAP/100C from the telephone network on a continuing basis without letting the telephone company know, they can disconnect you permanently. (Digital circuits ONLY)

4. Perform a "soft" shutdown of the system if you have been operating the MAP/100 as a fully loaded system.

5. Turn *off* both the front panel power switch and the circuit breakers on the back and remove the incoming line. Also disconnect keyboard and video cords.

6. Tag the power plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.

7. On the top of the MAP/100C, remove the 2 screws securing the distribution panel cover, remove the cover and set it aside (Figure 10-7).

Remove 7 screws
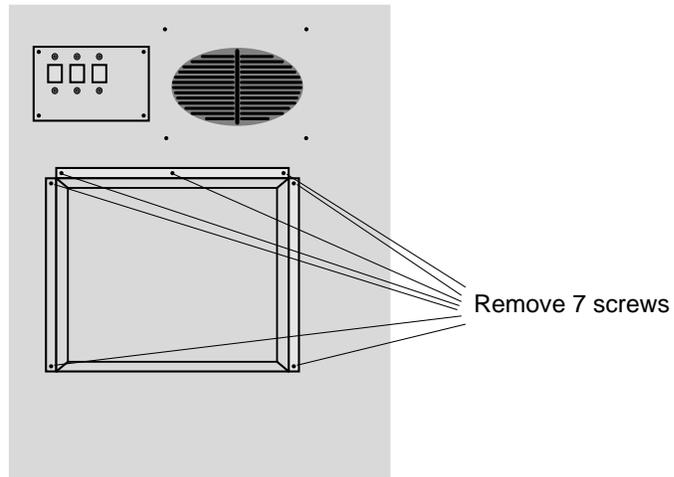
Figure 10-8. T/R Distribution Panel Installation

8. Position the distribution panel so that the two 50-pin connectors point toward the floor and the modular jacks face away from the cabinet. Align the screw holes in the circuit board with the fasteners in the cabinet.

9. Fasten the distribution panel to the cabinet using the seven screws provided.

10. Follow the instructions in this chapter titled "Making Connections to the T/R Distribution Panel" describing how to connect the T/R Boards to the panel.

Making Connections to the T/R Distribution Panel

The numbering scheme and a chart showing the method of connecting the short modular cords provided with the T/R boards to the panel is shown in Table 10-1.

1. Referring to Table 10-1 and using the channel numbers on the T/R board and the number of T/R boards in the system, connect the T/R board modular jacks to the appropriate jacks on the T/R Distribution Panel.

   A maximum of eight T/R boards (48 channels) can be connected to the distribution panel.

Table 10-1. Method of Connecting Modular Cords from T/R Board to T/R Distribution Panel

T/R Board	Chan. Numbers on T/R Board	Dist. Panel Jack Number
1st	1,2,3	J1
1st	4,5,6	J2
2nd	1,2,3	J3
2nd	4,5,6	J4
3rd	1,2,3	J5
3rd	4,5,6	J6
4th	1,2,3	J7
4th	4,5,6	J8
5th	1,2,3	J9
5th	4,5,6	J10
6th	1,2,3	J11
6th	4,5,6	J12
7th	1,2,3	J13
7th	4,5,6	J14
8th	1,2,3	J15
8th	4,5,6	J16

The telephone line connections to the MAP/100C are made through a 25-foot, 25 pair conductor shielded cable equipped with USOC RJ21X connections when the MAP/100C is equipped with a T/R Distribution Panel. One cable is provided with the Distribution Panel to terminate 24 lines. A second cable can be ordered from AT&T to accommodate an additional 24 lines (#).

➡ **NOTE:**

48 lines is the maximum supported.

2. After inserting the modular cord into the appropriate jacks, route all cabling through the slot opening in the distribution panel cover.

3. Secure and dress the cabling to the cable tie-down bar using standard central office nylon cord (Figure 10-8).

4. Carefully replace the distribution panel cover and tighten the 2 screws.

5. Complete Steps 1 through 3 in "Finishing Up" found at the end of this chapter.
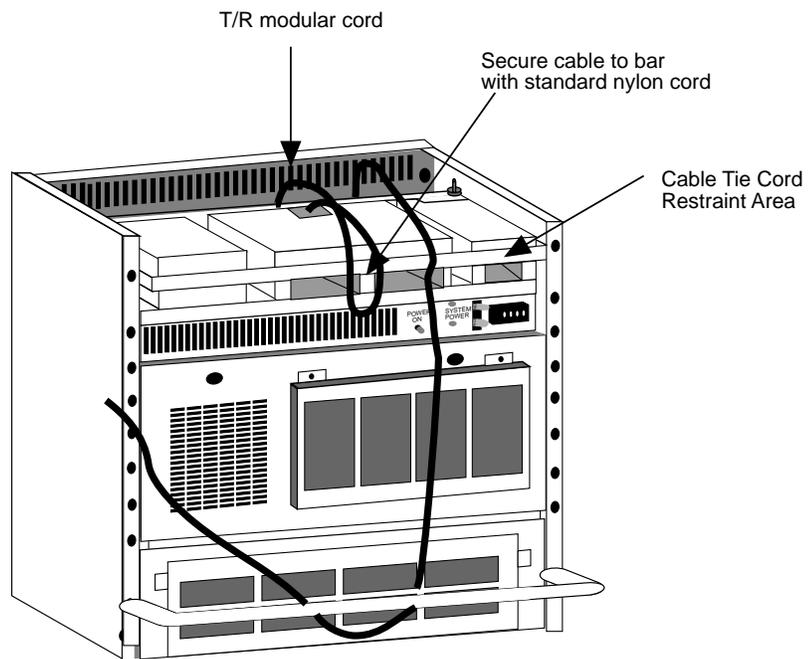
Figure 10-9. T/R Distribution Cable Routing

Installing the Speech Production Kit

The speech production kit enables users to encode speech on the Voice System using pre-recorded speech. The speech production kit must be used with the optional Script Builder software.

1. It is assumed that you have one of the following sets of equipment:

   - Tape deck or reel-to-reel tape player with integrated low-wattage amplifier

   - Tape deck or reel-to-reel tape player with external amplifier (tape player is connected to amplifier line-input connector)

2. Make sure you have the following items:

   - Audio cable

   - Voice Workstation-Tip/Ring (VWS-TR) Interface Module

   - 24 VDC power supply

   - Modular phone cord

   - Headphones (not included)

   $\Longrightarrow$ **NOTE:**
   Headphones or a speaker must be used for monitoring the audio signal from the amplifier so that the output can be adjusted to the desired level. Also use the headphones/speaker to monitor the phrases as they are encoded and to listen for the beginning and end of phrases so you can determine when to start and stop encoding.

3. Place the VWS-TR interface module in a convenient position either on or near the platform.

4. Make sure the tape deck and amplifier are connected properly (see the documentation that accompanied these pieces of hardware).

5. If you have a tape player with integrated amplifier, plug one end of the phono cable into the speaker output connector on the tape player.

   If you have a tape player with external amplifier, plug one end of the phono cable into the speaker output connector on the amplifier. If the speaker output is wires instead of a connector, cut the connector off of the phono cable and connect the cable directly to the wires.

   ⚠ **CAUTION:**
   If you are using an external amplifier, make sure the volume is initially set very low. Internal amplifiers usually have 8 watts of power but external amplifiers are much more powerful.

6. Plug the other end of the phono cable into the Audio In connector on the lower left corner of the VWS-TR interface module (see Figure 10-8).

7. Plug one end of the modular phone cord into the connector receptacle labeled "Tip/Ring Interface" of the VWS-TR interface module (see Figure 10-8) and the other end into the top connector receptacle on one of the T/R cards (see Figure 10-9).

8. Plug the jack at the end of the 24 VDC power supply cable into the connector labeled "24 VDC IN" of the VWS-TR interface module (see Figure 10-8). Plug the 24 VDC power supply into a 120 VAC power outlet.

⟹ **NOTE:**
    The input impedance of the Audio In jack of the VWS-TR interface module is 600 ohms. Do not attempt to drive this input with an audio source that has output impedance > 600 ohms. An 8 ohm speaker output from an audio amplifier (as shown) drives the audio input adequately.
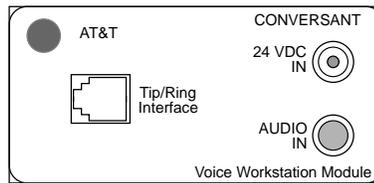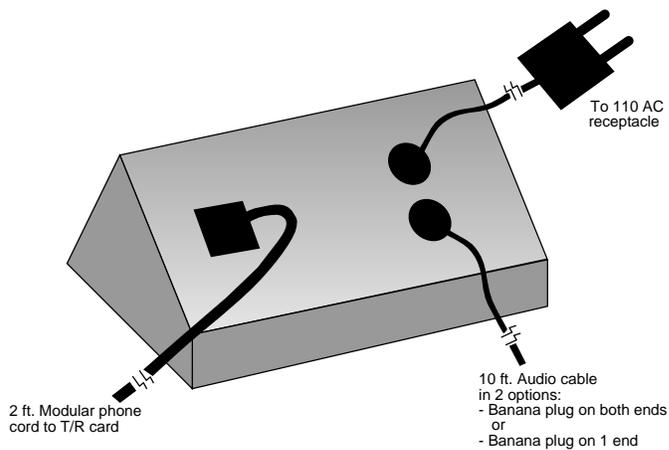
Figure 10-10. Speech Production Kit
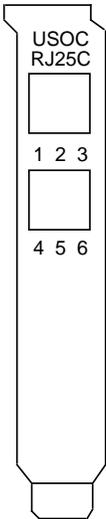
Figure 10-11. Tip/Ring Receptacles

Finishing Up

1. Close the front door and peripheral access door if you have finished working on the computer.

2. Reconnect the keyboard, the monitor, and power.

3. Power up the unit.

4. Access and correct the software setup screen so the unit will recognize the new second hard disk drive.

   a. Simultaneously press ⌈Ctrl⌉, ⌈Alt⌉, and ⌈Esc⌉ immediately after the resident diagnostics messages give you the status of COM1 and COM2, but before the screen goes blank.

      Do this even if the SETUP prompting message does not appear.

   b. Follow the directions at the bottom of the screen to modify SETUP entries.

      ⇒ **NOTE:**
      When you enter the memory field, you cannot use the left and right arrow keys to choose available values. You must enter a specific "Type" number, that is, 47 for Type 47.

      The Hard Disk SETUP appears as shown below at the top of the SETUP screen.

```
Hard Disk 1            TYPE 47
Hard Disk 2            NONE
```

   c. Correct Hard Disk 2 to read TYPE 47 as shown below.

```
Hard Disk 1            TYPE 47
Hard Disk 2            TYPE 47
```

5. Run diagnostics to verify the hardware is functioning properly.

6. Notify the telephone company that you are back online.

7. You have completed this procedure.

⇒ **NOTE:**
The manufacturer low-level formats the SCSI hard disk prior to shipping. You do not have to low-level format the SCSI hard disk.

See "Low Level Formatting an ESDI Hard Disk Drive" at the end of this

chapter to low level format the ESDI hard disk drive.

Low Level Formatting an ESDI Hard Disk Drive

The purpose of low-level formatting is to completely initialize the disk surface. Use this procedure if you suspect that the disk surface has been compromised, if you are installing a replacement disk drive, or if you are installing an additional disk drive.

Before beginning the procedure below, make sure the hard disk is installed according to the procedure given in this chapter. Once the hard disk is installed, follow the procedure given below:

1. Insert the Low Level Format Version 1.3 disk into the floppy drive. If the UNIX system is running, perform a shutdown and reboot the system.   If the system is off, turn it on.

2. When the A> prompt appears, enter **debug** The system responds by changing the prompt; it appears as –.

3. Enter **g=c800:5**.

   The Western Digital Bios Utilities Menu appears, requesting a choice.

4. Select option 2 — Low Level Format All of Drive.

   System response:

   ```
   Files will be LOST.  Are you sure? (Y/N)
   ```

   Enter **y**.

5. When prompted for the drive number, enter **0/** to format the first drive, or enter **1** to format the second drive.

   System response:

   ```
   Enable Alternate sectors (Y/N)
   ```

6. Enter **n**.

   System response:

   ```
   ALTERNATE SECTOR jumper should NOT be installed.  Last
   chance to quit!
   Continue? (Y/N)
   ```

7. Enter **y**.

   A message appears on the screen, informing you that the data is formatting. This process take approximately 25 minutes.

   When the formatting is complete, press any key to return to the menu.

8. Select option 3 — Mark Defect List Automatically.

9. Enter **y** when asked to confirm.

10. When you are prompted for which drive, enter **0/** for the first drive, or enter **1** for the second drive.

11. When the menu returns, press `CTRL` and `c` to abandon the program. Ignore the register information that is printed on the screen.

12. When the – prompt appears, enter **q** to quit and you will be returned to the `A>` prompt. You may remove the disk.

    The hard disk drive is now low-level formatted and ready to be used by UNIX or DOS.

13. You *must* now access the Setup screen and add the second hard disk to your system. Refer to "Accessing the Setup Screen" in Chapter 3, "Connecting Peripherals and Powering Up," of this book.

14. You have completed this procedure.

If you want to allocate speech on the second hard disk drive, refer to the "Allocating Speech on the Second ESDI Hard Disk Drive" section in Appendix A, "FACE Features" of *CONVERSANT Voice Information System Version 3.1 Operations, 585-350-701*.

⚠ WARNING:

You cannot allocate speech on the second hard disk drive if you have SCSI disks. The only 2 disk configuration supported for SCSI systems is SCSI Mirroring.

Finishing Up

11

What's in This Chapter

This chapter describes how to troubleshoot the hardware installation should there appear to be a problem and describes how to clean the hardware after installation.

To find detailed information on maintaining the MAP/100C, refer to the maintenance manual for your application.

Basic Troubleshooting

The suggestions below resolve the vast majority of installation problems and are further explained in the following sections.

- Verify Your Configuration
- Check All Cables
- Check All Cards

Verify Your Configuration

Using the information in the output from the configuration software program, verify that you have completed the following for your application.

1. Placed all cards in the correct slots
2. Set all jumpers correctly
3. Set all interrupts and addresses correctly

Check All Cables

Make sure all cables are securely connected. Ribbon cables are especially fragile. Make sure they are not crimped or damaged in any way. Keeping extra cables on hand for trouble-shooting may be helpful.

For each ribbon cable, verify that Pin 1 of the cable is matched to Pin 1 of the connector. Pin 1 is usually denoted by a stripe on the side of the ribbon cable.

Do *NOT* reverse-plug the cables. This can damage the system.

Check All Cards

Make sure that all cards are securely seated in their slots on the backplane. Ensure that once the cards are permanently installed, you have used the mounting screw in the faceplate to secure them.

Cleaning Up After Installation

Should the unit need cleaning after installation, follow the recommendations below.

Cleaning the Chassis Exterior

Disconnect the power source before cleaning. Use a mild detergent on a damp cloth to clean the chassis. If you use a spray cleaner, also use a cloth. Dampen the cloth with the cleaner and wipe the chassis surface. Using a spray directly could seep into the chassis and cause damage.

Cleaning the Monitor

Local office supply centers sell CRT screen cleaning wipes (wet pads). Use only these to clean the screen. Follow directions provided with the product. Clean the exterior monitor, other than the CRT screen, in the same manner as the chassis exterior. Use a mild detergent on a damp cloth. If you use a spray cleaner, also use a cloth. Dampen the cloth with the cleaner and wipe the surface.

Cleaning the Keyboard

Disconnect the keyboard from the MAP/100C. Use a mild detergent on a damp cloth to clean the chassis. If you use a spray cleaner, also use a cloth. Dampen the cloth with the cleaner and wipe the surface.

Cleaning the Cartridge Tape Drive

To clean the cartridge tape drive, use the 3M products DC-6320 or 3M DC-6150 cleaning tape cartridges. These are available at your local computer or office supply store. Follow the instructions provided.

Cleaning the Floppy Diskette Drive

If you find that you can no longer read or write when your floppy disk is in use, you should have the drive replaced. The manufacturer recommends that you *DO NOT* clean the disk heads, because they are susceptible to scratching and are easily damaged.

Refer to the maintenance document for your application for information on how to replace a floppy drive.

Cleaning the Air Filters

The MAP100/C is equipped with three (3) fan filters; one located behind the power supply filter access door, a second on the fan access panel, and a third on the drive bay door. Access the fan panel by refering to "Accessing the Cooling Fan Panel," found in Chapter 5, "Getting Inside the Computer," of this book

The filters can be replaced by releasing the captive screws, opening the appropriate door and removing the filter material. The filters may be cleaned in warm water, squeezed dry, and replaced. New filters are also available. To replace the filter, position it behind the door, close the door, and tighten the two captive screws which secure the door to the unit.

Moving the System

A
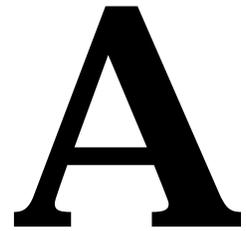
Moving the Equipment

Whenever you move your MAP/100C, be it across the room or across the country, you must prepare it for moving. There are specific procedures and precautions that must be followed when shipping any part(s) of the MAP/100C.

On short moves (across the room or down the hall) do not attempt to move all the computer parts at one time. Disconnect the keyboard and monitor from the MAP/100C and move each unit seperately.

It is recommended that two persons lift or port this unit from one area to another to prevent damage to the unit. Also prepare the hard disk drive for moving, as described later in this section. The power supply and storage peripherals may be removed from the unit the reduce the overall weight, but it is not recommended. Removal of any device increases the risk of error during reassembly.

Before moving the MAP/100C across a long distance, insure that the original shipping box and packing materials, or suitable substitutes, are available and accessible. Do not begin this job without them. Use only packaging material that complies with the current Uniform Freight and National Motor Freight classification rules and regulations.

The packaging material and packing method must provide adequate protection against:

- Corrosion, deterioration and physical damage

- Water and electrostatic damage to any electrical/electronic part or device

Also, be sure that proper preventive steps (cushioning, blocking, bracing, etc.) have been taken to prevent movement so that no structural or functional damage may occur.

Preparing the Hard Disk Drive for Moving

Back up your system before moving it. Refer to "Backing Up the System" in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT Voice Information System Version 3.1 Maintenance, 585-350-105*, for information.

Moving your MAP/100C can be rough on the disk drives. Both the floppy disk drive and the hard disk drive can be damaged by dropping the main unit or bumping it against something. The damage usually occurs to the disk heads.

When power is removed from a hard disk, the disk heads lock down on the platters to reduce the risk of bouncing. This can damage the platters. You must shut down the system before moving it. Refer to "Shutting Down the Operating System" in Chapter 4, "Common Maintenance Procedures," of the maintenance book.

Abbreviations

AB

A

ACD	Automatic Call Distributor
ADPCM	Adaptive Differential Pulse Code Modulation
ANI	Automatic Number Identification
ARU	Alarm Relay Unit
ASAI	Adjunct/Switch Application Interface
ASCII	American Standard Code for Information Interchange

B

BB	Bulletin Board
bps	Bits per second
BSC	Binary Synchronous Communication

C

CCA	Call Classification Analysis
CDH	Call Data Handler
CIC	AT&T Customer Information Center
CICS	Customer Information Control System
CMP	Companion card
CMS	Call Management System
CO	Central Office
CPE	Customer Provided Equipment or Customer Premise Equipment
CPU	Central Processing Unit
CSU	Channel Service Unit

D

dB	Decibels
DBMS	Database Management System
DC	Direct Current
DCE	Data Communications Equipment
DCP	Digital Communications Protocol
DIO	Disk Input and Output Process
DIP	Data Interface Process
DNIS	Dialed Number Identification Service
DSP	Digital Signal Processor
DTE	Data Terminal Equipment
DTMF	Dual Tone Multi-Frequency

E

EBCDIC	Extended Binary Coded Decimal Interexchange Code
EIA	Electronic Industries Association
EISA	Extended Industry Standard Architecture
ESDI	Extended Serial Data Interface
ESS	Electronic Switching System

F

FACE	Framed Access Command Environment interface
FDD	Floppy disk drive
FEP	Front end processor
foos	Facility out-of-service state

H

HDD	Hard disk drive
hwoos	hardware out-of-service
Hz	Hertz

I

IBM	International Business Machines
ID	Identification
IE	Information Element
inserv	in service
IPC	Inter-Process Communication
IPCI	Integrated personal computer interface
ISDN	Integrated Services Digital Network
IVP4	Integrated Voice Processing card with 4 analog channels
IVP6	Integrated Voice Processing card with 6 analog channels

K

Kbps	Kilobite per second
Kbyte	Kilobyte

L

LAN	Local Area Network
LED	Light-emitting Diode
LU	Logical Unit

M

manoos	Manually out-of-service
MAP/100	Multi-Application Platform 100
MAP/100C	Multi-Application Platform 100C
MAP/40	Multi-Application Platform 40
Mbyte	Megabyte
ms	Millisecond
MHz	Megahertz
MTC	Maintenance Process

N

NCP	Network Control Program
netoos	Network out-of-service
nonex	Non-existent
NRZ	Non Return to Zero
NRZI	Non Return to Zero Inverted

P

PBX	Private Branch Exchange
PC	Personal Computer
PCB	Printed circuit board
PCM	Pulse Code Modulation
PEC	Price element code
PRI	Primary Rate Interface

R

RAM	Random Access Memory
RDBMS	ORACLE relational database management system

S

SBC	Sub-band coding
SCCS	Switching Control Center System
SCSI	Small Computer System Interface
SDLC	Synchronous Data Link Control
SIMM	Single Inline Memory Module
SNA	Systems Network Architecture
SP	Signal Processor
SPIP	Signal Processor Interface Process
SPPLIB	Speech Processing Library
SQL	Structured Query Language
sysgen	System generation

T

TCC	Technology Control Center
TCP/IP	Transmission Control Protocol/Internet Protocol
TDM	Time Division Multiplexing
TE	Terminal Emulator
TLP	Transmission Level Plan
T/R	Tip/Ring
TRIP	Tip/Ring Interface Process
TSC	AT&T Technical Services Center
TSO	Time Share Operation
TSM	Transaction State Machine
TTS	Text to Speech
TWIP	T1 Interface Process

V

VIS	CONVERSANT Voice Information System
VPC	Voice processing co-marketer
VRU	Voice Response Unit
VROP	Voice Response Output Process

Glossary

GL

Terms that appear in quotes ("") within definitions are defined elsewhere in this glossary.

3270 interface A link between one or more VIS machines and a host mainframe. In CONVERSANT Voice Information System (VIS) documentation, the 3270 interface means the link between one or more VIS machines and an IBM host mainframe.

ACD See "Automatic Call Distributor."

ADPCM See "Adaptive Differential Pulse Code Modulation."

Adaptive Differential Pulse Code Modulation A means of encoding analog voice signals into digital signals by adaptively predicting future encoded voice signals. This adaptive modulation method reduces the number of bits required to encode voice. See also "Pulse Code Modulation."

adjunct products Products (for example, Adjunct/Switch Application Interface) that the CONVERSANT® Voice Information System (VIS) administers via cut-through access to the inherent management capabilities of the product itself; this is in opposition to CONVERSANT VIS's ability to administer the switch directly.

Adjunct/Switch Application Interface An optional feature package that provides an Integrated Services Digital Network-based interface between AT&T PBX's and adjunct processors.

alerter	System process which responds to patterns of events logged by the "logdaemon" process.
analog	An analog signal, such as voice or music, that varies in a continuous manner. An analog signal may be contrasted with a digital signal, which represents only discrete states.
application	Made of several components which provides an automated version of the communication between a caller and an attendant.
application administration	The component of the VIS that provides access to the applications currently available on your system and helps you to manage and administer them.
application installation	A two-step process in which the VIS invokes the TSM script assembler for the specific application name and files are moved to the appropriate directories.
application verification	A process in which the VIS verifies that all the components needed by an application are complete.
ASCII	ASCII is an acronym for American Standard Code for Information Interchange, a standard for data representation. ASCII code represents alphanumeric characters as binary numbers. The code includes 128 upper- and lower-case letters, numerals, and special characters. Each alphanumeric and special character has an ASCII code (binary) equivalent that is one byte long.
asynchronous communication	A method of data transmission in which bits or characters are sent at irregular intervals and bits or characters are spaced by start and stop bits and not by time. See also "synchronous communication."
AUDIX Voice Power	AUDIX Voice Power. A complete voice-mail messaging system accessed and operated by touch-tone telephones and integrated with a switch or "Private Branch Exchange."
Automatic Call Distributor	A phone system that recognizes and answers incoming calls and completes these calls based on a set of instructions contained a database. The Automatic Call Distributor can send the call to an operator or group of operators as soon as the operator has completed a previous call or after the system has played a message to the caller.
back up	To preserve a copy of the information in a file in a different location, so that the data will not be lost in the event of hardware or system failure.

GL-2

backing up an application   A utility that makes an archive copy of a completed application or makes an interim copy of an application in progress. The backup copy can be *restored* to the VIS if the online version is damaged, or if you make revisions and wish to go back to the previous version.

batch file   A file containing one or more lines, each of which is a command executable by the UNIX shell.

Binary Synchronous Communications   A character-oriented synchronous link protocol.

blind transfer protocol   A protocol in which a call is completed as soon as the extension is dialed, without having to wait to see if the phone is busy, or if the caller answered.

BSC   See "Binary Synchronous Communications."

bundle   In the context of the Enhanced File Transfer package, this term is used to denote a single file, a group of files (package), or a combination of both.

byte   A byte is a unit of storage in the computer. On many systems, a byte is eight bits (binary digits), the equivalent of one character of text.

Call Classification Analysis   An optional feature package that allows application developers to classify the disposition of originated and transferred calls.

call data event   A parameter that specifies a list of variables that are appended to a call data record at the end of each call.

Call Data Handler Process   A software process that accumulates generic call statistics and application events.

caution   The caution admonishment is used when there is a possibility of a service interruption.

CCA   See "Call Classification Analysis."

CDH   See "Call Data Handler process."

Central Processing Unit   A component of the VIS that is based on either the Multi-Application Platform 100 (MAP/100) or the Multi-Application Platform 100C (MAP/100C).

CICS	See "Customer Information Control System."
Customer Information Control System	Considered part of the operating system that manages resources for running applications (for example, IND$FILE). Note that TSO and CMS provide analogous functionality in other host environments.
cluster controller	A bisynchronous interface that provides a means of handling remote communications processing.
command	An instruction or request given by the user to the VIS software to perform a particular function. An entire command consists of the command name and options.
CompuLert/ SCCS Interface	The CompuLert®/SCCS Interface is an optional feature that enables remote or console monitoring of error messages generated from the CONVERSANT VIS. Compulert is a centralized maintenance system for monitoring minicomputers, computer mainframes, etc. The Switching Control Center System (SCCS) is similar to the Compulert system but is used to support 4ESS local switching systems.
configuration	The arrangement of the software and hardware of a computer system or network. The CONVERSANT Voice Information System configuration includes either a standard or custom processor, requisite peripheral equipment (for example, printers, modems), and software applications. Configuration also refers to the way the switch network is set up; that is, the types of products that are in the network and how those products communicate.
configuration management	The component of the VIS that allows you to manage the current configuration of voice channels, host sessions, and database connections, assign scripts to run on specific voice channels or host sessions assign functionality to SP and T1 cards, and perform various maintenance functions.
copying an application	A utility in which information from a source application is directed into the destination application.
CPU	See "Central Processing Unit."
crash	The crash command is an interactive utility for examining the operating system core and is useful for determining if system parameters are being exceeded.
danger	The danger admonishment is used when there is a possibility of personal injury.

Data Interface Process	A software process that communicates with Script Builder applications.
database	A structured set of files, records, or tables.
database fields	Used to extract values from a local database and form the structure upon which a database is built.
database table	A structure, made up of columns and rows, that holds information in a database. Database tables provide a means of storing information that change too often to "hard-code," or permanently store, in the transaction outline.
debug	The process of locating and correcting errors in computer programs. This process is also referred to as troubleshooting.
default	The way a computer will perform a task in the absence of other instructions.
diagnose	The procedure used to perform diagnostics on Tip/Ring, T1, or SP cards or a bus.
directory	A type of file used to group and organize other files or directories.
DNIS	See "Dialed Number Identification Service."
DIP	See "Data Interface Process."
display errdata	A command that displays system errors sent to the logger.
DSO	Digital Service Level 0 (64,000 bps).
DTMF	See "Dual Tone Multi-Frequency."
Dual 3270 Links	The dual 3270 link feature provides an additional physical unit (PU) to allow a cost-effective means of connecting to two host computers. The customer can connect a VIS to two separate FEPs or to a single FEP shared by one or more host computers. Each link supports a maximum of 32 LUs.
Dual Tone Multi-Frequency	A touch tone.
dump space	An area of the disk that is fixed in size and should equal the amount of RAM on the system. The operating system "dumps" an image of core memory upon system crashes. The dump can be fetched after rebooting for analysis of what may have caused the crash.

error message	A message on the screen indicating that something is wrong and possibly suggesting how to correct it.
Error Tracker Process	See "etStub."
etStub	System process which processes pre-Version 3.1 error message logging requests. These requests are transformed and passed on to the "logdaemon" process.
FACE	See "Framed Access Command Environment."
feature	A function or capability of a product or an application within the CONVERSANT VIS.
field	A "slot" in a VIS window that holds one column of information in a row.
file	A collection of data treated as a basic unit of storage.
file transfer	An option that allows you to transfer files interactively or directly to and from UNIX. File transfer is performed either interactively or directly using the File Transfer System.
filename	Alphabetic characters used to identify a particular file.
Form Filler Plus	An optional feature package that provides the capability for application scripts to record caller's responses to prompts for later transcription and review.
Framed Access Command Environment	The FACE (Framed Access Command Environment) interface that enables you to execute a variety of administrative procedures including, disk operations, user login setup, and peripherals setup.
Function key	A key, labeled F1 through F8, on your keyboard to which the CONVERSANT VIS software gives special properties for manipulating the user interface.
hardware	The physical components of a computer system. The Central Processing Unit, disks, tape and floppy drives, etc, are all hardware.
host computer	A computer linked to a network providing a range of services, such as database access and computation. The host computer operates in a time-sharing manner with other computers linked to it via the network.

IBM	See "International Business Machines."
iCk	System integrity checking process.
IND$FILE	The standard SNA file transfer utility that runs as an application under CICS, TSO, and CMS. IND$FILE is independent of link-level protocols such as BISYNC and SDLC.
indexed table	A table that, unlike a non-indexed table, may be searched via a field name that has been indexed.
initialize	To start up the system for the first time.
Integrated Services Digital Network	A network that provides end-to-end digital connectivity to support a wide range of voice and data services.
Integrated Voice Processing card	The IVP4 or IVP6 card.
intelligent transfer protocol	A transfer protocol that monitors the line after dialing is complete to determine whether a busy, reorder (fast busy) or other failure has been encountered. It also recognizes when the extension is answered or if the extension is not answered after a specified number of rings.
interface	The access point of a system. With respect to the VIS, the interface is designed to provide you with easy access to the software's capabilities.
IPC	See "Interprocess Communication."
Ipcs	A command that reports interprocess communication facilities status.
ISDN	See "Integrated Services Digital Network."
keyboard mapping	In emulation mode, this feature enables the keyboard to send 3270 keyboard codes to the host according to a configuration table set up during installation.
LAN	See "Local Area Network."
Local Area Network	A data communications network in a limited geographical area. The Local Area Network provides communications between computers and peripherals.

local database	A database residing on the VIS.
logical unit	A type of SNA Network Addressable Unit.
Logdaemon	System information and error logging process.
Logger	See "logdaemon."
Logging on/off	Entering or exiting the CONVERSANT Voice Information System software.
LU	See "logical unit."
main screen	The CONVERSANT VIS VERSION 3.1 screen, from which you are able to enter FACE or Voice System Administration.
maintenance process	A software process that runs temporary diagnostics.
master	A board that provides clock information to the TDM bus.
megabyte	A unit of memory equal to 1,048,576 bytes (1024 x 1024). It is often rounded to one million.
Microsoft	A company that manufactures software products, primarily for IBM-compatible computers.
MS-DOS	A personal computer DOS operating system developed by the Microsoft Corporation.
MTC	See "maintenance process."
NetView	An optional feature package that transmits high priority (major or critical) messages to the host as Operator-Generated Alerts (OGAs) over the 3270 host link. The NetView Alarm feature package does not require a dedicated LU.
non-indexed table	A table that may be searched only in a sequential manner and that may not be searched via a field name.
note	The note admonishment is used to supply supplementary information for the topic being discussed.
null value	An entry containing no value. A field containing a null value is normally displayed as blank and is different from a field containing a value of zero.
on-line help	Messages or information that appear on the user's screen when a "Function Key" (F1 through F8) is pressed.

option	An argument used in a command line to modify program output by modifying the execution of a command. When you do not specify any options, the command will execute according to its default options.
PBX	See "Private Branch Exchange."
PCM	See "Pulse Code Modulation."
peripheral (device)	Equipment such as printers or terminals that is in addition to the basic processor.
poll	A message sent from a central controller to an individual station on a multipoint network inviting that station to send if it has any traffic to send.
polling	A network arrangement whereby a central computer asks each remote location whether they wish to send information. This arrangement enables each user or remote data terminal an opportunity to transmit and receive information on shared facilities.
Primary Rate Interface	An optional feature package that provides a digital interface capable both of receiving and originating telephone calls directly from/to an AT&T 4ESS switch.
Private Branch Exchange	A private switching system, either manual or automatic, usually serving an organization, such as a business or government agency, and usually located on the customer's premises.
processor	In CONVERSANT Voice Information System documentation, the computer on which the UNIX Operating System and CONVERSANT Voice Information System software runs. In general, the part of the computer system that processes the data. Also known as the "Central Processing Unit."
ps	A command that shows active processes. This command displays the process table and can be used to determine which processes are consuming large amounts of system resources, such as CPU time.
Pulse Code Modulation	A digital modulation method of encoding voice signals into digital signals. See also "Adaptive Differential Pulse Code Modulation."
raw mode	Conveys data from a terminal to a user without processing the data.

recovery	The process of using copies of the VIS to reconstruct files that have been lost or damaged. See also "restore."
remote database	The component of the VIS that provides access to the applications currently
reports administration	The component of the VIS that provides access to system reports, including VIS call classification reports, call data detail reports, call data summary reports, message log reports, and traffic reports. In addition, if AUDIX Voice Power R2.1.1 is installed on your system, the reports administration component gives you access to AUDIX Voice Power reports.
restore	The process of recovering lost or damaged files by retrieving them from available backup tapes or from another disk device. See also "Recovery."
restore application	A utility that replaces a damaged application or to restore an older version of an application.
roll back	To cancel changes to a database since the point at which changes were last committed.
rollback segment	A portion of the database which records actions which should be undone under certain circumstances. rollback segments are used to provide transaction rollback, read consistency, and recovery.
root space	An area of the disk that houses the UNIX® Operating System, all VIS executables and data files, Script Builder application files, and the database.
sar	A command that is associated with the system activity report package.
Script Builder	An optional software package that provides a menu-oriented interface that is designed to assist in the development of custom voice response applications on the VIS.
SCSI	See "Small Computer System Interface."
Shared database table	Using the same database table in more than one application.
shared speech	Speech that is a part of more than one application.
shared speech pools	A parameter that allows the user of a voice application to share speech components with other applications.

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slave	A board that depends on the TDM bus for clock information.
Small Computer System Interface	The Small Computer System Interface (SCSI) is a disk drive control technology in which a single SCSI adapter card plugged into a PC slot is capable of controlling as many as seven different hard disks, optical disks, tape drives, etc.
software	The set or sets of programs that instruct the computer hardware to perform a task or series of tasks -- for example, the UNIX operating system software and the VIS Version 3.1 software.
Speech Recognition	An optional feature that provides speaker independence, connected digit recognition, key word spotting, prompt interrupt, and DTMF support functionality.
speech space	An area that contains all digitized speech used for playback in the applications loaded on the system.
StarLAN Networking	Version 3.1 supports connecting a VIS to the AT&T StarLAN network using the AT&T StarLAN 10 Network PC Network Access Unit (NAU) and AT&T Enhanced TCP/IP WIN/386 R3.0 software.
string	A contiguous sequence of characters treated as a unit. Strings are normally bounded by white spaces, tabs, or a character designated as a separator. A string value is a specified group of characters symbolized by a variable.
swap space	An area of the disk that is fixed in size depending on the amount of Random Access Memory (RAM) that is on the system. This area is used to temporarily store programs (swap in and out) that are competing for CPU time and cannot remain in core memory due to size constraints.
switch	A software and hardware device that controls and directs voice and data traffic. A customer-based switch is known as a "Private Branch Exchange."
switch hook	The device at the top of most telephones which is depressed when the handset is resting in the cradle (on hook). The device is raised when the handset is picked up (the phone is off hook).
switch hook flash	A signaling technique in which the signal is originated by momentarily depressing the "switch hook."
switch interface administration	The component of the VIS that enables you to define the interaction between the VIS and switches by allowing you to establish and modify switch interface parameters and protocol options for both analog and digital interfaces.

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switch network   Two or more interconnected switching systems.

synchronous   A method of data transmission in which bits or characters are
communication   sent at regular time intervals, rather than being spaced by
                     start and stop bits. See also "asynchronous communication."

System 75   An advanced digital switch supporting up to 800 lines that
                     provides voice and data communications for its users.

System 85   An advanced digital switch supporting up to 3,000 lines that
                     provides voice and data communications for its users.

system   The person assigned the responsibility of monitoring all VIS
administrator   software processing, performing daily system operations and
                     preventive maintenance, and troubleshooting errors as
                     required.

system   The manner in which the CONVERSANT Voice Information
architecture   System software is structured.

system   An event or alarm generated by either a VIS or end user
message   process.

system   A component of the VIS in which tests are performed to verify
monitor   that each incoming telephone line and its associated tip/ring
                     or T1 card is functional. Through the "System Monitor"
                     component, you are able to see displays of the Voice Channel
                     and Host Session Monitors.

T1   A digital transmission link with a capacity of 1.544 Mbps.

table   A collection of records that are logically grouped together.

talkfile   A talkfile is an ASCII file that contains the speech phrase tags
                     and phrase tag numbers for all the phrases of a specific
                     application.

TDM   See "Time-Division Multiplex."

Terminal   Software which allows the VIS to temporarily transform itself
Emulator   into a "look alike" of an IBM 3270 terminal. In addition to
                     providing full 3270 functionality, the Terminal Emulator
                     enables you to transfer files to and from UNIX.

Text to Speech   An optional feature that allows an application to play speech
                     directly from ASCII text by converting that text to synthesized
                     speech. The text may be used for prompts or for text
                     retrieved from a database or host, and can be spoken in an
                     application with prerecorded speech. Text to Speech
                     application development is supported through Script Builder.

Time-Division Multiplex	A method of serving a number of simultaneous channels over a common transmission path by assigning the transmission path sequentially to the channels, each assignment being for a discrete time interval.
trace	A command that can be used to monitor the execution of a script.
traffic	The flow of information or messages through a communications network for voice, data, or audio services.
transaction	Comprised of the exchanges between the caller and the voice system.
TRIP	See "Tip/Ring Interface Process."
Transaction State Machine Process	A software process that controls transactions via script execution and commands. The Transaction State Machine Process manages interaction with the network, manages interaction with other parts of the Voice System, allocates and frees devices and channels, and executes script language programs.
troubleshoot	The process of locating and correcting errors in computer programs. This process is also referred to as debugging.
TSM	See "Transaction State Machine Process."
TTS	See "Text to Speech."
UNIX Operating System	A multi-user, multitasking computer operating system developed by Bell Telephone Laboratories division of AT&T.
UNIX shell	The command language that provides a user interface to the UNIX operating system.
Usr space	An area of the disk that houses user home directories and files, and is used at installation time to temporarily load some feature packages. This is also a file system which is fixed in size once the system is partitioned at installation.
vi editor	A screen editor used by the VIS to create and change electronic files.

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virtual channel
A channel that is not associated with an interface to the telephone network (Tip/Ring, T1, or PRI). Virtual channels are intended to run "data only" applications which do not interact with callers but may interact with DIPs. Voice or network functions (for example, coding or playing speech, call answer, origination or transfer) will not work on a virtual channel. Virtual channel applications may be initiated only by a "virtual seizure" request to TSM from a DIP.

VIS
See "Voice Information System."

voice channel
A channel that is associated with an interface to the telephone network (Tip/Ring, T1, or PRI). Any VIS application may run on a voice channel. Voice channel applications may be initiated by being assigned to particular voice channels or dialed numbers to handle incoming calls or they may be initiated by a "soft seizure" request to TSM from a Data Interface Process (DIP) or the **soft_szr** command.

Voice Information System
A computer connected to a telephone network that handles touch-tone input, voice response, and line transfer. The Voice Information System uses a screen-based, menu-driven user interface to interact with the system operator or administrator.

Voice Response Output Process
A software process that transfers digitized speech between system hardware (for example, Tip/Ring and SP cards) and data storage devices (that is, hard disk, etc.)

Voice System Administration
The means by which you are able to administer both voice and non-voice related aspects of the system.

VROP
See "Voice Response Output Process."

warning
The warning admonishment is used when there is a possibility of equipment damage.

wink signal
An interruption of current to a busy lamp indicating that there is a line on hold.

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