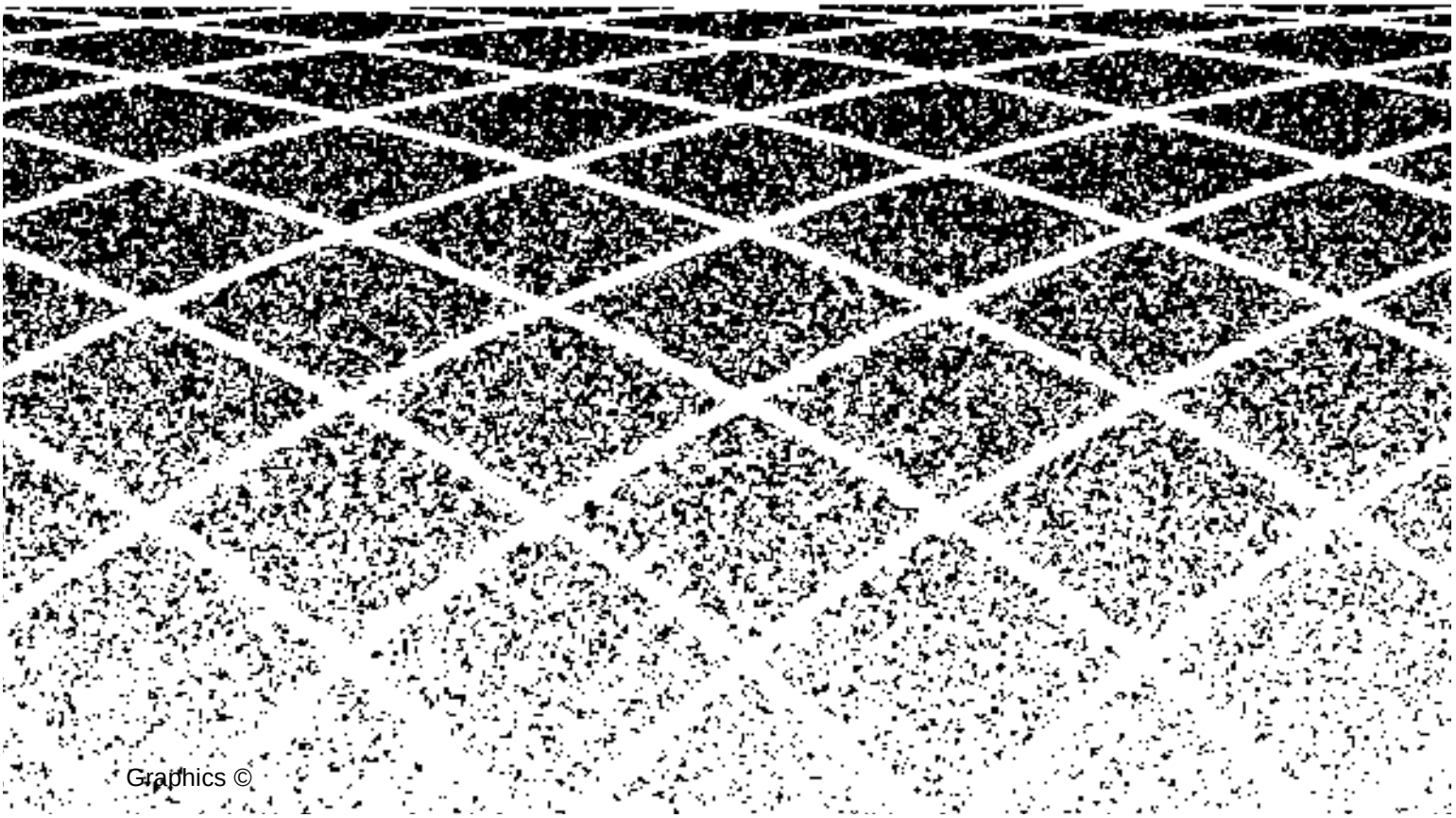
585-350-212
Issue 1
October, 1993

SCSI Disk Drive Upgrade Kit for MAP/100 and MAP/100C



Blank Page

Contents

Contents

Contents

Contents

About This Book

Purpose

This book, *SCSI Disk Drive Upgrade Kit for MAP/100 and MAP/100C*, 585-350-212, describes the procedures for upgrading both a MAP/100 and MAP/100C from an ESDI to a SCSI system.

Intended Audiences

This book is intended primarily for the technician. Secondary audiences include the following: customer, field support, customer support, and factory assemble, load, and test (ALT) personnel.

How This Book Is Organized

This book is organized into the following chapters:

- ‘‘About This Book’’

  This chapter is designed as a preface to the rest of the book, including such information as the book purpose, its intended audiences and organization, use, conventions, trademarks and service marks, security and safety requirements, and related resources. This chapter also explains how to make comments about the book.

- Chapter 1, ‘‘Getting Started’’

  This chapter describes warnings about the MAP/100 and MAP/100C, how to avoid electrostatic damage to hardware items, how to unpack the kit, the importance of saving packing materials, items in the kit, and tools you need.

- Chapter 2, ‘‘Getting Inside the Platform’’

  The first half of this chapter describes how to open the MAP/100 by removing the dress covers of the chassis and opening and removing the front doors, as well as how to access the peripheral bay and card cage.

  The last half of this chapter how to open the MAP/100C by opening the front door, as well as how to access the peripheral bay, card cage, power supply, and cooling fan panel.

- Chapter 3, ‘‘Upgrading Circuit Cards’’

  This chapter serves as an introduction to the circuit cards that you will be upgrading as part of this upgrade kit. 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.

  There are two separate sections for installing cards in the MAP/100 and the MAP/100C.

- Chapter 4, ‘‘Performing the Upgrade’’

  This chapter describes the procedures to upgrade your system from ESDI to SCSI. The first half of this chapter describes how to upgrade your hardware in the MAP/100. The last half of this chapter describes how to upgrade your hardware in the MAP/100C.

- ‘‘Index’’

  This section provides an alphabetical listing of principal subjects covered in this book.

Trademarks and Service Marks

The following trademarked products are mentioned in this book:

- CONVERSANT and AUDIX is a registered trademark of AT&T.
- Voice Power is a trademark of AT&T.
- UNIX is a registered trademark of UNIX System Laboratories, Inc.

Related Resources

The following books are expected to be used in conjunction with this book:

- *MAP/100 Voice Processing Hardware Installation*, 585-350-107
- *MAP/100C Voice Processing Hardware Installation*, 585-350-108
- *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112

How to Make Comments About This Book

A reader comment card is behind the title page of this book. While we have tried to make this book fit your needs, we are interested in your suggestions for improving it and urge you to complete and return a reader comment card.

If the reader comment card has been removed, send your comments to:

AT&T
Product Documentation Development Department
Room 22-2C11
11900 North Pecos Street
Denver, Colorado 80234

Please include the name and order number of this book.

Getting Started

1

What's in This Chapter

This chapter describes warnings about the MAP/100 and MAP/100C, how to avoid electrostatic damage to hardware items, how to unpack the kit, the importance of saving packing materials, items in the kit, and tools you need.

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/100 or 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/100(C), you are disconnecting from the line/trunk circuits.

WARNING:
If you disconnect the MAP/100 or 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:
Shut power off before removing the dress covers or opening any part of the MAP/100 or MAP/100C.

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 4.0 Operations, 585-350-703, for information.

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.

WARNING:
Do not use the dress covers of the MAP/100 as a way to lift it.

Avoiding Electrostatic Discharge Damage 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 1-1.
- Hold a larger circuit card as shown in Figure 1-2. 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 cartridge tape drive 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.

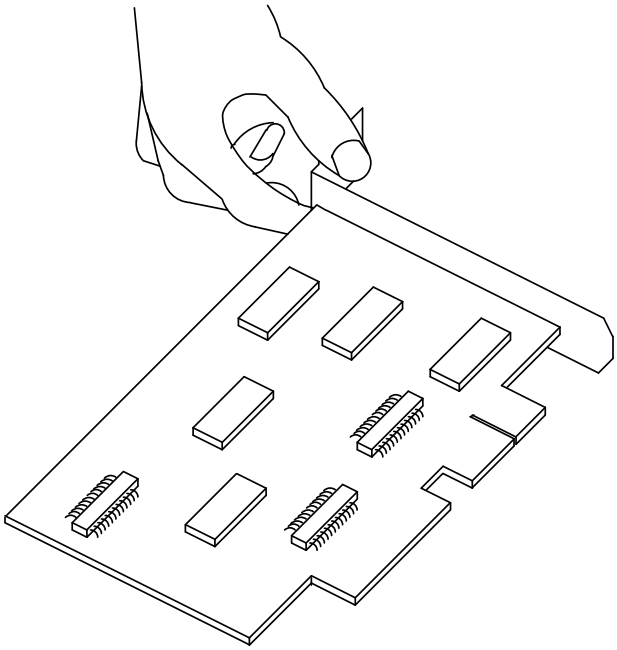


Figure 1-1. How to Hold a Short Circuit Card

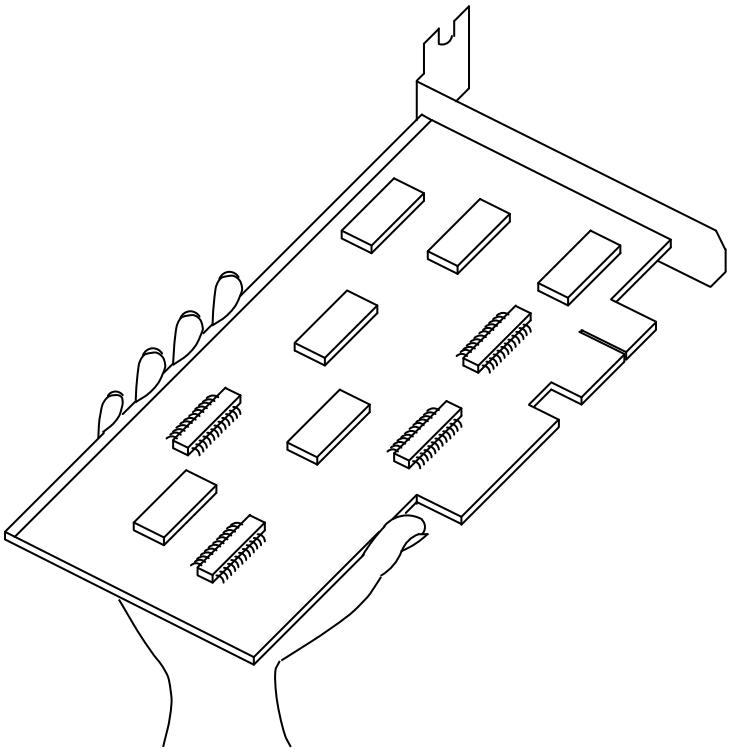


Figure 1-2. How to Hold a Long Circuit Card

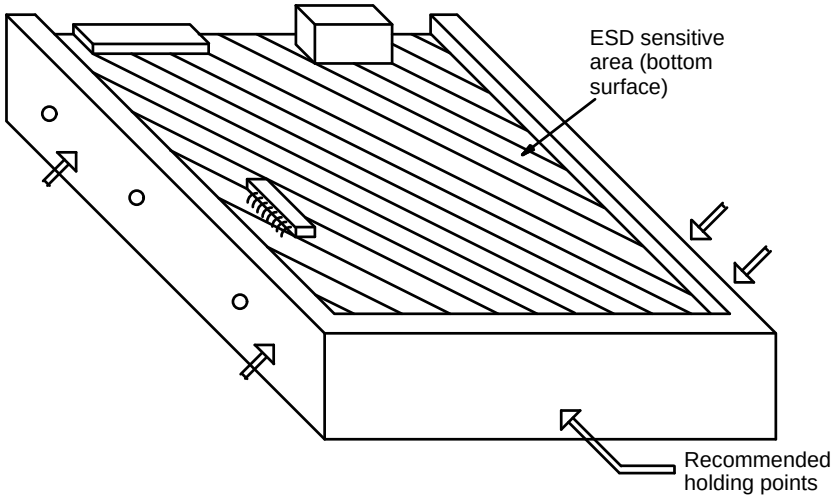


Figure 1-3. Electronic Component ESD Sensitive Area

Unpacking the Upgrade Kit

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. If you have ordered multiple kits, 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 kit, complete the yellow GBCS return repair tag and attach it to the unit. The factory information packet included in the kit carton contains the yellow return repair tag.

Follow the steps listed below to unpack the kit at the job site:

1. At the job site, cut open the top of the box.
2. Remove the top foam packing materials. Save all packing materials in case the kit items must be repacked and transported to a different location.
3. Remove and lay out each item in the container.
4. Use the list below to ensure that you received all the items in the kit.

Inventory of Upgrade Kit Items

The SCSI upgrade kit contains the following items:

- One SCSI 1.2 Gbyte hard disk drive
- One 3.5 inch disk bracket kit
- One SCSI bus controller
- One MAP/100 SCSI bus cable (ED5P208-30, G35)
- One MAP/100C SCSI bus cable (A20126)
- Four 403136583 connectors
- Four 6” cable ties
- One faceplate I/O blank
- One Base System Boot Floppy (SCSI) UNIX R3.2 V2.2, 1 of 1
- One SCSI Support Package V2.3, 1 of 1
- One Recovery Boot Floppy (SCSI), 1 of 1
- One copy of this book

Gathering Tools and Test Equipment

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

- Medium width flat-blade screwdriver
- No. 2 Phillips screwdriver
- Small needle-nose pliers for moving jumpers
- Small wire cutters for cutting cable ties
- Antistatic grounded wrist strap
- Antistatic grounded work mat
- Flashlight or auxiliary lighting if in dimly lit area

Locating Key Components in the MAP/100

Use the following sections and diagrams to locate key components on the unit. For additional information describing the MAP/100 hardware, see the system description for your application.

The Front of the Chassis

See the table below for descriptions and functions of components on the front of the chassis that are important for this kit. Figure 1-4 shows the front view of the MAP/100.

Table 1-1. MAP/100 – Chassis Front Components

Component	Location	Description	Function
front doors	one on each side	hinged doors	covers peripheral bay — disk drives and cooling fans
power switch	lower right side, behind door	rocker switch	turns MAP/100 on and off
reset switch	lower right side, behind door	button	depress button to reset the MAP/100
Main power available indicator	center, between doors	LED	lights green when power is on
fan status indicator	center, between doors	LED	lights green when fan is working normally
disk activity indicator	center, between doors	LED	covers air intake fan and holds air filter

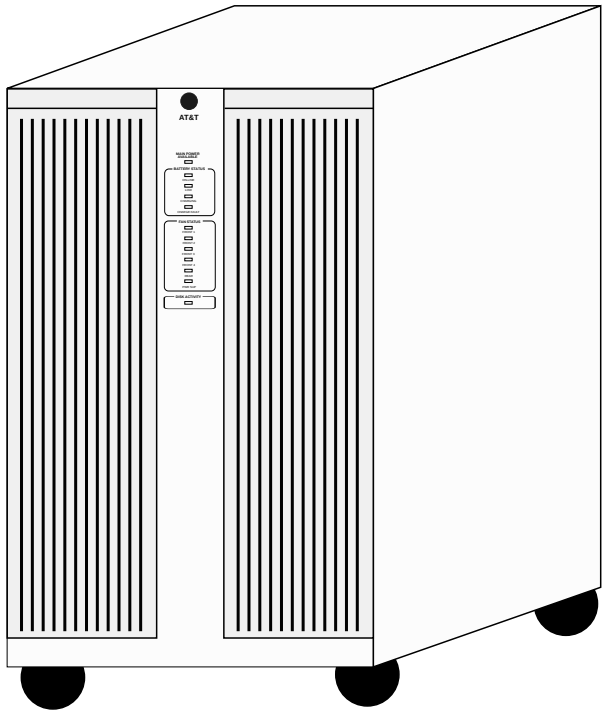


Figure 1-4. Front View of the MAP/100

Locating the Peripheral Drive Devices

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

Table 1-2. MAP/100 – Peripheral Bay Drives

Drive	Description	Function	Peripheral Bay Location
Cartridge tape	SCSI 525 Mbyte	Backup & restore load system	8
Floppy	3.5 inch 1.44 Mbtye high density	System config diagnostic testing	9
Hard disk (optional)	1.2 Gbyte SCSI	Disk mirroring	2
Hard disk	1.2 Gbyte SCSI	Stores operating system application software speech data	0

Chassis Cooling System

Four cooling fans are located in front of the circuit card cage area, behind the left front door. Another cooling fan (the chassis fan) is located in the center on the back of the unit. The last 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 1-5 shows the back view of the MAP/100 for AC units. Figure 1-6 shows the back view of the MAP/100 for DC units. See the table below for the location and description of components on the back of the MAP/100 chassis that are important for this kit.

Table 1-3. MAP/100 – Chassis Back Components

Component	Location	Description	Function
Video connector	Video circuit card faceplate in slot #16	15-pin female D-subminiature	Connects MAP/100 to monitor
circuit breaker	lower center	rocker switch	Turns off/on incoming power to MAP/100
AC power outlet connector	lower center below circuit breaker (AC units)	3-prong, 5 AMP 110/220V	Connects MAP/100 to monitor via 6-feet monitor power cord
AC power inlet receptacle	Lower center below circuit breaker (AC units)	3-prong 110/220V	Connects the MAP100 with 9-feet power cord
DC power terminal strip	Lower center below circuit breaker (DC units)	3 Screw lugs	Connects MAP/100 to DC power via -48CD dedicated line

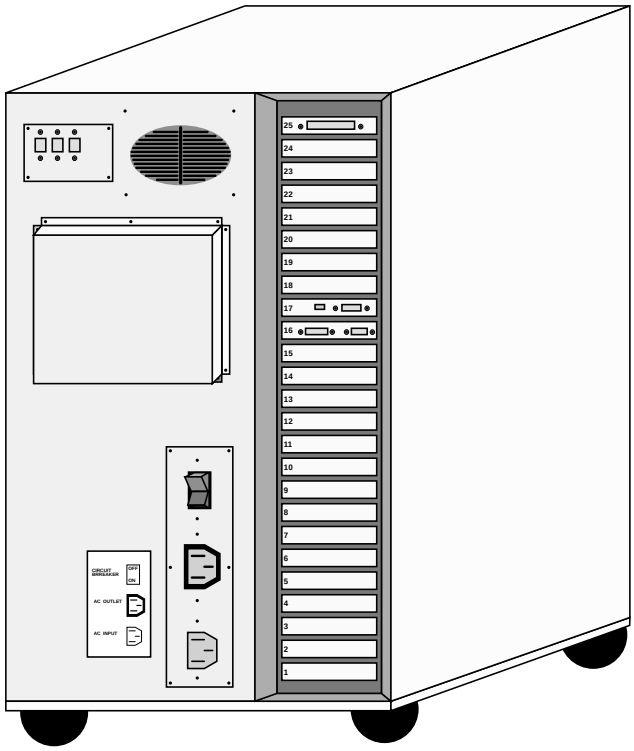


Figure 1-5. Back View of the MAP/100 – AC Units

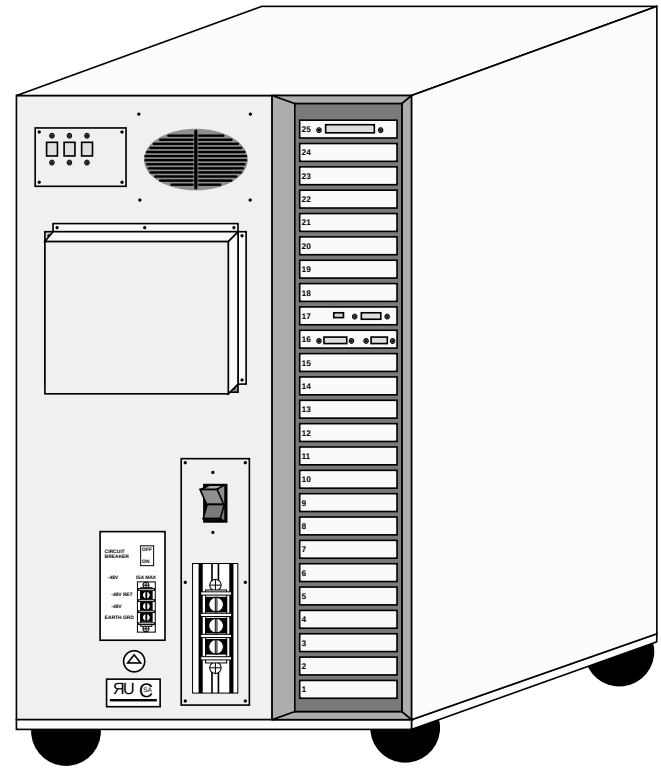


Figure 1-6. Back View of the MAP/100 – DC Units

Locating Key Components in 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 the system description for your application.

The Front of the Chassis

See the table below for descriptions and functions of components on the front of the chassis that are important for this kit. Figure 1-7 shows the front view of the MAP/100C.

Table 1-4. MAP/100C – Chassis Front Components

Component	Location	Description	Function
front door	upper middle section	hinged on right, has latch fasteners	covers card backplane
peripheral door	bottom middle	hinged on the bottom of the door	covers the hard disk and tape drive units
power switch	lower right side, below front door	rocker switch	turns MAP/100C on and off
reset switch	lower right side, below front door	recessed button	depress button to reset the MAP/100C
Power indicator	far lower right, below front doors	LED	lights green when power is on
fan status indicator	lower left, below front door	LED	lights green when fan is working normally

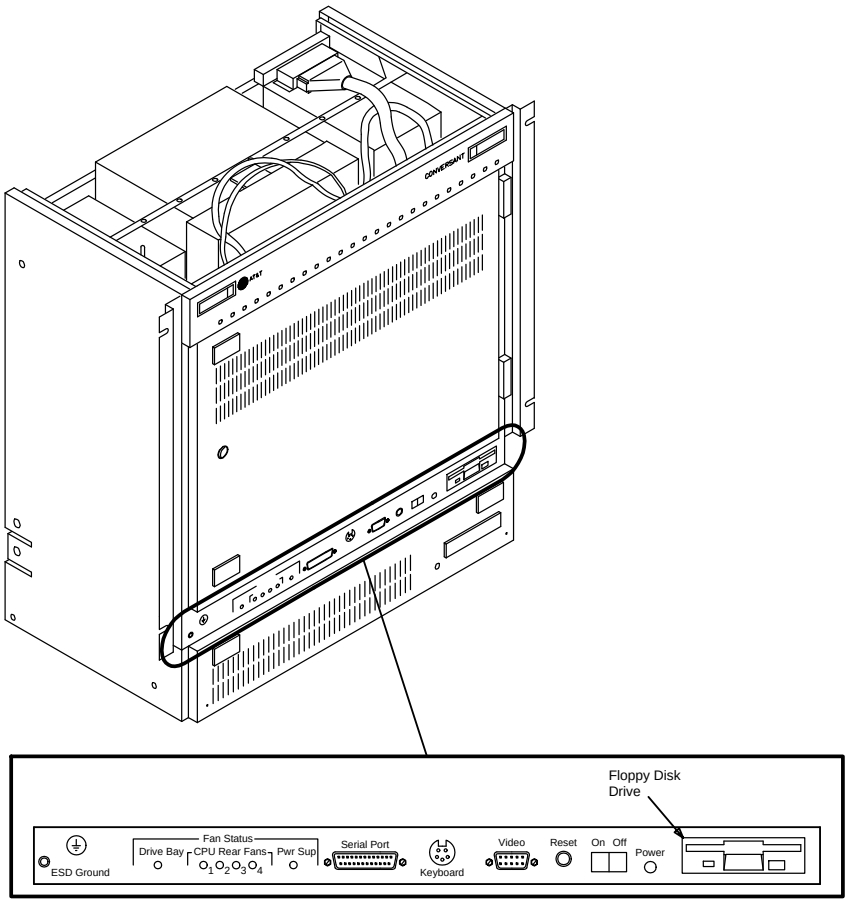


Figure 1-7. Front View of the MAP/100C

Locating the Peripheral Drive Devices

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

Table 1-5. MAP/100C – Peripheral Bay Drives

Drive	Description	Function	Peripheral Bay Location
Cartridge tape	SCSI 525 Mbyte	Backup & restore load system	Lower right – 4
Floppy	3.5 inch 1.44 Mbtye high density	System config diagnostic testing	On control panel – above position 3 of the peripheral bay
Hard disk (optional)	1.2 Gbyte SCSI	Disk mirroring	Lower middle – 2
Hard disk	1.2 Gbyte SCSI	Stores operating system application software speech data	Lower left – 1

Chassis Cooling System

Four cooling fans are located in front of the circuit card cage area, behind the left front door. Another cooling fan (the chassis fan) is located in the center on the back of the unit. The last 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 1-8 shows the back view of the MAP/100C. See the table below for the location and description of components on the back of the MAP/100C chassis that are important for this kit.

Table 1-6. MAP/100C – Chassis Back Components

Component	Location	Description	Function
Power supply access door	Top center	Hinged on bottom to swing downward	Covers MAP/100C power supply
Fan panel access door	Center	Hinged on bottom to swing downward	Covers the 4 rear cooling fans
Peripheral bay access door	Bottom center	Hinged on bottom to swing downward	Covers peripheral bay units
Video connector	Middle right	15-pin female D-subminiature	Connects MAP/100C to monitor
Reset button	On the control panel	Recessed button	Depress button to reset the MAP/100C
Circuit breakers	Upper right corner	Rocker switches	Turns off/on incoming power to MAP/100C
Power on	Control panel, upper right corner next to circuit breakers	LED	Lights green when power is on to supply power to MAP/100C
AC power inlet receptacle	Upper right rear corner, next to circuit breaker (AC units)	3-prong 110/220V	Connects the MAP/100C with 9-feet power cord to supply power
DC power terminal strip	Upper right rear corner, next to circuit breaker (DC units)	4 Screw lugs	Connects MAP/100C to DC power via -48CD dedicated line

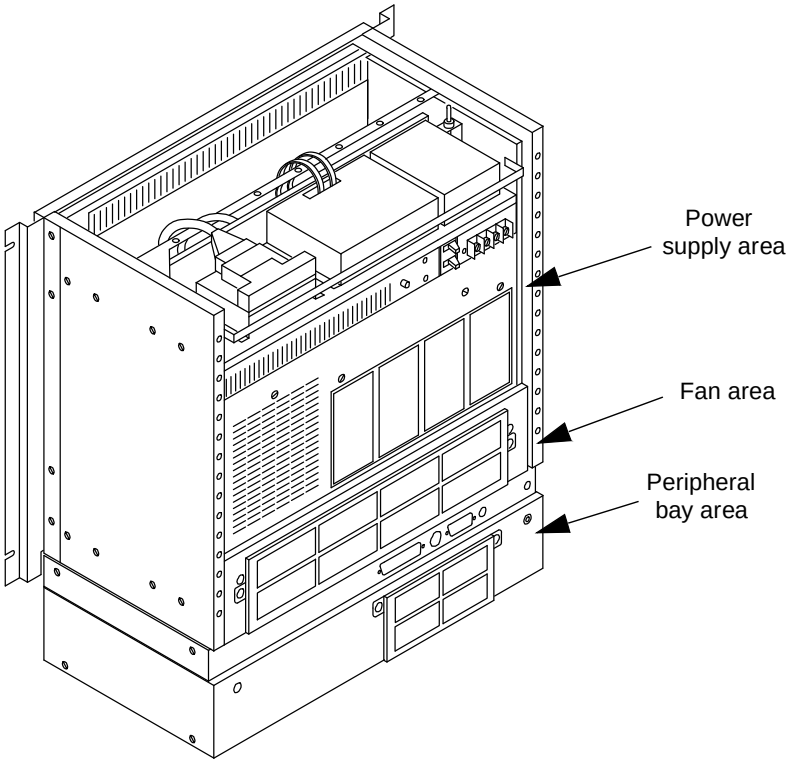


Figure 1-8. Back View of the MAP/100C – DC Units

Getting Inside the Platform

2

What's in This Chapter

The first half of this chapter describes how to open the MAP/100 by removing the dress covers of the chassis and opening and removing the front doors, as well as how to access the peripheral bay and card cage.

The last half of this chapter how to open the MAP/100C by opening the front door, as well as how to access the peripheral bay, card cage, power supply, and cooling fan panel.

WARNING:
Shut power off before accessing any of the internal parts of your platform.

Do this by following the procedure ''Removing Power from the Platform'', found in this chapter.

WARNING:
Notify the telephone company immediately if the system is to be permanently or temporarily disconnected from its present line/trunk circuits. (Digital Circuits ONLY)

Removing Power from the Platform

Remove power from the system as follows:

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 Maintenance Procedures,” of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112.
    b. Shut the system by following the procedure, “Shutting Down the Operating System” found in Chapter 4, “Common Maintenance Procedures,” of the maintenance book.
3. Turn OFF both the front panel power switch and the circuit breaker(s) on the rear of the unit.
4. Remove the incoming power 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.

Getting Inside the MAP/100

Use the procedures on the following pages to gain access to various areas of the MAP/100 platform.

Removing the MAP/100 Dress Covers

Removing the MAP/100 dress covers as follows (see Figure 2-1):

1. In one corner of the top dress cover, place your fingertips in the space between the bottom of top cover and top of the side cover. Gently pry off the dress cover by applying upward pressure at each corner.
2. Place your fingertips at the top of the side dress cover. Gently pry off the dress cover by applying outward pressure at each corner.
3. Repeat Step 3 for the other side dress cover, if necessary.

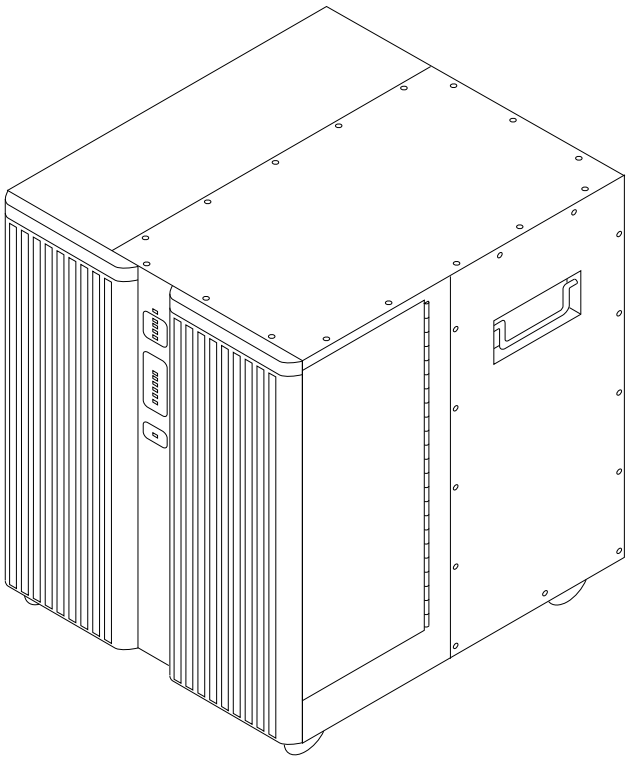


Figure 2-1. MAP/100 – Dress Covers Removed

Opening and Removing the Front Doors

Open and remove the platform's front doors as follows (see Figure 2-2):

1. Open the right door on the front of the unit by placing your finger in the indentation on the bottom right corner of the door. Swing the door out towards you.
2. With the door fully opened, remove it by applying upward pressure to slide it off its hinges. Set the door aside.
3. Open the left door on the front of the unit by placing your finger in the indentation on the bottom left corner of the door. Swing the door out towards you.
4. With the door fully opened, remove it by applying upward pressure to slide it off its hinges. Set the door aside.

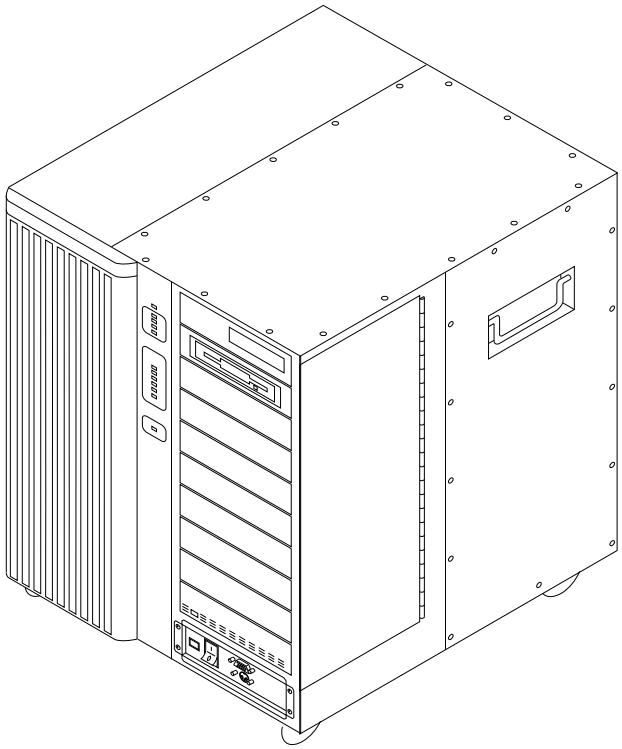


Figure 2-2. MAP/100 – Front Door Removed

Accessing the Peripheral Bay

Access the peripheral bay and power supply as follows (see Figure 2-3):

1. Remove the top and right-side dress covers.
2. Remove the right front door.
3. Loosen the four ¼-turn fasteners around the perimeter of the peripheral bay.

   NOTE:
   Notice the label placed on the side plate of the unit before loosening any of the ¼-turn fasteners. It reads:

   ATTENTION
   This panel is retained with ¼-turn fasteners. Maximum tightening torque: 6 in-lbs. (0.68 N-M)
   Excessive force will permanently damage these fasteners.

4. Loosen the seven ¼-turn fasteners around the perimeter of the peripheral bay access door and open the door. See Figure 2-3.

   Grasp the peripheral bay steel framework and carefully pull the entire peripheral bay out while observing that no cable “hang-ups” occur (observe cables through the side door). Proceed pulling the assembly forward until it is against its mechanical stop.

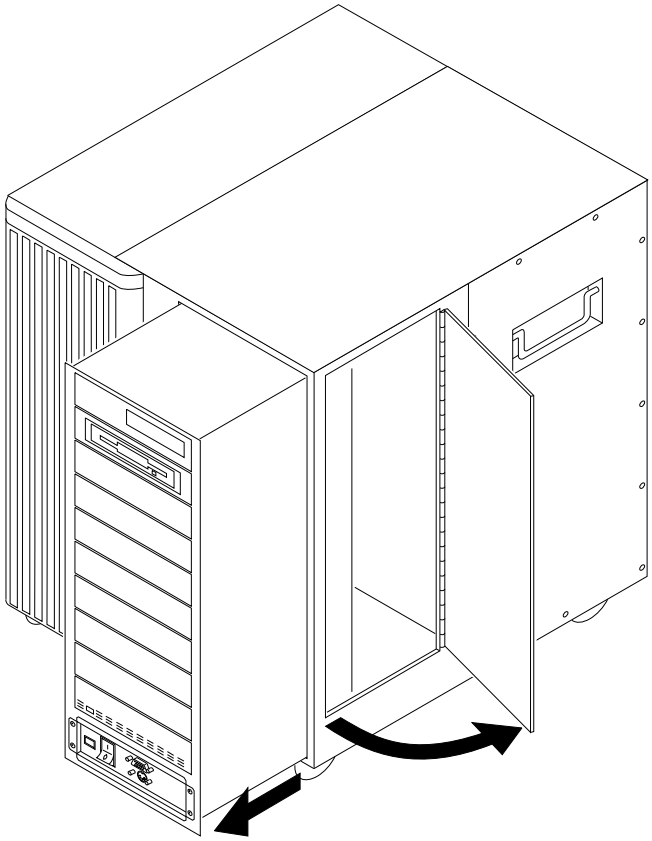


Figure 2-3. MAP/100 – Peripheral Bay Open

Accessing the Top of the Power Supply

Access the top of the power supply as follows:

1. Remove the top and right-side dress covers.
2. Remove the 17 flat-head screws from the perimeter of the top panel. See Figure 2-4.
3. Carefully remove the panel. You now have access to the cable and connector of the uninterrupted power supply (UPS) and power distribution panel.
4. Grasp the power supply and battery module (PS&BM) external pull handle and pull the PS&BM from the unit until it rests against the safety stop while observing any cable “hang-ups” through the open peripheral bay side door.

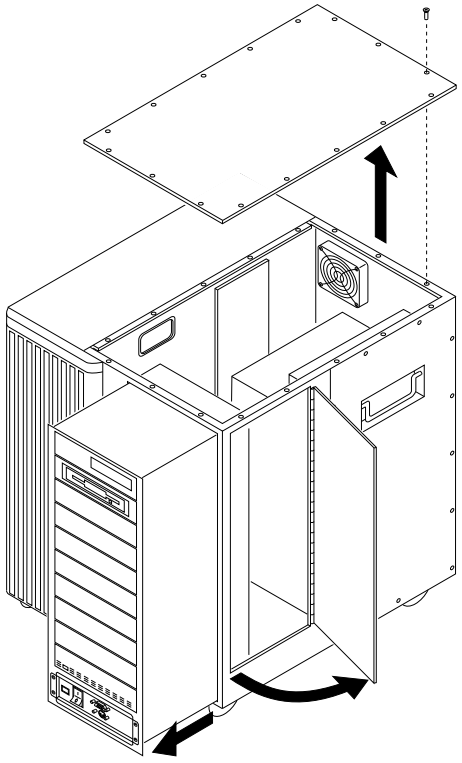


Figure 2-4. MAP/100 – Accessing the Top Connectors of the Power Supply

Accessing the Card Cage

Access the card cage as follows:

1. Remove the top and left-side dress covers.
2. Loosen the eight ¼-turn fasteners around the Card Cage access door and open the door (Figure 2-5).

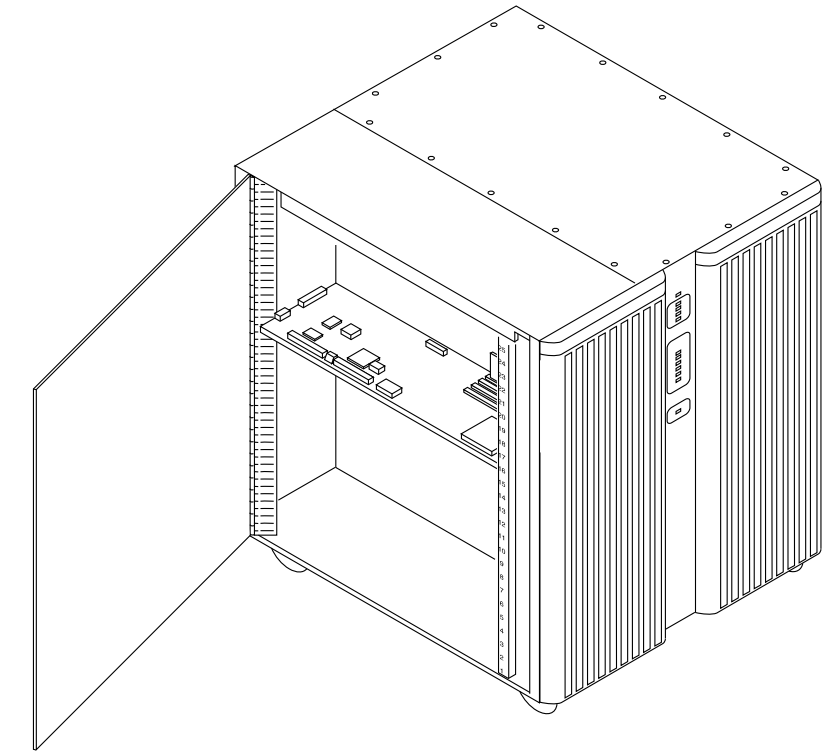


Figure 2-5. MAP/100 – Card Cage Access Door

Replacing the Dress Covers

For each of the side covers, align the holes on the back of the cover with the pegs on the MAP/100 and push the cover on by applying inward pressure at each of the corners.

For the top cover, align the holes on the bottom of the cover with the pegs on the MAP/100 and push the cover on by applying downward pressure at each of the corners.

Replacing the Front Doors

Replace the platform's front doors as follows:

1. With the door in a fully open position, align the hinge pins on the door with the hinges on the chassis.
2. Slide the hinge pins downward into the hinges and close the door.
3. Complete Step 1 through 3 for each door.

Getting Inside the MAP/100C

Use the procedures on the following pages to gain access to various areas of the MAP/100C platform.

Opening the Front Door

Open the front door as follows:

1. Loosen the ¼-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 2-6.

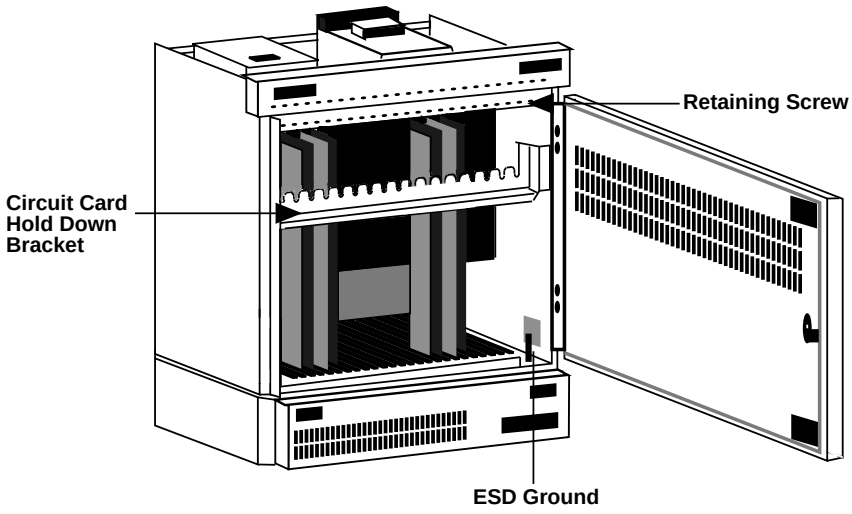


Figure 2-6. MAP/100C – Front Door Open

Removing the Circuit Card Hold-Down Bracket

Remove the hold-down bracket as follows:

1. Pull in on the knurled knob at the left of the bracket.
2. Pull in a rotating motion from the left until the end of the bracket clears the side of the MAP/100C.
3. Pull the bracket outward and to the left.

Accessing the Peripheral Bay in Front

Open the front peripheral bay access door as follows:

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 downward toward you. See Figure 2-7.

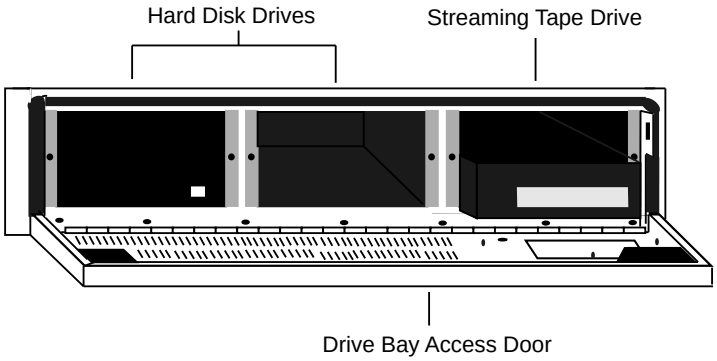


Figure 2-7. MAP/100C Front View – Peripheral Bay Door Open

Accessing the Peripheral Bay in Back

Open the rear peripheral bay access door by letting it fall downward toward you. Use Figure 2-8 as a reference.

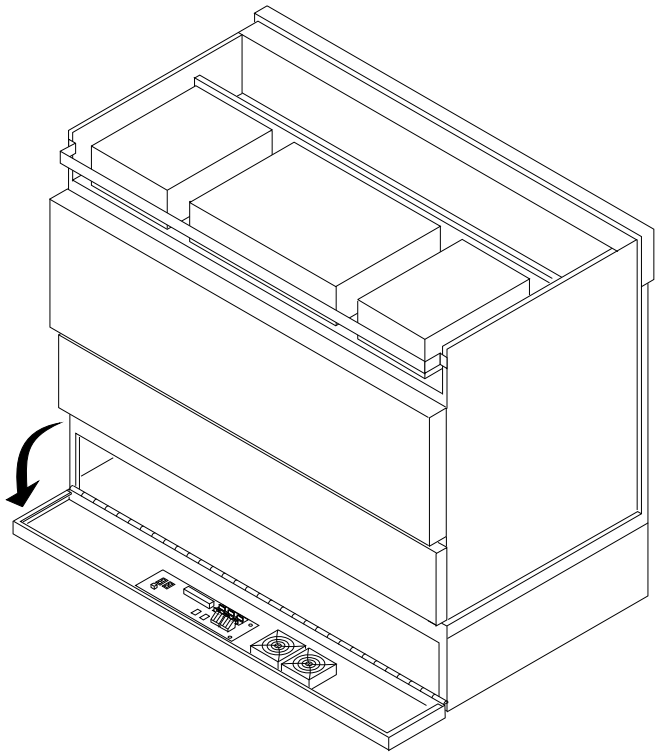


Figure 2-8. MAP/100C Back View – Peripheral Bay Door Open

Accessing the Card Cage

Access to the card cage as follows:

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.

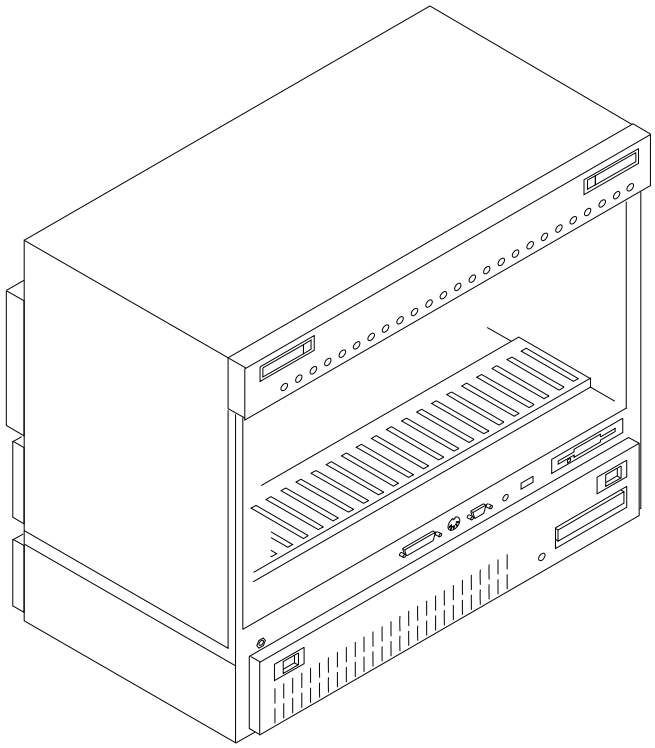


Figure 2-9. MAP/100C – Inside Card Cage

Accessing the Power Supply

Access the power supply as follows:

1. Loosen the two captive screws on the power supply access door on the rear of the unit (Figure 2-10).
2. Open the door and let it fall downward toward you.

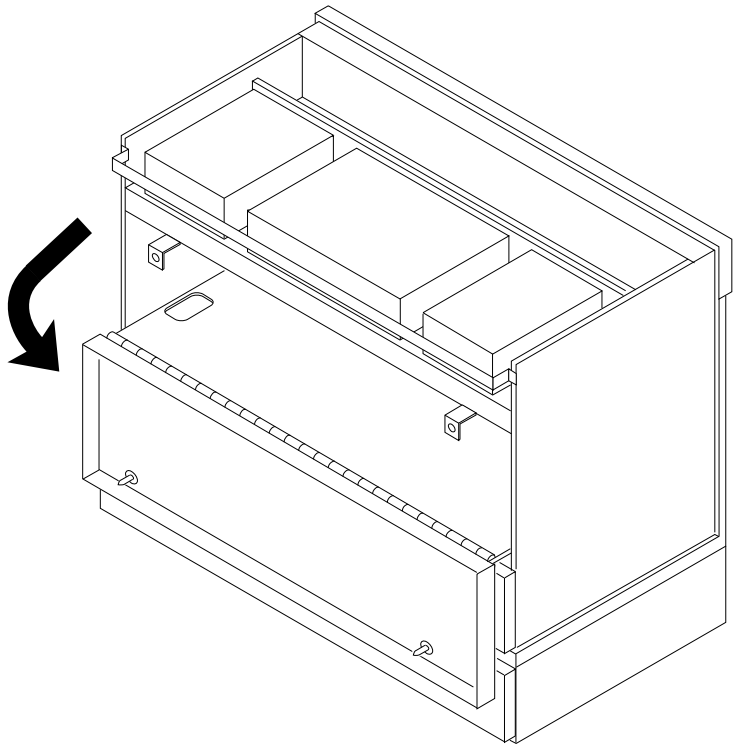


Figure 2-10. MAP/100C – Power Supply Access Door

Accessing the Cooling Fan Panel

Access the fan panel by loosening the two captive screws on the fan panel access door on the rear of the unit. Open the appropriate door by letting it fall downward toward you (Figure 2-11).

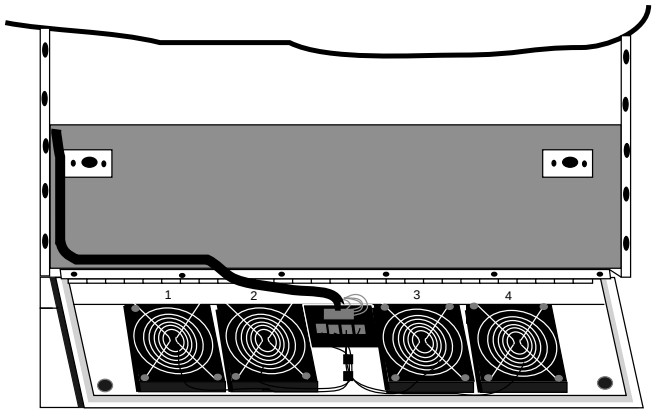


Figure 2-11. MAP/100C – Fan Panel Access Door

Upgrading Circuit Cards

3

What's in This Chapter

This chapter serves as an introduction to the circuit cards that you will be upgrading as part of this upgrade kit. 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.

There are two separate sections for installing cards in the MAP/100 and the MAP/100C.

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 1, ''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 in the following chapters.

NOTE:
Read Chapter 4, "Running the Configuration Program," of your *Voice Processing Hardware Installation* book 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 configuration data sheet in order to check addresses of existing cards. Also, when removing a card, set address switches and jumpers of the new card matching to the old card.

Installing a Circuit Card in the MAP/100

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

1. Verify that the new or replacement 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/100 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/100 as a fully loaded system.

   Remove the configuration floppy disk, if you have had the MAP/100 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. Remove the dress covers and open the card cage. See Chapter 2, ‘‘Getting Inside the Platform’’, 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 faceplate and the edge of the circuit card with the with the circuit card guide and the backplane slot position. The card is now next to the expansion slot. Move the card 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 to 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. Close the card cage and/or peripheral bay access door, and replace the dress covers if you have completed work inside the platform. See Chapter 2, ‘‘Getting Inside the Platform’’ for more information.

Installing a Circuit Card in the MAP/100C

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 2, ‘‘Getting Inside the Platform’’ 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 card 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 MAP/100C” for more information.

The SCSI Host Adapter Circuit Card

The Small Computer System Interface (SCSI) Host Adapter controller card controls the 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. In this upgrade procedure, you will be replacing your system's existing hard disk controller card (and possibly a cartridge tape controller card) with the 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.

To install the SCSI circuit card, complete the following:

- Verify jumpers
- Verify switch settings
- Verify that the 3 terminating resistor SIPs are installed. The first and last peripheral devices on the SCSI cable must have terminating resistors installed. All other SCSI devices must have terminators removed.
- Refer to ''General Steps for Circuit Card Installation'', found in this chapter to install the SCSI card.
- Connect cables

Refer to the figure on the next page for location of jumpers and switches.

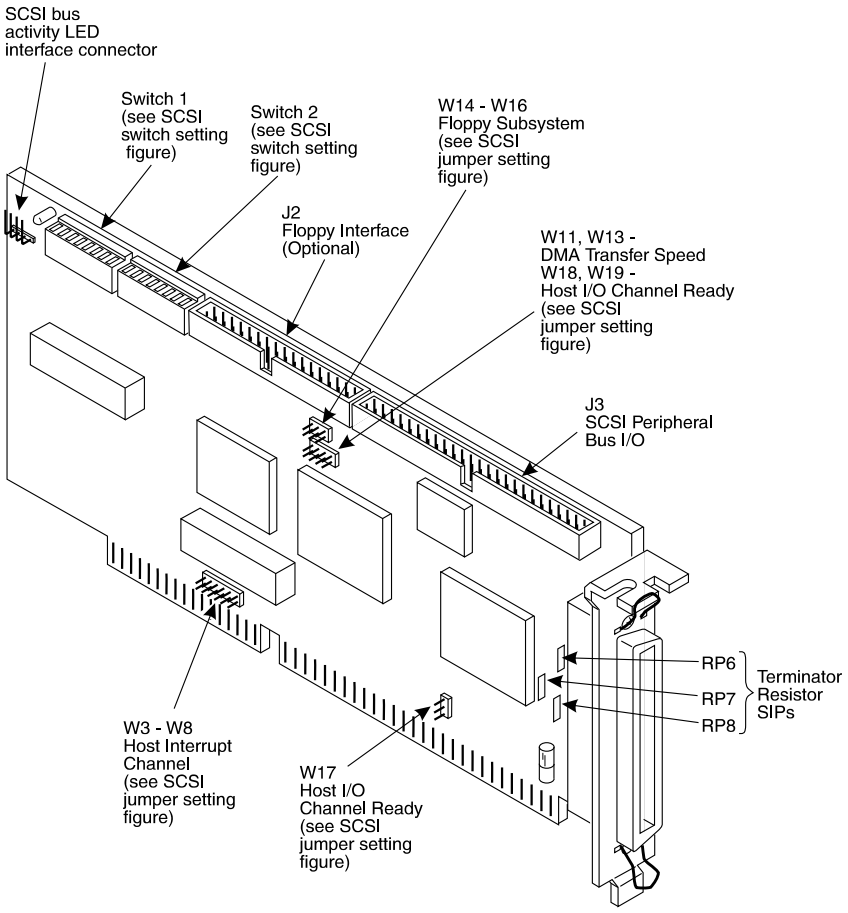


Figure 3-1. SCSI Host Adapter Controller Circuit Card

Verify the Jumpers on the SCSI Circuit Card

Jumpers on the SCSI circuit card should be set as indicated in the figure below.

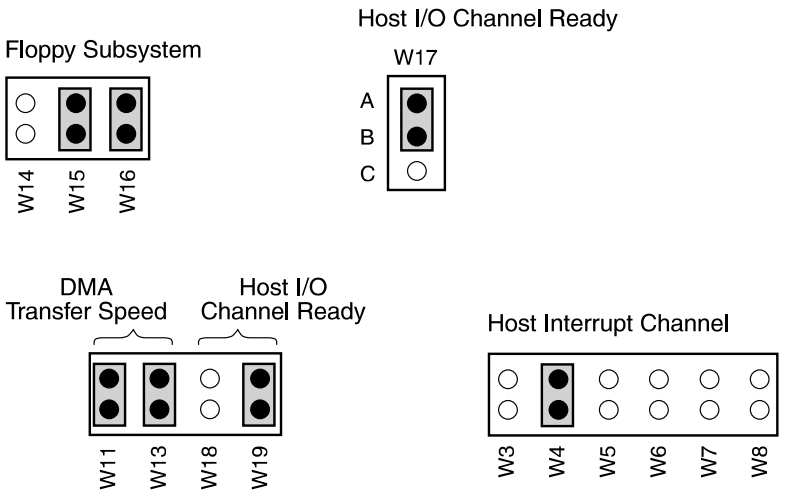


Figure 3-2. Jumpers Settings for the SCSI Circuit Card

Verifying Switch Settings on the SCSI Circuit Card

Switches are set by the manufacturer. Use the figure below to verify correct switch settings.

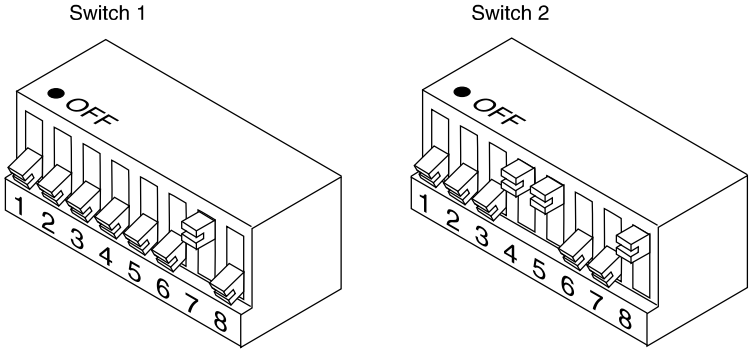


Figure 3-3. Switch Settings for the SCSI Circuit Card

Performing the Upgrade

4

What's in This Chapter

The first half of this chapter describes how to upgrade your hardware in the MAP/100.

The last half of this chapter describes how to upgrade your hardware in the MAP/100C.

Before You Start the Upgrade

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

Gather the appropriate tools, the components of the upgrade kit, and a space to place the old components you remove from the MAP/100 (hint: have an empty box to place old components in to avoid mixing them in with the new kit components).

NOTE:
If you are performing both SCSI and 486 CPU upgrades, refer to both kit's documentation to reduce duplication of effort.

Preparing the System for Upgrading

Back up your system before removing the old hard disk unit(s). Refer to "Backing Up the System" in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT Voice Information System Version 4.0 Maintenance*, 585-350-112, for information. 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.

If power is removed from the 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 your system before moving it. Refer to "Shutting Down the Operating System," in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT Voice Information System Version 4.0 Maintenance*, 585-350-112, for information.

Upgrading the MAP/100 Hardware

Use the following procedures to upgrade your system from ESDI to SCSI. These procedures are broken up into sections that are meant to be performed sequentially.

Removing the Old Controller Cards from a MAP/100

Remove your old cards as follows:

1. Follow the procedures in Chapter 2 to power down the MAP/100, remove the MAP/100 dress covers, and open the peripheral bay, card cage and power supply.
2. Locate the ESDI disk controller card in slot #24. Locate the cartridge tape controller card in slot #25.
3. Disconnect the cables from each card and separate the floppy drive and disk activity cables from the ESDI cables. The floppy cable is the 34 conductor ribbon attached to the connector nearest the faceplate of the card. The disk activity cable is attached to the 4 pin header on the opposite end of the card. These 2 cables will be connected onto the SCSI controller card after it is installed.
4. Mark the floppy cable with a pen or piece of tape. Should the disk activity cable become accidentally disconnected from the backplane, it connectors to J129's lower pair of pins. J129 is located at the right end of slot #24's connectors.
5. Remove the retaining screw on top of each card's faceplate and save.
6. Grasp the ESDI card along the top at opposite ends and while pulling use a slight rocking motion by alternately pulling harder on one end and then the other.
7. Once you've removed the card, place it in a safe place for storing or returning later.
8. Remove the cartridge tape card in a similar manner and place it in a safe place as with the ESDI card.
9. To allow easy access to the cable routing portal between the card cage peripheral bay area, it may be necessary to remove the additional cards residing in slots #20 through #23. If so, follow the same procedures as for removing the ESDI and cartridge tape cards. Be aware that most of these cards will have external cable connections. Take careful note of the card type, slot number, and cables for each so that you can reinstall them with easily at the end of the upgrade.

Removing the Old Cables and Drive Units from a MAP/100

1. From the card cage side, locate any cable ties bundling the cables.
2. Cautiously, cut the cable ties with wire cutters.
3. Go to the peripheral bay side of the MAP/100. With the peripheral side bay door open, and the peripheral bay shelves extended (pulled out through the front of the unit until stopped), locate the cables and the portal. The cable bundle passes through a reusable cable retainer that can be unlatched by pulling on the tab on top of it.
4. Once released and the cable bundle free, return to the card cage side and with the floppy cable separated, push the ESDI and cartridge tape cables through the portal.
5. Disconnect the cables from the drive units and set them aside.
6. Disconnect the power cables (4 conductor wires) from both the ESDI and cartridge tape drive units.
7. Remove the screws that secure peripheral to the shelf in the peripheral bay, 2 on each side.
8. After all the screws and cables have been removed, push the peripheral forward, out of the shelf, until it can be grasped and removed from the front.
9. Store the drive units in a safe place until they can be put into ESD protective containers.

Installing the SCSI Host Adapter Controller Card in a MAP/100

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, and 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 the instructions to install this card as shown here. Do *not* use the instructions shipped by the manufacturer with the card.

Follow the steps in ''General Steps for Circuit Card Installation'' to install the SCSI controller card while using the procedure below as additional information. Refer to Chapter 3 also for proper jumper and switch settings.

1. Place the card near slot #25 and attach all the cabling to the card, including the SCSI cable, the floppy cable, and the visual indicator cable.

   NOTE:
   The SCSI cable is prefolded and has a connector that is located on one end and is approximately 36 inches from the next connector. For the purpose of this procedure, this is connector “A.” See Figure 4-1.

.

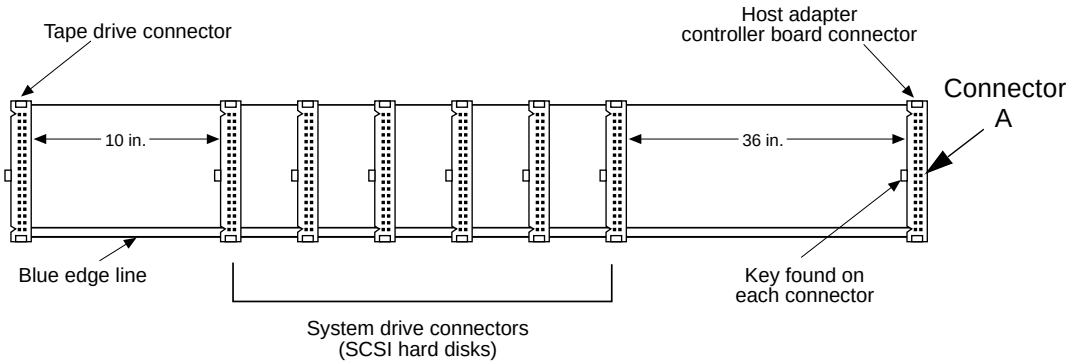


Figure 4-1. MAP/100 – SCSI Cable

2. Push Connector A through the cable portal from the peripheral bay side into the card cage side. Orient Connector A, while maintaining the folds so the connector openings are facing toward the backplane. Work out any kinks or twists in the cable back through the portal and dress the cable down into the peripheral bay.
3. Align the card with the backplane connectors in slot #25 and insert.
4. Apply firm uniform pressure along the top of the card to ensure complete connection of the gold contacts into the backplane connectors.
5. Secure the faceplate with the screw removed when removing the ESDI controller card.
6. Place a faceplate filler panel in slot #24 where the tape controller card was removed and secure with the screw.
7. Now that you have installed the SCSI controller card remove any unnecessary slack in the SCSI cable by pulling it through the portal into the peripheral bay.

CAUTION:
Leave enough slack to allow attaching or removing of the cable to or from the card.

8. Dress the floppy and SCSI cables across the open cable retainer that originally held the old cable bundle. Snap the cable retainer close securing the new bundle in place.

Installing the New SCSI Disk Drive in a MAP/100

This procedure should be used when installing a disk in a previously unused peripheral bay shelf.

1. Locate the filler panel where the drive was removed in the area beneath the floppy disk drive.
2. Remove one screw on each side of the filler panel.
3. Reach through the inside of the peripheral bay to behind the filler panel.
4. Push out the filler panel.
5. Open the box containing the hard disk. Cut the top seams so that the box can be used again should you need to return the hard disk.

WARNING:
The manufacturers do 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.

6. Observe proper ESD protection, and remove the disk from the anti-static bag. Keep the bag with the shipping carton.
7. Place the disk drive on the antistatic grounded work mat with the circuitry side up.
8. Verify that all jumpers are correctly positioned as shown in Figure 4-2.
9. Remove the 2 Phillips head screws hold the small black plastic faceplate. Discard all these items (Figure 4-2).
10. Remove the terminating resistor SIPs, RN1 and RN2, using needle nose pliers. Discard the SIPs (Figure 4-2).

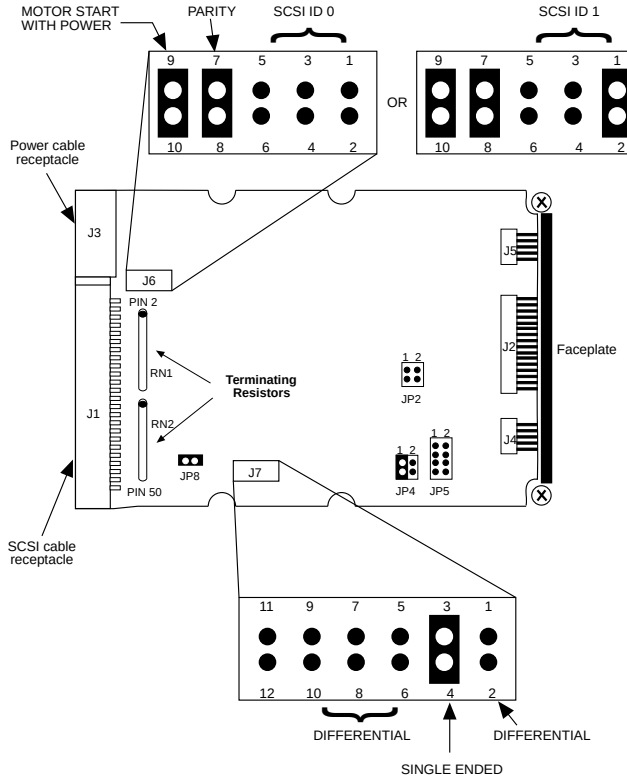


Figure 4-2. SCSI Hard Disk Drive – Circuitry Side Up

NOTE:

SCSI ID ~~0~~ is the first drive. SCSI ID 1 is the second drive.

Terminating resistors, RN1 and RN2, should be installed if the SCSI disk drive is the last component on the TDM bus cable. If it is not the last component, then the resistors should be removed.

11. Set the disk aside and open the Universal Installation kit. The kit contains two bag. One bag contains the LED lenses, the LED with the connector cable, and the faceplate. The second bag contains the mounting rails, spacer bar, and bag of screws need for assembly and mounting.
12. Discard the LED lenses and the LED with connector cable. These items are not needed to install the hard disk.
13. Assemble the installation kit following Figure 4-3.
14. Place the mounting rails parallel to each other with the smaller of the two flanges of the rails on the inside. Assemble the spacer bar and faceplate to form a rectangle, using the six screws.

15. Now take the SCSI disk drive and turn it over so the circuit side is down.
16. Locate the drive between the rails; the J4, J3 connector end of the drive unit should be flush with the spacer bar illustrated in Figure 4-3.
17. Find the two mounting holes farthest apart on each side of the drive.
18. Start each of the 6 screws through the mounting kit rails with needle nose pliers.
19. Tighten the screws while keeping the J1, J3 connector edge of the drive flush with the spacer bar.
20. Remove the screws holding the spacer bar and discard the screws and the bar.

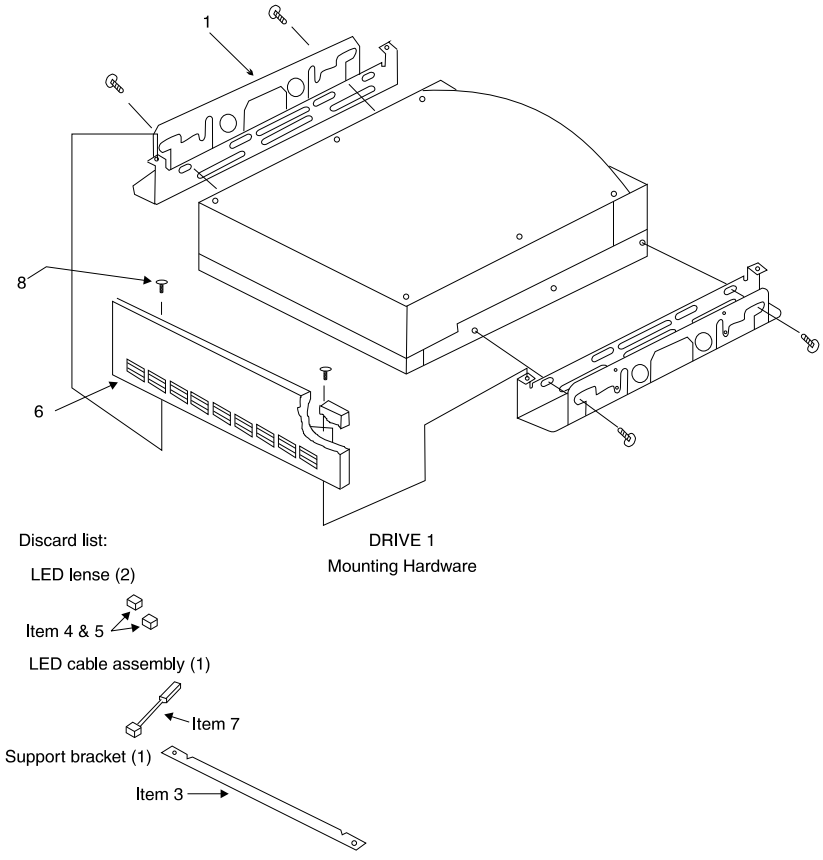


Figure 4-3. Universal Installation Kit

NOTE:
Once the kit is assembled, you should have screws left over. These may be discarded, but they may also be used to mount the assembled disk drive kit into the drive bay shelf.

Mounting the SCSI Disk Drive in a MAP/100

1. Position the drive the circuitry of the drive down.
2. Locate the third set of shelves down in the peripheral bay. The extra screws provided with the Universal Installation kit may used through the bottom slot to secure the drive to the MAP/100 peripheral bay area.

NOTE:
Even though, there are two threaded holes located just above each other, use only the bottom position to secure the disk drive/mounting brackets inside the MAP/100.

3. Place the drive in the peripheral bay, sliding it through from the front to the back until the faceplate stops the movement.
4. Insert two screws on each side of the disk. Start the screw but do not tighten. Do this for each of the 4 screws.
5. PUsh the drive in until the faceplate stops the movement, then tighten each screw.
6. Take note of the locations and orientation of the connectors on the disk drive.
7. Connect the SCSI and power cables. The SCSI connection should be the first connector on the cable when coming from the controller card.

Installing the SCSI Cartridge Tape Drive in a MAP/100

1. See Figure 4-4 and verify the jumpers and that the terminating resistors are installed for the SCSI cartridge tape drive.
2. Slide the cartridge tape drive into the position in the peripheral bay (where the old cartridge tape unit you removed was located), and secure it with the 4 screws (two on each side) that you saved from removing the old drive unit.
3. Take note of the position and orientation of the connectors on the drive unit.
4. Connect the controller cable and power cable to the cartridge tape drive. The SCSI connector is the last one on the cable.

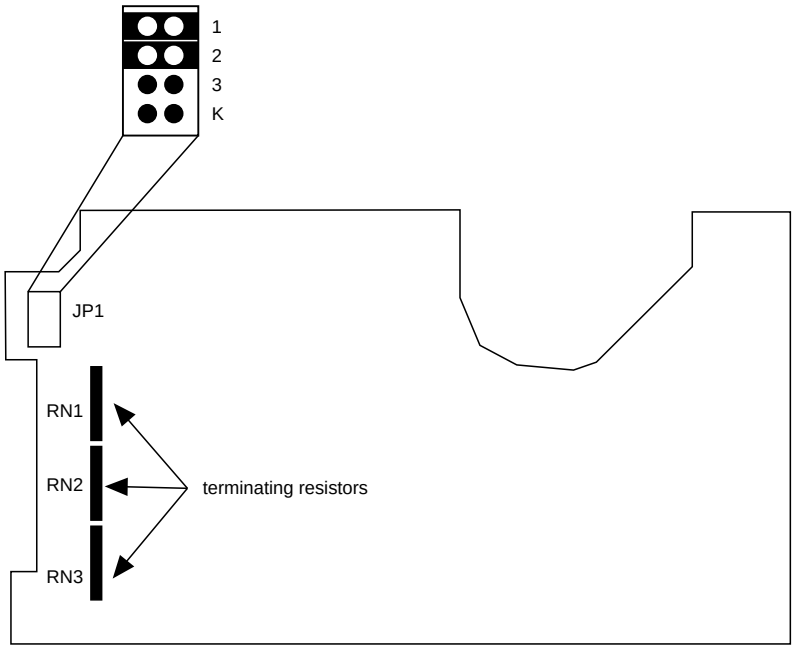


Figure 4-4. Jumper Settings for SCSI Cartridge Tape Drive

Finishing Up

Reinstall any other circuit cards you may have removed earlier. Verify and attach all external cables connections to these cards.

Go to Chapter 2 and reverse the process you used to get into the MAP/100. There are also procedures to replace the dress panels.

Included in your kit are 3 floppies that contain important SCSI information. See your *CONVERSANT VIS Version 4.0 Software Installation*, 585-350-111 and *CONVERSANT VIS Version 4.0 Upgrade*, 585-350-110, books (or similar books for other releases) for information on upgrading/installing your new software which will include these floppies.

Upgrading the MAP/100C Hardware

Use the following procedures to upgrade your system from ESDI to SCSI. These procedures are broken up into sections that are meant to be performed sequentially.

Removing the Old Controller Cards from a MAP/100C

Use the following procedure to remove your old cards:

1. Follow the procedures in Chapter 2 to power down the MAP/100C, open the peripheral bay, and card cage.
2. Locate the ESDI disk controller card in slot #24. Locate the cartridge tape controller card in slot #25.
3. Disconnect the cables from each card and separate the floppy drive and disk activity cables from the ESDI cables. The floppy cable is the 34 conductor ribbon attached to the connector nearest the faceplate of the card. The disk activity cable is attached to the 4 pin header on the opposite end of the card. These 2 cables will be connected onto the SCSI controller card after it is installed.
4. Mark the floppy cable with a pen or piece of tape. Should the disk activity cable become accidentally disconnected from the backplane, it connectors to J129's lower pair of pins. J129 is located at the right end of slot #24's connectors.
5. Remove the retaining screw on top of each card's faceplate and save.
6. Grasp the ESDI card along the top at opposite ends and while pulling use a slight rocking motion by alternately pulling harder on one end and then the other.
7. Once you've removed the card, place it in a safe place for storing or returning later.
8. Remove the cartridge tape card in a similar manner and place it in a safe place as with the ESDI card.
9. To allow easy access to the cable routing portal between the card cage and peripheral bay area, it may be necessary to remove the additional cards residing in slots #20 through #23. If so, follow the same procedures as for removing the ESDI and cartridge tape cards. Be aware that most of these cards will have external cable connections. Take careful note of the card type, slot number, and cables for each so that you can reinstall them with ease at the end of the upgrade.

Removing the Old Cables and Drive Units from a MAP/100C

1. In the bottom of the card cage, located in the back right area (as viewed from the front), there is a floor panel held in place with a thumb screw fastener. Remove the panel so that you can see the cable portal to the peripheral bay.
2. Unlatch the two reusable cable retainers mounted along the right side of the card cage. Remove these by pulling on the tabs extending from one end, and free the cable bundle.
3. Locate any cable ties securing the bundle and cautiously cut them.
4. Go the rear of the unit, and find the rear peripheral bay door. Open the door by using a flat head screwdrivers to release the fasteners. See Figure 4-5.

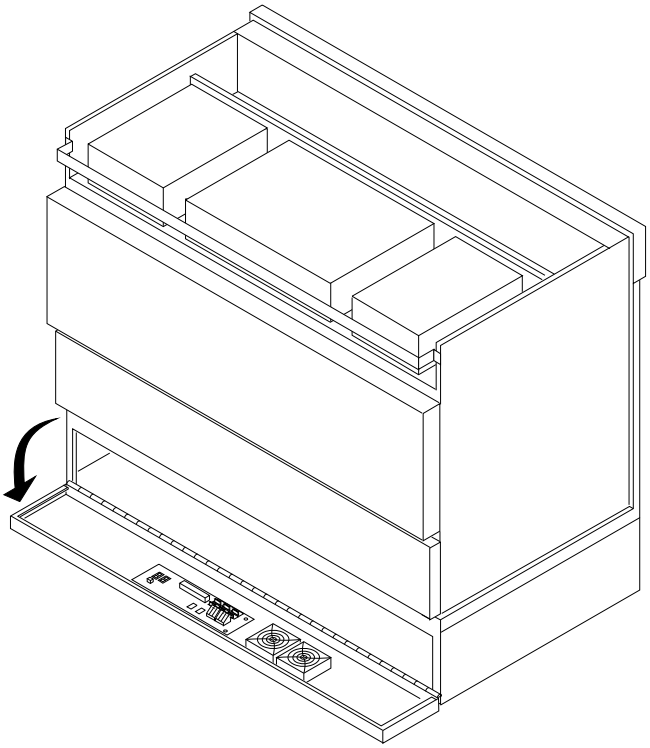


Figure 4-5. MAP/100C Rear Peripheral Door

5. From the back of the unit, locate the ESDI disk drive unit in the right side shelf of the peripheral bay. Locate the cartridge tape drive unit in the left side of the peripheral bay.
6. Disconnect the ribbon and power cables (4 conductor discrete wires). Unlatch the two reusable cable retainers along the bottom and pull and then cables out through the cable portal. You may find it easier to remove the cables by pulling them through from the front of the card cage side instead.

⚠ CAUTION:
Do not use excessive force when disconnecting the cables. Other cables routed through the portal may be entangled.

Set the cable aside.

7. From the front of the unit, at the peripheral bay, locate the two screws centered on each side of the shelves. See Figure 4-5. Remove these screws for the ESDI disk and cartridge tape drives.
8. Slide the ESDI disk drive shelf forward until it hits the stops.
9. Remove the 4 screws, two on each side, that hold the unit in the shelf. Save the screws.
10. Remove the drive unit and set in a safe place.
11. Repeat steps 8–10 for the cartridge tape drive.

Installing the SCSI Cartridge Tape Drive in the MAP/100C

Go to the section found earlier in this chapter, ‘‘Installing the SCSI Cartridge Tape Drive in a MAP/100’’, and follow steps 1–4 of the procedure found there. Come back to this page when you are finished.

Installing the New SCSI Disk Drive in a MAP/100C

Go to the section found earlier in this chapter, ‘‘Installing the New SCSI Disk Drive in a MAP/100’’, and follow steps 5–20 of the procedure found there. Come back to this page when you are finished.

1. Position the drive the circuitry of the drive down.
2. Locate the correct slot in the peripheral bay. The extra screws provided with the Universal Installation kit may used through the bottom slot to secure the drive to the peripheral bay area.

NOTE:
Even though, there are two threaded holes located just above each other, use only the bottom position to secure the disk drive/mounting brackets inside the MAP/100C.

3. Place the drive in the peripheral bay, sliding it through from the front to the back until the faceplate stops the movement.
4. Insert two screws on each side of the disk. Start the screw but do not tighten. Do this for each of the 4 screws.
5. Push the drive in until the faceplate stops the movement, then tighten each screw.
6. Take note of the locations and orientation of the connectors on the disk drive.

Installing the SCSI Host Adapter Controller Card in a MAP/100C

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.

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

Follow the steps in ''General Steps for Circuit Card Installation'' to install the SCSI controller card while using the procedure below as additional information. Refer to Chapter 3 also for proper jumper and switch settings.

1. Place the card near slot #25 and attach all the cabling to the card, including the SCSI cable, the floppy cable, and the visual indicator cable.
2. Align the card with the backplane connectors in slot #25 and insert.
3. Apply firm uniform pressure along the top of the card to ensure complete connection of the gold contacts into the backplane connectors.
4. Secure the faceplate with the screw removed when removing the ESDI controller card.
5. Place a faceplate filler panel in slot #24 where the tape controller card was removed and secure with the screw.
6. With the MAP/100C SCSI cable in hand, notice that the SCSI cable is pre-folded and has a connector on it located on one end that is approximately 36 inches from the next connector. See Figure 4-6.

.

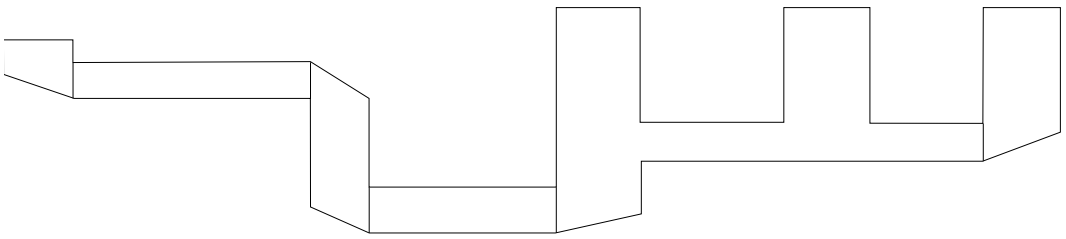


Figure 4-6. MAP/100C – SCSI Cable

7. Working from the rear of the platform and in the peripheral bay, push this connector through the cable portal into card cage area.
8. Return to front of the MAP/100C and pull the cable up to the SCSI controller card, orienting the connector with the openings facing the card. Maintain the folds that are preformed in this cable while doing this.
9. Attach the cable to the SCSI controller card and dress the cable neatly down the side of the card cage and through the portal to the peripheral bay.
10. With the floppy and SCSI cable together, position them in the cable retainers and latch the retainers. Make sure a small amount of slack is left in the cable toward the SCSI controller card to allow for its removal or reattachment.
11. Connect the disk activity cable to the SCSI controller card with the two populated connectors. They are the two (of the 4 total) on the bottom of the card.
12. Go to the rear of the platform and completely dress the SCSI cable. Run the cable across the peripheral bay, away from its entry point, to the right and back with the end connector position available for the SCSI tape drive unit. The connector at the bend of the cable should line up with the SCSI hard disk drive unit.
13. Slide the drive unit shelves into place and install the SCSI power cables.
14. Dress the cable loosely through the cable retainers and latch them.

15. From the front of the platform, secure the peripheral bay shelves with the two screws that you previously removed from each.
16. From the rear of the platform, inspect the cables to ensure that no pinching or binding occurred during the final positioning of the shelves.

Finishing Up

Finish the upgrade procedures on the MAP/100C as follows:

1. Replace the floor panel in the bottom of the card cage. Make sure the insulator strip along the right side is in place.
2. Align the tabs at the rear of the floor panel with the openings in the rear of the card cage.
3. Align the thumb screws with the holes and tighten.
4. Close and latch the front and rear peripheral bay doors.

Reinstall any circuit cards you may be removed earlier. Verify and attach all external cables connections to these cards.

Go to Chapter 2 and reverse the process you used to get into the MAP/100C.

Included in your kit are 3 floppies that contain important SCSI information. See your *CONVERSANT VIS Version 4.0 Software Installation*, 585-350-111, and *CONVERSANT VIS Version 4.0 Upgrade*, 585-350-110, books (or similar books for other releases) for information on upgrading/installing your new software which will include these floppies.

Index

P

R

S

T

U

W