

**Setting Up and Starting
AViiON™ 3000 and 4000 Series
Computer Systems**

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014-001872-00

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Setting Up and Starting AViiON™ 3000 and 4000 Series Computer Systems

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NOTE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference in which case the user will be required to correct the interference at his own expense. Testing was done with shielded cables. The use of any cable other than the shielded type means that your system will emit excess amounts of radio frequency energy, thereby increasing the likelihood of interference. Therefore, in order to comply with the FCC regulations, it is necessary that you use shielded cables with your installation.

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(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

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Preface

Use this manual to set up and start an AViiON™ 3000 or AViiON 4000 series computer for the first time. This manual describes how to prepare a site, unpack and set up computer system components, start the computer, and respond to any problems you encounter during powerup. The manual also includes physical, electrical, and environmental specifications for components of your computer system.

Once power-up diagnostic tests complete, you will need your operating system documentation for further instructions. If you plan to run the hardware acceptance test provided with System Diagnostics media before you install your operating system, first refer to the manual *Using AViiON™ System Diagnostics*, described in the “Related Documents” section of this Preface.

How We Organized This Manual

This manual presents information as follows:

Chapter 1 Getting Started

This chapter describes what you need to know or do *before* installing your computer system. It includes site preparation and unpacking instructions, an overview of the desk-side computer unit (connectors, switches, the system console, VME, and mass-storage options), and procedures for handling cartridge tape storage media.

Chapter 2 Setting Up the Computer System

This chapter describes the how to connect the system console, an asynchronous device such as a modem, serial printer, or plotter, a local area network (LAN) transceiver, a parallel printer, a SCSI bus cable for external peripherals, and the computer unit power cord.

Chapter 3 Starting the Computer System

This chapter explains how to start the system and describes power-up testing and the automatic boot sequence of a first time powerup.

Chapter 4 Solving Power-Up Problems

This chapter provides suggestions for resolving power-up trouble such as a blank system console screen or unclear text messages.

Appendix A Technical Specifications: AViiON 3000 Series

This appendix lists physical, environmental, and electrical specifications for the AViiON 3200 base hardware and optional components.

Appendix B Technical Specifications: AViiON 4000 Series

This appendix lists physical, environmental, and electrical specifications for the AViiON 4000, 4010, 4100, and 4110 base hardware and optional components.

Appendix C Identifying SCSI Devices

This appendix lists factory default values for the SCSI device identification jumper settings (SCSI IDs) of supported device types. It provides a worksheet on which to record your initial and any subsequent SCSI device configuration information, including naming conventions for SCSI devices.

Related Documents

You received a comprehensive set of manuals with your AViiON computer system. This section lists manuals related to the tasks of setting up and starting an AViiON 3000 or 4000 series computer. These manuals describe how to operate, manage and maintain your hardware and software on a day-to-day basis. For a complete list of manuals available for this product, refer to the *Documentation Set* after the Index.

DG/UX Manuals

Installing and Managing the DG/UX™ System (093-701052)

Shows system administrators who are familiar with the UNIX® operating system how to install and manage the DG/UX™ operating system on AViiON hosts that will run as stand-alone, server, or client systems.

Hardware Manuals

Ethernet/IEEE 802.3 Local Area Network Installation Guide (014-000793)

Explains how to install both the coaxial cable plant of an Ethernet local area network (LAN) and the transceivers that connect the network to a node communication controller.

Expanding and Maintaining AViiON™ 3000 and 4000 Series Computers (014-001874)

Explains how to add or replace components (drives, memory modules, system board assembly, CPU board, power supply, fan assembly, and PROM).

Installing and Operating the Model 10565 Peripheral Housing Unit (014-001810)

Describes how to unpack, inspect, install, and power up the unit. Explains how to replace the power supply, line cord, fan, and provides general instructions for replacing a drive. Lists physical, electrical, and environmental specifications of the peripheral housing unit.

Installing the Model 6586/6587 Magnetic Tape Streamer Unit (014-001692)

Describes how to unpack, inspect, install, and power up the unit. Explains how to install and remove reel-to-reel tapes.

Setting Up and Installing VME Options in AViiON™ Systems (014-001867)

Describes how to jumper VME controllers to operate in an AViiON environment. Explains how to install and remove the controller boards in the system's VME card cage, and how to jumper the VME printed circuit backplane when an empty slot is present. Also supplies instructions for connecting external devices to the controller boards.

Using AViiON™ System Diagnostics (014-001863)

Describes how to use the diagnostic software that comes with your computer system to verify AViiON hardware. You can use menu-based diagnostic utilities to verify the system configuration, to run tests on a server's asynchronous terminals or a workstation's graphics monitor, keyboard, and mouse, to locate faults in LAN connections, or to maintain cartridge tape and diskette media.

Using the AViiON™ System Control Monitor (SCM) (014-001802)

Describes how to use the commands and menus of the firmware monitor program to boot software, control the system environment, and debug programs on AViiON computers.


Reader, Please Note

We use the following conventions in this and related manuals:


The term *server system* refers to any model of AViiON hardware that provides user services through direct terminal lines and/or a local area network. An AViiON server could be a *stand-alone server*, providing operating system support via direct terminal access, or a *network server*, providing operating system support to client computer systems across a local area network. Some computers function as both standalone and network servers.

The term *workstation* refers to any single-user AViiON model that provides graphics computing either as a stand-alone station or as a network client to a server system.

The term *backplane* refers to the interconnecting printed-circuit board that passes bus and power signals to other boards. The backplane contains connectors into which the boards of the system are plugged. The backplane is the same this as the *backpanel* in other documentation.

Within text, "press New Line" means that you should press the New Line key on a Data General DASHER® keyboard, or that you should press the equivalent key on any keyboard compatible with that of the IBM PC AT® keyboard, usually marked Enter, Return, or with a standard symbol like the following: .

Within text, we use certain symbols in special ways:

Symbol	Means
	Press the New Line, Return, or Enter key on your system console keyboard.
SCM>	The default System Control Monitor (SCM) prompt on single processor systems.
Jp#n/SCM>	The default System Control Monitor (SCM) prompt on dual processor systems, where n is the number of the attached job processor (0 or 1).

In examples we use

This typeface to show your entry.

This typeface to show system queries and responses.

Contacting Data General

Data General wants to assist you in any way it can to help you use its products. Please feel free to contact the company as outlined below.

Manuals

If you require additional manuals, please use the enclosed TIPS order form (United States only) or contact your local Data General sales representative.

If you have comments on this manual, please use the prepaid Comment Form that appears at the back. We want to know what you like and dislike about this manual.

Telephone Assistance

If you are unable to solve a problem using any manual you received with your system, and you are within the United States or Canada, contact the Data General Service Center by calling 1-800-DG-HELPS for toll-free telephone support. The center will put you in touch with a member of Data General's telephone assistance staff who can answer your questions.

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End of Preface

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Chapter 1

Getting Started

This first part of this chapter describes how to prepare a site, unpack and inspect your equipment, and gather required documentation; it also includes a checklist to use before installing your computer system. We suggest that you complete the Installation Checklist before you follow the installation instructions in Chapter 2. The last part of this chapter includes an overview of the hardware in AViiON™ 3000 series and AViiON 4000 series computers, describes and illustrates their operator switches and peripheral connectors, and provides information about handling the cartridge tape storage media that you receive with your system.

Preparing for Installation

Before unpacking your equipment, select a final location for setting up and operating your computer system. Try to complete as much of the installation as possible at this final location. Select an area with the following physical requirements:

- Access to at least two ac outlets, plus an additional outlet for each self-powered external device (such as a printer).
- A desk or cleared work surface to hold the system console and external devices at a comfortable access and operating height.
- Floor area for the deskside computer unit where it is not likely to be jarred.
- Appropriate natural or electrical lighting.

Ensure that your site is compatible with your computer's physical, environmental, electrical requirements. To do so, refer to Appendix A if you have an AViiON 3000 series computer system or to Appendix B if you have an AViiON 4000 series computer system.

Unpacking and Inspecting Your Computer System

Follow these steps to unpack and inspect your computer system. Although it may seem simpler to unpack items as you install them, it is important to verify that your equipment arrived as ordered and undamaged before you start.

1. Remove and save the packing slip from the outside of the first shipping carton.
2. Open the carton and remove the equipment. As you do so, inspect the equipment carefully for visible external damage.

CAUTION: Handle your computer equipment carefully; do not drop or jar it, and do not lift it by any fragile or delicate surface.

3. Compare the items you received in the carton with the items listed on the packing slip. Make sure that the model and part numbers on the packing slip match those on your equipment. If a model or part number is incorrect, contact Data General as described in the Preface.

Make sure that you have *all* of the cables listed on the packing slip; the cables may be in a separate box. Your computer unit power cord is packaged with other loose cabling and is identified by part number below.

Table 1-1 Voltage Suffixes for Power Cords

Part Number	Country	Voltage	Frequency
109-996-1	U.S./Canada	100	50/60
109-996-0	U.S./Canada	120	60
109-809-6	Australia	240	50
109-810-0	Switzerland	220	50
109-811-8	Italy	220	50
109-812-7	Europe ¹	220	50
109-813-5	United Kingdom ²	240	50
109-815-9	Denmark	220	50

¹ Excluding Switzerland, Italy, U.K., Denmark.

² Used in Bangladesh, Bermuda, Hong Kong, Nigeria, Pakistan, Singapore, Sri Lanka, United Arab Republics.

5. Put the packing materials aside; do not throw them away. You will use these packing materials if you ever have to return a component or move the computer to a different site.
6. Complete steps 1-5 for each shipping carton.
7. Make sure that the model and part numbers on the combined packing slips are what you ordered. If you are missing equipment or received equipment you did not order, contact Data General as described in the Preface.

Gathering Required Documentation and Media

If you have at least one disk drive and ordered the DG/UX® operating system with your computer, the files you need to install your operating system are preloaded on disk. Keep the 150-megabyte QIC (quarter-inch cartridge) tapes you received as backup copies of your system software. Refer to the last section of this chapter for information about handling cartridge tapes and protecting the data that is stored there.

Whether or not you ordered the DG/UX operating system, you received AViiON System Diagnostics software (either preloaded on disk or on cartridge tape). You can use these diagnostics to verify your hardware configuration as an optional part of the installation. Refer to *Using AViiON™ System Diagnostics* for information about the 15-minute hardware Acceptance test and other diagnostic utilities provided.

The following checklist (Table 1-2) itemizes what you need to install your computer system and to begin software installation. Your software Release Notices itemize the documentation and media necessary to complete installation of your software packages.

Table 1-2 Installation Checklist

Complete the following:	Check Here When Completed
<ul style="list-style-type: none"> ● Make sure your installation site satisfies the electrical and environmental requirements listed in Appendix A or Appendix B. 	<input type="checkbox"/>
<ul style="list-style-type: none"> ● Inspect equipment received for damage. 	<input type="checkbox"/>
<ul style="list-style-type: none"> ● Compare packing slips with equipment received and equipment ordered. 	<input type="checkbox"/>
<ul style="list-style-type: none"> ● Determine the ac line current for your site <ul style="list-style-type: none"> 100/120 volts <input type="checkbox"/> 220/240 volts <input type="checkbox"/> 	<input type="checkbox"/>
<p>Ensure that your equipment model numbers reflect the proper site voltage for your site.</p>	<input type="checkbox"/>
Make sure you have the following:	
<ul style="list-style-type: none"> ● Medium flat-head screwdriver (nonmagnetic) 	<input type="checkbox"/>
<ul style="list-style-type: none"> ● Software Release Notice, plus cartridge tapes if you did not order the DG/UX® operating system preloaded on disk. 	<input type="checkbox"/>
<ul style="list-style-type: none"> ● The <i>Installing and Managing the DG/UX™ System</i> manual or other operating system documentation. 	<input type="checkbox"/>
You may also need to use the following manuals:	
<ul style="list-style-type: none"> ● If you have VME controllers installed, you'll need <i>Setting Up and Installing VME Options in AViiON™ Systems</i>. 	<input type="checkbox"/>
<ul style="list-style-type: none"> ● If you have an AViiON 4000 series system and an external mass storage unit from Data General, you'll need <i>Installing and Operating the Model 10565 Peripheral Housing Unit or Installing the Model 6586/6587 Magnetic Tape Streamer Unit</i>. 	<input type="checkbox"/>
<ul style="list-style-type: none"> ● <i>Using the AViiON™ System Control Monitor (SCM)</i>. 	<input type="checkbox"/>
<ul style="list-style-type: none"> ● <i>Using AViiON™ System Diagnostics</i>. 	<input type="checkbox"/>

You should now be prepared to set up the computer system. For an overview of your computer system, read further in this chapter. Proceed to Chapter 2 to set up your system now.

Using the Computer Unit Switches

The front panel of the AViiON 3000 and 4000 series computer unit chassis includes the system power switch, a diagnostic LED, and slots for two half-height mass-storage drives. The rear panel of the computer unit chassis contains hardware reset and interrupt switches. This section describes these front and rear panel computer unit switches, illustrated in Figure 1-1. Refer to the section about mass-storage later in this chapter for information about the drives that go in the front panel slots.

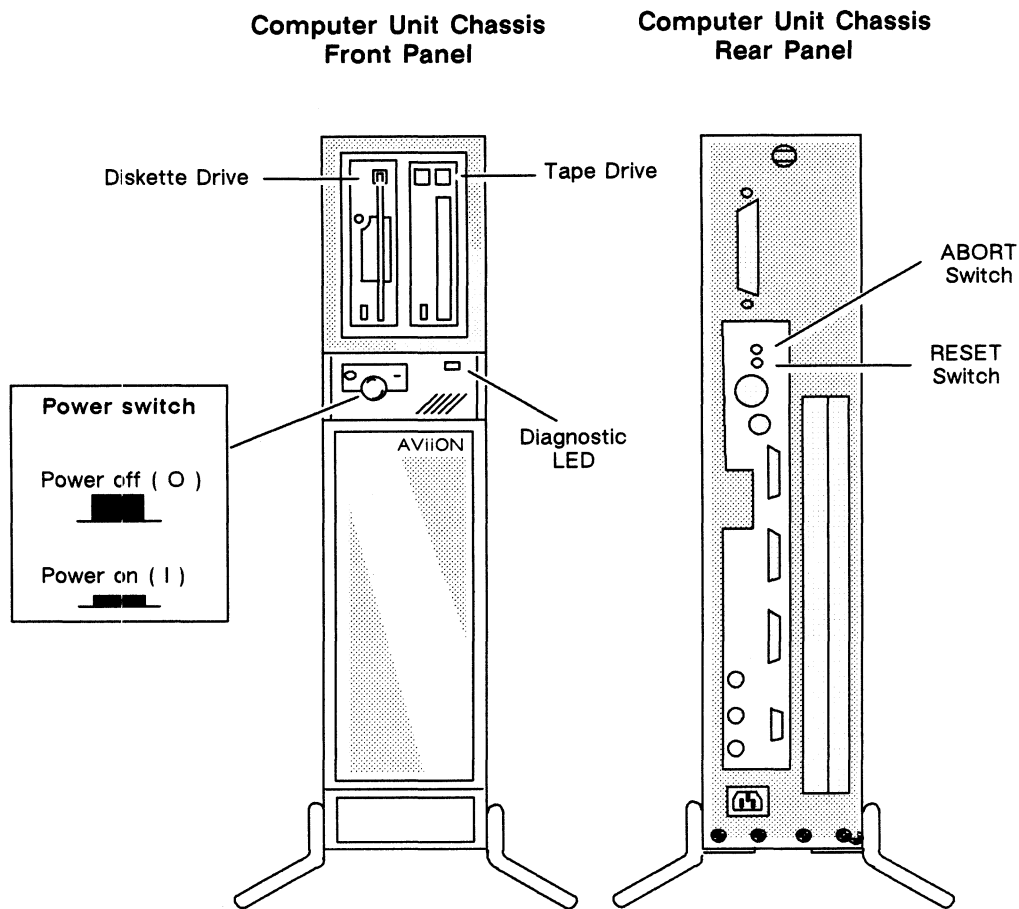


Figure 1-1 AViiON 3000 and 4000 Series Operator Switches

Power Switch

To turn the power switch on or off, depress the switch on the computer unit front panel, shown in Figure 1-1. When power is on, the switch light illuminates and the computer proceeds through power-up testing and an automatic boot sequence, described in Chapter 3. The diagnostic LED signals progress during power-up testing.

Hardware and Software Reset Switches

There are two button-type switches on the rear panel of your computer unit chassis. The topmost button is a software reset switch, labeled ABORT. The button beneath the ABORT switch is a hardware reset switch, labeled RESET. Figure 1-1 on the previous page illustrates both switches.

CAUTION: Resetting the computer before power-up testing completes could cause memory errors. Do not interrupt power-up testing with the RESET switch.

Pressing the RESET switch anytime after your computer has completed power-up testing will restore the system board components to initial power-up status; your system console screen displays the System Control Monitor (SCM) command interpreter prompt. Refer to the manual *Using AViiON™ the System Control Monitor (SCM)* for information about SCM commands and functions.

CAUTION: Resetting the computer while your operating system is running could result in lost or damaged data. Always attempt to shut down your operating system before pressing the RESET switch.

Pressing the ABORT switch while system software is running sends an interrupt to the CPU but does not reset system board components. How your operating system or stand-alone software handles the ABORT switch interrupt depends on the system software that is running. Most revisions of the DG/UX operating system will display the kernel debugger prompt.

About the System Console

The term *system console* refers to a terminal with keyboard that receives power-up diagnostic test messages and from which you bring up your operating system.

Any asynchronous terminal and keyboard with an ASCII character set and an RS-232-C interface can serve as the system console for AViiON 3000 and 4000 series computers. However, you need a terminal that conforms to ANSI standard X3.64 (1977) to support a UNIX screen editor. Those terminals that conform to the standard include Data General terminals with ANSI mode, and any terminal that emulates a VT100 or VT220 terminal.

Refer to Chapter 2 for information about connecting the system console to an AViiON 3000 or 4000 series rear panel connector.

The AViiON 3000 Series Computer System and Options

Read this section to become familiar with the AViiON 3000 series computer system and its options. Skip this section and refer to “The AViiON 4000 Series Computer System and Options” later in this chapter for information about AViiON 4000 series computers. Proceed to Chapter 2 to begin installation right away.

The basic AViiON 3000 series computer consists of the deskside computer unit with an asynchronous terminal connected as system console, illustrated in Figure 1-2. This section contains information about system board components, mass-storage and VME options, and the use and location of computer unit peripheral connectors.

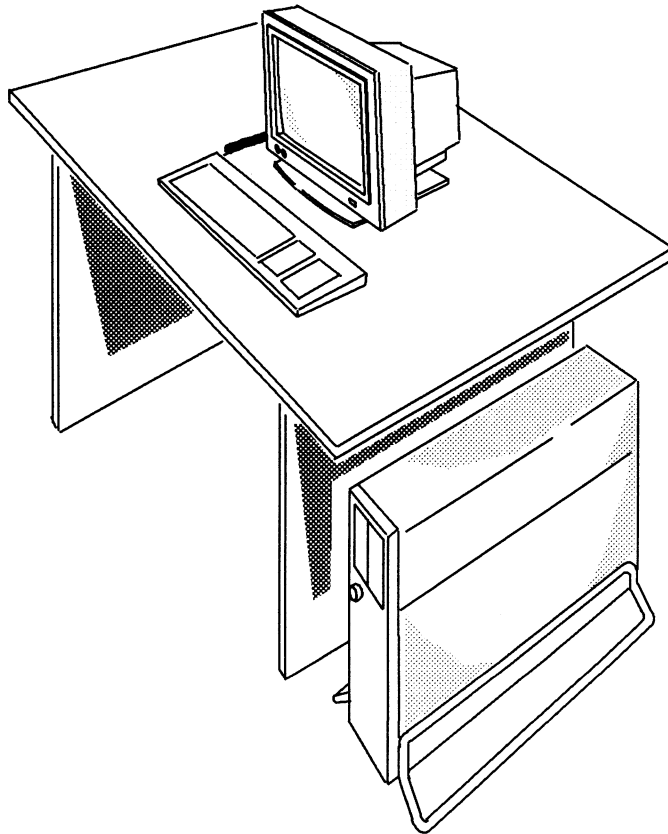


Figure 1-2 AViiON 3000 Series Computer System

About the Computer Unit

The deskside computer unit includes the system board, power supply, fans, and system board I/O connectors. The computer unit chassis, switches, and external connectors for peripheral devices are part of the computer unit as well. This section describes the system board components and rear panel I/O connectors. Refer to sections earlier in this chapter for information about the computer unit operator switches. Refer to Appendix A for information about the power subsystem.

System Board

The AViiON 3200 system board includes the following components:

- Motorola 88000 CPU and CMMU (cache and memory management unit) processor set, running at 16-megahertz clock speed.
- Four socket connectors containing a minimum of two 4-megabyte memory boards for 8-megabytes minimum DRAM (dynamic random access memory). Your system board may contain as many as two additional 4-megabyte memory boards (4 total), for 16-megabytes maximum DRAM.
- An integrated VME standard interface to a VME backplane printed circuit board which extends to a separate VME card cage.
- An integrated SCSI (Small Computer System Interface) controller for internal SCSI-based mass-storage devices.
- An Ethernet 802.3 LAN interface that allows the computer to function as a client or server system in a local area network environment.
- One RS-232-C asynchronous port for a system console terminal.
- One RS-232-C asynchronous port for data terminal devices such as a modem, serial printer, scanner, or plotter.
- A parallel printer port for a printer with a Centronics interface.

Refer to Appendix A for additional information about the system board components.

Rear Panel Connectors

The rear panel of the computer unit chassis contains the following I/O connectors:

- Two D25 male connectors for asynchronous devices with an RS-232-C standard interface.
- A D25 female connector for a parallel printer with a Centronics standard interface.
- A D15 male connector for an Ethernet LAN transceiver using thick or thin cabling.
- A 6U card cage slot for one VME standard controller.

Figure 1-3 illustrates the AViiON 3000 series rear panel connectors. Refer to Chapter 2 for information about installing devices in any of the connectors.

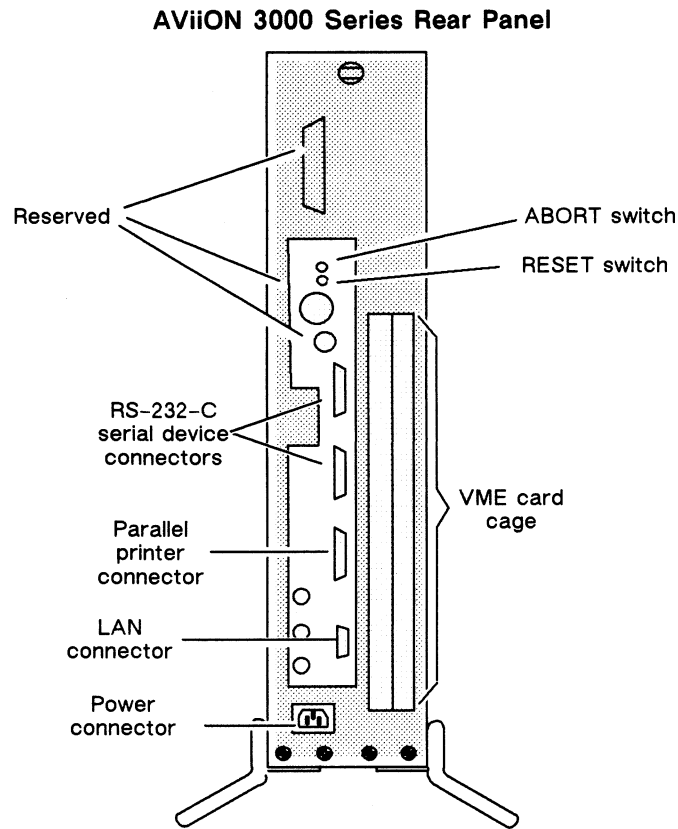


Figure 1-3 AViiON 3000 Series Rear Panel

NOTE: The computer unit rear panel also contains a champ connector, two DIN-8 connectors and RGB connectors for devices that your server system does not use; these connectors are designated “reserved.”

About VME Options

Figure 1-3 in the previous section illustrates the location of the rear panel VME card cage. There may be one of the following VME device controllers installed in the VME card cage:

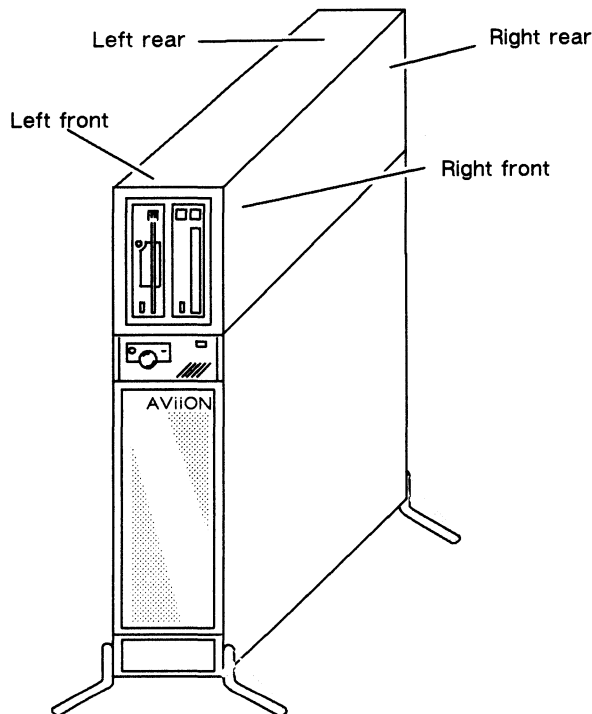
- VAC/16 (VME Asynchronous Controller) providing as many as 16 ports for asynchronous devices such as user terminals.
- VSC/3 (VME Synchronous Controller) providing as many as three synchronous communications ports.
- VLC (VME LAN Controller) providing a second Ethernet LAN connection, to supplement the LAN controller integrated on the system board.

Refer to the manual *Setting Up and Installing VME Options in AViiON™ Systems* for information about installing devices such as user terminals or a VAC/16 junction box managed by a VME controller in the rear panel card cage.

About the Mass Storage

Your computer system includes as many as four Small Computer Systems Interface (SCSI) peripherals for data storage and backup. The basic configuration includes one disk drive and one 150-megabyte QIC (quarter-inch cartridge) tape. Your model number indicates the preinstalled configuration of internal drives. This section lists supported drives and discusses drive locations within the computer unit chassis.

The computer system chassis contains four drive locations. A full-height drive uses two positions (left and right) within the chassis. Since removable-media drives (such as diskette and tape) must be in the front positions, a full-height drive must reside in the rear positions. Figure 1-4 lists supported devices and shows front, rear, left, and right positions.



Full-Height Drives

662-megabyte Winchester disk

Half-Height Drives

150-megabyte QIC (quarter-inch cartridge) tape

179-megabyte Winchester disk

332-megabyte Winchester disk

CD-ROM disk

1.44-megabyte diskette

1.2-megabyte diskette

Figure 1-4 AViiON 3000 Series Mass Storage

Refer to the manual *Expanding and Maintaining AViiON™ 3000 and 4000 Series* for information about adding or removing drives. Refer to the documentation you received with each drive for specific information such as environmental specifications or operating and maintaining procedures. Refer to the last section of this chapter for information inserting a 150-megabyte cartridge tape into the tape drive.

The AViiON 4000 Series Computer System and Options

Read this section to become familiar with the AViiON 4000 series computer system and its options. Skip this section and refer to “The AViiON 3000 Series Computer System and Options” earlier in this chapter for information about AViiON 3000 series computers. Proceed to Chapter 2 to begin installation right away.

The basic AViiON 4000 series computer consists of the deskside computer unit with an asynchronous terminal connected as system console, illustrated in Figure 1-2. This section contains information about system board components, mass-storage and VME options, and the use and location of computer unit peripheral connectors.

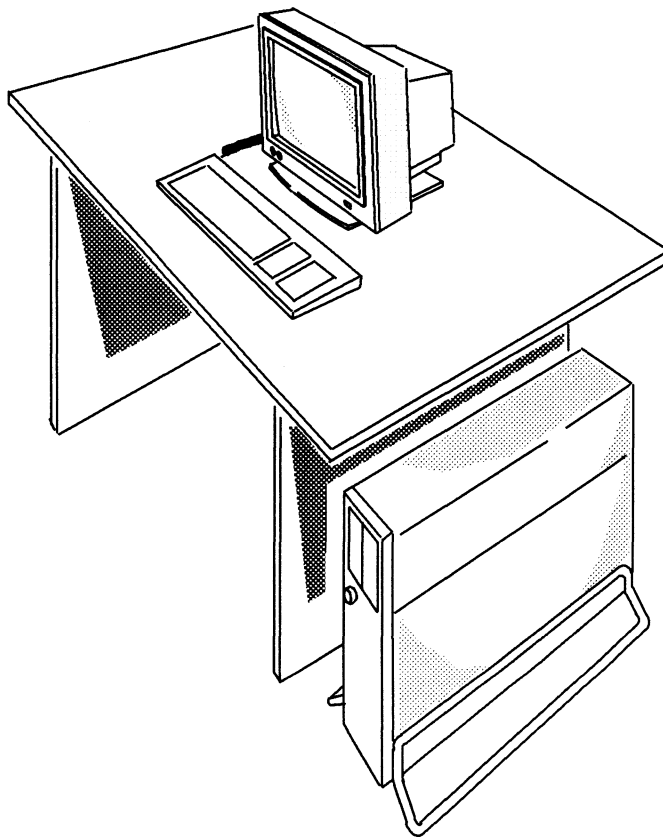


Figure 1-5 AViiON 4000 Series Computer System

About the Computer Unit

The deskside computer unit includes the system board, power supply, fans, and system board I/O connectors. The computer unit chassis, switches, and external connectors for peripheral devices are part of the computer unit as well. Some computer units include system board options such as a second CPU, enhanced graphics circuitry, or additional memory. This section describes the system board components and rear panel I/O connectors. Refer to the sections earlier in this chapter for information about the computer unit operator switches. Refer to Appendix A for information about the power subsystem.

System Board

The base system board includes the following standard components:

- Motorola 88000 CPU and CMMU (cache and memory management unit) processor set running at 16- or 20-megahertz clock speed. Model 4000 runs at 16 megahertz; model 4100 runs at 20 megahertz.
- Eight socket connectors containing a minimum of two 4-megabyte memory boards for a minimum of 8-megabytes DRAM (dynamic random access memory).
- An integrated VME standard interface to a VME backplane printed-circuit board, which extends to a separate VME card cage.
- An integrated SCSI (Small Computer System Interface) controller for internal and external SCSI-based mass storage.
- An Ethernet 802.3 LAN interface to allow the computer system to function as a multiuser client or server in a local area network environment.
- One RS-232-C asynchronous port for a system console terminal.
- One RS-232-C asynchronous port for data terminal devices such as a modem, serial printer, scanner, or plotter.
- A parallel printer port for a printer with a Centronics interface.

Your system board may also include the following optional components:

- A second Motorola 88000 CPU and CMMU (cache and memory management unit) processor set. Model 4020 contains dual 16-megahertz CPUs; model 4120 contains dual 20-megahertz CPUs.
- As many as six additional 4-megabyte memory boards (eight total), 32-megabytes maximum DRAM.

Refer to Appendix A for additional information about the system board components.

Rear Panel Connectors

The rear panel of the computer unit chassis contains the following I/O connectors:

- A champ connector to the SCSI bus for external mass-storage devices.
- Two D25 male connectors for asynchronous devices with an RS-232-C interface.
- A D25 female connector for a parallel printer with a Centronics or Data Products standard interface.
- A D15 male connector for a LAN transceiver using thick or thin Ethernet cabling.
- A 6U card cage slot for one or two VME standard controllers.

Figure 1-6 illustrates the AViiON 4000 series rear panel. Refer to Chapter 2 for information about installing devices in any of the connectors. Refer to the next section for information about the VME card cage.

Computer Unit Chassis Rear Panel

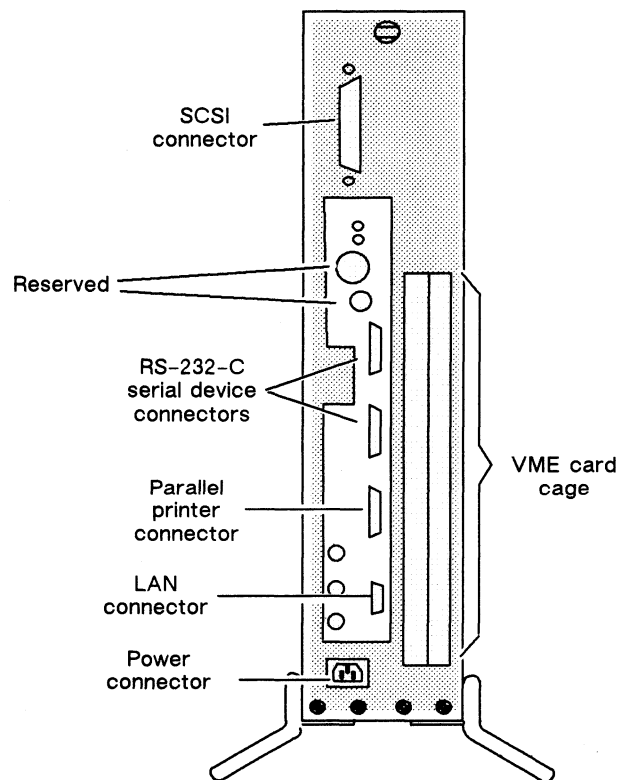


Figure 1-6 AViiON 4000 Series Rear Panel Connectors

NOTE: The computer unit rear panel contains two DIN-8 connectors and RGB connectors that your server system does not use; these connectors are designated “reserved.”

About VME Options

Figure 1–7 in the previous section illustrates the location of the AViiON 4000 series rear panel VME card cage. There may be one or two of the following VME device controllers installed in the VME card cage:

- VAC/16 (VME Asynchronous Controller) providing as many as 16 ports for asynchronous devices such as user terminals.
- VSC/3 (VME Synchronous Controller) providing as many as three synchronous communications ports.
- VDA/128 (VME Distributed Asynchronous Controller). A host adapter that supports as many as 128 asynchronous user devices via a network of cluster controllers.
- VLC (VME LAN Controller) with a connector for a second Ethernet LAN transceiver to supplement the Ethernet connection managed by the LAN controller integrated on the system board.

Refer to the manual *Setting Up and Installing VME Options in AViiON™ Systems* for information about installing devices (such as user terminals, cluster controllers, or a VAC/16 junction box) managed by a VME controller in the rear panel card cage. Refer to Appendix B for technical specifications.

About the Mass Storage

Your computer system includes as many as seven SCSI-based peripherals for data storage and backup. As many as four drives are installed internally; additional drives are installed externally in one or two optional peripheral units. Your model number indicates the preinstalled configuration of internal drives. The following subsections in this chapter show supported internal and external SCSI-based peripherals.

Refer to the documentation you received with each drive for specific information such as environmental specifications or operating and maintaining procedures. Refer to the last section of this chapter for information inserting a 150-megabyte cartridge tape into the tape drive.

Internal Peripherals

The computer system chassis contains four internal drive locations. A full-height drive uses two positions (left and right) within the chassis. Since removable-media drives (such as diskette and tape) must be in the front positions, a full-height drive must reside in the rear positions. Figure 1-4 lists supported devices and shows front, rear, left, and right positions.

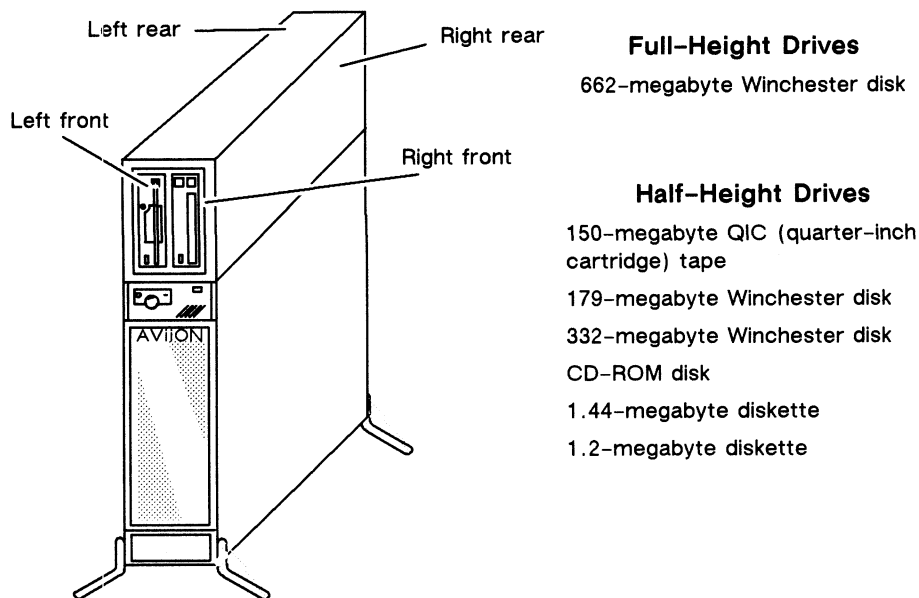


Figure 1-7 AViiON 4000 Series Internal Mass Storage

Refer to the manual *Expanding and Maintaining AViiON™ 3000 and 4000 Series* for information about adding or removing internal drives.

External Peripherals

AViiON 4000 series computer systems can include external device support in one or two SCSI-based, stand-alone peripheral units. External units include the model 10565 Peripheral Housing Unit (PHU) and reel-to-reel desktop tape units. Refer to Chapter 2 for information about connecting external mass-storage to the computer unit.

Figure 1-8 shows a Peripheral Housing Unit (PHU) with a typical drive configuration. Each PHU houses one full-height and one half-height device, or as many as three half-height devices; Figure 1-8 lists supported devices. Refer to the manual *Installing and Operating the Model 10565 Peripheral Housing Unit* (listed in the Preface) for additional information.

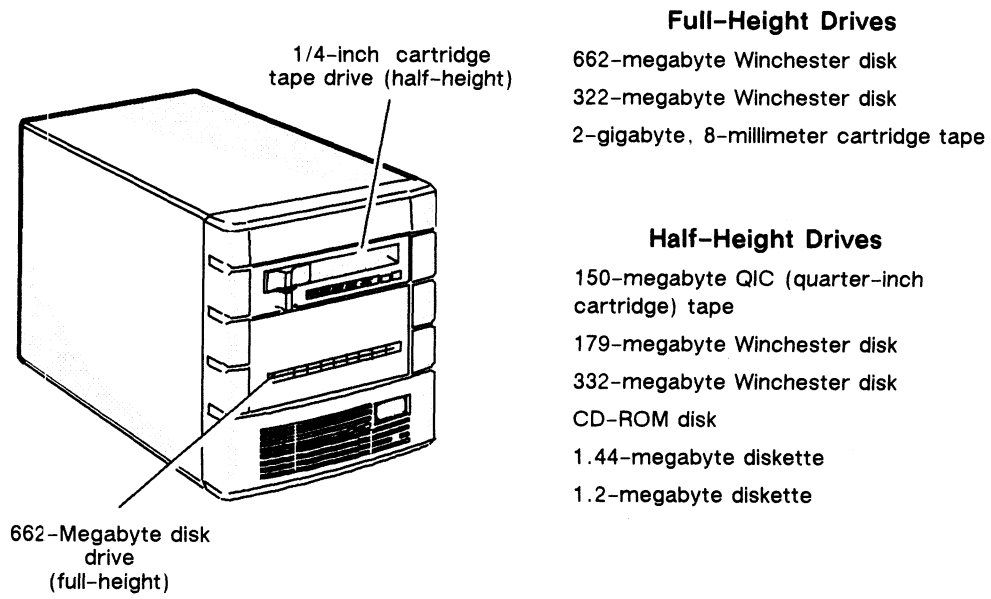


Figure 1-8 Model 10565 Peripheral Housing Unit (PHU) for AViiON 4000

About Your Cartridge Tapes

You received cartridge tapes which contain AViiON System Diagnostics and (if ordered) the DG/UX operating system. Keep these tapes as backup; you can use them to load your system software if you ever have trouble with the files on disk.

This section describes how to handle 150-megabyte cartridge tapes, protect the data that is stored there, and insert and remove tapes from drives. For information about drive maintenance and operation, and for information about handling other types of storage media, refer to the pertinent drive manual and to *Using AViiON™ System Diagnostics*, listed in the Documentation Set (after the Index).

Handling Cartridge Tapes

Quarter-inch cartridge tapes come in plastic storage cases. Because dust, dirt, and moisture can damage a cartridge tape, it is very important to keep the cartridge tape in its case when it is not in use. The tapes have a shutter on one end that closes to protect the magnetic tape when the cartridge tape is not in use. Avoid opening the shutter on a cartridge tape; otherwise, you may damage the magnetic tape or cause dirt or other foreign substances to enter the covering. Figure 1-9 illustrates the QIC tape.

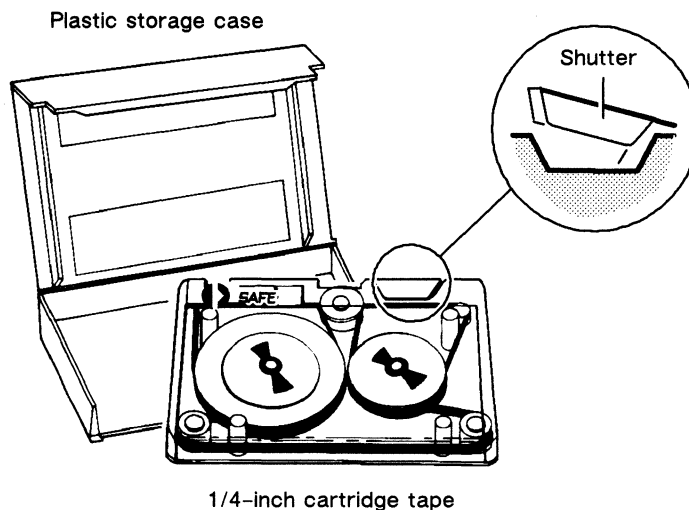


Figure 1-9 QIC (Quarter-Inch Cartridge) Tape

Avoid placing tapes near magnets or equipment that produces electromagnetic fields, such as a telephone, power supply, printer, or terminal. Do not touch parts of the tape that are exposed at the openings of the cartridge. The oil or dirt from your hands can make the data on cartridge tapes inaccessible to the computer.

Protecting Data

The computer uses a cartridge tape in two ways. It retrieves information from the tape in a process called *reading*, and it stores information on the tape in a process called *writing*. When the computer reads the information from an area of the tape, that information remains intact on the tape. When the computer writes new information to a cartridge tape, it may write over (erase) information already stored on the tape. Once the old information is lost, the system cannot recover it.

To prevent accidentally erasing valuable information that is stored on the quarter-inch cartridge tape, rotate the protection indicator on the tape cartridge so that the arrow points to the word **SAFE**. With the indicator pointing to **SAFE**, the system cannot write any information onto the cartridge tape: The cartridge tape is *write protected*.

To enable writing information onto the cartridge tape, rotate the protection indicator so that the arrow points away from the word **SAFE**. Now the system can write new information and also write over any old information stored on the cartridge tape: The cartridge tape is *write enabled*.

Figure 1-10 illustrates the protection indicator in both write-enabled and write-protected positions.

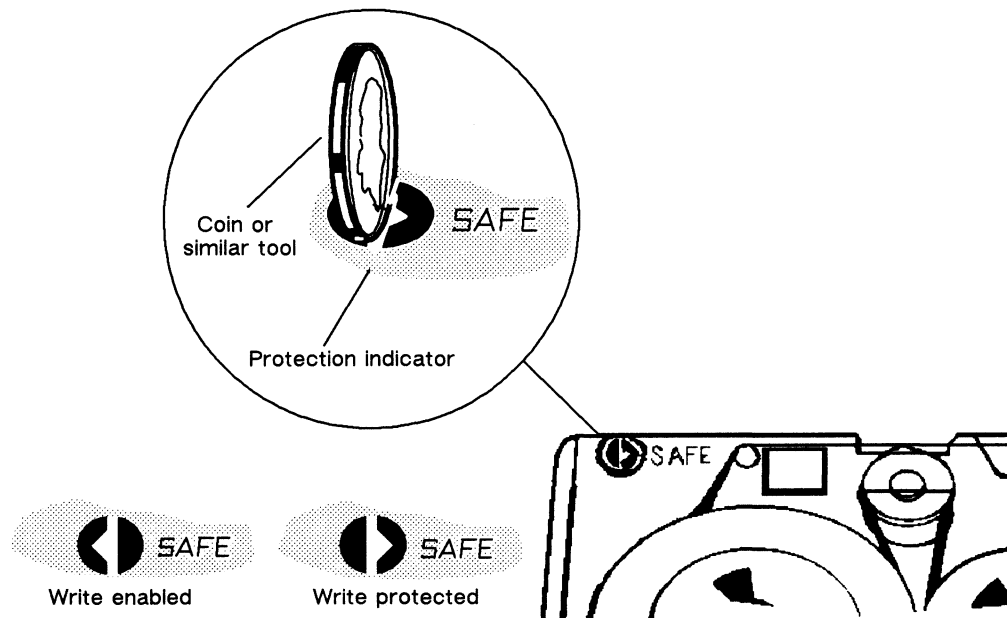


Figure 1-10 Write Enabling and Write Protecting QIC Tape

Inserting and Removing Tapes in Internal Drives

This section describes how to use the quarter-inch cartridge (QIC) tape with a tape drive installed inside the chassis of an AViiON 3000 or 4000 series computer.

1. Turn the protection indicator on the cartridge to write protect or write enable the tape. Refer to the previous section for information on write protecting or write enabling the cartridge.
2. Make sure that the load/eject latch on the tape drive is all the way open (pushed *up* as far as it will go).
3. Hold the cartridge tape with the metal plate facing left and the shutter on top, as shown in Figure 1-11.

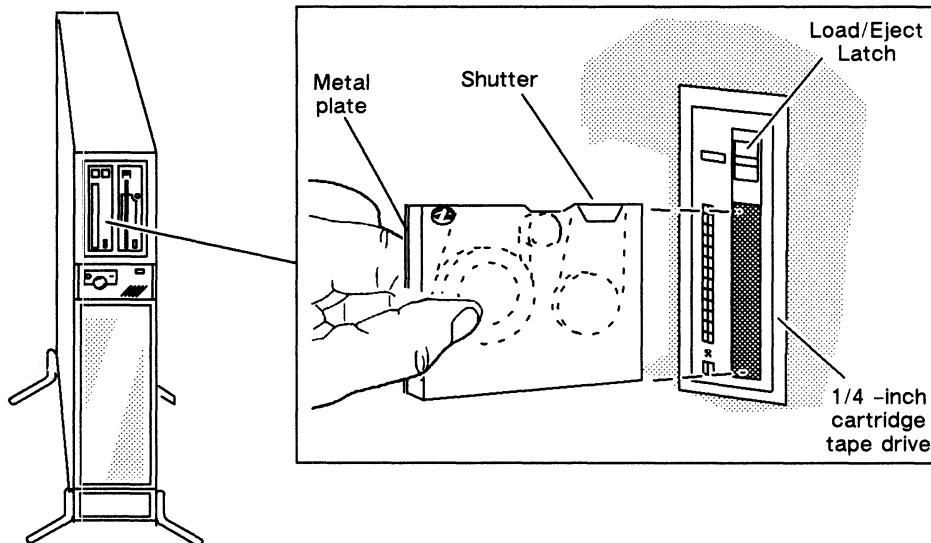


Figure 1-11 Inserting QIC Tape into an Internal Drive

4. Gently push the cartridge tape into the drive opening; then it push firmly all the way into the drive.
5. Slide the load/eject latch downward, firmly locking the cartridge tape in place.
You hear the drive make a whirring sound as the read/write heads find the beginning of the cartridge. If you don't hear this sound, the tape is not properly inserted or the drive is not locked; remove the tape (as described in step 6) and repeat steps 2 through 5.
6. To remove the cartridge tape, slide the load/eject latch all the way up so that it partially ejects the cartridge tape from the drive. Grasp the ejected edge and slide the cartridge out of the drive.
7. After you are finished using the tape, make sure it is write-protected and return it to the plastic storage case.

Inserting and Removing Tapes in PHU Drives

This section describes how to use the quarter-inch cartridge (QIC) tape with a drive installed inside the chassis of a Peripheral Housing Unit (PHU) that is connected to an AViiON 4000 series computer.

1. Turn the protection indicator on the cartridge to write protect or write enable the tape. Refer to the "Protecting Data" section for information on write protecting or write enabling the cartridge.
2. Slide the load/eject latch on the tape drive as far to the left as it goes.
3. Hold the cartridge tape with the metal plate facing *down* and the write-protect indicator in the *bottom left* corner, as shown in Figure 1-12.

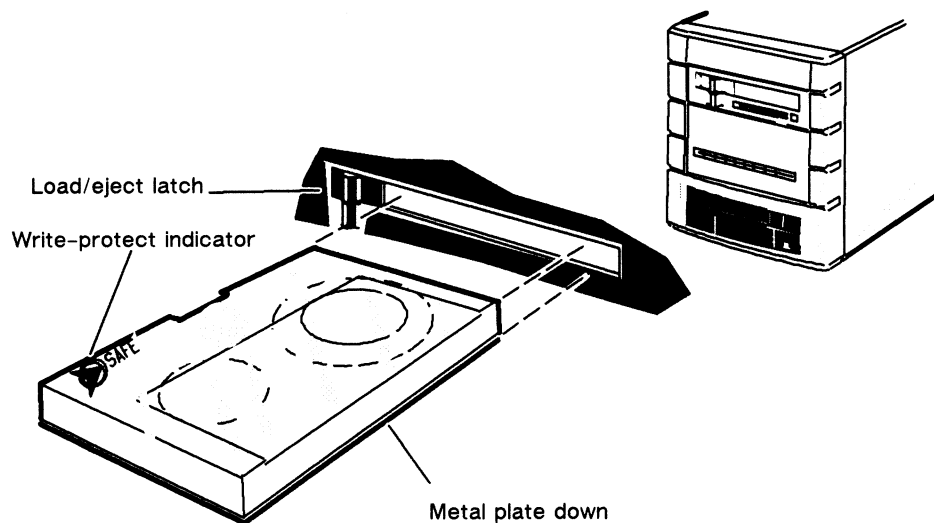


Figure 1-12 Inserting a Cartridge Tape into a Peripheral Housing Unit (PHU)

4. Gently push the cartridge tape into the drive opening; then push it firmly all the way into the drive.
5. Slide the load/eject latch to the right, locking the cartridge tape in place. You hear the drive make a whirring sound as the read/write heads find the beginning of the cartridge. If you don't hear this sound, the tape is not properly inserted or the drive is not locked; remove the tape (as described in step 6) and repeat steps 2 through 5.
6. To remove the cartridge tape, slide the load/eject latch all the way to the left so that it partially ejects the cartridge tape from the drive. Grasp the ejected edge and pull the cartridge out of the drive.
7. After you are finished using the cartridge tape, make sure it is write-protected and return it to the plastic storage case.

End of Chapter

Chapter 2

Setting Up the Computer System

Complete the steps in this chapter after you finish unpacking and preparing for installation as described in Chapter 1. If you have not already done so, complete the Installation Checklist in Chapter 1 before proceeding.

This chapter describes how to connect the following items to the computer unit:

- terminal for use as a system console
- modem, serial printer, plotter, scanner, or other asynchronous device
- parallel printer
- LAN transceiver cable
- computer unit power cord
- external mass-storage such as a Peripheral Housing Unit (AViiON 4000 only)

Refer to Chapter 1 for information about connecting devices (such as user terminals) managed by VME options installed in the rear panel card cage.

Connecting the System Console

Your system console is the keyboard and display device that receives power-up diagnostic test messages from the computer and from which you bring up your operating system. This section describes how to connect an asynchronous terminal to the computer unit rear panel to use as a system console.

You can connect any asynchronous terminal with an ASCII character set and an RS-232-C interface to serve as the system console. However, you need a terminal that conforms to ANSI standard X3.64 (1977) to support a UNIX screen editor. Those terminals that conform to the standard include Data General terminals with ANSI mode or any other terminal that emulates a VT100 or VT220 terminal.

Table 2-1 lists the cables available for connecting an asynchronous terminal to the system console port.

Table 2-1 Terminal Cables

Equipment	Cable Number	Cable Length
Terminal cable with an EIA RS-232-C interface	005-013325	5 ft (1.5 m)
	005-033703	15 ft (4.6 m)
	005-033788	25 ft (7.6 m)
	005-033776	50 ft (15.2 m)

To connect a terminal to the computer-unit system-console connector, complete the following steps.

NOTE: You will need a medium flat-head screwdriver to complete these steps.

1. Align the pins in the male end of the terminal cable to the holes in the upper RS-232-C connector (port A) on the computer unit rear panel, shown in Figure 2-1. The connector is labeled RS232A.

NOTE: Do not use port B (RS232B) for the system console.

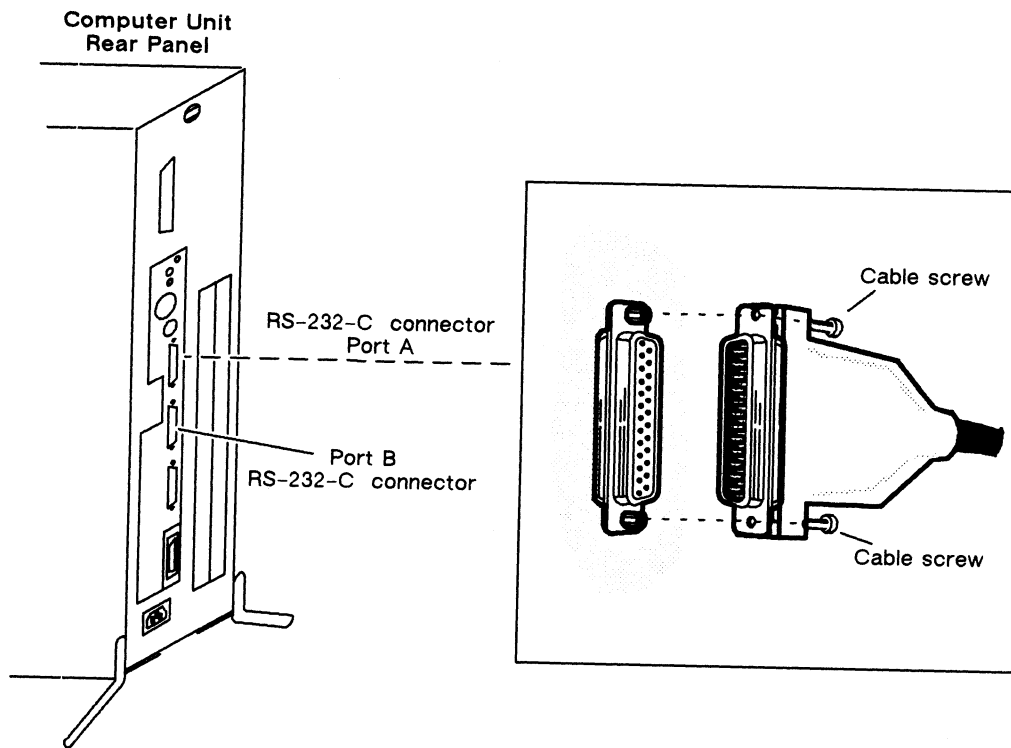


Figure 2-1 Connecting the System Console

2. Push the cable gently but firmly into the computer unit connector.

3. Secure the cable to the connector by tightening the two cable screws with a medium flat-head screwdriver.
4. Secure the other end of the cable to the RS-232-C connector on the back of the terminal. Often, the terminal connector is labeled HOST.
5. Initially, both your firmware and the DG/UX operating system require that your system console have the following characteristics:

9600 baud
 8 data bits
 No parity
 ANSI character set
 Enabled flow control

Set the switches on the terminal to select these characteristics. For information on terminal switches, see the manual that came with the terminal.

If you have an operating system that supports different terminal characteristics, refer to the *Using the AViiON™ System Control Monitor (SCM)* manual for information about changing the console port parameters after your first powerup.

NOTE: SCM menus refer to Port A as the “console port” and to Port B as the “modem port.”

Connecting an Asynchronous Device

This section describes how to connect a modem, serial printer, plotter, scanner (or any other asynchronous device with a compatible interface) to the computer unit rear panel. Table 2-2 lists the available cables.

Table 2-2 Asynchronous Device Cables

Equipment	Cable Number	Cable Length
EIA RS-232-C interface cable with modem support	005-033775	25 ft (7.6 m)
Data terminal device cable with EIA RS-232-C interface	005-013325	5 ft (1.5 m)
	005-033703	15 ft (4.6 m)
	005-033788	25 ft (7.6 m)
	005-033776	50 ft (15.2 m)

To connect an asynchronous device to the computer unit, complete the following steps. You will need a medium flat-head screwdriver.

1. Align the pins in the male end of the cable to the holes in the lower of the two RS-232-C connectors (port B) on the computer unit rear panel, shown in Figure 2-2. The connector is labeled RS232B.

NOTE: Do not use port A (RS232A); it is reserved for the system console.

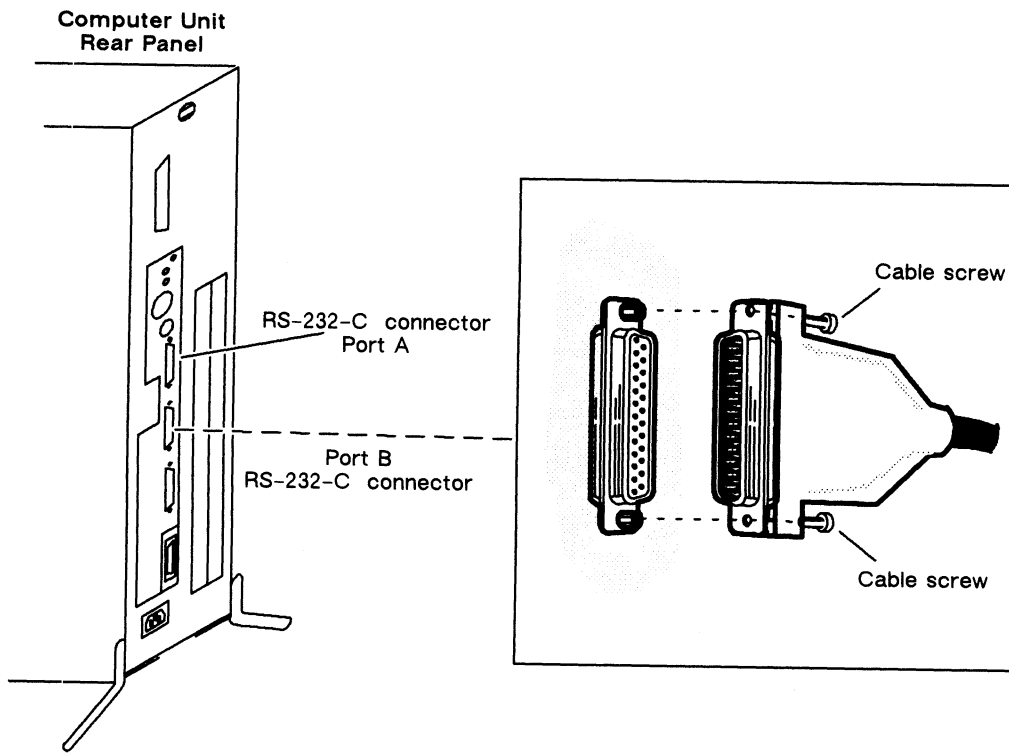


Figure 2-2 Connecting Asynchronous Devices to the RS-232-C B Port

2. Push the cable gently but firmly into the computer unit connector.
3. Secure the cable to the connector by tightening the two cable screws with a medium flat-head screwdriver.
4. Plug the other end of the cable into the RS-232-C connector on the back of the device you are connecting.
5. Set any switches on the device to select the appropriate data terminal characteristics. For information on the switches, see the manual shipped with the device.

Refer to the manual *Using the AViiON™ System Control Monitor (SCM)* for information about changing the modem port parameters.

NOTE: SCM menus refer to Port A as the “console port” and to Port B as the “modem port.”

Connecting a Parallel Printer

The steps in this section describe how to connect a parallel printer. Table 2-3 lists available parallel printer cables. You will need a medium flat-head screwdriver to complete these steps.

Table 2-3 Parallel Printer Cables

Equipment	Cable Number	Cable Length
Centronics parallel printer interface cable	005-033762	15 ft (4.6 m)
	005-023915	5 ft (1.5 m)

1. Plug one end of the printer cable into the parallel printer connector on the back of the computer unit, shown in Figure 2-3.

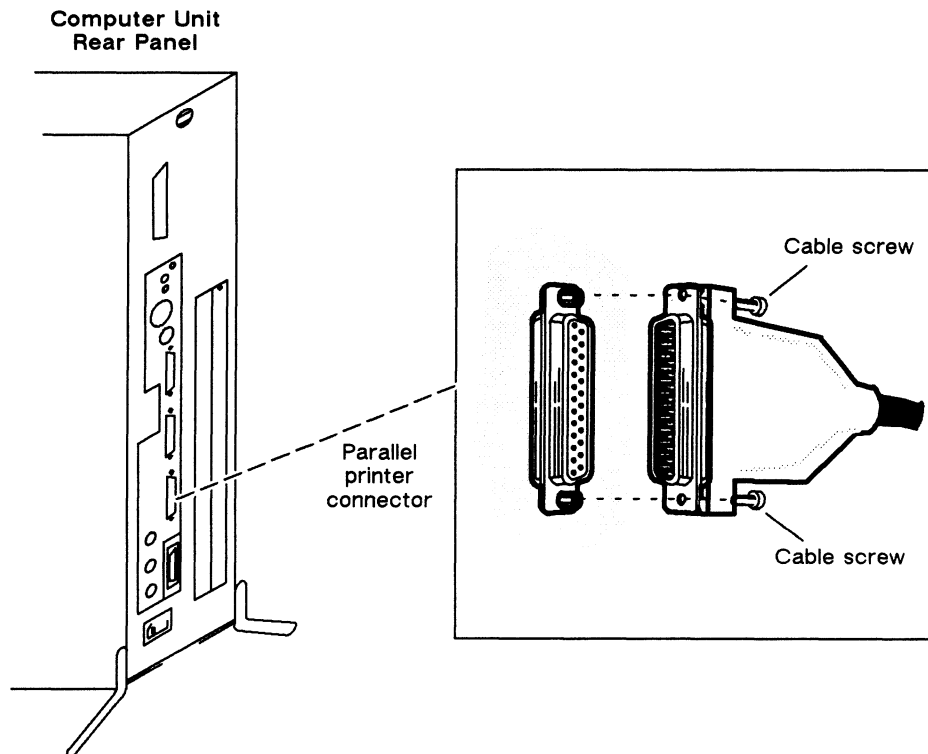


Figure 2-3 Connecting a Parallel Printer to the Computer Unit

2. Attach the printer cable to the connector by tightening the two screws on the printer cable.
3. Plug the other end of the printer cable into the connector on the parallel printer.

Connecting to a Local Area Network

If your computer system is going to be part of a local area network (LAN), you must connect the LAN cable to the computer unit LAN connector. Table 2-4 lists the available LAN cables. The steps in this section assume that the LAN drop cable is already installed and the male end of the cable is within reach of your computer unit. Refer to the manual *Ethernet/IEEE 802.3 Local Area Network Installation Guide* (listed in the Preface) for detailed information about installing your Ethernet network.

Table 2-4 LAN Cables

Transceiver Cable	Cable Number	Length
IEEE 802.3 Teflon® (thick Ethernet)	005-033791	16.4 ft (5 m)
IEEE 802.3 PVC (thin Ethernet)	005-033766	16.4 ft (5 m)
IEEE 802.3 Teflon (thick Ethernet)	005-033787	65.6 ft (20 m)

NOTE: Your system may include an optional VLC (VME LAN controller) installed in the rear panel VME card cage for a second Ethernet LAN. Refer to Chapter 4 of *Setting Up and Installing VME Options in AViiON™ Systems* for information about a VME Ethernet LAN.

To connect a LAN cable to the computer unit LAN connector, complete the following steps. You need a screwdriver or comparable tool to complete the steps.

1. Align the pins in the transceiver cable with the holes in the computer unit LAN connector, shown in Figure 2-4.

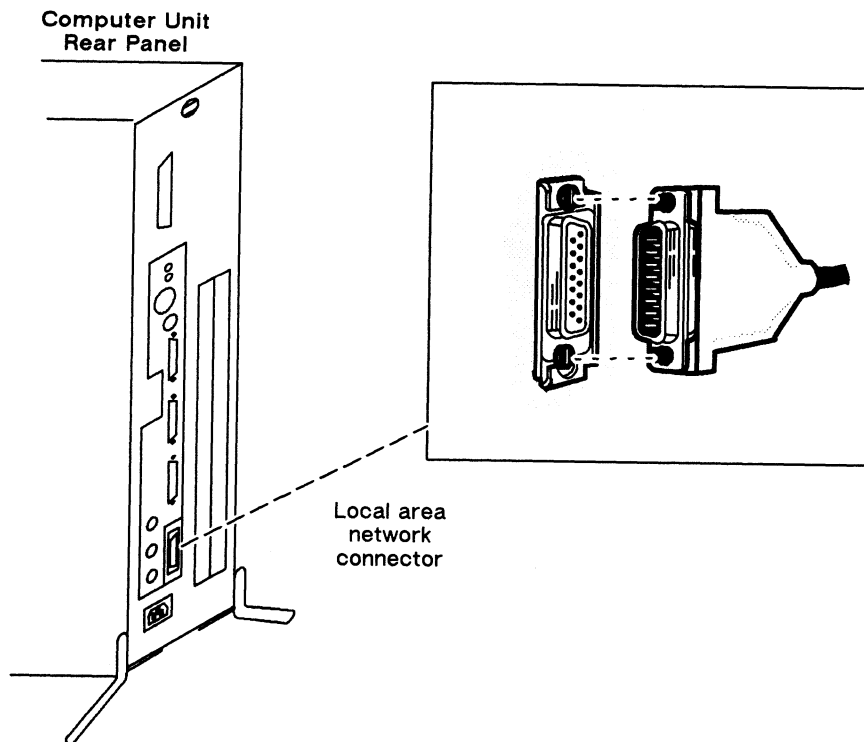


Figure 2-4 Connecting the LAN Transceiver Cable to the Computer Unit

2. As shown in Figure 2-5A, line up the slide clip on the computer unit connector so that the slide clip mounts on the cable can pass through; then push the cable firmly into the connector.
3. Once the cable and clip mounts are secured to the connector, use your screwdriver or a comparable tool to push the slide clip down to lock the cable in place, as shown in Figure 2-5B.

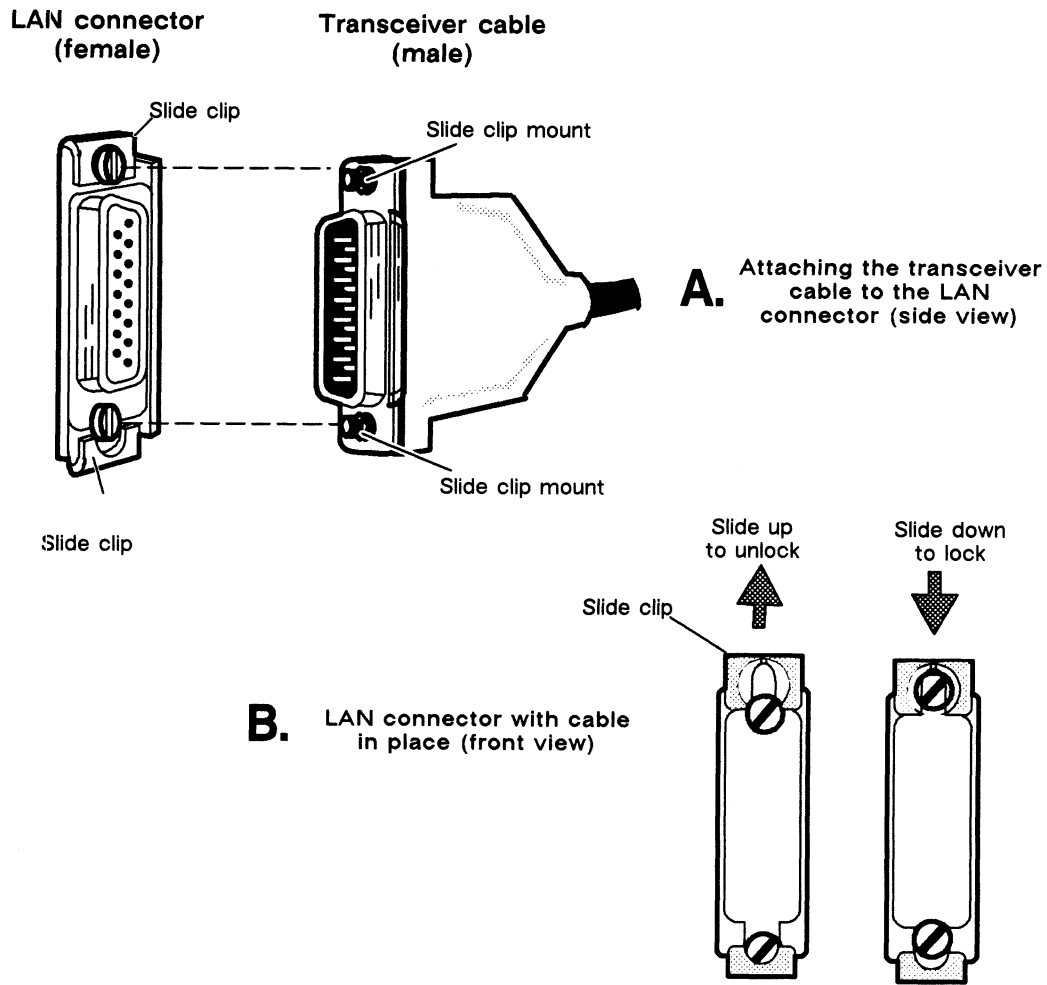


Figure 2-5 Securing the LAN Transceiver Cable

Connecting External Mass Storage (AViiON 4000 Series Only)

You can use the SCSI (Small Computer System Interface) connector on the AViiON 4000 series computer unit rear panel to connect external SCSI-based devices to the internal SCSI bus. This section describes how to connect an external SCSI-based mass-storage device to an AViiON 4000 series computer. Skip this section if you have an AViiON 3000 series computer, or if you do not have an external mass-storage device.

The SCSI bus can support as many as seven SCSI devices. These devices include those drives residing inside the deskside computer unit, as well as those in external mass-storage devices such as peripheral housing units (PHUs) or stand-alone SCSI-based tape drives. Refer to Appendix C for information about default SCSI ID numbers that uniquely identify each installed SCSI device.

Table 2-5 contains the part numbers and lengths of the SCSI bus cables available for connecting mass-storage devices to the rear panel external SCSI connector.

Table 2-5 SCSI Bus Cables

SCSI Cable Number	Part Number	Length
005-033334	15325E001	1.3 ft (0.39 m)
005-033000	15325E005	5 ft (1.52 m)
005-033001	15325E010	10 ft (3.05 m)
005-033335	15325E015	15 ft (4.57 m)

NOTE: The integrated SCSI bus can be extended to a maximum of 19.7 feet (6 meters). The AViiON 4000 series use 4.5 feet (1.4 meters) of the SCSI bus cable internally. You will need this information to calculate the total length of the SCSI bus for your system when planning for external devices.

To connect an external mass-storage device, complete the following steps:

1. The computer requires a SCSI-bus terminator plug; it comes to you installed in the external SCSI connector on the rear panel. To connect an external device to the computer unit, you must first remove the terminator plug from the computer unit SCSI connector.

To remove the bus terminator plug, release the spring clips on each side of the SCSI connector, as shown in Figure 2-6. Pull the plug away from the connector and set it aside; you will install the plug in another connector in step 4.

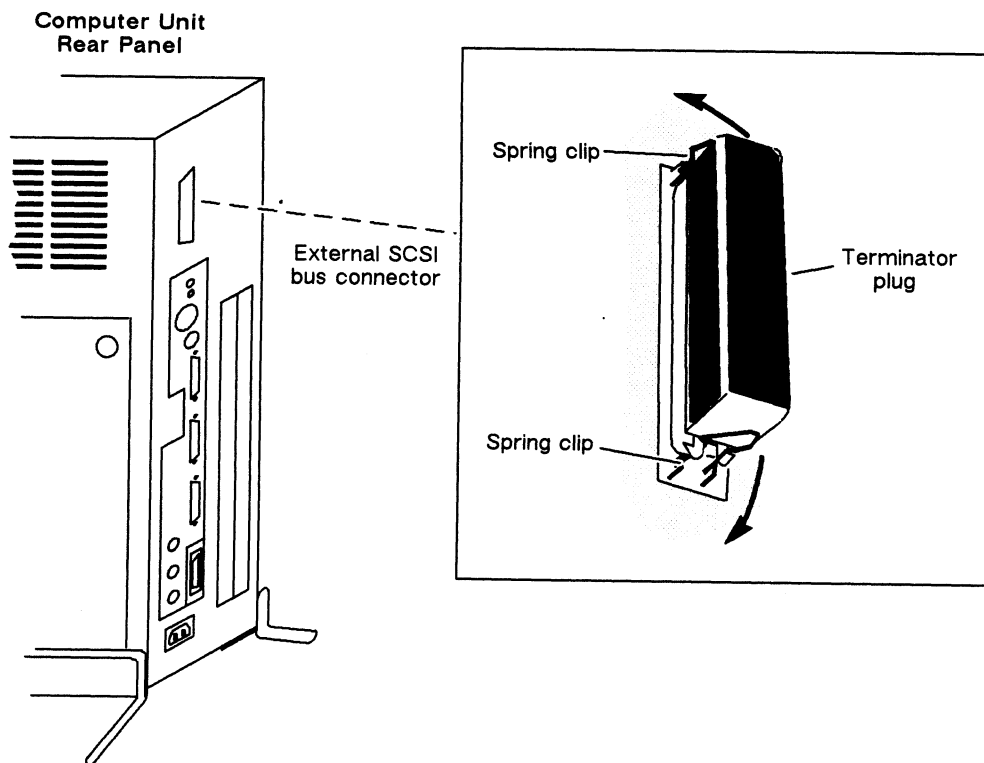


Figure 2-6 Removing the AViiON 4000 Series SCSI Bus Terminator

2. Refer to the documentation that came with the device for unpacking, installing, and operating information. Use this documentation to make sure that the voltage selection is properly set on the device.

If you are connecting a Data General Peripheral Housing Unit (PHU), refer to the manual *Installing and Operating the Model 10565 Peripheral Housing Unit*, listed in the Preface.

If you are connecting a Data General reel-to-reel tape drive, refer to the manual *Installing the Model 6586/6587 Magnetic Tape Streamer Unit*, listed in the Preface.

3. Connect the SCSI bus cable to a SCSI connector on the the mass-storage device, as described in the device installation manual.
4. Plug the other end of the SCSI bus cable into the computer-unit rear-panel SCSI-bus connector, as shown in Figure 2-7. Gently squeeze the two spring clips together until the cable is firmly attached to the SCSI bus connector.

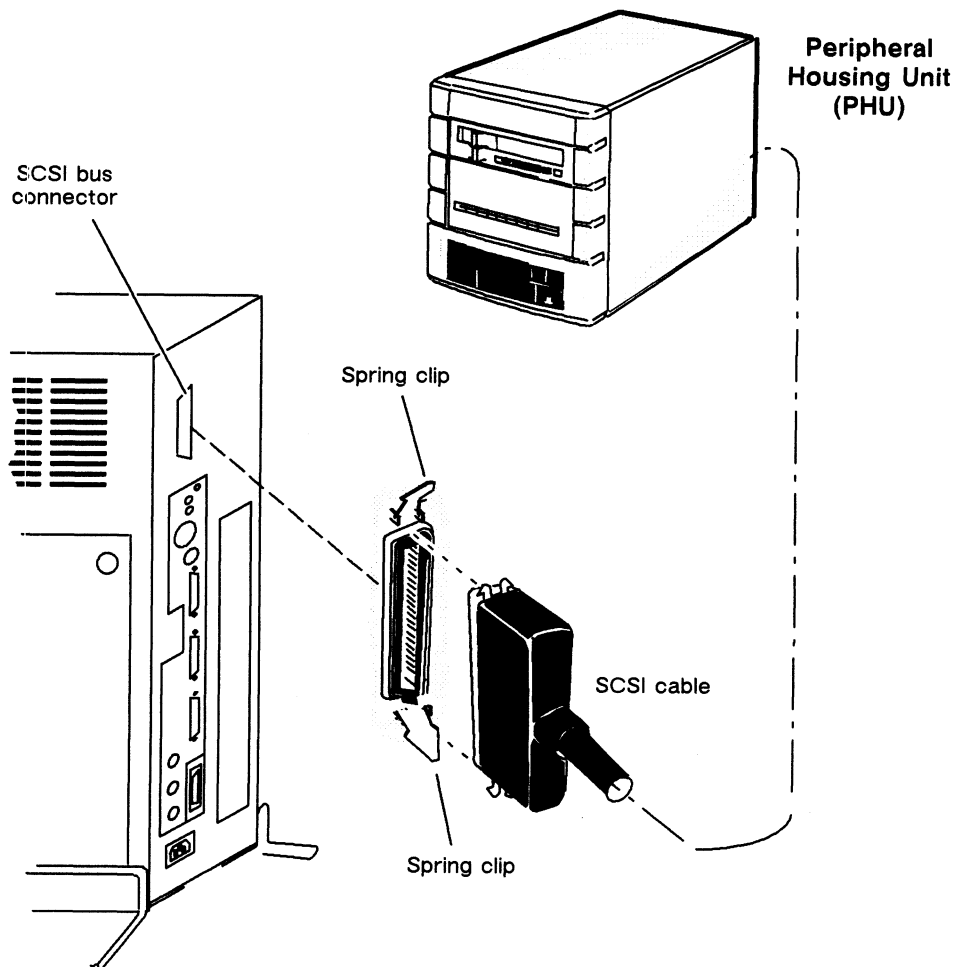


Figure 2-7 Connecting the External SCSI Bus Cable to the Computer Unit Connector

5. Connect the SCSI bus terminator plug to the back of the external device. If you install more than one external unit, install the terminator on the last device in the daisy chain configuration

Connecting the Computer Unit Power Cord

After you have assembled your computer system, use these steps to connect the computer unit power cord to an ac outlet and complete your set-up procedures.

CAUTION: *Make sure that the computer unit power switch is off before connecting the power cord.*

1. Locate the computer unit power cord; it has one of the part numbers listed in Figure 2-8.

NOTE: The correct power cord part number ensures that you are using a proper cord for your site's voltage. Refer to Table 1-2 in Chapter 1 if you have not already checked your power cord part number.

Computer unit power cord part numbers

109-000996
 109-000809
 109-000810
 109-000811
 109-000812
 109-000813
 109-000815

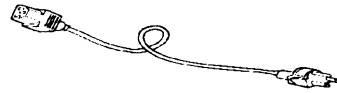


Figure 2-8 Computer Unit Power Cord

2. You receive the computer unit with a yellow and black warning label covering the rear panel ac connector. Examine this label to be sure your computer unit's voltage is properly set for your site; then, remove the label and plug the female end of the computer unit power cord into the ac connector on the computer unit rear panel, as shown in Figure 2-9.
3. Plug the male end of the computer unit power cord into an ac outlet.

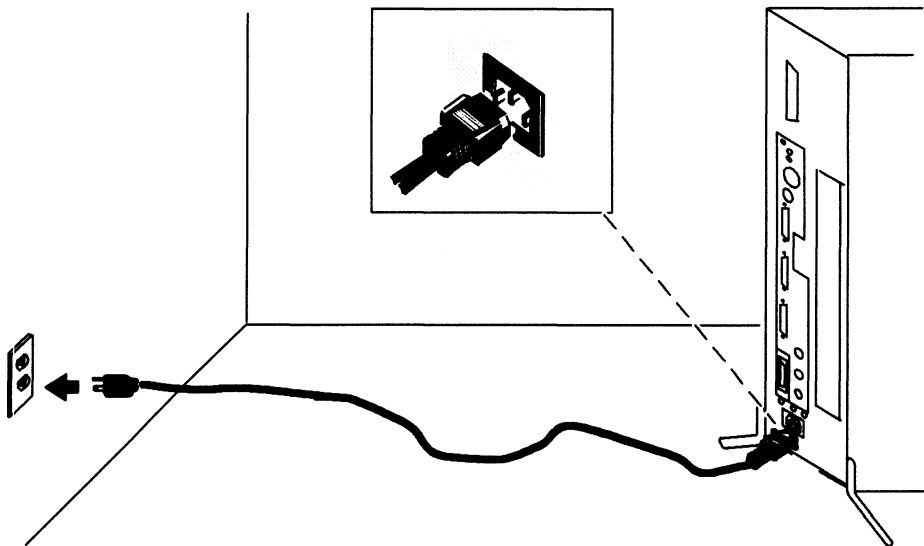


Figure 2-9 Connecting the Computer Unit Power Cord

End of Chapter

Chapter 3

Powering Up

After you install your computer system hardware as described in Chapter 2, follow the steps in this chapter to power up the computer and boot your operating system for the first time. Review the installation checklist in Chapter 1 (Table 1-2) for a list of documentation to have on hand before beginning these steps. You will also need paper and pen, and a copy of your sales order or information about the AViiON model and options you ordered.

Refer to Chapter 4, “Solving Power-Up Problems,” if you encounter any errors or problems with your system console screen display while completing the steps in this chapter.

1. Turn on power to the system console.
2. Turn on power to all devices connected to the computer unit.
3. Turn on power to the computer by pressing the computer unit power switch as shown in Figure 3-1. The power switch (*not* the diagnostic LED) lights up when power is on.

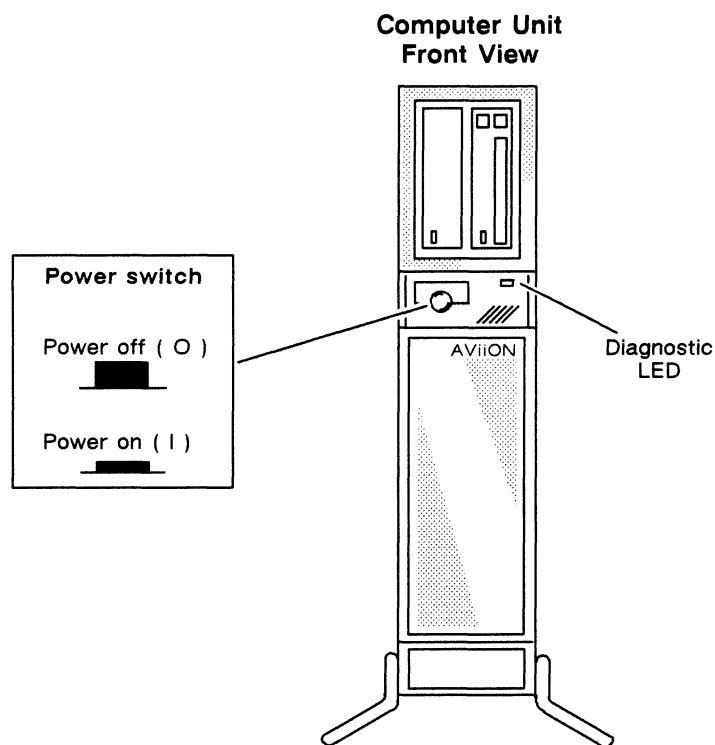


Figure 3-1 Computer Unit Power Switch and Diagnostic LED Indicator

4. Watch your system console screen. After you depress the power switch, the screen flashes for about 4 seconds, and then goes blank. After approximately 5 seconds, the screen displays a cursor in the top left corner; it then begins to display sizing and initialization messages, as shown in the example below.

```
(c) Data General Corporation 1989, 1990
[xx Mhz] AV Series Computer
Firmware Revision xx.xx
Keyboard Language is U.S. English
Local Ethernet address is 08:00:1B:7F:7F:07
Initializing [n Megabytes]
```

Where	Indicates
xx Mhz	The speed of the processor
n Megabytes	The amount of memory installed

If your display does not appear as described above, refer to Chapter 4, "Solving Power-Up Problems."

5. Use your sales order or other records to verify that the processor speed and the amount of installed memory are what you ordered. If you ordered a dual processor AViiON 4000 series computer (model 4020 or 4120), make sure your display includes a line with the message Dual Processor.

If the keyboard language in your initialization message does not match the type of keyboard you installed, refer to the manual *Using the AViiON™ System Control Monitor (SCM)* for information about entering the SCM to change the keyboard language. You will need to repeat the steps in this chapter after you select your keyboard language.

If any message is not correct, or if you ordered a dual processor model and it is *not* indicated in your power-up display, contact Data General.

CAUTION: Do not press the reset switch before power-up testing completes.
If you want to interrupt powerup, wait until you see the message Passed.

6. Record the amount of installed memory and your computer's Ethernet address for future use.

7. Watch the screen as power-up tests verify that components are functioning sufficiently to bring up your operating system. As testing progresses, each character in the alphanumeric sequence 0123...ABC...Z appears on the screen, indicating that a power-up subtest has passed. In addition to this visual display, the diagnostic LED and speaker signal progress as the diagnostic tests complete.

If the test messages are incomplete or include an error message, refer to Chapter 4, "Solving Power-Up Problems."

Once the system displays the message Passed, power-up diagnostic testing is complete. Your console screen appears as follows:

```

Testing ...
 0123456789ABCDEFGHIJKLMNQRSTUWXYZ

Passed

```

If you need to interrupt the powerup for any reason (such as entering the System Control Monitor to change your keyboard language), you can press the rear panel RESET switch or type the keyboard interrupt (Ctrl-C) at this time.

After power-up testing completes, the computer uses a default sequence to automatically boot system software. Your screen displays a message indicating the device and file name of the automatic boot sequence. The computer is configured to automatically boot the DG/UX starter operating system from disk. Your screen display appears as follows:

```
Booting sd(insc(),0)root:/dgux.starter
```

8. What happens next depends on whether or not you ordered the DG/UX operating system. If you did *not* order DG/UX, skip to step 11.

Look for the following initialization messages as the DG/UX starter operating system boots:

```
Booting sd(insc(),0)root:dgux.starter

DG/UX Bootstrap Release x.x

=====

DG/UX System Release x.xx, Version DG/UX x.xx (starter)
Using [n] Megabytes of physical memory
Found [n] processor(s)
Processor 0 running
```

Where

n processor(s)

Indicates

The number of processors, 1 or 2.

If you do not see messages from the DG/UX starter operating system on your system console screen after one minute, skip to step 11.

9. Verify that the DG/UX Starter System sized the correct number of processors. AViiON 4000 or 4100 model computers display the message Found 1 processor(s). AViiON 4020 or 4120 model computers display the message Found 2 processor(s).

Next, your screen displays the initial instructions of the DG/UX Starter System, shown below. Your computer has completed powerup successfully.

```
                DG/UX Starter System
Enter the names of the devices you will use in Common Device
Specification Format, with one name per line. Enter just newline
when done.
Examples: sd(insc(),0) st(insc(),4) cird() st(cisc(),4)

Include duart() for servers and kbd() and grfx() for workstations.

Device Name?
```

You will reach this point each time you power up until you customize the starter operating system for your configuration. Proceed with step 10 to begin this process.

CAUTION: How you respond to the initial Device Name? prompts is very important. The example in step 10 may only be a subset of the devices you need to enter. Do not respond to prompts or press New Line without first referring to the manual Installing and Managing the DG/UX® System.

10. At the Device Name? prompt, enter the DG/UX device names for your system console, root disk, tape drive, and other system devices to customize the starter operating system with your configuration. A typical configuration, including one Winchester SCSI drive as root disk and one SCSI tape drive, appears in the example below.

NOTE: You *must* specify the device that manages keyboard entry to and from your system console, device mnemonic **duart()**, and the hard disk drive that contains your preloaded software, device mnemonic **sd(insc(),0)**.

```

                DG/UX Starter System
Enter the names of the devices you will use in Common Device
Specification Format, with one name per line. Enter just newline
when done.
Examples: sd(insc(),0) st(insc(),4) cird() st(cisc(),4)

Include duart() for servers and kbd() and grfx() for workstations.

Device Name?   duart()
Device Name?   sd(insc(),0)
Device Name?   st(insc(),4)
Device Name?

```

If you do not know what hardware is installed in your system, or if you just want to verify your hardware configuration before installing your operating system, you can run a 15-minute hardware Acceptance Test using the AViiON System Diagnostics software, also preloaded on your hard disk. The system diagnostics software automatically sizes your system devices, including peripherals. To run the diagnostics, you first need to exit from the DG/UX Starter System to the System Control Monitor (SCM) prompt. Do this by pressing the rear panel RESET switch (described in Chapter 1). Refer to the manual *Using AViiON™ System Diagnostics* for information about starting the diagnostics from the SCM.

If you are not familiar with the DG/UX mnemonic naming convention for devices in your system, refer Appendix C of this manual for a quick reference of SCSI device names and to the manual *Installing and Managing the DG/UX™ System* for a list of all server system devices. The manual *Using the AViiON™ System Control Monitor* describes naming conventions (for boot devices only) in detail.

Refer to the *Installing and Managing the DG/UX™ System* manual for what to do next. The steps in “Installation Phase Three” of Chapter 2 describe how to proceed directly from the Starter System prompts to build your custom DG/UX operating system. Earlier sections of Chapter 2 provide overview information and examples of installation procedures.

11. If the automatic boot sequence does not bring up the DG/UX starter operating system, your system console screen displays the message:

```
Unable to load bootfile sd(insc(),0)root:/dgux.starter
```

Next, the system enters the System Control Monitor (SCM). The SCM displays processor status information, followed by its command interpreter prompt. In single-processor computers, the prompt appears as follows:

```
SCM>
```

In dual-processor computers, the prompt appears as follows:

```
Jp#0/SCM>
```

NOTE: You have *not* failed powerup if your system displays the SCM prompt; your system has failed to boot the DG/UX starter operating system.

If you ordered the DG/UX operating system and have a disk drive installed, turn off power to the computer unit and repeat steps 1 through 9. If the DG/UX starter operating system fails to boot again, contact Data General as described in the Preface.

If you do not have a disk drive or if your disk drive is not working, you can boot the DG/UX operating system from the cartridge tape media you received with your system. Refer to the “About Your Cartridge Tapes” section of Chapter 1 for information about handling tapes and loading the tape drive. Use the following SCM command to boot from a 150-megabyte QIC (quarter-inch cartridge) tape:

```
SCM> b st(insc(),4) ↵
```

Refer to the *Installing and Managing the DG/UX™ System* manual for what to do next. The steps in “Installation Phase Three” of Chapter 2 describe how to proceed directly from the Starter System prompts to build your custom DG/UX operating system. Earlier sections of Chapter 2 provide overview information and examples of installation procedures.

If you do not have the DG/UX operating system, refer to the documentation that came with your operating system for installation instructions.

This manual does not address further what to do if the computer successfully completes power-up, but does not boot your operating system. If you are unable to boot your operating system using the steps in this chapter, contact Data General, as described in the Preface.

End of Chapter

Chapter 4

Solving Power-Up Problems

This chapter describes what you can do if your computer fails to complete power-up diagnostic testing properly.

During a normal powerup, your system console displays the message `Passed` and immediately begins to boot the DG/UX operating system; this signifies that the computer system has successfully completed power-up diagnostic tests. If the computer fails a power-up diagnostic test, the system console screen either *hangs* (does not continue testing), or displays an error message on the screen to indicate the failure.

NOTE: This manual does not describe what to do if the computer successfully completes power-up diagnostic testing, but cannot boot your operating system. For this information, refer to the documentation that came with your operating system, and to the manual *Using the AViiON™ System Control Monitor (SCM)* for information about the `BOOT` command and automatic boot sequence. If you cannot resolve the problem using these manuals, contact Data General as described in the Preface.

Table 4-1 on the next page summarizes common symptoms and suggests quick strategies for fixing simple problems that could occur during powerup. The sections following the table provide step-by-step procedures for resolving simple power-up problems and explain how to reset and restart the computer. For example, if your system console displays an error code or message, refer to the “Error Codes and Messages” section. If your system console remains blank after you power on the computer unit or if your power-up messages are not readable, refer to the “Blank or Unclear Power-Up Display” section.

If you cannot resolve your problem, contact Data General as described in the Preface.

NOTE: If you do not have a specific problem with your computer but want to run a comprehensive test of your computer hardware, refer to the manual *Using AViiON™ System Diagnostics* for a description of how to start the AViiON system diagnostics to run the hardware Acceptance Test. The system diagnostic software also includes several menu-based utilities to test hardware components such as user terminals managed by VME devices or your LAN cabling.

Table 4-1 Quick Reference for Power-Up Problems

For this Condition	Try This
Blank or Unclear Display	
<p>Has the screen been blank for 2 minutes?</p>	<p>Adjust brightness control to maximum. Turn all power off; then</p> <ul style="list-style-type: none"> • Tighten the computer, system console, and peripheral power cords in their ac connectors. • Tighten all computer unit cable connections on both ends. • Make sure the system console and all connected peripherals are powered on. • Make sure the ac outlet is supplying power. • Verify that the terminal's baud rate, parity, and other settings match the computer's (see Chapter 2). <p>Turn computer unit power back on.</p>
<p>Is the screen still blank or unclear?</p>	<p>Contact Data General.</p>
System Displays Text but Fails Powerup	
<p>Is the last display in the power-up message the number 2?</p>	<p>If you have <i>not</i> added memory since the last powerup, contact Data General. If you have added memory since the last powerup, press the space bar to continue.</p>
<p>Is text garbled on the screen?</p>	<p>Try suggestions in "Unclear Display" section later in this chapter.</p>
<p>Do you see a numerical code other than 2, and/or a text message?</p>	<p>Write down the number or text; then</p> <ul style="list-style-type: none"> • Turn power off to the computer unit, monitor, and any peripherals. • Tighten all cabling. <p>Power on peripherals, system console, and computer unit again.</p>
<p>Does the problem repeat?</p>	<p>Contact Data General.</p>

Blank or Unclear Power-Up Display

Complete the steps in this section if you cannot see diagnostic messages on your system console screen during the power-up sequence.

NOTE: If you hear sounds from the computer unit speaker but cannot see power-up messages, it is likely that your system console terminal is not properly connected or is not functioning; complete the steps below to verify that the system console *is* properly connected. The next section, “Error Codes and Messages,” describes the computer unit beep codes.

Blank Screen

Follow the steps in this section if your screen remains blank for more than 2 minutes after powerup.

1. Move the system console brightness control to the maximum setting to ensure the screen intensity is adjusted brightly enough for you to see messages on the screen.
2. Turn power off to the computer unit and all connected peripherals.
3. Make sure the computer unit power cord is plugged tightly into an ac power outlet that is supplying power.
4. Make sure the terminal power cord is plugged tightly into a working ac power outlet.
5. Make sure the graphic keyboard connector on the computer unit rear panel is *empty*. (This graphic keyboard connector is a round, DIN-8 connector located beneath the RESET and ABORT switches, labeled with a keyboard icon).
6. Make sure the system console cable is connected to the *first* computer unit RS-232-C connector (labeled RS232A).
7. Make sure the cables that connect your workstation components together are secured tightly so that they make a good connection.
8. Make sure the system console terminal is set to 9600 baud, 8 data bits, no parity. For information on changing terminal switch settings, see the manual that shipped with the terminal.
9. Turn the system console power on.
10. Turn the computer unit power on.

If your display remains blank but the computer unit LED and speaker signaled at least four times, the system console terminal may have a problem. Try to power up using a different terminal connected to the system console port.

Your computer can complete power-up diagnostic tests even if the system console is not working. The diagnostic LED on the computer unit flashes on and off several times, and you will hear beeps from the computer unit speaker. You should also hear the three fans at the bottom of the computer unit chassis spinning. If the LED and speaker do not signal at least four times, or if one or more of the fans sound slow or are not spinning at all, contact Data General as described in the Preface; the problem is not your terminal.

Unclear Display

Try the following if your terminal screen displays messages, but they are distorted or unreadable.

- Make sure that the cable connection from RS-232-C port A to the terminal is secure.
- If the keyboard has an “On Line” key or indicator, toggle that key. If you know that the keyboard is on line and your screen is still blank, do the following:
 1. Disconnect the terminal from the computer unit.
 2. Turn on the terminal power to see if the terminal diagnostic self-test message appears. If the terminal does not pass its diagnostic test, try a different terminal as system console.
 3. Use the keyboard to type something. If the characters appear on your terminal screen, reconnect the terminal to the computer unit and power up the computer again. If nothing appears on your terminal screen, there could be a problem with the terminal cable.
- Verify that the terminal’s baud rate, parity, number of data bits, and other characteristics are set according to the following defaults:

9600 baud

8 data bits

No parity

ANSI character set

Enabled flow control

To change these characteristics after you successfully complete the first powerup, refer to the *Using the AViiON™ System Control Monitor (SCM)* manual. For information on changing terminal switch settings, see the manual that shipped with the terminal.

If your screen display remains unreadable, contact Data General as described in the Preface.

Error Codes and Messages

This section describes how your computer signals an error during powerup. Refer to this section if power-up diagnostic tests halt and display an error message, if the system console “hangs” during power-up testing, or to determine whether the front panel diagnostic LED or speaker sounds indicate an error.

If your screen has been blank for more than 2 minutes, refer to the section, “Blank Screen” earlier in this chapter. If you see meaningless display on your system console screen, refer to the section “Unclear Display” earlier in this chapter.

Screen Display

If your computer encounters a serious error during powerup, your screen display usually includes a Data General error code and a brief text message. Your screen display appears as follows after you receive an error:

```

Testing ...
012345

*** - Error code - nnnnnnnn - ***
*** - Halted on Error - ***

```

Where

nnnnnnnn

Indicates

Data General fault code

If your computer displays an error message or hangs during power-up testing, complete the following steps.

NOTE: If the system console hangs at the number 2 when printing the alphanumeric sequence 012...AB...YZ during power-up testing, refer to the “Memory Configuration Change” section later in this chapter.

1. Write down any text and the error code number that appears on the screen. If no error message appears, write down the last letter or number of the testing message displayed.
2. Turn off the computer unit’s power.
3. Wait at least 30 seconds.
4. Turn on power to the computer unit again. If the problem repeats, contact Data General as described in the Preface.

LED Signals

The green LED indicator pulses on and off during power-up diagnostic tests to signal the completion of individual tests. The LED then remains on while the system is booting, until your operating system successfully starts. If the LED remains on *before* power-up testing is complete, or if the system seems to be hung up after one or two pulses, an abnormal condition exists. Ordinarily, there are screen indications of an error; be sure to carefully record all error indicators before contacting Data General about an error condition.

Speaker Signals

The beeps that sound during the power-up tests also provide some indication of the condition of the computer hardware. If your power-up tests complete normally, your computer unit speaker will beep several times in a unique sequence. If no beeps sound during power-up testing, if the system seems to be hung up after one or two beeps, or if the sequence of beeps is unlike that of previous powerups, an error condition exists. Sometimes you can determine the problem even if there is no discernible screen display. Table 4-2 lists beep codes and suggests how to respond to any of these abnormal conditions. Contact Data General as described in the Preface if you cannot determine the error condition or if you discover a problem you cannot solve. Ordinarily, there are screen indications of error; be sure to carefully record all error indicators before contacting Data General about an error condition.

Table 4-2 Beep Codes

Beep Code	Error Condition	Solution
No sound		Probable system or speaker problem. Contact Data General.
One beep	FATAL BBSRAM ERROR	Contact Data General.
Two beeps	FATAL MEMORY ERROR	Problem with first memory module. Refer to <i>Maintaining AViiON 3000 and 4000 Series Computer Systems</i> to verify that the first memory module is properly seated in its connector. If the problem repeats, contact Data General.
Three or four beeps	FATAL CACHE ERROR	Contact Data General.
Seven beeps	KEYBOARD NOT FOUND	Verify that the keyboard cable is securely connected to the RS232A port, and that the DIN-8 graphics keyboard connector is empty. If the problem repeats, contact Data General.

Memory Configuration Change

After the initial powerup, one of the power-up diagnostic tests compares the previous amount of memory with the current memory configuration. The system indicates a discrepancy between these configurations for any of the following reasons:

- You added or removed one or more memory module(s).
- One or more memory module(s) is not properly seated in its connector.
- One or more memory module(s) is failing.

If the system finds a discrepancy between the previous and current memory configuration, the power-up test stops at number 2 and displays the following screen:

```

© Data General Corporation 1989
Firmware Revision xxx.xx
xx MHz AV Series Computer
Keyboard Language is U.S. English
Local Ethernet address is 08:00:1B:7F:7F:07
Initializing [n Megabytes]

Testing ...
  012

Memory configuration has changed from n to n Megabytes
Press the space bar to restart with new configuration
or, if not correct, press any other key to halt.
```

Where

xx MHz
n Megabytes

Indicates

The speed of the processor
The amount of memory

If you added or removed one or more memory module(s) and are certain each module is properly seated in its system board connectors, press the space bar to power up with the new memory configuration.

CAUTION: *Be careful not to press the space bar unintentionally if you have not changed your memory configuration since the previous powerup. Powerup will continue by pressing the space bar; you could be proceeding with a failed memory module.*

If you have not added or removed a memory module, this error could indicate a memory module failure. Press any key other than the space bar to halt the system, write down the error code or message, and contact Data General as described in the Preface.

Resetting Your System

If your computer hangs during powerup, you will need to reset. You may also choose to reset the computer to interrupt the automatic boot sequence. Once power-up testing completes, you can reset the system by pressing the RESET switch on the computer unit rear panel or by turning power off, and then on again.

CAUTION: Do not press the reset switch before power-up testing completes. If you want to interrupt powerup, wait until you see the message Passed. Resetting or cycling power to your system while your operating system is running may result in lost data.

If you turn power off, and then on again, your system goes through power-up testing and its autoboot sequence, as described in Chapter 3. If you press the rear panel RESET switch, your system resets the system board components to their power-up state and displays the System Control Monitor (SCM) command interpreter prompt, but does not go through power-up tests or automatically boot your operating system.

Figure 4-2 shows the location of the computer unit switches.

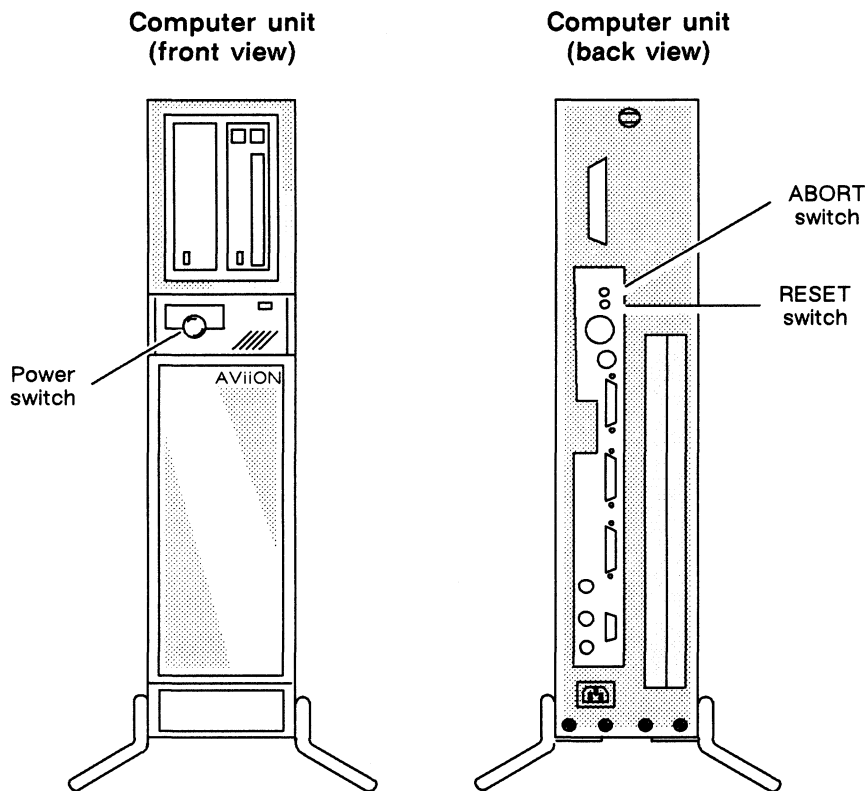


Figure 4-2 System Reset Options

NOTE: The rear panel ABORT switch is a software reset feature. Refer to Chapter 1 for information.

End of Chapter

Appendix A

AViiON 3000 Series

Technical Specifications

This appendix includes physical, electrical, and environmental specifications for AViiON 3000 series computer system hardware components.

The base computer system includes an asynchronous terminal used as system console and the desktop computer unit chassis. Refer to Chapter 1 for information about the system console.

The desktop computer unit consists of the external chassis, the system processor board, the power subsystem, and a VME standard backplane supporting one optional VME controller. The following sections list specifications for the computer unit chassis and for computer unit components.

Physical Specifications

This section contains the computer unit chassis physical specifications.

Dimensions

24.75 inches high

5.75 inches wide

22 inches deep

Weight

59 pounds fully loaded with peripherals

Environmental Requirements

This section contains environmental requirements and specifications for the computer unit chassis.

Temperature

Operating: 50° through 100.4° Fahrenheit; 10° through 38° Celsius

Storage: -40° through +149° Fahrenheit; -40° through +65° Celsius

Relative humidity

Operating: 20–80%, noncondensing

Storage: 10–90%, noncondensing

Altitude

Operating: 0–8000 feet; 0–2438 meters
Storage: 0–25000 feet; 0–7620 meters

Noise

0–40 decibels (Quiet Office rating)

System Processor Board

This section contains specifications for the computer unit system board.

Processor

- 12 x 18 inches printed circuit board with side panel mounting
- One 16.67–megahertz Motorola 88100 processor
- Two Motorola 88200 cache and memory management units (CMMUs)

Main Memory

- Socket connectors for 2–inch x 5–inch printed circuit memory boards
- Minimum: 8 megabytes (two boards) required
- Maximum: 16 megabytes (four boards)
- Byte Parity

Clocks

- Time–of–boot clock with battery backup
- Real time system clock

Integrated I/O

- VME bus interface to rear panel card cage
- LAN controller:
 - IEEE 802.3 interface
 - 10 megabits/second bandwidth
 - System board port to rear panel DB15 female connector
- SCSI controller:
 - Single–ended channel for synchronous or asynchronous transfer
 - Four bus connectors for as many as four internally mounted devices:
 - Two full–height drives; or, up to four half–height drives;
 - or, one full–height drive and two half–height drives.
- DUART (Dual Universal Asynchronous Receiver/Transmitter):
 - Two RS–232–C ports with modem control
 - 19.2 kilobits/second maximum baud rate
 - System board port to two rear panel DB25 female connectors
- Parallel printer interface:
 - Centronics compatible
 - System board port to rear panel DB25 female connector

Power Subsystem

This section contains specifications for the power subsystem, which includes a modular off-line switching converter and three cooling fans.

Alternating current (ac) input line

Frequency	47–63 hertz
Phase	Single

Voltage options

120 volts ac	+10%, -15%
220 or 240 volts ac	+10%, -15%

Current (maximum)

120 volts ac	8.0 amperes
220 volts ac	5.0 amperes

Power consumption

325 watts, maximum

Direct current (dc) output power

78 watts, maximum

Heat dissipation

1024 Btu/hour, maximum

VME Subsystem

The system board VMEbus interfaces a printed circuit board (backplane) that supplies the VMEbus signals to an optional VME-based communications controller installed in the rear-panel card cage. This section contains VME specifications for the backplane.

- Motorola's VMEbus, Revision C.1
- IEEE P1014, Draft 1.2
- Slot for one 6U form factor (VLC, VSC/3 or VAC/16) controller card

End of Appendix

Appendix B

AViiON 4000 Series

Technical Specifications

This appendix includes physical, electrical, and environmental specifications for AViiON 4000 series computer system hardware components. The base computer system includes an asynchronous terminal used as system console and the deskside computer unit. Refer to Chapter 1 for information about the system console.

The deskside computer unit consists of the external chassis, the system processor board, the power subsystem, and a VME standard backplane with slots for two optional VME controllers. The following sections list physical and environmental specifications for the computer unit chassis. The rest of the appendix lists technical specifications of the system board, power subsystem, and VME backplane.

Physical Specifications

This section contains the computer unit chassis physical specifications.

Dimensions

24.75 inches high

5.75 inches wide

22 inches deep

Weight

59 pounds fully loaded with peripherals

Environmental Requirements

This section contains environmental requirements and specifications.

Temperature

Operating: 50° through 100.4° Fahrenheit; 10° through 38° Celsius

Storage: -40° through +149° Fahrenheit; -40° through +65° Celsius

Relative humidity

Operating: 20–80%, noncondensing

Storage: 10–90%, noncondensing

Altitude

Operating: 0–8000 feet; 0–2438 meters

Storage: 0–25000 feet; 0–7620 meters

Noise

0–40 decibels (Quiet Office rating)

System Processor Board

This section contains specifications for the computer unit system board.

Processor

- 12 x 18 inches printed circuit board with side panel mounting
- One 16.67-megahertz Motorola 88100 processor
- Two Motorola 88200 cache and memory management units (CMMUs)
- Optional daughter board for second processor with CMMUs

Main Memory

- Socket connectors for 2-inch x 5-inch printed circuit memory boards
- Minimum: 8 megabytes (two boards) required
- Maximum: 32 megabytes (eight boards)
- Byte Parity

Clocks

- Real time system clock
- Time-of-boot clock with battery backup

Integrated I/O

- VME bus interface to rear panel card cage
- LAN controller:
 - IEEE 802.3 interface
 - 10 megabits/second bandwidth
 - System board port to one DB15 female connector on rear panel
- SCSI controller:
 - Single-ended channel for synchronous or asynchronous transfer
 - Four bus connectors for as many as four internally mounted devices:
 - Two full-height drives; or, up to four half-height drives;
 - or, one full-height drive and two half-height drives.
 - System board port to rear panel champ connector for external devices
 - 19.2 feet maximum bus length
- DUART (Dual Universal Asynchronous Receiver/Transmitter):
 - Two RS-232-C ports with modem control
 - 19.2 kilobits/second maximum baud rate
 - System board port to two DB25 female connectors on rear panel
- Parallel printer interface:
 - Centronics compatible
 - System board port to DB25 female connector on rear panel

Power Subsystem

This section contains specifications for the power subsystem, which includes a modular off-line switching converter and three cooling fans.

Alternating current (ac) input line

Frequency	47–63 hertz
Phase	Single

Voltage options

120 volts ac	+10%, –15%
220 or 240 volts ac	+10%, –15%

Current (maximum)

120 volts ac	8.0 amperes
220 volts ac	5.0 amperes

Power consumption

325 watts, maximum

Direct current (dc) output power

78 watts, maximum

Heat dissipation

1024 Btu/hour, maximum

VME Subsystem

The system board VMEbus interfaces a printed circuit board (backplane) that supplies the VMEbus signals to optional VME-based communications controllers installed in the rear panel card cage. This section contains specifications for the VME backplane.

- Motorola's VMEbus, Revision C.1
- IEEE P1014, Draft 1.2
- Slots for two 6U form factor controller cards

End of Appendix

Appendix C

Identifying SCSI Devices

The Small Computer System Interface (SCSI) is a standard for computer and peripheral interconnection. System software identifies SCSI devices by a unique identification number called a SCSI device ID number, or simply SCSI ID. When you receive preinstalled devices, the SCSI ID numbers are already set (jumpered).

Table C-1 lists the default (factory installed) SCSI device ID numbers for hard disk, diskette, and tape drives. The “DG/UX Device Name” column lists the mnemonic name that the DG/UX operating system and the PROM use to identify a boot device; the mnemonic name includes the SCSI ID of the device. Refer to Appendix A of the manual *Using the AViiON™ System Control Monitor (SCM)* and to *Installing and Managing the DG/UX® System* for information about device specifications.

Table C-1 Default SCSI Device ID Numbers

Drives	ID Number	DG/UX Device Name
Hard Disk¹		
First	0	sd(inc())
Second	1	sd(inc(),1)
Third	2	sd(inc(),2)
Diskette²		
First (LUN 0)	3	N/A ³
Second (LUN 1)	3	N/A ³
Cartridge Tape		
First	4	st(inc(),4)
Second	5	st(inc(),5)
Third	6	st(inc(),6)

¹ Hard disk drives include Winchester and CD-ROM types.

² If you have diskette drives, the SCSI ID is set on a SCSI adapter board, not on the drive. If you have more than one drive managed by the same SCSI adapter board, the drives use the SCSI ID number of the adapter board. The LUN (Logical Unit Number) differentiates drives managed by the same SCSI adapter, and is set on the drive itself.

³ Not a bootable device.

NOTE: In addition to device identification jumper settings, your preinstalled SCSI drives are jumpered at the factory to enable parity.

Your SCSI ID configuration depends upon the configuration of drives installed both internally and externally. For example, if you have one internal full-height hard disk drive, one internal tape drive, one internal diskette drive, and an external peripheral housing unit with one cartridge tape drive and one hard disk drive, the SCSI device ID numbers are set at the factory as illustrated in Figure C-1.

NOTE: AViiON 3000 series computers include internal drives only. The example below shows an AViiON 4000 series system with a Model 10565 Peripheral Housing Unit (PHU) connected externally.

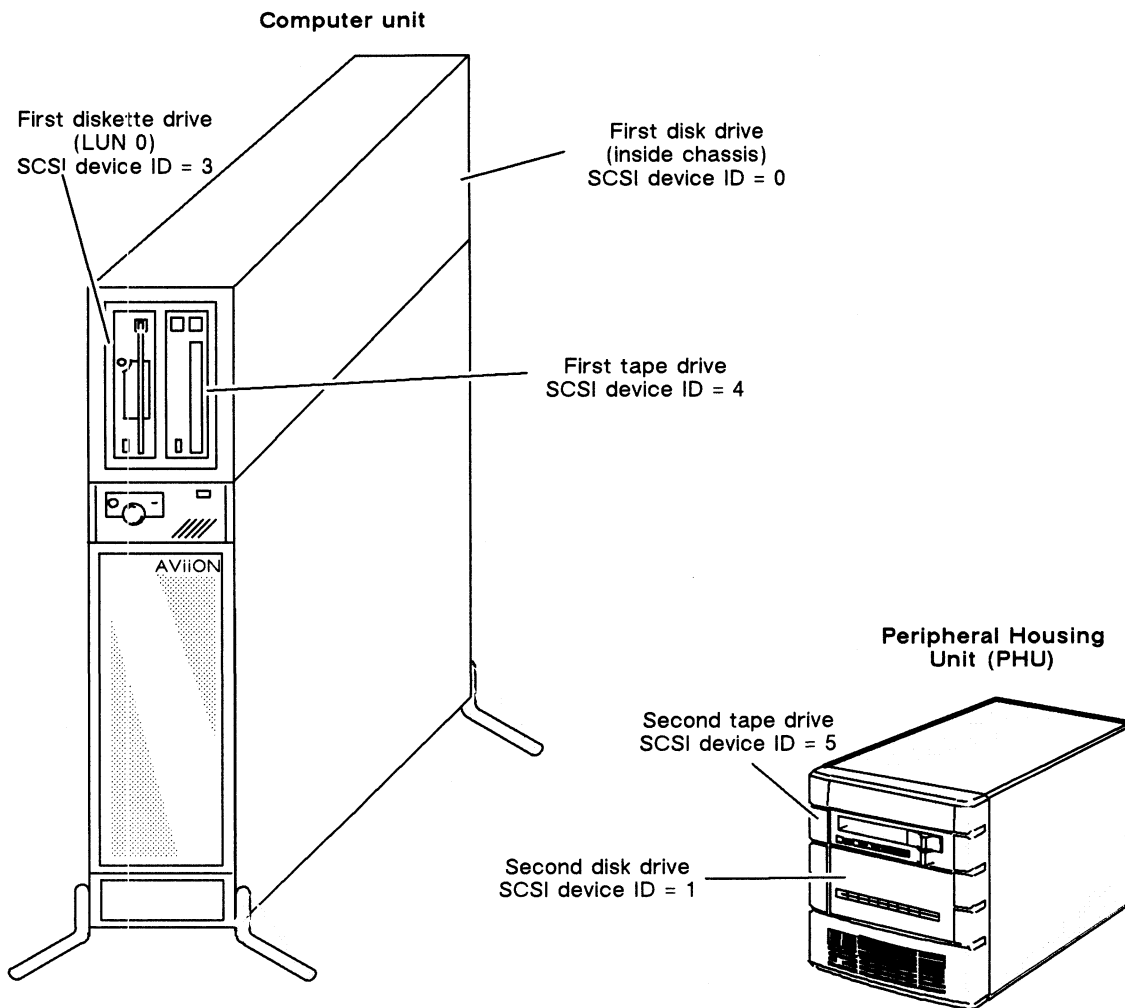


Figure C-1 Example of Default SCSI ID Settings

Your computer unit and peripheral housing unit chassis ship to you with a label indicating the SCSI ID settings of preinstalled devices. If you add other SCSI devices, we recommend that you follow the same SCSI device ID numbering scheme shown in Table C-1. The manual *Expanding and Maintaining AViiON 3000 and 4000 Series Computers* provides additional information about assigning SCSI ID numbers, and includes a worksheet for recording for your configuration. Each drive manual (listed in the Preface) explains how to install the SCSI ID jumpers in the drive. To access drives inside a PHU, refer to *Installing and Operating the Model 10565 Peripheral Housing Unit*, listed in Preface.

End of Appendix

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Documentation Set

This section lists those documents currently available for AViiON 3000 and 4000 series systems. The documents specifically referred to in the text of this manual are also listed in the “Related Manuals” section of the Preface.

Hardware Manuals

AViiON™ 300 and 400 Series Stations: Programming System Control and I/O Registers (014-001800) used in conjunction with *Technical Notice for AViiON™ 3000 and 4000 Series Computers: Programming System Control and I/O Registers* (014-001878)

Describes the system board architecture and explains how to program the system control logic, serial and parallel ports, LAN interface, and SCSI port.

Ethernet/IEEE 802.3 Local Area Network Installation Guide (014-000793)

Explains how to install both the coaxial cable plant of an Ethernet local area network (LAN) and the transceivers that connect the network to a node communication controller.

Expanding and Maintaining AViiON™ 3000 and 4000 Series Computers (014-001874)

Explains how to add or replace components (drives, memory modules, system board assembly, CPU board, power supply, fan assembly, and PROM).

MC88100 User's Manual, Reduced Instruction Set Computer (RISC) (014-001809)

Describes the Motorola 88100 Central Processing Unit (CPU), including the registers, addressing modes, internal and bus timing, and assembly-language instruction set.

MC88200 User's Manual, Cache/Memory Management Unit (CMMU) (014-001808)

Describes the Motorola 88200 Cache/Memory Management Unit (CMMU), including the CMMU registers, the cache and cache coherency, memory management and user/supervisor space, the Processor bus (Pbus), and the Memory bus (Mbus).

Using AViiON™ System Diagnostics (014-001863)

Describes how to use menu-based utilities to verify system hardware, test terminal or graphics display, test the functionality of a graphics keyboard and mouse, locate faults in LAN connections, and maintain cartridge tape and diskette media on AViiON hardware models.

Using the AViiON™ System Control Monitor (SCM) (014-001802)

Describes how technical users can use the commands and menus of the firmware monitor program to bring up software, control their system environment, and debug programs on AViiON hardware models.

Manuals for VME Hardware

HPS Application Installation Manual (069-000348)

Contains information about transferring software to VAC/16 asynchronous multiplexors and VDA/128 host adapters.

HPS Cluster Controller Download Package User Manual (069-000361)

Contains information about transferring code from the host computer to HPS cluster controllers that are managed by a VDA/128 host adapter.

HPS Diagnostic Application User Manual (069-000349)

Contains information about the interface provided by the Diagnostic Application software for the host system.

HPS Downloadable Cluster Controller Technical Manual (014-001813)

Contains information about installing, programming, and operating the HPS Downloadable Cluster Controller hardware.

HPS Downloadable Cluster Controller Installation Guide (014-001814)

Describes how to install the HPS Downloadable Cluster Controller hardware.

HPS Terminal Control Software, Version 03A User's Manual (069-000347)

Contains information about the interface provided by the Terminal Controller software for the host system. This interface allows access to the asynchronous communication channels of the VAC/16 multiplexor and the VDA/128 host adapter board with its cluster controllers.

HPS VMEbus Host Adapters Technical Manual (014-001815)

Contains information about installing, programming, and operating the HPS VMEbus Host Adapter (VDA/128) hardware.

HPS VMEbus Multiplexor (HPS-6236/6237) Technical Manual (014-001817)

Contains information about installing and operating the HPS VMEbus Multiplexor hardware (VAC/16).

Setting Up and Installing VMEbus Options in AViiON™ Systems (014-001867)

Describes how to jumper VME controllers to operate in an AViiON environment. Explains how to install and remove the controller boards in the system's VME card cage, and how to jumper the VME printed circuit backplane when necessary. Also supplies instructions for connecting external devices to the controller boards.

V/Ethernet 3207 Hawk Local Area Network Controller for Ethernet User's Guide (014-001818)

Contains information about programming and installing the V/Ethernet 3207 Hawk Local Area Network Controller (VLC).

VMEbus Data Communications Processor (DCP-8820) Technical Manual
(014-001816)

Contains information about installing the VMEbus Data Communications Processor (VSC/3).

Storage Peripheral Manuals

Installing and Operating the Model 10565 Peripheral Housing Unit (014-001810)

Describes how to unpack, inspect, install, and power up the unit. Explains how to replace the power supply, line cord, fan, and provides general instructions for replacing a drive. Lists physical, electrical, and environmental specifications of the peripheral housing unit.

Installing the Model 6586/6587 Magnetic Tape Streamer Unit (014-001692)

Describes how to unpack, inspect, install, and power up the unit. Explains how to install and remove reel-to-reel tapes.

Installing and Operating Your Model 6538/6539 Half-Height Winchester Disk Drive
(014-001722)

Describes how to unpack, install, power up, and maintain the 179-megabyte half-height Winchester disk drive.

Installing the Model 6491 Fixed Disk Drive (014-001460)

Describes how to unpack, install, power up, and maintain the 322-megabyte full-height Winchester disk drive.

Installing Your Model 6660 Series Fixed Disk Drive (014-001940)

Describes how to unpack, install, power up, and maintain the 332-megabyte half-height Winchester disk drive.

Installing Your Model 6554/6555 Series Disk Drive (014-001702)

Describes how to unpack, install, power up, and maintain the 662-megabyte full-height Winchester Drive.

Installing and Operating Your Model 6552 Series CD-ROM Drive (014-001721)

Describes how to unpack, install, power up, and maintain the 600-megabyte half-height CD-ROM drive.

Installing and Operating Your 150-Megabyte 1/4-inch Cartridge Tape (014-001699)

Describes how to unpack, install, power up, and maintain the 150-megabyte QIC (quarter-inch cartridge) half-height tape drive.

Installing and Operating Your Model 6590 Series Cartridge Tape Drive (014-001701)

Describes how to unpack, install, power up, and maintain the 2.2-gigabyte standalone cartridge tape drive.

Installing the Model 6562/6563-Series Diskette Drive (014-001921)

Describes how to unpack, install, power up, and maintain the 1.44-megabyte, 5.25-inch and 1.2-megabyte, 3.5-inch half-height diskette drives (with SCSI adapter board).

Documentation Set

Software Manuals

Installing and Managing the DG/UX™ System (093-701052)

Shows how to install and manage the DG/UX operating system on AViiON hosts that will run as stand-alone, server, or client systems. Intended for system administrators who are familiar with the UNIX operating system.

Other Organizations' Documents

The following documents are available from other organizations.

The VMEbus Specification (Motorola document number HB212)

Describes Motorola's Versa Modula Europa bus (VMEbus), and how to program using the VMEbus. This document is available from Motorola Corp.

TIPS ORDERING PROCEDURES

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INTERNATIONAL ORDERS

9. Customers outside of the United States must obtain documentation from their local Data General Subsidiary or Representative. Any TIPS orders received by Data General U.S. Headquarters will be forwarded to the appropriate DG Subsidiary or Representative for processing.

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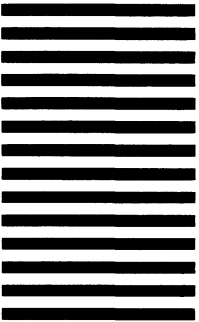
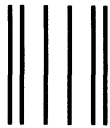


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