

**Setting Up and Starting
AViiON™ 300 Series Stations**

Setting Up and Starting AViiON[™] 300 Series Stations

014-001801-03

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This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his or her own expense will be required to take whatever measures may be required to correct the interference.

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

This manual is written for the person who is responsible for installing and starting the AViiON™ 300 series station. It describes how to unpack and install the workstation. It also tells you how to start a new workstation. If you encounter problems with your workstation during powerup, this manual suggests steps you can take to solve these problems.

Once the workstation passes the power-up diagnostic tests, the operating system documentation describes how to install your DG/UX™ operating system software.

The next section lists related manuals. These manuals tell you how to manage and maintain your workstation's hardware and software on a day-to-day basis.

Related Documents

If you install, operate, manage, or maintain this workstation, you will find the following books useful. For a complete list of manuals available for this product, refer to the *Documentation Set* after the Index.

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 boot software, control their system environment, and debug programs.

Maintaining AViiON™ 300 Series Stations (014-001803)

Explains how system administrators can replace components (mouse, keyboard, monitor, memory modules, system board assembly, power supply, SCSI bus fuse, and fan). It also describes how to use the workstation's diagnostic software to verify system integrity.


Installing and Operating the Model 10565 Mass-Storage Subsystem (014-001810)

Describes how to unpack, inspect, install, and power up the subsystem. 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 subsystem.

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. Aimed at system administrators who are familiar with the UNIX® operating system.

Reader, Please Note

The term *New Line* in this manual refers to the New Line key on some Data General keyboards. The keyboard connected to the computer unit labels the equivalent key Enter. The keyboard for your system console may label the equivalent key Return, CR (Carriage Return), Enter, or with a standard symbol like the following: 

We use certain symbols in special ways:

Symbol	Means
<code>↵</code>	Press the New Line, Carriage Return (CR), or Enter key on your system console keyboard.
<code>SCM></code>	The default System Control Monitor prompt.

Finally, in examples we use

This typeface to show your entry.

`This typeface to show system queries and responses.`

Contacting Data General

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

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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.

Free telephone assistance is available with your warranty and with most Data General service options. Lines are open from 8:30 a.m. to 8:30 p.m., Eastern Time, Monday through Friday.

For telephone assistance outside the United States or Canada, ask your Data General sales representative for the appropriate phone number.

End of Preface

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Chapter 1

Getting Started

This chapter describes the AViiON™ 300 station and options. It also describes how to unpack and inspect your workstation.

AViiON 300 Series Station and Options

This section describes and illustrates the workstation and options for the AViiON 300 series station. See Figure 1-1.

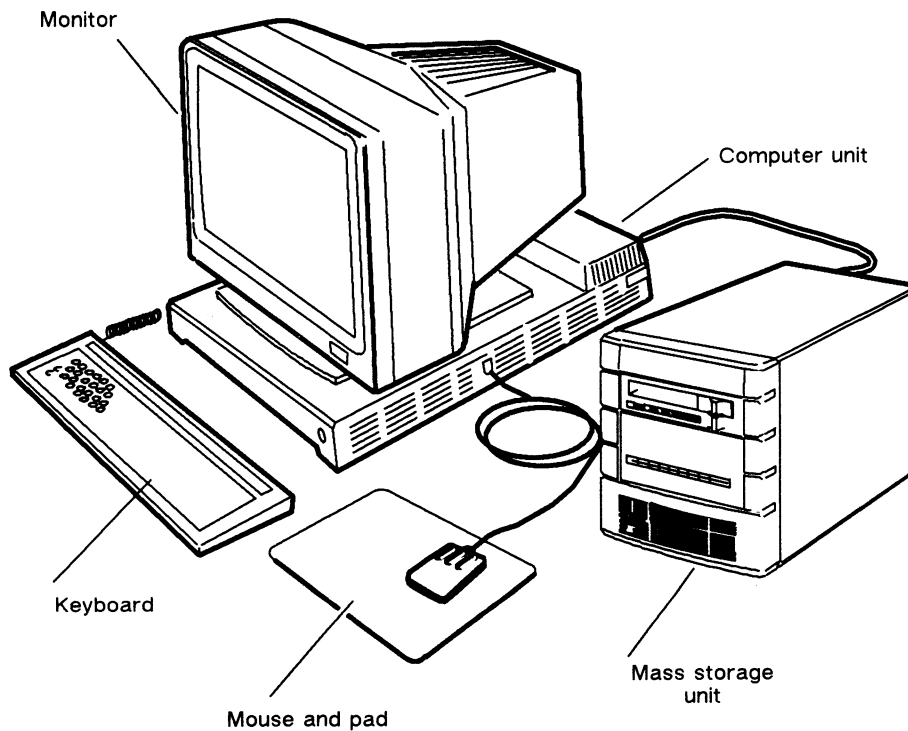


Figure 1-1 AViiON 300 Series Station and Options

The basic AViiON 300 series station consists of a desktop computer unit, a graphics monitor, an IBM PC AT® style keyboard, and a mouse. The computer unit includes an Ethernet 802.3 LAN interface to allow the workstation to function as a node or server in a local area network environment.

NOTE: Some models do not include a monitor, keyboard, or mouse. In this case, the system must include a display terminal.

The desktop computer unit contains the system board which includes the following components:

- 4 Mbytes (minimum) memory, expandable in 4 Mbyte increments to 28 Mbytes maximum
- An Ethernet/IEEE 802.3 LAN port
- A parallel printer port, Centronics/Data Products compatible
- An RS-232-C/RS-422 asynchronous port for a data terminal device, such as a modem, display terminal, serial printer or plotter
- A Small Computer System Interface (SCSI) port for add-on mass storage devices.

If your workstation has local mass-storage support, it also includes one or more desktop mass-storage subsystems. Each subsystem contains one or more of the following drive units:

- A 150 Mbyte cartridge tape drive
- A Winchester disk drive, 179 Mbytes or 322 Mbytes.

Unpacking and Inspecting Your Workstation

This section describes how to unpack and inspect your computer and peripheral devices.

Follow these steps to unpack your workstation.

1. Ensure that your site is compatible with the environmental and electrical requirements listed in Appendix A, "Technical Specifications." For peripheral device specifications, see the documentation shipped with the peripheral device.
2. Remove the packing slip from the outside of the shipping carton.
3. Open the carton and remove your equipment.

Save the packing materials to use if you have to return a component.

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

4. Inspect your equipment for damage.

5. Compare the items you received with the items listed on the packing slip. Make sure that you have all of the cables listed on the packing slip; the cables may be in a separate box. Also, make sure that the model and part numbers on the packing slip are what you ordered, *and* that these part numbers match those on your equipment.

Examine the model number and suffix (the letter following the model number) on the label at the bottom of the keyboard. Table 1-1 lists the suffixes for available international keyboards.

Table 1-1 Keyboard Model Number Suffixes

Suffix	Keyboard
A	U.S. English
B	U.K. English
C	French
D	German
E	Japanese
G	Spanish
I	Italian
N	Swedish
Y	Swiss
Z	Swedish

If a model or part number is incorrect or you are missing equipment, contact Data General. If 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. Refer to the "Telephone Assistance" section of the Preface for more information.

6. Make sure that you have the materials to start your computer system.

If you ordered the DG/UX™ operating system with your workstation, you should have the media labeled with the operating system name.

NOTE: If you ordered a workstation with a preloaded DG/UX operating system, the operating system software is on one of your disk drives. In this case, save the operating system tape as a backup copy.

Also, you should have the documentation, including the *Installing and Managing the DG/UX™ System* manual that describes how to manage and run DG/UX.

If you received the wrong materials or are missing materials, contact Data General. If 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.

End of Chapter

Chapter 2

Installing Your Workstation

This chapter describes how to connect a keyboard, a mouse, and a monitor to the workstation. It also describes how to connect the workstation to a local-area network, a mass-storage subsystem, a terminal, a printer, and a modem. Before getting started, you must confirm that the voltage switch on each workstation is set properly for your site.

Verifying the Voltage Selection Switch Setting

The voltage selection switch is preset at the factory for your location. It is rarely necessary to change the setting, but it is important to verify.

CAUTION: *Powering up the computer system with an incorrect voltage switch setting can damage the computer. If you are unsure of the installation site's line voltage, consult a qualified electrician.*

To verify the setting of the voltage selection switch, you must remove the tray assembly from the housing.

1. Move the computer unit, if necessary, so you have access to the back.
2. Loosen the two screws on the back panel as shown in Figure 2-1.

NOTE: The screws are *captive* and can be loosened but not removed from the back panel.

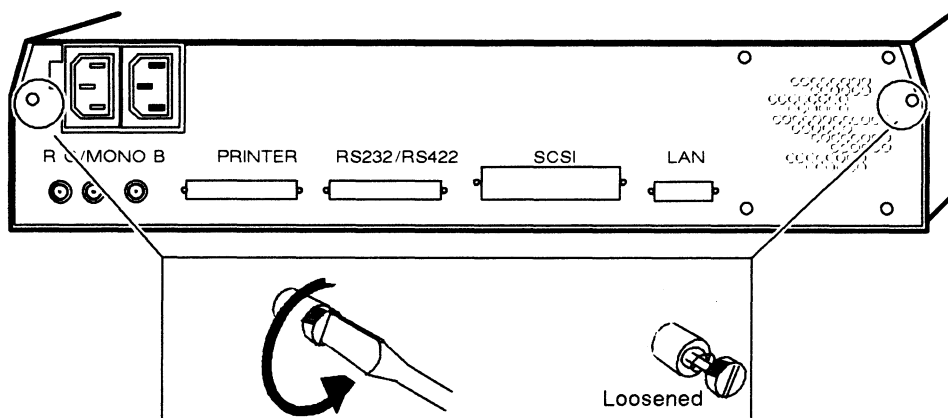


Figure 2-1 Loosening Two Screws That Attach the Tray Assembly to the Housing

3. Slide the tray assembly out of the housing (until the voltage selection switch is visible) as shown in Figure 2-2.

CAUTION: Unless you are properly grounded, you can discharge static electricity and damage components in the system.

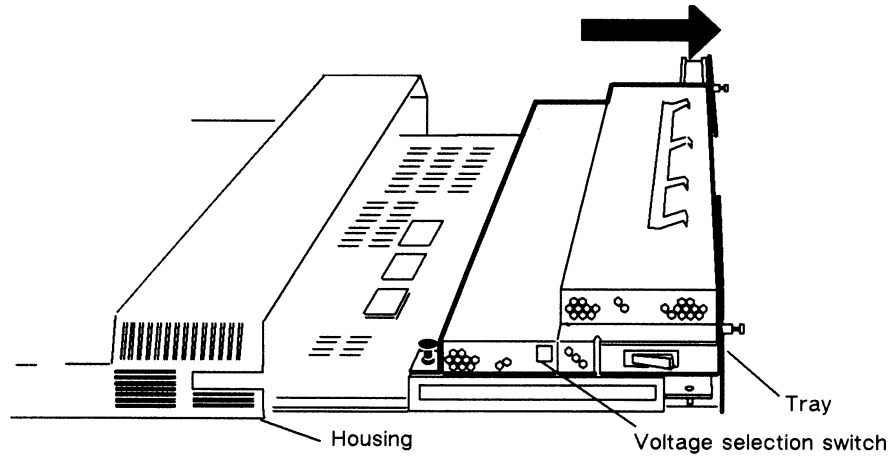


Figure 2-2 Sliding the Tray Assembly out of the Housing

4. Ensure that the computer unit is set to the proper ac power voltage for your site. If the installation site has 100 V ac or 120 V ac line voltage, make sure the switch is in the 115 V position as shown in Figure 2-3 (A). Most sites in the United States and Canada have 120 V ac power.

If the site has 220 V ac or 240 V ac line voltage, make sure the switch is in the 230 V position as shown in Figure 2-3 (B).

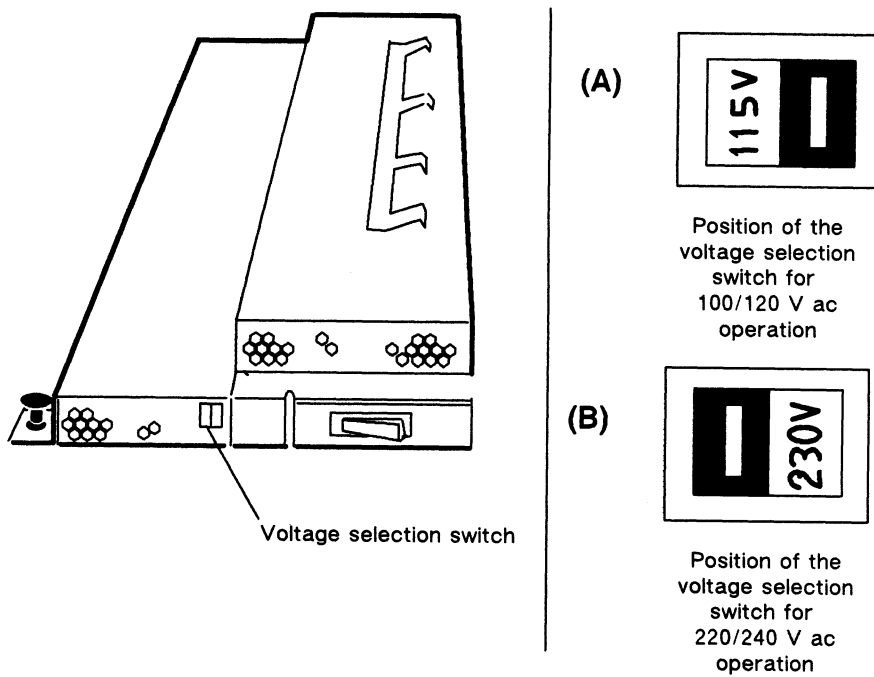


Figure 2-3 Verifying the Voltage Selection Switch Setting

5. Push the tray assembly back into the housing as shown in Figure 2-4.

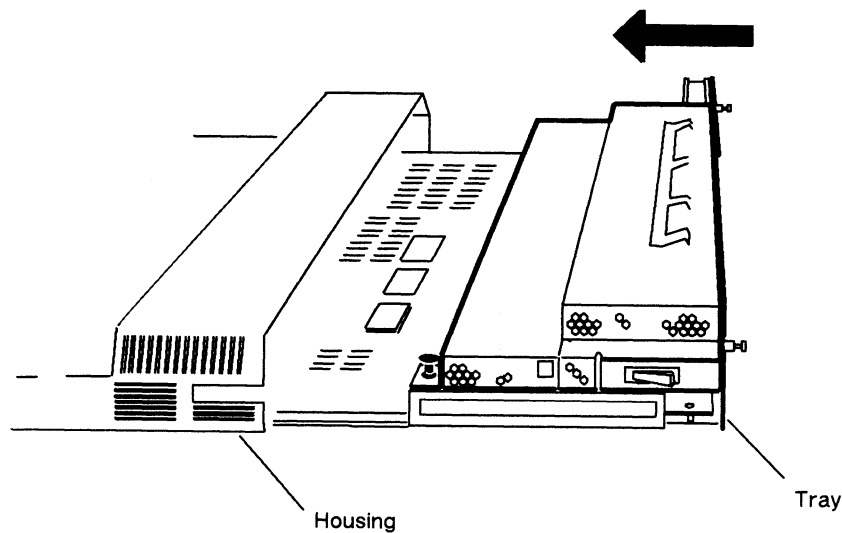


Figure 2-4 Replacing the Tray Housing

6. Tighten the two screws that attach the tray assembly to the housing as shown in Figure 2-5.

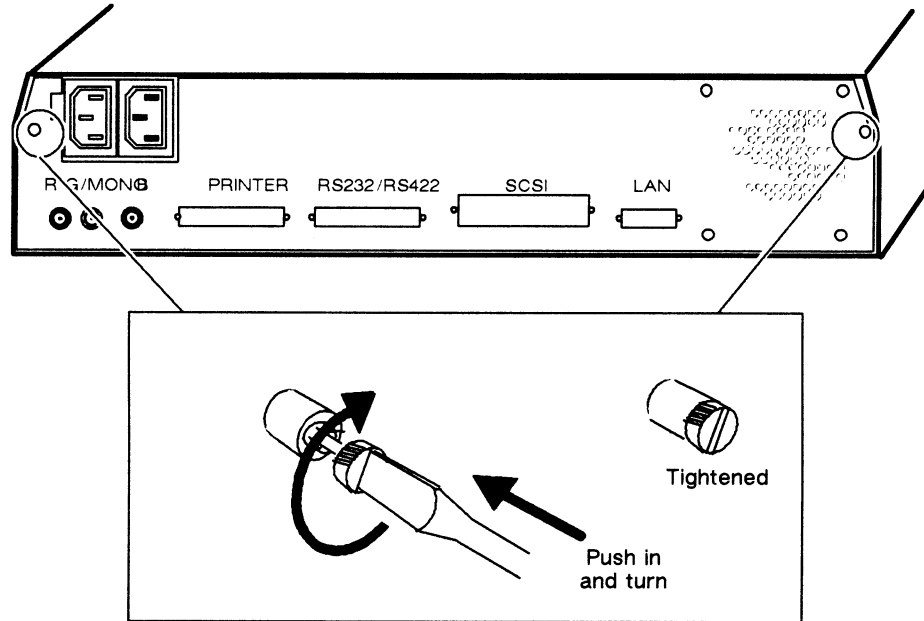


Figure 2-5 Tightening the Two Screws That Attach the Tray Assembly to the Housing

Connecting the Keyboard and Mouse

Follow these steps to connect a keyboard and mouse to the computer unit.

1. Place the keyboard on the desk close to the computer unit.
2. Plug the keyboard cable into the keyboard connector located on the side of the computer unit as shown in Figure 2-6.

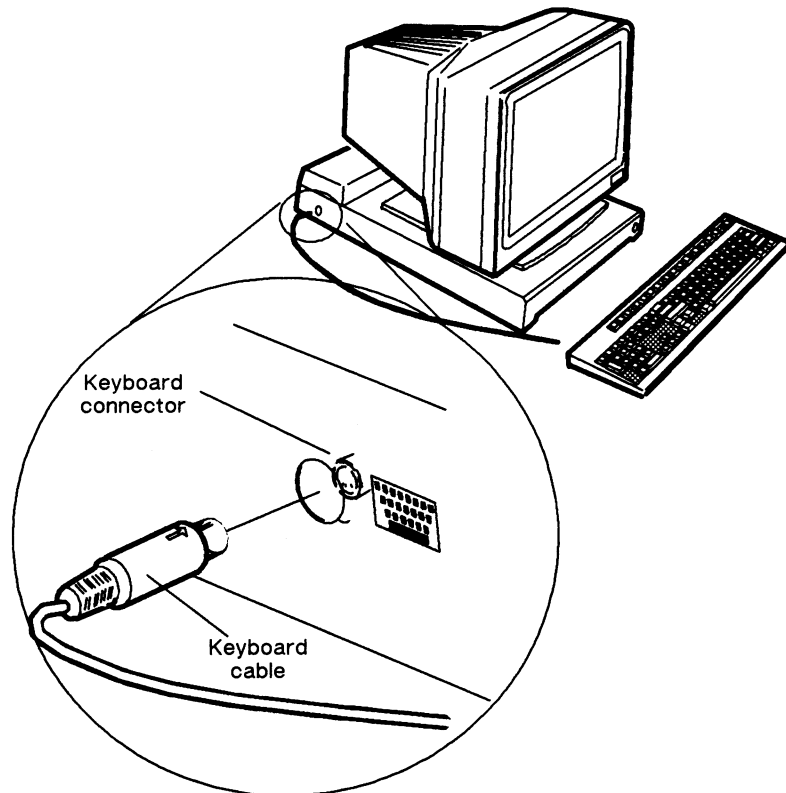


Figure 2-6 *Plugging the Keyboard Cable into the Keyboard Connector*

Installing Your Workstation

3. Place the mouse and mouse cable on the desk close to the computer unit.
4. Place the mouse pad on the desk so that you will be seated opposite its longer side.
5. Plug the mouse cable into the mouse connector on the side of the computer unit as shown in Figure 2-7.

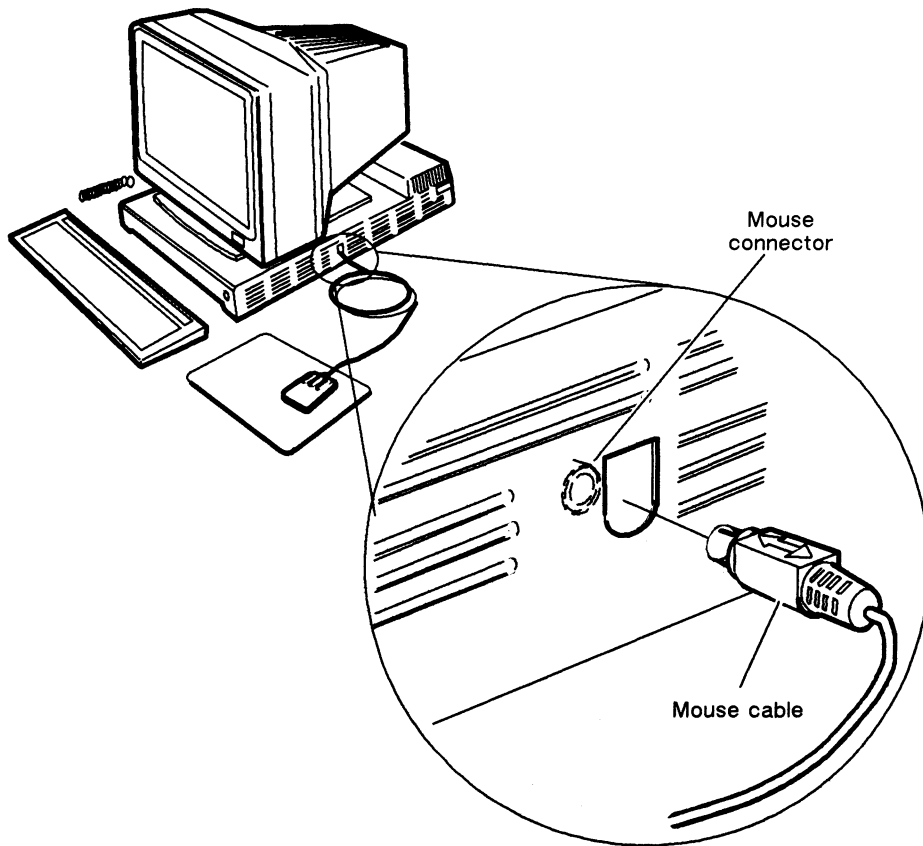


Figure 2-7 Plugging the Mouse Cable into the Mouse Connector

Connecting a Graphics Monitor

To connect a graphics monitor to the computer unit you will need the monitor cables and a power cord. The following sections discuss the procedures for connecting either a monochrome or a color monitor.

Connecting a Monochrome Monitor

1. Place the monitor shown in Figure 2-8 on top of the computer unit.

CAUTION: The monitor is heavy; be careful when moving it.

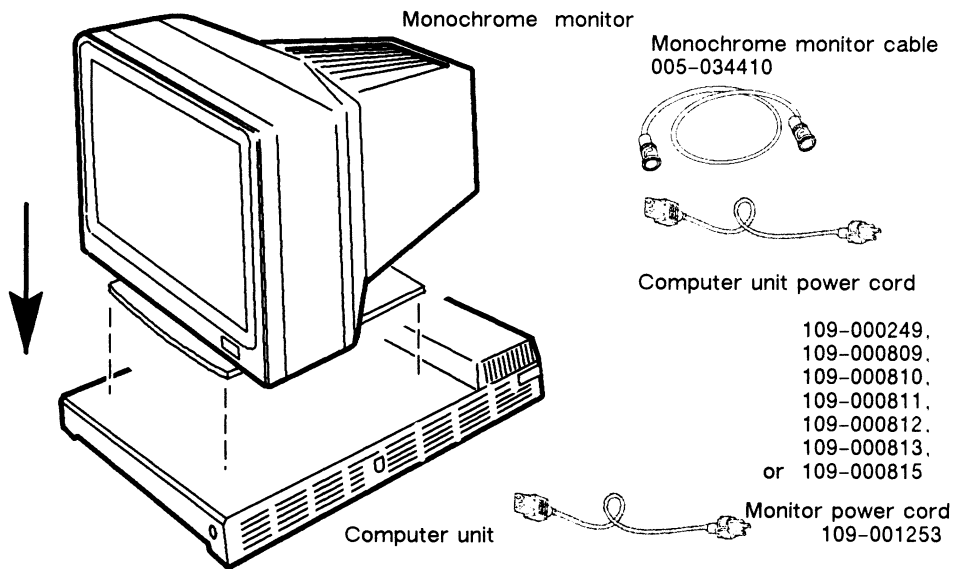


Figure 2-8 Monochrome Monitor and Required Power Cords and Cable

2. Make sure that the power switches for the computer unit and monitor are off as shown in Figure 2-9.

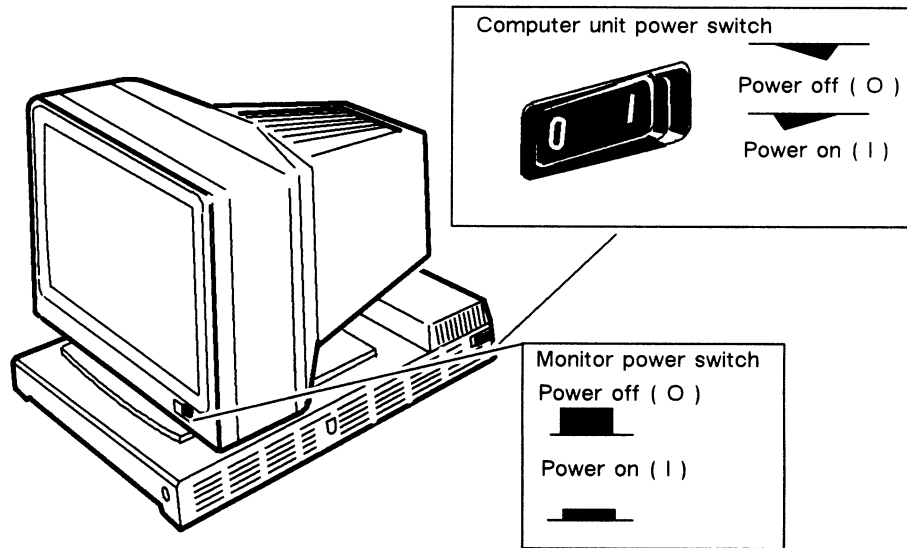


Figure 2-9 Power Switches for the Computer Unit and Monitor

3. Plug the female end of the monitor power cord into the ac connector at the back of the monitor as shown in Figure 2-10.
4. Plug the male end of the monitor power cord into the ac connector on the back of the computer unit as shown in Figure 2-10.
5. Locate the monitor cable.
6. Plug one end of the monitor cable into the connector on the back of the monitor as shown in Figure 2-10. Turn the end of the cable clockwise to lock it.

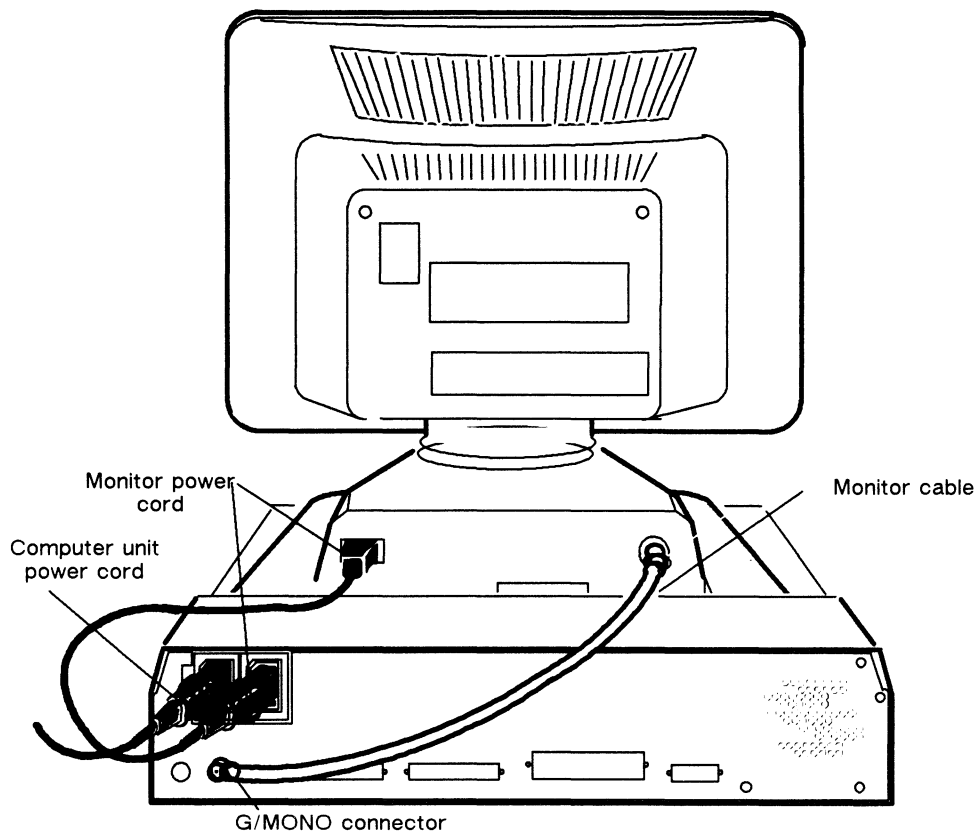


Figure 2-10 Plugging the Monitor Power Cord and Monitor Cable into the Back of the Monochrome Monitor and Computer Unit

7. Plug the other end of the monitor cable into the G/MONO connector shown on the back of the computer unit in Figure 2-10. Turn the end of the cable clockwise to lock it.
8. Plug the female end of the computer unit power cord into the ac connector shown in Figure 2-10. Plug the male end of the power cord into an ac outlet.

Connecting a Color Monitor

1. Place the monitor shown in Figure 2-11 on top of the computer unit.

CAUTION: The monitor is heavy; be careful when moving it.

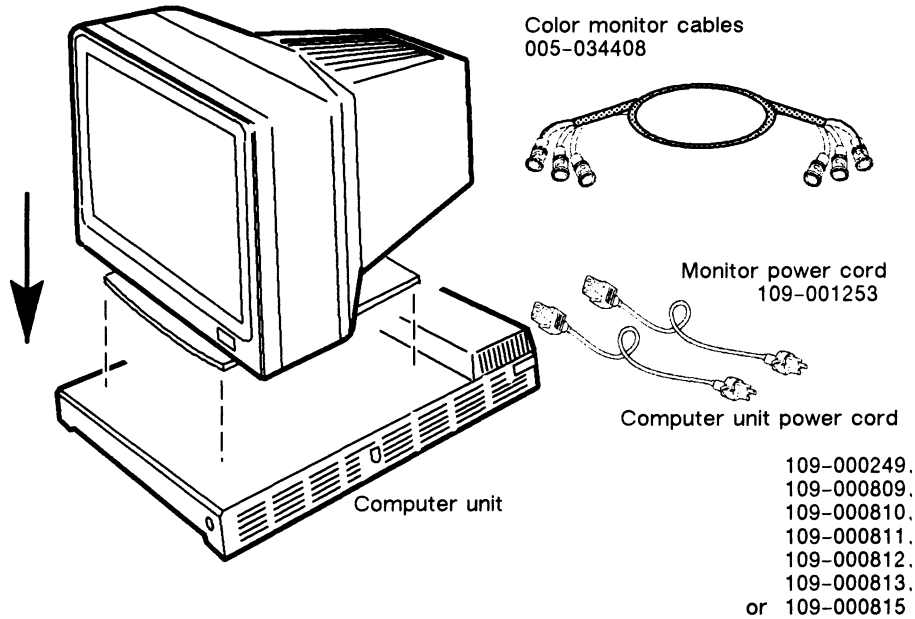


Figure 2-11 Color Monitor and Required Power Cords and Cables

2. Make sure that the power switches for the computer unit and monitor are off as shown in Figure 2-12.

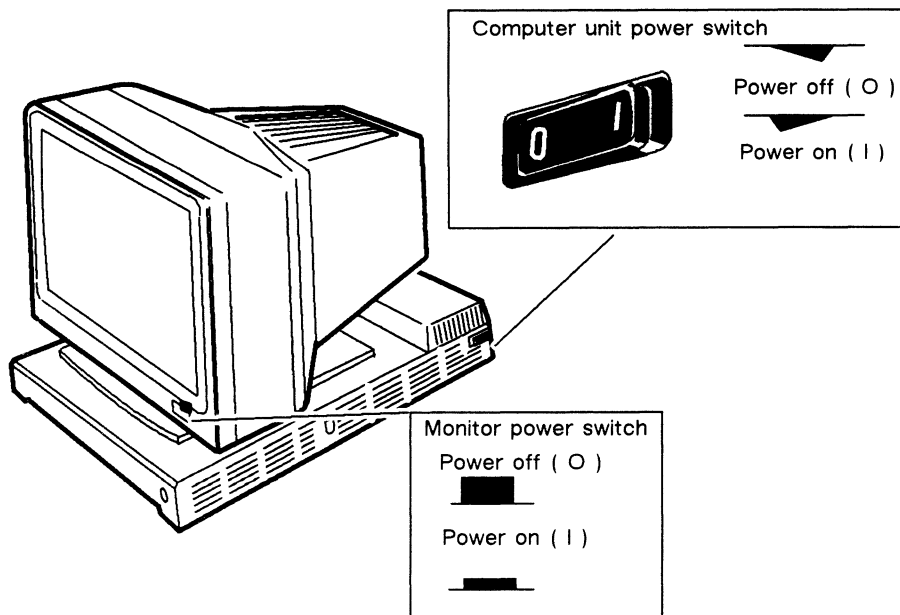


Figure 2-12 Power Switches for the Computer Unit and Monitor

3. Ensure that the color monitor is set to the proper ac power voltage for your site. If the installation site has 100 V ac or 120 V ac line voltage, make sure the switch is in the 115 V position as shown in Figure 2-13 (A). If the site has 220 V ac or 240 V ac line voltage, make sure the switch is in the 230 V position as shown in Figure 2-13 (B).

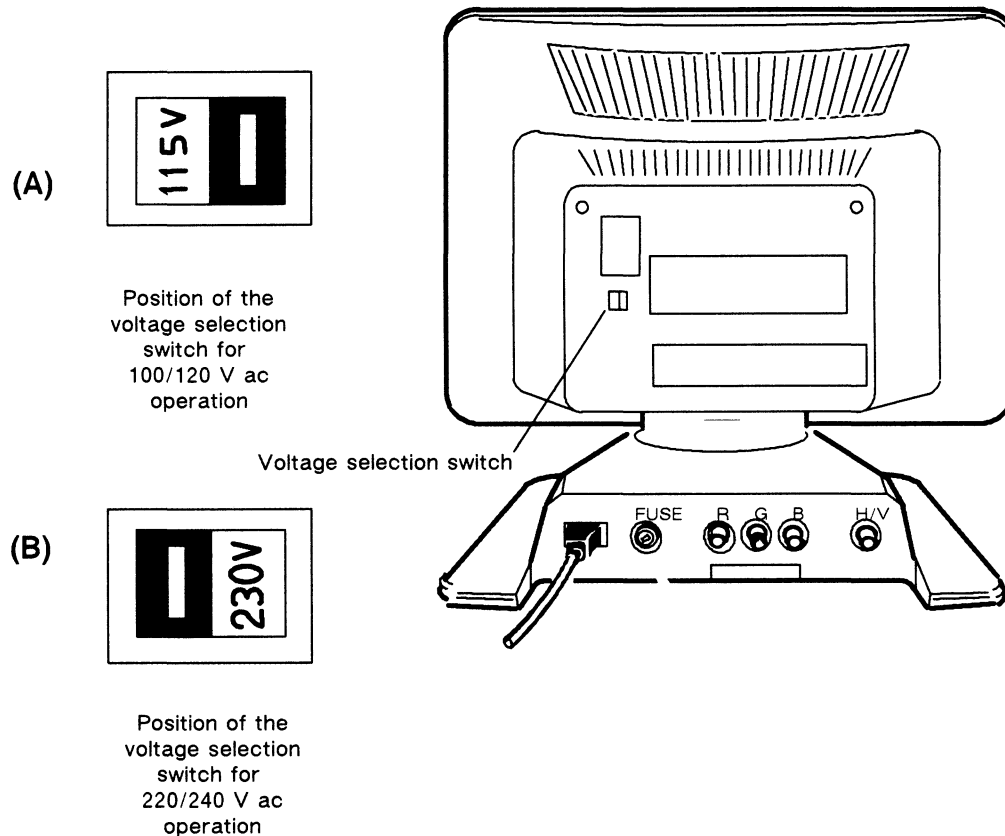
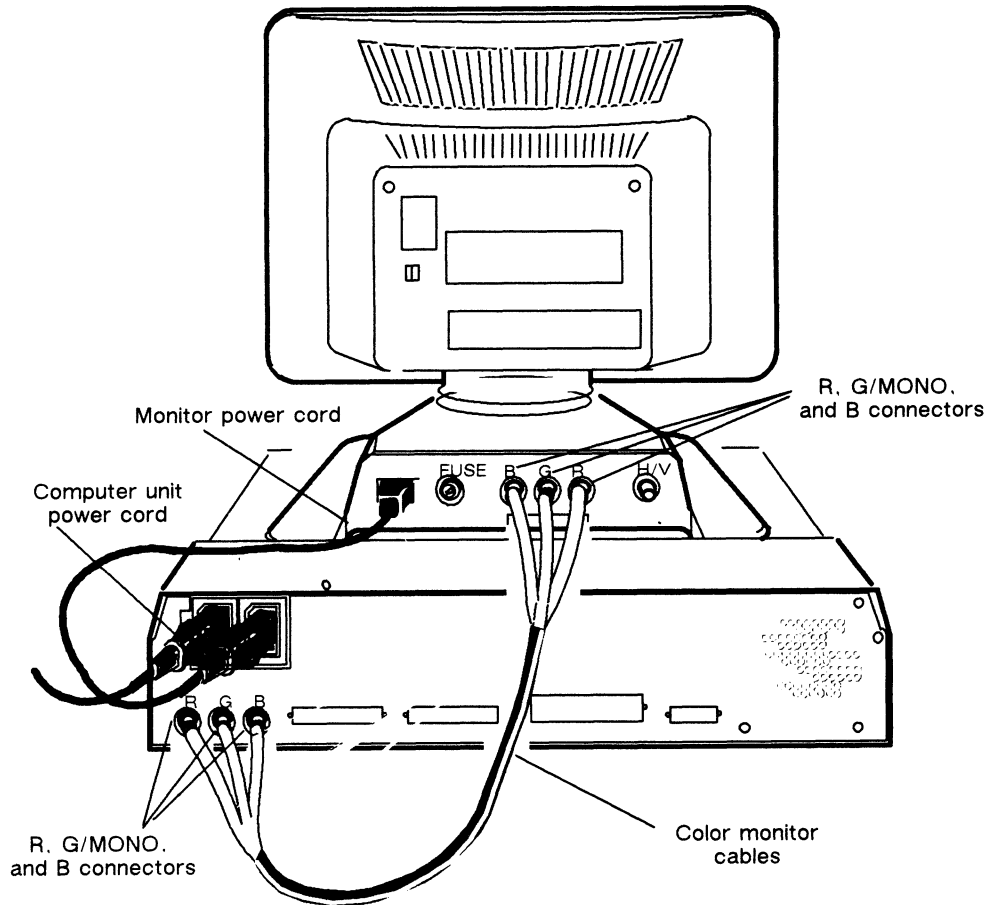


Figure 2-13 Verifying the Color Monitor Voltage Selection Switch Setting

4. Plug the female end of the monitor power cord into the ac connector at the back of the monitor as shown in Figure 2-14.
5. Plug the male end of the monitor power cord into the ac connector on the back of the computer unit as shown in Figure 2-14.
6. Locate the monitor cables.

7. Plug one end of each monitor cable into the R, G, and B connectors on the back of the monitor as shown in Figure 2-14. Turn the ends of the cables clockwise to lock them.

NOTE: If you are cabling your monitor for monochrome operation, plug the cable labeled G into the G connector.



NOTE: R = red. G = green. B = blue

Figure 2-14 *Plugging the Cables and Power Cord into the Back of the Color Monitor and Computer Unit*

8. Plug the other ends of the monitor cables into the R, G/MONO, and B connectors on the back of the computer unit as shown in Figure 2-14. Turn the ends of the cables clockwise to lock them.

NOTE: If you are cabling your monitor for monochrome operation, plug the cable labeled G into the G/MONO connector.

9. Plug the female end of the computer unit power cord into the ac connector shown in Figure 2-14. Plug the male end of the power cord into an ac outlet.

Connecting to a Local Area Network

If your workstation is going to be part of a network, you must connect the Local Area Network (LAN) connector cable to the computer unit.

Table 2-1 lists the available LAN transceiver cables.

Table 2-1 LAN Connector Cables

Equipment	Cable No.	Length
LAN Ethernet	005-033791	16.4 ft (5 m)
	005-033766	16.4 ft (5 m)
	005-033787	65.6 ft (20 m)

To connect a LAN connector cable to the computer unit you will need a medium flathead screwdriver.

1. Locate the end of the LAN connector cable with the pins.
2. Line up the pins in the cable with the holes in the LAN connector shown in Figure 2-15.

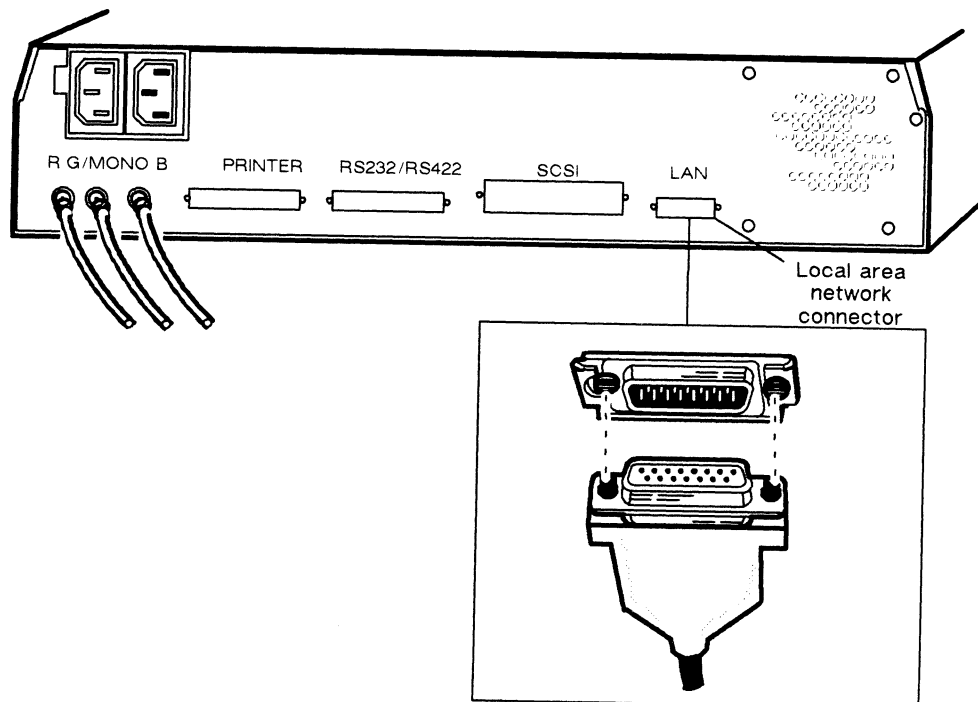


Figure 2-15 Local Area Network Connector on the Back of the Computer Unit

3. Line up the slide lock so that the clip mounts on the cable can pass through it.
4. Push the cable firmly into the connector.
5. Use a screwdriver to push the slide to the left and lock the cable in place.

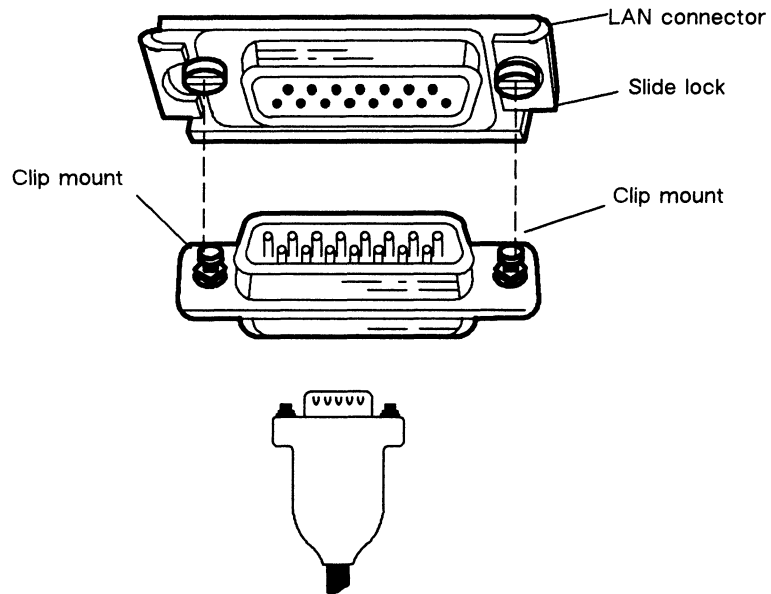


Figure 2-16 Connecting and Securing the LAN Connector Cable

6. Plug the end of the LAN connector cable without the pins into the LAN transceiver.

Connecting a Mass-Storage Subsystem

The Small Computer System Interface (SCSI) is an ANSI defined standard for computer and peripheral interconnection. The SCSI bus connector on the computer unit allows the workstation to connect to SCSI-based, mass-storage devices. Your computer unit can support a total of seven SCSI devices. These devices include any drives residing in the mass-storage subsystem desktop unit, or other peripheral housing unit. This section describes how to connect a mass-storage subsystem to your workstation.

SCSI Device Identification

Each SCSI drive in the mass-storage subsystem requires a unique ID number called a SCSI device ID number, or simply a DID (device ID). When you receive the mass-storage subsystem, the SCSI device ID numbers for the drives are set (jumpered). Table 2-2 lists the default SCSI device ID settings (factory installed) for hard disk drives and tape drives in the mass-storage subsystem.

Table 2-2 Default SCSI Device ID Numbers

Hard Disk Drives	ID Number
First drive	0
Second drive	1
Third drive	2
Fourth drive	3
Tape Drives	ID Number
First drive	4
Second drive	5
Third drive	6

For example, if the mass-storage subsystem that you received contains one cartridge tape drive and one hard disk drive, the SCSI device ID number for the tape is set at the factory for 4 and the SCSI device ID number for the disk is set for 0, as shown in Figure 2-17.

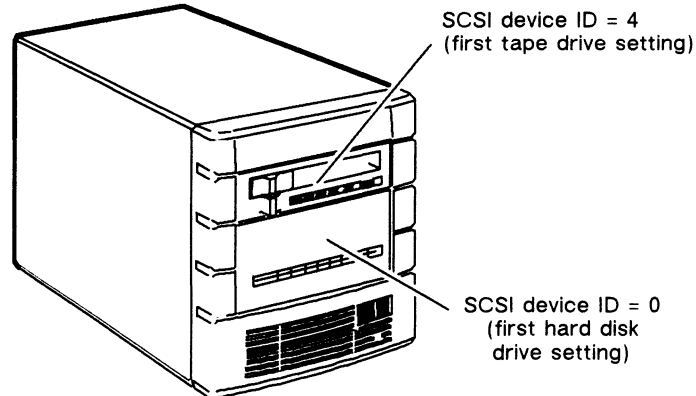


Figure 2-17 Default SCSI ID Settings for a Tape Drive and a Hard Disk Drive

If you add other SCSI devices to your station we recommend that you follow the same SCSI device ID numbering scheme shown in Table 2-2. If you need to reset one or more drives to a different ID number, refer to your drive manual(s). The drive manual(s) explains how to install the SCSI ID jumpers in the drive. To access the drives, refer to the *Installing and Operating the Model 10565 Mass-Storage Subsystem* manual for a description of how to remove and install drives in the mass-storage subsystem.

The initial autoboot sequence for your workstation looks for SCSI device ID 0. Therefore, if you are assigning SCSI device ID numbers, assign device ID 0 to a disk that you want on your boot path. You can change the boot path, as described in the *Using the System Control Monitor (SCM)* manual.

DG/UX allows the configuration of any SCSI device at any unique and valid SCSI device ID number. However, other software such as device drivers may limit the use of certain device ID numbers to specific types of devices. Check the drive manual(s), and the documentation for any customized software you plan to run on your system, for further SCSI restrictions.

Installing a Mass-Storage Subsystem

Table 2-3 contains the model numbers and lengths of the SCSI bus cables currently available for the mass-storage subsystem.

Table 2-3 SCSI Bus Cables

Equipment	Cable No.	Model No.	Length
SCSI cable	005-033000	15324E005	5 ft (1.52 m)
	005-033001	15324E010	10 ft (3.05 m)
	005-033335	15324E015	15 ft (4.57 m)

1. Plug the SCSI bus cable into the SCSI bus connector as shown in Figure 2-18. Tighten the two screws on the SCSI bus cable to attach it to the SCSI bus connector.

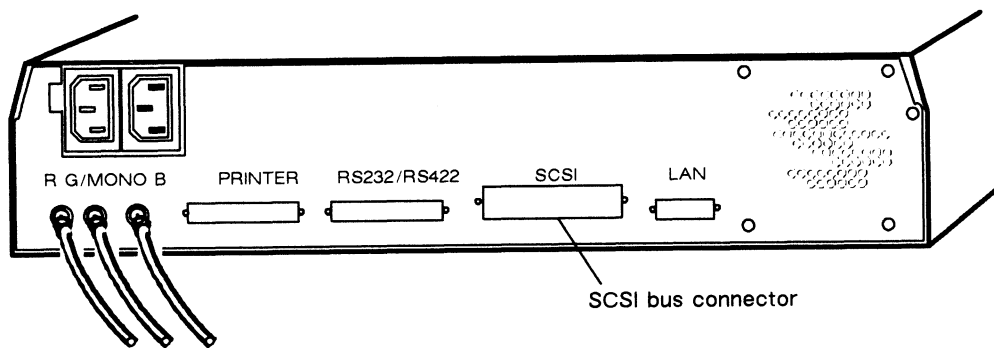


Figure 2-18 SCSI Bus Connector on the Back of the Computer Unit

2. Position the mass-storage subsystem so that the SCSI bus cable can reach the computer.

NOTE: Since the computer unit does not contain an internal SCSI bus cable, do not subtract any internal SCSI bus cable length from the 19.68-foot maximum SCSI bus length.

Never attempt to exceed the reach of a cable: doing so will only strain the cable and connectors, causing equipment damage or failure. If the mass-storage subsystem has a cartridge-tape drive, position the subsystem so that you can easily insert or remove a cartridge tape.

If you are setting up two or more mass-storage subsystems, you must connect them together in daisy-chain fashion as described in the *Installing and Operating the Model 10565 Mass-Storage Subsystem* manual.

3. Plug the other end of the SCSI bus cable into either the top or bottom SCSI bus connector located on the back of the mass-storage subsystem, as shown in Figure 2-19. It does not matter which connector you choose.

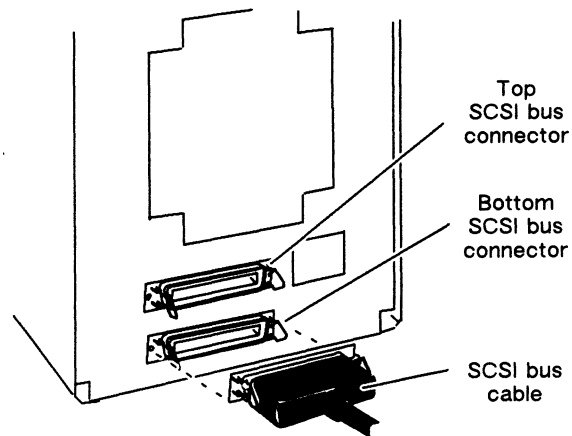


Figure 2-19 Top and Bottom SCSI Bus Connector on Back of Mass-Storage Subsystem

- Secure the SCSI bus cable's connector by closing over the two spring clips, as shown in Figure 2-20.

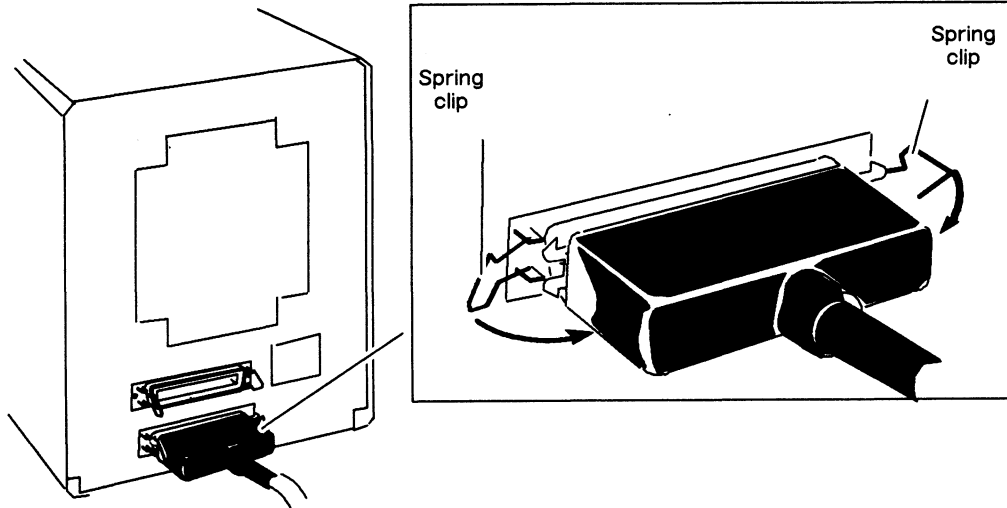


Figure 2-20 Connecting and Securing the SCSI Bus Cable

- Insert the terminator plug into the remaining empty connector, and secure the terminator plug by closing over the two spring clips in the direction shown in Figure 2-21.

NOTE: If you add more than one mass-storage subsystem unit to your workstation, insert the terminator plug into the connector on the last mass-storage subsystem attached to the SCSI cable.

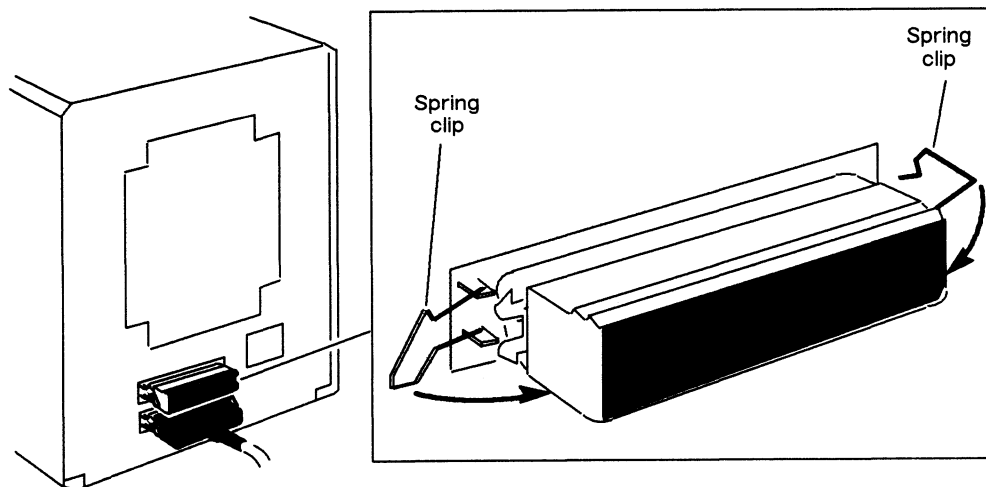


Figure 2-21 Connecting the SCSI Bus Terminator Plug

Connecting the Power Cord

1. Make sure the power switch on the mass-storage subsystem is turned off.
2. Plug the power cord into the receptacle on the back of the mass-storage subsystem, as shown in Figure 2-22.

Rear view of mass-storage subsystem backpanel

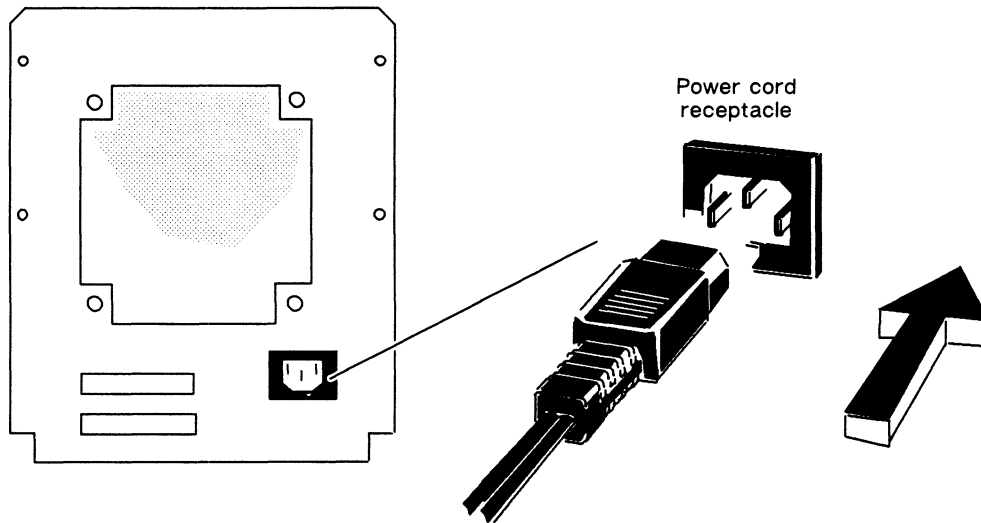


Figure 2-22 Connecting the Mass-Storage Subsystem Power Cord

3. Plug the other end of the power cord into the installation site's ac power outlet.

Connecting an Asynchronous Terminal, Modem, and Printer

This section describes how to connect an asynchronous terminal, a modem, or a serial printer to the single RS-232-C/RS-422 serial port connector. Table 2-4 lists the available cables.

Table 2-4 Terminal, Modem, and Serial Printer Cables

Equipment	Interface Type	Device Cable No.	Length
Modem	EIA RS-232-C with modem support	005-013266	25 ft (7.6 m)
		005-021433	15 ft (3.0 m)
Terminal or serial printer	EIA RS-232-C	005-013325	5 ft (1.5 m)
		005-013315	15 ft (3.0 m)
		005-033788	25 ft (7.6 m)
		005-033776	50 ft (15.2 m)
	EIA RS-422	005-033783	25 ft (7.6 m)
		005-020905	50 ft (15.2 m)
		005-020906	100 ft (30.4 m)
		005-020907	300 ft (41.4 m)
		005-020908	500 ft (152.4 m)

1. Plug one end of the terminal, modem or printer cable into the RS-232-C/RS-422 connector on the back of the computer unit shown in Figure 2-23. Attach the cable to the connector by tightening the two screws on the cable.
2. Plug the other end into the RS-232-C/RS-422 connector on the back of the terminal, modem, or printer.

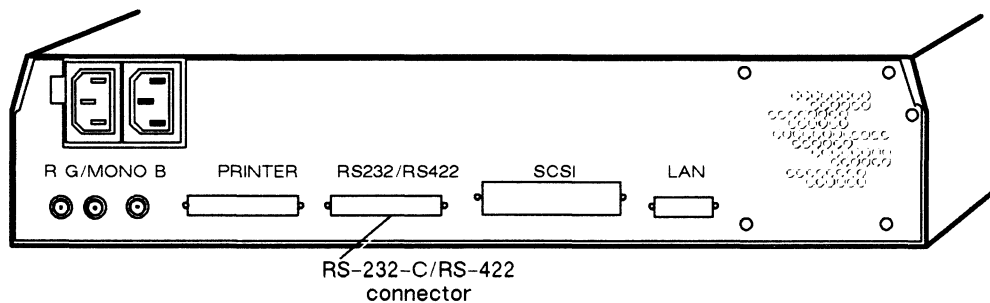


Figure 2-23 RS-232-C/RS-422 Connector on the Back of the Computer Unit

3. Set the switches on the terminal, modem, or printer to select the appropriate characteristics. For information on the switches, see the manual shipped with the terminal, modem, or printer.

Initially the system expects the following terminal characteristics:

9600 baud

7 data bits

Even parity

ANSI character code set

Disabled flow control

If you need to change these characteristics, refer to the *Using the System Control Monitor (SCM)* manual.

NOTE: If your computer unit has a terminal connected to the asynchronous port and you change the character code set characteristics to DG, you must disconnect the monitor and workstation keyboard from the computer unit.

Connecting a Parallel Printer

This section describes how to install a parallel printer. Table 2-5 shows you the choices of parallel printer cables available.

Table 2-5 Parallel Printer Cables

Equipment	Device Cable No.	Length
Centronics parallel printer	005-023832	25 ft (7.6 m)
	005-013281	2 ft (.60 m)
Data Products parallel printer	005-036214	60 ft (18.2 m)
	005-036215	360 ft (109 m)

NOTE: If you connect a Data Products printer, you must enter the System Control Monitor (SCM) to change the initial printer type setting from Centronics to Data Products interface as described in the *Using the System Control Monitor (SCM)* manual.

1. Plug one end of the printer cable into the parallel printer connector on the back of the computer unit as shown in Figure 2-24. Attach the printer cable to the connector by tightening the two screws on the printer cable.
2. Plug the other end of the printer cable into the connector on the parallel printer.

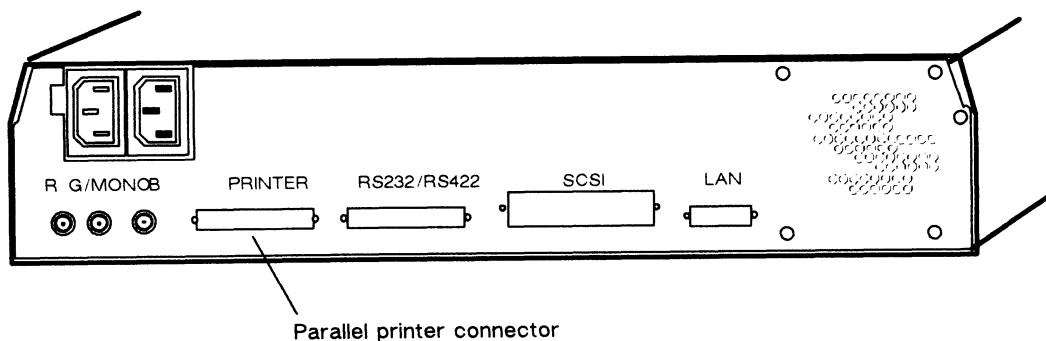


Figure 2-24 Parallel Printer Connector on the Back of the Computer Unit

3. Set the switches on the parallel printer to select the appropriate characteristics. For information on the switches in your printer, see the manual shipped with the printer.

End of Chapter

Chapter 3

Powering Up the Workstation

After your workstation hardware is installed, read this chapter to find out how to power up your workstation and boot the DG/UX operating system.

Powering Up

CAUTION: If you are powering up a color monitor, ensure the monitor is set to the proper ac power voltage for your site before turning on power.

1. Turn on the monitor. Figure 3-1 shows the location of the monitor power switch.

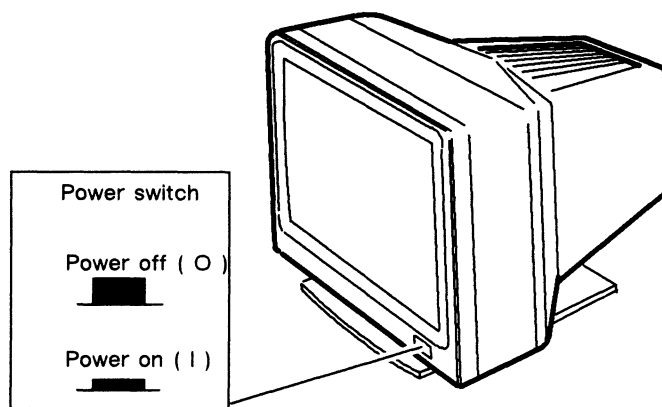


Figure 3-1 Monitor Power Switch

2. If you have a mass-storage subsystem connected to your workstation, turn on power.

Figure 3-2 shows the location of the mass-storage subsystem power switch and LED power-on indicator.

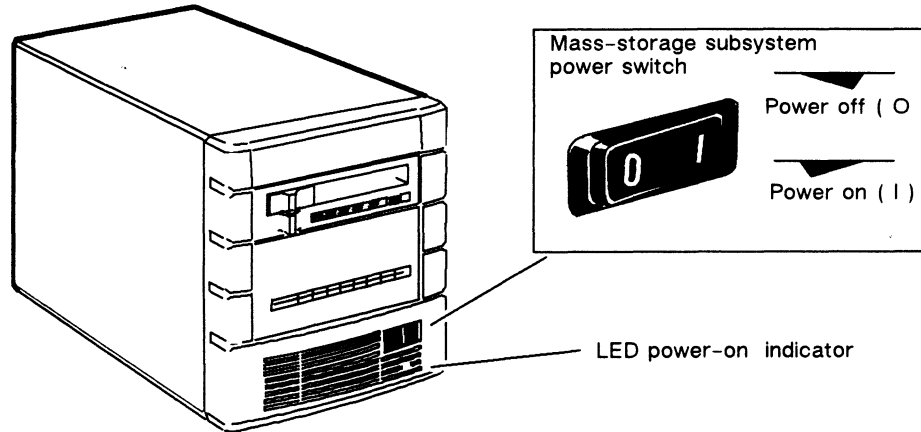


Figure 3-2 Mass-storage Subsystem Power Switch

If you have a printer or terminal connected to your workstation, turn on power and make sure that each is *on line*. For specific information, see the documentation that came with your printer or terminal.

3. Turn on power to the computer unit by pressing the computer unit's power switch as shown in Figure 3-3. Check the monitor screen. The screen will turn white for about four seconds and then go blank. If the monitor does not behave in this manner, refer to Chapter 4, "Solving Power-up Problems."

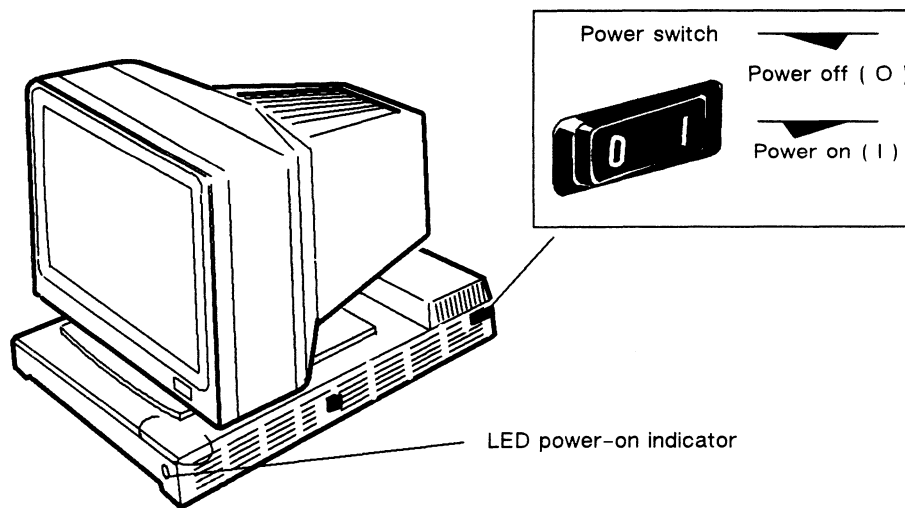


Figure 3-3 Computer Unit Power Switch and LED Power-on Indicator

4. After approximately five seconds, the monitor screen begins displaying power-up test messages like the following:

NOTE: The monitor and keyboard serve as the system console. However, if your computer unit has a display terminal connected to the asynchronous port and the monitor and workstation keyboard are disconnected from the computer unit, the display terminal serves as the system console.

```

Data General AViiON 300
Firmware Revision xxx.xx
Keyboard Language is U.S. English
Local Ethernet address is 08:00:1B:7F:7F:07
Initializing [n Megabytes]

Testing ...
  0123456789ABCDEFGHIJKLMN0PQRSTUVWXYZ
Passed
Booting [st (0,4)] . . .
    
```

Screen Display

Indicates

n Megabytes

The amount of memory

5. Make sure the test messages are complete.

Each character in alphanumeric sequence 0123...ABC...Z indicates a power-up test that has passed.

If the test messages are either incomplete or end with an error message, refer to Chapter 4, "Solving Power-up Problems."

Once the system displays Passed, the power-up tests are complete.

What happens next depends on whether or not you ordered the DG/UX operating system.

If you did not order DG/UX continue with step 6.

If you ordered the DG/UX operating system, Data General shipped DG/UX and the AViiON System Diagnostics software already loaded on hard disk within your mass-storage subsystem. If so, go to step 7.

NOTE: If you did not order a mass-storage subsystem and your workstation is connected to a network with a DG/UX-based host, the DG/UX operating system and the AViiON System Diagnostics software will be downloaded to the workstation via the network.

6. The system enters the System Control Monitor (SCM) program. The SCM displays the following prompt:

```
SCM>
```

Refer to your operating system manual(s) for instructions on installing your operating system. You can change the boot path, as described in the *Using the System Control Monitor (SCM)* manual.

7. If your system includes preloaded DG/UX, it boots the operating system, as shown in the following screen example.

```
Booting sd(,0)root:dgux.avx

DG/UX Bootstrap Release 4.10

BCS Compliant File Header: 0555.
Relocating relocater.

DG/UX System Release 4.10
Using n Megabytes of physical memory
Found 1 processor(s)
Processor 0 running

**root:
No check necessary for root.

INIT: SINGLE USER MODE
-sh: cat: not found
-sh: mail: not found

#
```

Make sure the operating system recognizes the correct amount of memory for your system. If this value is incorrect, contact Data General immediately.

If your screen display appears correct and similar to the one above, continue with the next step. If DG/UX does not boot, or you encounter some other problem, refer to Chapter 4, "Solving Power-up Problems."

8. Refer to the *Installing and Managing DG/UX™* manual for instructions on what to do next. The description of Installation Phase 1 in that manual provides an overview and examples of file systems and the installation process.

9. Follow the steps in Installation Phase 4 in the *Installing and Managing DG/UX™* manual to initialize your system.

End of Chapter

Chapter 4

Solving Power-up Problems

When you turn on your workstation, power-up diagnostic programs automatically test your workstation to make sure that it can perform certain basic operations. This chapter tells you what you should do in case your workstation fails a power-up diagnostic test.

When your system passes the power-up diagnostic tests, it displays the message Passed before it boots DG/UX or displays the SCM prompt. On the other hand, if your workstation fails a power-up diagnostic test, usually the system console screen remains blank or an error message on the screen indicates a failure; or, the system *hangs* (does not continue testing) at some point in the initial powerup.

If your system console screen remains blank for more than two minutes, try to resolve the problem yourself. If your system console is a monitor and keyboard, follow the steps in the “Blank Screen on the Monitor” section. If your system console is a display terminal, follow the steps in the “Blank Screen on the Terminal” section. If your system displays an error message, try to resolve the problem by following the steps in the “Error Messages on the Screen” section.

NOTE: If you do not have a specific problem, but want to run a thorough system check using the AViiON System Diagnostics, refer to *Maintaining the AViiON™ 300 Series Stations* for a description of how to use the AViiON System Diagnostics.

Blank Screen on the Monitor

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

1. Make sure the computer unit's power cord is plugged tightly into an ac power outlet and the outlet is supplying power.
2. Make sure the monitor's power cord is plugged tightly into the ac power outlet on the back of the computer unit.
3. Make sure the keyboard is plugged into the computer unit.
4. Make sure the monitor is turned on.
5. Make sure the screen intensity on the monitor is adjusted brightly enough so you can see messages on the screen. (Try temporarily rotating the brightness dial shown in Figure 4-1 clockwise to the maximum setting.)

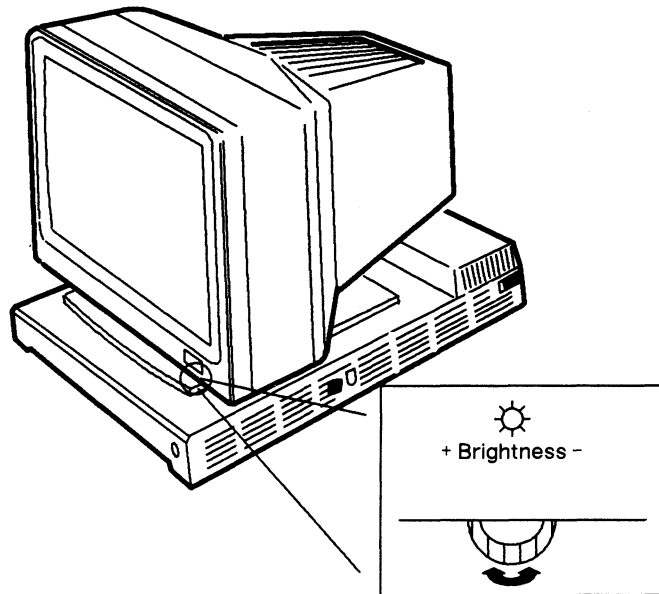


Figure 4-1 Monitor Brightness Dial

6. If you still do not receive the power-up messages on the monitor screen, make sure the cables that connect your station components together are undamaged and their connectors are secured tightly so that they make a good connection.
7. If the cables are connected properly, try powering up your system again.
8. If the display is still blank, your monitor may have a problem. If you have a terminal, connect the terminal to the serial port on the computer unit. Disconnect the keyboard connector from the computer unit. Try powering up using the terminal as the system console.
9. If your screen is still blank, contact Data General. If 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.

Blank Screen on the Terminal

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

1. Make sure the computer unit's power cord is plugged tightly into an ac power outlet and the outlet is supplying power.
2. If you have a monitor and a terminal connected to your computer unit, make sure you disconnect the keyboard cable from the computer unit.
3. Make sure the terminal is turned on. Make sure the terminal's power cord is plugged tightly into the ac power outlet, and that the ac outlet is supplying power.
4. Make sure the screen intensity on your terminal is adjusted brightly enough so you can see messages on the screen. (Try temporarily adjusting the screen intensity to the maximum setting.)
5. Make sure the keyboard's On Line light is on. If it is not on, check the cable connected to the terminal serial port.
6. If the On Line light is on and your screen is still blank, do the following:
Take the terminal off line by holding down the Cmd key and pressing the On Line key. With the terminal off line, use the keyboard to type something. If the characters appear on your terminal screen, put the terminal back on line by holding down the Cmd key and pressing the On Line key.
7. If you still do not receive the power-up messages on your terminal screen, make sure the cables that connect your station components together are undamaged and their connectors are secured tightly so that they make a good connection.
8. If the screen displays lines or blocks of meaningless information, check the terminal's baud rate, parity, data length, and so forth; make sure they are set according to the default characteristics listed in Chapter 2. Refer to the terminal documentation for proper switch settings.
9. If the cables are connected properly and the switch settings for the terminal are correct, try powering up your system again.
10. If your screen is still blank, contact Data General. If 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.

Beep Codes

The beeps that sound during the power-up tests provide some indication of the condition of the workstation. If your power-up tests complete normally, your workstation will beep six times.

If no beeps sound, or if the system seems to be hung up after one or two beeps, this indicates an abnormal condition. Table 4-1 lists the beep codes and explains what to do in any of these abnormal conditions.

Table 4-1 Beep Codes

Beep Code	Error Condition	Solution
No sound	Probable system or speaker problem.	Contact Data General as described in the Preface.
One beep	If your computer unit has a display terminal connected to the asynchronous port, the terminal displays FATAL BBSRAM ERROR.	Contact Data General as described in the Preface.
Two beeps	If your computer unit has a display terminal connected to the asynchronous port, the terminal displays FATAL MEMORY ERROR.	Problem with first memory module. Verify that the first memory module is properly seated in its connector. Contact Data General as described in the Preface.
Three or four beeps	If your computer unit has a display terminal connected to the asynchronous port, the terminal displays FATAL CACHE ERROR.	Contact Data General as described in the Preface.
Seven beeps	If your computer unit has a display terminal connected to the asynchronous port, the terminal displays KEYBOARD NOT FOUND. If your computer unit has both a display terminal and a monitor connected or if your computer unit has only a monitor connected, it displays KEYBOARD NOT FOUND.	Verify that the keyboard cable is securely connected to the computer unit. If the cable is securely connected, contact Data General as described in the Preface.

Error Messages on the Screen

Follow the steps in this section if the power-up diagnostic tests display an error message, or the system console “hangs” and does not display a complete message.

1. Write down the error code or, if no error code appears, write down the last letter or number displayed. Note which series of tests produced the fault. If the system console hangs at number 2, refer to the Memory Configuration Change section.
2. If the error is indicated by a meaningless display on your system console screen, check the device cables at the back of your computer unit. If you are using a terminal as the system console, ensure that the your terminal settings correspond to the default terminal characteristics described in Chapter 2.
3. Turn off the computer unit’s power.
4. Turn on power to the computer unit again.
5. If an error reappears, refer to *Maintaining the AViiON™ 300 Series Stations* for a description of how to use the AViiON System Diagnostics.
6. If your system does not recover from the error condition after running AViiON System Diagnostics, contact Data General. If 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.

NOTE: If your system recovers from the error condition after restarting, you should still consider the original problem a warning to run AViiON System Diagnostics as soon as possible.

Resetting Your System

You can reset your system by pressing a reset switch on the computer unit (a warm reset), or by turning power off and then on again (a cold reset). Figure 4-2 shows the location of the reset switch on the computer unit.

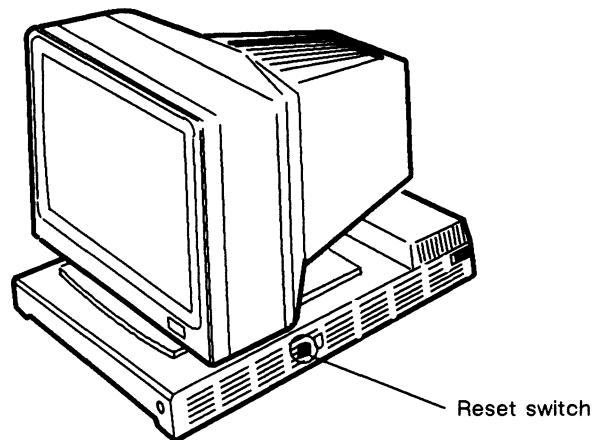


Figure 4-2 Reset Switch

CAUTION: Resetting your system while your operating system or other software is running may harm the system or result in lost data.

If you press the reset switch, your system enters the System Control Monitor (SCM). Refer to the *Using the System Control Monitor (SCM)* manual for more information. If you turn power off and then on again, your system goes through power-up testing and its autoboot sequence.

Memory Configuration Change

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

- You added or removed one or more memory module(s)
- 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 AViiON 300
Firmware Revision xxx.xx
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.

```

Screen Display

Indicates

n Megabytes

The amount of memory

If you added or removed one or more memory module(s), press the space bar to powerup with the new memory configuration.

If you have not added or removed any memory module, this indicates a memory module failure. Press any key other than the space bar to halt the system. Write down the error code. Contact Data General. If 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.

End of Chapter

Appendix A

Technical Specifications

Processor

Motorola 88100
16.67 or 20 MHz 88100 processor with integral floating-point unit
Two 88200 cache and memory management units

System Configurations

Base system units	System processor board Integrated I/O
Optional mass storage subsystem	
Optional boards	Expansion memory board (maximum of 7)

System Board

Board size	16 by 16 inches
Mounting location	Bottom panel
Memory	4 to 28 Mbytes

Integrated I/O

LAN - Ethernet	
IEEE 802.3	
Bandwidth	10 Mbits/second
Serial port:	
RS-232 with modem control/RS-422	
Baud rate	19.2 kilobits/second maximum
Parallel printer port:	
Compatibility	Centronics/Data Products
Cable connection	Connector on system board
SCSI port:	
asynchronous	

Technical Specifications

Expansion Memory Board

Capacity	4 Mbytes
Board size	2 by 5 inches
Mounting location	System board

Graphics Subsystems

Configurations	One monochrome or color subsystem
Type of graphics	Bit-mapped, raster scan
Display options:	
Monochrome	1 bit/pixel
Color	8 bits/pixel
	256 active colors from palette of 16,777,216 colors
Display resolution	
Monochrome	1280 pixels x 1024 pixels x 1 bit
Color	1280 pixels x 1024 pixels x 8 bits
Horizontal scan rate	75.12 Hz
Pixel rate	125 MHz
Screen refresh rate	70 Hz, noninterlaced
Screen size	
Monochrome	20-in, diagonal measure
Color	19-in, diagonal measure

Environmental Requirements

Temperature:	
Operating	32 through 109 degrees F; 10 through 38 degrees C
Storage	-40 through +149 degrees F; -40 through +65 degrees C
Relative humidity:	
Operating	0 - 80 percent, noncondensing
Storage	10 - 90 percent, noncondensing
Altitude:	
Operating	0 - 8000 feet; 0 - 2438 meters
Storage	0 - 25000 feet; 0 - 7620 meters

Power Subsystem

Type	Modular off-line switching converter with cooling fan
Ac input line:	
Frequency	47-63 hertz
Phase	Single
Voltage options:	120 volts ac, +10 percent, -15 percent 220/240 volts ac, +10 percent, -15 percent
Current (maximum):	
120 Vac	4.0 amperes
220 Vac	2.0 amperes
Power consumption	112 watts, maximum
Dc output power	78 watts, maximum
Heat dissipation	1024 BTU/hour, maximum
System location	Module located on system board; ac power switch located on side of power subsystem

Mouse Specifications

Switches	Three momentary switches with tactile and audible feedback
Protocol	Compatible with EIA RS-232-C interface; 1200 baud asynchronous serial, with 1 start bit, 1 stop bit, and 8 data bits
Power	Uses power from RS-232-C interface, maximum current 15mA, maximum voltage +/-13.2 V
Size	
Mouse	3.75 inches x 2.5 inches
Mouse pad	7.75 inches x 9 inches
Weight	
Mouse	4-10 oz
Mouse pad	3.25 oz
Mechanical life	1000 miles of travel

Keyboard Specifications

Type	101/102-key IBM PC-AT style
Available versions	U.S., U.K., German, French, Swedish, Italian, Japanese, Spanish, and Swiss

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Documentation Set

This section lists the documents currently available for the AViiON 300 series stations. Those documents specifically referred to in the text of this manual are also listed in the “Related Manuals” section of the Preface.

Hardware Manuals

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.

Setting Up and Starting AViiON™ 300 Series Stations (014-001801)

Describes how to unpack and connect system components and optional devices. Explains how to power up the workstation, run diagnostics, and prepare for your operating system installation. Includes operational, physical, electrical, and environmental specifications of the workstation, including the computer unit, monitor, keyboard, and mouse.

Maintaining AViiON™ 300 Series Stations (014-001803)

Explains how system administrators can replace components (mouse, keyboard, monitor, memory modules, system board assembly, power supply, SCSI bus fuse, and fan). It also describes how to use the workstation’s diagnostic software to verify system integrity.

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.

AViiON™ 300 Series Stations: Programming System Control and I/O Registers (014-001800)

Describes the workstation architecture and explains how to program the system control logic, monochrome and color graphics controller subsystems, keyboard port, mouse port, serial and parallel ports, LAN interface, and SCSI port.

Software Manuals

Finding Your Way Around the DG/UX™ Documentation (069-701013)

Contains a task index that guides users to the appropriate DG/UX™ manual and chapter. Describes the manuals in the DG/UX documentation set and explains how to use manual (man) pages.

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. Aimed at system administrators who are familiar with the UNIX® operating system.

(UNIX is a U.S. registered trademark of American Telephone and Telegraph Company.)

Managing NFS® and Its Facilities on the DG/UX™ System (093-701049)

Shows how to install, manage, and use the DG/UX ONC™/NFS® product. This manual contains information on the Network File System (NFS), the Yellow Pages (YP), Remote Procedure Calls (RPC), and External Data Representation (XDR). (NFS is a U.S. registered trademark of Sun Microsystems, Inc. ONC is a trademark of Sun Microsystems, Inc.)

User's Reference for the DG/UX™ System (093-701054)

Contains an alphabetical listing of manual (man) pages for commands relating to system administration or operation.

Installing and Managing DG TCP/IP (DG/UX™) (093-701051)

Explains how to prepare for the installation of Data General's TCP/IP (DG/UX) package on AViiON computer systems. This manual contains information on tailoring the software for your site, managing the system, and troubleshooting system problems.

Writing a Device Driver for the DG/UX™ System (093-701053)

Describes how to write your own device driver for a DG/UX system running on an AViiON computer. Under the AViiON architecture, drivers must be written to address either a specific device or an adapter that manages secondary bus access to specific devices. This manual address both types of driver.

Porting Applications to the DG/UX™ System (069-701059)

Describes how to port UNIX application programs to the DG/UX system.

Using the DG/UX™ System (069-701035)

Describes the DG/UX system and its major features, including **mailx**, the C shell, the Bourne shell, and the filing system.

Using the DG/UX™ Editors (069-701036)

Describes the text editors **vi** and **ed**, the batch editor **sed**, and the command line editor **editread**.

Using DG/UX™ System Programming Tools (093-701048)

Discusses programming support tools (**awk**, **nawk**, **lex**, **yacc**, **ld**, **lint**, and **as**), interprocess communications, archiving, the C language, SCCS, and COFF.

System Manager's Reference for the DG/UX™ System (093-701050)

Contains an alphabetical listing of manual (man) pages for commands relating to system administration or operation.

Programmer's Reference for the DG/UX™ System (093-701055 and 093-701056)

Alphabetical listing of manual (man) pages for programming commands on the DG/UX system. This two-volume set includes information on system calls, file formats, subroutines, and libraries.

Programming with DG TCP/IP (DG/UX™) (093-701024)

Describes how to program with the TCP and IP protocols and UDP interfaces.

DG TCP/IP User's Manual (DG/UX™) (093-701023)

Introduces Data General's TCP/IP (DG/UX) family of protocols and describes how to use the package.

Using DG/UX™ SNA/3270 (069-701030)

Explains how to use the DG/UX SNA/3270 **te3278** terminal emulator and the **pe3287** printer emulator.

Managing DG/UX™ SNA/3270 (069-701044)

Explains how to manage the DG/UX SNA/3270 terminal and printer emulation software, the SNA controller emulator, and the SDLC software.

DG/UX™ SNA/3270 API Programmer's Reference (093-701045)

Shows how to incorporate API function calls into C language programs to replicate the functions of a 3278 terminal.

Using DG/UX™ SNA/RJE (069-701031)

Explains how to use the DG/UX SNA/RJE workstation emulation to send batch jobs to an IBM host.

Managing DG/UX™ SNA/RJE (069-701046)

Explains how to manage DG/UX emulation software, the SNA controller emulator, and the SDLC software.

Learning the UNIX® Operating System (069-701042)

Helps beginners learn UNIX fundamentals through a step-by-step tutorial.

C: A Reference Manual (069-100226)

Describes lexical structure, the preprocessor, declarations, types, expressions, statements, functions, programs, and the run-time libraries.

Peripheral Manual

Installing and Operating the Model 10565 Mass-Storage Subsystem (014-001810)

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

Other Companies' Manuals

The following documents, written by companies other than Data General Corporation, provide additional information.

Manuals Available Through Data General Corporation

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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).

Green Hills Software User's Manual C-88000 (069-100230)

Describes the C programming language when run on an 88000 system.

Green Hills Software User's Manual Fortran-88000 (069-100231)

Describes the FORTRAN programming language when run on an 88000 system.

Green Hills Software User's Manual Pascal-88000 (069-100232)

Describes the Pascal programming language when run on an 88000 system.

STREAMS Primer for the DG/UX™ System (069-701033)

Defines STREAMS, a set of tools for developing DG/UX system communications services; explains how to build a stream; and discusses user-level and kernel-level functions.

STREAMS Programmer's Guide for the DG/UX™ System (069-701034)

Describes the development methods and design philosophy of STREAMS.

The VMEbus Specification (Motorola document number HB212)

Defines the mechanical and electrical specifications, protocols, and terminology of the Versa Modula Europa bus (VMEbus). This interface is used to interconnect data processing, data storage, and peripheral control devices in a closely-coupled hardware configuration. Contact Motorola if you want to obtain this manual.

Memory Products Databook

Contact SGS-Thompson Microelectronics if you want to obtain this manual.

Z8536 Z-CIO/Z8536 CIO Counter/Timer and Parallel I/O Unit

Contact Zilog, Inc. if you want to obtain this manual.

uPD72120 Advanced Graphics Display Controller User's Manual

Contact NEC Inc. if you want to obtain this manual.

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Local Area Controller Am7990 (LANCE) Technical Manual (Advance Micro Device)

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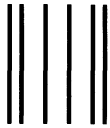
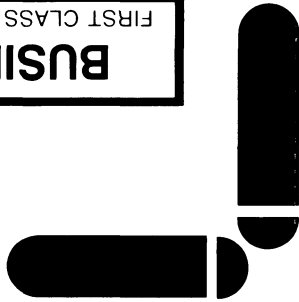


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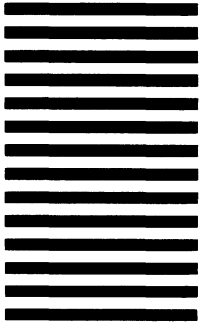


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