Sun™ Ultra™ 450 Product Notes

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Part No. 805-2321-14
Revision A, June 1998

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Sun Ultra 450 Product Notes

Determining Your Power Supply Needs

The minimum configuration of the Sun™ Ultra™ 450 workstation includes one power supply, which provides sufficient power for maximum memory, one Elite3D graphics card, 3 PCI cards, four internal disks, an optional CD-ROM drive, and up to two CPU modules.

If you plan to add internal options to your system, you should consider installing a second power supply before adding such options, or be sure to calculate your system's power requirements before installing such options.

Here are some simple guidelines to use as an alternative to calculating system power requirements. If your system configuration meets or exceeds any of these conditions, you need a second power supply:

- Any system configuration that requires redundant power
- Any system configuration with more than four internal disk drives
- Any system configuration with more than three CPU modules
- Any system configuration with more than one Elite3D graphics card

If there is any doubt about whether the system requires a second power supply, you are strongly urged to calculate the system's total power requirements (see the *Sun Ultra 450 Workstation Owner's Guide*) or to simply install a second power supply before adding additional internal components.

System Software Requirements

To run the Solaris™ 2.5.1 operating environment, the Sun Ultra 450 workstation requires the Solaris 2.5.1 Hardware: 11/97 release. To run the Solaris 2.6 operating environment, this system requires Solaris 2.6 Hardware: 3/98 or a subsequent compatible Solaris release. You can verify which version of the operating system is installed on your Sun Ultra 450 workstation by examining the file `/etc/release`.

Power Interlock

The Sun Ultra 450 workstation features a power interlock safety mechanism. Removing either of the system side panels activates the system power interlock switches. This safety mechanism prevents DC voltages from reaching any internal component when either side panel is removed and the AC power switch is left on. Do not remove either side panel while the system is running. Doing so will cause the system to power off abruptly.

Main Logic Board Jumpers

The following supersedes the information presented on pages 74 and 75 of the *Sun Ultra 450 Workstation Owner's Guide* concerning main logic board jumpers:

- The clock mode select jumper (J2701) is no longer used on Sun Ultra 450 systems. No shunt should be installed on jumper J2701. The main logic board is hardwired to provide the correct clock mode for UltraSPARC II CPU modules.
- On page 75, the table describing the settings for the three flash PROM jumpers is incorrect. The corrected table appears below.

Jumper	Shunt on Pins 1 + 2 Selects	Shunt on Pins 2 + 3 Selects	Default Shunt on Pins	Signal Controlled
J3102	Flash PROM	Not To Be Used	1 + 2	FLASH PROM SEL
J3103	Write Protect	Write Enable	2 + 3	FLASH PROM PROG ENABLE
J5501	High Half Booting	Normal Booting	2 + 3	XOR LOGIC SET

SPARCstorage MultiPack Units

A compatibility issue exists between the Sun Ultra 450 system's embedded or expansion PCI SCSI host bus adapters (HBAs) and the use of newer SPARCstorage™ MultiPack (SMP) units that may contain UltraSCSI (Fast-20) capable drives. The HBAs available on Sun Ultra 450 systems default to use UltraSCSI operation when UltraSCSI devices are present. However, SPARCstorage MultiPack units (both 6- and 12-drive versions) do not support UltraSCSI operation. Attempting to use such a configuration can lead to reduced SCSI bus performance and potential system panic.

Workaround: Prior to using this configuration, disable the UltraSCSI mode for each controller instance to which a SMP is attached. Refer to the `pci(4)`, `glm(7D)`, and `isp(7D)` man pages for details.

Note – An alternative workaround method involving a global SCSI option change through `/etc/system` would result in loss of UltraSCSI mode on internal system disk backplanes.

This issue does not exist with SPARCstorage MultiPack 2 systems, which are UltraSCSI capable.

Creator-Series Graphics Cards

The Sun Ultra 450 workstation does not support any type of Creator-series graphics card. Creator-series graphics cards do not function properly in a Sun Ultra 450 workstation.

Please note that the *Sun Ultra 450 Workstation Owner's Guide* and *ShowMe How Multimedia* application are in error on this matter. Both incorrectly state that the Sun Ultra 450 workstation may include one or two Creator-series graphics cards.

Elite3D Graphics Card

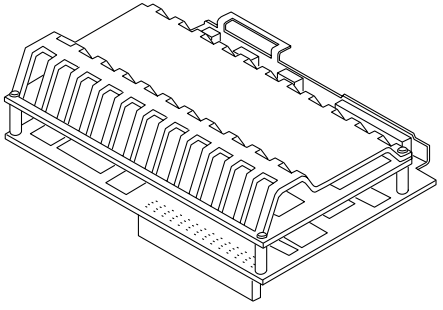
The Sun Ultra 450 workstation supports one or two Elite3D m6 graphics cards. To install or remove an Elite3D card, see the following sections of the *Sun Ultra 450 Workstation Owner's Guide*:

- "How to Remove a UPA Graphics Card"—page 134
- "How to Install a UPA Graphics Card"—page 136

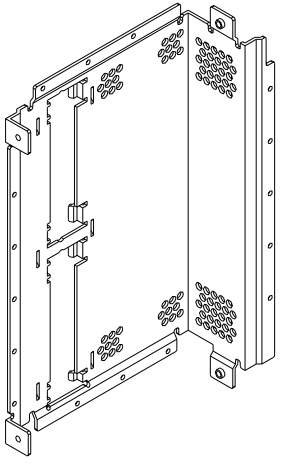
Although the above sections contain illustrations of a single-width UPA graphics card, the procedures work equally well for installing a double-width card such as the Elite3D graphics card (shown below).

For a system configured with one Elite3D card, the Elite3D card should always be installed in the upper UPA graphics slot (the one furthest from the PCI slots).

To configure a system with two Elite3D graphics cards, you must replace the standard rear panel insert with the optional Elite3D rear panel insert shown below. For installation instructions, see "How to Install a Rear Panel Insert" in the *Sun Ultra 450 Workstation Owner's Guide*.



Elite3D graphics card

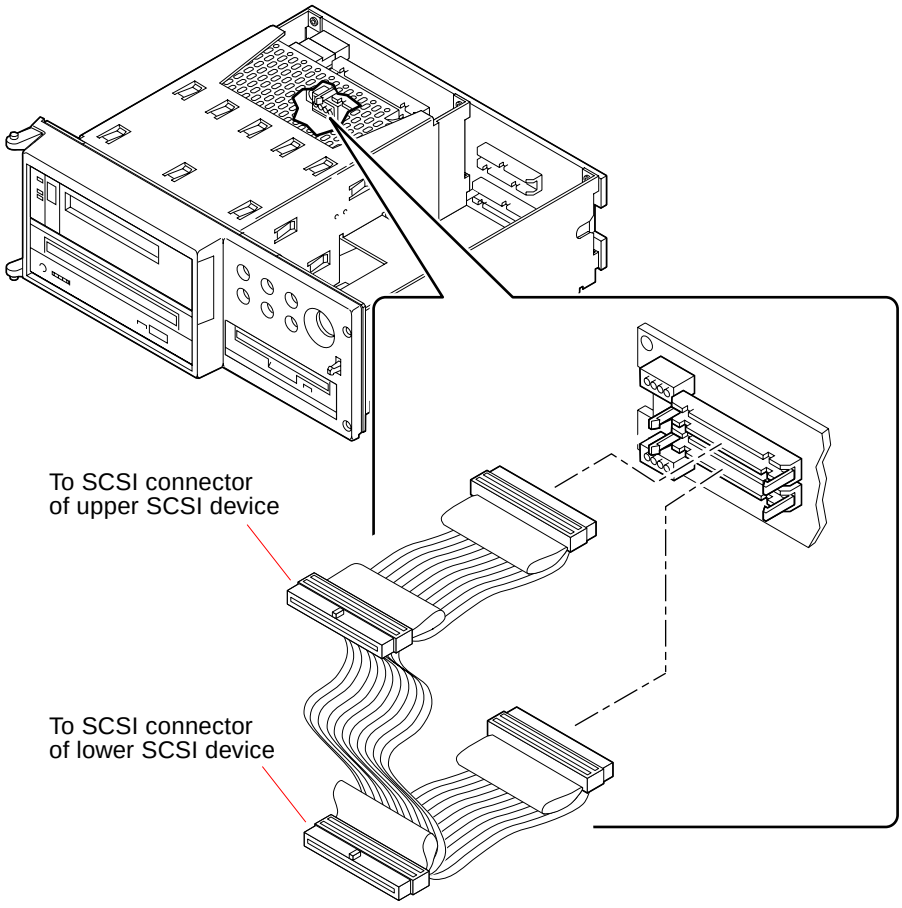


Elite3D rear panel insert

Note – The Elite3D graphics card draws a maximum of 19.7 amps at 3.3 VDC. Use this information to calculate the total power requirements for your system. For more information, see "How to Determine System Power Requirements" in the *Sun Ultra 450 Workstation Owner's Guide.*

SCSI Drive Data Cable

The *Sun Ultra 450 Workstation Owner's Guide* and *ShowMe How Multimedia* application incorrectly show how to install the SCSI drive data cable in the removable media assembly. Procedures documented in both show that the connectors at each end of the cable should be connected to the SCSI devices, and the two connectors in the middle of the cable should attach to the removable media backplane. These procedures are incorrect. The correct way to install the cable is with the two free ends of the cable connected to the removable media backplane, as shown below.



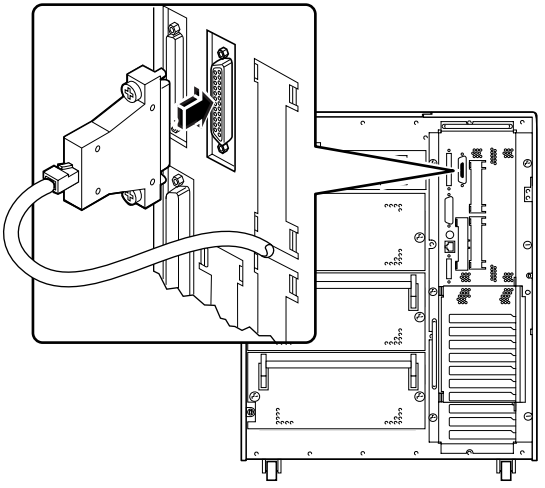
Please refer to this illustration when performing the following procedures in the *Sun Ultra 450 Workstation Owner's Guide* and the corresponding procedures in the *ShowMe How Multimedia* application:

- "How to Remove the Removable Media Backplane"—page 170
- "How to Install the Removable Media Backplane"—page 174
- "How to Remove a CD-ROM Drive or Tape Drive"—page 201
- "How to Install a CD-ROM Drive or Tape Drive"—page 205
- "How to Remove the SCSI Drive Data Cable"—page 286
- "How to Install the SCSI Drive Data Cable"—page 289

Note – There is no adverse effect on system operation or performance if the cable is installed according to the original instructions in the *Sun Ultra 450 Workstation Owner's Guide* and *ShowMe How Multimedia* application. However, the cable is easier to install, and less prone to damage during installation, if you install it as shown in these Product Notes.

Attaching an Alphanumeric Terminal

The illustration on page 24 of the *Sun Ultra 450 Workstation Owner's Guide* incorrectly identifies the location of the serial port connector on the system's back panel. The correct location is shown below.



Removing the NVRAM Module

Caution – Before removing or installing an NVRAM module on the main logic board, be sure to disconnect the board from its power connector. Failure to do so could corrupt the information stored in the NVRAM module and adversely affect operation of the system. To disconnect the main logic board from its power connector, loosen the captive screws that secure the board to the system rear panel, and pull the handles at the rear of the board until the board is fully disengaged from its power connector.

Rackmounting the Sun Ultra 450 Workstation

An optional rackmounting kit is available for installing a Sun Ultra 450 workstation into a EIA standard 19-inch rack. For additional details, contact your Sun™ authorized sales representative.

Rackmount placement information for the Sun Ultra 450 workstation is available through the Web at:

`http://docs.sun.com`

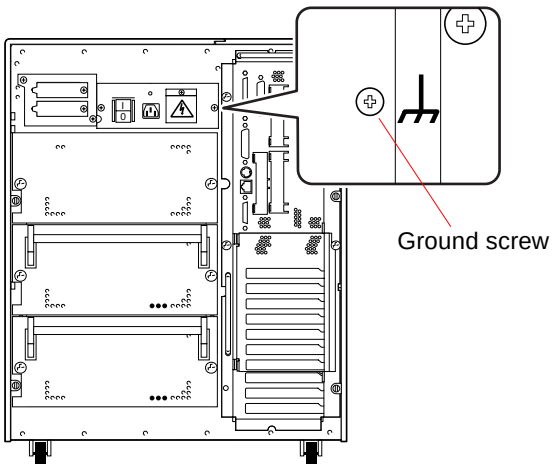
Click on “Storage & Peripherals” in the Hardware section and open the *Rackmount Placement Matrix*.

Note – Before installing the Sun Ultra 450 workstation into a Sun Enterprise Expansion Cabinet, be sure to remove the kick plate at the bottom rear of the cabinet. Removing the kick plate allows two Sun Ultra 450 workstations to fit inside the cabinet. For additional details, see the documentation supplied with the Sun Enterprise Expansion Cabinet.

Connecting Rackmounted Peripherals

When connecting a deskside Sun Ultra 450 workstation to any rackmounted peripheral, be sure to connect an appropriate grounding strap between the workstation and the rack enclosure. This strap prevents ground loops between the two systems and guards against possible data loss.

A grounding strap is typically provided with the rack enclosure. Attach one end of the strap to the designated ground point on your rack enclosure, according to the instructions provided with the enclosure. Attach the other end to the ground screw on the Sun Ultra 450 workstation, as shown below. Be sure to tighten the ground screw completely to ensure a good connection.



Caution – The ground screw on the Sun Ultra 450 workstation is a critical component for providing protection against electrical hazard in the event of a system power fault. Failure to replace and completely tighten the ground screw could result in a hazardous condition.

Upper Blower Assembly

The upper blower assembly (part number 540-3023) is not present in Sun Ultra 450 systems; however, the procedures contained in the *Sun Ultra 450 Workstation Owner's Guide* and *ShowMe How Multimedia* application assume that this part is present. For any procedure that involves removal of the main logic board, the instructions say to disconnect the upper blower assembly from the main logic board before removing the board. Since your system does not include an upper blower assembly, you can safely ignore this step.

Power Supply Memory Latch Function

The Sun Ultra 450 power supply has a memory latch function that allows the power supply to "remember" its last power on / off state in response to a power outage or removal of the AC power cord. This feature allows the power supply to resume operation automatically once power is restored. It also enables hot-swapping of power supplies.

Under some circumstances, this feature can be misdiagnosed as a power supply failure. If you remove a power supply from a system that is powered off and attempt a hot-plug installation into a system that is powered on, the power supply will remain in the Off state. This should not be interpreted as a power supply failure. To activate the power supply, simply turn the front panel keyswitch from the Power-On position to the Diagnostics position, and then back to the Power-On position. Alternatively, you may press the Power-On key on a Sun Type-5 keyboard attached to the system.