



Sun™ Expert3D and Fan Card Installation for Sun Enterprise™ 450 Server

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Your Sun product is marked to indicate its compliance class:

- Federal Communications Commission (FCC) — USA
- Industry Canada Equipment Standard for Digital Equipment (ICES-003) - Canada
- Voluntary Control Council for Interference (VCCI) — Japan
- Bureau of Standards Metrology and Inspection (BSMI) — Taiwan

Please read the appropriate section that corresponds to the marking on your Sun product before attempting to install the product.

FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

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 it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Shielded Cables: Connections between the workstation and peripherals must be made using shielded cables to comply with FCC radio frequency emission limits. Networking connections can be made using unshielded twisted-pair (UTP) cables.

Modifications: Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Shielded Cables: Connections between the workstation and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits. Networking connections can be made using unshielded twisted pair (UTP) cables.

Modifications: Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

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Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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VCCI 基準について

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Installing a Sun Expert3D and Fan Card in a Sun Enterprise 450 Server

Refer to the hardware installation documentation provided with your Sun™ system for general instructions on accessing your system internal modules and handling Sun PCI graphics cards.

The Sun™ Expert3D Installation Kit for your Sun™ Enterprise 450 is accompanied by a Fan Card Installation Kit. The Fan Card Installation Kit includes:

- Sun Expert3D-F Fan Card
- Sun Expert3D multiview cable (longer for multiple card configurations)

The Sun Expert3D graphics card connects into the 66-Mhz or 33-Mhz PCI connector on the Sun Enterprise 450 motherboard. Each Sun Expert3D requires a fan card in the adjacent PCI slot below the Sun Expert3D. See TABLE 1 for the Sun Expert3D and fan card configuration options.

TABLE 1 Sun Expert3D and Fan Card PCI Slot Configuration for the Sun Enterprise 450 Server

Number of Sun Expert3Ds	Sun Expert3D and Fan Card Configuration
One Sun Expert3D	Sun Expert3D: use one of the following 66Mhz slots: 4, 5, or 6 Fan card: use adjacent slots: 3, 4, or 5, respectively.
Two Sun Expert3Ds	Sun Expert3D: use 66Mhz slots 4 and 6. Fan card: use adjacent slots: 3 and 5.
Three Sun Expert3Ds	Sun Expert3D: use slots 2 (33Mhz), 4 (66Mhz), and 6 (66Mhz). Fan card: use adjacent slots: 1, 3, and 5.

- 1. Shut down your system and remove the Sun Enterprise 450 enclosure.**
- 2. Attach the antistatic wrist strap.**
- 3. If necessary, remove the system rear panel filler panel.**

4. **Insert the Sun Expert3D card into the appropriate slot on the main logic board (FIGURE 1).**
 - a. **Insert the left side of the Sun Expert3D card into the selected opening on the rear panel. At the same time, insert the right side of the card into the corresponding groove on the CPU cage.**
 - b. **Push the card into the slot on the main logic board.**

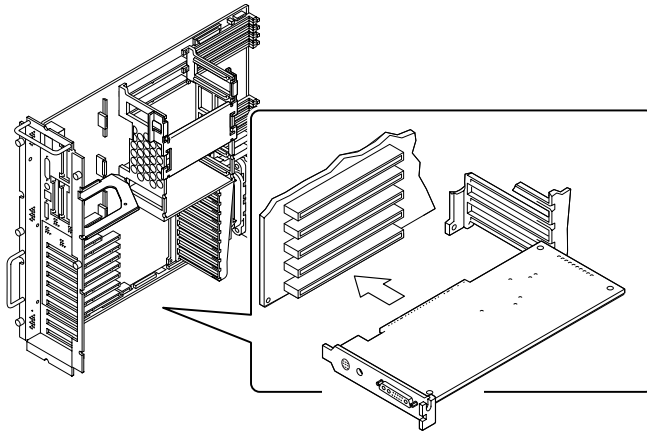


FIGURE 1 Installing Sun Expert3D Graphics Card

- c. **Align the left side of the card with the appropriate opening on the rear panel.**
 - d. **Push the card into the corresponding slot on the main logic board.**
5. **Secure the Sun Expert3D card faceplate to the rear panel with the Phillips screw.**

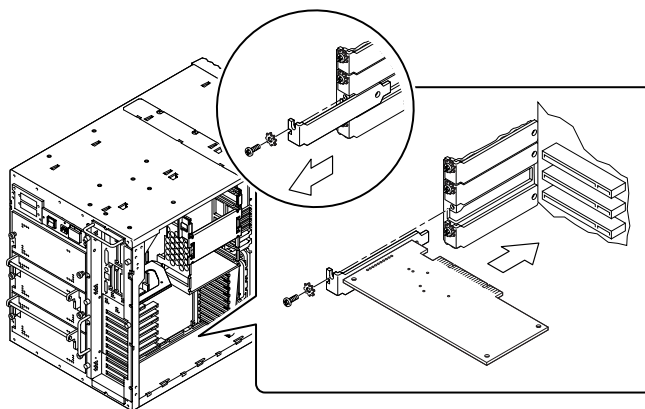


FIGURE 2 Securing Sun Expert3D Graphics Card

6. Install the Sun Expert3D fan card.

Each Sun Expert3D requires a fan card in the adjacent PCI slot below the Sun Expert3D (TABLE 1). Use the procedure in Steps 4 through 5 for installing the fan card.

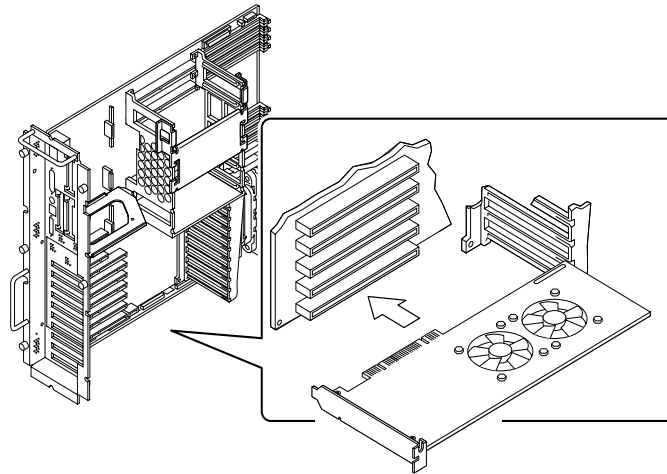


FIGURE 3 Installing the Fan Card

7. If applicable to your configuration, cable the Sun Expert3D cards for multiviewing.

The Fan Card Installation Kit provides a longer multiview cable for cabling two or more Sun Expert3D cards in the Sun Enterprise 450. This is required because the fan card occupies the card slot between two Sun Expert3D cards.

Note – See “Expert3D Multiview Ports” on page 35 of the *Sun Expert3D Graphics Card Installation Guide*, provided with your Sun Expert3D Installation Kit, for procedures on cabling two or more Sun Expert3D graphics cards for multiviewing.

Sun Expert3D Supported Monitor Resolutions

TABLE 2 Sun Expert3D Monitor Resolutions

Display resolution	Vertical refresh rate	Sync standard	Aspect ratio format
1920 x 1200	70, 75 Hz	Sun	16:10
1920 x 1080	72 Hz	Sun	16:9
1792 x 1344	75 Hz	VESA	4:3
1600 x 1280	76 Hz	Sun	5:4
1600 x 1200	75 Hz	VESA	4:3
1600 x 1000	66, 76 Hz	Sun	16:10
1440 x 900	76 Hz	Sun	16:10
1280 x 800	112 Hz	Sun-Stereo	16:10
1280 x 800	76 Hz	Sun	16:10
1280 x 1024	60, 75, 85 Hz	VESA	5:4
1280 x 1024	67, 76 Hz	Sun	5:4
1280 x 1024	112 Hz	Sun-Stereo	5:4
1152 x 900	66, 76 Hz	Sun	5:4
1024 x 800	84 Hz	Sun	5:4
1024 x 768	75 Hz	VESA	4:3
1024 x 768	60, 70, 77 Hz	Sun	4:3
960 x 680	108, 112 Hz	Sun-Stereo	Sun-Stereo
768 x 575	50i Hz	PAL	PAL
640 x 480	60 Hz	VESA	4:3
640 x 480	60i Hz	NTSC	NTSC

TABLE 3 Main Resolutions Supported for 24-inch Monitors

Display resolution	Vertical refresh rate	DPI value
1920 x 1200	70 Hz	103 dpi
1600 x 1000	66, 76 Hz	86 dpi
1440 x 900	76 Hz	77 dpi
1280 x 800	112-Hz stereo	69 dpi
1280 x 800	66, 76 Hz	69 dpi