

*Sun<sup>™</sup> Ultra<sup>™</sup> 2  
UltraSPARC<sup>™</sup> -II Module X-Option*



The Network Is the Computer<sup>™</sup>

**Sun Microsystems Computer Company**

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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 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.

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## *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.

## *Modifications*

Modifications to this device that are not approved by the party responsible for compliance may void the authority granted to the user by the FCC to operate this equipment.

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## *DOC Class B Notice — Canada*

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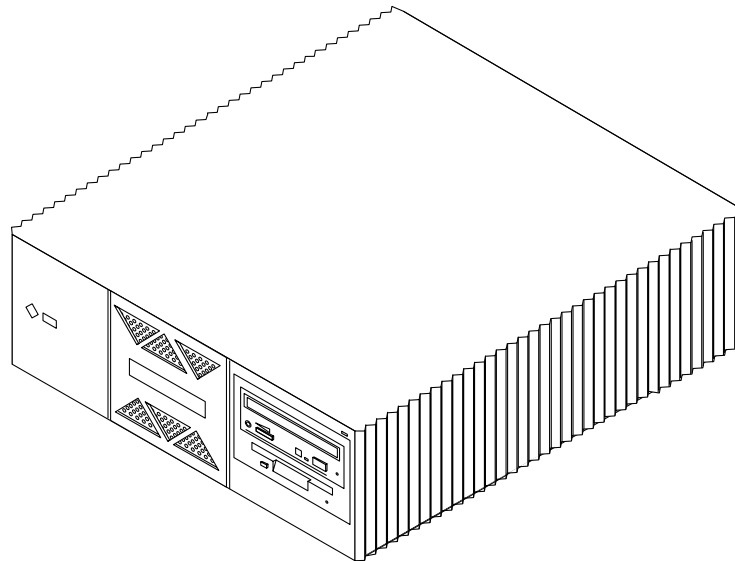


# *UltraSPARC-II Module X-Option*

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This book contains procedures for installing an UltraSPARC™-II module x-option in a Sun™ Ultra™ 2 system.



*Figure 1-1* Ultra 2 System

## 1.1 *System Software Requirements*

### 1.1.1 *Solaris*

Ultra 2 systems equipped with UltraSPARC-II module(s) require using Solaris 2.5.1 or later system software releases.

### 1.1.2 *Open Boot PROM*

UltraSPARC-II systems require OpenBoot™ PROM version 3.7 (or later).

## 1.2 *System Hardware Requirements*

Ultra 2 systems operated in multiprocessor mode must use processor modules of the same clock frequency.

### 1.2.1 *Determining Clock Frequency*

To determine the clock frequency of the processor module(s) already installed in your system:

♦ **Query your system by typing:**

```
% prtconf -vp | grep banner-name  
banner-name: 'Sun Ultra 2 UPA/SBus (2 X UltraSPARC 168Hz)'
```

The system responds with the quantity (for example, 2 X) and speed (168 MHz) of the UltraSPARC module(s) installed.

## 1.3 *SCD Compliance*



Sun Ultra 2 systems have been independently tested and verified to comply with revision 2.1 of the SPARC Compliance Definition (SCD) developed by SPARC International, Inc. These systems are binary compatible with all other systems and software that conform to SCD version 2.1.

## 1.4 *UltraSPARC-II Module X-Option Kit*

Each UltraSPARC-II module x-option kit contains:

- This book
- UltraSPARC-II module
- Antistatic wrist strap

## 1.5 *Flash PROM Update Utility*

If you do not have OpenBoot PROM version 3.7 (or later) installed in your system and do not have the flash PROM update utility software containing version 3.7 (or later), you must obtain the software from SunService™ or another authorized service provider.

## 1.6 *Using This Book*

This book shows you how to install and test UltraSPARC-II modules in Ultra 2 systems. The procedures are arranged in a sequence of four chapters. Read and perform the procedures in the remainder of this book *in sequence*, starting with Chapter 2, “Opening the System Unit,” and ending with Chapter 6.



## Opening the System Unit

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This chapter contains the following sections:

- Removing Power from the System
- Removing the System Unit Cover
- Attaching the Wrist Strap

### 2.1 Removing Power from the System

Before turning off system power, shut down the operating system to avoid loss of data.

1. **If your system is not a standalone, notify users that the system is going down.**  
Refer to the *Solaris Handbook* for the procedure.
2. **Back up the system files and data.**  
Refer to the *Solaris Handbook* for the procedure.
3. **Shut down the system.**
4. **Turn the power off to the monitor and all peripherals connected to the system.**
5. **Remove DC power from the system by pressing the Standby side of the power switch on the back panel (Figure 2-1).**

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**Note** – After the Standby switch is pressed, it returns to its original position.

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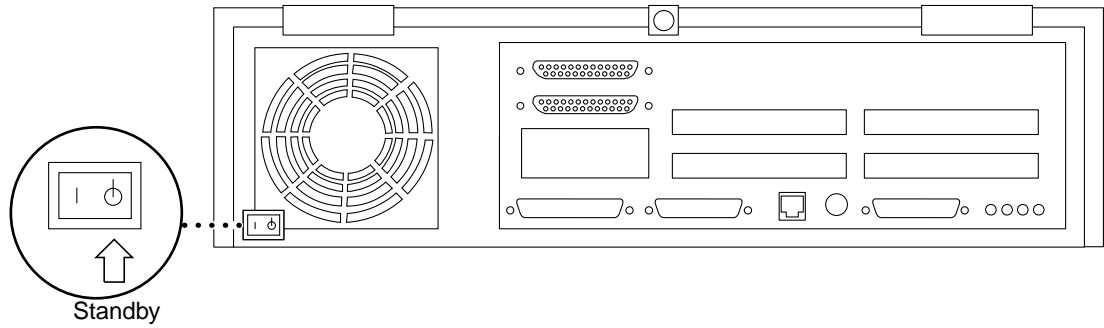


Figure 2-1 Standby Switch

When the power is off, the LED on the middle front of the system is not lit and the fans are not running (Figure 2-2).

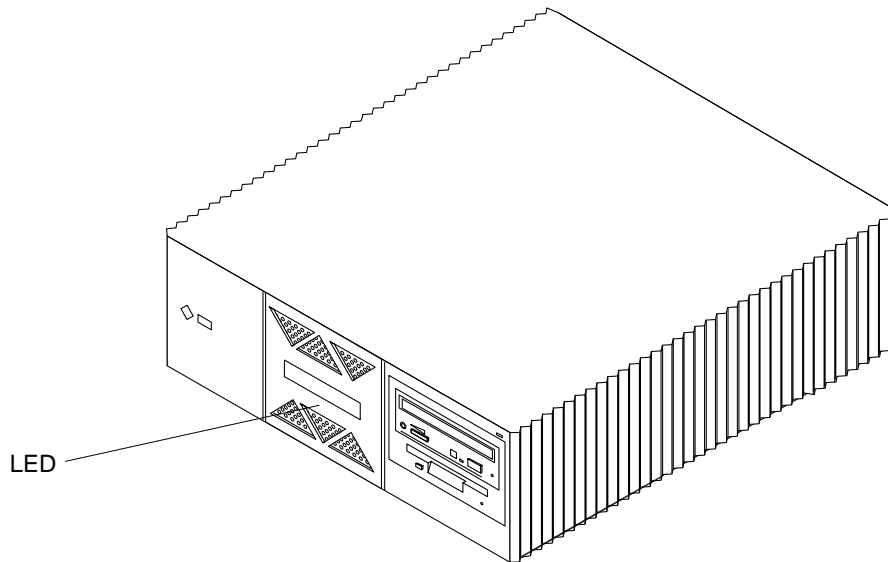


Figure 2-2 Front Panel LED Location



**Caution** – When the Power On/Standby switch is pressed and the AC power cord remains connected to a power outlet, hazardous AC voltage is still present in the power supply primary.

**6. Detach all cords and cables connected to the system unit except for the AC power cord.**

The AC power cord provides the grounding path for safely discharging static electricity. Note where each cord and cable attaches to the system unit.

## 2.2 Removing the System Unit Cover

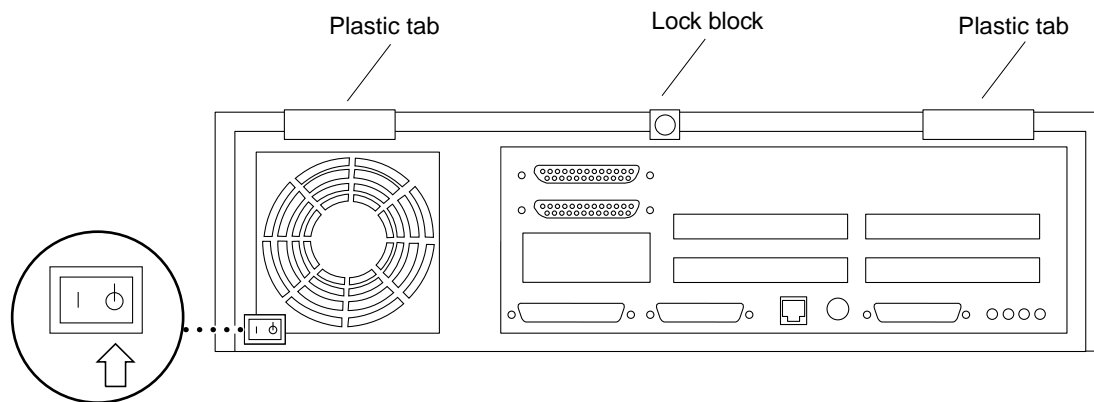


Figure 2-3 Opening the System Unit

1. Use a Phillips screwdriver to remove the lock block (if installed) on the top cover and back panel (Figure 2-3).
2. Pull the two top cover plastic tabs towards yourself (Figure 2-3).

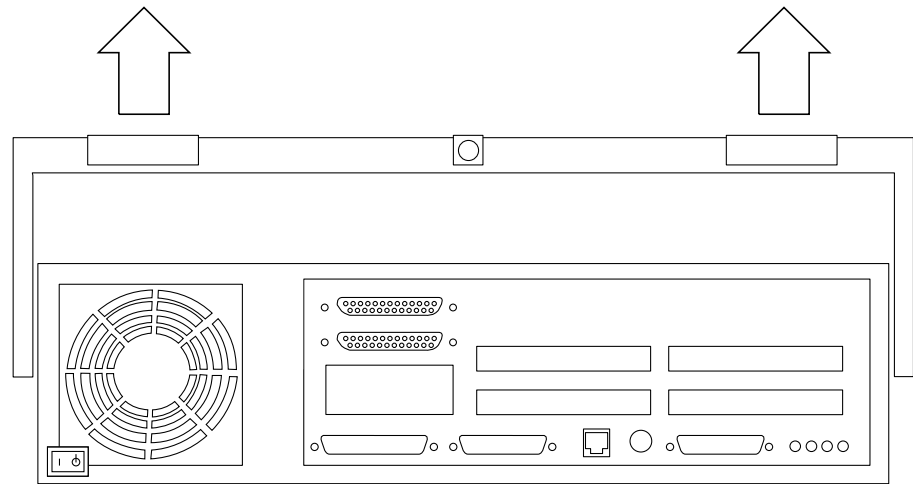


Figure 2-4 Lifting the Top Cover

3. Lift the top cover so that it clears the chassis, and push the cover forward so that it clears the chassis (Figure 2-4).



## 2.3 Attaching the Wrist Strap

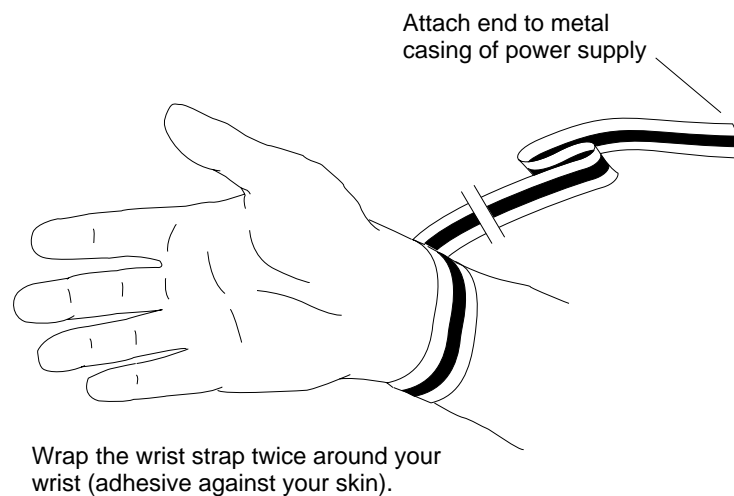
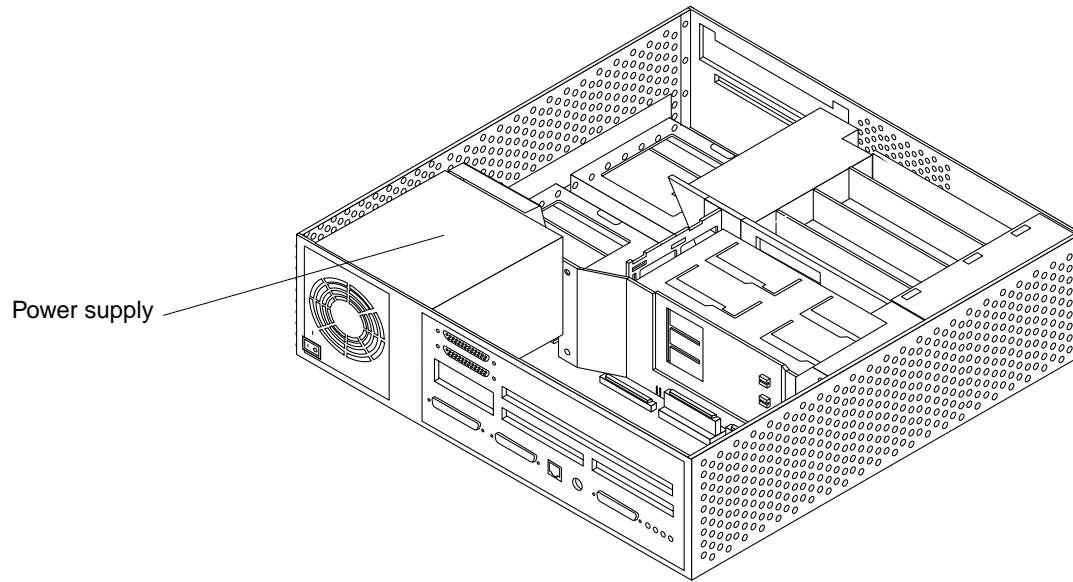


Figure 2-5 Attaching the Wrist Strap




*Figure 2-6 Power Supply Location*

- 1. Unwrap the first two folds of the wrist strap and wrap the adhesive side firmly around your wrist (Figure 2-5).**
- 2. Attach the adhesive copper strip to the metal casing of the power supply inside your system (Figure 2-6).**

## *Updating the Flash PROM*

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- ♦ **Use the flash PROM update CD-ROM and the accompanying programming guide to update your system flash PROM to OpenBoot PROM version 3.7 (or later).**

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**Note** – If you do not have OpenBoot PROM version 3.7 (or later) installed in your system and do not have the flash PROM update utility software containing version 3.7 (or later), you must obtain the software from SunService or another authorized service provider.

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## *Removing the UltraSPARC Module*

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Read this chapter if:

- Your system is equipped with one UltraSPARC module and you are replacing the module
- Your system is equipped with one UltraSPARC module and you are replacing the module with two new modules
- Your system is equipped with two UltraSPARC modules and you are replacing them with two new modules

Skip this chapter and read Chapter 5 if:

- Your system is equipped with one UltraSPARC-II module and you are adding a second module of the same clock frequency

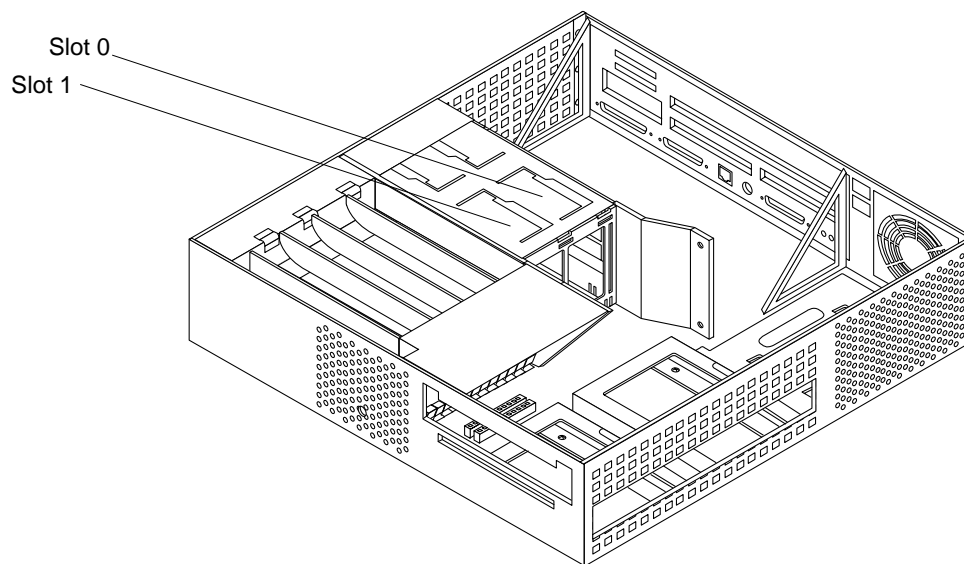


Figure 4-1 UltraSPARC Module Locations and Shroud-Assembly Processor Area

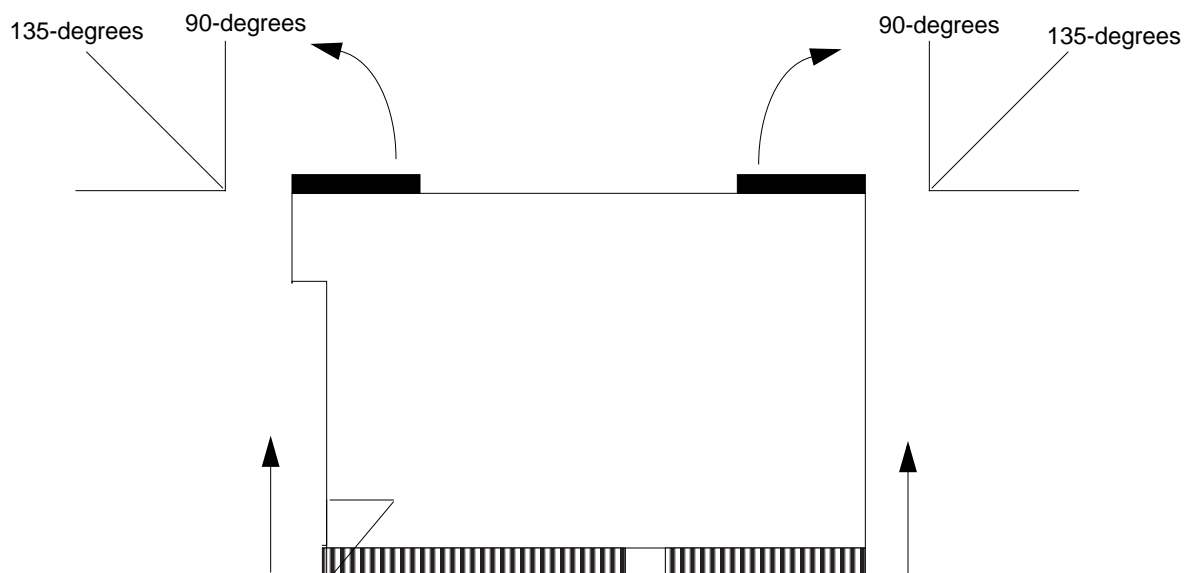


Figure 4-2 Removing the UltraSPARC Module

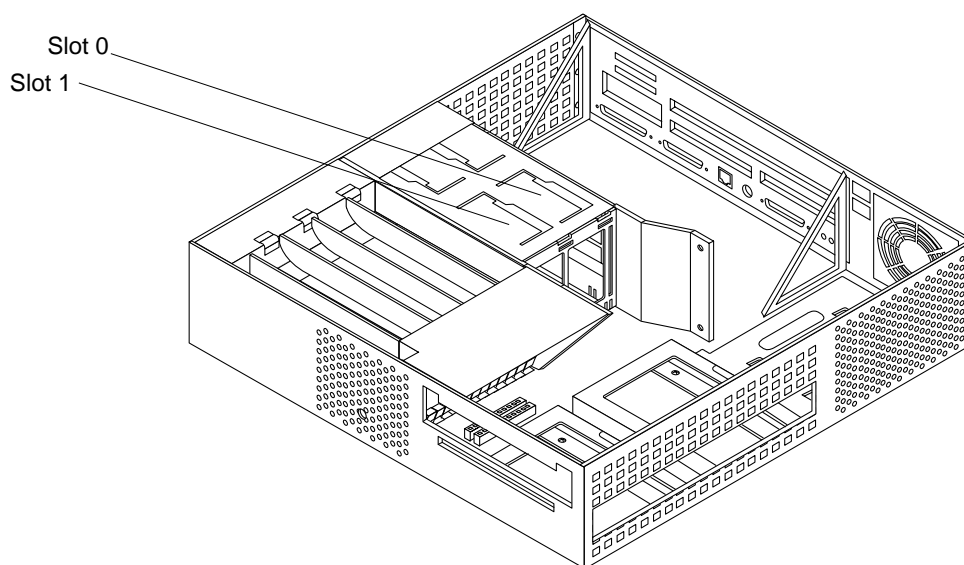
1. Grip the sides of the shroud-assembly processor area (Figure 4-1).
2. With the thumbs of both hands, simultaneously lift the two levers on the module upwards and to the side (about 135-degrees) (Figure 4-2).
3. Lift the module upwards until it clears the system chassis.
4. Place the module on an antistatic surface.





## *Installing the UltraSPARC Module*

5 



*Figure 5-1* Ultra 2 Processor Slot Locations

- 1. Unpack the processor module.**
- 2. Place the module on an antistatic surface.**
- 3. Identify the appropriate or available slot (Figure 5-1).**

- If your system is equipped with one UltraSPARC module, the module must be installed in slot 0.
  - If your system is equipped with two UltraSPARC modules, each slot will have a module installed.
4. On the antistatic surface, hold the module in an upright position so that the plastic surface faces you (Figure 5-2).
  5. Move the levers on the module to the 135-degree position (Figure 5-2).

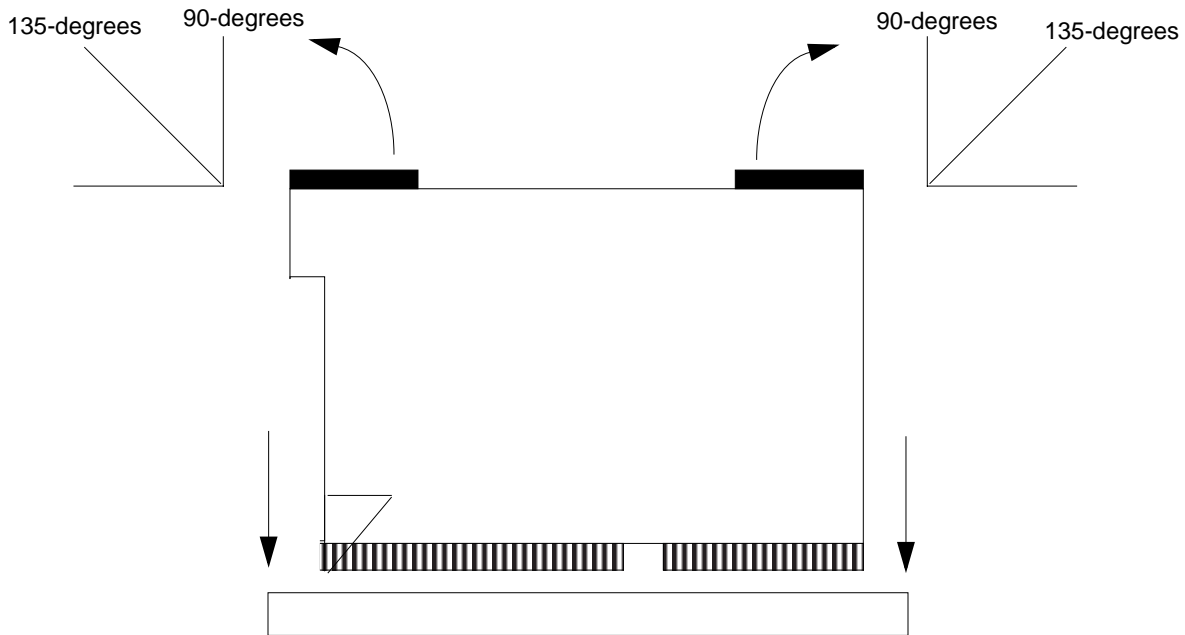
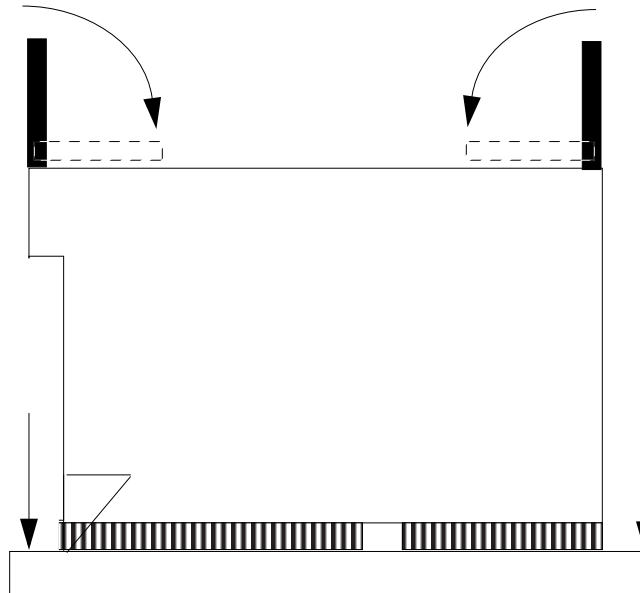


Figure 5-2 Lowering the Module Into the Chassis

6. Lower the module along the vertical plastic guides until the module touches the slot socket on the main logic board (Figure 5-2).

7. With both hands, simultaneously turn and press the levers downward to the fully horizontal position. Firmly press the module downward into the socket until it is fully seated and the levers are fully locked (Figure 5-3).



*Figure 5-3* Locking the Module in Place



## 5.1 Changing the Clocking Select Jumper

- Table 6-1 gives information about the clocking select jumper functionality.
- Figure 6-1 shows the location of the clocking select jumper on the main logic board.
- Figure 6-2 shows the two available jumper settings.

Table 5-1 UltraSPARC Module Clocking Select Jumper Settings

Jumper	Pins 1 + 2 Select	Pins 2 + 3 Select	Default Jumper on Pins
J2301	300 MHz, 2 Mbytes external cache UltraSPARC-II modules.	All 168 MHz and 200 MHz UltraSPARC-I modules.	2 + 3

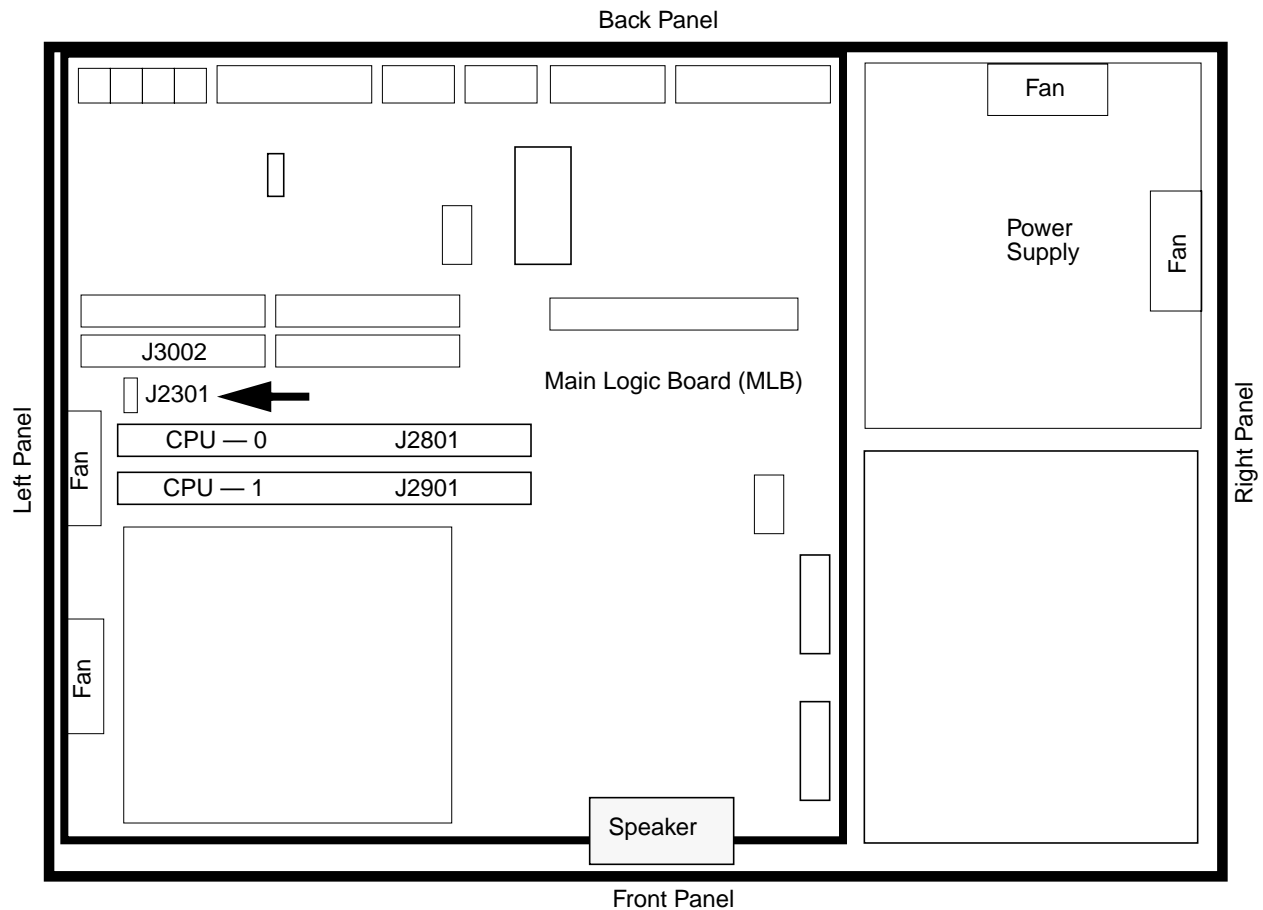


Figure 5-1 Clocking Select Jumper Location on Main Logic Board

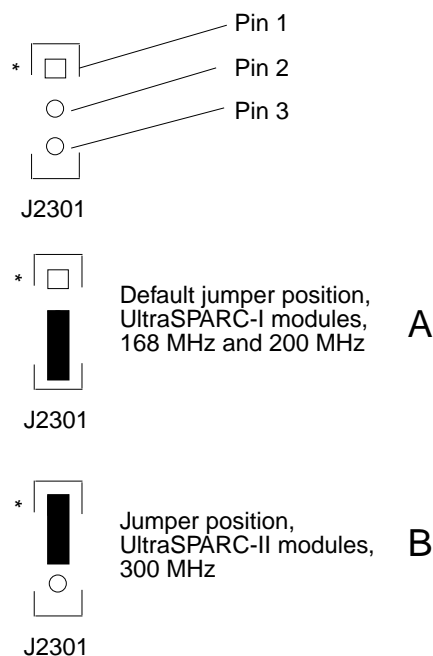


Figure 5-2 Clocking Select Jumper Positions

To change the jumper:

- ♦ Use needlenose pliers to remove the jumper from position A and to install the jumper at position B (Figure 6-2).

## 5.2 Closing the System Unit

1. Remove the wrist strap from your wrist and then from the power supply.
2. Hold the cover at an angle to the system unit. Seat the cover lip to the chassis lip.
3. Slowly lower the cover onto the system unit so that the rear of the cover seats with the chassis back panel (Figure 6-3).

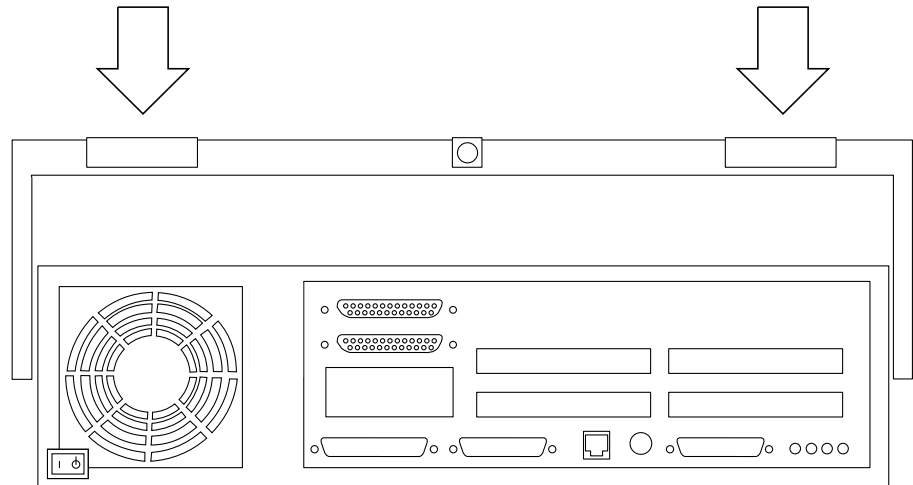


Figure 5-3 Lowering the Cover Onto the System Unit Back Panel

4. **Guide the two top cover plastic tabs in place onto the back panel.**  
You will hear a click as each tab seats with the back panel (Figure 6-4).
5. **Use a Phillips screwdriver to reinstall the lock block to the back pane (Figure 6-4).**

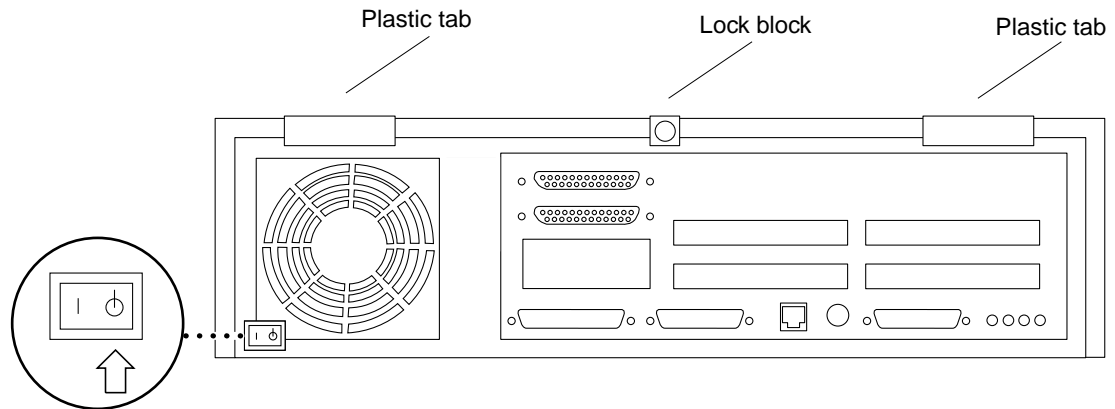


Figure 5-4 Cover Tabs and Lock Block



## 5.3 Turning On the Power

1. Reattach all cords and cables connected to the system unit.
2. Turn on the power in this order:
  - External SCSI peripheral with SCSI terminator attached
  - External SCSI peripheral daisy-chained to the SCSI peripheral with the SCSI terminator attached
  - Monitor
  - Power On/Standby switch on the system unit back panel (Figure 6-5).

The operating system should load or the `ok` prompt should appear on the monitor.

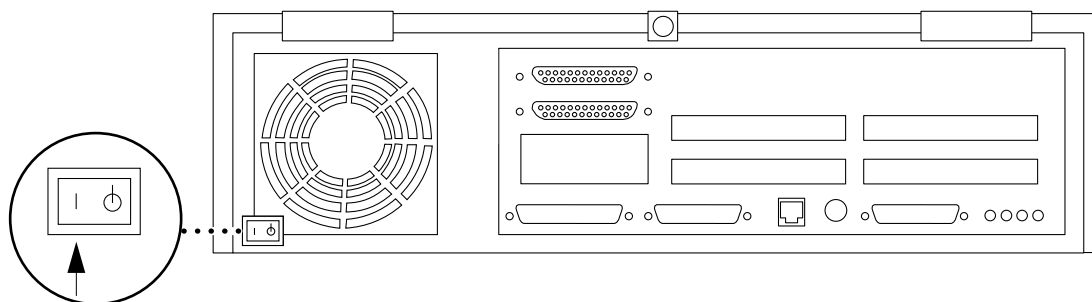


Figure 5-5 Power On/Standby Switch

## 5.4 Power-On Self-Test (POST)

For a full description of the Power-On Self-Test (POST), refer to the *Sun Ultra 2 Service Manual*.

## 5.5 EnergyStar

If you experience RED State Exception failures when exercising EnergyStar suspend/resume functions, install patch 104729-01.

An alternative is to install the Solaris 2.5.1 Hardware: 4/97 release which also incorporates a correction to this problem.

