Sun™ Ultra™ 80 Product Note

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Sun Ultra 80 Product Note

This product note contains information about Sun™ Ultra™ 80 workstations and the Ultra 80 product documentation that became known after the documentation set was published.

Memory Modules Supported

The *Sun Ultra 80 Service Manual* lists the capacities of dual inline memory modules (DIMMs) supported by Ultra 80 workstations. A change has been made to the list of DIMMs supported.

The Ultra 80 workstation supports 64- and 256-MByte DIMMs. 128-MByte DIMMs are not supported on the Ultra 80 workstation.

Using a Token Ring PCI Card

Note – A Sun Token Ring PCI card, optional component (x-option) X1039 or X1154, will not function properly if you install it in PCI slot number 4 in some early Ultra 80 workstations.

If you want to use a Sun Token Ring PCI card in such an Ultra 80 workstation, you must install it in PCI slots 3, 2, or 1.

PGX32 Graphics Card

Note – If you are using a Sun PGX32 graphics card and you have a Sun 21-inch monitor, an adapter cable is required. The 15HDM/13W3F video adapter cable, part number 530-2917, is required between the monitor cable connector and the PGX32 graphics card connector. This cable is shipped with your system in the ship kit box, where this guide was packed.

Power Interlock Switch

Caution – As a safety precaution, the Ultra 80 system is equipped with a power interlock switch that shuts off system power when the access panel is opened. Be sure to power down the system before you open the access panel to avoid losing data.

PCI Slot Logical-to-Physical Mapping

The Ultra 80 system firmware displays PCI slot logical addresses during a system reset. The relationship between the logical addresses displayed and their corresponding physical slot number as listed in the following table.

TABLE 1   PCI Slot Logical-to-Physical Mapping

Device Addresses	Motherboard PCI Slot #
/pci@1f,2000 at Device 1	1
/pci@1f,4000 at Device 4	2
/pci@1f,4000 at Device 2	3
/pci@1f,4000 at Device 5	4
/pci@1f,4000 at Device 1	(Built-in Ethernet on motherboard)
/pci@1f,4000 at Device 3	(Built-in SCSI on motherboard)

A PCI card that has more than one I/O port displays each port as a separate line in the device list.

Installing Additional Memory

Read the following procedures to supplement the procedures found in Sections 9.6 and 9.7 of the *Sun Ultra 80 Service Manual.*

Caution – Use proper ESD grounding techniques when handling components. Wear an antistatic wrist strap and use an ESD-protected mat. Store ESD-sensitive components in antistatic bags before placing them on any surface.

1. **Power off the system, remove the access panel, and attach an antistatic wrist strap as described in "Power On/Off and Internal Access" in Chapter 6.**

2. **If necessary, remove the DC-to-DC converter.**

   See Section 7.3.1 "Replacing the DC-to-DC Converter Assembly".

3. **Review the important memory installation information below before you begin installing the memory.**

   The system's dual in-line memory modules (DIMMs) are arranged in four banks, each bank consisting of four slots. The four slots in each bank are separated, with two slots on the motherboard, and two slots on the memory riser assembly.

DIMM Bank	DIMM Slots on Memory Riser Assembly	DIMM Slots on Motherboard
3	U0403, U0404	U1403, U1404
1	U0401, U0402	U1401, U1402
2	U0303, U0304	U1303, U1304
0	U0301, U0302	U1301, U1302

   The following diagram shows the placement of the DIMM banks on the memory riser assembly (left) and the motherboard (right). On the motherboard, bank 3 is closest to the system top, bank 0 is closest to the CPU shroud (FIGURE 1).
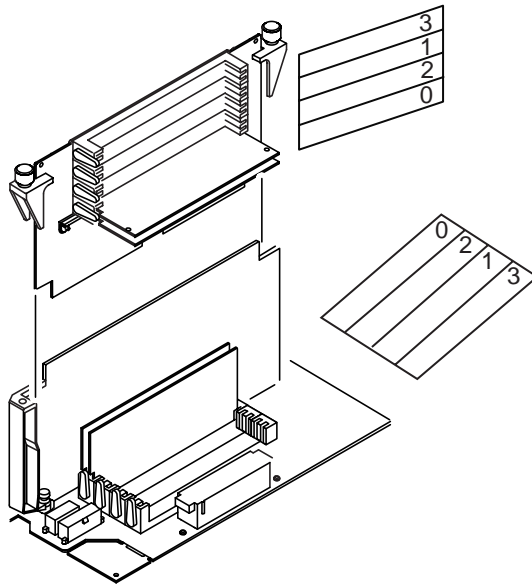
FIGURE 1   DIMM Bank Organization

Note – Each DIMM bank being used must contain four DIMMs of equal density (for example, four 64-Mbyte DIMMs) to function properly. Do not mix DIMM densities in any single bank.

4. **Locate an empty bank of four DIMM slots (two on the motherboard and two on the memory riser assembly).**

Note – Fill additional DIMM banks in this order: bank 1, bank 2, bank 3. Bank 0 is the default DIMM position for DIMMs installed at the factory.

Caution – When you loosen the memory riser assembly in the next step, loosen both of the assembly's thumbscrews simultaneously to avoid damaging the connector.

5. **Using the short leg of the torque-indicator driver (part number 340-6091), loosen the thumbscrews, then use your hands to turn the thumbscrews** *simultaneously* **until the assembly is loose (**FIGURE 2**).**
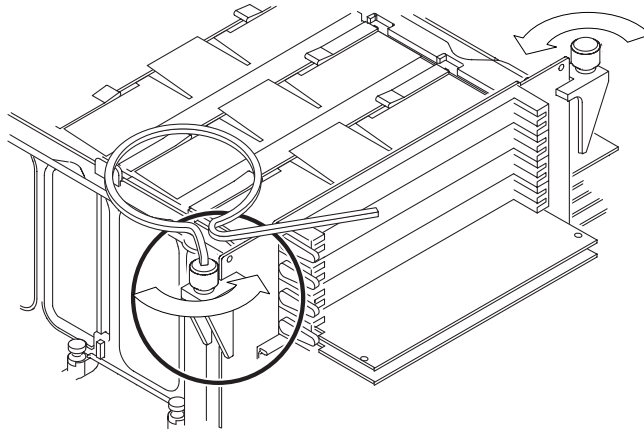
FIGURE 2   Removing the Memory Riser Assembly

Note – The torque-indicator driver included with your system is shipped in the green holder that is stored in the center of the hard drive cage.

6. Lift the memory riser assembly from the chassis and lay it on an antistatic mat with the DIMM slots facing upwards.

Caution – Hold DIMMs only by their edges. Place DIMMs and the memory riser assembly on an antistatic mat whenever you set them down.

Caution – If you do not seat the DIMM into its slot evenly, it can cause shorts that will damage the system. Follow the procedure below and refer to the illustration at right to seat the DIMM properly.
Failure to comply with these instructions can result in damage to system components or assemblies and can void the warranty.

7. Hold the DIMM at the top left and right corners using the thumb and index finger of each hand.

Note – Be sure you are holding the DIMM straight and parallel to its slot.

8. **With even pressure, firmly push down simultaneously on** *both* **upper corners of the DIMM until the bottom edge of the DIMM (the edge with the gold pads) is firmly seated into the slot.**

Note – Do *not* rock the DIMM into place.
Ensure that all contacts engage at the same time.
You will hear a "click" when the DIMM is properly seated.

The following illustration shows the incorrect and correct ways to seat the DIMM (FIGURE 3).

Incorrect:
Corners Not Evenly Seated

Correct:
Corners Evenly Seated
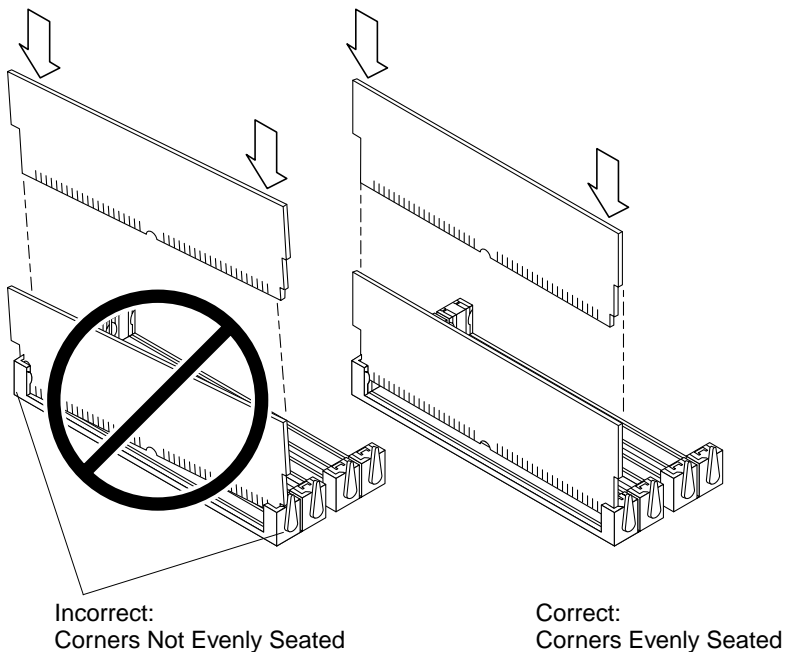
FIGURE 3   Correct DIMM Seating

9. **Install two DIMMs on the memory riser assembly and two DIMMs on the motherboard.**

Caution – Verify that the DIMMs are fully and evenly seated. Full DIMM seating is verified by a clicking sound. Failure to properly seat the DIMM can cause electrical shorts that can damage the DIMM and/or the system.

Continue installing DIMMs on the motherboard and memory riser assembly until you have filled the DIMM bank with four identical DIMMs.

10. **Repeat Step 9 for any additional DIMM banks you are filling.**

11. **Replace the memory riser assembly by carefully aligning the connectors of the assembly and the motherboard.**

Caution – When you install the memory riser assembly in the next step, tighten both of the assembly's thumbscrews simultaneously to avoid damaging the connector.

12. **Using your hands, tighten the thumbscrews** *simultaneously* **until they are both finger-tight.**

Caution – Do not apply more torque than needed to close the torque-indicator drivers's gap. If you apply more torque than needed to close the gap, you might damage the connectors.

13. **Using the short leg of the torque-indicator driver, alternately turn each thumbscrew clockwise one turn at a time. Stop turning each thumbscrew as soon as the torque indicator driver gap closes (**FIGURE 4**).**
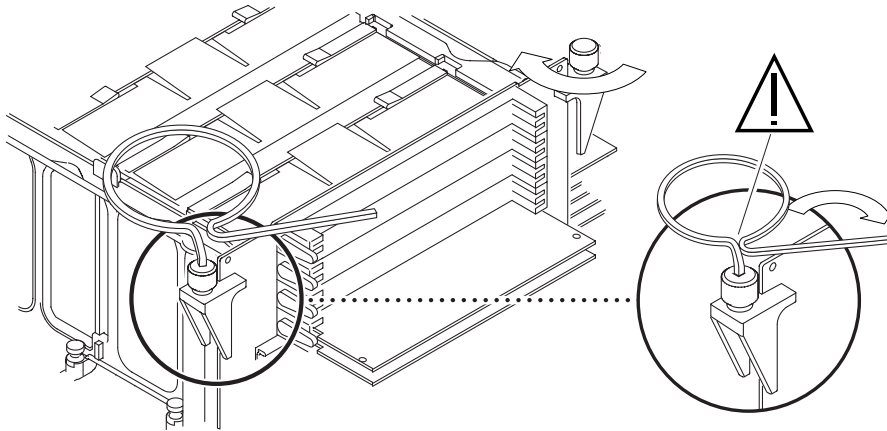
FIGURE 4   Replacing the Memory Riser Assembly

14. **Press down firmly and evenly on the top corners of the memory riser assembly to ensure that it is firmly seated in the motherboard connector.**

15. **Using the torque-indicator driver, alternately turn each thumbscrew clockwise again to ensure that the thumbscrews remained properly torqued after you pressed downward on the assembly in the previous step.**

16. **If necessary, replace the DC-to-DC converter.**

    See Section 7.3.2 "Replacing the DC-to-DC Converter Assembly".

17. **Detach the antistatic wrist strap.**

18. **Replace the access panel and power on the system.**

    See Section 6.3 "Replacing the Access Panel/Powering on the System".

19. **Verify proper operation.**

    See Section 3.5 "Maximum and Minimum Level of POST".

ShowMe How Multimedia Documentation Support on Non-Sun Systems

The *Sun Ultra 80 Hardware Documentation* CD-insert, which describes how to install and view the AnswerBook2™ and ShowMe How™ multimedia documentation, also describes how to view the HTML version of the documentation on Microsoft Windows PCs and Macintosh systems.

The ISO 9660 format used on the CD is not fully supported on some PC or Macintosh systems. Therefore, the ShowMe How (MPEG-1) video segments cannot be launched on those systems by clicking the document's video-link icons. The ShowMe How video segments *can* be viewed on PC and Macintosh systems if you manually browse to the segments' location on the CD.

To manually open and view a ShowMe How video segment on a PC or Macintosh system:

1. **Open the video viewer that you use to view MPEG-1 videos.**

2. **In the viewer's File menu, select Open.**

3. **In the dialog window that is displayed, browse to the following directory on the** *Sun Ultra 80 Hardware Documentation* **CD (capitalization may vary):**

   ```
   CDROM/ULETPSVC/ULETPSVC/COMMON/PRODUCT/SUNWULT8/INSTALL/RELOC/
   _AB2INST/BOOKS/ULETPSVC/FIGURES/MOVIES/
   ```

4. **Open the MPEG file that you want to view. The nine MPEG file names are listed in the following table, with the corresponding procedure names.**

TABLE 2   ShowMe How MPEG Video Clips on CD

Procedure	MPEG File
Removing and replacing a peripheral assembly drive (CD-ROM, tape, or diskette drive)	CD.MPG
Removing and replacing a hard drive	HD.MPG
Removing and replacing an interface card (PCI, UPA graphics, or audio card)	IC.MPG
Removing and replacing a motherboard	MB.MPG
Removing and replacing a CPU module	CPU.MPG

TABLE 2   ShowMe How MPEG Video Clips on CD

Procedure	MPEG File
Removing and replacing a power supply	`PS.MPG`
Restarting the system	`RS.MPG`
Shutting down the system	`SD.MPG`
Setting serial port jumpers	`SJ.MPG`

Warning Message When Viewing ShowMe How Video Clips

Sometimes when launching ShowMe TV to view a video clip, a warning window might pop up with a message similar to the following:

```
Netscape: subprocess diagnostics (stdout/stderr)
Warning:
Name: recPositionForm
Class: XmForm
Bailed out of edge synchronization after 10,000 iterations. Check
for contradictory constraints on children of this form.
```

This warning does not indicate a problem with either the video clip or the ShowMe TV application. Click the button at the bottom of the warning window to dismiss it, and continue watching the video clip.