

Field Engineer Handbook - Volume I

This *Field Engineer Handbook* edition, dated 9/18/00, replaces the Volume I and Volume II contents and tabs.

Volume I CPU is now two tabs; Workstation CPU and Server CPU.

Volume II Sun-4u Systems is now two tabs; Sun-4u Workstation and Sun-4u Server.

Systems and Peripherals added to the twenty-first edition:

- Netra ct 400
- Netra ct 800
- Netra S220
- StorEdge L9
- StorEdge L20, L40, and L60
- StorEdge L180
- StorEdge T3
- Sun Blade 100
- Sun Blade 1000
- Sun Ray 100
- Sun Ray 150

For your filing convenience, a title page with a bar strip on the right edge separates each section, so that you can easily place a new section after the appropriate tab.

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The JavaStation JJ and JavaStation JK systems are serviced as whole unit replacements. The CPU boards for these systems are not illustrated in this edition.

The SPARCcluster and MediaCenter chapters are not in this edition. These products were a combination of a workstation or server, a peripheral, and software. The workstations, servers, and peripherals used to build these products can still be found in their respective chapters.

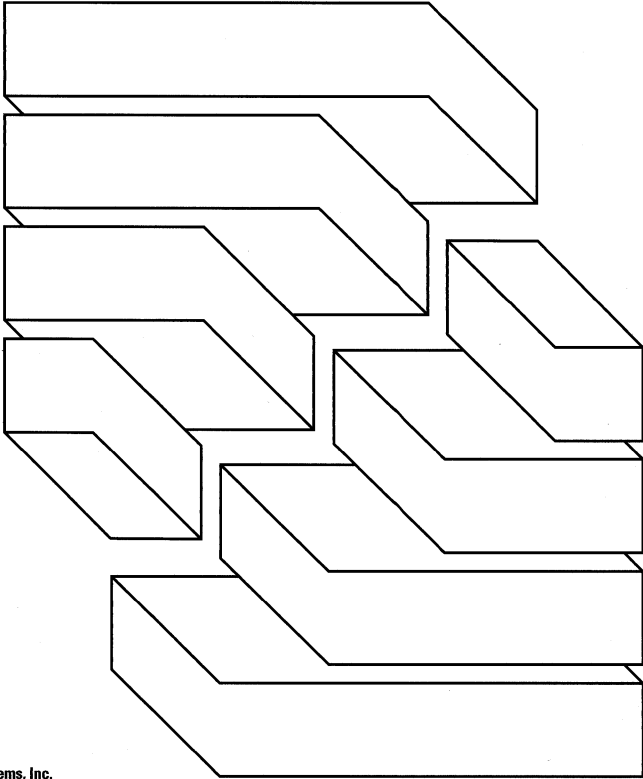
The Netra xt 600 was announced in August 1999 and discontinued in January 2000. The Netra xt 600 is not in this edition.

You may wish to save this product information from the twentieth edition of the Field Engineer Handbook for reference.

| | | |
|-----------|------------|----------|
| VOLUME I | CLUSTER-10 | MEDIA-7 |
| CPU-32 | CLUSTER-11 | TELCO-41 |
| CPU-33 | CLUSTER-12 | TELCO-42 |
| CPU-34 | CLUSTER-13 | |
| CPU-35 | CLUSTER-14 | |
| CLUSTER-1 | CLUSTER-15 | |
| CLUSTER-2 | CLUSTER-16 | |
| CLUSTER-3 | CLUSTER-17 | |
| CLUSTER-4 | MEDIA-1 | |
| CLUSTER-5 | MEDIA-2 | |
| CLUSTER-6 | MEDIA-3 | |
| CLUSTER-7 | MEDIA-4 | |
| CLUSTER-8 | MEDIA-5 | |
| CLUSTER-9 | MEDIA-6 | |

Field Engineer Handbook

Volume I



Part No: 800-4006-19
©1999 Sun Microsystems, Inc.

Written and published by Mike Persichetty and Gerri Roe

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Printed in the USA

Preface

The *Field Engineer Handbook*, Volumes I and II, illustrates and describes Sun™ Workstations, Servers, and Options. This hardware manual set is available to Sun service providers and customers.

This handbook complements other Sun technical publications and education courses. We assume that Sun service providers and customers who service and repair Sun products have access to these resources.

The *Field Engineer Handbook* does not include installation, removal, replacement, and troubleshooting procedures documented in other Sun publications.

The complexity of products requiring extensive training is beyond the scope of this hardware manual set. These products are not covered in detail. Refer to the manuals.

The *Field Engineer Handbook* is not an official configuration guide or sales guide. Configurations and options supported and sold by Sun Microsystems are documented in the End User and Reseller Price Lists. Installation Manuals, User's Guides, Product Notes, and the Hardware Platform Guide are other sources of supported configuration information.

Send email to fehb-errata@persius.eng.sun.com to receive the errata for the *Field Engineer Handbook*.

Email your comments and suggestions to the authors at fehb@scarlett.eng.sun.com.

Handbook Organization

The *Field Engineer Handbook* is organized into two volumes.

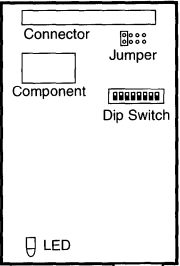
Volume I includes the Configuration section.

- **Configurations** contains board and peripheral part numbers, option numbers, and illustrations; jumper and switch settings; video resolutions; memory module compatibility; and notes and references.

Volume II includes the following sections:

- **Parts Breakdown** contains workstation, server, and option illustrations; part number listings; and monitor specifications.
- **Troubleshooting** contains system LED error codes; SCSI connector pin assignments, SCSI sense keys and codes; tape drive manual ejection procedures; and communications device pin assignments.
- **Power** contains fuse and power cord charts; system wiring diagrams; and illustrations of power plugs, power supplies, power sequencers, and power distribution units.

Volume I Page Layout

| | |
|--|-------------------------|
| Configurations | Date |
| <p>Name Systems/Peripherals¹ Option Numbers² Part Numbers Part Number Details</p> | |
|  | |
| <p>Power requirements Notes: Special considerations References: <i>Reference Manuals</i></p> | |
| Chapter | Field Engineer Handbook |

| Date | Configurations | | | | | | | | | | | | | | | | | | | | |
|---|----------------|---------------------|-------------|---------------|-------------|----------|--------------------|-------|----------|---------------------|-------|----------|---------------------|-------|----------|---------------------|-----------|-------|-----|-----|-----------|
| <p>Part Number Switch and Jumper Settings</p> | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>JUMPER</th> <th>PINS</th> <th>SETTING</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>J0101</td> <td>1-2</td> <td>In</td> <td>Parity</td> </tr> <tr> <td>J0603</td> <td>1-2</td> <td>Out</td> <td>SCSI ID 0</td> </tr> <tr> <td>J0603</td> <td>3-4</td> <td>In</td> <td>SCSI ID 1</td> </tr> <tr> <td>J0603</td> <td>5-6</td> <td>Out</td> <td>SCSI ID 2</td> </tr> </tbody> </table> | | JUMPER | PINS | SETTING | DESCRIPTION | J0101 | 1-2 | In | Parity | J0603 | 1-2 | Out | SCSI ID 0 | J0603 | 3-4 | In | SCSI ID 1 | J0603 | 5-6 | Out | SCSI ID 2 |
| JUMPER | PINS | SETTING | DESCRIPTION | | | | | | | | | | | | | | | | | | |
| J0101 | 1-2 | In | Parity | | | | | | | | | | | | | | | | | | |
| J0603 | 1-2 | Out | SCSI ID 0 | | | | | | | | | | | | | | | | | | |
| J0603 | 3-4 | In | SCSI ID 1 | | | | | | | | | | | | | | | | | | |
| J0603 | 5-6 | Out | SCSI ID 2 | | | | | | | | | | | | | | | | | | |
| <p>Memory Map</p> | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SOCKET</th> <th>SIMM</th> <th>ADDRESS RANGE</th> </tr> </thead> <tbody> <tr> <td>J0304</td> <td>2nd SIMM</td> <td>0c000000 - 0ffffff</td> </tr> <tr> <td>J0302</td> <td>4th SIMM</td> <td>08000000 - 0bffffff</td> </tr> <tr> <td>J0203</td> <td>3rd SIMM</td> <td>04000000 - 07ffffff</td> </tr> <tr> <td>J0201</td> <td>1st SIMM</td> <td>00000000 - 03ffffff</td> </tr> </tbody> </table> | | SOCKET | SIMM | ADDRESS RANGE | J0304 | 2nd SIMM | 0c000000 - 0ffffff | J0302 | 4th SIMM | 08000000 - 0bffffff | J0203 | 3rd SIMM | 04000000 - 07ffffff | J0201 | 1st SIMM | 00000000 - 03ffffff | | | | | |
| SOCKET | SIMM | ADDRESS RANGE | | | | | | | | | | | | | | | | | | | |
| J0304 | 2nd SIMM | 0c000000 - 0ffffff | | | | | | | | | | | | | | | | | | | |
| J0302 | 4th SIMM | 08000000 - 0bffffff | | | | | | | | | | | | | | | | | | | |
| J0203 | 3rd SIMM | 04000000 - 07ffffff | | | | | | | | | | | | | | | | | | | |
| J0201 | 1st SIMM | 00000000 - 03ffffff | | | | | | | | | | | | | | | | | | | |
| <p>Power requirements Notes: Special considerations References: <i>Reference Manuals</i></p> | | | | | | | | | | | | | | | | | | | | | |
| Volume I | Date | | | | | | | | | | | | | | | | | | | | |

¹ Systems and Peripherals that the part is supported inside are listed. Systems that the part is supported on as an external option are not listed.

When a System or Peripheral name is changed after product introduction, both names are included. Example: The RSM Array 2000 was introduced in 1997. The name was changed to StorEdge A3000 in 1998.

When a System or Peripheral name is discontinued before a follow-on product is introduced, the previous name is not included. Example: The FC-AL 501-4158 Backplane was introduced in 1999. The name, Enterprise Network Array A5000, was discontinued in 1998 and is not used on the 11-slot FC-AL Backplane page in the Fibre Channel chapter.

² Internal and external option numbers are listed in Volume I. Internal disk and removable media option numbers are not included in Volume II. Volume II includes chapters for external disk and removable media option numbers.

Option numbers for products with multiple long option numbers are not listed. Example: ARY012A-254G, ARY012A-509G, ARY512A127G. The product name, StorEdge A5000, is used on the 9.1GB FC-AL Disk Drive page.

Supported systems and supported options are subject to change. Refer to the *Price List* and the *Hardware Platform Guide* for the most recent list of supported systems and options.

Revision History

| DATE | DESCRIPTION | PART NUMBER |
|----------|----------------------|-----------------------------|
| 06/01/87 | First Edition | 1-Volume 800-1819-01 |
| 11/01/87 | Second Edition | 1-Volume 800-1819-01 |
| 04/01/88 | Third Edition | 1-Volume 800-4006-01 |
| 09/01/88 | Fourth Edition | 1-Volume 800-4006-02 |
| 05/01/89 | Fifth Edition | 2-Volume Set 851-1020-01 |
| 10//0189 | Supplement | 2-Volume Set 851-1020-02 |
| 05/01/90 | Supplement | 2-Volume Set 851-1020-03 |
| 12/01/90 | Sixth Edition | 2-Volume Set 851-1020-04 |
| 08/15/91 | Seventh Edition | 2-Volume Set 851-1020-05 |
| 02/15/92 | Eighth Edition | 2-Volume Set 851-1020-06 |
| 11/15/92 | Ninth Edition | 2-Volume Set 851-1020-07 |
| 05/28/93 | Tenth Edition | 2-Volume Set 851-1020-08 |
| 12/15/93 | Eleventh Edition | 2-Volume Set 851-1020-09 |
| 06/10/94 | Twelfth Edition | 2-Volume Set 851-1020-10 |
| 02/21/95 | Thirteenth Edition | 2-Volume Set 851-1020-11 |
| 02/23/96 | Fourteenth Edition | 2-Volume Set 851-1020-12 |
| 09/27/96 | Fifteenth Edition | 2-Volume Set 851-1020-13 |
| 04/16/97 | Sixteenth Edition | 2-Volume Set 851-1020-14 |
| 12/05/97 | Seventeenth Edition | 2-Volume Set 851-1020-15 |
| 06/17/98 | Eighteenth Edition | 2-Volume Set 851-1020-16 |
| 03/26/99 | Nineteenth Edition | 2-Volume Set 851-1020-17 |
| 11/26/99 | Twentieth Edition | 2-Volume Set 851-1020-18 |
| 09/18/00 | Twenty-first Edition | 2-Volume Set 851-1020-19 |
| | | Volume I 800-4006-19 |
| | | Volume II 800-4247-17 |

CONFIGURATIONS

Configurations

Handling Static Sensitive Devices

Electronic components on printed circuit boards can be damaged by static electricity. Always wear a grounding strap and use an antistatic mat when handling boards or components.

Reference Documentation

Standard Configurations and Standard Options supported by Sun Microsystems are documented in the End User Price List, Reseller Price List, Hardware Configuration Guides, Product Brochures, and Hardware Installation Manuals.

Abbreviations

| | |
|------|------------------------|
| Assy | Assembly |
| Bkt | Bracket |
| FRU | Field Replaceable Unit |
| OBP | Open Boot PROM |
| OS | Operating System |
| w | With |
| w/o | Without |

Option Abbreviations

| | |
|-------|---------------------------------|
| SSA | SPARCstorage Array |
| A1000 | StorEdge A1000 |
| D1000 | StorEdge D1000 |
| A3000 | StorEdge A3000 (RSM Array 2000) |
| A3500 | StorEdge A3500 |
| A5000 | Enterprise Network Array A5000 |
| A5000 | StorEdge A5000 |
| A7000 | StorEdge A7000 |

System Abbreviations

| | |
|-------|---|
| SC | SPARCcenter |
| SS | SPARCserver, SPARCstation, or SPARCsystem |
| A11 | Ultra 1 Models 140 and 170 |
| A12 | Ultra 1 Models 140E, 170E, and 200E |
| A14 | Ultra 2 |
| A16 | Ultra 30 |
| A17 | Ultra Enterprise 3000 Workstation |
| A18 | Ultra Enterprise 4000 Workstation |
| A20 | Ultra 450 Workstation |
| A21 | Ultra 5 |
| A22 | Ultra 10 |
| A23 | Ultra 60 |
| A25 | Ultra Enterprise 450 Workgroup Server |
| A26 | Enterprise 250 |
| A27 | Ultra 80 |
| A28 | Sun Blade 1000 |
| A33 | Enterprise 420R |
| A34 | Enterprise 220R |
| A36 | Sun Blade 100 |
| E150 | Ultra Enterprise 150 |
| Ex000 | Ultra Enterprise 3000/4000/5000/6000 |
| Ex500 | Enterprise 3500/4500/5500/6500 |

PCI Local Bus

PCI Mechanical Specification

PCI boards have two basic form factors, standard or long length (312 mm) and short length (119-167 mm). Board edge connectors are keyed for 3.3V signaling, 5V signaling, or universal signaling. Universal boards are designed to fit in 3.3V or 5V connectors.

The 32-Bit, 124 -Pin PCI connector has 120 signal pins and 4 key pins. The 32-Bit connector defines the system signaling as 3.3V or 5V. An optional 64-Bit extension is built into the same connector molding extending the number of pins to 184.

A 32-Bit PCI board identifies itself for 32-Bit transfers when it is installed in a 32-Bit or 64-Bit connector. A 32-Bit PCI board can be installed in either a 32-Bit or 64-Bit connector.

A 64-Bit PCI board identifies itself for 32-Bit transfers when it is installed in a 32-Bit connector. A 64-Bit PCI board identifies itself for 64-Bit transfers when it is installed in a 64-Bit connector.

The signals that enable 64-Bit operation are REQ64 and ACK64. They are Side A Pin-60 and Side B Pin-60 of the 32-Bit connector.

64-Bit PCI boards do not fit into Ultra 80, Slot 4.

64-Bit PCI boards do not fit into Slots 9 and 10 on A20/A25 System Boards 501-5028, 501-2996, and 501-5270.

PCI Electrical Specification

The PCI specification provides for 3.3V and 5V signaling. Signaling is determined by the motherboard. Signaling for a 3.3V PCI board is at 3.3V. Signaling for a 5V PCI board is at 5V. Signaling for a universal PCI board is at 3.3V or 5V.

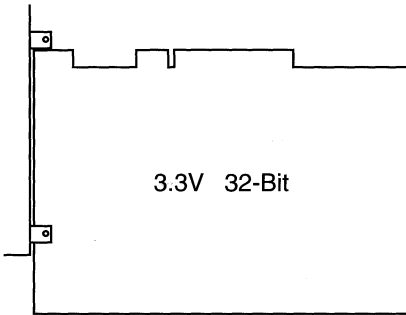
All PCI connectors require four power rails: +3.3V, +5V, +12V, and -12V. The distinction between a 3.3V and 5V PCI boards is in the signaling protocol, not the connector power rails.

The maximum power allowed for a PCI board is 25 Watts from all four power rails combined.

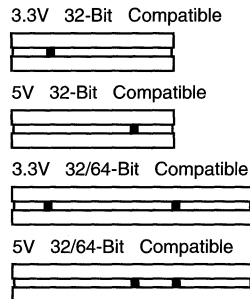
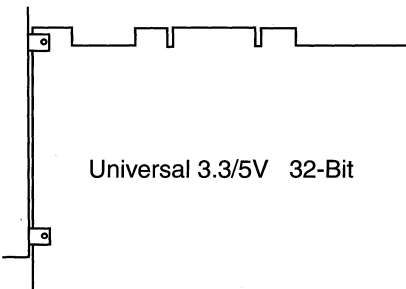
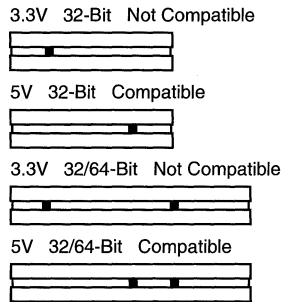
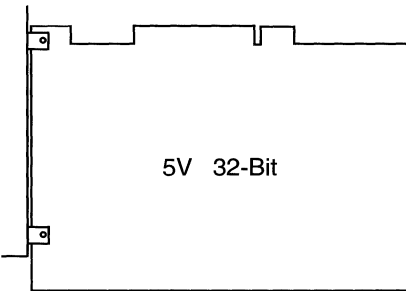
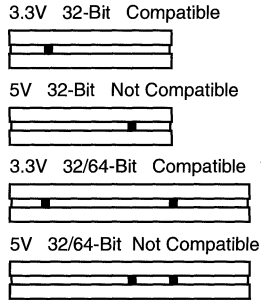
PCI Board and PCI Connector Illustrations

PCI Boards are shown with the solder side up because this is the orientation in PCI systems including the Ultra 5 (Slots 1 and 3), Ultra 10, Ultra 30, Ultra 60, Ultra 80, Enterprise 250, and Ultra Enterprise 450.

32-Bit PCI Boards

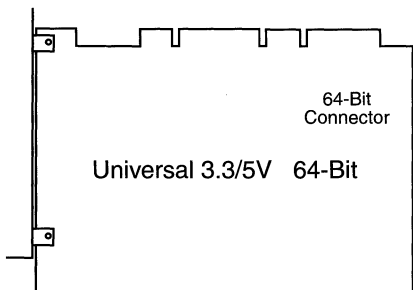
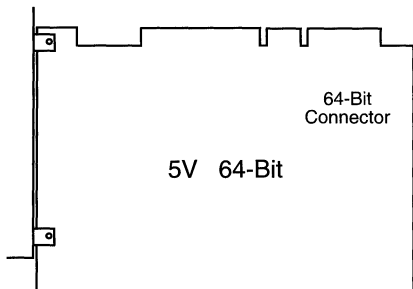
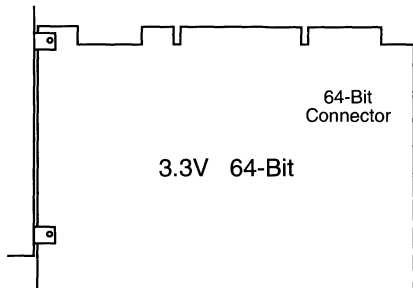


PCI Connectors



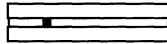
PCI Board and PCI Connector Illustrations

64-Bit PCI Boards

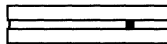


PCI Connector

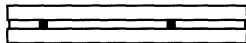
3.3V 32-Bit Compatible



5V 32-Bit Not Compatible



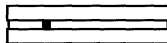
3.3V 32/64-Bit Compatible



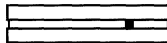
5V 32/64-Bit Not Compatible



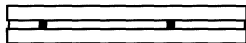
3.3V 32-Bit Not Compatible



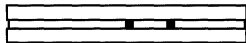
5V 32-Bit Compatible



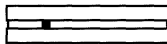
3.3V 32/64-Bit Not Compatible



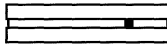
5V 32/64-Bit Compatible



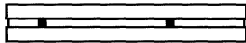
3.3V 32-Bit Compatible



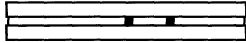
5V 32-Bit Compatible



3.3V 32/64-Bit Compatible



5V 32/64-Bit Compatible

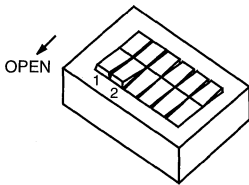


Dip Switches

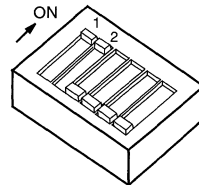
Rocker and Slide type DIP Switches are used in Sun products. Turn on a Rocker-type switch by pressing down the end of the switch furthest from the OPEN lettering on the switch. Turn on a Slide-type switch by sliding the switch in the direction of the arrow on the switch. Switches 1 and 2 are shown in the ON position in these illustrations.

Rocker-type Switch

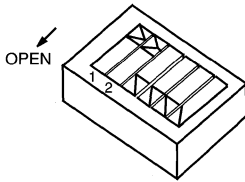
Slide-type Switch



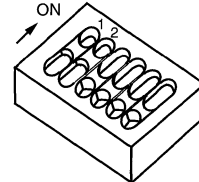
SWITCH TYPE A



SWITCH TYPE C



SWITCH TYPE B



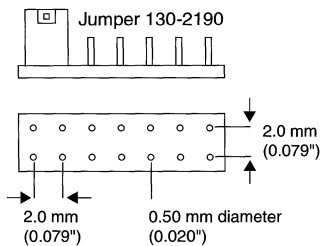
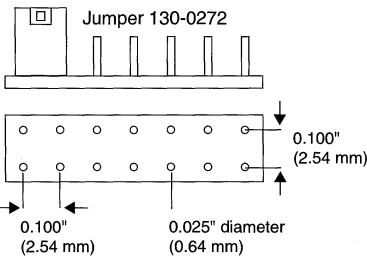
SWITCH TYPE D

Jumpers

Jumpers are used to connect two pins of a Terminal Strip. Two sizes of jumpers are used: 0.100 inch and 2.0 millimeter.

0.100 inch Jumper

2.0 millimeter Jumper



Power-On Self Test

Power-On Self Test (POST) is a diagnostic that performs hardware tests at power-on. When POST runs in Diagnostic mode, output is sent to Serial Port A. Frame buffer output occurs during memory initialization after POST has completed. Answer Books, Service Manuals, and Owner Guides provide system specific details on how to use POST and the available options.

Normal Mode runs when:

- The NVRAM parameter **diag-switch?** is set to false.
- The NVRAM parameter **diag-level** is set to off.
- The front panel keyswitch is in the Normal or Secure position.

Diagnostic Mode runs when:

- The NVRAM parameter **diag-switch?** is set to true.
- The NVRAM parameter **diag-level** is set to min, med, or max.
- The front panel keyswitch is in the Diagnostic position.

DEMON and Extended Modes is initialized after POST when:

- The s key (Stop after POST) is depressed after power-on.
- The m key (Menus) is depressed after power-on.

DEMON is available on the SS1000(E) and SC2000(E).
Extended POST is available on the E3x00-E6x00.

OBDDiag in interactive mode is initialized from OBP when:

- The forth word **obddiag** is entered at the ok prompt.
- The forth words **obddiag obtest** are entered at the ok prompt.
- The NVRAM parameter **diag-level** is set to menus.

OBDDiag is available on the Ultra 5, Ultra 10, Ultra 30, Ultra 60, Ultra 80, Enterprise 250, and Ultra Enterprise 450.

OBDDiag runs automatically on the E250/E450 after POST when:

- The NVRAM parameter **diag-switch?** is set to true.
- The NVRAM parameter **diag-level** is set to min, med, or max.
- The front panel keyswitch is in the Diagnostic position.

Open Boot PROM Commands

Power On Commands

STOP bypasses POST. **STOP-A** aborts POST.

STOP-D forces a diagnostic power-on. The NVRAM Parameter **diag-switch?** is set to true.

STOP-F forces input and output to ttya. Input from the Keyboard is disabled except for L1-A.

STOP-N forces a **set-defaults** of the NVRAM.

Help and Printenv Commands

These examples are from an Enterprise 250 with OBP 3.5.

The **help** command displays the menu of available help options.

ok **help**

```
Enter 'help command-name' or 'help category-name' for more help.
(Use ONLY the first word of a category-name or category description)
Examples: help select -or- help line
Repeated loops
Defining new commands
Numeric output
Radix (number base conversions)
Arithmetic
Memory access
Line editor
System and boot configuration parameters
Select I/O devices
Floppy eject
Power on reset
Diag (diagnostic routines)
Resume execution
File download and boot
nvramrc (making new commands permanent)
Enable/Disable selected hardware subsystems
Environmental monitor
```

Open Boot PROM Commands

The **printenv** command displays NVRAM parameter names, current values, and default values.

| Variable Name | Value | Default Value |
|--------------------|----------------------|----------------------|
| diag-passes | 1 | 1 |
| diag-verbosity | 0 | 0 |
| diag-continue? | false | false |
| tpe-link-test? | true | true |
| scsi-initiator-id | 7 | 7 |
| keyboard-click? | false | false |
| keymap | | |
| ttyb-mode | 9600,8,n,1,- | 9600,8,n,1,- |
| ttya-mode | 9600,8,n,1,- | 9600,8,n,1,- |
| ttyb-rts-dtr-off | false | false |
| ttyb-ignore-cd | true | true |
| ttya-rts-dtr-off | false | false |
| ttya-ignore-cd | true | true |
| reboot-flag | false | false |
| reboot-posc | 4294582272 | 0 |
| reboot-posl | 0 | 0 |
| reboot-cmd | boot net -r | |
| pci-slot-skip-list | none | none |
| pci0-probe-list | 3,2,4,5 | 3,2,4,5 |
| upa-port-skip-list | none | none |
| diag-level | min | min |
| diag-script | normal | normal |
| diag-targets | none | none |
| diag-trigger | power-reset | power-reset |
| env-monitor | enabled | enabled |
| asr-disable-list | | |
| asr-status | 18437736870358094097 | 18437736870358094097 |
| post-status | 18437736870358094097 | |
| post-address | 0 | |
| post-flag | 0 | |
| obp-flags | 0 | |
| obp-state | 6 | |
| obp-status | 0 | |

Open Boot PROM Commands

printenv command - continued

| Variable Name | Value | Default Value |
|----------------------|----------|---------------|
| #power-cycles | 4 | |
| system-board-serial# | 802F01F0 | |
| system-board-date | 34cf6a6b | |
| fcode-debug? | false | false |
| output-device | screen | screen |
| input-device | keyboard | keyboard |
| load-base | 16384 | 16384 |
| boot-command | boot | boot |
| auto-boot? | true | true |
| auto-boot-on-error? | false | false |
| watchdog-reboot? | false | false |
| diag-file | | |
| diag-device | net | net |
| boot-file | | |
| boot-device | net | disk net |
| local-mac-address? | false | false |
| ansi-terminal? | true | true |
| screen-#columns | 80 | 80 |
| screen-#rows | 34 | 34 |
| silent-mode? | false | false |
| use-nvramrc? | false | false |
| nvramrc | | |
| security-mode | none | |
| security-password | | |
| security-#badlogins | 0 | |
| oem-logo | | |
| oem-logo? | false | false |
| oem-banner | | |
| oem-banner? | false | false |
| hardware-revision | | |
| last-hardware-update | | |
| upa-noprobe-mask | 0 | 0 |
| mfg-options | 49 | |
| diag-switch? | false | false |

Open Boot PROM Commands

Use **printenv** and the variable name to show a specific parameter.

```
ok printenv diag-switch?
diag-switch? = true
```

The Ultra 450 and Ultra Enterprise 450 OBP 3.12 changed the **printenv** output to eliminate non-user configurable variables used for the internal workings of OpenBoot. Use **printenv -a** to see all variables.

Use the **setenv** command to change a parameter.

```
ok setenv diag-switch? true
```

Use the **set-defaults** command to restore the default settings.

```
ok set-defaults
```

Other commonly used commands are shown below.

| OPTION | DESCRIPTION |
|---------------------|---|
| banner | Display the selftest banner message |
| .version | Display the version and date of boot PROM |
| print-nvram-stat | Display the PROM version for all boards installed |
| .enet-addr | Display the Ethernet address |
| .idprom | Display the ID PROM contents |
| input [source] | Select source for input (ttya, ttyb, or keyboard) |
| output [source] | Select source for output (ttya, ttyb, or keyboard) |
| reset | Resets entire system, similar to SunMon k2 |
| soft-reset | Soft reset, similar to SunMon k1 |
| eject-floppy | Ejects floppy diskette from the drive |
| security-mode | Select non-secure mode (enter none) Select command secure mode (enter command) Select full secure mode (enter full) |
| security-password | Allows user to enter an 8 byte password in ASCII |
| sifting <i>text</i> | Display forth commands containing <i>text</i> |
| words | Display forth words in the dictionary |
| probe-scsi | Display addresses and types of SCSI devices |
| probe-ide | Display addresses and types of IDE devices |
| obdiag | Enter open boot diagnostics |
| flash-update-ucm | Update UCM flash prom |
| diag-level | Set the diagnostic level to min, max, menus, or off |

Open Boot PROM Commands

nvrarc

The *nvrarc* is an NVRAM location reserved for user-defined commands used during system initialization. Include the following entries when creating a custom *nvrarc*:

| | |
|------------------------|------------------------------------|
| probe-all | Probes for plug-in devices |
| install-console | Selects and activates the console |
| banner | Displays the banner to the console |

nvedit

The **nvedit** command opens the *nvrarc* editor and enables the use of the following commands:

| | |
|------------------|----------------------------------|
| Return | Inserts a new line |
| Control-L | Displays all lines in the buffer |
| Control-C | Exits the <i>nvrarc</i> editor. |

nvquit

The **nvquit** command discards the contents of the temporary *nvrarc* buffer created when an **nvedit** session is exited.

nvrn

The **nvrn** command executes the contents of the temporary *nvrarc* buffer created when an **nvedit** session is exited.

nvstore

The **nvstore** command saves the contents of the temporary *nvrarc* buffer created when an **nvedit** session is exited.

use-nvrarc?

Set the **use-nvrarc?** parameter to true to use the *nvrarc*. This parameter is normally set to false.

Open Boot PROM Commands

Twisted Pair Ethernet Link Integrity Test

Set the **tpe-link-test?** nvram parameter to false to disable the on-board Link Integrity Test.

Use the **set-tpe-test** command to enable or disable the on-board Link Integrity Test on the SPARCserver 1000.

ok **true set-tpe-test**

enables the Link Test on all System Boards

ok **false set-tpe-test**

disables the Link Test on all System Boards

ok **false apply set-tpe-test net0 [net1, net2, net3]**

disables the Link Test on System Board 0 [1, 2, 3]

Use the **nvedit** command to program the *nvramrc* to disable the Link Integrity Test when a reset or power cycle occurs on the SPARCserver 1000.

ok **nvedit**

0: **probe-all install-console <return>**

1: **false set-tpe-test <return>**

or

1: **false apply set-tpe-test net0 [net1, net2, net3]**

2: **banner <control-c>**

ok **nvstore**

ok **setenv use-nvramrc? true**

ok **reset**

Open Boot PROM Commands

SBus Quad Ethernet Controller Link Integrity Test

Use the **set-tpe-test** command to enable the Link Integrity Test.

```
ok true " sqec-node1-path" " set-tpe-test" execute-device-method drop
ok true " sqec-node2-path" " set-tpe-test" execute-device-method drop
ok true " sqec-node3-path" " set-tpe-test" execute-device-method drop
ok true " sqec-node4-path" " set-tpe-test" execute-device-method drop
```

Use the **set-tpe-test** command to disable the Link Integrity Test. The Link Integrity Test is enabled if a system reset or power cycle occurs.

```
ok false " sqec-node1-path" " set-tpe-test" execute-device-method drop
ok false " sqec-node2-path" " set-tpe-test" execute-device-method drop
ok false " sqec-node3-path" " set-tpe-test" execute-device-method drop
ok false " sqec-node4-path" " set-tpe-test" execute-device-method drop
```

Use the **nvedit** command to program the *nvrnrc* to disable the Link Integrity Test. The Link Integrity Test is not enabled if a system reset or power cycle occurs.

```
ok nvedit
0: probe-all install-console <return>
1: false " sqec-node1-path" " set-tpe-test" execute-device-method drop
2: false " sqec-node2-path" " set-tpe-test" execute-device-method drop
3: false " sqec-node3-path" " set-tpe-test" execute-device-method drop
4: false " sqec-node4-path" " set-tpe-test" execute-device-method drop
5: banner <control-c>
ok nvstore
ok setenv use-nvrnrc? true
ok reset
```

Open Boot PROM Commands

SPARCstation 4 Frame Buffer Resolution

The following methods are available for changing the SS4 tcx frame buffer resolution.

```
ok setenv fcode-debug? true  
ok setenv output-device screen:r1152x900x94  
ok reset
```

or

```
ok setenv fcode-debug? true  
ok setenv output-device /sbus/sunw,tcx:r1024x768x84  
ok reset
```

or

```
ok setenv fcode-debug? true  
ok cd /sbus/sunw,tcx  
ok screen select-dev  
ok r1280x1024x135 set-resolution
```

Open Boot PROM Commands

PCI System Commands

The following user query and control commands (forth words) are available on PCI based systems.

Use the **show-pci-devs** command to show all devices on a specific PCI bus.

```
ok show-pci-devs /pci@1f,2000      show pcia devices
ok show-pci-devs /pci@1f,4000     show pcib devices
```

Use the **show-pci-devs-all** command to show all PCI devices.

```
ok show-pci-devs-all             show all pci devices
```

Use the **show-pci-config** command to show configuration space registers for a given PCI device.

```
ok show-pci-config /pci@1f,4000/network@1,1
```

Use the **show-pci-configs** command to show configuration space registers for all PCI devices on a PCI bus.

```
ok show-pci-configs /pci@1f,4000
```

Use the **show-pci-configs-all** command to show configuration space registers for all PCI devices on all PCI busses.

```
ok show-pci-configs-all /pci@1f,4000
```

Use the **probe-pci** command to probe all devices on a specific PCI bus.

```
ok probe-pci /pci@1f,4000
probing /pci@1f,4000 at Device 3 scsi disk tape
probing /pci@1f,4000 at Device 3 nothing there
```

Use the **probe-pci-slot** command to probe a specific PCI slot on a specific PCI bus.

```
ok 3 probe-pci-slot /pci@1f,4000
probing /pci@1f,4000 at Device 3 scsi disk tape
```

Open Boot PROM Commands

Ultra 30

The **pcia-probe-list** NVRAM variable is used to control the probe order for the following pcia devices (/pci@1f,2000):

| | |
|------------|-------------------------------|
| Psycho | 0 (not probed) |
| PCI Slot 0 | 1 (J1301 = pci@1f,2000/xxx@1) |
| no device | 2 (historical entry) |

ok **setenv pcia-probe-list 1,2** Probe in order 1,2

The **pcib-probe-list** NVRAM variable is used to control the probe order for the following pcib devices (/pci@1f,4000):

| | |
|--------------|------------------------------------|
| Psycho | 0 (not probed) |
| Cheerio | 1 (not probed) |
| PCI Slot 1 | 2 (J1401 = pci@1f,4000/xxx@2) |
| Onboard SCSI | 3 (first device probed by default) |
| PCI Slot 2 | 4 (J1501 = pci@1f,4000/xxx@4) |
| PCI Slot 3 | 5 (J1601 = pci@1f,4000/xxx@5) |

ok **setenv pcib-probe-list 3,2,4,5** Probe in order 3,2,4,5

The **printenv pci-x-probe-list** command is used to show the probe list for pcia or pcib:

| | |
|------------------------------------|-----------------------|
| ok printenv pcia-probe-list | print pcia probe list |
| ok printenv pcib-probe-list | print pcib probe list |

The **show-pci-devs** command is used to show all devices on a specific PCI bus:

| | |
|--------------------------------------|-------------------|
| ok show-pci-devs /pci@1f,2000 | show pcia devices |
| ok show-pci-devs /pci@1f,4000 | show pcib devices |

The **show-pci-devs-all** command is used to show all devices.

| | |
|-----------------------------|----------------------|
| ok show-pci-devs-all | show all pci devices |
|-----------------------------|----------------------|

Open Boot PROM Commands

Ultra 60, Netra t 1120/1125, and Enterprise 220R**Ultra 80, Netra t 1400/1405, and Enterprise 420R**

The Ultra 60 Workstation, Netra t 1120/1125 Telco Server, and Enterprise 220R Workgroup Server use the same System Board.

The Ultra 80 Workstation, Netra t 1400/1405 Telco Server, and Enterprise 420R Workgroup Server use the same System Board.

The **banner-name**, **enclosure-type**, and **energystar-enabled?** NVRAM variables set up the system board for use in a Workstation, Telco Server, or Workgroup Server. These variables:

- Control the system name displayed in the power-on banner
- Enable or disable energystar
- Report the enclosure type to software

ok **setenv banner-name Sun Enterprise 220R**

banner-name = Sun Enterprise 220R

ok **setenv enclosure-type 540-4284**

enclosure-type = 540-4284

ok **setenv energystar-enabled? true**

energy-star-enabled? = false

| System | banner-name | enclosure-type | energystar-enabled? |
|-------------------|----------------------|----------------|---------------------|
| Ultra 60 | Sun Ultra 60 UPA/PCI | 540-3251 | true |
| Netra t 1120/1125 | Sun Ultra 60 UPA/PCI | Unknown | false |
| Enterprise 220R | Sun Enterprise 220R | 540-4284 | false |
| Ultra 80 | Sun Ultra 80 UPA/PCI | 540-3871 | true |
| Netra t 1400/1405 | Sun Ultra 80 UPA/PCI | Unknown | false |
| Enterprise 420R | Sun Enterprise 420R | 540-4115 | false |

The **enclosure-type** variable is for future use. Current software uses the **banner-name**.

The **banner-name**, **enclosure-type**, and **energystar-enabled?** variables are not changed by the **set-defaults** command.

Open Boot PROM Commands

Enterprise 250

The **upa-port-skip-list** NVRAM variable is used to skip probing of UPA ports. The following UPA ports are used:

| | |
|------------|-------------------|
| Processors | UPA Ports 0 and 1 |
| Psycho | UPA Port 1f |

ok **setenv upa-port-skip-list 1** Skip CPU1

The **pci0-probe-list** NVRAM variable is used to control the probe order for PCI devices /pci@1f,4000. Device 2 is card slot 2, device 3 is SCSI, device 4 is card slot 1, and device 5 is card slot 0.

ok **setenv pci0-probe-list 3,2,4** Probe in order 3-2-4

The **pci-slot-skip-list** NVRAM variable is used to skip probing of PCI devices probing into the backpanel slots 0, 1, 2, and 3.

ok **setenv pci-slot-skip-list 0,3** Skip slot 0 and 3

The **diag-trigger** NVRAM variable is used to control which resets will automatically enable POST when **diag-switch?** is true.

ok **setenv diag-trigger power-reset**
Run diagnostics on power-on resets.

ok **setenv diag-trigger error-reset**
Run diagnostics on power-on resets, fatal hardware errors, and watchdog resets.

ok **setenv diag-trigger soft-reset**
Run diagnostics on all resets (except XIR) including UNIX unit 6 or reboot

ok **setenv diag-trigger none**
Does not run diagnostics on any resets.

The **auto-boot-on-error?** NVRAM variable is used to allow the system to attempt to boot if POST fails and **auto-boot?** is true.

ok **setenv auto-boot-on-error? true**
Attempt to boot if POST fails and **auto-boot?** is true

Open Boot PROM Commands

Enterprise 250 - Continued

The **env-monitor** NVRAM variable is used for environmental monitoring at the Open Boot PROM level.

```
ok setenv env-monitor advise          overtime warning
ok setenv env-monitor enabled        overtime warning
                                       shut down power
ok setenv env-monitor disabled      env-monitor is off
```

The **asr-enable** and **asr-disable** commands enable and disable system devices. The **asr** command displays the settings.

```
ok.asr
System status:      Enabled
CPU0:              Enabled
CPU1:              Enabled
SC-MP:             Enabled
Psycho@1f:         Enabled
Cheerio:           Enabled
SCSI:              Enabled
Mem Bank0:         Enabled
Mem Bank1:         Enabled
Mem Bank2:         Enabled
Mem Bank3:         Enabled
PROM:              Enabled
NVRAM:             Enabled
TTY:               Enabled
Audio:             Enabled
Soupier:           Enabled
PCI Slots:         Enabled
```

Known 'enable/disable' subsystem components are:

```
cpu*  cpu0  cpu1
bank* bank0 bank1 bank2 bank3
dimm0 - dimm15
```

Open Boot PROM Commands

Ultra 450 and Ultra Enterprise 450

The **mfg-options** NVRAM variable is a decimal value that sets up the system as a Workstation or Server. The **mfg-options**:

- Controls the system name displayed in the power-on banner
- Enables or disables energystar
- Controls the behavior after a watchdog reset
- Enables or disables the blinking front panel LEDs

ok **setenv mfg-options 0** Workstation default (in decimal)

ok **setenv mfg-options 49** Server default (in decimal)

| Hex | Root (/) Node Properties | | | /eeprom Node Properties | SUNW.envctrl Node Properties |
|-----------|-----------------------------|-------------|---------------|----------------------------|---------------------------------|
| | banner-name | system-type | energystar-v2 | watchdog-enable | activity-led-blink? |
| xxxx xxx0 | Ultra 450 | Workstation | Enabled | | |
| xxxx xxx1 | Enterprise 450 | Server | Disabled | | |
| xxx0 xxxx | | | | | Disabled |
| xxx1 xxxx | | | | | Enabled |
| xx0x xxxx | | | | Disabled | |
| xx1x xxxx | | | | Enabled | |

The method of changing the **mfg-options**, **diag-targets**, and **diag-verbosity** was changed in OBP 3.12. The new method accepts a + or - construct for these variables.

mfg-options:

- workstation-class --+(0x00) Workstation
- server-class --+(0x01) Server
- workstation --+(0x00) Workstation
- energystar --+(0x10) Energy Star
- watch-dog --+(0x20) Watchdog
- server --+(0x31) Server/Energy Star/Watchdog

- ok **setenv mfg-options + server**
- ok **setenv mfg-options + watchdog + energystar**
- ok **setenv mfg-options - energystar**

Open Boot PROM Commands

Ultra 450 and Ultra Enterprise 450 - Continued**diag-targets:**

| | |
|-----------|--|
| none | --(0x00) no bus or device I/O testing |
| iopath | --(0x01) test bus connectivity (eg SCSI) |
| media | --(0x02) perform I/O to the device |
| device | --(0x04) invoke device self test (BIST) |
| loopback | --(0x10) external loopback (eg tty) |
| loopback2 | --(0x20) external loopback2 (eg MII) |
| loopbacks | --(0x30) external loopback + loopback2 |
| loopback3 | --(0x40) external loopback3 (eg RSC) |

diag-verbosity:

| | |
|----------|--|
| none | --(0x00) minimum output (errors only) |
| silent | --(0x00) minimum output (errors only) |
| verbose | --(0x01) test progress information |
| subtests | --(0x02) print subtest names |
| debug | --(0x04) print debug messages |
| callers | --(0x08) print back trace of callers on errors |
| tests | --(0x10) print Testing <name> |
| all | --(0x1f) verbose + names + debug + callers |

The **upa-port-skip-list** NVRAM variable is used to skip probing of UPA ports. The following UPA ports are used:

| | |
|---------------|--------------------------|
| Processors | UPA Ports 0, 1, 2, and 3 |
| Frame Buffers | UPA Ports 1d and 1e |
| Psycho | UPA Ports 4, 6, and 1f |

ok **setenv upa-port-skip-list 3,1d** Skip CPU3 and FFB1

Open Boot PROM Commands

Ultra 450 and Ultra Enterprise 450 - Continued

The **pci0-probe-list** NVRAM variable is used to control the probe order for on-board PCI devices (/pci@1f,4000). The probe order for PCI devices plugged into the backpanel slots cannot be controlled. Devices omitted from the **pci0-probe-list** are not probed.

Devices in the **pci0-probe-list** are:

- 2 = scsi (rma backplane & external connector)
- 3 = scsi (4 disk backplane)
- 4 = Empty slot - Back panel slot 10

ok **setenv pci0-probe-list 3,2,4** Probe in order 3-2-4

Due to internal PCI changes introduced in OBP 3.12, the Cheerio node is pseudo-probed and device 1 must always be included in the **pci0-probe-list**. Prior to OBP 3.12, an entry for device 1 was not required. The default probe order for OBP 3.12 is 1-3-2-4.

Devices in the OBP 3.12 **pci0-probe-list** are:

- 1 = Cheerio (flash, nvram, superio, serial, audio, and I2C)
- 2 = SCSI (rma backplane & external connector)
- 3 = SCSI (4 disk backplane)
- 4 = PCI Slot 10

ok **setenv pci0-probe-list 1,3,2,4** Probe in order 1-3-2-4

The **pci-slot-skip-list** NVRAM variable is used to skip probing of PCI devices plugged into the backpanel slots. If slot 10 is in the **pci-slot-skip-list**, it will be skipped even if device 4 is included in the **pci0-probe-list**.

ok **setenv pci-slot-skip-list 4,6** Skip slot 4 and 6

Open Boot PROM Commands

Ultra 450 and Ultra Enterprise 450 - Continued

The **memory-interleave** NVRAM variable controls how OBP sets memory interleaving. If interleaving is enabled with mixed memory bank sizes, the smaller memory size is used and POST displays a smaller memory value than is physically installed.

ok **setenv memory-interleave max-size**

| Setting | Description |
|----------------|--|
| auto (default) | OBP chooses best setting |
| max-size | Configure for maximum available memory space |
| max-interleave | Configure for maximum memory bandwidth (high interleaving values) at the expense of memory size. |
| 1 | Use 1-way interleaving |
| 2 | Use 2-way interleaving |
| 4 | Use 4-way interleaving |

The **env-monitor** NVRAM variable determines how OBP responds to environmental monitoring via the I2C serial bus.

ok **setenv env-monitor advise**

| Setting | Description |
|-------------------|--|
| enabled (default) | Issue a warning and shut down the system in 15 seconds if an unsafe condition is detected. |
| advise | Issue a warning if an unsafe condition is detected. |
| disabled | Do not monitor for unsafe conditions. |

The **.post** command displays the results of the Power On Self Test.

```
ok .post
System status :      OK
CPU0 :              OK
CPU1 :              OK
CPU2 :              OK
CPU3 :              OK
etc ...
```

Open Boot PROM Commands

Ultra 450 and Ultra Enterprise 450 - Continued

The **diag-trigger** NVRAM variable is used to control which resets will automatically enable POST when **diag-switch?** is true.

ok **setenv diag-trigger power-reset**

Run diagnostics on power-on resets.

ok **setenv diag-trigger error-reset**

Run diagnostics on power-on resets, fatal hardware errors, and watchdog resets.

ok **setenv diag-trigger soft-reset**

Run diagnostics on all resets (except XIR) including UNIX init 6 or reboot

ok **setenv diag-trigger none**

Does not run diagnostics on any resets.

The **asr-enable** and **asr-disable** commands enable and disable system devices. The **.asr** command displays the settings.

```

ok .asr
System status :      Enabled      (Not Selectable)
CPU0 :              Enabled      (cpu0 or cpu*)
CPU1 :              Enabled      (cpu1 or cpu*)
CPU2 :              Disabled     (cpu2 or cpu*)
CPU3 :              Enabled      (cpu3 or cpu*)
SC-Marvin :         Enabled      (Not Selectable)
Psycho@1f :         Enabled      (Not Selectable)
Psycho@4 :          Enabled      (Not Selectable)
Psycho@6 :          Enabled      (Not Selectable)
Cheerio :           Enabled      (Not Selectable)
SCSI :              Enabled      (Not Selectable)
Mem Bank0 :         Enabled      (bank0 or bank* or dimm0-3)
Mem Bank1 :         Enabled      (bank1 or bank* or dimm4-7)
Mem Bank2 :         Enabled      (bank2 or bank* or dimm8-11)
Mem Bank3 :         Enabled      (bank3 or bank* or dimm12-15)
PROM :              Enabled      (Not Selectable)
NVRAM :             Enabled      (Not Selectable)
TTY :               Enabled      (Not Selectable)
Audio :             Enabled      (Not Selectable)
SuperIO :           Enabled      (Not Selectable)
PCI Slots :         Enabled      (Not Selectable)

```

Open Boot PROM Commands

Ultra 450 and Ultra Enterprise 450 - Continued

The **/mc** device node stores memory configuration information for use by the operating system.

```
ok cd /mc@0,0
ok ls
f007f3e8      bank@0,c0000000
f007f230      bank@0,80000000
f007f078      bank@0,40000000
f007e9a0      bank@0,00000000
```

```
ok cd /mc@0,0/bank@0,0
ok ls
f007eed8      dimm@0,3
f007ed90      dimm@0,2
f007ec48      dimm@0,1
f007eb00      dimm@0,0
```

```
ok .properties
reg            00000000 00000000 00000000 08000000
#size-cells    00000002
fru           motherboard
device_type    memory-bank
name          bank
```

The lower half of the register is the bank size:

00000000 08000000 = 128mb bank

The upper half of the register is the starting address:

00000000 00000000 = starting address 0

```
ok cd /mc@0,0/bank@0,0/dimm@0,3
ok .properties
socket-name    1704
reg            00000000 00000003 00000000 02000000
fru           memory-module
device_type    memory-module
name          dimm
```

The lower half of the register is the dimm size:

00000000 02000000 = 32mb

The upper half of the register is the dimm number in the bank:

00000000 00000003 = dimm 3

Open Boot PROM Commands

Ultra 450 and Ultra Enterprise 450 - Continued

The **/associations** tree node contains entries representing categories of associations, or connections, between system components that are dispersed in the device tree.

```
ok cd /associations/slot2dev
```

```
ok .properties
```

| <u>Sub-System</u> | <u>Is Associated With</u> |
|-------------------|---------------------------------|
| ebusaudio | /pci@1f,4000/ebus@1/*@14,200000 |
| pci-slot#10 | /pci@1f,4000/*@4,* |
| pci-slot#9 | /pci@4,4000/*@2,* |
| pci-slot#8 | /pci@4,4000/*@3,* |
| pci-slot#7 | /pci@4,4000/*@4,* |
| pci-slot#6 | /pci@4,2000/*@1,* |
| pci-slot#5 | /pci@1f,2000/*@1,* |
| pci-slot#4 | /pci@6,2000/*@1,* |
| pci-slot#3 | /pci@6,4000/*@2,* |
| pci-slot#2 | /pci@6,4000/*@3,* |
| pci-slot#1 | /pci@6,4000/*@4,* |
| graphics#2 | /*@1d,0 |
| graphics#1 | /*@1e,0 |
| cpu-b2 | /*@3,0 |
| cpu-b1 | /*@2,0 |
| cpu-a2 | /*@1,0 |
| cpu-a1 | /*@0,0 |

```
ok cd /associations/slot2led
```

```
ok .properties
```

| <u>Sub-System</u> | <u>Is Associated With</u> |
|-------------------|--|
| slot # 3 | /pci@1f,4000/ebus@1/i2c@14,600000/bits@40/wo@3 |
| slot # 2 | /pci@1f,4000/ebus@1/i2c@14,600000/bits@40/wo@2 |
| slot # 1 | /pci@1f,4000/ebus@1/i2c@14,600000/bits@40/wo@1 |
| slot # 0 | /pci@1f,4000/ebus@1/i2c@14,600000/bits@40/wo@0 |

```
ok cd /associations/slot2disk
```

```
ok .properties
```

| <u>Sub-System</u> | <u>Is Associated With</u> |
|-------------------|----------------------------|
| slot # 3 | /pci@1f,4000/scsi@3/disk@3 |
| slot # 2 | /pci@1f,4000/scsi@3/disk@2 |
| slot # 1 | /pci@1f,4000/scsi@3/disk@1 |
| slot # 0 | /pci@1f,4000/scsi@3/disk@0 |

Open Boot PROM Commands

Ultra 450 and Ultra Enterprise 450 - Continued

The **disk-led-assoc** NVRAM variable defines the PCI slot location for the dual channel Ultra/Wide SCSI controller connected to the lower and upper 8-drive backplanes.

The value 0 defines the location of the onboard SCSI controller that connects to the 4-drive backplane.

The value *x* defines the PCI slot location of the lower SCSI controller that connects to the lower 8-drive backplane.

The value *y* defines the PCI slot location of the upper SCSI controller that connects to the upper 8-drive backplane.

```
ok printenv disk-led-assoc  
disk-led-assoc 0 (default)  
ok setenv disk-led-assoc 0 x y
```

E3000 - E6500 Flash and FCode

Use the Flash PROM programming utility to update the Flash PROM on the CPU/Memory board and FCode on the I/O boards.

Program the Flash PROM and FCode over a local area network, from CD-ROM, or from Patch 103346. Patch $\leq 103346-09$ is for the 32-bit Solaris Operating System and Patch $\geq 103346-10$ is for the 32-bit or 64-bit Solaris Operating System.

Use caution when performing a Flash PROM update. A board may be inoperable if it is programmed with an older version of code. For example:

CPU/Memory boards with 336MHz modules require OBP ≥ 3.2 Version 12. Selftest fails if older code is downloaded.

Flash Update 1.6 does not support Type-4 I/O boards. A Type-4 I/O board will appear to be a Type-1 I/O board after downloading FCode from Flash Update 1.6. The device SUNW,socal will not be recognized, and errors from device SUNW,soc will appear during selftest.

Open Boot PROM Commands

E3000 - E6500 Flash PROM and FCode - Continued

Use caution when using **flash-update**. A board may be inoperable if it is programmed with a newer version of code. For example:

OBP 3.2.11 does not support Type-4 I/O Boards. If the OBP **flash-update** command is used when Type-1 and Type-4 I/O Boards are installed, the Type-1 I/O Board will appear to be a Type-4 I/O Board after downloading FCode. The SUNW,soc will be programmed as a SUNW,socal.

A corrupted Flash PROM can be reprogrammed if another board of the same type with uncorrupted code is available.

1. Connect to Serial Port A at 9600 baud, 8-bit, no parity, 1 stop bit.
2. Disconnect the board with corrupted code from the backplane.
3. Install the known good board in any available slot.
4. Turn the keyswitch to On.
5. Wait 15 seconds and press 's' to enter Extended POST.
6. Select 'f' for fcopy from the Extended POST Menus.
7. Insert the board with corrupted code into the backplane.
8. Select '4' for Activate System Board and follow the prompts.
9. Select '1' to copy the code and follow the prompts.
10. Turn the keyswitch to Standby.

Use the **.version** command to display the CPU/Memory Board Flash PROM and I/O Board FCode revision.

ok **.version**

```
Slot 1 - I/O Type 4 FCODE 1.8.7 1997/12/08 15:39 iPOST 3.4.4 1997/08/26 17:37
Slot 3 - I/O Type 3 FCODE 1.8.7 1997/05/09 11:18 iPOST 3.0.2 1997/05/01 10:56
Slot 9 - CPU/Memory OBP 3.2.16 1998/06/08 16:58 POST 3.9.4 1998/06/09 16:25
```

Use the **.properties** command to display the CPU/Memory Board Flash PROM revision in hexadecimal ASCII.

ok **cd /fhc@12,f8800000/flashprom@0,0**

ok **.properties**

```
version          4f 42 50 20 20 20 33 2e 32 2e 31 36 20 31 39 39
model            SUNW,525-1431
name             flashprom
```

4f 42 50 20 20 20 33 2e 32 2e 31 36 20 31 39 39 = OBP 3.2.16 199

Open Boot PROM Commands

E3000 - E6500 Flash and FCode - Continued

The model property contains the part number of the Flash PROM. The model property of some boards is not the same as the part number used for the Flash PROM Code.

| Board | Model Property | Flash PROM |
|------------|----------------|------------|
| CPU/Memory | SUNW,525-1431 | 525-1387 |
| I/O Type 1 | SUNW,525-1432 | 525-1445 |
| I/O Type 2 | SUNW,525-1433 | 525-1446 |
| I/O Type 3 | SUNW,525-1680 | 525-1680 |
| I/O Type 4 | SUNW,525-1757 | 525-1757 |
| I/O Type 5 | SUNW,525-1760 | 525-1760 |

Use the **.properties** command to display the I/O Board FCode revision in hexadecimal ASCII.

```
ok cd /fhc@e,f8800000/flashprom@0,0
ok .properties
version      46 43 4f 44 45 20 31 2e 38 2e 33 20 31 39 39 37
model       SUNW,525-1432
name        flashprom

46 43 4f 44 45 20 31 2e 38 2e 33 20 31 39 39 37 = FCODE 1.8.3 1997
```

Use the **.properties** command to display the I/O Board SOC Controller FCode revision.

```
ok cd /sbus@2,0/SUNW,soc@d,10000
ok .properties
soc-fcode    1.3 95/09/28
model       501-2069
name        SUNW,soc
```

Use the **.properties** command to display the I/O Board SOC+ Controller FCode revision.

```
ok cd /sbus@2,0/SUNW,socal@d,10000
ok .properties
version      @(#) FCode 1.11 97/12/07
model       501-3060
name        SUNW,socal
```

References

SBus References

1. *SBus Specification A.1*, 800-4453-10.
2. *SBus Specification B.0*, 800-5922-10.
3. *PCI:SBus Comparison*, 802-7681.

OBP 1.x and 2.x References

1. *Open Boot PROM Toolkit User's Guide*, 800-4251-10.
2. *Open Boot PROM Toolkit User's Guide*, 800-5279-10.
3. *Introduction to Open Boot 2.0*, 800-5674-10.
4. *Open Boot PROM 2.0 Command Reference*, 800-6076-11.
5. *Open Boot PROM Toolkit Reference Summary*, 800-4687-10.
6. *Open Boot PROM Toolkit Reference Summary*, 800-5280-10.
7. *Open Boot PROM Command Summary*, 800-5675-11.
8. *Writing FCode Programs for SBus Cards*, 800-4456-10.
9. *Writing FCode 2.x Programs*, 801-5123-10.

OBP 3.x References

1. *OpenBoot 3.x Quick Reference*, 802-3240-10.
2. *OpenBoot 3.x Command Reference*, 802-3242-10
3. *Writing FCode 3.x Programs*, 802-3239-10.
4. *Writing FCode 3.x Programs*, 802-5895-10.
5. *OpenBoot 3.x Supplement for PCI*, 802-7679.
6. *Enterprise 250 Platform Note*, 805-3399.

Flash PROM References

1. *Ultra 1 and Ultra 2 Flash PROM Programming Guide*, 802-3233-12.
2. *Ultra System Flash PROM Programming Guide for Ultra 1, Ultra 2, Ultra 5/10, Ultra 30, Ultra 60, and Ultra Enterprise 450*, 802-3233-17.
3. *E3000/4000/5000/6000 Flash PROM Programming Guide*, 802-5579-10.
4. *E6x00/5x00/4x00/3x00 Flash PROM Programming Guide*, 802-5579-12.

Ultra 450 and Ultra Enterprise 450 OBP References

1. *Ultra Enterprise 450 Server Owner's Guide*, 805-0429-10.
2. *Ultra 450 Workstation Owner's Guide*, 805-0430-10.

Field Engineer Handbook References

1. *Sun-3 Handbook*, 802-6796-01.
2. *Sun-4 Handbook*, 805-3028-01.
3. *Sun-4c Handbook*, 805-6849-02.
4. *SS600MP Handbook*, 805-3973-02.
5. *Printer Handbook*, 806-2138-01.
6. *SPARCstation 10 Handbook*, 806-2139-01.
7. *SPARCstation Voyager Handbook*, 806-2140-01.
8. *Removable Media Handbook*, 806-2141-01.
9. *Sun-4/10/15/30 Handbook*, 806-2142-01.

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CONFIGURATIONS

WORKSTATION CPU

Workstation CPU

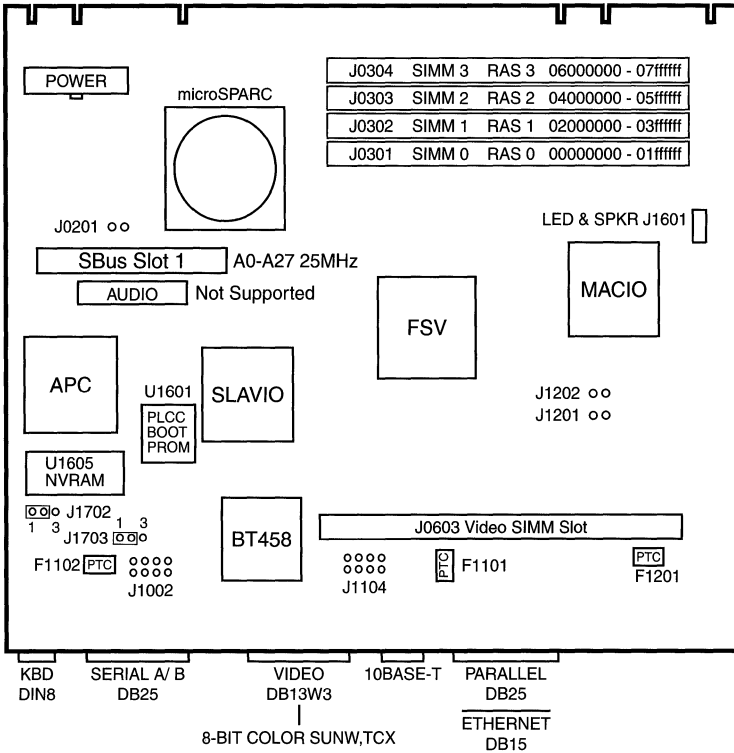
| | |
|--------------------------|----|
| Sun-4m Architecture | |
| SPARC Xterminal 1 | 2 |
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| SPARCstation 5 | 12 |
| SPARCstation 20 | 24 |
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SPARC Xterminal 1

501-2540
50MHz OMB FRU
FAB 270-2549

501-3025
50MHz OMB FRU
FAB 270-2928

501-2585
50MHz 8MB



- 8-BIT COLOR SUNW,TCX
- 744 x 1273 x 105MHz *
 - 1000 x 1022 x 105MHz
 - 1024 x 768 x 64MHz
 - 1024 x 768 x 74MHz
 - 1024 x 768 x 81MHz
 - 1024 x 768 x 84MHz
 - 1024 x 800 x 81MHz
 - 1024 x 800 x 92MHz
 - 1024 x 800 x 94MHz
 - 1024 x 1024 x 92MHz
 - 1152 x 900 x 92MHz
 - 1152 x 900 x 94MHz
 - 1152 x 900 x 105MHz
 - 1152 x 900 x 108MHz
 - 1280 x 1024 x 117MHz †
 - 1280 x 1024 x 118MHz †
 - 1280 x 1024 x 135MHz †
- *Pixel frequency
†VSIMM required

501-2540

501-3025

501-2585

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0201 | 1-2 | Out | Pin-1=Gnd / Pin-2=POK |
| J1002 | 1-2 | Out | Test point rxda |
| J1002 | 3-4 | Out | Test point txda |
| J1002 | 5-6 | Out | Test point rxdb |
| J1002 | 7-8 | Out | Test point txdb |
| J1104 | 1-2 | Out | Test point tpe<0> |
| J1104 | 3-4 | Out | Test point tpe<1> |
| J1104 | 5-6 | Out | Test point tpe<2> |
| J1104 | 7-8 | Out | Test point tpe<3> |
| J1201 | 1-2 | Out | 1= normal (default) |
| J1201 | 1-2 | In | 0= -4.5db |
| J1202 | 1-2 | Out | 1=100 Ohm (default) |
| J1202 | 1-2 | In | 0=150 Ohm |
| J1702 | 1-2 | In | RS-423 (default) |
| J1703 | 1-2 | In | RS-423 (default) |
| J1702 | 2-3 | In | RS-232 +12Vdc |
| J1703 | 2-3 | In | RS-232 -12Vdc |

Notes

1. The minimum operating system is X Terminal Software Version 2.1.
2. The PLCC Boot PROM is not a FRU and is not field replaceable.
3. The serial ports are not supported.
4. OBP settings for the tcx frame buffer use the Pixel frequency instead of Vertical frequency.
5. Use the OBP **setenv** command to change the frame buffer resolution:
ok **setenv fcode-debug? true**
ok **reset**
ok **setenv output-device screen:r1152x900x94**
ok **setenv output-device screen:r1024x768x84**

Reference: *SPARCstation 4 Service Manual*, 802-1529-10.

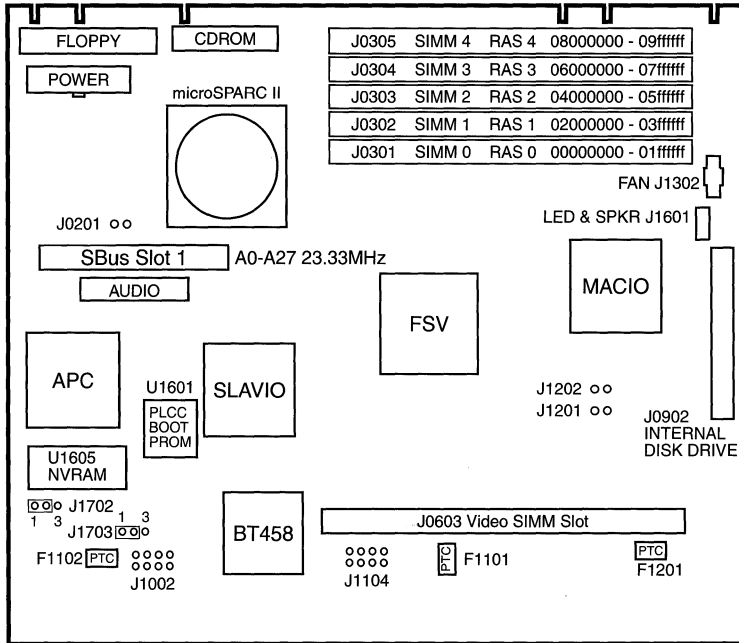
SPARCstation 4

501-2860
70MHz 16MB

501-2861
70MHz 0MB
FAB 270-2549

501-2862
70MHz 32MB

501-3002
70MHz 0MB FRU
FAB 270-2928



KBD DIN8 SERIAL A/B DB25 VIDEO DB13W3 10BASE-T PARALLEL DB25 HD50 SCSI

8-BIT COLOR SUNW,TCX

- 744 x 1273 x 105MHz *
- 1000 x 1022 x 105MHz
- 1024 x 768 x 64MHz
- 1024 x 768 x 74MHz
- 1024 x 768 x 81MHz
- 1024 x 768 x 84MHz
- 1024 x 800 x 81MHz
- 1024 x 800 x 92MHz
- 1024 x 800 x 94MHz
- 1024 x 1024 x 92MHz
- 1152 x 900 x 92MHz
- 1152 x 900 x 94MHz
- 1152 x 900 x 105MHz
- 1152 x 900 x 108MHz
- 1280 x 1024 x 117MHz †
- 1280 x 1024 x 118MHz †
- 1280 x 1024 x 135MHz †

* Pixel frequency
† VSIMM required

501-2860

501-2861

501-2862

501-3002

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0201 | 1-2 | Out | Pin-1=Gnd / Pin-2=POK |
| J1002 | 1-2 | Out | Test point rxda |
| J1002 | 3-4 | Out | Test point txda |
| J1002 | 5-6 | Out | Test point rxdb |
| J1002 | 7-8 | Out | Test point txdb |
| J1104 | 1-2 | Out | Test point tpe<0> |
| J1104 | 3-4 | Out | Test point tpe<1> |
| J1104 | 5-6 | Out | Test point tpe<2> |
| J1104 | 7-8 | Out | Test point tpe<3> |
| J1201 | 1-2 | Out | 1= normal (default) |
| J1201 | 1-2 | In | 0= -4.5db |
| J1202 | 1-2 | Out | 1=100 Ohm (default) |
| J1202 | 1-2 | In | 0=150 Ohm |
| J1702 | 1-2 | In | RS-423 (default) |
| J1703 | 1-2 | In | RS-423 (default) |
| J1702 | 2-3 | In | RS-232 +12Vdc |
| J1703 | 2-3 | In | RS-232 -12Vdc |

* Default Setting

Notes

1. The minimum OS is Solaris 1.1.2 or Solaris 2.4 Hardware: 11/94.
2. The PLCC Boot PROM is not a FRU and is not field replaceable.
3. Serial Port B supports asynchronous operation only.
4. Sync on green produces a higher than normal green output level when the tcx frame buffer is connected to the 16-inch Sony Mid-Range and 17-inch Nokia Entry-Level Color Monitors. Refer to BugID 1218690.
5. OBP settings for the SS4 tcx frame buffer use the Pixel frequency instead of Vertical frequency.
6. Use the OBP **setenv** command to change the frame buffer resolution:
ok **setenv fcode-debug? true**
ok **reset**
ok **setenv output-device screen:r1152x900x94**
ok **setenv output-device screen:r1024x768x84**

Reference: *SPARCstation 4 Service Manual*, 802-1529-10.

SPARCstation 4

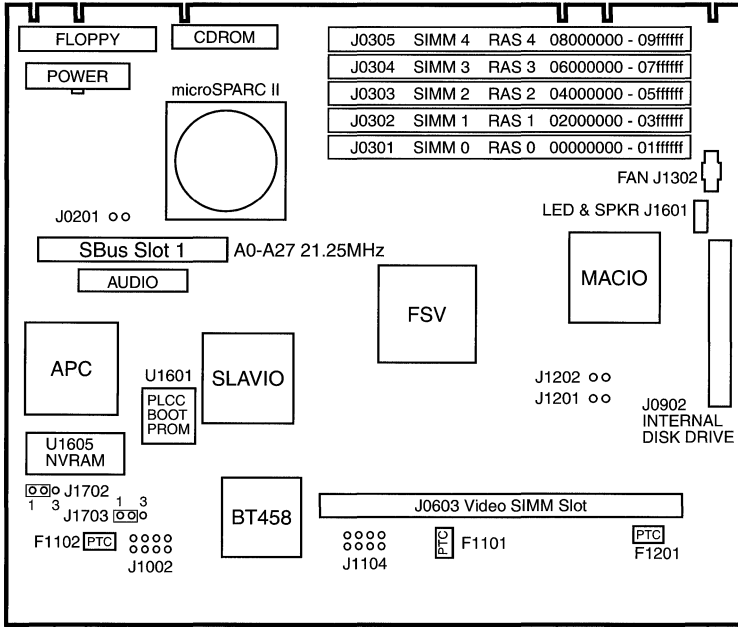
SS4-85 Netra i400

501-2549
85MHz OMB FRU
FAB 270-2549

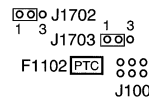
501-2578
85MHz 16MB

501-2590
85MHz 32MB

501-2928
85MHz OMB FRU
FAB 270-2928-01



| | | | |
|-------|--------|-------|-------------------|
| J0305 | SIMM 4 | RAS 4 | 08000000 - 09ffff |
| J0304 | SIMM 3 | RAS 3 | 06000000 - 07ffff |
| J0303 | SIMM 2 | RAS 2 | 04000000 - 05ffff |
| J0302 | SIMM 1 | RAS 1 | 02000000 - 03ffff |
| J0301 | SIMM 0 | RAS 0 | 00000000 - 01ffff |



- KBD DIN8
- SERIAL A/B DB25
- VIDEO DB13W3
- 10BASE-T
- PARALLEL DB25
- HD50 SCSI

- 8-BIT COLOR SUNW,TCX
- 744 x 1273 x 105MHz *
 - 1000 x 1022 x 105MHz
 - 1024 x 768 x 64MHz
 - 1024 x 768 x 74MHz
 - 1024 x 768 x 81MHz
 - 1024 x 768 x 84MHz
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 - 1024 x 800 x 94MHz
 - 1024 x 1024 x 92MHz
 - 1152 x 900 x 92MHz
 - 1152 x 900 x 94MHz
 - 1152 x 900 x 105MHz
 - 1152 x 900 x 108MHz
 - 1280 x 1024 x 117MHz †
 - 1280 x 1024 x 118MHz †
 - 1280 x 1024 x 135MHz †
- * Pixel frequency
† VSIMM required

ETHERNET DB15

501-2549

501-2578

501-2590

501-2928

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0201 | 1-2 | Out | Pin-1=Gnd / Pin-2=POK |
| J1002 | 1-2 | Out | Test point rxda |
| J1002 | 3-4 | Out | Test point txda |
| J1002 | 5-6 | Out | Test point rxdb |
| J1002 | 7-8 | Out | Test point txdb |
| J1104 | 1-2 | Out | Test point tpe<0> |
| J1104 | 3-4 | Out | Test point tpe<1> |
| J1104 | 5-6 | Out | Test point tpe<2> |
| J1104 | 7-8 | Out | Test point tpe<3> |
| J1201 | 1-2 | Out | 1= normal (default) |
| J1201 | 1-2 | In | 0= -4.5db |
| J1202 | 1-2 | Out | 1=100 Ohm |
| J1202 | 1-2 | In | 0=150 Ohm |
| J1702 | 1-2 | In | RS-423 (default) |
| J1703 | 1-2 | In | RS-423 (default) |
| J1702 | 2-3 | In | RS-232 +12Vdc |
| J1703 | 2-3 | In | RS-232 -12Vdc |

Notes

1. The minimum OS is Solaris 1.1.2 or Solaris 2.4 Hardware: 11/94.
2. The PLCC Boot PROM is not a FRU and is not field replaceable.
3. Serial Port B supports asynchronous operation only.
4. Sync on green produces a higher than normal green output level when the tcx frame buffer is connected to the 16-inch Sony Mid-Range and 17-inch Nokia Entry-Level Color Monitors. Refer to BugID 1218690.
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ok **reset**
ok **setenv output-device screen:r1152x900x94**
ok **setenv output-device screen:r1024x768x84**

Reference: *SPARCstation 4 Service Manual*, 802-1529-10.

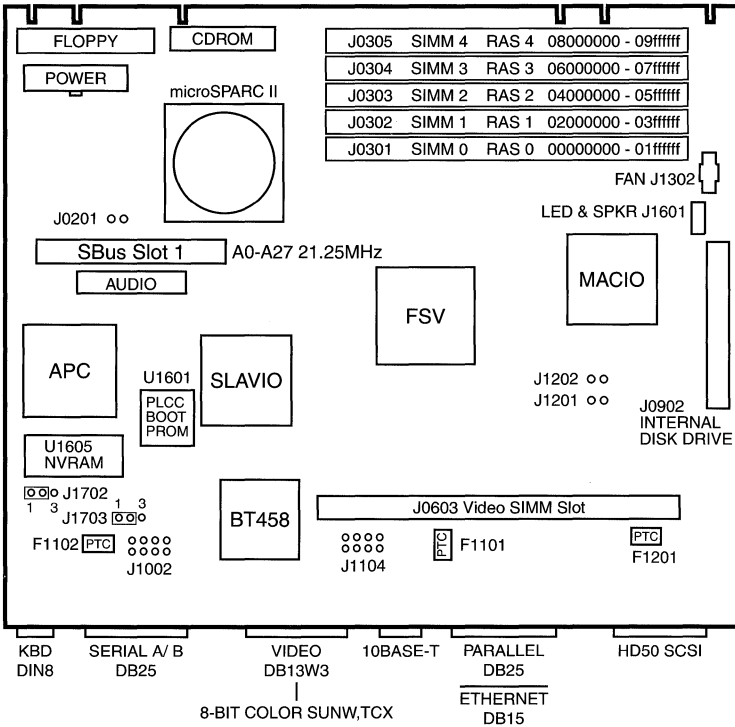
SPARCstation 4

SS4-110 Netra i4 Netra j4

501-3008
110MHz OMB FRU
FAB 270-2928-01

501-3009
110MHz 16MB

501-3010
110MHz 32MB



- 8-BIT COLOR SUNW,TCX
- 744 x 1273 x 105MHz *
 - 1000 x 1022 x 105MHz
 - 1024 x 768 x 64MHz
 - 1024 x 768 x 74MHz
 - 1024 x 768 x 81MHz
 - 1024 x 768 x 84MHz
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 - 1024 x 800 x 94MHz
 - 1024 x 1024 x 92MHz
 - 1152 x 900 x 92MHz
 - 1152 x 900 x 94MHz
 - 1152 x 900 x 105MHz
 - 1152 x 900 x 108MHz
 - 1280 x 1024 x 117MHz †
 - 1280 x 1024 x 118MHz †
 - 1280 x 1024 x 135MHz †
- * Pixel frequency
† VSIMM required

501-3008

501-3009

501-3010

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0201 | 1-2 | Out | Pin-1=Gnd / Pin-2=POK |
| J1002 | 1-2 | Out | Test point rxda |
| J1002 | 3-4 | Out | Test point txda |
| J1002 | 5-6 | Out | Test point rxdb |
| J1002 | 7-8 | Out | Test point txdb |
| J1104 | 1-2 | Out | Test point tpe<0> |
| J1104 | 3-4 | Out | Test point tpe<1> |
| J1104 | 5-6 | Out | Test point tpe<2> |
| J1104 | 7-8 | Out | Test point tpe<3> |
| J1201 | 1-2 | Out | 1= normal (default) |
| J1201 | 1-2 | In | 0= -4.5db |
| J1202 | 1-2 | Out | 1=100 Ohm (default) |
| J1202 | 1-2 | In | 0=150 Ohm |
| J1702 | 1-2 | In | RS-423 (default) |
| J1703 | 1-2 | In | RS-423 (default) |
| J1702 | 2-3 | In | RS-232 +12Vdc |
| J1703 | 2-3 | In | RS-232 -12Vdc |

Notes

1. The minimum OS is Solaris 1.1.2 or Solaris 2.4 Hardware: 11/94.
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ok **setenv output-device screen:r1152x900x94**
ok **setenv output-device screen:r1024x768x84**

Reference: *SPARCstation 4 Service Manual*, 802-1529-10.

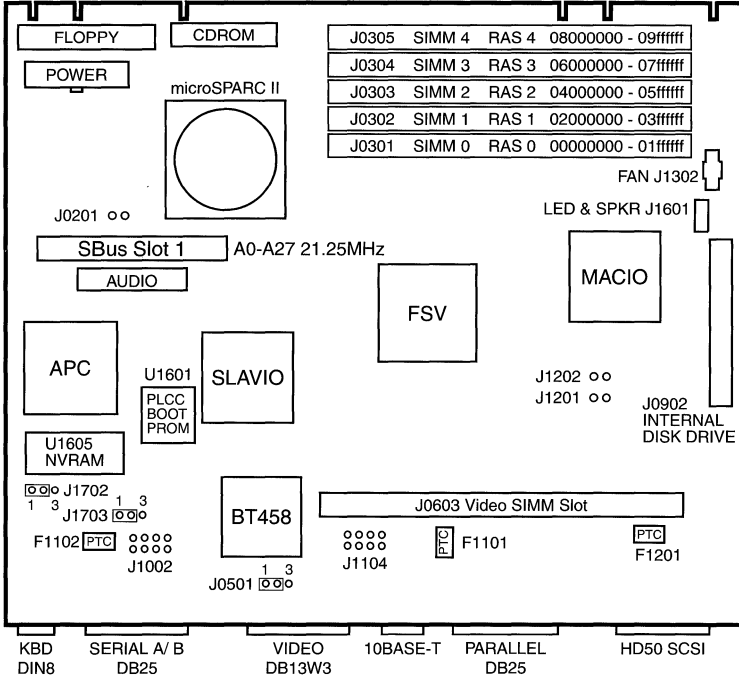
SPARCstation 4

SS4-110 Netra i4 Netra j4

501-3109
110MHz 0MB FRU
FAB 270-2928-02
w Standoff 240-2196

501-3111
110MHz 32MB

501-3134
110MHz 0MB FRU
FAB 270-2928-02
w Standoff 240-2308



| | | | |
|-------|--------|-------|-------------------|
| J0305 | SIMM 4 | RAS 4 | 08000000 - 09ffff |
| J0304 | SIMM 3 | RAS 3 | 06000000 - 07ffff |
| J0303 | SIMM 2 | RAS 2 | 04000000 - 05ffff |
| J0302 | SIMM 1 | RAS 1 | 02000000 - 03ffff |
| J0301 | SIMM 0 | RAS 0 | 00000000 - 01ffff |

J1702 1 3
J1703 1 3

F1102 PTC 0 0 0 0
J1002

BT458
J0501 1 3

J0603 Video SIMM Slot
F1101 PTC
F1201

KBD DIN8 SERIAL A/B DB25 VIDEO DB13W3 10BASE-T PARALLEL DB25 HD50 SCSI

ETHERNET DB15

- 8-BIT COLOR SUNW,TCX
- 744 x 1273 x 105MHz *
 - 1000 x 1022 x 105MHz
 - 1024 x 768 x 64MHz
 - 1024 x 768 x 74MHz
 - 1024 x 768 x 81MHz
 - 1024 x 768 x 84MHz
 - 1024 x 800 x 81MHz
 - 1024 x 800 x 92MHz
 - 1024 x 800 x 94MHz
 - 1024 x 1024 x 92MHz
 - 1152 x 900 x 92MHz
 - 1152 x 900 x 94MHz
 - 1152 x 900 x 105MHz
 - 1152 x 900 x 108MHz
 - 1280 x 1024 x 117MHz †
 - 1280 x 1024 x 118MHz †
 - 1280 x 1024 x 135MHz †
- * Pixel frequency
† VSIMM required

501-3109

501-3111

501-3134

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0201 | 1-2 | Out | Pin-1=Gnd / Pin-2=POK |
| J0501 | 1-2 | In* | Disable sync on green |
| J0501 | 2-3 | In | Enable sync on green |
| J1002 | 1-2 | Out | Test point rxda |
| J1002 | 3-4 | Out | Test point txda |
| J1002 | 5-6 | Out | Test point rxdb |
| J1002 | 7-8 | Out | Test point txdb |
| J1104 | 1-2 | Out | Test point tpe<0> |
| J1104 | 3-4 | Out | Test point tpe<1> |
| J1104 | 5-6 | Out | Test point tpe<2> |
| J1104 | 7-8 | Out | Test point tpe<3> |
| J1201 | 1-2 | Out | 1= normal (default) |
| J1201 | 1-2 | In | 0= -4.5db |
| J1202 | 1-2 | Out | 1=100 Ohm (default) |
| J1202 | 1-2 | In | 0=150 Ohm |
| J1702 | 1-2 | In | RS-423 (default) |
| J1703 | 1-2 | In | RS-423 (default) |
| J1702 | 2-3 | In | RS-232 +12Vdc |
| J1703 | 2-3 | In | RS-232 -12Vdc |

Notes

1. The minimum OS is Solaris 1.1.2 or Solaris 2.4 Hardware: 11/94.
2. The PLCC Boot PROM is not a FRU and is not field replaceable.
3. Serial Port B supports asynchronous operation only.
4. Sync on green produces a higher than normal green output level when the tcx frame buffer is connected to the 16-inch Sony Mid-Range and 17-inch Nokia Entry-Level Color Monitors. Refer to BugID 1218690.
5. OBP settings for the SS4 tcx frame buffer use the Pixel frequency instead of Vertical frequency.
6. Use the OBP **setenv** command to change the frame buffer resolution:
ok **setenv fcode-debug? true**
ok **reset**
ok **setenv output-device screen:r1152x900x94**
ok **setenv output-device screen:r1024x768x84**

Reference: *SPARCstation 4 Service Manual*, 802-1529-10.

SPARCstation 5

SS5-70 Netra i5

501-2286
70MHz 0MB FRU
2.3/2.5 microSPARC II

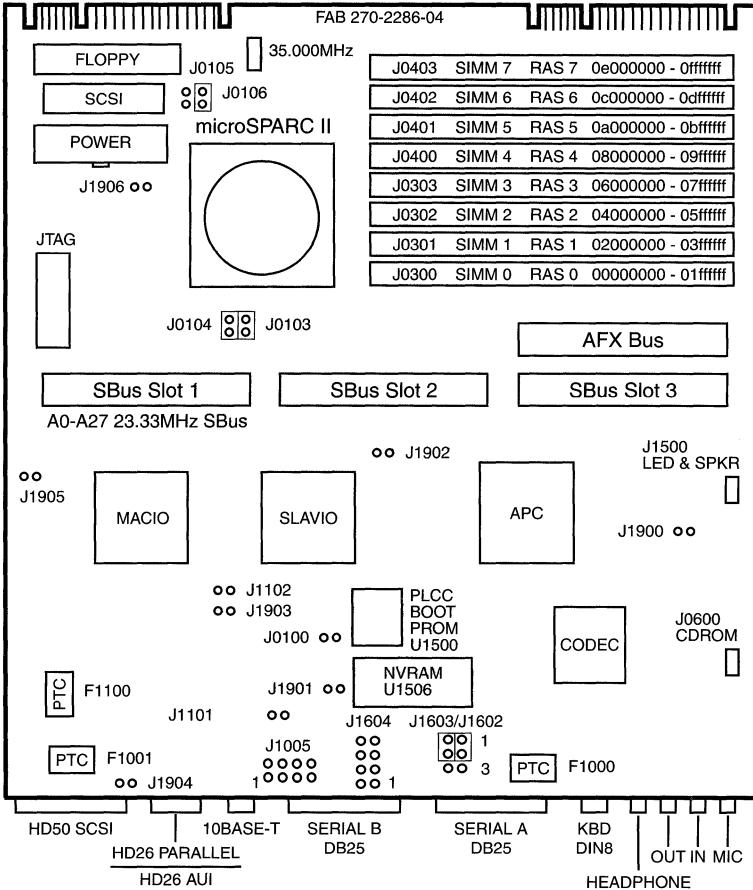
501-2472
70MHz 16MB
2.3/2.5 microSPARC II

501-2508
70MHz 32MB
2.3/2.5 microSPARC II

501-2798
70MHz 0MB FRU
microSPARC II *

501-2802
70MHz 16MB
microSPARC II *

501-2811
70MHz 32MB
microSPARC II *



* The chronological revision is 3.2, 3.3, 4.0.2, 2.6, and 2.6.2

501-2286 501-2472 501-2508
 501-2798 501-2802 501-2811

Jumper Settings

Jumpers J0103 and J0104 set the microSPARC II memory controller wait states. Wait states are used to maintain the memory timing requirements of 60ns DRAM.

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0103 | 1-2 | In* | spd_sel<0> = 0 70MHz |
| J0104 | 1-2 | In* | spd_sel<1> = 0 70MHz |
| J0103 | 1-2 | Out | spd_sel<0> = 0 85MHz |
| J0104 | 1-2 | In | spd_sel<1> = 1 85MHz |
| J0103 | 1-2 | In | spd_sel<0> = 1 100MHz |
| J0104 | 1-2 | Out | spd_sel<1> = 0 100MHz |
| J0103 | 1-2 | Out | spd_sel<0> = 1 125MHz |
| J0104 | 1-2 | Out | spd_sel<1> = 1 125MHz |

* Default setting for the 70MHz CPU

Jumpers J0105 and J0106 set the divide control bits used by the microSPARC II. Set the 70MHz microSPARC II to divide by three to obtain an SBus speed of 23.33MHz.

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|--------------------|
| J0105 | 1-2 | In | div_ctl <0> = 0 /2 |
| J0106 | 1-2 | In | div_ctl <1> = 0 /2 |
| J0105 | 1-2 | Out* | div_ctl <0> = 1 /3 |
| J0106 | 1-2 | In* | div_ctl <1> = 0 /3 |
| J0105 | 1-2 | In | div_ctl <0> = 0 /4 |
| J0106 | 1-2 | Out | div_ctl <1> = 1 /4 |
| J0105 | 1-2 | Out | div_ctl <0> = 1 /5 |
| J0106 | 1-2 | Out | div_ctl <1> = 1 /5 |

* Default setting for the 70MHz CPU

SPARCstation 5

501-2286 501-2472 501-2508
 501-2798 501-2802 501-2811

Jumper Settings - Continued

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0100 | 1-2 | Out | Pin-1=Gnd / Pin-2=POK |
| J1101 | 1-2 | Out | 1= normal (default) |
| J1101 | 1-2 | In | 0= -4.5db |
| J1102 | 1-2 | Out | 1=100 Ohm (default) |
| J1102 | 1-2 | In | 0=150 Ohm |
| J1005 | 1-2 | Out | Test point tpe<0> |
| J1005 | 3-4 | Out | Test point tpe<1> |
| J1005 | 5-6 | Out | Test point tpe<2> |
| J1005 | 7-8 | Out | Test point tpe<3> |
| J1602 | 1-2 | In | RS-423 (default) |
| J1603 | 1-2 | In | RS-423 (default) |
| J1602 | 2-3 | In | RS-232 -12Vdc |
| J1603 | 2-3 | In | RS-232 +12Vdc |
| J1604 | 1-2 | Out | Test point rxda |
| J1604 | 3-4 | Out | Test point txda |
| J1604 | 5-6 | Out | Test point rxdb |
| J1604 | 7-8 | Out | Test point txdb |
| J1900 | N/A | N/A | Ground test point |
| J1901 | N/A | N/A | Ground test point |
| J1902 | N/A | N/A | Ground test point |
| J1903 | N/A | N/A | Ground test point |
| J1904 | N/A | N/A | Ground test point |
| J1905 | N/A | N/A | Ground test point |
| J1906 | N/A | N/A | Ground test point |

Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 Edition II.
2. SS5 audio requires the Solaris 1.1.1 Version B ms2 patch.
3. Install the highest capacity SIMM in Slot 0 under Solaris 1.x.
4. Use the MFAR value to determine the address of a failing SIMM.
5. The PLCC Boot PROM is not a FRU and is not field replaceable.
6. Serial Ports A and B support synchronous operation.

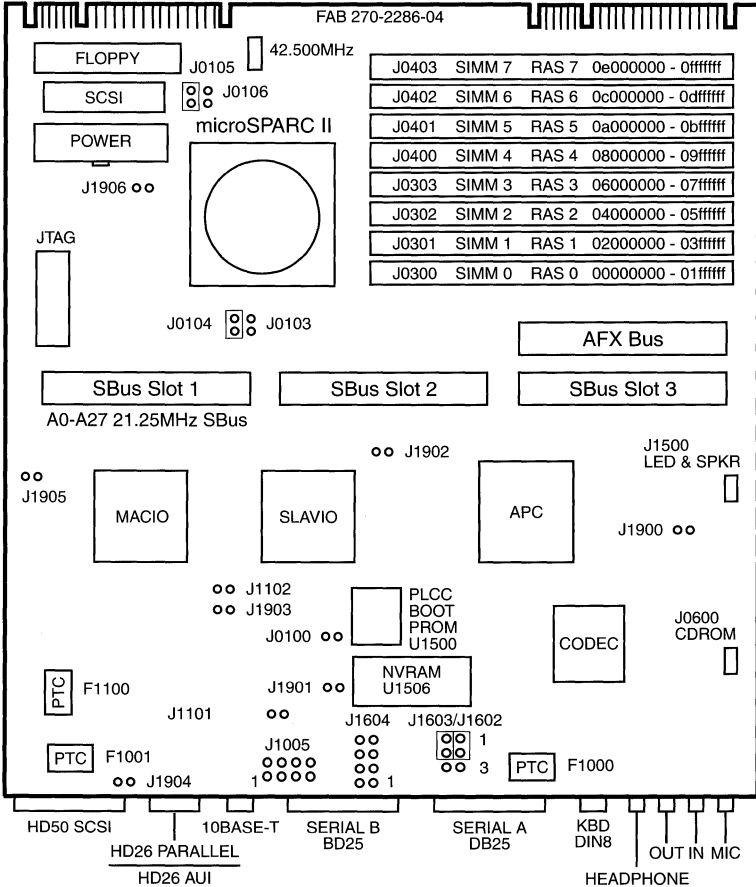
Reference: *SPARCstation 5 Service Manual*, 801-6396-10.

SPARCstation 5

SS5-85 Netra i5 Netra s5

| | |
|-----------------------|-----------------------|
| 501-2572 | 501-2574 |
| 85MHz 0MB FRU | 85MHz 32MB |
| 2.3/2.5 microSPARC II | 2.3/2.5 microSPARC II |

| | |
|-------------------|-------------------|
| 501-2799 | 501-2803 |
| 85MHz 0MB FRU | 85MHz 32MB |
| 3.x microSPARC II | 3.x microSPARC II |



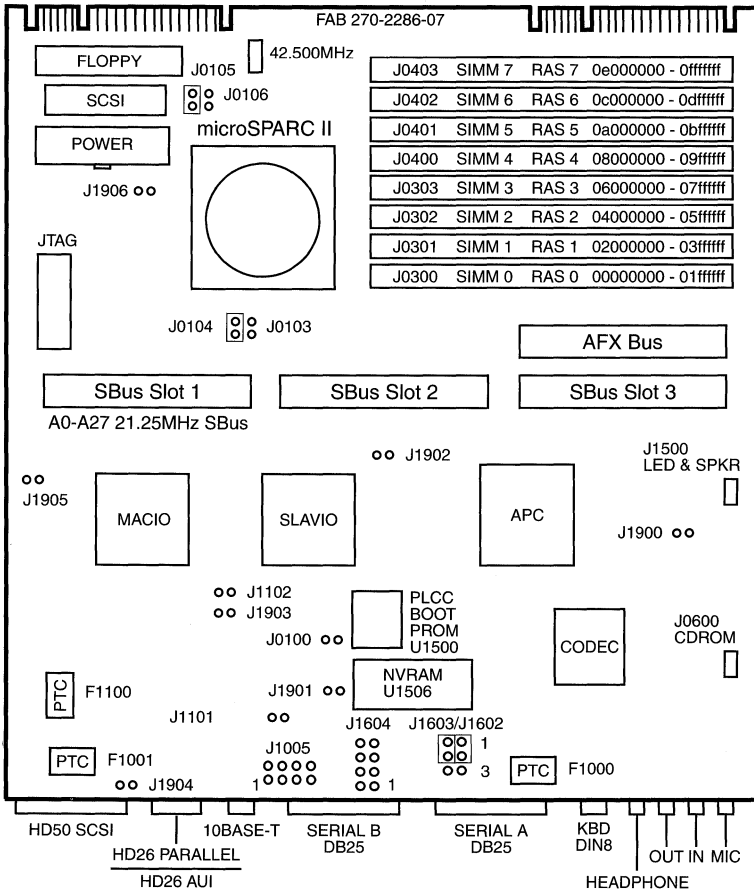
Power: OMB Board
 4.0 Amps @ +5Vdc
 0.4 Amps @ +12Vdc
 0.1 Amps @ -12Vdc
 8.0 Watts

SPARCstation 5

SS5-85 Netra i5 Netra s5

501-2815
85MHz OMB FRU
microSPARC II *

501-2816
85MHz 32MB
microSPARC II *



* The chronological revision of microSPARC II is 2.6 and 2.6.2.

Power: OMB Board
 4.0 Amps @ +5Vdc
 0.4 Amps @ +12Vdc
 0.1 Amps @ -12Vdc
 8.0 Watts

501-2572 501-2574 501-2799
 501-2803 501-2815 501-2816

Jumper Settings

Jumpers J0103 and J0104 set the microSPARC II memory controller wait states. Wait states are used to maintain the memory timing requirements of 60ns DRAM.

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0103 | 1-2 | In | spd_sel<0> = 0 70MHz |
| J0104 | 1-2 | In | spd_sel<1> = 0 70MHz |
| J0103 | 1-2 | Out* | spd_sel<0> = 0 85MHz |
| J0104 | 1-2 | In* | spd_sel<1> = 1 85MHz |
| J0103 | 1-2 | In | spd_sel<0> = 1 100MHz |
| J0104 | 1-2 | Out | spd_sel<1> = 0 100MHz |
| J0103 | 1-2 | Out | spd_sel<0> = 1 125MHz |
| J0104 | 1-2 | Out | spd_sel<1> = 1 125MHz |

* Default setting for the 85MHz CPU

Jumpers J0105 and J0106 set the divide control bits used by the microSPARC II. Set the 85MHz microSPARC II to divide by four to obtain an SBus speed of 21.25MHz.

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|--------------------|
| J0105 | 1-2 | In | div_ctl <0> = 0 /2 |
| J0106 | 1-2 | In | div_ctl <1> = 0 /2 |
| J0105 | 1-2 | Out | div_ctl <0> = 1 /3 |
| J0106 | 1-2 | In | div_ctl <1> = 0 /3 |
| J0105 | 1-2 | In* | div_ctl <0> = 0 /4 |
| J0106 | 1-2 | Out* | div_ctl <1> = 1 /4 |
| J0105 | 1-2 | Out | div_ctl <0> = 1 /5 |
| J0106 | 1-2 | Out | div_ctl <1> = 1 /5 |

* Default setting for the 85MHz CPU

SPARCstation 5

501-2572

501-2574

501-2799

501-2803

501-2815

501-2816

Jumper Settings - Continued

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0100 | 1-2 | Out | Pin-1=Gnd / Pin-2=POK |
| J1101 | 1-2 | Out | 1= normal (default) |
| J1101 | 1-2 | In | 0= -4.5db |
| J1102 | 1-2 | Out | 1=100 Ohm (default) |
| J1102 | 1-2 | In | 0=150 Ohm |
| J1005 | 1-2 | Out | Test point tpe<0> |
| J1005 | 3-4 | Out | Test point tpe<1> |
| J1005 | 5-6 | Out | Test point tpe<2> |
| J1005 | 7-8 | Out | Test point tpe<3> |
| J1602 | 1-2 | In | RS-423 (default) |
| J1603 | 1-2 | In | RS-423 (default) |
| J1602 | 2-3 | In | RS-232 -12Vdc |
| J1603 | 2-3 | In | RS-232 +12Vdc |
| J1604 | 1-2 | Out | Test point rxda |
| J1604 | 3-4 | Out | Test point txda |
| J1604 | 5-6 | Out | Test point rxdb |
| J1604 | 7-8 | Out | Test point txdb |
| J1900 | N/A | N/A | Ground test point |
| J1901 | N/A | N/A | Ground test point |
| J1902 | N/A | N/A | Ground test point |
| J1903 | N/A | N/A | Ground test point |
| J1904 | N/A | N/A | Ground test point |
| J1905 | N/A | N/A | Ground test point |
| J1906 | N/A | N/A | Ground test point |

Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 Edition II.
2. SS5 audio requires the Solaris 1.1.1 Version B ms2 patch.
3. Install the highest capacity SIMM in Slot 0 under Solaris 1.x.
4. Use the MFAR value to determine the address of a failing SIMM.
5. The PLCC Boot PROM is not a FRU and is not field replaceable.
6. Serial Ports A and B support synchronous operation.

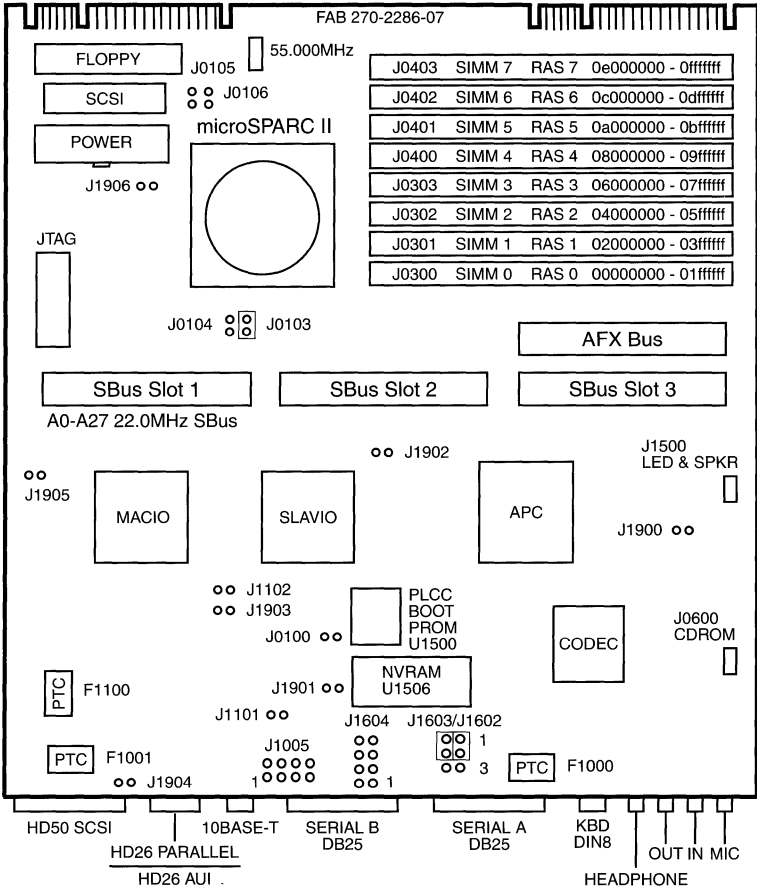
Reference: *SPARCstation 5 Service Manual*, 801-6396-10.

SPARCstation 5

SS5-110 Netra i5 Netra i500 Netra i525

501-2778
110MHz 0MB FRU
microSPARC II

501-2779
110MHz 32MB
microSPARC II



Power: 0MB Board
 4.0 Amps @ +5Vdc
 0.4 Amps @ +12Vdc
 0.1 Amps @ -12Vdc
 8.0 Watts

SPARCstation 5
501-2778 501-2779
Jumper Settings

Jumpers J0103 and J0104 set the microSPARC II memory controller wait states. Wait states are used to maintain the memory timing requirements of 60ns DRAM.

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0103 | 1-2 | In | spd_sel<0> = 0 70MHz |
| J0104 | 1-2 | In | spd_sel<1> = 0 70MHz |
| J0103 | 1-2 | Out | spd_sel<0> = 0 85MHz |
| J0104 | 1-2 | In | spd_sel<1> = 1 85MHz |
| J0103 | 1-2 | In* | spd_sel<0> = 1 110MHz |
| J0104 | 1-2 | Out* | spd_sel<1> = 0 110MHz |
| J0103 | 1-2 | Out | spd_sel<0> = 1 125MHz |
| J0104 | 1-2 | Out | spd_sel<1> = 1 125MHz |

* Default setting for the 110MHz CPU

Jumpers J0105 and J0106 set the divide control bits used by the microSPARC II. Set the 110MHz microSPARC II to divide by five to obtain an SBus speed of 22.00MHz.

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|--------------------|
| J0105 | 1-2 | In | div_ctl <0> = 0 /2 |
| J0106 | 1-2 | In | div_ctl <1> = 0 /2 |
| J0105 | 1-2 | Out | div_ctl <0> = 1 /3 |
| J0106 | 1-2 | In | div_ctl <1> = 0 /3 |
| J0105 | 1-2 | In | div_ctl <0> = 0 /4 |
| J0106 | 1-2 | Out | div_ctl <1> = 1 /4 |
| J0105 | 1-2 | Out* | div_ctl <0> = 1 /5 |
| J0106 | 1-2 | Out* | div_ctl <1> = 1 /5 |

* Default setting for the 110MHz CPU

SPARCstation 5
501-2778 501-2779
Jumper Settings - Continued

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0100 | 1-2 | Out | Pin-1=Gnd / Pin-2=POK |
| J1101 | 1-2 | Out | 1= normal (default) |
| J1101 | 1-2 | In | 0= -4.5db |
| J1102 | 1-2 | Out | 1=100 Ohm (default) |
| J1102 | 1-2 | In | 0=150 Ohm |
| J1005 | 1-2 | Out | Test point tpe<0> |
| J1005 | 3-4 | Out | Test point tpe<1> |
| J1005 | 5-6 | Out | Test point tpe<2> |
| J1005 | 7-8 | Out | Test point tpe<3> |
| J1602 | 1-2 | In | RS-423 (default) |
| J1603 | 1-2 | In | RS-423 (default) |
| J1602 | 2-3 | In | RS-232 -12Vdc |
| J1603 | 2-3 | In | RS-232 +12Vdc |
| J1604 | 1-2 | Out | Test point rxda |
| J1604 | 3-4 | Out | Test point txda |
| J1604 | 5-6 | Out | Test point rxdb |
| J1604 | 7-8 | Out | Test point txdb |
| J1900 | N/A | N/A | Ground test point |
| J1901 | N/A | N/A | Ground test point |
| J1902 | N/A | N/A | Ground test point |
| J1903 | N/A | N/A | Ground test point |
| J1904 | N/A | N/A | Ground test point |
| J1905 | N/A | N/A | Ground test point |
| J1906 | N/A | N/A | Ground test point |

Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 Edition II.
2. SS5 audio requires the Solaris 1.1.1 Version B ms2 patch.
3. Install the highest capacity SIMM in Slot 0 under Solaris 1.x.
4. Use the MFAR value to determine the address of a failing SIMM.
5. The PLCC Boot PROM is not a FRU and is not field replaceable.
6. Serial Ports A and B support synchronous operation.

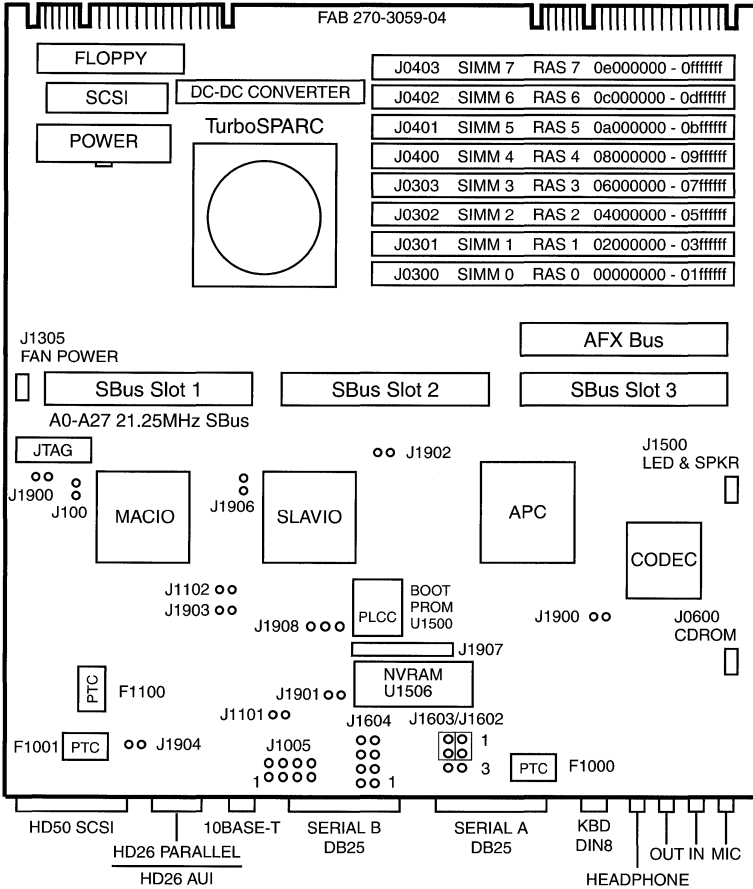
Reference: *SPARCstation 5 Service Manual*, 801-6396-10.

SPARCstation 5

SS5-170 Netra i5 Netra j5/170

501-3059
170MHz 0MB FRU
TurboSPARC II

501-3103
170MHz 32MB
TurboSPARC II



501-3059 501-3103
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------|
| J0100 | 1-2 | Out | Pin-1=Gnd / Pin-2=POK |
| J1101 | 1-2 | Out | 1= normal (default) |
| J1101 | 1-2 | In | 0= -4.5db |
| J1102 | 1-2 | Out | 1=100 Ohm (default) |
| J1102 | 1-2 | In | 0=150 Ohm |
| J1005 | 1-2 | Out | Test point tpe<0> |
| J1005 | 3-4 | Out | Test point tpe<1> |
| J1005 | 5-6 | Out | Test point tpe<2> |
| J1005 | 7-8 | Out | Test point tpe<3> |
| J1602 | 1-2 | In | RS-423 (default) |
| J1603 | 1-2 | In | RS-423 (default) |
| J1602 | 2-3 | In | RS-232 -12Vdc |
| J1603 | 2-3 | In | RS-232 +12Vdc |
| J1604 | 1-2 | Out | Test point rxda |
| J1604 | 3-4 | Out | Test point txda |
| J1604 | 5-6 | Out | Test point rxdb |
| J1604 | 7-8 | Out | Test point txdb |
| J1900 | N/A | N/A | Ground test point |
| J1901 | N/A | N/A | Ground test point |
| J1902 | N/A | N/A | Ground test point |
| J1903 | N/A | N/A | Ground test point |
| J1904 | N/A | N/A | Ground test point |
| J1905 | N/A | N/A | Ground test point |
| J1906 | N/A | N/A | Ground test point |
| J1908 | N/A | N/A | ROMBO selection |

Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 Edition II.
2. SS5 audio requires the Solaris 1.1.1 Version B ms2 patch.
3. SS5 S24 configurations require Solaris 2.3 Hardware: 8/94.
4. Install the highest capacity SIMM in Slot 0 under Solaris 1.x.
5. Use the MFAR value to determine the address of a failing SIMM.
6. The PLCC Boot PROM is not a FRU and is not field replaceable.
7. Serial Ports A and B support synchronous operation.

Reference: *SPARCstation 5 Service Manual*, 801-6396-10.

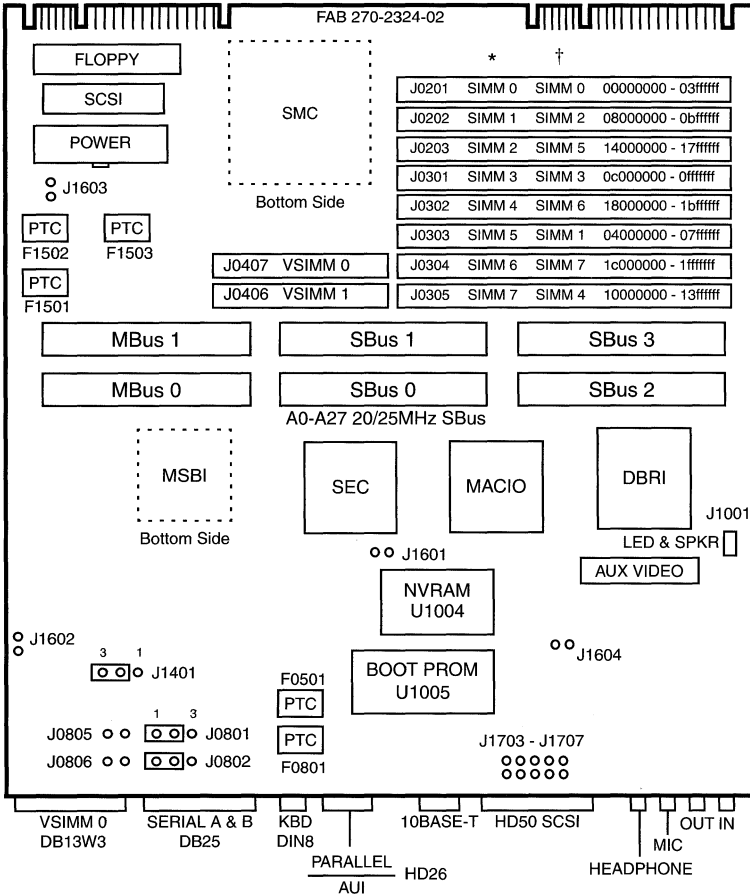
SPARCstation 20

SS20 Netra i20 Netra s20 Netra i600 Netra i625

501-2324
OMB FRU
w/o MBus Module
MSBI Version 0 - 3

501-2924
OMB FRU
w/o MBus Module
MSBI Version 3

501-2961
OMB FRU
w/o MBus Module
MSBI Version 3



* This installation sequence does not match the bank order.

* *SS20 Service Manual*, 801-6189-11.

† This installation sequence matches the bank order.

† *SS20 DSIMM Installation*, 801-6185-11.

† *SS10SX and SS20 System Configuration Guide*, 801-7287-10.

Notes

1. Part number 501-2924 is a new board with MSBI Version 3.
2. Part number 501-2961 is a repaired 501-2324 with MSBI Version 3.

501-2324 501-2924 501-2961
 FAB 270-2324-02 Jumper Settings

When Pins 1-2 on J1401 are jumpered, the MBus speed is set to 40MHz.

When Pins 2-3 on J1401 are jumpered, the MBus speed is selected by the module installed in MBus 0. The MBus speed of the SM50 is 50MHz. The MBus speed of the SM51 is 40MHz. The MBus speed of the SM61 is 50MHz.

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|---------------------|
| J0801 | 1-2 | In | RS-232 +12Vdc |
| J0802 | 1-2 | In | RS-232 -12Vdc |
| J0801 | 2-3 | In* | RS-423 |
| J0802 | 2-3 | In* | RS-423 |
| J0805 | 1-2 | Out* | Port B asynchronous |
| J0806 | 1-2 | Out* | Port B asynchronous |
| J0805 | 1-2 | In† | Port B synchronous |
| J0806 | 1-2 | In† | Port B synchronous |
| J1401 | 1-2 | In | 40MHz MBus |
| J1401 | 2-3 | In* | 40/50MHz MBus |
| J1601 | 1-2 | N/A | Ground test point |
| J1602 | 1-2 | N/A | Ground test point |
| J1603 | 1-2 | N/A | Ground test point |
| J1703 | 1-2 | Out | Test point tpe<3> |
| J1704 | 1-2 | Out | Test point tpe<2> |
| J1705 | 1-2 | Out | Test point tpe<1> |
| J1706 | 1-2 | Out | Test point tpe<0> |
| J1707 | 1-2 | Out | Test point edgeon |

* Default setting

† Requires an adapter that is not available from Sun

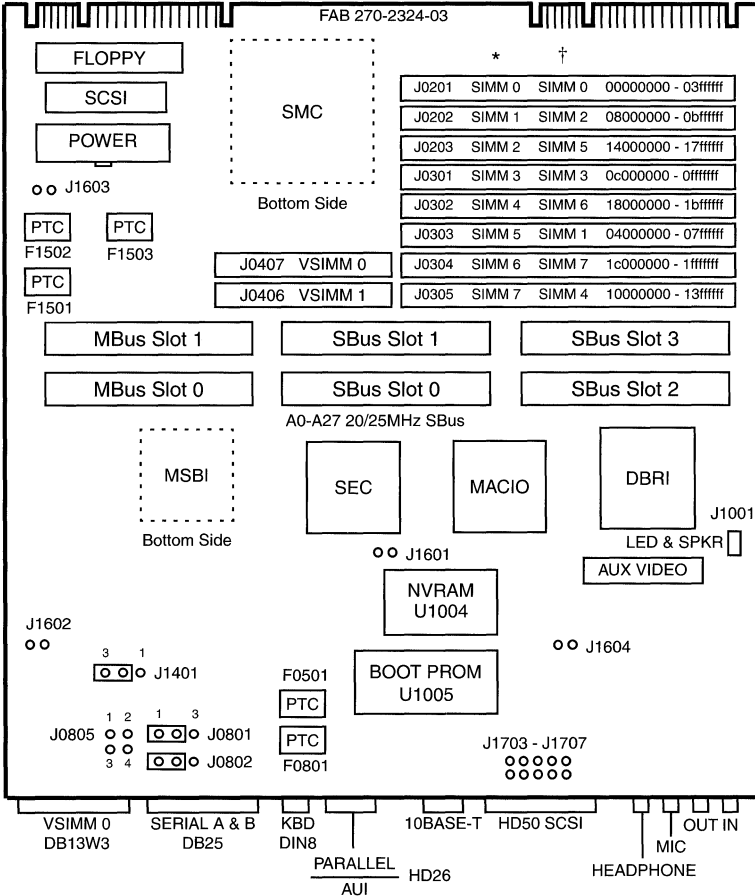
SPARCstation 20

SS20 Netra i20 Netra s20 Netra i600 Netra i625

501-2324
OMB FRU
w/o MBus Module
MSBI Version 0 - 3

501-2924
OMB FRU
w/o MBus Module
MSBI Version 3

501-2961
OMB FRU
w/o MBus Module
MSBI Version 3



- * This installation sequence does not match the bank order.
- * *SS20 Service Manual*, 801-6189-11.
- † This installation sequence matches the bank order.
- † *SS20 DSIMM Installation*, 801-6185-11.
- † *SS10SX and SS20 System Configuration Guide*, 801-7287-10.

Notes

1. Part number 501-2924 is a new board with MSBI Version 3.
2. Part number 501-2961 is a repaired 501-2324 with MSBI Version 3.

501-2324 501-2924 501-2961
 FAB 270-2324-03 Jumper Settings
 FAB 270-2324-04 Jumper Settings

When Pins 1-2 on J1401 are jumpered, the MBus speed is set to 40MHz.

When Pins 2-3 on J1401 are jumpered, the MBus speed is selected by the module installed in MBus 0. The MBus speed of the SM50 is 50MHz. The MBus speed of the SM51 is 40MHz. The MBus speed of the SM61 is 50MHz.

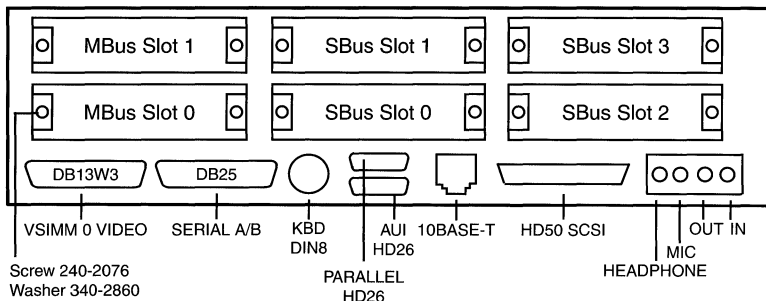
| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|---------------------|
| J0801 | 1-2 | In | RS-232 +12Vdc |
| J0802 | 1-2 | In | RS-232 -12Vdc |
| J0801 | 2-3 | In* | RS-423 |
| J0802 | 2-3 | In* | RS-423 |
| J0805 | 1-2 | Out* | Port B asynchronous |
| J0805 | 3-4 | Out* | Port B asynchronous |
| J0805 | 1-2 | In† | Port B synchronous |
| J0805 | 3-4 | In† | Port B synchronous |
| J1401 | 1-2 | In | 40MHz MBus |
| J1401 | 2-3 | In* | 40/50MHz MBus |
| J1601 | 1-2 | N/A | Ground test point |
| J1602 | 1-2 | N/A | Ground test point |
| J1603 | 1-2 | N/A | Ground test point |
| J1703 | 1-2 | Out | Test point tpe<3> |
| J1704 | 1-2 | Out | Test point tpe<2> |
| J1705 | 1-2 | Out | Test point tpe<1> |
| J1706 | 1-2 | Out | Test point tpe<0> |
| J1707 | 1-2 | Out | Test point edgeon |

* Default setting

† Requires an adapter that is not available from Sun

SPARCstation 20

System Board Backpanel and Connectors



Notes

1. The minimum operating system is Solaris 2.3 or Solaris 1.1.1 Revision B.
2. Use SIMMs 501-2479 (16MB), 501-2622 (32MB), and 501-2480 (64MB).
3. Install Solaris 2.3 Patch \geq 101318-34 when:
 - One 32MB SIMM is mixed with seven 16 or 64MB SIMMs
 - Two 32MB SIMMs are mixed with five or more 16 or 64MB SIMMs
 - Three 32MB SIMMs are mixed with three or more 16 or 64MB SIMMs
 - Four 32MB SIMMs are mixed with one or more 16, 32, or 64MB SIMMs.
4. Use the **sxconfig** (1M) command to configure contiguous memory.
5. Do NOT mix SPARC modules of different types or speeds.
6. The 100MHz and 125MHz hyperSPARC Modules require OBP 2.19.
7. SuperSPARC II Modules require Boot PROM 2.22.
8. The 150MHz hyperSPARC Module requires OBP 2.25.

ZX and TurboZX Notes

1. Poor performance may occur when running XGL applications with the ZX and TurboZX frame buffers on system boards with MSBI Versions 0, 1, and 2. Refer to BugID 1173967 and FCO A0073.
2. Use the **.attributes** OBP command or the **prtconf -vp** Unix command to determine the MSBI Version:


```
ok cd /iommu
ok .version
Implementation: 00000001
Version: 00000000 or 00000001 or 00000002 or 00000003
```

References

1. *SPARCstation 20 Service Manual*, 801-6189-10.
2. *SS20 DSIMM Installation*, 801-6185-11.
3. *SS10SX and SS20 System Configuration Guide*, 801-7287-10.

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Ultra 1 Model 140

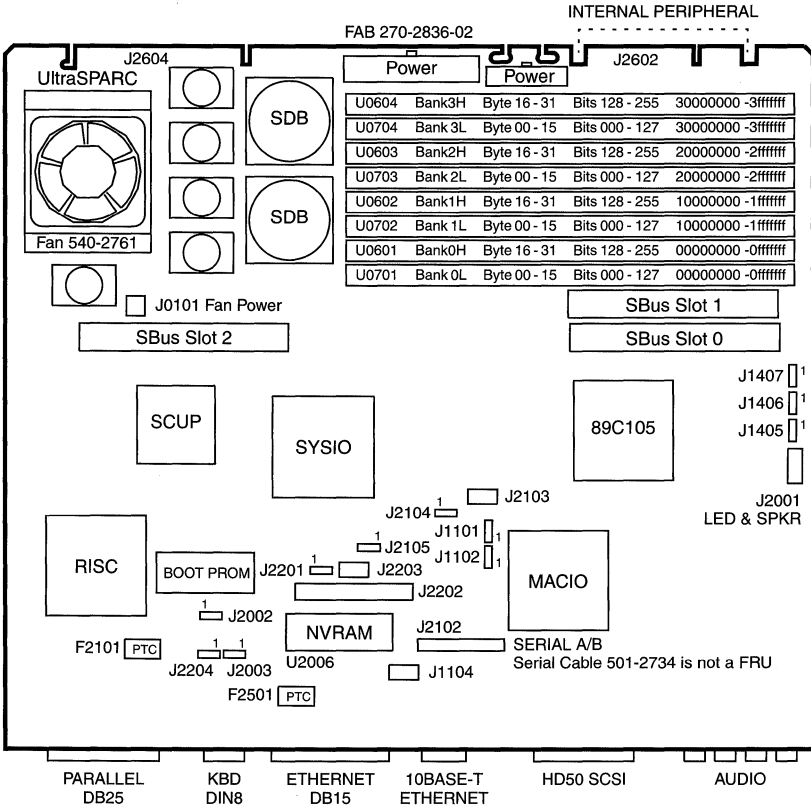
A11-140 Netra i1/140 Netra j1/145

501-2836
143MHz 0MB FRU

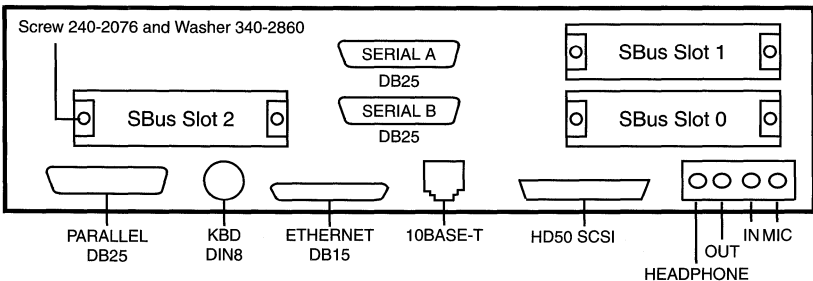
501-2854
143MHz 32MB

501-2855
143MHz 128MB

501-2994
143MHz 64MB



Backpanel and Connectors



501-2836

501-2854

501-2855

501-2994

FAB 270-2836-02 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------------------|
| J1101 | 1-2 | Out | |
| J1101 | 2-3 | N/A | Pins 2-3 are hardwired |
| J1102 | 1-2 | Out | |
| J1102 | 2-3 | N/A | Pins 2-3 are hardwired |
| J1405 | 1-3 | - | Pre-FCS speed selection |
| J1406 | 1-3 | - | Pre-FCS speed selection |
| J1407 | 1-3 | - | Pre-FCS speed selection |
| J2002 | 1-2 | In | Select FEPROM (default) |
| J2002 | 2-3 | In | Select ROMBO |
| J2003 | 1-2 | In | FEPROM write protect (default) |
| J2003 | 2-3 | In | FEPROM write enable |
| J2102 | 1-24 | Out | Serial port connector |
| J2104 | 1-2 | In | RS-232 -12Vdc |
| J2104 | 2-3 | In | RS-423 (default) |
| J2105 | 1-2 | In | RS-232 +12Vdc |
| J2105 | 2-3 | In | RS-423 (default) |
| J2201 | 1-2 | Out | Button XIR |
| J2201 | 2-3 | Out | Button POR |
| J2204 | 1-2 | In | FEPROM high half booting |
| J2204 | 2-3 | In | FEPROM low half booting (default) |
| J1104 | 1-8 | Out | Ethernet edge test |
| J2103 | 1-8 | Out | Serial port edge test |
| J2202 | 1-8 | Out | ROMBO connector |
| J2203 | 1-8 | Out | JTAG connector |

Notes

1. The minimum operating system is Solaris 2.5.
2. The flash PROM is soldered to the system board.
3. Use the Flash PROM Programming Utility to update the flash PROM.
4. UltraSPARC Fan 540-2761 was replaced by Heatsink 540-3361 and Shield 540-3090 in May/June 1997.

References

1. *Sun Ultra 1 Series Installation Guide*, 802-3825.
2. *Sun Ultra 1 Series Service Manual*, 802-3819.
3. *Flash PROM Programming Guide*, 802-3233.

Ultra 1 Model 140

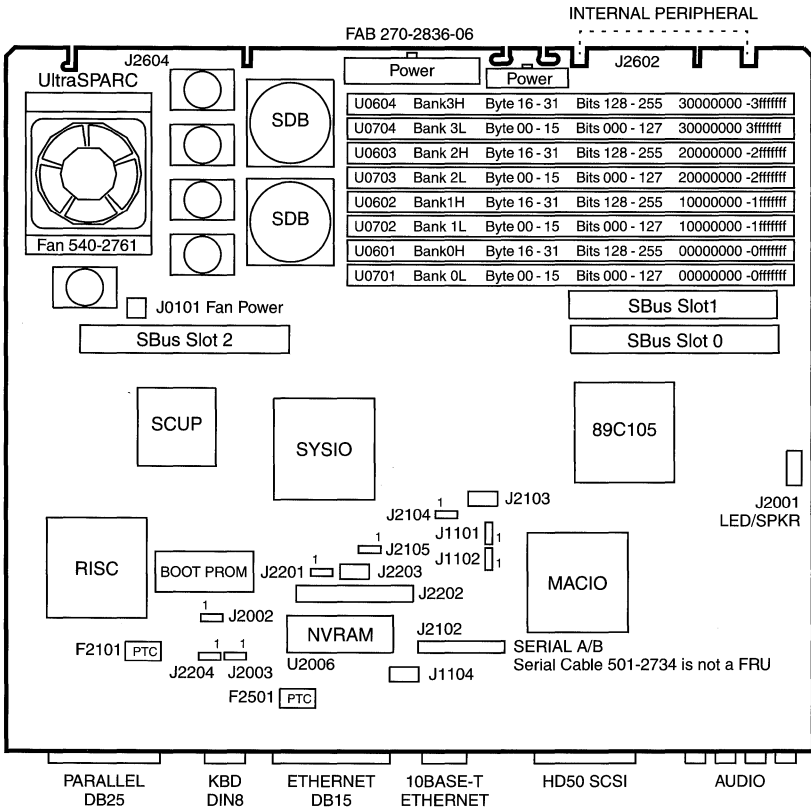
A11-140 Netra i 1/140 Netra j 1/145

501-2836
143MHz OMB FRU

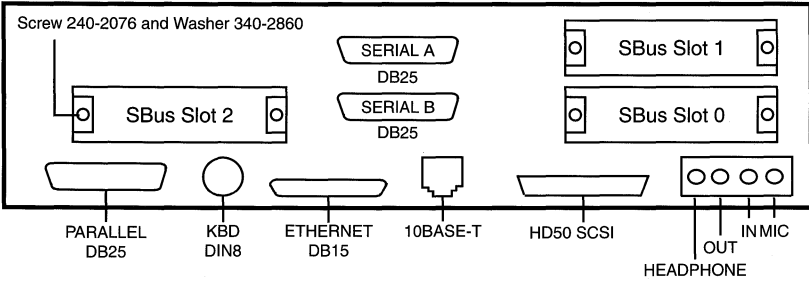
501-2854
143MHz 32MB

501-2855
143MHz 128MB

501-2994
143MHz 64MB



Backpanel and Connectors



501-2836

501-2854

501-2855

501-2994

FAB 270-2836-06 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------------------|
| J1101 | 1-2 | Out | |
| J1101 | 2-3 | N/A | Pins 2-3 are hardwired |
| J1102 | 1-2 | Out | |
| J1102 | 2-3 | N/A | Pins 2-3 are hardwired |
| J2002 | 1-2 | In | Select FEPROM (default) |
| J2002 | 2-3 | In | Select ROMBO |
| J2003 | 1-2 | In | FEPROM write protect (default) |
| J2003 | 2-3 | In | FEPROM write enable |
| J2102 | 1-24 | Out | Serial port connector |
| J2104 | 1-2 | In | RS-232 -12Vdc |
| J2104 | 2-3 | In | RS-423 (default) |
| J2105 | 1-2 | In | RS-232 +12Vdc |
| J2105 | 2-3 | In | RS-423 (default) |
| J2201 | 1-2 | Out | Button XIR |
| J2201 | 2-3 | Out | Button POR |
| J2204 | 1-2 | In | FEPROM high half booting |
| J2204 | 2-3 | In | FEPROM low half booting (default) |
| J1104 | 1-8 | Out | Ethernet edge test |
| J2103 | 1-8 | Out | Serial port edge test |
| J2203 | 1-8 | Out | JTAG connector |

Notes

1. The minimum operating system is Solaris 2.5.
2. The flash PROM is soldered to the system board.
3. Use the Flash PROM Programming Utility to update the flash PROM.
4. UltraSPARC Fan 540-2761 was replaced by Heatsink 540-3361 and Shield 540-3090 in May/June 1997.

References

1. *Sun Ultra 1 Series Installation Guide*, 802-3825.
2. *Sun Ultra 1 Series Service Manual*, 802-3819.
3. *Flash PROM Programming Guide*, 802-3233.

Ultra 1 Model 170

A11-170 Netra i1/170 Netra j1/170

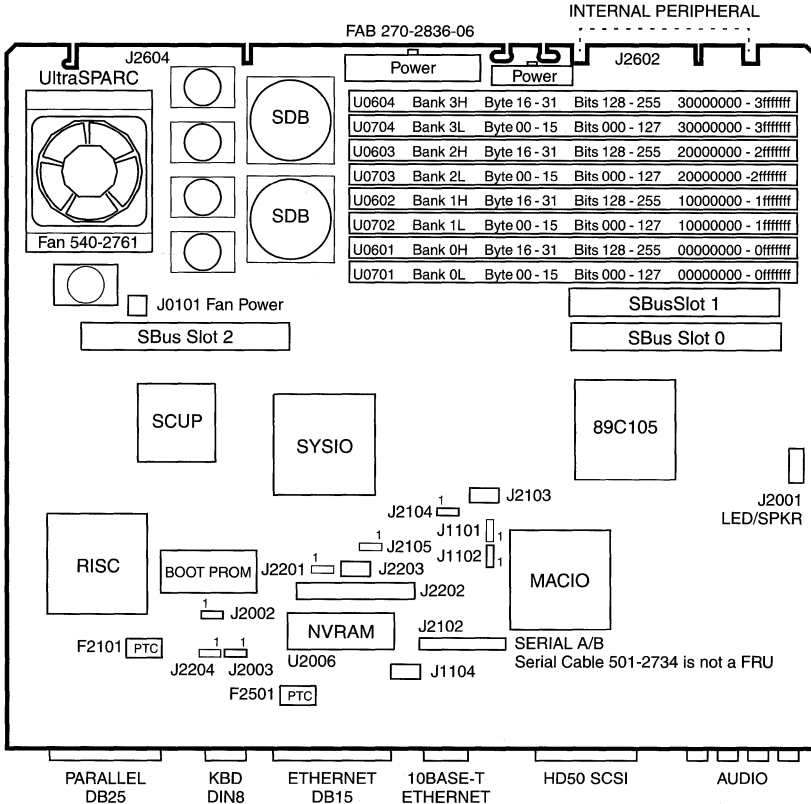
Netra nfs 150 Netra i 150 Ultra Enterprise 150

501-3082

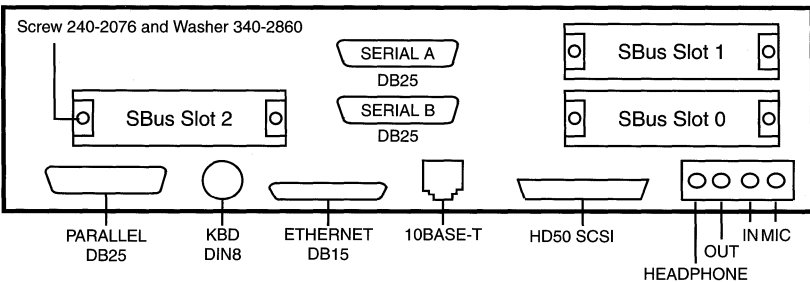
501-5139

167MHz OMB FRU

167MHz OMB FRU



Backpanel and Connectors



501-3082 501-5139
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------------------|
| J1101 | 1-2 | Out | |
| J1101 | 2-3 | N/A | Pins 2-3 are hardwired |
| J1102 | 1-2 | Out | |
| J1102 | 2-3 | N/A | Pins 2-3 are hardwired |
| J2002 | 1-2 | In | Select FEPROM (default) |
| J2002 | 2-3 | In | Select ROMBO |
| J2003 | 1-2 | In | FEPROM write protect (default) |
| J2003 | 2-3 | In | FEPROM write enable |
| J2102 | 1-24 | Out | Serial port connector |
| J2104 | 1-2 | In* | RS-232 -12Vdc |
| J2104 | 2-3 | In | RS-423 (default) |
| J2105 | 1-2 | In* | RS-232 +12Vdc |
| J2105 | 2-3 | In | RS-423 (default) |
| J2201 | 1-2 | Out | Button XIR |
| J2201 | 2-3 | Out | Button POR |
| J2204 | 1-2 | In | FEPROM high half booting |
| J2204 | 2-3 | In | FEPROM low half booting (default) |
| J1104 | 1-8 | Out | Ethernet edge test |
| J2103 | 1-8 | Out | Serial port edge test |
| J2103 | 5-6 | In* | Enable txdb at J2602 |
| J2103 | 7-8 | In* | Enable rxdb at J2602 |
| J2203 | 1-8 | Out | JTAG connector |

* Netra *nfs* 150, Netra *i* 150, and E150 requirement

Notes

1. The minimum operating system is Solaris 2.5.
2. The flash PROM is soldered to the system board.
3. Use the Flash PROM Programming Utility to update the flash PROM.
4. UltraSPARC Fan 540-2761 was replaced by Heatsink 540-3361 and Shield 540-3090 in May/June 1997.
5. The 501-5139 was released in April 1998 to fix BugID 4011704.
6. The 501-5139 is only available from Enterprise Service.

References

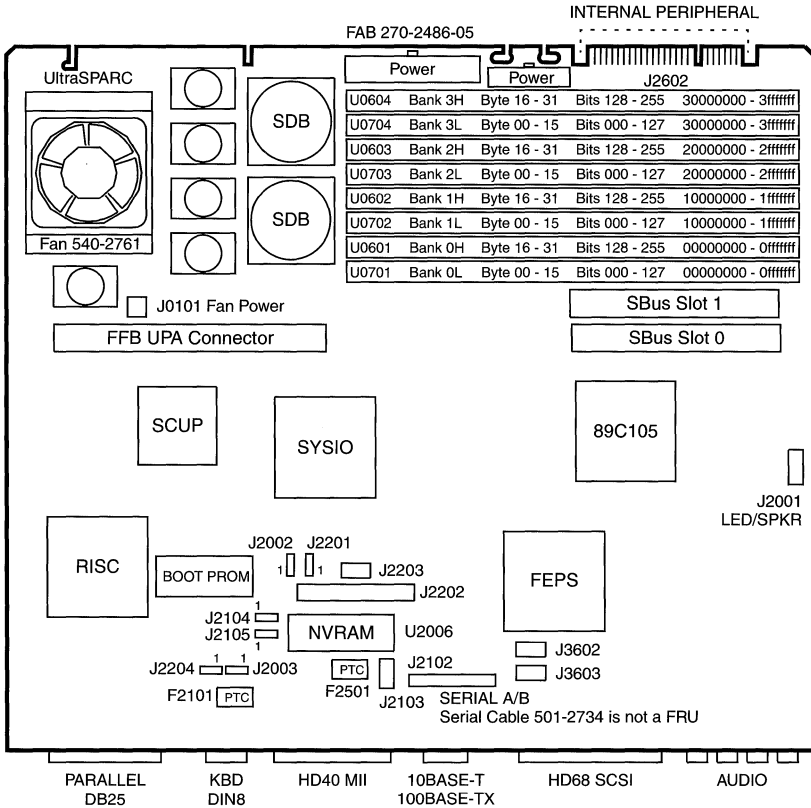
1. *Sun Ultra 1 Series Installation Guide*, 802-3825.
2. *Sun Ultra 1 Series Service Manual*, 802-3819.
3. *Flash PROM Programming Guide*, 802-3233.

Ultra 1 Model 140E

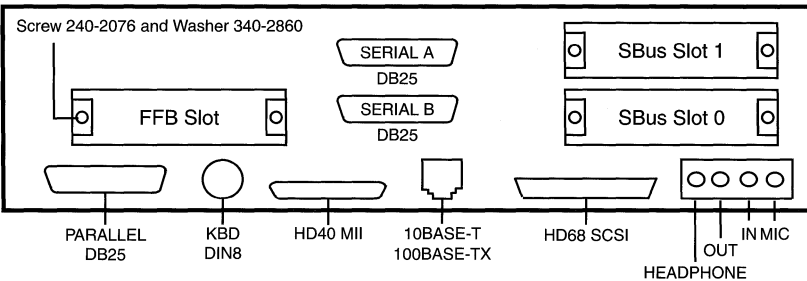
A12-140

501-4291
143MHz 0MB FRU
FAB 270-2486

501-4677
143MHz 0MB FRU
FAB 270-4358



Backpanel and Connectors



501-4291

501-4677

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|---------------------------------|
| J2002 | 1-2 | In | Select FPRM (default) |
| J2002 | 2-3 | In | Select ROMBO |
| J2003 | 1-2 | In | FPRM write protect (default) |
| J2003 | 2-3 | In | FPRM write enable |
| J2102 | 1-24 | Out | Serial port connector |
| J2103 | 1-8 | Out | Serial port edge test |
| J2104 | 1-2 | In | RS-232 -12Vdc |
| J2104 | 2-3 | In | RS-423 (default) |
| J2105 | 1-2 | In | RS-232 +12Vdc |
| J2105 | 2-3 | In | RS-423 (default) |
| J2201 | 1-2 | Out | Button XIR |
| J2201 | 2-3 | Out | Button POR |
| J2202 | 1-8 | Out | ROMBO connector |
| J2203 | 1-8 | Out | JTAG connector |
| J2204 | 1-2 | In | FPRM high half booting |
| J2204 | 2-3 | In | FPRM low half booting (default) |
| J3602 | 1-8 | Out | Ethernet edge test |
| J3603 | 1-8 | Out | Ethernet edge test |

Configured System Boards

| PART # | MEMORY | SIMM | # SIMMs |
|----------|--------|------|---------|
| 501-3051 | 64MB | 32MB | 2 |

Notes

1. The minimum operating system is Solaris 2.5 Hardware:1/96.
2. The flash PROM is soldered to the system board.
3. Use the Flash PROM Programming Utility to update the flash PROM.
4. UltraSPARC Fan 540-2761 was replaced by Heatsink 540-3361 and Shield 540-3090 in May/June 1997.

References

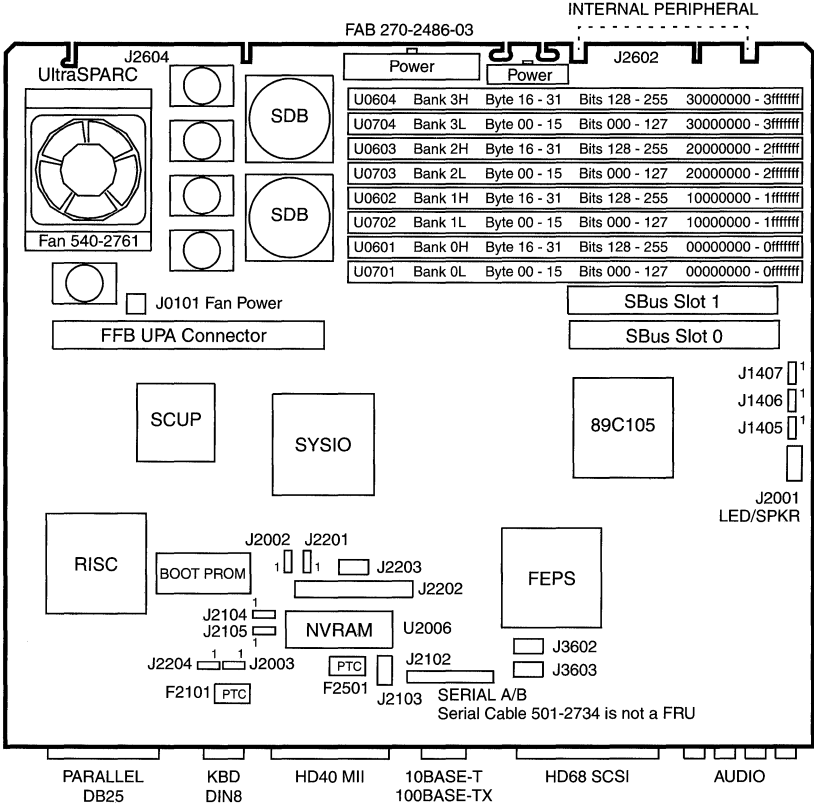
1. *Sun Ultra 1 Series Installation Guide*, 802-3825.
2. *Sun Ultra 1 Creator Series Service Manual*, 802-4148.
3. *Flash PROM Programming Guide*, 802-3233.

Ultra 1 Model 170E

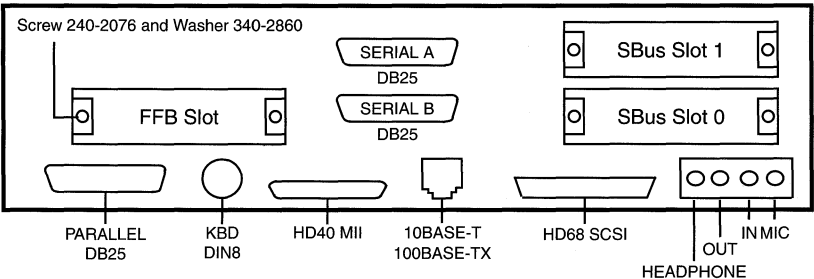
A12-170 Netra i1/170E

501-2486
167MHz OMB FRU
FAB 270-2486

501-4676
167MHz OMB FRU
FAB 270-4358



Backpanel and Connectors



501-2486 501-4676
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------------------|
| J1405 | 1-3 | - | Pre-FCS speed selection |
| J1406 | 1-3 | - | Pre-FCS speed selection |
| J1407 | 1-3 | - | Pre-FCS speed selection |
| J2002 | 1-2 | In | Select FEPROM (default) |
| J2002 | 2-3 | In | Select ROMBO |
| J2003 | 1-2 | In | FEPROM write protect (default) |
| J2003 | 2-3 | In | FEPROM write enable |
| J2102 | 1-24 | Out | Serial port connector |
| J2103 | 1-8 | Out | Serial port edge test |
| J2104 | 1-2 | In | RS-232 -12Vdc |
| J2104 | 2-3 | In | RS-423 (default) |
| J2105 | 1-2 | In | RS-232 +12Vdc |
| J2105 | 2-3 | In | RS-423 (default) |
| J2201 | 1-2 | Out | Button XIR |
| J2201 | 2-3 | Out | Button POR |
| J2202 | 1-8 | Out | ROMBO connector |
| J2203 | 1-8 | Out | JTAG connector |
| J2204 | 1-2 | In | FEPROM high half booting |
| J2204 | 2-3 | In | FEPROM low half booting (default) |
| J3602 | 1-8 | Out | Ethernet edge test |
| J3603 | 1-8 | Out | Ethernet edge test |

Notes

1. The minimum operating system is Solaris 2.5 Hardware:1/96.
2. The flash PROM is soldered to the system board.
3. Use the Flash PROM Programming Utility to update the flash PROM.
4. Boards built in April 1997, labeled 501-2486-07 DEV-WO-10498, do not use Fan 540-2761. A fanless heatsink cools the UltraSPARC processor.
5. UltraSPARC Fan 540-2761 was replaced by Heatsink 540-3361 and Shield 540-3090 in May/June 1997.

References

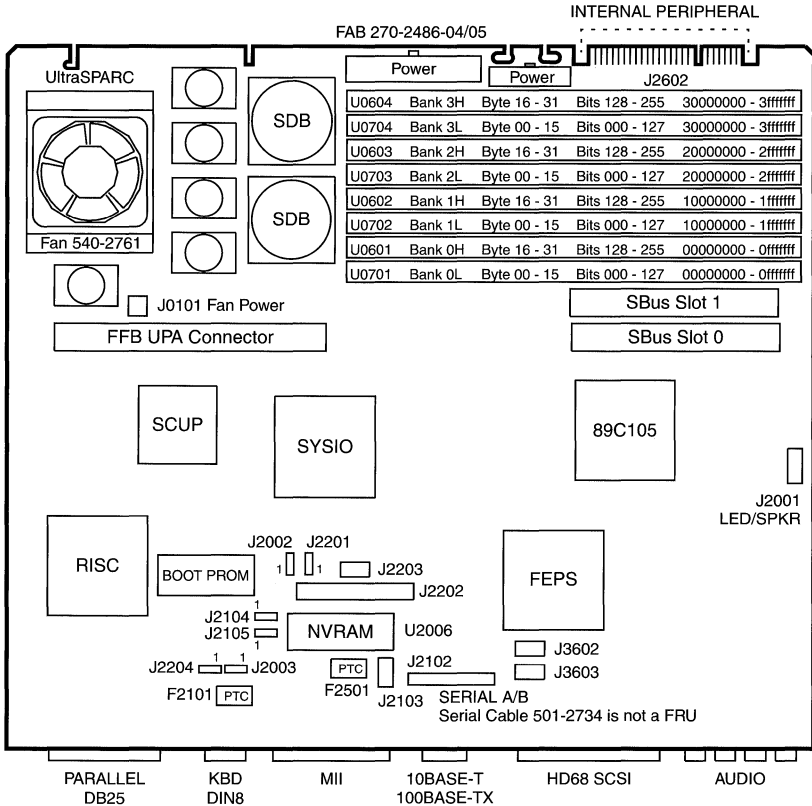
1. *Sun Ultra 1 Series Installation Guide*, 802-3825.
2. *Sun Ultra 1 Creator Series Service Manual*, 802-4148.
3. *Flash PROM Programming Guide*, 802-3233.

Ultra 1 Model 170E

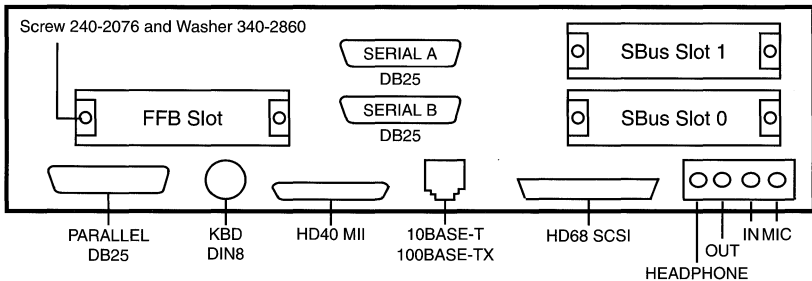
A12-170E Netra i 1/170E

501-2486
167MHz 0MB FRU
FAB 270-2486

501-4676
167MHz 0MB FRU
FAB 270-4358



Backpanel and Connectors



501-2486 501-4676
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------------------|
| J2002 | 1-2 | In | Select FEPROM (default) |
| J2002 | 2-3 | In | Select ROMBO |
| J2003 | 1-2 | In | FEPROM write protect (default) |
| J2003 | 2-3 | In | FEPROM write enable |
| J2102 | 1-24 | Out | Serial port connector |
| J2103 | 1-8 | Out | Serial port edge test |
| J2104 | 1-2 | In | RS-232 -12Vdc |
| J2104 | 2-3 | In | RS-423 (default) |
| J2105 | 1-2 | In | RS-232 +12Vdc |
| J2105 | 2-3 | In | RS-423 (default) |
| J2201 | 1-2 | Out | Button XIR |
| J2201 | 2-3 | Out | Button POR |
| J2202 | 1-8 | Out | ROMBO connector |
| J2203 | 1-8 | Out | JTAG connector |
| J2204 | 1-2 | In | FEPROM high half booting |
| J2204 | 2-3 | In | FEPROM low half booting (default) |
| J3602 | 1-8 | Out | Ethernet edge test |
| J3603 | 1-8 | Out | Ethernet edge test |

Configured System Boards

| PART # | MEMORY | SIMM | # SIMMs |
|----------|--------|------|---------|
| 501-2805 | 128MB | 64MB | 2 |
| 501-2806 | 32MB | 16MB | 2 |
| 501-2995 | 64MB | 32MB | 2 |

Notes

1. The minimum operating system is Solaris 2.5 Hardware:1/96.
2. The flash PROM is soldered to the system board.
3. Use the Flash PROM Programming Utility to update the flash PROM.
4. Boards built in April 1997, labeled 501-2486-07 DEV-WO-10498, do not use Fan 540-2761. A fanless heatsink cools the UltraSPARC processor.
5. UltraSPARC Fan 540-2761 was replaced by Heatsink 540-3361 and Shield 540-3090 in May/June 1997.

References

1. *Sun Ultra 1 Series Installation Guide*, 802-3825.
2. *Sun Ultra 1 Creator Series Service Manual*, 802-4148.
3. *Flash PROM Programming Guide*, 802-3233.

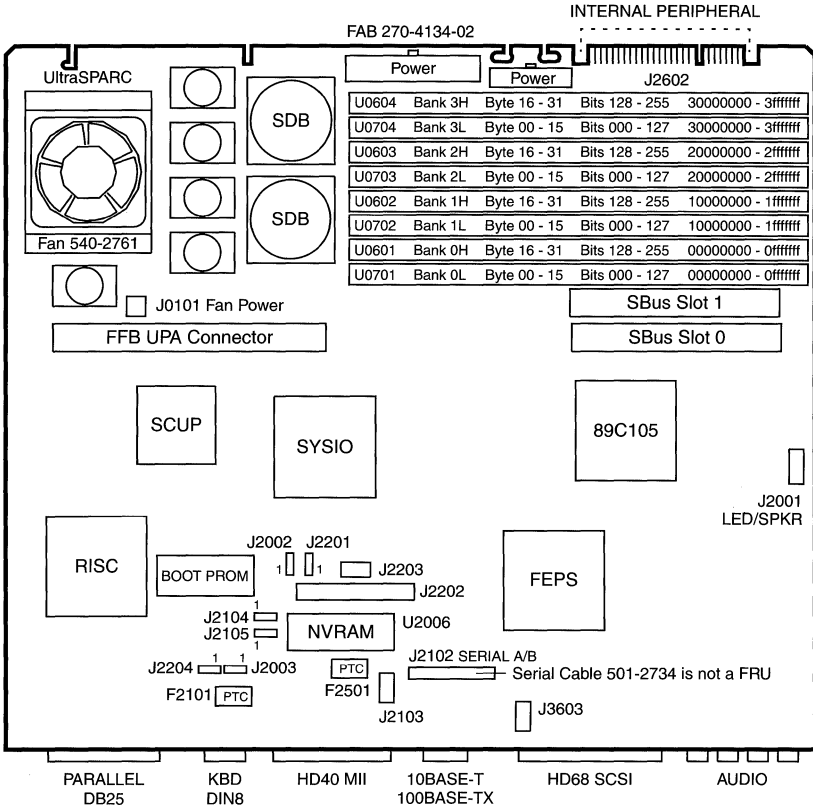
Ultra 1 Model 200E

A12-200E Netra i1/200E

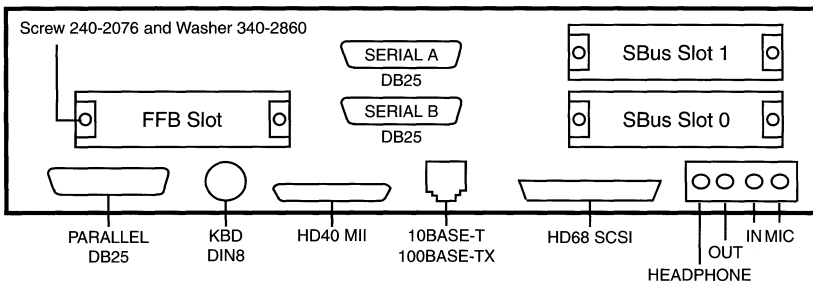
501-4134
200MHz OMB FRU
FAB 270-4134

501-4358
200MHz OMB FRU
FAB 270-4358

501-5403
200MHz OMB FRU
FAB 270-4358



Backpanel and Connectors



501-4134

501-4358

501-5403

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-----------------------------------|
| J2002 | 1-2 | In | Select FEPROM (default) |
| J2002 | 2-3 | In | Select ROMBO |
| J2003 | 1-2 | In | FEPROM write protect (default) |
| J2003 | 2-3 | In | FEPROM write enable |
| J2102 | 1-24 | Out | Serial port connector |
| J2103 | 1-8 | Out | Serial port edge test |
| J2104 | 1-2 | In | RS-232 -12Vdc |
| J2104 | 2-3 | In | RS-423 (default) |
| J2105 | 1-2 | In | RS-232 +12Vdc |
| J2105 | 2-3 | In | RS-423 (default) |
| J2201 | 1-2 | Out | Button XIR |
| J2201 | 2-3 | Out | Button POR |
| J2202 | 1-8 | Out | ROMBO connector |
| J2203 | 1-8 | Out | JTAG connector |
| J2204 | 1-2 | In | FEPROM high half booting |
| J2204 | 2-3 | In | FEPROM low half booting (default) |
| J3603 | 1-8 | Out | Ethernet edge test |

Configured System Boards

| PART # | MEMORY | SIMM | # SIMMS |
|----------|--------|-------|---------|
| 501-4144 | 64MB | 32MB | 2 |
| 501-4145 | 256MB | 128MB | 2 |
| 501-4244 | 128MB | 64MB | 2 |
| 501-4380 | 512MB | 128MB | 4 |

Notes

1. The minimum operating system is Solaris 2.5.1.
2. The flash PROM is soldered to the system board.
3. Use the Flash PROM Programming Utility to update the flash PROM.
4. UltraSPARC Fan 540-2761 was replaced by Heatsink 540-3361 and Shield 540-3090 in May/June 1997.

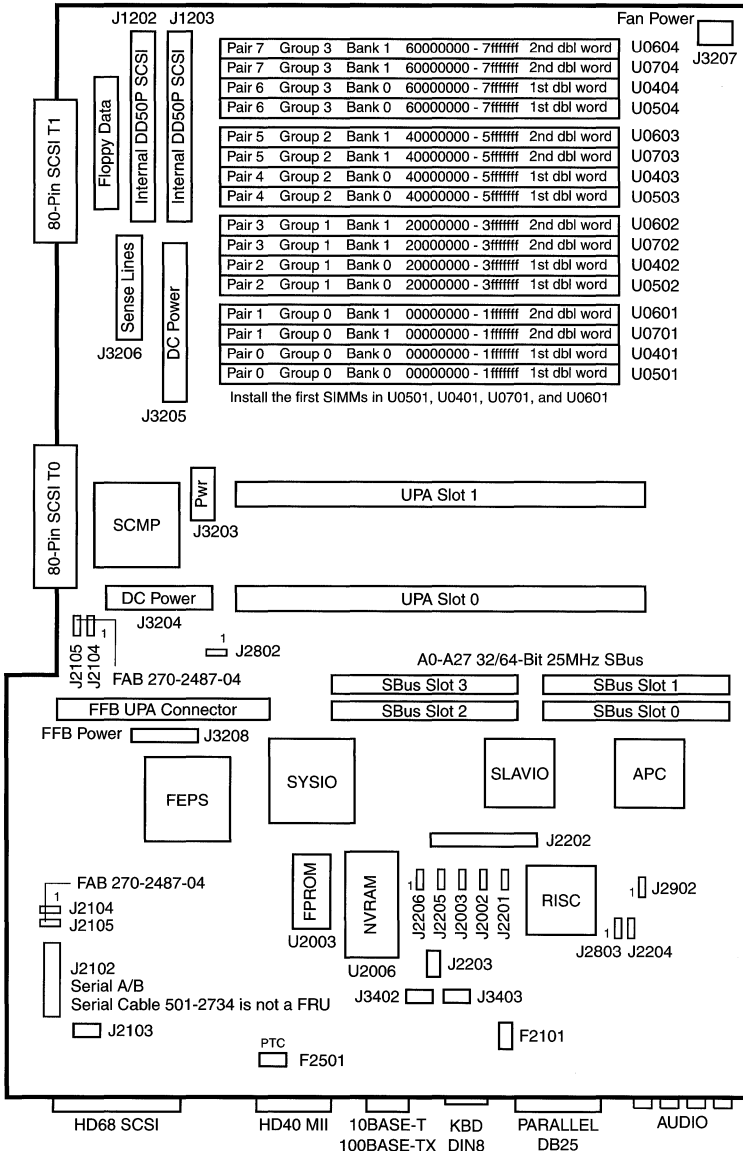
References

1. *Sun Ultra 1 Series Installation Guide*, 802-3825.
2. *Sun Ultra 1 Creator Series Service Manual*, 802-4148.
3. *Flash PROM Programming Guide*, 802-3233.

Ultra 2 A14

501-2487
OMB PRE-FCS

FAB 270-2487-04/05



501-2487
 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|----------------------------------|
| J2002 | 1-2 | In | Select Flash PROM (default) |
| J2002 | 2-3 | In | Select ROMBO |
| J2003 | 1-2 | In | FPROM write protect (default) |
| J2003 | 2-3 | In | FPROM write enable |
| J2102 | 1-24 | Out | Serial port connector |
| J2103 | 1-8 | Out | Serial port edge test |
| J2104 | 1-2 | In | RS-232 -12Vdc |
| J2104 | 2-3 | In | RS-423 (default) |
| J2105 | 1-2 | In | RS-232 +12Vdc |
| J2105 | 2-3 | In | RS-423 (default) |
| J2201 | 1-2 | In | UPA Speed2 pullup |
| J2201 | 2-3 | Out | UPA Speed2 pulldown |
| J2202 | 1-32 | Out | ROMBO connector |
| J2203 | 1-8 | Out | JTAG connector |
| J2204 | 1-2 | In | FPROM high half booting |
| J2204 | 2-3 | In | FPROM low half booting (default) |
| J2205 | 1-2 | Out | Button XIR |
| J2205 | 2-3 | Out | Button POR |
| J2206 | 1-2 | Out | Pin-1 hardwired to Vcc |
| J2206 | 2-3 | Out | Pin-3 hardwired to Vcc |
| J2802 | 1-2 | Out | UPA REQ pullup |
| J2802 | 2-3 | In | UPA REQ pulldown |
| J2803 | 1-2 | Out | SLAVIO TDO - MOD0 TDO |
| J2803 | 2-3 | In | SLAVIO TDO - MOD1 TDI |
| J2902 | 1-2 | Out | MOD1 TDI - MOD1 TDO |
| J2902 | 2-3 | In | MOD1 TDI - RISC TDI |
| J3208 | 1-20 | Out | Odd Pins 1-19 = Gnd |
| J3208 | 1-20 | Out | Even Pins 2-20 = +3.3Vdc |
| J3402 | 1-8 | Out | Ethernet edge test |
| J3403 | 1-8 | Out | Ethernet edge test |

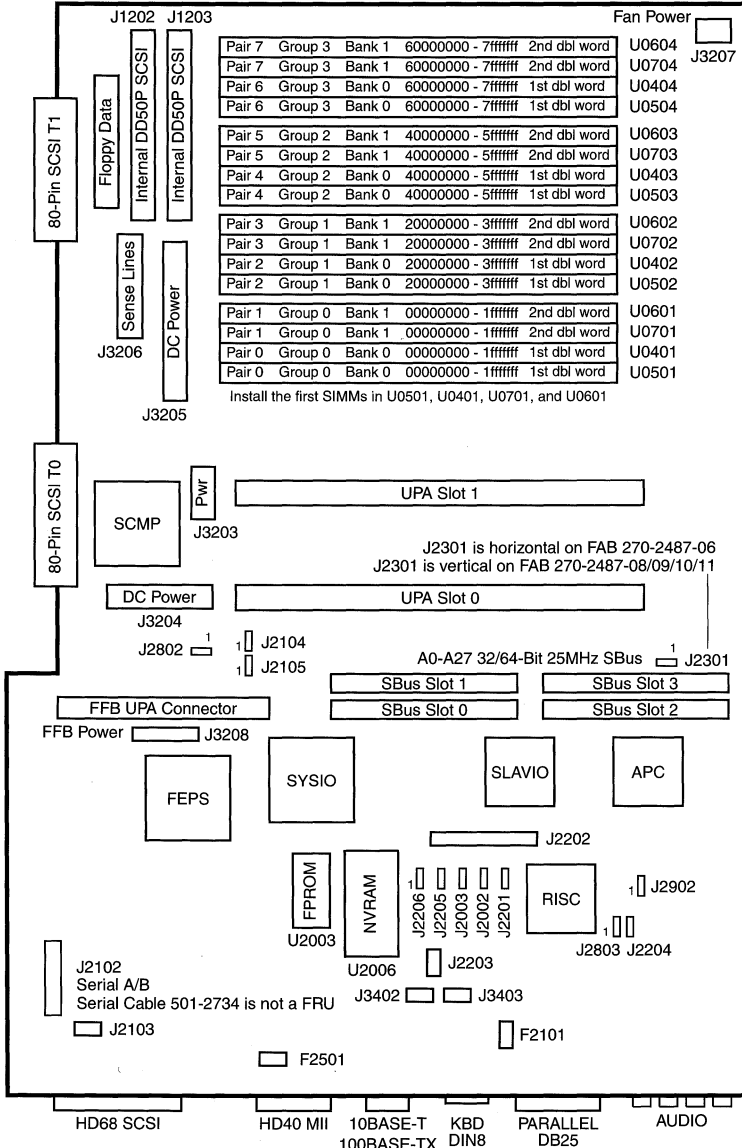
CAUTION - Do NOT install jumpers on Power Connector J3208.

Ultra 2

A14 Netra i Netra j Netra NFS

501-3132
OMB FRU

FAB 270-2487-06/08/09/10/11



501-3132
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|----------------------------------|
| J2002 | 1-2 | In | Select Flash PROM (default) |
| J2002 | 2-3 | In | Select ROMBO |
| J2003 | 1-2 | In | FPROM write protect (default) |
| J2003 | 2-3 | In | FPROM write enable |
| J2102 | 1-24 | Out | Serial port connector |
| J2103 | 1-8 | Out | Serial port edge test |
| J2104 | 1-2 | In | RS-232 -12Vdc |
| J2104 | 2-3 | In | RS-423 (default) |
| J2105 | 1-2 | In | RS-232 +12Vdc |
| J2105 | 2-3 | In | RS-423 (default) |
| J2201 | 1-2 | In | UPA Speed2 pullup |
| J2201 | 2-3 | Out | UPA Speed2 pulldown |
| J2202 | 1-32 | Out | ROMBO connector |
| J2203 | 1-8 | Out | JTAG connector |
| J2204 | 1-2 | In | FPROM high half booting |
| J2204 | 2-3 | In | FPROM low half booting (default) |
| J2205 | 1-2 | Out | Button XIR |
| J2205 | 2-3 | Out | Button POR |
| J2206 | 1-2 | Out | Pin-1 hardwired to Vcc |
| J2206 | 2-3 | Out | Pin-3 hardwired to Vcc |
| J2301 | 1-2 | In | +3 mode (250MHZ/300MHZ) |
| J2301 | 2-3 | In | +2 (167MHZ/200MHZ) +4 (400MHZ) |
| J2802 | 1-2 | Out | UPA REQ pullup |
| J2802 | 2-3 | In | UPA REQ pulldown |
| J2803 | 1-2 | Out | SLAVIO TDO - MOD0 TDO |
| J2803 | 2-3 | In | SLAVIO TDO - MOD1 TDI |
| J2902 | 1-2 | Out | MOD1 TDI - MOD1 TDO |
| J2902 | 2-3 | In | MOD1 TDI - RISC TDI |
| J3208 | 1-20 | Out | Odd Pins 1-19 = Gnd |
| J3208 | 1-20 | Out | Even Pins 2-20 = +3.3Vdc |
| J3402 | 1-8 | Out | Ethernet edge test |
| J3403 | 1-8 | Out | Ethernet edge test |

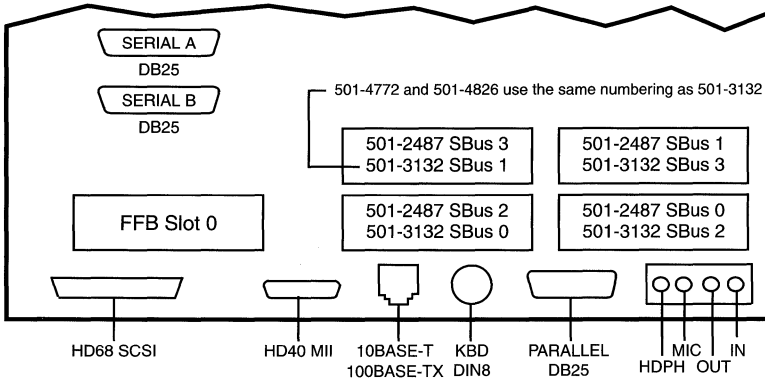
CAUTION - Do NOT install jumpers on Power Connector J3208.

Ultra 2

501-2487

501-3132

Backpanel and Connectors



Configured System Boards

| PART NUMBER | MEMORY SIZE | SIMM SIZE | NUMBER SIMMs | SPARC MODULE | NUMBER MODULES |
|-------------|-------------|-----------|--------------|--------------|----------------|
| 501-2902 | 256MB | 64MB | 4 | 167MHz | 2 |
| 501-2966 | 64MB | 16MB | 4 | 167MHz | 1 |
| 501-2967 | 128MB | 32MB | 4 | 167MHz | 1 |
| 501-2968 | 128MB | 32MB | 4 | 167MHz | 2 |
| 501-3052 | 256MB | 64MB | 4 | 167MHz | 1 |
| 501-3107 | 256MB | 64MB | 4 | 200MHz | 2 |
| 501-3137 | 128MB | 32MB | 4 | 200MHz | 1 |
| 501-4117 | 64MB | 16MB | 4 | 200MHz | 1 |
| 501-4118 | 64MB | 16MB | 4 | 167MHz | 2 |
| 501-4119 | 64MB | 16MB | 4 | 200MHz | 2 |
| 501-4121 | 512MB | 128MB | 4 | 200MHz | 2 |
| 501-4123 | 128MB | 32MB | 4 | 200MHz | 2 |
| 501-4381 | 1GB | 128MB | 8 | 200MHz | 2 |
| 501-4633 | 1GB | 128MB | 8 | 300MHz | 2 |
| 501-4634 | 512MB | 128MB | 4 | 300MHz | 2 |
| 501-4707 | 128MB | 32MB | 4 | 300MHz | 1 |
| 501-4708 | 256MB | 64MB | 4 | 300MHz | 1 |
| 501-4709 | 256MB | 64MB | 4 | 300MHz | 2 |

Ultra 2

501-2487

501-3132

Notes

1. The minimum operating system is Solaris 2.5.1.
2. OBP 3.11 is required if Solaris 7 is used in 64-bit mode.
3. The flash PROM is soldered to the system board.
4. Use the Flash PROM Programming Utility to update the flash PROM.

Graphics Notes

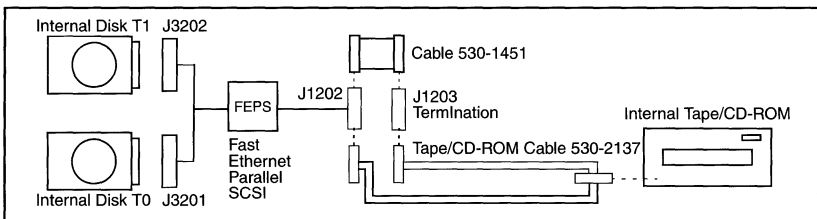
1. FFB2+ is not compatible with 300MHz Module 501-4196.
2. FFB2+ is not compatible with 300MHz Module \leq 501-4849-02.
3. Elite3D is not compatible with 300MHz Module 501-4196.
4. Elite3D is not compatible with 300MHz Module \leq 501-4849-02.

Memory Notes

1. Two pairs of SIMMs form a group.
2. All four SIMMs within a group must be the same size.
3. The minimum memory requirement is four SIMMs in Group 0.
4. SIMMs can be installed in Group 1, Group 2, or Group 3 in any order.
5. A group addresses 512MB of memory. Unused memory is mapped out.
6. OBP \leq 3.1.3 reports memory errors as a pair of SIMMs.
7. OBP \leq 3.1.3 reports the wrong SIMM pair when a memory error occurs. Refer to BugID 1262941.
8. OBP 3.1.5 reports memory errors as a single SIMM.

Internal SCSI Bus Notes

1. The SCSI controller is connected to J1202, J3201, and J3202.
2. There is no termination at J1202, J3201, or J3202.
3. The internal SCSI bus is terminated at J1203.
4. Connect J1202 to J1203 with Cable 530-1451 or CD-ROM/Tape Drive Cable 530-2137 to terminate the internal SCSI bus.



References

1. *Ultra 2 Creator Series Service Manual*, 802-2561.
2. *Flash PROM Programming Guide*, 802-3233.

Ultra 5 Ultra 10

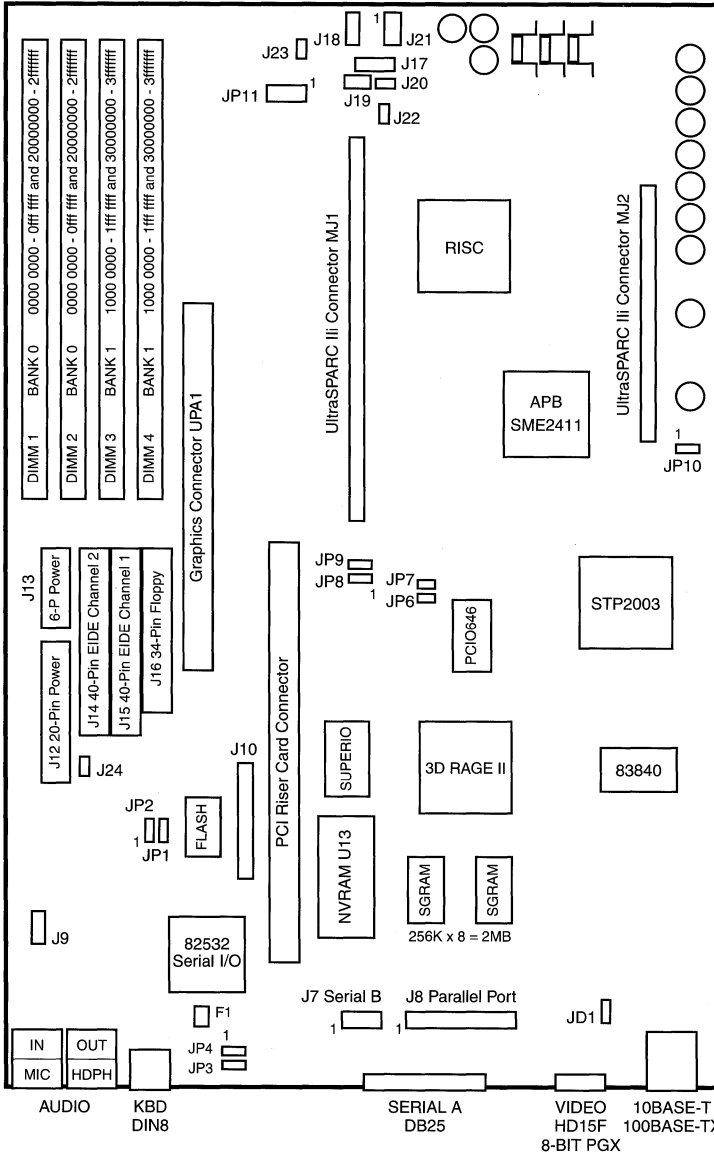
A21 A22

375-0009

w/o Memory

A21 270MHz

A22 300/333MHz



375-0009

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------------------|
| JD1 | 1-2 | Out | Composite video synchronization |
| JP1 | 1-2 | In | Select PROM (default) |
| JP1 | 2-3 | In | Select ROMBO |
| JP2 | 1-2 | In | FEPROM write protect (default) |
| JP2 | 2-3 | In | FEPROM write enable |
| JP3 | 1-2 | In | RS-232 |
| JP3 | 2-3 | In | RS-423 (default) |
| JP4 | 1-2 | In | RS-232 |
| JP4 | 2-3 | In | RS-423 (default) |
| JP6 | 1-2 | N/A | Not stuffed |
| JP7 | 1-2 | N/A | Not stuffed |
| JP8 | 1-2 | In | Simba Clock Input Normal (default) |
| JP8 | 2-3 | In | Simba Clock Input Test |
| JP9 | 1-2 | In | Simba Clock Input Normal (default) |
| JP9 | 2-3 | In | Simba Clock Input Test |
| JP10 | 1-2 | Out | Bypass CPU in scan chain |
| JP10 | 2-3 | In | Include CPU in scan chain (default) |
| JP11 | 1-10 | N/A | Not stuffed |

Miscellaneous Connectors

| CONNECTOR | PINS | DESCRIPTION |
|-----------|------|----------------------------|
| J7 | 1-10 | Asynchronous serial Port B |
| J8 | 1-26 | Parallel port |
| J9 | 1-4 | CD-ROM audio |
| J10 | 1-24 | ROMBO |
| J17 | 1-4 | LED and soft reset switch |
| J18 | 1-4 | Speaker |
| J19 | 1-3 | DC fan power |
| J20 | 1-8 | Unknown |
| J21 | 1-8 | JTAG |
| J22 | 1-2 | Not stuffed |
| J23 | 1-2 | Not stuffed |
| J24 | 1-2 | Unknown |

Ultra 5 Ultra 10
375-0009

Graphics Notes

1. Creator and Creator3D are not supported in the Ultra 5.
2. Elite3D is not supported in the Ultra 5.
3. Elite3D is supported in the Ultra 10.
4. Elite3D-m6 was not sold with System Board 375-0009.

Memory Notes

1. The minimum memory requirement is two DIMMs in any bank.
2. The 16MB DIMM uses 10-bit column addressing and was not sold.
3. The 32, 64, 128, and 256MB DIMMs use 11-bit column addressing.
4. If 10-bit and 11-bit DIMMs are mixed, either pair will be ignored.
5. The 256MB DIMMs are not supported in the Ultra 5.
6. OBP $\geq 3.25v3$ is required when DIMMs manufactured by Micron are installed with 360MHz, 400MHz, or 440MHz CPU modules.

NVRAM Notes

1. NVRAMs 525-1430 and 525-1817 include an M48T59 and a carrier.
2. System Board 375-0009 was built with an AMP NVRAM socket.
3. System Board 375-0009 shipped with NVRAM 525-1430.
4. System Board 375-0115 is built with a Chupond NVRAM socket.
5. NVRAM 525-1430 is compatible with the Chupond socket on 375-0115.
6. NVRAM 525-1817 is not compatible with the AMP socket on 375-0009.

OBP Notes

1. The flash PROM is soldered to the system board.
2. Use the Flash PROM Programming Utility to update the flash PROM.
3. BugIDs 4114343 and 4114784 prevent booting from Dual Ultra SCSI Controller Options X6540A and X6541A. Use the following workaround:


```
ok nvedit
0: dev /builtin-drivers
1: alias pci1000,1000 pci1000,3
2: device-end
3: probe-all install-console banner Ctrl-C to exit
ok nvstore
ok setenv use-nvramrc? true
ok reset-all
```
4. OBP 3.11 version 9 fixes BugIDs 4114343 and 4114784.
5. Modules 501-5568, 501-5148, and 501-5149 require OBP $\geq 3.19v4$.

Ultra 5 Ultra 10
375-0009

Operating System Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 11/97.
2. The minimum Solaris 2.6 release is Solaris 2.6 Hardware: 3/98.

System Board Notes

1. The 375-0009 shipped with Ultra 5 270MHz.
2. The 375-0009 shipped with Ultra 10 300MHz and 333MHz.
3. The 375-0009 is not tested with 360MHz, 400MHz, or 440MHz.
4. Graphics quality BugID 4120186 is fixed on 375-0009-07.
5. Serial communication BugID 4121884 is fixed on 375-0009-08.

References

1. *Sun Ultra 5/10 Service Manual*, 805-0423.
2. *Sun Ultra 5/10 Product Note*, 805-3647.
3. *Sun Ultra 5/10 Product Note*, 805-4970.
4. *Sun Ultra 5 ShowMe How CD-ROM*, 704-5753.
5. *Sun Ultra 10 ShowMe How CD-ROM*, 704-5983.

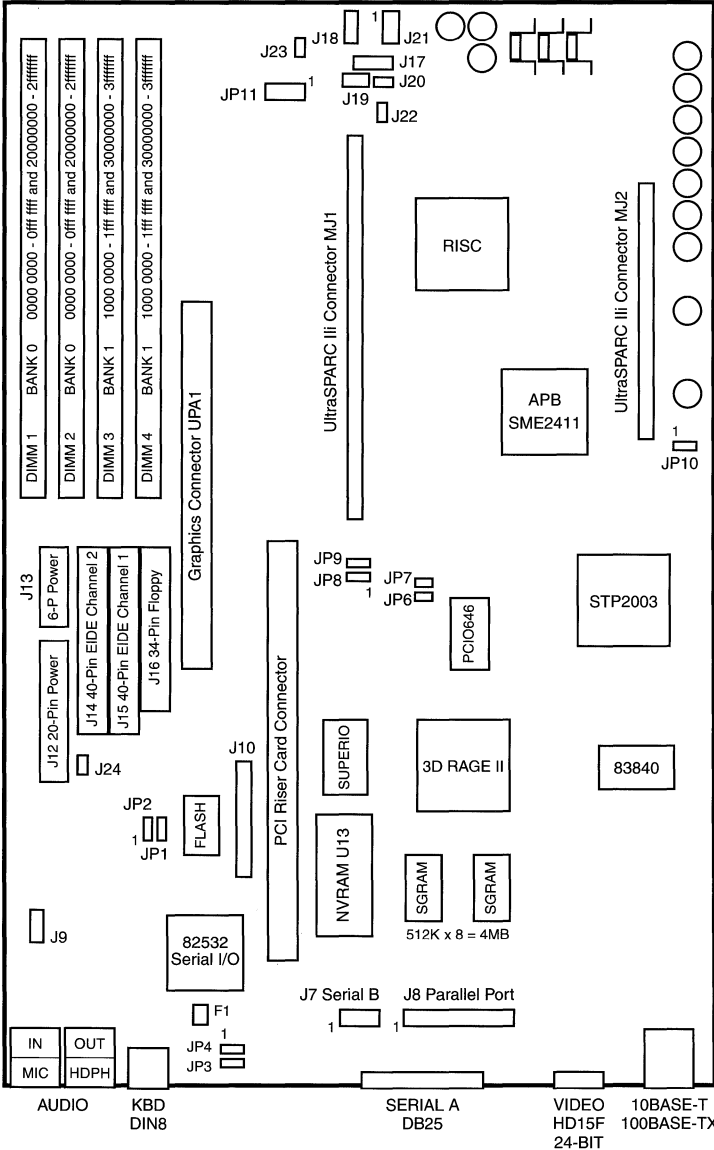
Ultra 5 Ultra 10

A21 A22

375-0066
w/o Memory
A21 270/333MHz
A22 333/360MHz

375-0079
w/o Memory
A21 360/400MHz
A22 333/360/440MHz

375-0115
w/o Memory
A21 360/400MHz
A22 360/440MHz



375-0066

375-0079

375-0115

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------------------|
| JP1 | 1-3 | N/A | Not stuffed |
| JP2 | 1-2 | In | FEPROM write protect (default) |
| JP2 | 2-3 | In | FEPROM write enable |
| JP3 | 1-2 | In | RS-232 |
| JP3 | 2-3 | In | RS-423 (default) |
| JP4 | 1-2 | In | RS-232 |
| JP4 | 2-3 | In | RS-423 (default) |
| JP8 | 1-2 | In | Simba Clock Input Normal (default) |
| JP8 | 2-3 | In | Simba Clock Input Test |
| JP9 | 1-2 | In | Simba Clock Input Normal (default) |
| JP9 | 2-3 | In | Simba Clock Input Test |
| JP10 | 1-2 | Out | Bypass CPU in scan chain |
| JP10 | 2-3 | In | Include CPU in scan chain (default) |
| JP11 | 1-10 | N/A | Not stuffed |

Miscellaneous Connectors

| CONNECTOR | PINS | DESCRIPTION |
|-----------|------|----------------------------|
| J7 | 1-10 | Asynchronous serial port B |
| J8 | 1-26 | Parallel port |
| J9 | 1-4 | CD-ROM audio |
| J10 | 1-24 | ROMBO |
| J17 | 1-4 | LED and soft reset switch |
| J18 | 1-4 | Speaker |
| J19 | 1-3 | DC fan power |
| J21 | 1-8 | JTAG |
| J22 | 1-2 | Not stuffed |
| J23 | 1-2 | Not stuffed |
| J24 | 1-2 | Not stuffed |

Ultra 5 Ultra 10
 375-0066 375-0079 375-0115

Chassis EZ Label Notes

1. The EZ Label is located on the lower left side of the front bezel.
2. The EZ Label includes a Service Code and the Serial Number.
3. The Service Code identifies changes made to system FRUs.

| SERVICE CODE | CPU | MODULE | NVRAM | Ultra 5 SPEAKER | Ultra 10 PCI RISER SPACERS |
|--------------|----------|----------|----------|-----------------|----------------------------|
| None | 375-0009 | - | 525-1430 | 370-3170 | Not installed * |
| PGX24 | 375-0066 | - | 525-1430 | 370-3170 | Not installed * |
| PGX24 | 375-0079 | - | 525-1430 | 370-3170 | Not installed * |
| SR PGX24 | 375-0066 | 501-5568 | 525-1430 | 370-3170 | Installed |
| SR PGX24 | 375-0079 | 501-5568 | 525-1430 | 370-3170 | Installed |
| SERIES 3 | 375-0079 | - | 525-1430 | 370-3170 | Installed |
| B SERIES 3 | 375-0115 | - | 525-1817 | 370-3170 | Installed |
| C SERIES 3 | 375-0079 | - | 525-1430 | 370-4212 | Do not Install |
| BC SERIES 3 | 375-0115 | - | 525-1817 | 370-4212 | Do not Install |

* Refer to FCO A0152 for details.

Graphics Notes

1. PGX24 does not support 8-bit and 24-bit graphics at the same time.
2. Creator and Creator3D are not supported in the Ultra 5.
3. Elite3D is not supported in the Ultra 5.
4. Elite3D is supported in the Ultra 10.
5. Elite3D-m6 was not sold with System Board 375-0066.

Memory Notes

1. The minimum memory requirement is two DIMMs in any bank.
2. The 16MB DIMM uses 10-bit column addressing and was not sold.
3. The 32, 64, 128, and 256MB DIMMs use 11-bit column addressing.
4. If 10-bit and 11-bit DIMMs are mixed, either pair will be ignored.
5. The 256MB DIMMs are not supported in the Ultra 5.
6. Memory speed is 60ns if 50ns and 60ns DIMMs are mixed.
7. OBP ≥3.25v3 is required when DIMMs manufactured by Micron are installed with 360MHz, 400MHz, or 440MHz CPU modules.

Module Notes

1. Ultra 5 ships with 360MHz/512KB module 501-5148.
2. Ultra 10 shipped with 360MHz/2MB module 501-5222.
3. Ultra 5 was not shipped with the 440MHz Module.
4. 333MHz Module 501-5568 requires OBP ≥3.19v4.
5. 360MHz Module 501-5148 requires OBP ≥3.19v4.
6. 440MHz Module 501-5149 requires OBP ≥3.19v4.
7. 400MHz Modules 501-5740 and 501-5741 require OBP ≥3.25v1.

| | Ultra 5 | Ultra 10 | |
|----------|---------|----------|----------|
| 375-0066 | | 375-0079 | 375-0115 |

NVRAM Notes

1. NVRAMs 525-1430 and 525-1817 include an M48T59 and a carrier.
2. The 375-0066 and 375-0079 were built with an AMP NVRAM socket.
3. Approximately 1200 375-0079 boards were built with a Chupond socket.
4. The 375-0115 system board is built with a Chupond NVRAM socket.
5. System Boards 375-0066 and 375-0079 shipped with NVRAM 525-1430.
5. System Board 375-0115 ships with NVRAM 525-1817.
7. NVRAM 525-1430 is compatible with the Chupond socket on 375-0115.
3. NVRAM 525-1817 is not compatible with the AMP socket on System Boards 375-0009, 375-0066, and 375-0079.

OBP Notes

1. The flash PROM is soldered to the system board.
2. Use the Flash PROM Programming Utility to update the flash PROM.

Operating System Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 11/97.
2. The minimum Solaris 2.6 release is Solaris 2.6 Hardware: 5/98.
3. PGX24 Graphics on 2.5.1 HW: 11/97 and 2.6 HW: 5/98 requires Ultra 5/10 Software Supplement CD 704-5885-11.

System Board Notes

1. The 375-0066 shipped with Ultra 5 270MHz and 333MHz.
2. The 375-0066 shipped with Ultra 10 333MHz and 360MHz.
3. The 375-0079 shipped with Ultra 5 360MHz and 400MHz.
4. The 375-0079 shipped with Ultra 10 440MHz.
5. The 375-0079 shipped with Ultra 5 270/333MHz after July 1999.
6. The 375-0079 shipped with Ultra 10 333/360MHz after July 1999.
7. The 375-0115 shipped with Ultra 5 360/400MHz after May 2000.
8. The 375-0115 shipped with Ultra 10 360/440MHz after May 2000.

References

1. *Sun Ultra 5 Service Manual*, 805-7763.
2. *Sun Ultra 10 Service Manual*, 805-7764.
3. *Sun Ultra 5/10 Product Note*, 805-4970.
4. *Sun Ultra 5 ShowMe How CD-ROM*, 704-5753.
5. *Sun Ultra 10 ShowMe How CD-ROM*, 704-5983.

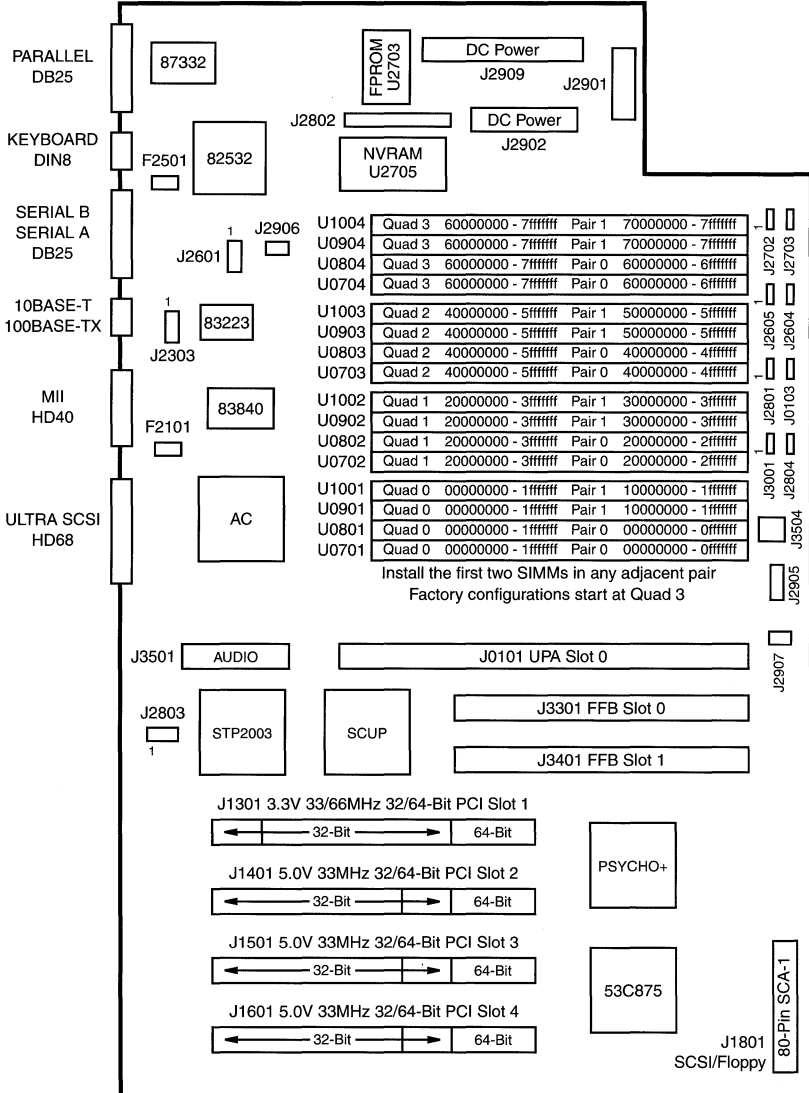
Ultra 30 Netra t 1100

A16

501-3139

OMB FRU

FAB 270-3139-03/04/05



501-3139

FAB 270-3139-03/04/05 Jumper Settings

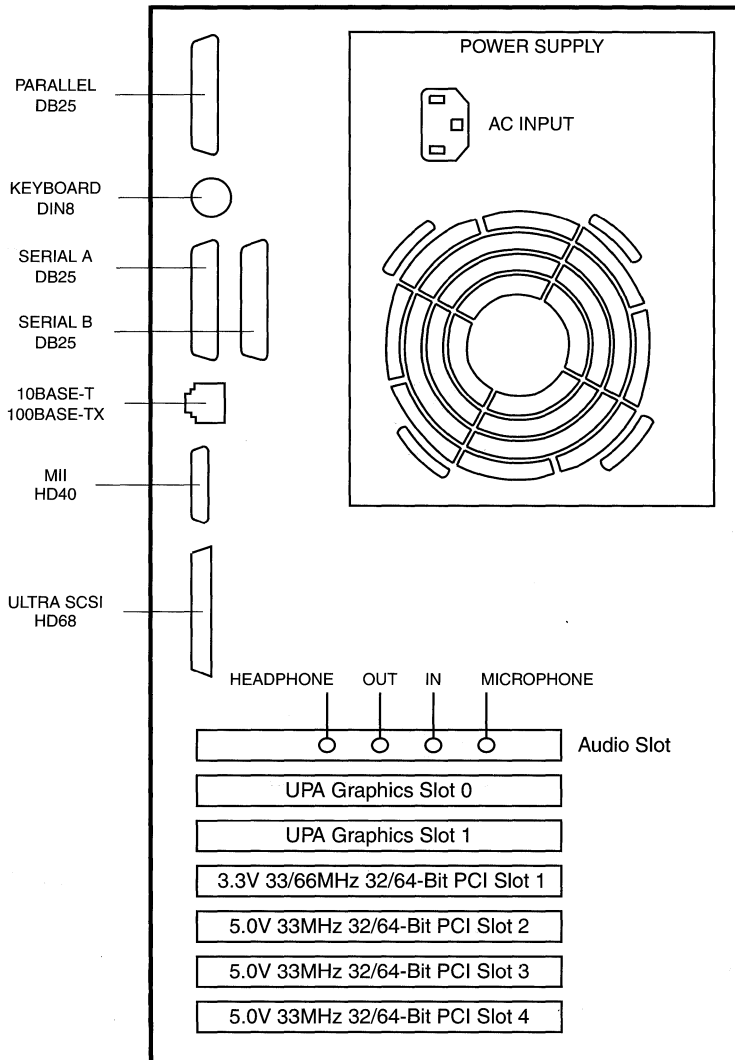
| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------------------|
| J0103 | 1-2 | In | Bypass CPU in scan chain |
| J0103 | 2-3 | In | Include CPU in scan chain (default) |
| J2604 | 1-2 | In | RS-232 |
| J2604 | 2-3 | In | RS-423 (default) |
| J2605 | 1-2 | In | RS-232 |
| J2605 | 2-3 | In | RS-423 (default) |
| J2702 | 1-2 | In | Select FEPROM (default) |
| J2702 | 2-3 | In | Select ROMBO |
| J2703 | 1-2 | In | FEPROM write protect (default) |
| J2703 | 2-3 | In | FEPROM write enable |
| J2804 | 1-2 | In | FEPROM high half booting |
| J2804 | 2-3 | In | FEPROM low half booting (default) |
| J3001 | 1-2 | In | +3 mode (250MHZ/300MHZ) |
| J3001 | 2-3 | In | +2 mode (167MHZ/200MHZ) |

Miscellaneous Connectors

| CONNECTOR | PINS | DESCRIPTION |
|-----------|------|-------------------------------------|
| J1801 | 1-80 | SCSI and floppy bus |
| J2303 | 1-8 | Ethernet test (factory use) |
| J2602 | 1-8 | Serial test (factory use) |
| J2801 | 1-3 | Button XIR/POR (factory use) |
| J2802 | 1-32 | ROMBO (factory use) |
| J2803 | 1-8 | JSCC (factory use) |
| J2901 | 1-20 | Sense from power supply (FAB 03) |
| J2901 | 1-16 | Sense from power supply (FAB 04/05) |
| J2902 | 1-8 | DC power from power supply |
| J2906 | 1-4 | Rear fan power |
| J2907 | 1-2 | Front fan power |
| J2909 | 1-12 | DC power from power supply |
| J3504 | 1-4 | On/Off switch |

Ultra 30 Netra t 1100
501-3139

Rear View



Ultra 30 Netra t 1100
501-3139
Configured System Boards

| PART NUMBER | MEMORY SIZE | SIMM SIZE | NUMBER SIMMS | SPARC MODULE | MODULE CACHE |
|-------------|-------------|-----------|--------------|--------------|--------------|
| 501-4101 | 128MB | 32MB | 4 | 250MHz | 1MB |
| 501-4340 | 128MB | 32MB | 4 | 300MHz | 2MB |
| 501-4341 | 512MB | 128MB | 4 | 300MHz | 2MB |

Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. The flash PROM is soldered to the system board.
3. Use the Flash PROM Programming Utility to update the flash PROM.

Graphics Notes

1. FFB2+ is not compatible with 300MHz Module 501-4196.
2. FFB2+ is not compatible with 300MHz Module ≤501-4849-02.
3. Elite3D is not compatible with 300MHz Module 501-4196.
4. Elite3D is not compatible with 300MHz Module ≤501-4849-02.

Memory Notes

1. Two DIMMs form a pair. Two pairs of DIMMs form a quad.
2. The minimum requirement is two DIMMs in any adjacent pair.
3. DIMMs can be installed in any order of pairs.
4. Interleaving requires a fully populated quad.
5. Each quad addresses 512MB of memory.

PCI Slot Numbering

| SLOT | BUS | DEVICE TREE |
|------|-----|-------------------|
| 1 | A | pci@1f,2000/*@1,* |
| 2 | B | pci@1f,4000/*@2,* |
| 3 | B | pci@1f,4000/*@4,* |
| 4 | B | pci@1f,4000/*@5,* |

PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

References

1. *Ultra 30 Service Manual*, 802-7719.
2. *Ultra 30 ShowMe How* CD-ROM, 704-5681.
3. *Flash PROM Programming Guide*, 802-3233.

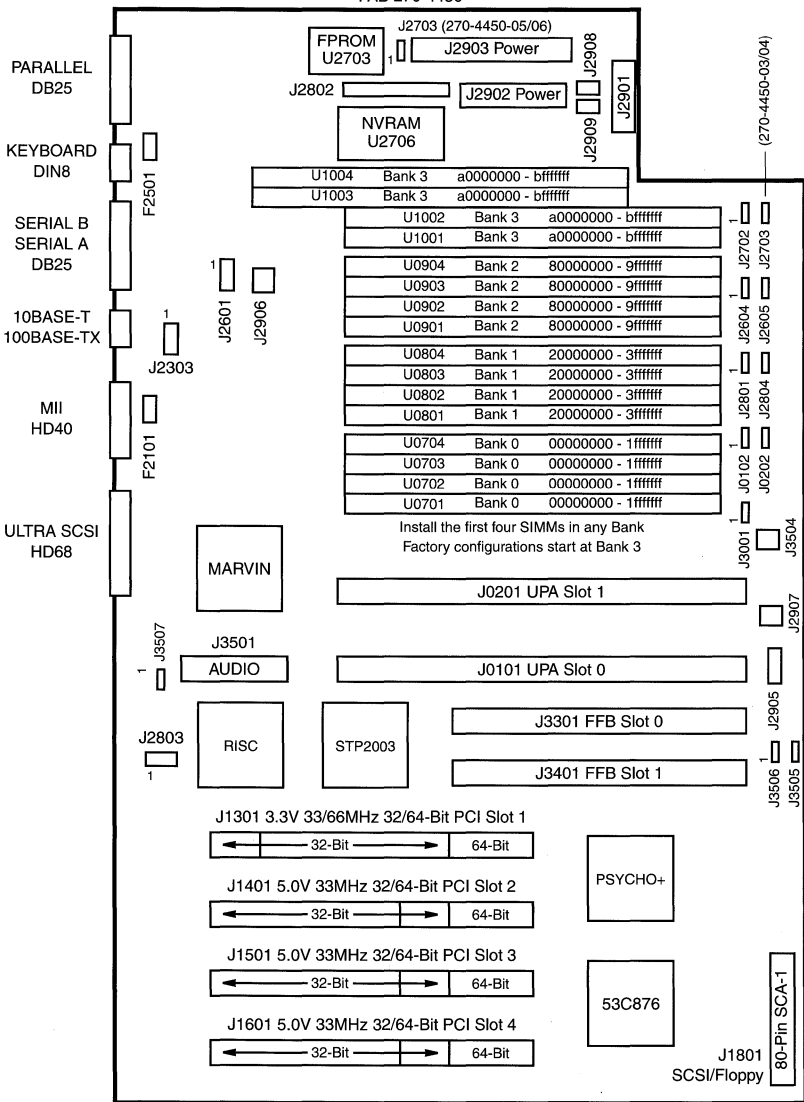
Ultra 60 Enterprise 220R Netra t 1120/1125

A23 A34

501-4450
FAB 270-4450
OMB FRU

501-5606
FAB 270-5606
OMB FRU

FAB 270-4450



501-4450 501-5606
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|---|
| J0102 | 1-2 | In | Include CPU0 in scan chain |
| J0102 | 2-3 | In | Bypass CPU0 in scan chain (default) |
| J0202 | 1-2 | In | Include CPU1 in scan chain |
| J0202 | 2-3 | In | Bypass CPU1 in scan chain (default) |
| J2604 | 1-2 | In | RS-232 -12Vdc |
| J2604 | 2-3 | In | RS-423 (default) |
| J2605 | 1-2 | In | RS-232 +12Vdc |
| J2605 | 2-3 | In | RS-423 (default) |
| J2702 | 1-2 | In | Select Flash PROM (default) |
| J2702 | 2-3 | In | Select ROMBO |
| J2703 | 1-2 | In | FEPROM write protected (default) |
| J2703 | 2-3 | In | FEPROM write enabled |
| J2804 | 1-2 | In | FEPROM high half booting |
| J2804 | 2-3 | In | FEPROM low half booting (default) |
| J2908* | 1-2 | In | Core voltage from CPU 0 (default) |
| J2908* | 2-3 | In | Core voltage from CPU 1 |
| J2909* | 1-2 | In | Over voltage protect from CPU 0 (default) |
| J2909* | 2-3 | In | Over voltage protect from CPU 1 |
| J3001 | 1-2 | In | ÷3 mode (300MHz/360MHz) [†] |
| J3001 | 2-3 | In | ÷2 mode and ÷4 mode (450MHz) [†] |
| J3505 | 1-2 | In | QAM WGS- to SPEAKER_OUT- (default) |
| J3505 | 2-3 | In | QAM WGS- to POWERON_L |
| J3506 | 1-2 | In | QAM WGS+ to SPEAKER_OUT+ (default) |
| J3506 | 2-3 | In | QAM WGS+ to SUPPLY_TRIP_L |

* J2908 and J2909 have two pins on FABs 270-4450-03 and 270-4450-05

[†] The Ultra 60 was not sold with 167MHz, 200MHz, or 250MHz modules

PCI Slot Numbering

| SLOT | BUS | DEVICE TREE |
|------|-----|-------------------|
| 1 | A | pci@1f,2000/*@1,* |
| 2 | B | pci@1f,4000/*@2,* |
| 3 | B | pci@1f,4000/*@4,* |
| 4 | B | pci@1f,4000/*@5,* |

PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

Ultra 60 Enterprise 220R Netra t 1120 Netra t 1125
 501-4450 501-5606
 Miscellaneous Connectors

| CONNECTOR | PINS | DESCRIPTION |
|-----------|------|------------------------------|
| J1801 | 1-80 | Internal SCSI and floppy bus |
| J2303 | 1-8 | Ethernet test (factory use) |
| J2601 | 1-8 | Serial test (factory use) |
| J2801 | 1-3 | Button XIR/POR (factory use) |
| J2802 | 1-32 | ROMBO (factory use) |
| J2803 | 1-8 | JSCC (factory use) |
| J2901 | 1-16 | Sense from power supply |
| J2902 | 1-8 | DC power from power supply |
| J2903 | 1-12 | DC power from power supply |
| J2905 | 1-3 | LED and speaker |
| J2906 | 1-4 | Rear fan power |
| J2907 | 1-2 | Front fan power |
| J3504 | 1-4 | On/Off switch |
| J3507 | 1-2 | Button POR |

Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The flash PROM is soldered to the system board.
3. Use the Flash PROM Programming Utility to update the flash PROM.

SCSI Bus Notes

1. The internal SCSI bus is controlled by /pci@1f,4000/scsi@3.
2. The external SCSI bus is controlled by /pci@1f,4000/scsi@3,1.

Graphics Notes

1. FFB2+ is not compatible with 300MHz Module 501-4196.
2. FFB2+ is not compatible with 300MHz Module ≤501-4849-02.
3. Elite3D is not compatible with 300MHz Module 501-4196.
4. Elite3D is not compatible with 300MHz Module ≤501-4849-02.

Memory Notes

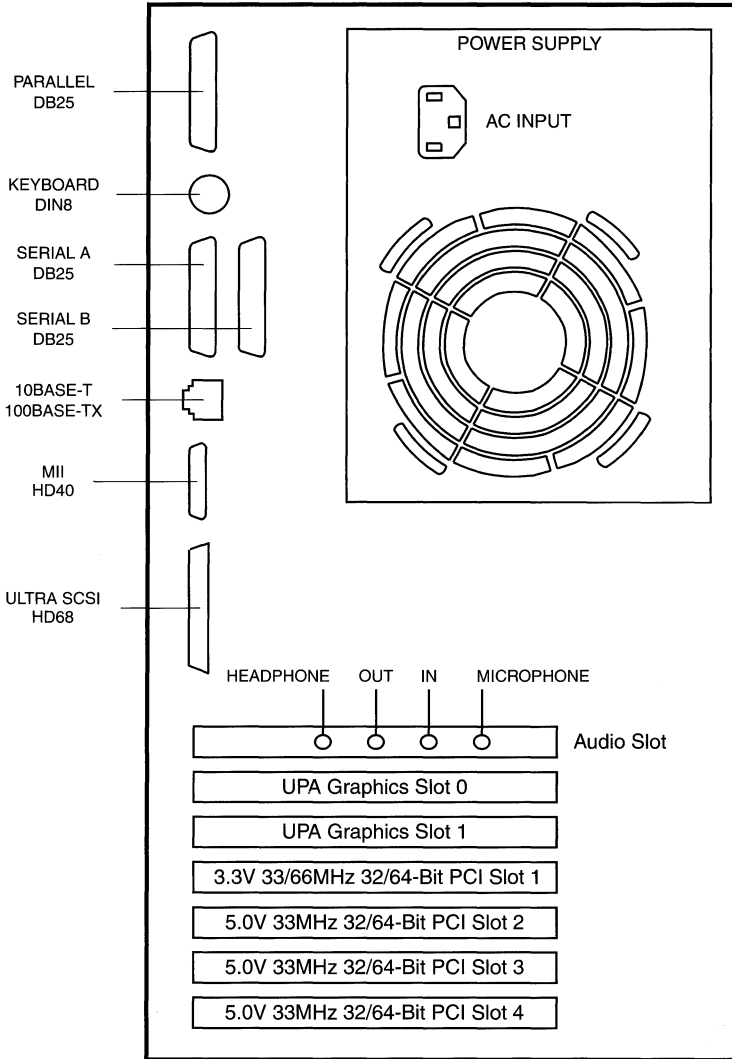
1. The minimum requirement is four DIMMs in any bank.
2. DIMMs can be installed in any order of banks.
3. Each bank addresses .5GB of memory.
4. Interleaving is not supported.

References

1. *Ultra 60 Service Manual*, 805-1709-10.
2. BugID 4091708 against the *Ultra 60 Service Manual*.
3. *Ultra 60 ShowMe How* CD-ROM, 704-5886-10.
4. *Enterprise 220R Service Manual*, 806-1081.

Ultra 60 Enterprise 220R Netra t 1120 Netra t 1125
501-4450 501-5606

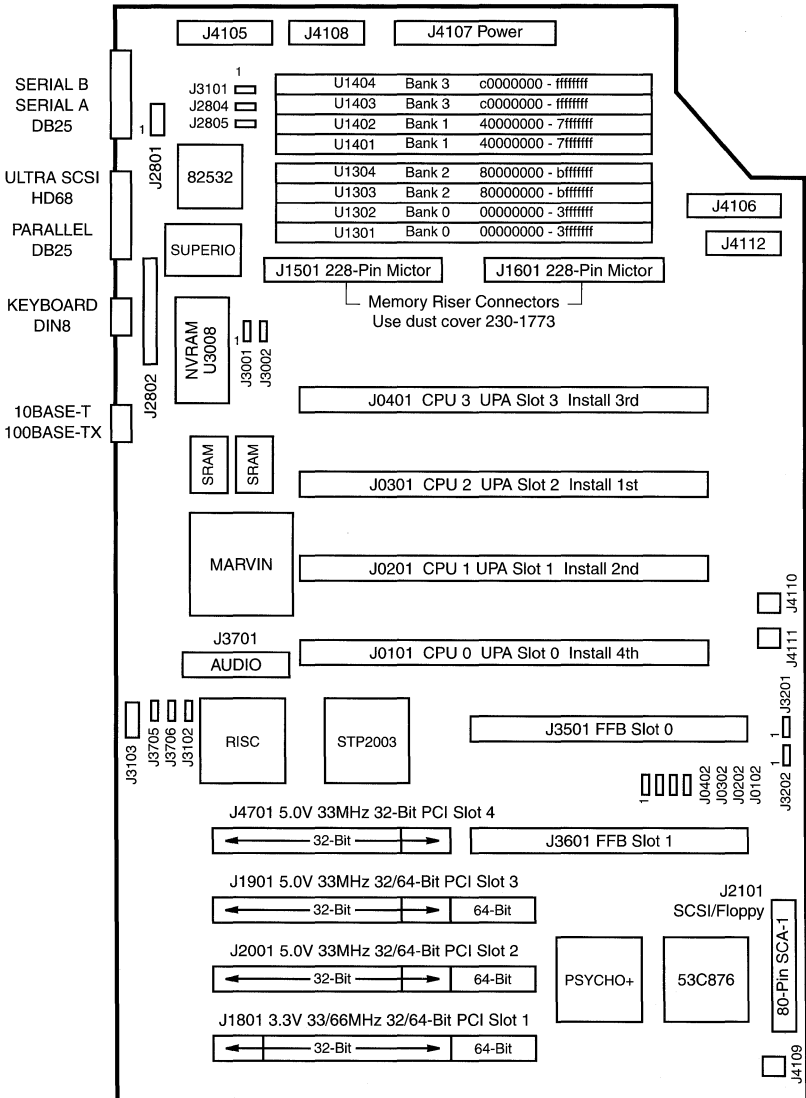
Ultra 60 Rear View



Ultra 80 Enterprise 420R Netra t 1400/1405

A27 A33
501-5168
OMB FRU

FAB 270-5168-08



501-5168
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|------------------------------------|
| J0102 | 2-3 | In | Bypass CPU0 in scan chain |
| J0202 | 2-3 | In | Bypass CPU1 in scan chain |
| J0302 | 2-3 | In | Bypass CPU2 in scan chain |
| J0402 | 2-3 | In | Bypass CPU3 in scan chain |
| J2804 | 1-2 | In | RS-232 +12Vdc |
| J2804 | 2-3 | In | RS-423 (default) |
| J2805 | 1-2 | In | RS-232 -12Vdc |
| J2805 | 2-3 | In | RS-423 (default) |
| J3001 | 1-2 | In | FEPROM write protected (default) |
| J3001 | 2-3 | In | FEPROM write enabled |
| J3002 | 1-2 | In | Select Flash PROM (default) |
| J3002 | 2-3 | In | Select ROMBO |
| J3102 | 1-2 | In | FEPROM high half booting |
| J3102 | 2-3 | In | FEPROM low half booting (default) |
| J3201 | 1-2 | In | ÷3 mode (360MHz) |
| J3201 | 2-3 | In | ÷4 mode (400MHz/450mhz) |
| J3202 | 2-3 | In | (on -07/08 FAB removed from -09) |
| J3705 | 1-2 | In | QAM WGS- to SPEAKER OUT- (default) |
| J3705 | 2-3 | In | QAM WGS- to POWERON_L |
| J3706 | 1-2 | In | QAM WGS+ to SPEAKER OUT+ (default) |
| J3706 | 2-3 | In | QAM WGS+ to SUPPLYTRIP_L |

PCI Slot Numbering

| SLOT | BUS | DEVICE TREE |
|------|-----|-------------------|
| 4 | B | pci@1f,4000/*@5,* |
| 3 | B | pci@1f,4000/*@2,* |
| 2 | B | pci@1f,4000/*@4,* |
| 1 | A | pci@1f,2000/*@1,* |

PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

Ultra 80 Enterprise 420R Netra t 1400 Netra t 1405
501-5168

Miscellaneous Connectors

| CONNECTOR | PINS | DESCRIPTION |
|-----------|------|---|
| J2801 | 1-8 | Serial test (factory use) |
| J2802 | 1-32 | ROMBO (factory use) |
| J3101 | 1-2 | Button XIR (factory use) |
| J3101 | 2-3 | Button POR (factory use) |
| J3103 | 1-8 | JSCC (factory use) |
| J4105 | 1-18 | DC-DC Converter |
| J4106 | 1-14 | Power supply sense |
| J4107 | 1-28 | Power supply +3.3V and +5V |
| J4108 | 1-10 | DC-DC converter |
| J4109 | 1-2 | Fan power |
| J4110 | 1-2 | Fan power |
| J4111 | 1-8 | Interlock, LED, speaker, and power switch |
| J4112 | 1-10 | DC power to internal peripherals |

Notes

1. The minimum OS is 2.5.1 HW: 11/97, 2.6 HW: 5/98, or 7 HW: 8/99.
2. The flash PROM is soldered to the solder side at U3007.
3. Use the Flash PROM Programming Utility to update the flash PROM.
4. 64-Bit PCI boards do not fit into Slot 4. Connector J3601 interferes with the 64-Bit PCI extension connector.

SCSI Bus Notes

1. The internal SCSI bus is controlled by /pci@1f,4000/scsi@3.
2. The external SCSI bus is controlled by /pci@1f,4000/scsi@3,1.

Memory Notes

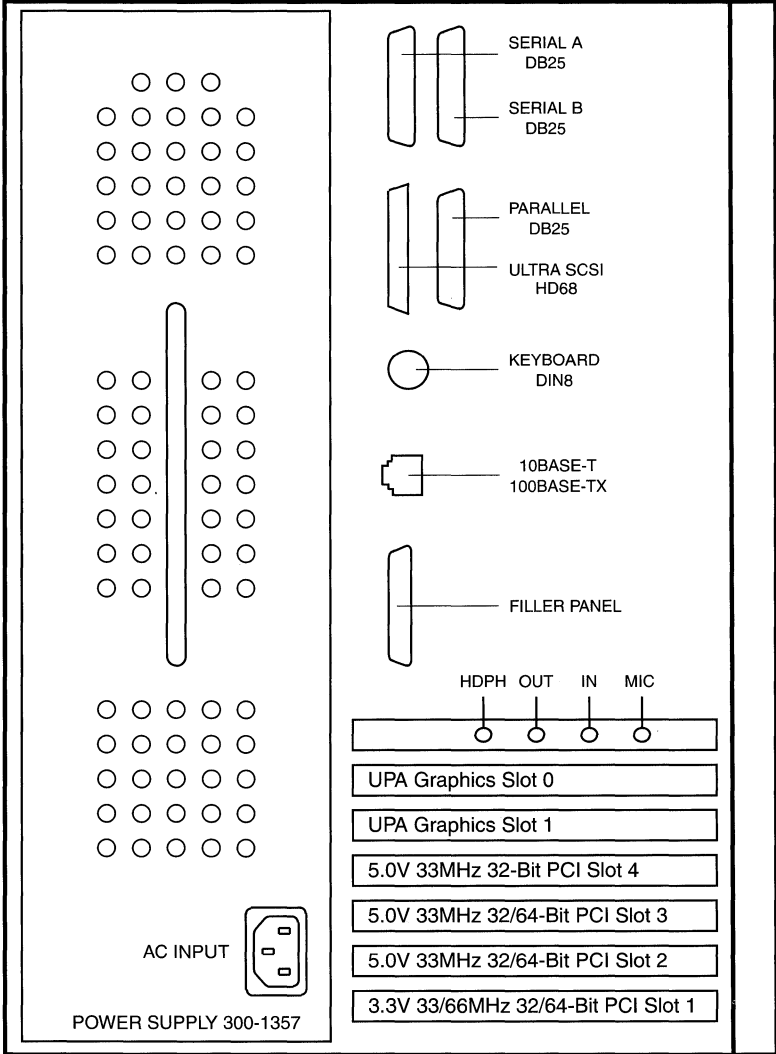
1. The minimum requirement is four DIMMs in any bank.
2. The recommended installation sequence is Bank 0, 2, 1, 3.
3. DIMMs are required on both the Riser Board and the System Board.
4. Damage to the Mictor Connectors can occur if DIMMs are installed or removed when the Riser Board is installed on the System Board.
5. Each bank addresses 1GB of memory.
6. Two-way and four-way memory bank interleaving is supported.

References

1. *Ultra 80 getting Started Guide*, 805-6615.
2. *Ultra 80 Service Manual*, 805-6618.
3. *Enterprise 420R Service Manual*, 806-1080.

Ultra 80 Enterprise 420R Netra t 1400 Netra t 1405
501-5168

Ultra 80 Rear View

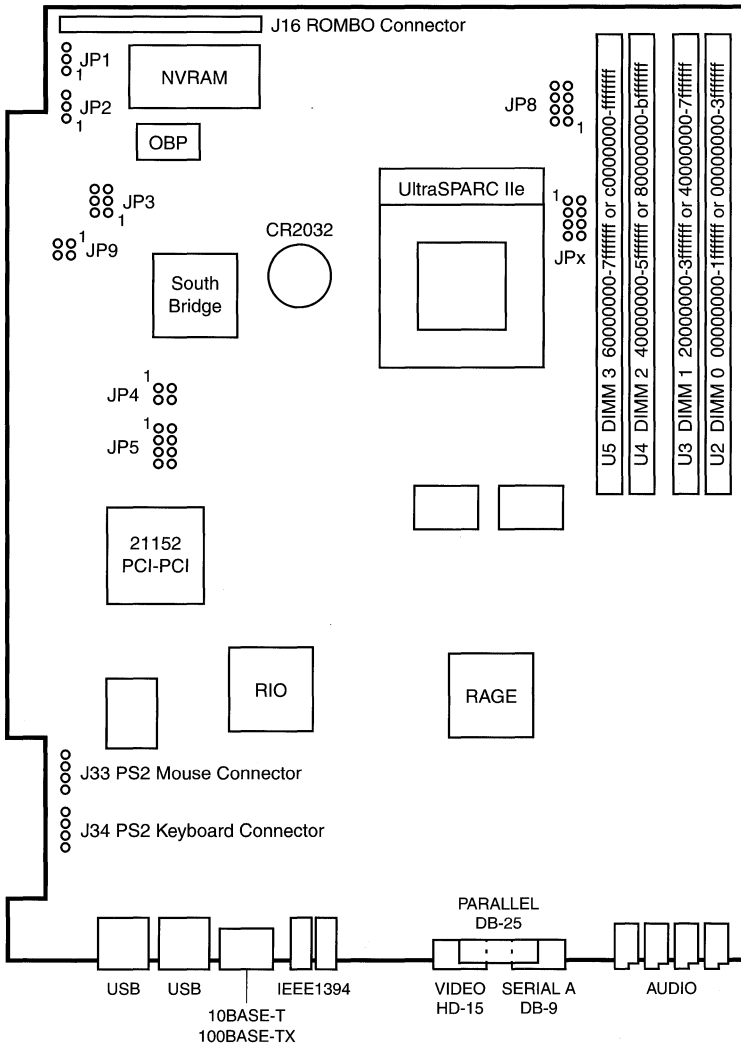


Sun Blade 100

A36

375-0096
OMB FRU
w/o UltraSPARC IIe

375-0112
OMB 500MHz
UltraSPARC IIe



375-0096 375-0112

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------------|
| JP1 | 1-2 | In | Select Flash PROM (default) |
| JP1 | 2-3 | In | Select ROMBO |
| JP2 | 1-2 | In | OBP write protected (default) |
| JP2 | 2-3 | In | OBP write enabled |
| JP4 | 1-4 | | Unknown |
| JP5 | 1-8 | | Unknown |
| JP8 | 1-8 | Out | Debug header |
| JP9 | 1-4 | | Unknown |
| JPx | 1-8 | Out | Debug header |

JP3 Speed Select Jumper Settings

| 1-2 | 3-4 | 5-6 | DESCRIPTION | UltraSPARC IIe |
|-----|-----|-----|-----------------------|----------------|
| Out | Out | Out | 500MHz UltraSPARC IIe | 100-6471 |
| In | Out | Out | 550MHz UltraSPARC IIe | Not available |
| Out | In | Out | 600MHz UltraSPARC IIe | Not available |
| In | In | Out | 650MHz UltraSPARC IIe | Not available |
| Out | Out | In | Reserved | Not available |
| In | Out | In | Reserved | Not available |
| Out | In | In | Reserved | Not available |
| In | In | In | 450MHz UltraSPARC IIe | Not available |

Notes

1. The minimum operating system is Solaris 8 10/00.
2. The minimum memory requirement is one DIMM in U2.
3. The memory installation sequence is U2, U3, U4, and U5.
4. Each bank addresses 512MB of memory with 500MHz UltraSPARC.
5. Each bank addresses 1GB of memory with \geq 550MHz UltraSPARC.

Reference: *Sun Blade 100 Service Manual*, 806-3416.

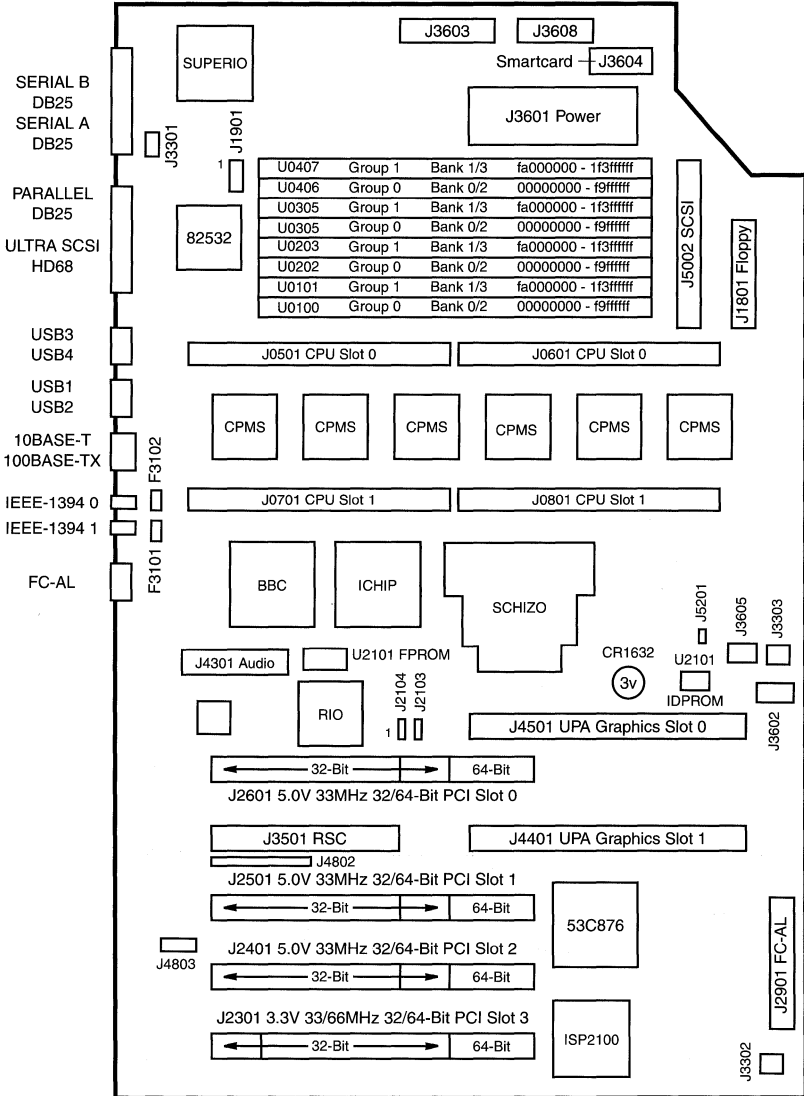
Sun Blade 1000

A28

501-4143

OMB FRU

FAB 270-5168-08



501-4143
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|----------------------------------|
| J2103 | 1-2 | In | FPROM write protected |
| J2103 | 2-3 | In | FPROM write enabled (default) |
| J2104 | 1-2 | Out | FPROM high half booting |
| J2104 | 2-3 | In | FPROM low half booting (default) |

Miscellaneous Connectors

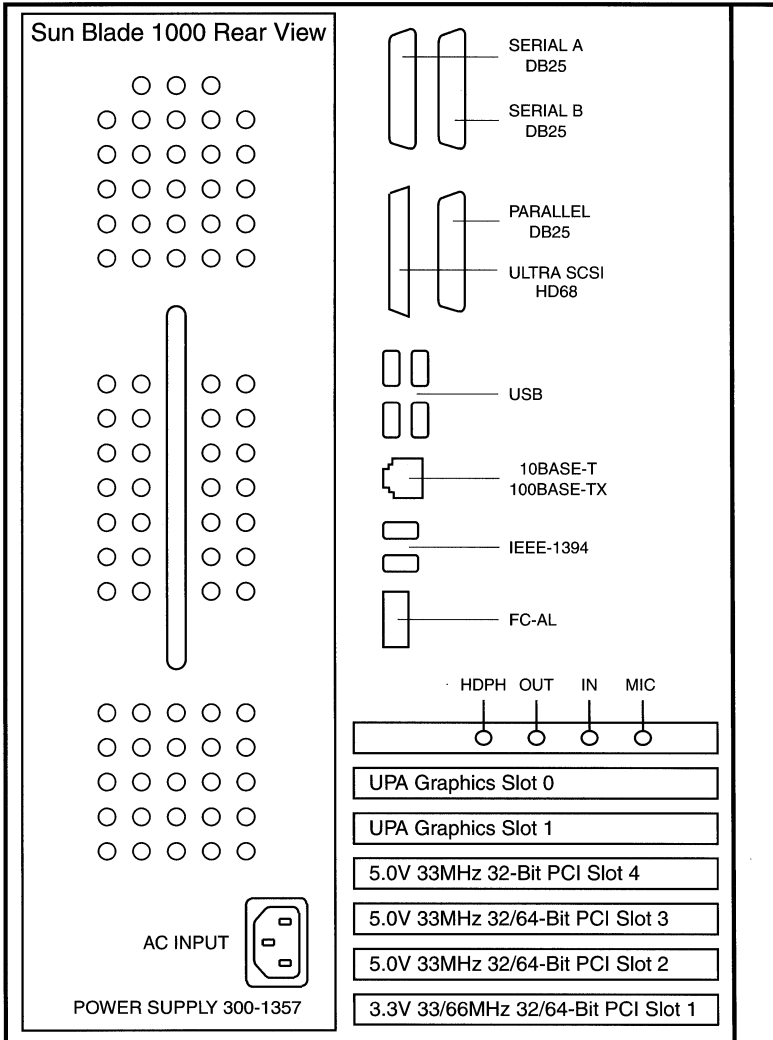
| CONNECTOR | PINS | DESCRIPTION |
|-----------|------|---|
| J1801 | 1-34 | Floppy |
| J1901 | 1-8 | Serial test (factory use) |
| J2901 | 1-20 | Internal FC-AL |
| J3301 | 1-2 | DIMM Fan Power |
| J3302 | 1-2 | Graphics and PCI Fan Power |
| J3303 | 1-2 | CPU Fan Power |
| J3601 | 1-28 | Power supply +3.3V and +5V |
| J3602 | 1-8 | Interlock, LED, speaker, and power switch |
| J3603 | 1-14 | Power supply sense |
| J3604 | 1-10 | Smart Card |
| J3605 | 1-6 | Glow Logo LED |
| J3608 | 1-10 | DC power to internal peripherals |
| J4802 | 1-38 | ROMBO (factory use) |
| J4803 | 1-8 | JSCC (factory use) |
| J5002 | 1-50 | Internal UltraSCSI |
| J5201 | 1-2 | Logic Analyzer Clock |
| J5202 | 1-2 | Logic Analyzer Clock |

Notes

1. The minimum operating system is Solaris 8.
2. Use the Flash PROM Programming Utility to update the flash PROM.
3. Use torque tool 340-6395 to install the UltraSPARC III module.
4. The minimum memory requirement is four DIMMs in any Group.
5. Each Group addresses 4GB memory.

Reference: *Sun Blade 1000 Service Manual*, 805-4496.

Sun Blade 1000
501-4143



PCI Slot Numbering

| SLOT | BUS | DEVICE TREE |
|------|-----|------------------|
| 4 | B | pci@8,7000/*@1,* |
| 3 | B | pci@8,7000/*@2,* |
| 2 | B | pci@8,7000/*@3,* |
| 1 | A | pci@8,6000/*@1,* |

PCI Bus A shares the address/data bus with the FC-AL device. PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, IEEE 1394, Parallel, SCSI, Serial, and USB devices.

CONFIGURATIONS

SERVER CPU

Server CPU

Sun-4d Architecture

- SPARCserver 1000 2
- SS1000 40MHz Control Board 4
- SPARCserver 1000E 6
- SS1000E 50MHz Control Board 8
- SPARCcenter 2000 10
- SC2000 40MHz Control Board 14
- SPARCcenter 2000E 16
- SC2000E 50MHz Control Board 18

Sun-4u Architecture

- SPARCengine CP1500 20
- Enterprise 250 24
- Ultra 450 30
- Ultra Enterprise 450 Enterprise 450 32
- E3000 4000 5000 6000
- CPU/Memory Board 44
- Clock Board 50
- E3500 4500 5500 6500
- CPU/Memory Board 48
- Clock Board 54

Sun-4u1 Architecture

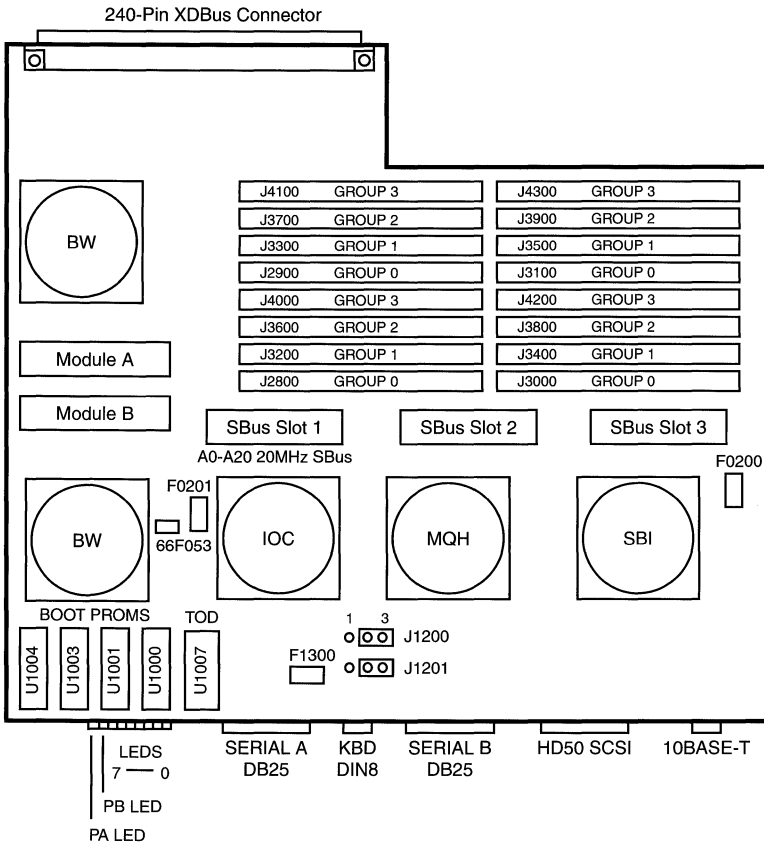
- E10000 System Board 58
- E10000 Control Board 62

Sun-u4ft Architecture

- Netra ft 1800 CPUset 64
- Netra ft 1800 CAF Module 66

SPARCserver 1000

501-2336
 OMB FRU
 w/o SPARC Module



Backplane Guide Pins

Remove two screws from the System Board XDBus connector before installing the system board in backplanes with guide pins. Guide pins were added to the backplane in March 1994 by ECO WO_05457.



501-2336

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------|
| J1200 | 1-2 | Out | RS-423 |
| J1201 | 1-2 | Out | RS-423 |
| J1200 | 2-3 | In | RS-232 +12Vdc (default) |
| J1201 | 2-3 | In | RS-232 -12Vdc (default) |

Configured System Boards

| PART NUMBER | MAIN MEMORY | SIMM SIZE | SPARC MODULE |
|-------------|-------------|-----------|--------------|
| 501-2245-03 | 32MB | 8MB | 1 SM41 |
| 501-2247-03 | 64MB | 8MB | 2 SM41 |
| 501-2248-03 | 128MB | 32MB | 2 SM41 |
| 501-2429-xx | 64MB | 8MB | 2 SM41 |
| 501-2430-xx | 512MB | 32MB | 2 SM41 |
| 501-2245-04 | 32MB | 8MB | 1 SM51 |
| 501-2247-04 | 64MB | 8MB | 2 SM51 |
| 501-2248-04 | 128MB | 32MB | 2 SM51 |
| 501-2736-xx | 64MB | 8MB | 2 SM61 |
| 501-2737-xx | 128MB | 32MB | 2 SM61 |

Notes

1. The minimum operating system is Solaris 2.2 (SunOS 5.2).
2. Install the highest level Boot PROM set in System Board 0.
3. Use SPARC module and SBus board Standoff 330-1664-01.
4. A root partition >2GB is not supported by Sun-4c, 4m, or 4d systems.

Memory Configuration Notes

1. The minimum memory configuration is 4 SIMMs in Group 0.
2. Use 8MB SIMM 501-1817 and 32MB SIMM 501-2196.
3. Install all Group 0 SIMMs on all system boards from the lowest board slot number to the highest. Then install SIMMs in Group 1 on all system boards, followed by Group 2 and Group 3. Refer to the *Memory Module Installation Guide* for installation performance guidelines.

References

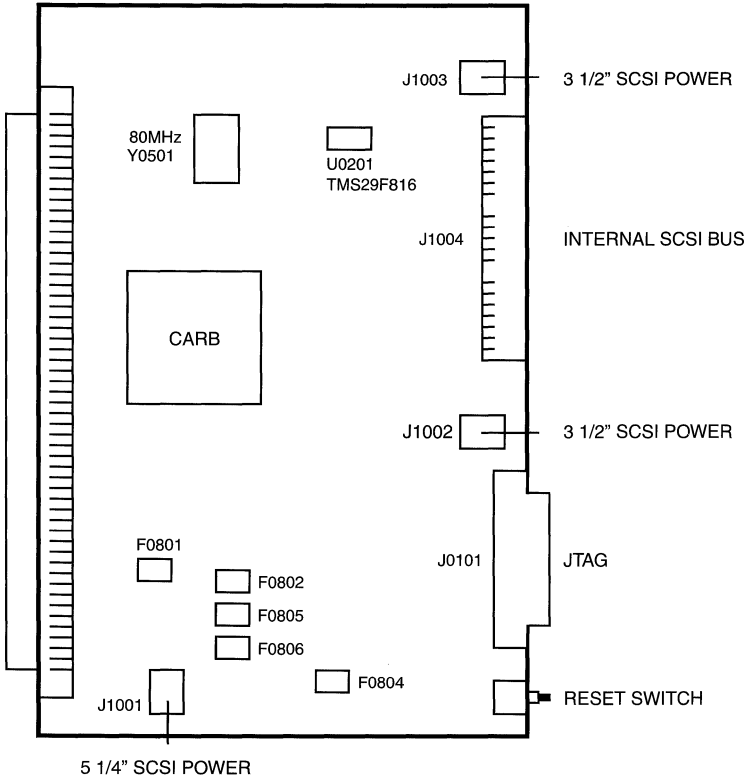
1. *SPARCserver 1000 Installation Manual*, 801-2893-12.
2. *SPARCserver 1000 System Board Manual*, 801-2900-12.
3. *Memory Module (SIMM) Product Note*, 801-5345-10.
4. *Memory Module Installation Guide*, 801-2030-12.
5. BugID 4035259 filed against root partition >2GB.

40MHz Control Board

SPARCserver 1000

501-1979
Programmed

501-2412
Unprogrammed



501-1979

501-2412

Notes

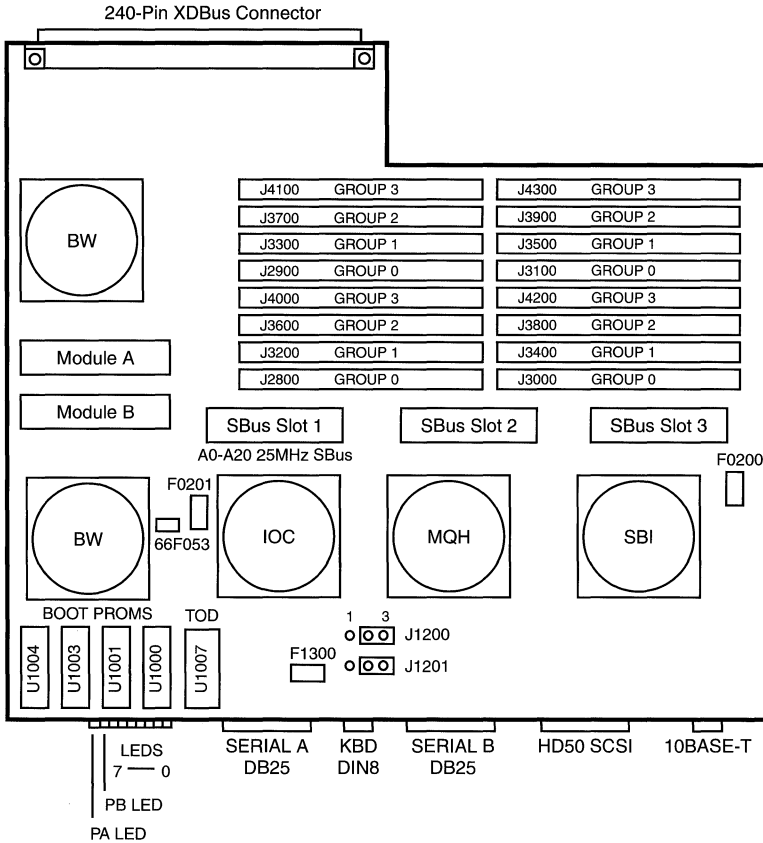
1. The 40MHz Control Board is not compatible with the SS1000E System Board.
2. The HOSTID and Ethernet Address are programmed into a 2KB x 8-bit Flash EEPROM in the TMS29F816 at U0201. The TMS29F816 is not field replaceable.
3. The HOSTID and Ethernet Address are downloaded from the control board to the NVRAM on all system boards during POST.
4. If the control board EEPROM content is invalid, the values stored in the NVRAM on System Board 0 are used.
5. The Yellow LED on the keyswitch interface board is ON if the control board EEPROM content is invalid.
6. Use the **update-system-idprom** OBP command to download the contents of the NVRAM on System Board 0 to a control board with an invalid EEPROM. OBP 2.11 is required.
7. Use the following commands to invalidate the control board EEPROM:
ok **patch noop call update-system-idprom**
ok **patch noop call update-system-idprom**
ok **patch call noop update-system-idprom**
ok **update-system-idprom**
8. Use the following commands to change the NVRAM parameter that defines the location of the master system board:
ok **clear-master-nvram**
ok **reset**

SPARCserver 1000E

501-2668

OMB FRU

w/o SPARC Module



501-2668

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------|
| J1200 | 1-2 | Out | RS-423 |
| J1201 | 1-2 | Out | RS-423 |
| J1200 | 2-3 | In | RS-232 +12Vdc (default) |
| J1201 | 2-3 | In | RS-232 -12Vdc (default) |

Configured System Boards

| PART# | MEMORY | SIMM | MODULE |
|----------|--------|------|--------|
| 501-2764 | 64MB | 8MB | 1 SM61 |
| 501-2765 | 128MB | 32MB | 2 SM61 |
| 501-2766 | 0MB | - | 2 SM61 |
| 501-2998 | 0MB | - | 2 SM81 |
| 501-3038 | 128MB | 8MB | 2 SM81 |
| 501-3039 | 256MB | 32MB | 2 SM81 |

Notes

1. The minimum operating system is Solaris 2.3.
2. The SM81 requires Solaris 2.4 and Patch \geq 101945-35.
3. Install the highest level Boot PROM set in System Board 0.
4. Boot PROMs \geq 2.18 disable 40MHz System Boards if they are installed in systems using the 50MHz Control Board.
5. Use SPARC module and SBus board Standoff 330-1664-01.
6. A root partition $>$ 2GB is not supported by Sun-4c, 4m, or 4d systems.

Memory Configuration Notes

1. The minimum memory configuration is 4 SIMMs in Group 0.
2. Use 8MB SIMMs 501-1817 and 32MB SIMM 501-2196.
3. Install all Group 0 SIMMs on all system boards from the lowest board slot number to the highest. Then install SIMMs in Group 1 on all system boards, followed by Group 2 and Group 3. Refer to the *Memory Module Installation Guide* for installation performance guidelines.

References

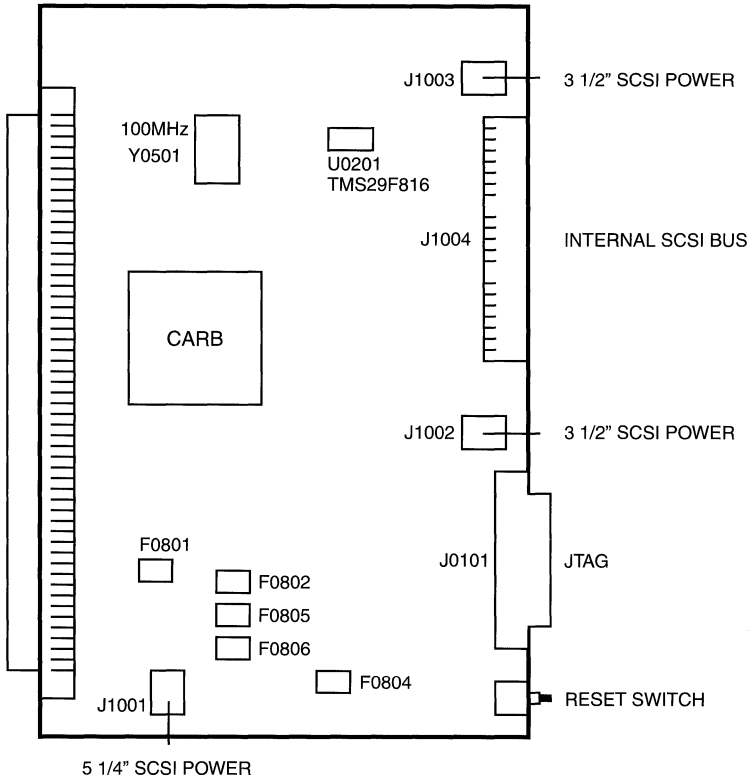
1. *SPARCserver 1000 Installation Manual*, 801-2893-12.
2. *SPARCserver 1000 System Board Manual*, 801-2900-12.
3. *Memory Module Product Note*, 801-5345-10.
4. *Memory Module Installation Guide*, 801-2030-12.
5. BugID 4035259 filed against root partition $>$ 2GB.

50MHz Control Board

SPARCserver 1000E

501-2667
Programmed

501-2673
Unprogrammed



501-2667

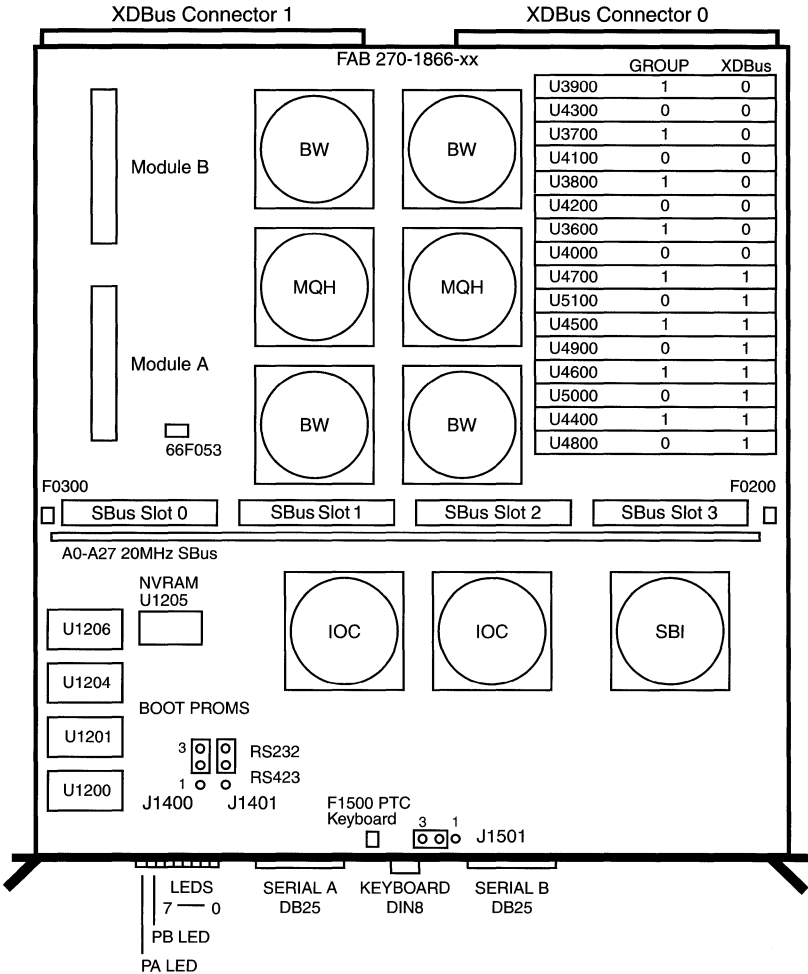
501-2673

Notes

1. The 50MHz Control Board is not compatible with the SS1000 System Board and SuperSPARC modules that run at 40MHz on the XDBus.
2. Boot PROMs ≥ 2.18 disable 40MHz System Boards if they are installed in systems using the 50MHz Control Board.
3. The HOSTID and Ethernet Address are programmed into a 2KB x 8-bit Flash EEPROM in the TMS29F816 at U0201. The TMS29F816 is not field replaceable.
4. The HOSTID and Ethernet Address are downloaded from the control board to the NVRAM on all system boards during POST.
5. If the control board EEPROM content is invalid, the values stored in the NVRAM on System Board 0 are used.
6. The Yellow LED on the keyswitch interface board is ON if the control board EEPROM content is invalid.
7. Use the **update-system-idprom** OBP command to download the contents of the NVRAM on System Board 0 to a control board with an invalid EEPROM. OBP 2.11 is required.
8. Use the following commands to invalidate the control board EEPROM:
ok **patch noop call update-system-idprom**
ok **patch call noop update-system-idprom**
ok **update-system-idprom**
9. Use the following commands to change the NVRAM parameter that defines the location of the master system board:
ok **clear-master-nvram**
ok **reset**

SPARCcenter 2000

501-1866
 OMB FRU
 w/o SPARC Module

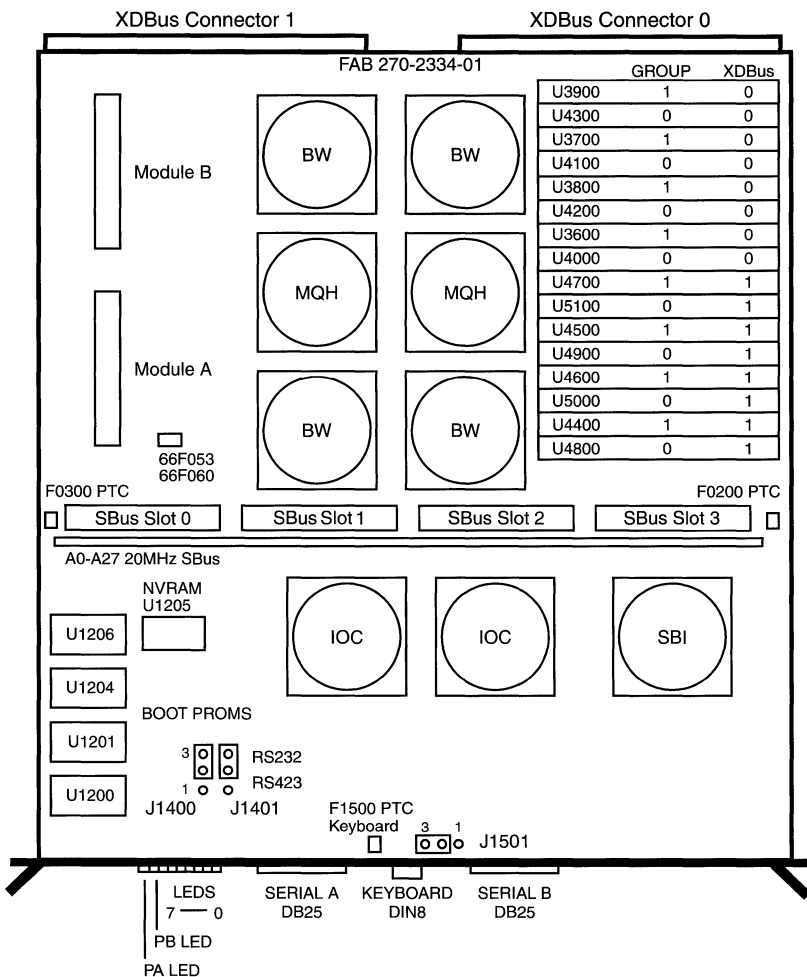


Notes

1. FAB 270-1866-03 uses a fuse at F0200 and F0300.
2. FAB 270-1866-04 uses a PTC at F0200 and F0300.
3. System Board 501-1866-xx can only access 1MB of cache.

SPARCcenter 2000

501-2334
 OMB FRU
 w/o SPARC Module



SPARCcenter 2000
501-1866 501-2334
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------|
| J1400 | 1-2 | Out | RS-423 |
| J1401 | 1-2 | Out | RS-423 |
| J1400 | 2-3 | In | RS-232 +12Vdc (default) |
| J1401 | 2-3 | In | RS-232 -12Vdc (default) |
| J1501 | 1-2 | Out | Factory use only |
| J1501 | 2-3 | In | Default setting |

Backplane Guide Pins

Remove two screws from the System Board XDBus connectors before installing the system board in backplanes with guide pins. Guide pins were added to the backplane in December 1993 by ECO WO_05425.



Notes

1. The minimum operating system is Solaris 2.2.
2. Solaris 2.2 supports 5 system boards.
3. Solaris 2.2 supports 8 SuperSPARC modules on 4 system boards.
4. Solaris 2.3 supports 20 SuperSPARC modules on 10 system boards.
5. Install the highest level Boot PROM set in System Board 0.
6. Use SPARC module and SBus board Standoff 330-1664-01.
7. A root partition >2GB is not supported by Sun-4c, 4m, or 4d systems.

Memory Configuration Notes

1. The minimum memory configuration is 8 SIMMs in Group 0.
2. Install all Group 0 SIMMs on all system boards from the lowest board slot number to the highest. Then install SIMMs in Group 1 on all system boards. Refer to the *Memory Module Installation Guide* for installation performance guidelines.
3. Use 8MB SIMM 501-1817 and 32MB SIMM 501-2196.

References

1. *SPARCcenter 2000 Installation Manual*, 800-6975-15.
2. *SPARCcenter 2000 System Board Manual*, 800-6993-13.
3. *Memory Module (SIMM) Product Note*, 801-5345-10.
4. *Memory Module Installation Guide*, 801-2030-12.
5. BugID 4035259 filed against root partition >2GB.

SPARCcenter 2000
501-1866 501- 2334
Configured System Boards

| PART NUMBER | MAIN MEMORY | DIMM SIZE | NV MEMORY | NVSIMM SIZE | SPARC MODULE |
|-------------|-------------|-----------|-----------|-------------|--------------|
| 501-2208 | 128MB | 8MB | - | - | 2 SM41 |
| 501-2209 | 64MB | 8MB | - | - | 2 SM41 |
| 501-2221 | 128MB | 8MB | - | - | - |
| 501-2223 | 0MB | - | - | - | 2 SM51 |
| 501-2296 | 64MB | 8MB | 8MB | 1MB | S SM41 |
| 501-2321 | 256MB | 32MB | - | - | 2 SM41 |
| 501-2322 | 256MB | 32MB | 8MB | 1MB | 2 SM41 |
| 501-2323 | 512MB | 32MB | - | - | 2 SM41 |
| 501-2437 | 128MB | 8MB | - | - | 2 SM51-2 |
| 501-2438 | 64MB | 8MB | - | - | 2 SM51-2 |
| 501-2439 | 512MB | 32MB | - | - | - |
| 501-2448 | 64MB | 8MB | - | - | - |
| 501-2720 | 0MB | - | - | - | 2 SM61-2 |
| 501-2721 | 128MB | 8MB | - | - | 2 SM61-2 |
| 501-2722 | 256MB | 32MB | - | - | 2 SM61-2 |

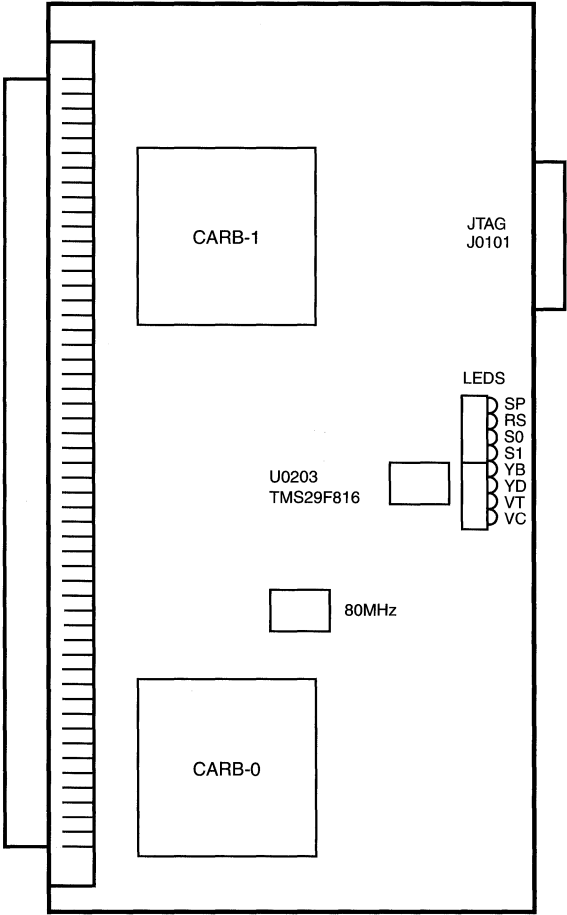
40MHz Control Board

SPARCcenter 2000

501-1671
Programmed

501-2335
Programmed

501-2406
Unprogrammed



501-1671

501-2335

501-2406

LED Description

| LED | SIGNAL | DESCRIPTION | COLOR |
|-----|--------|------------------------------|--------|
| SP | SVP | Service processor attached | Yellow |
| RS | RST | System reset | Yellow |
| S0 | STP0 | Stop request from CARB0 ASIC | Yellow |
| S1 | STP1 | Stop request from CARB1 ASIC | Yellow |
| VB | Vbb | -12 Volts DC status OK | Green |
| VD | Vdd | +12 Volts DC status OK | Green |
| VT | Vtt | +1.2 Volts DC status OK | Green |
| VC | Vcc | +5 Volts DC status OK | Green |

Notes

1. The 40MHz Control Board is not compatible with the SC2000E System Board.
2. The HOSTID and Ethernet Address are programmed into a 2KB x 8-bit Flash EEPROM in the TMS29F816 at U0203. The TMS29F816 is not field replaceable.
3. The HOSTID and Ethernet Address are downloaded from the control board to the NVRAM on all system boards during POST.
4. If the control board EEPROM content is invalid, the values stored in the NVRAM on System Board 0 are used.
5. The Yellow LED on the keyswitch interface board is ON if the control board EEPROM content is invalid.
6. Use the **update-system-idprom** OBP command to download the contents of the NVRAM on System Board 0 to a control board with an invalid EEPROM. OBP 2.11 is required.
7. Use the following commands to invalidate the control board EEPROM:

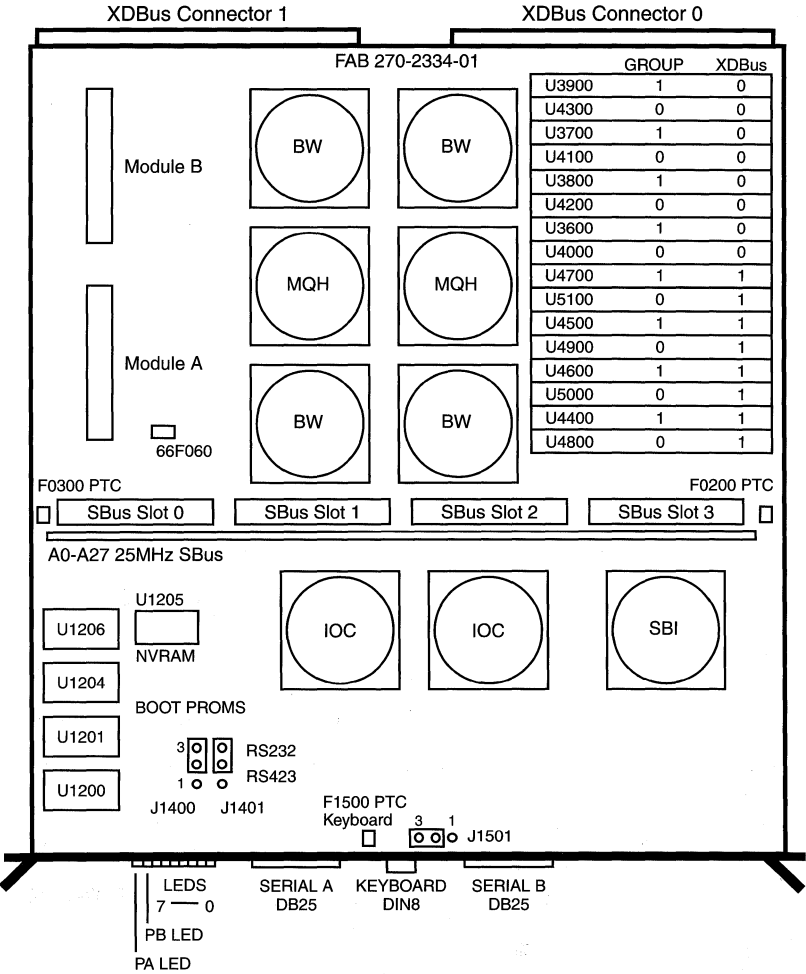
```
ok patch noop call update-system-idprom
ok patch noop call update-system-idprom
ok patch call noop update-system-idprom
ok update-system-idprom
```
8. Use the following commands to change the NVRAM parameter that defines the location of the master system board:

```
ok clear-master-nvram
ok reset
```
9. The 501-1671-04 has a 66MHz clock for the early production units with 33MHz SuperSPARC modules.

Reference: *SPARCcenter 2000 Service Manual*, 801-2007-16.

SPARCcenter 2000E

501-2718
OMB FRU
w/o SPARC Module



501-2718

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------|
| J1200 | 1-2 | Out | RS-423 |
| J1201 | 1-2 | Out | RS-423 |
| J1200 | 2-3 | In | RS-232 +12Vdc (default) |
| J1201 | 2-3 | In | RS-232 -12Vdc (default) |
| J1501 | 1-2 | Out | Factory use only |
| J1501 | 2-3 | In | Default setting |

Configured System Boards

| PART# | MEMORY | DIMM | MODULE |
|----------|--------|------|----------|
| 501-2672 | 256MB | 32MB | 2 SM61-2 |
| 501-2719 | 0MB | - | 2 SM61-2 |
| 501-2723 | 128MB | 8MB | 2 SM61-2 |
| 501-2999 | 0MB | - | 2 SM81-2 |
| 501-3034 | 256MB | 32MB | 2 SM81-2 |
| 501-3035 | 256MB | 32MB | 2 SM81-2 |
| 501-3036 | 128MB | 8MB | 2 SM81-2 |
| 501-3037 | 512MB | 32MB | 2 SM81-2 |

Notes

1. The minimum operating system is Solaris 2.3.
2. Solaris 2.3 supports 20 SuperSPARC modules on 10 system boards.
3. The SM81-2 requires Solaris 2.4 and Patch \geq 101945-35.
4. Boot PROMs \geq 2.18 disable 40MHz System Boards if they are installed in systems using the 50MHz Control Board.
5. Install the highest level Boot PROM set in System Board 0.
6. Use SPARC module and SBus board Standoff 330-1664-01.
7. A root partition >2GB is not supported by Sun-4c, 4m, or 4d systems.

Memory Configuration Notes

1. The minimum memory configuration is 8 SIMMs in Group 0.
2. Use 8MB SIMM 501-1817 and 32MB SIMM 501-2196.
3. Install all Group 0 SIMMs on all system boards from the lowest board slot number to the highest. Then install SIMMs in Group 1 on all system boards. Refer to the *Memory Module Installation Guide* for installation performance guidelines.

References

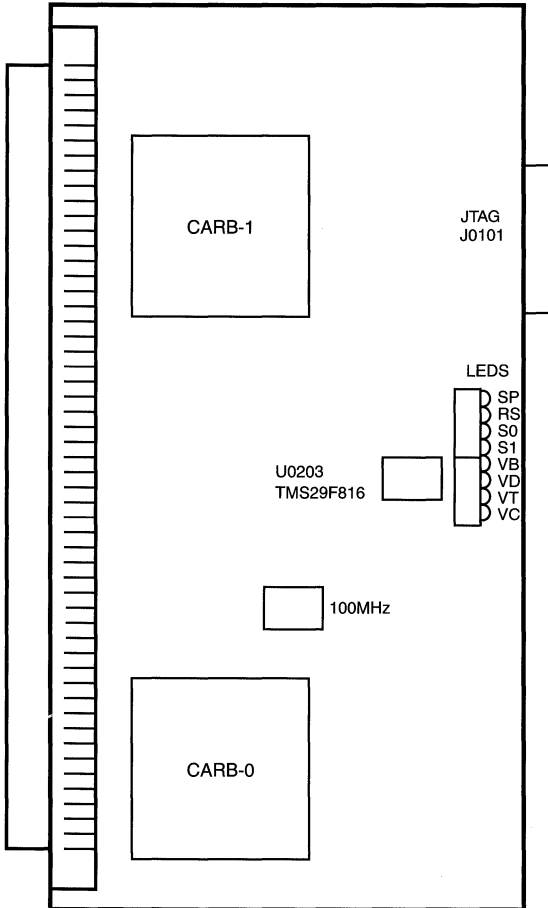
1. *SPARCcenter 2000 Installation Manual*, 800-6975-15.
2. *SPARCcenter 2000 System Board Manual*, 800-6993-13.
3. BugID 4035259 filed against root partition >2GB.

50MHz Control Board

SPARCcenter 2000E

501-2666
Programmed

501-2674
Unprogrammed



501-2666 501-2674
LED Description

| LED | SIGNAL | DESCRIPTION | COLOR |
|-----|--------|------------------------------|--------|
| SP | SVP | Service processor attached | Yellow |
| RS | RST | System reset | Yellow |
| S0 | STP0 | Stop request from CARB0 ASIC | Yellow |
| S1 | STP1 | Stop request from CARB1 ASIC | Yellow |
| VB | Vbb | -12 Volts DC status OK | Green |
| VD | Vdd | +12 Volts DC status OK | Green |
| VT | Vtt | +1.2 Volts DC status OK | Green |
| VC | Vcc | +5 Volts DC status OK | Green |

Notes

1. The 50MHz Control Board is not compatible with the SC2000 System Board and SuperSPARC modules that run at 40MHz on the XDBus.
2. Boot PROMs ≥ 2.18 disable 40MHz System Boards if they are installed in systems using the 50MHz Control Board.
3. The HOSTID and Ethernet Address are programmed into a 2KB x 8-bit Flash EEPROM in the TMS29F816 at U0203. The TMS29F816 is not field replaceable.
4. The HOSTID and Ethernet Address are downloaded from the control board to the NVRAM on all system boards during POST.
5. If the control board EEPROM content is invalid, the values stored in the NVRAM on System Board 0 are used.
6. The Yellow LED on the keyswitch interface board is ON if the control board EEPROM content is invalid.
7. Use the **update-system-idprom** OBP command to download the contents of the NVRAM on System Board 0 to a control board with an invalid EEPROM. OBP 2.11 is required.
8. Use the following commands to invalidate the control board EEPROM:
ok **patch noop call update-system-idprom**
ok **patch noop call update-system-idprom**
ok **patch call noop update-system-idprom**
ok **update-system-idprom**
9. Use the following commands to change the NVRAM parameter that defines the location of the master system board:
ok **clear-master-nvram**
ok **reset**

Reference: *SPARCcenter 2000 Service Manual*, 801-2007-16.

SPARCengine CP1500

Netra t1 SPARCengine CP1500

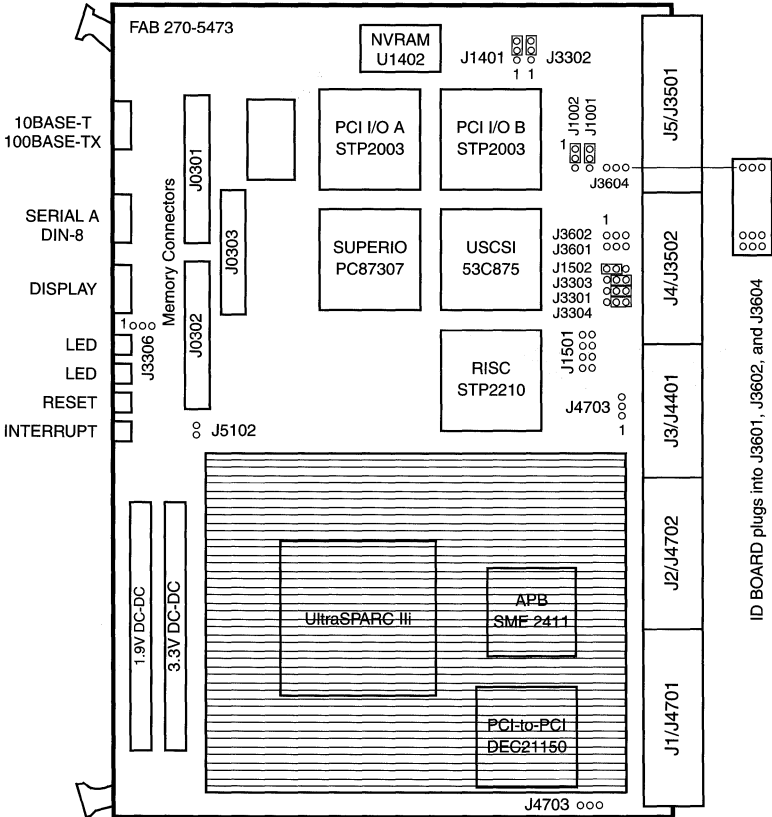
501-5472
360MHz
OMB FRU
w Front Panel

501-5577
360MHz
OMB
w/o Front Panel
Used in Netra t1

501-5640
360MHz
128MB FRU
w Front Panel

595-5254
360MHz
OMB 501-5577
w/o Front Panel
Used in Netra t1

595-5329
360MHz
128MB FRU
w Front Panel
w 501-5640



501-5472 501-5577 501-5640 595-5254 595-5329
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|---|
| J1001 | 1-2 | In | Enable active SCSI terminator (default) |
| J1001 | 2-3 | In | Disable active SCSI terminator |
| J1002 | 1-2 | In | Enable SCSI terminator power (default) |
| J1002 | 2-3 | In | Disable SCSI terminator power |
| J1401 | 1-2 | In | FEPROM write protect |
| J1401 | 2-3 | In | FEPROM write enable (default) |
| J1501 | 1-8 | Out | JTAG scan connector |
| J1502 | 1-2 | In | External clock (default) |
| J1502 | 2-3 | In | Scan clock |
| J3301 | 1-2 | In | Disable loopback reset |
| J3301 | 2-3 | In | Enable loopback reset (default) |
| J3302 | 1-2 | In | Disable user flash write |
| J3302 | 2-3 | In | Enable user flash write (default) |
| J3303 | 1-2 | In | System flash access by ROMBO |
| J3303 | 2-3 | In | System flash access by J3304 (default) |
| J3304 | 1-2 | In | Boot from user flash0 |
| J3304 | 2-3 | In | Boot from system flash (default) |
| J3306 | 2-3 | In | 7-segment LED display bias |
| J3401 | 1-3 | Out | Header for I2C EEPROM module |
| J3601 | 1-3 | Out | Header for I2C EEPROM module |
| J3602 | 1-3 | Out | Header for I2C EEPROM module |
| J4703 | 1-2 | Out | PLD TDO |
| J4703 | 2-3 | Out | cPCI TDO |
| J5102 | 1-2 | Out | Thermal diode |

Notes

1. The minimum SPARCengine CP1500 OS is Solaris 2.6 HW 5/98.
2. The minimum Netra t1 Model 100/105 OS is Solaris 2.6 HW 5/98.

References

1. *Netra ct Server Service Manual*, 806-3296.
2. *SPARCengine CP1500 Technical Reference Manual*, 806-2104.

SPARCengine CP1500

Netra t1 Netra ct400 Netra ct800 SPARCengine CP1500

501-5473
440MHz
0MB
w Front Panel

501-5578
440MHz
0MB
w/o Front Panel
Netra t1

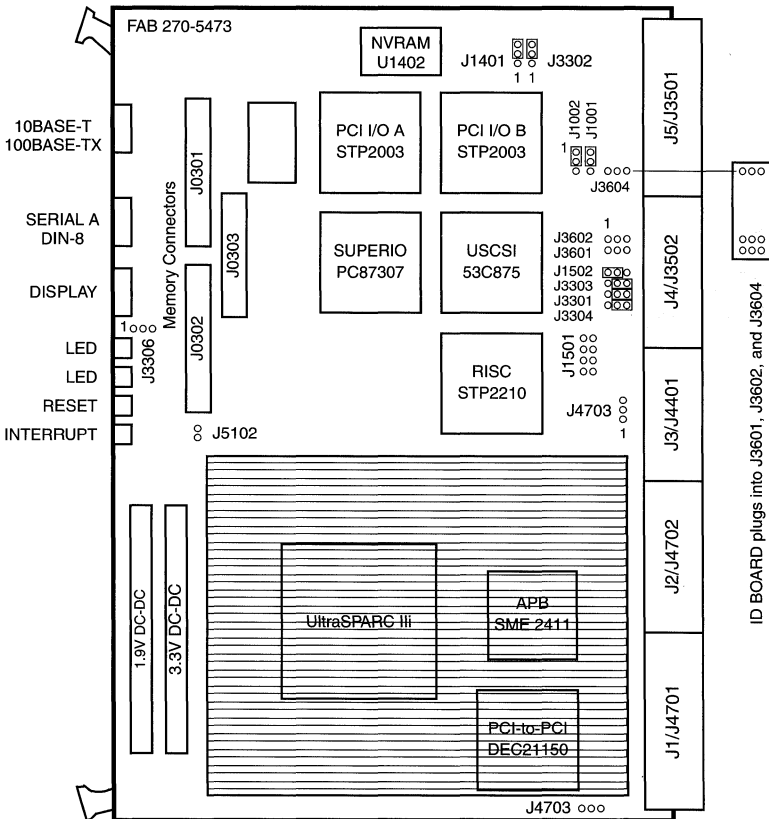
501-5580
440MHz
256MB FRU
w/o Front Panel

501-5731
440MHz
0MB FRU
w Front Panel
Netra ct 400/800
Modified 501-5473

501-5795
440MHz
128MB
w Front Panel
Netra ct 400/800

501-5796
440MHz
512MB
w Front Panel
Netra ct 400/800

501-5800
440MHz
1GB
w Front Panel
Netra ct 400/800



ID BOARD plugs into J3601, J3602, and J3604

501-5473 501-5578 501-5580 501-5812
 501-5829 501-5831 501-5832 501-5833

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|---|
| J1001 | 1-2 | In | Enable active SCSI terminator (default) |
| J1001 | 2-3 | In | Disable active SCSI terminator |
| J1002 | 1-2 | In | Enable SCSI terminator power (default) |
| J1002 | 2-3 | In | Disable SCSI terminator power |
| J1401 | 1-2 | In | FEPROM write protect |
| J1401 | 2-3 | In | FEPROM write enable (default) |
| J1501 | 1-8 | Out | JTAG scan connector |
| J1502 | 1-2 | In | External clock (default) |
| J1502 | 2-3 | In | Scan clock |
| J3301 | 1-2 | In | Disable loopback reset |
| J3301 | 2-3 | In | Enable loopback reset (default) |
| J3302 | 1-2 | In | Disable user flash write |
| J3302 | 2-3 | In | Enable user flash write (default) |
| J3303 | 1-2 | In | System flash access by ROMBO |
| J3303 | 2-3 | In | System flash access by J3304 (default) |
| J3304 | 1-2 | In | Boot from user flash0 |
| J3304 | 2-3 | In | Boot from system flash (default) |
| J3306 | 2-3 | In | 7-segment LED display bias |
| J3401 | 1-3 | Out | Header for I2C EEPROM module |
| J3601 | 1-3 | Out | Header for I2C EEPROM module |
| J3602 | 1-3 | Out | Header for I2C EEPROM module |
| J4703 | 1-2 | Out | PLD TDO |
| J4703 | 2-3 | Out | cPCI TDO |
| J5102 | 1-2 | Out | Thermal diode - pins are not installed |

Notes

1. The minimum SPARCengine CP1500 OS is Solaris 2.6 HW 5/98.
2. The minimum Netra t1 Model 100/105 OS is Solaris 2.6 HW 5/98.
3. The *Operating Environment Installation CD* is required to install Solaris 2.6 HW: 5/98.
4. The minimum Netra ct 400 and ct 800 OS is Solaris 8 HW: 6/00.

References

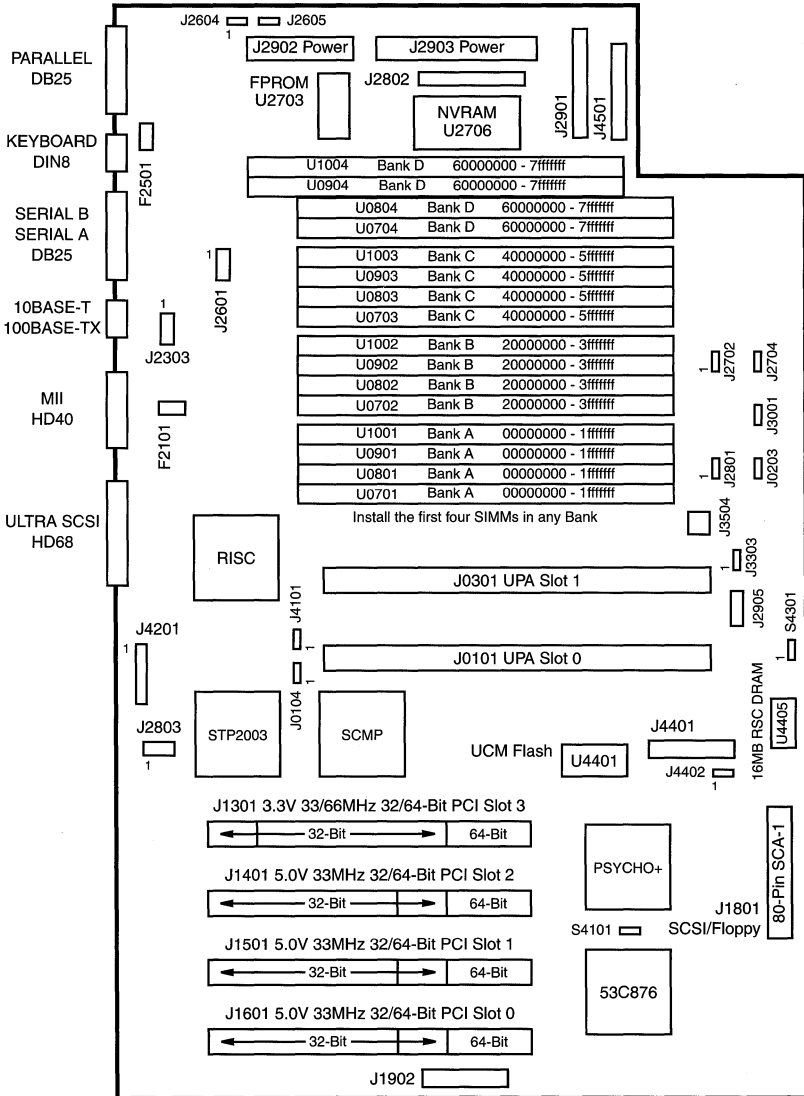
1. *Netra ct Server Service Manual*, 806-3296.
2. *SPARCengine CP1500 Technical Reference Manual*, 806-2104.

Enterprise 250

A26

501-4681
OMB FRU

FAB 270-4681-03



501-4681
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|--------------------------------------|
| J0103 | 1-2 | In | Include CPU0 in scan chain |
| J0103 | 2-3 | In | Bypass CPU0 in scan chain (default) |
| J0104 | 1-2 | In | UPA_REQ_SPARE High |
| J0104 | 2-3 | In | UPA_REQ_SPARE Low (default) |
| J2604 | 1-2 | In | RS-232 |
| J2604 | 2-3 | In | RS-423 (default) |
| J2605 | 1-2 | In | RS-232 |
| J2605 | 2-3 | In | RS-423 (default) |
| J2702 | 1-2 | In | Select Flash PROM (default) |
| J2702 | 2-3 | In | Select ROMBO |
| J2704 | 1-2 | In | FPROM write protect |
| J2704 | 2-3 | In | FPROM write enable (default) |
| J2804 | 1-2 | In | FPROM flash recovery mode |
| J2804 | 2-3 | In | FPROM normal mode (default) |
| J3001 | 1-2 | In | +3 mode (250MHZ/300MHZ) |
| J3001 | 2-3 | In | +2 mode (200MHZ) +4 mode (400MHZ) |
| J3303 | 1-2 | In | Include CPU1 in scan chain |
| J3303 | 2-3 | In | Bypass CPU1 in scan chain (default) |
| J4101 | 1-2 | In | Include UCM in scan chain |
| J4101 | 2-3 | In | Bypass UCM in scan chain (default) |
| J4402 | 1-2 | In | Select RSC Flash PROM (default) |
| J4402 | 2-3 | In | Select ROMBO |
| S4101 | 1-2 | Out | Unknown function of MPC823 (default) |
| S4301 | 1-2 | Out | RSC PBRST (default) |

PCI Slot Numbering

| SLOT | BUS | DEVICE TREE |
|------|-----|-------------------|
| 3 | A | pci@1f,2000/*@1,* |
| 2 | B | pci@1f,4000/*@2,* |
| 1 | B | pci@1f,4000/*@4,* |
| 0 | B | pci@1f,4000/*@5,* |

PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

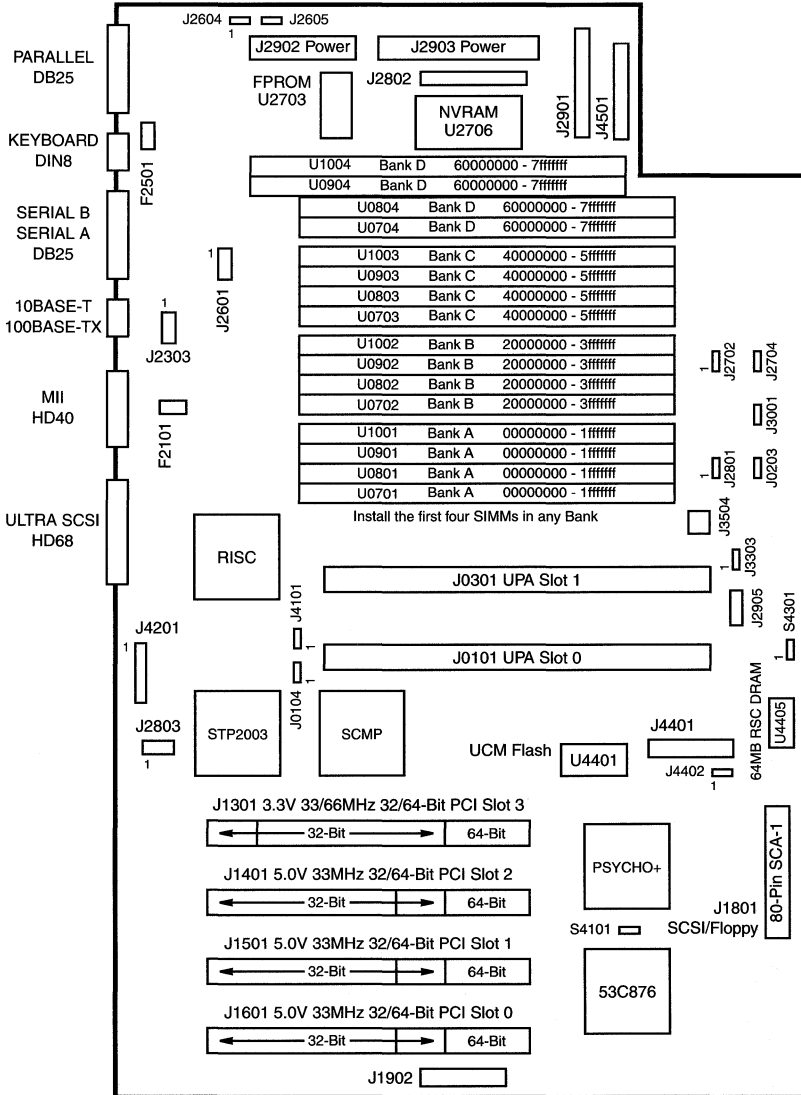
Enterprise 250

A26

501-5440

OMB FRU

FAB 270-4681-07



501-5440
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|--------------------------------------|
| J0103 | 1-2 | In | Include CPU0 in scan chain |
| J0103 | 2-3 | In | Bypass CPU0 in scan chain (default) |
| J0104 | 1-2 | In | UPA_REQ_SPARE High |
| J0104 | 2-3 | In | UPA_REQ_SPARE Low (default) |
| J2604 | 1-2 | In | RS-232 |
| J2604 | 2-3 | In | RS-423 (default) |
| J2605 | 1-2 | In | RS-232 |
| J2605 | 2-3 | In | RS-423 (default) |
| J2702 | 1-2 | In | Select Flash PROM (default) |
| J2702 | 2-3 | In | Select ROMBO |
| J2704 | 1-2 | In | FEPROM write protect |
| J2704 | 2-3 | In | FEPROM write enable (default) |
| J2804 | 1-2 | In | FEPROM flash recovery mode |
| J2804 | 2-3 | In | FEPROM normal mode (default) |
| J3001 | 1-2 | In | +3 mode (250MHZ/300MHZ) |
| J3001 | 2-3 | In | +2 (200MHz) +4 (400MHz) +5 (tbd) |
| J3002 | 1-2 | In | +2 mode, +3 mode, +4 mode |
| J3002 | 2-3 | In | +5 mode |
| J3303 | 1-2 | In | Include CPU1 in scan chain |
| J3303 | 2-3 | In | Bypass CPU1 in scan chain (default) |
| J4101 | 1-2 | In | Include UCM in scan chain |
| J4101 | 2-3 | In | Bypass UCM in scan chain (default) |
| J4402 | 1-2 | In | Select RSC Flash PROM (default) |
| J4402 | 2-3 | In | Select ROMBO |
| S4101 | 1-2 | Out | Unknown function of MPC823 (default) |
| S4301 | 1-2 | Out | RSC PBRST (default) |

PCI Slot Numbering

| SLOT | BUS | DEVICE TREE |
|------|-----|-------------------|
| 3 | A | pci@1f,2000/*@1,* |
| 2 | B | pci@1f,4000/*@2,* |
| 1 | B | pci@1f,4000/*@4,* |
| 0 | B | pci@1f,4000/*@5,* |

PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

Enterprise 250
501-4681 501-5440
Miscellaneous Connectors

| CONNECTOR | PINS | DESCRIPTION |
|-----------|------|---|
| J1902 | 1-50 | Not used |
| J2303 | 1-8 | Ethernet test (factory use) |
| J2601 | 1-8 | Serial test (factory use) |
| J2801 | 1-3 | Button XIR (1-2) and POR (2-3) |
| J2803 | 1-8 | JSCC (factory use) |
| J2901 | 1-16 | Sense cable to power distribution board |
| J2902 | 1-4 | DC power to power distribution board |
| J2903 | 1-6 | DC power to power distribution board |
| J2905 | 1-5 | LED and speaker (not used) |
| J3504 | 1-4 | On/Off switch (not used) |
| J4201 | 1-20 | UCM flex cable |
| J4401 | 1-60 | Not used |
| J4501 | 1-14 | Sense cable to power distribution board |

Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 5/98.
2. Solaris 2.5.1 HW: 11/97 requires Enterprise 250 extensions.
3. The flash PROM is soldered to the system board.
4. Use the Flash PROM Programming Utility to update the flash PROM.
5. Disconnect all system board power cables before removing or installing the NVRAM. Failure to remove power can result in NVRAM corruption.
6. Synchronous communication BugID 4162312 is fixed on 501-4681-06.

SCSI Bus Notes

1. The internal SCSI bus is controlled by /pci@1f,4000/scsi@3.
2. The external SCSI bus is controlled by /pci@1f,4000/scsi@3,1.
3. RMA Tray SCSI Cable ≤530-2445-02 does not terminate the bus.
4. Enable termination on the last device with SCSI Cable ≤530-2445-02.

Memory Notes

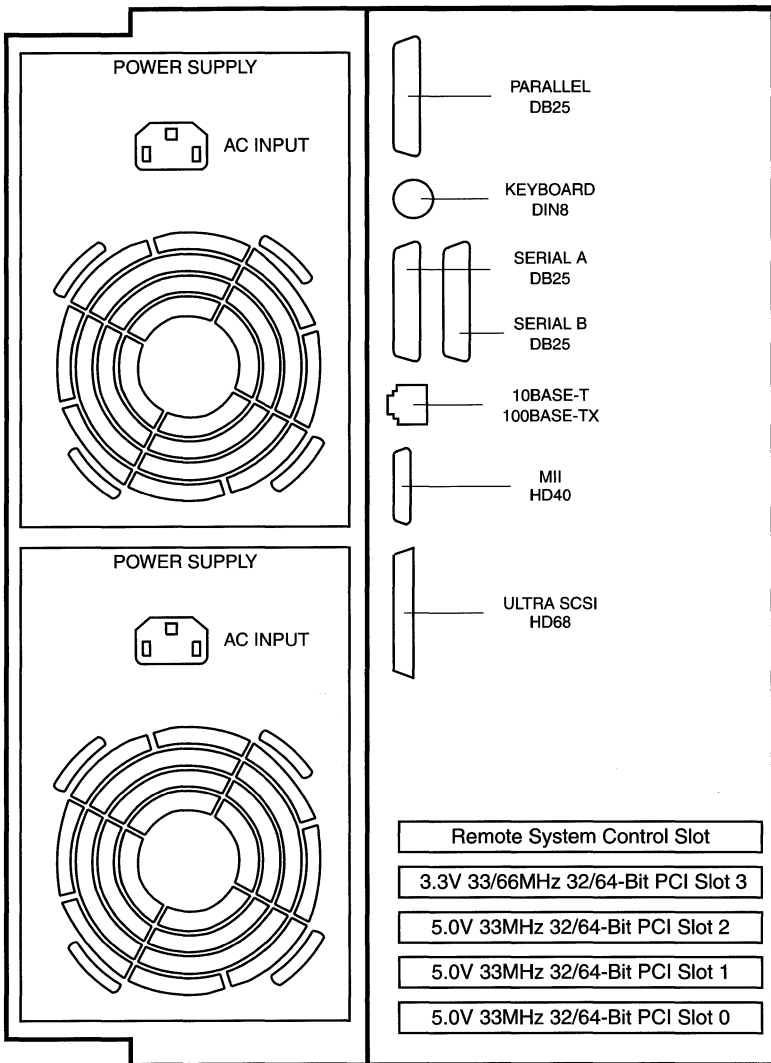
1. The minimum requirement is four DIMMs in any bank.
2. The recommended installation sequence is Bank A, B, C, D.
3. Each bank addresses 512MB of memory.

References

1. *Enterprise 250 Owners Guide*, 805-5160.
2. *Enterprise 250 ShowMe How*, 724-2794.
3. *Flash PROM Programming Guide*, 802-3233.

Enterprise 250
501-4681 501-5440

Rear View

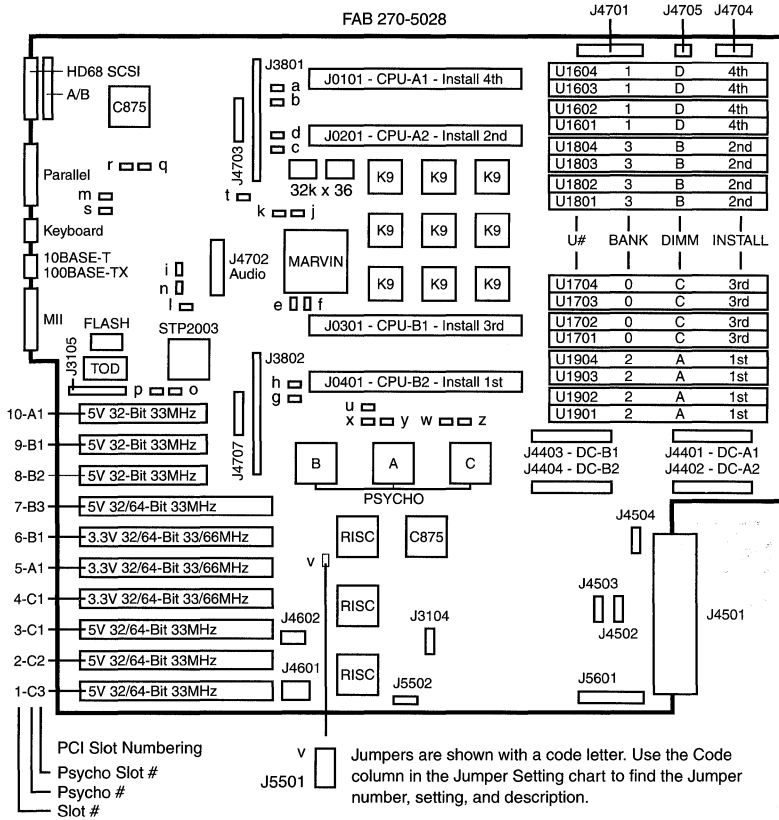


Ultra 450

A20

501-5028

OMB FRU w 2MB Cache Support



PCI Slot Numbering

| SILKSCREEN | PCI SLOT | PSYCHO | PCI BUS | DEVICE TREE |
|------------|----------|-------------------|---------|-------------------|
| 10-A1 | 10 | PSYCHO A - SLOT 1 | B - 0 | pci@1f,4000/*@4,* |
| 9-B1 | 9 | PSYCHO B - SLOT 1 | F - 2 | pci@4,4000/*@2,* |
| 8-B2 | 8 | PSYCHO B - SLOT 2 | F - 2 | pci@4,4000/*@3,* |
| 7-B3 | 7 | PSYCHO B - SLOT 3 | F - 2 | pci@4,4000/*@4,* |
| 6-B1 | 6 | PSYCHO B - SLOT 1 | E - 3 | pci@4,2000/*@1,* |
| 5-A1 | 5 | PSYCHO A - SLOT 1 | A - 1 | pci@1f,2000/*@1,* |
| 4-C1 | 4 | PSYCHO C - SLOT 1 | C - 5 | pci@6,2000/*@1,* |
| 3-C1 | 3 | PSYCHO C - SLOT 1 | D - 4 | pci@6,4000/*@2,* |
| 2-C2 | 2 | PSYCHO C - SLOT 2 | D - 4 | pci@6,4000/*@3,* |
| 1-C3 | 1 | PSYCHO C - SLOT 3 | D - 4 | pci@6,4000/*@4,* |

Psycho A and Psycho C share the address/data bus. Psycho B has a private bus.
 PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

501-5028
Jumper Settings

| CODE | JUMPER | PINS | SETTING | DESCRIPTION |
|------|--------|------|---------|-------------------------------------|
| a | J0102 | 2-3 | In | CPU-A1 scan enabled |
| b | J0103 | 2-3 | In | UPA-A lab debug use only |
| c | J0104 | 2-3 | In | UPA-A lab debug use only |
| d | J0202 | 2-3 | In | CPU-A2 scan enabled |
| e | J0302 | 2-3 | In | CPU-B1 scan enabled |
| f | J0303 | 2-3 | In | UPA-B lab debug use only |
| g | J0304 | 2-3 | In | UPA-B lab debug use only |
| h | J0402 | 2-3 | In | CPU-B2 scan enabled |
| i | J0501 | 2-3 | In | Marvin scan enabled |
| j | J0601 | 2-3 | In | Marvin SRAM U0601 scan enabled |
| k | J0602 | 2-3 | In | Marvin SRAM U0602 scan enabled |
| l | J2304 | 2-3 | In | STP2003 scan enabled |
| m | J2402 | 2-3 | In | 53C825 SCSI J2401 scan enabled |
| n | J2701 | 1-2 | In | +3 mode (250/300MHz)* |
| n | J2701 | 2-3 | In | +2 mode and +4 mode (400MHz)* |
| o | J3102 | 1-2 | In | Select FEPROM (default) |
| o | J3102 | 2-3 | In | Select ROMBO |
| p | J3103 | 1-2 | In | FEPROM write protect |
| p | J3103 | 2-3 | In | FEPROM write enable (default) |
| q | J3303 | 1-2 | In | RS-232 |
| q | J3303 | 2-3 | In | RS-423 (default) |
| r | J3304 | 1-2 | In | RS-232 |
| r | J3304 | 2-3 | In | RS-423 (default) |
| s | J3401 | 2-3 | In | Ethernet 83840 PHY scan enabled |
| t | J3803 | 2-3 | In | FFB J3801 Port ID 0x1d scan enabled |
| u | J3804 | 2-3 | In | FFB J3802 Port ID 0x1e scan enabled |
| v | J5501 | 1-2 | In | FEPROM flash recovery mode |
| v | J5501 | 2-3 | In | FEPROM normal booting (default) |
| w | J5602 | 2-3 | In | 53C825 SCSI J5601 scan enabled |
| x | J5701 | 2-3 | In | Psycho B scan enabled |
| y | J5702 | 2-3 | In | Psycho A scan enabled |
| z | J5703 | 2-3 | In | Psycho C scan enabled |

* The "ULTRA-1 CPU 2-3" silkscreen is incorrect. UltraSPARC I is not supported. The 3-Pin header is not installed in system board <501-5028-02.

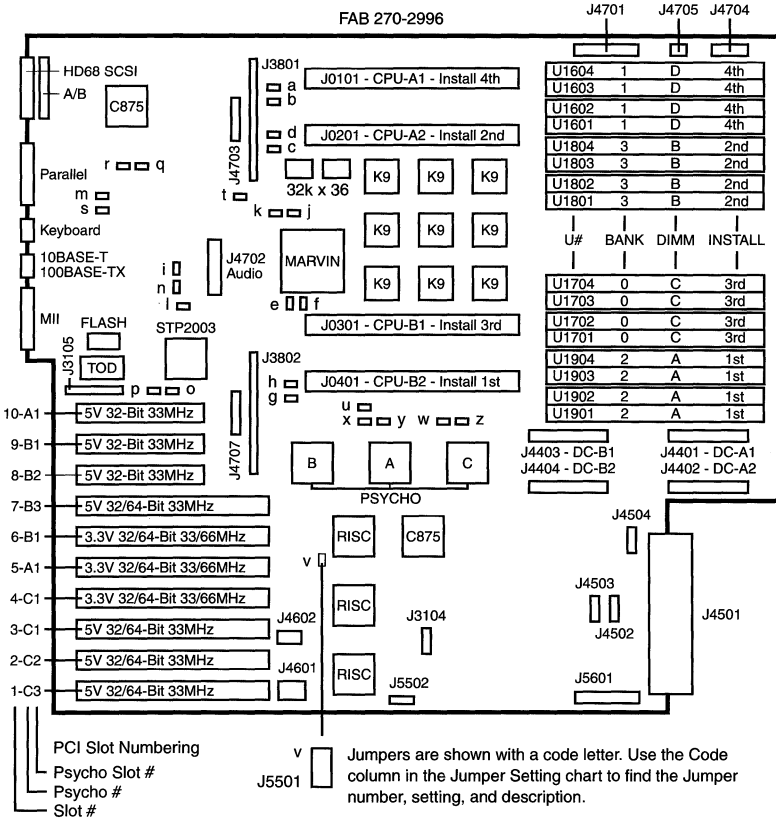
Ultra Enterprise 450 Enterprise 450

A25

501-2996

OMB FRU w 2MB Cache Support

FAB 270-2996



PCI Slot Numbering

| SILKSCREEN | PCI SLOT | PSYCHO | PCI BUS | DEVICE TREE |
|------------|----------|-------------------|---------|-------------------|
| 10-A1 | 10 | PSYCHO A - SLOT 1 | B - 0 | pci@1f,4000/*@4,* |
| 9-B1 | 9 | PSYCHO B - SLOT 1 | F - 2 | pci@4,4000/*@2,* |
| 8-B2 | 8 | PSYCHO B - SLOT 2 | F - 2 | pci@4,4000/*@3,* |
| 7-B3 | 7 | PSYCHO B - SLOT 3 | F - 2 | pci@4,4000/*@4,* |
| 6-B1 | 6 | PSYCHO B - SLOT 1 | E - 3 | pci@4,2000/*@1,* |
| 5-A1 | 5 | PSYCHO A - SLOT 1 | A - 1 | pci@1f,2000/*@1,* |
| 4-C1 | 4 | PSYCHO C - SLOT 1 | C - 5 | pci@6,2000/*@1,* |
| 3-C1 | 3 | PSYCHO C - SLOT 1 | D - 4 | pci@6,4000/*@2,* |
| 2-C2 | 2 | PSYCHO C - SLOT 2 | D - 4 | pci@6,4000/*@3,* |
| 1-C3 | 1 | PSYCHO C - SLOT 3 | D - 4 | pci@6,4000/*@4,* |

Psycho A and Psycho C share the address/data bus. Psycho B has a private bus. PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

501-2996
Jumper Settings

| CODE | JUMPER | PINS | SETTING | DESCRIPTION |
|------|--------|------|---------|-------------------------------------|
| a | J0102 | 2-3 | In | CPU-A1 scan enabled |
| b | J0103 | 2-3 | In | UPA-A lab debug use only |
| c | J0104 | 2-3 | In | UPA-A lab debug use only |
| d | J0202 | 2-3 | In | CPU-A2 scan enabled |
| e | J0302 | 2-3 | In | CPU-B1 scan enabled |
| f | J0303 | 2-3 | In | UPA-B lab debug use only |
| g | J0304 | 2-3 | In | UPA-B lab debug use only |
| h | J0402 | 2-3 | In | CPU-B2 scan enabled |
| i | J0501 | 2-3 | In | Marvin scan enabled |
| j | J0601 | 2-3 | In | Marvin SRAM U0601 scan enabled |
| k | J0602 | 2-3 | In | Marvin SRAM U0602 scan enabled |
| l | J2304 | 2-3 | In | STP2003 scan enabled |
| m | J2402 | 2-3 | In | 53C825 SCSI J2401 scan enabled |
| n | J2701 | 1-2 | NA | +3 mode (250MHZ/300MHZ)* |
| n | J2701 | 2-3 | NA | +2 mode* |
| o | J3102 | 1-2 | In | Select FEPROM (default) |
| o | J3102 | 2-3 | In | Select ROMBO |
| p | J3103 | 1-2 | In | FEPROM write protect |
| p | J3103 | 2-3 | In | FEPROM write enable (default) |
| q | J3303 | 1-2 | In | RS-232 |
| q | J3303 | 2-3 | In | RS-423 (default) |
| r | J3304 | 1-2 | In | RS-232 |
| r | J3304 | 2-3 | In | RS-423 (default) |
| s | J3401 | 2-3 | In | Ethernet 83840 PHY scan enabled |
| t | J3803 | 2-3 | In | FFB J3801 Port ID 0x1d scan enabled |
| u | J3804 | 2-3 | In | FFB J3802 Port ID 0x1e scan enabled |
| v | J5501 | 1-2 | In | FEPROM flash recovery mode |
| v | J5501 | 2-3 | In | FEPROM normal booting (default) |
| w | J5602 | 2-3 | In | 53C825 SCSI J5601 scan enabled |
| x | J5701 | 2-3 | In | Psycho B scan enabled |
| y | J5702 | 2-3 | In | Psycho A scan enabled |
| z | J5703 | 2-3 | In | Psycho C scan enabled |

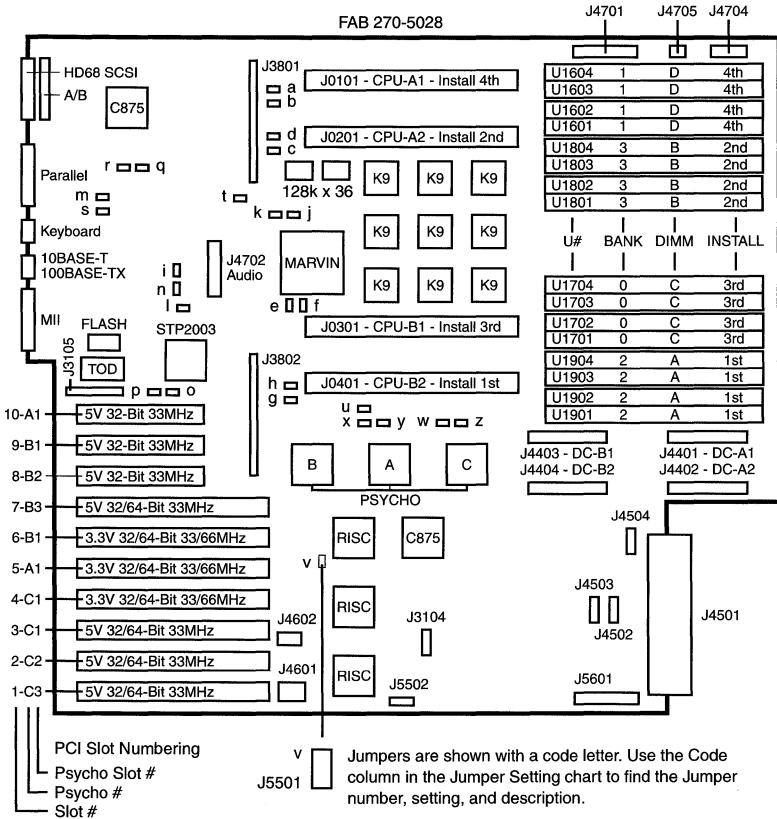
* The "ULTRA-1 CPU 2-3" silkscreen is incorrect. UltraSPARC I is not supported. The 3-Pin header is not installed in system board ≤501-2996-07.

Enterprise 450

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501-5270

OMB FRU w 8MB Cache Support



PCI Slot Numbering

| SILKSCREEN | PCI SLOT | PSYCHO | PCI BUS | DEVICE TREE |
|------------|----------|-------------------|---------|-------------------|
| 10-A1 | 10 | PSYCHO A - SLOT 1 | B - 0 | pci@1f,4000/*@4,* |
| 9-B1 | 9 | PSYCHO B - SLOT 1 | F - 2 | pci@4,4000/*@2,* |
| 8-B2 | 8 | PSYCHO B - SLOT 2 | F - 2 | pci@4,4000/*@3,* |
| 7-B3 | 7 | PSYCHO B - SLOT 3 | F - 2 | pci@4,4000/*@4,* |
| 6-B1 | 6 | PSYCHO B - SLOT 1 | E - 3 | pci@4,2000/*@1,* |
| 5-A1 | 5 | PSYCHO A - SLOT 1 | A - 1 | pci@1f,2000/*@1,* |
| 4-C1 | 4 | PSYCHO C - SLOT 1 | C - 5 | pci@6,2000/*@1,* |
| 3-C1 | 3 | PSYCHO C - SLOT 1 | D - 4 | pci@6,4000/*@2,* |
| 2-C2 | 2 | PSYCHO C - SLOT 2 | D - 4 | pci@6,4000/*@3,* |
| 1-C3 | 1 | PSYCHO C - SLOT 3 | D - 4 | pci@6,4000/*@4,* |

Psycho A and Psycho C share the address/data bus. Psycho B has a private bus. PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

501-5270
Jumper Settings

| CODE | JUMPER | PINS | SETTING | DESCRIPTION |
|------|--------|------|---------|-------------------------------------|
| a | J0102 | 2-3 | In | CPU-A1 scan enabled |
| b | J0103 | 2-3 | In | UPA-A lab debug use only |
| c | J0104 | 2-3 | In | UPA-A lab debug use only |
| d | J0202 | 2-3 | In | CPU-A2 scan enabled |
| e | J0302 | 2-3 | In | CPU-B1 scan enabled |
| f | J0303 | 2-3 | In | UPA-B lab debug use only |
| g | J0304 | 2-3 | In | UPA-B lab debug use only |
| h | J0402 | 2-3 | In | CPU-B2 scan enabled |
| i | J0501 | 2-3 | In | Marvin scan enabled |
| j | J0601 | 2-3 | In | Marvin SRAM U0601 scan enabled |
| k | J0602 | 2-3 | In | Marvin SRAM U0602 scan enabled |
| l | J2304 | 2-3 | In | STP2003 scan enabled |
| m | J2402 | 2-3 | In | 53C825 SCSI J2401 scan enabled |
| n | J2701 | 1-2 | In/Out | ÷3 mode (250MHZ/300MHZ)* |
| n | J2701 | 2-3 | In | ÷2 mode and ÷4 mode (400MHZ)* |
| o | J3102 | 1-2 | In | Select FEPROM (default) |
| o | J3102 | 2-3 | In | Select ROMBO |
| p | J3103 | 1-2 | In | FEPROM write protect |
| p | J3103 | 2-3 | In | FEPROM write enable (default) |
| q | J3303 | 1-2 | In | RS-232 |
| q | J3303 | 2-3 | In | RS-423 (default) |
| r | J3304 | 1-2 | In | RS-232 |
| r | J3304 | 2-3 | In | RS-423 (default) |
| s | J3401 | 2-3 | In | Ethernet 83840 PHY scan enabled |
| t | J3803 | 2-3 | In | FFB J3801 Port ID 0x1d scan enabled |
| u | J3804 | 2-3 | In | FFB J3802 Port ID 0x1e scan enabled |
| v | J5501 | 1-2 | In | FEPROM flash recovery mode |
| v | J5501 | 2-3 | In | FEPROM normal booting (default) |
| w | J5602 | 2-3 | In | 53C825 SCSI J5601 scan enabled |
| x | J5701 | 2-3 | In | Psycho B scan enabled |
| y | J5702 | 2-3 | In | Psycho A scan enabled |
| z | J5703 | 2-3 | In | Psycho C scan enabled |

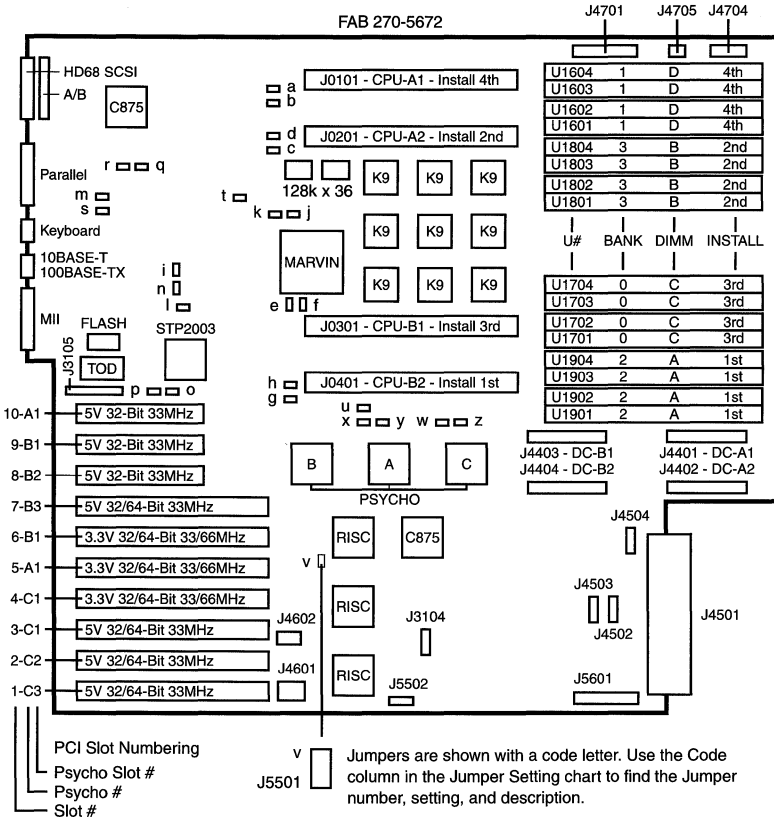
* The "ULTRA-1 CPU 2-3" silkscreen is incorrect. UltraSPARC I is not supported. The 400MHz UltraSPARC II requires a jumper on Pins 2-3. Pins 1-2 are jumpered for 250/300MHz UltraSPARC II. A jumper is not required because Pin-1 is not connected.

Enterprise 450

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501-5672

OMB FRU w 8MB Cache Support



PCI Slot Numbering

| SILKSCREEN | PCI SLOT | PSYCHO | PCI BUS | DEVICE TREE |
|------------|----------|-------------------|---------|-------------------|
| 10-A1 | 10 | PSYCHO A - SLOT 1 | B - 0 | pci@1f,4000/*@4,* |
| 9-B1 | 9 | PSYCHO B - SLOT 1 | F - 2 | pci@4,4000/*@2,* |
| 8-B2 | 8 | PSYCHO B - SLOT 2 | F - 2 | pci@4,4000/*@3,* |
| 7-B3 | 7 | PSYCHO B - SLOT 3 | F - 2 | pci@4,4000/*@4,* |
| 6-B1 | 6 | PSYCHO B - SLOT 1 | E - 3 | pci@4,2000/*@1,* |
| 5-A1 | 5 | PSYCHO A - SLOT 1 | A - 1 | pci@1f,2000/*@1,* |
| 4-C1 | 4 | PSYCHO C - SLOT 1 | C - 5 | pci@6,2000/*@1,* |
| 3-C1 | 3 | PSYCHO C - SLOT 1 | D - 4 | pci@6,4000/*@2,* |
| 2-C2 | 2 | PSYCHO C - SLOT 2 | D - 4 | pci@6,4000/*@3,* |
| 1-C3 | 1 | PSYCHO C - SLOT 3 | D - 4 | pci@6,4000/*@4,* |

Psycho A and Psycho C share the address/data bus. Psycho B has a private bus. PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

501-5672
Jumper Settings

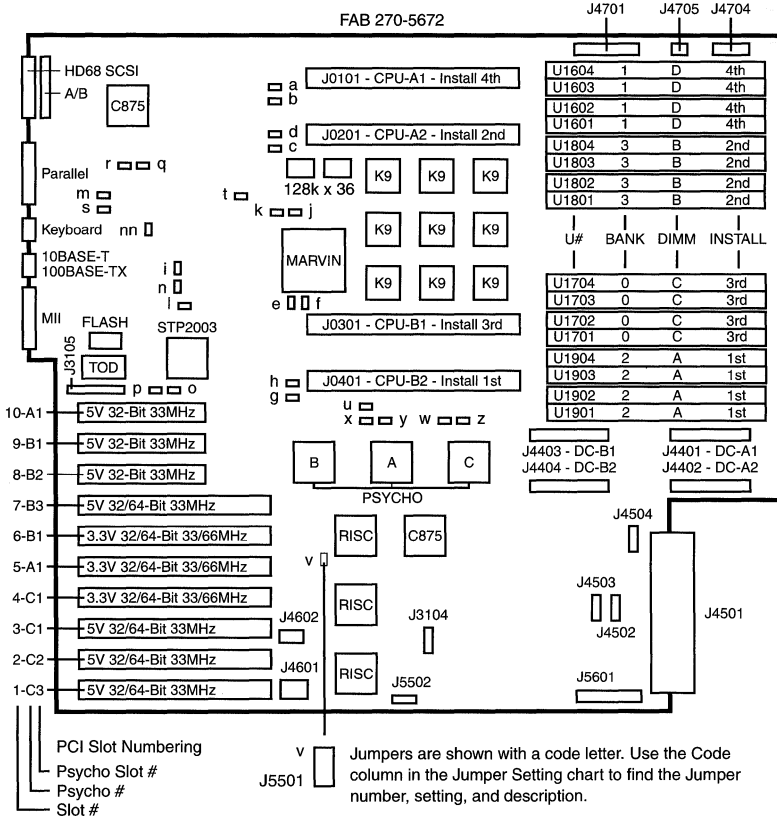
| CODE | JUMPER | PINS | SETTING | DESCRIPTION |
|------|--------|------|---------|-------------------------------------|
| a | J0102 | 2-3 | In | CPU-A1 scan enabled |
| b | J0103 | 2-3 | In | UPA-A lab debug use only |
| c | J0104 | 2-3 | In | UPA-A lab debug use only |
| d | J0202 | 2-3 | In | CPU-A2 scan enabled |
| e | J0302 | 2-3 | In | CPU-B1 scan enabled |
| f | J0303 | 2-3 | In | UPA-B lab debug use only |
| g | J0304 | 2-3 | In | UPA-B lab debug use only |
| h | J0402 | 2-3 | In | CPU-B2 scan enabled |
| i | J0501 | 2-3 | In | Marvin scan enabled |
| j | J0601 | 2-3 | In | Marvin SRAM U0601 scan enabled |
| k | J0602 | 2-3 | In | Marvin SRAM U0602 scan enabled |
| l | J2304 | 2-3 | In | STP2003 scan enabled |
| m | J2402 | 2-3 | In | 53C825 SCSI J2401 scan enabled |
| n | J2701 | 1-2 | In/Out | ÷3 mode (250MHZ/300MHZ)* |
| n | J2701 | 2-3 | In | ÷2 mode and ÷4 (400MHZ)* |
| o | J3102 | 1-2 | In | Select FEPROM (default) |
| o | J3102 | 2-3 | In | Select ROMBO |
| p | J3103 | 1-2 | In | FEPROM write protect |
| p | J3103 | 2-3 | In | FEPROM write enable (default) |
| q | J3303 | 1-2 | In | RS-232 |
| q | J3303 | 2-3 | In | RS-423 (default) |
| r | J3304 | 1-2 | In | RS-232 |
| r | J3304 | 2-3 | In | RS-423 (default) |
| s | J3401 | 2-3 | In | Ethernet 83840 PHY scan enabled |
| t | J3803 | 2-3 | In | FFB J3801 Port ID 0x1d scan enabled |
| u | J3804 | 2-3 | In | FFB J3802 Port ID 0x1e scan enabled |
| v | J5501 | 1-2 | In | FEPROM flash recovery mode |
| v | J5501 | 2-3 | In | FEPROM normal booting (default) |
| w | J5602 | 2-3 | In | 53C825 SCSI J5601 scan enabled |
| x | J5701 | 2-3 | In | Psycho B scan enabled |
| y | J5702 | 2-3 | In | Psycho A scan enabled |
| z | J5703 | 2-3 | In | Psycho C scan enabled |

Enterprise 450

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501-5673

OMB FRU w 8MB Cache Support



PCI Slot Numbering

| SILKSCREEN | PCI SLOT | PSYCHO | PCI BUS | DEVICE TREE |
|------------|----------|-------------------|---------|-------------------|
| 10-A1 | 10 | PSYCHO A - SLOT 1 | B - 0 | pci@1f,4000/*@4,* |
| 9-B1 | 9 | PSYCHO B - SLOT 1 | F - 2 | pci@4,4000/*@2,* |
| 8-B2 | 8 | PSYCHO B - SLOT 2 | F - 2 | pci@4,4000/*@3,* |
| 7-B3 | 7 | PSYCHO B - SLOT 3 | F - 2 | pci@4,4000/*@4,* |
| 6-B1 | 6 | PSYCHO B - SLOT 1 | E - 3 | pci@4,2000/*@1,* |
| 5-A1 | 5 | PSYCHO A - SLOT 1 | A - 1 | pci@1f,2000/*@1,* |
| 4-C1 | 4 | PSYCHO C - SLOT 1 | C - 5 | pci@6,2000/*@1,* |
| 3-C1 | 3 | PSYCHO C - SLOT 1 | D - 4 | pci@6,4000/*@2,* |
| 2-C2 | 2 | PSYCHO C - SLOT 2 | D - 4 | pci@6,4000/*@3,* |
| 1-C3 | 1 | PSYCHO C - SLOT 3 | D - 4 | pci@6,4000/*@4,* |

Psycho A and Psycho C share the address/data bus. Psycho B has a private bus.
PCI Bus B shares the address/data bus with on-board Audio, Ethernet, Flash, Floppy, Keyboard, Mouse, NVRAM, Parallel, SCSI, and Serial devices.

501-5673
Jumper Settings

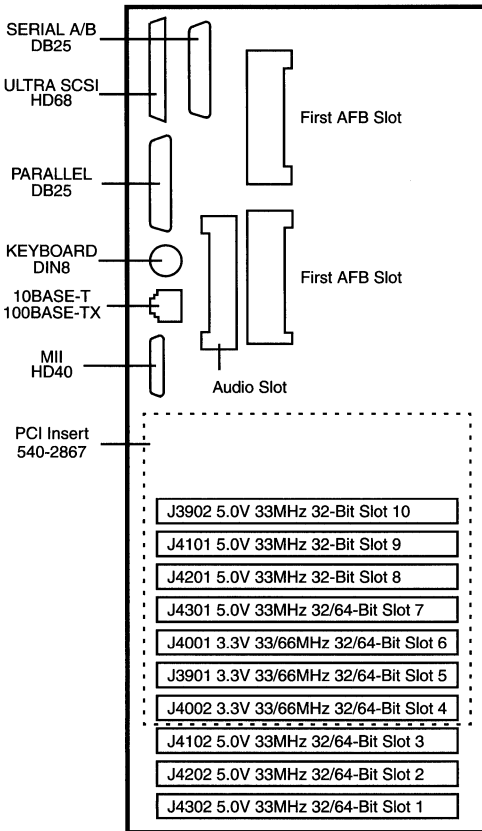
| CODE | JUMPER | PINS | SETTING | DESCRIPTION |
|------|--------|------|---------|-------------------------------------|
| a | J0102 | 2-3 | In | CPU-A1 scan enabled |
| b | J0103 | 2-3 | In | UPA-A lab debug use only |
| c | J0104 | 2-3 | In | UPA-A lab debug use only |
| d | J0202 | 2-3 | In | CPU-A2 scan enabled |
| e | J0302 | 2-3 | In | CPU-B1 scan enabled |
| f | J0303 | 2-3 | In | UPA-B lab debug use only |
| g | J0304 | 2-3 | In | UPA-B lab debug use only |
| h | J0402 | 2-3 | In | CPU-B2 scan enabled |
| i | J0501 | 2-3 | In | Marvin scan enabled |
| j | J0601 | 2-3 | In | Marvin SRAM U0601 scan enabled |
| k | J0602 | 2-3 | In | Marvin SRAM U0602 scan enabled |
| l | J2304 | 2-3 | In | STP2003 scan enabled |
| m | J2402 | 2-3 | In | 53C825 SCSI J2401 scan enabled |
| n | J2701 | 1-2 | In/Out | +3 mode (250MHZ/300MHZ) |
| n | J2701 | 2-3 | In | +2, +4 (400MHZ), and +5 (480MHZ) |
| nn | J2702 | 1-2 | In | 480MHZ |
| nn | J2702 | 2-3 | In | 250MHZ/300MHZ/400MHZ |
| o | J3102 | 1-2 | In | Select FEPROM (default) |
| o | J3102 | 2-3 | In | Select ROMBO |
| p | J3103 | 1-2 | In | FEPROM write protect |
| p | J3103 | 2-3 | In | FEPROM write enable (default) |
| q | J3303 | 1-2 | In | RS-232 |
| q | J3303 | 2-3 | In | RS-423 (default) |
| r | J3304 | 1-2 | In | RS-232 |
| r | J3304 | 2-3 | In | RS-423 (default) |
| s | J3401 | 2-3 | In | Ethernet 83840 PHY scan enabled |
| t | J3803 | 2-3 | In | FFB J3801 Port ID 0x1d scan enabled |
| u | J3804 | 2-3 | In | FFB J3802 Port ID 0x1e scan enabled |
| v | J5501 | 1-2 | In | FEPROM flash recovery mode |
| v | J5501 | 2-3 | In | FEPROM normal booting (default) |
| w | J5602 | 2-3 | In | 53C825 SCSI J5601 scan enabled |
| x | J5701 | 2-3 | In | Psycho B scan enabled |
| y | J5702 | 2-3 | In | Psycho A scan enabled |
| z | J5703 | 2-3 | In | Psycho C scan enabled |

Ultra 450 Ultra Enterprise 450 Enterprise 450
 501-5028 501-2996 501-5270 501-5672 501-5673
 Miscellaneous Connectors

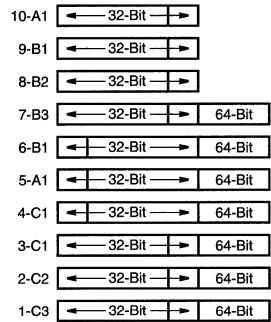
| CONNECTOR | PINS | DESCRIPTION |
|-----------|------|---|
| J3104 | 3 | Button XIR (1-2) and POR (2-3) |
| J3105 | 32 | ROMBO (factory use) |
| J3801 | 144 | First UPA framebuffer * |
| J3802 | 144 | Second UPA framebuffer * |
| J4401 | 40 | DC-A1 DC-DC converter for CPU-A1 |
| J4402 | 40 | DC-A2 DC-DC converter for CPU-A2 |
| J4403 | 40 | DC-B1 DC-DC converter for CPU-B1 |
| J4404 | 40 | DC-B2 DC-DC converter for CPU-B2 |
| J4501 | 144 | Power from DC distribution board |
| J4502 | 24 | To wavecrimp connector J4501 |
| J4503 | 24 | To wavecrimp connector J4501 |
| J4504 | 14 | Not installed |
| J4601 | 30 | Not installed after early production |
| J4602 | 4 | Second AFB fan power (not used) |
| J4701 | 68 | Ultra SCSI to removable media backplane |
| J4702 | 40 | Audio module * |
| J4703 | 20 | First AFB power * |
| J4704 | 12 | CPU fan power |
| J4705 | 6 | First AFB blower power † |
| J4707 | 20 | Second AFB power * |
| J5502 | 8 | JTAG scan (6-8 jumpered) |
| J5503 | 6 | Not installed |
| J5504 | 2 | Not installed |
| J5601 | 68 | Ultra SCSI to 4-slot disk backplane |

* J4703 and J4707 are not installed on 501-5270.
 * J3801, J3802, J4702, J4703, J4707 are not installed on 501-5672.
 * J3801, J3802, J4702, J4703, J4707 are not installed on 501-5673.
 † The Wrench Icon is lit when AFB Blower 540-3023 or Loopback Plug 530-2509 is not connected to J4705 on the System Board. AFB Blower 540-3023 was not installed after August 1997.

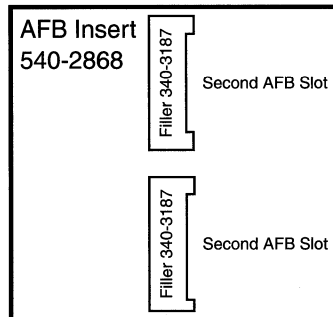
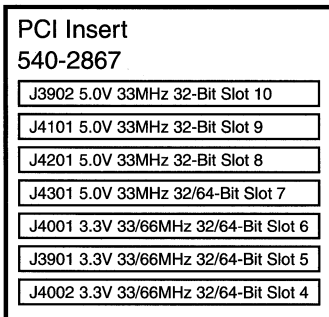
Ultra 450 Ultra Enterprise 450 Enterprise 450
 501-5028 501-2996 501-5270 501-5672 501-5673
 Backpanel Connectors and Backpanel Inserts



PCI Slot Numbering



Option 9694



Ultra 450 Ultra Enterprise 450 Enterprise 450
 501-5028 501-2996 501-5270 501-5672 501-5673

Notes

1. The minimum A25 operating system is Solaris 2.5.1 Hardware: 4/97.
2. The minimum A20 operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. Ultra Enterprise 450 was renamed Enterprise 450 in December 1997.
4. Use the Flash PROM Programming Utility to update the flash PROM.
5. Disconnect all system board power cables before removing or installing the NVRAM. Failure to remove power can result in NVRAM corruption.
6. Use the **setenv mfg-options** OBP command to set the system up as Server (**mfg-options 49**) or as a Workstation (**mfg-options 0**).

Backpanel Insert Notes

1. System Board FRUs include PCI Insert 540-2867.
2. 64-Bit PCI boards do not fit into Slots 9 and 10 of System Boards 501-5028, 501-2996, and 501-5270. Connectors J3802 and J4707 interfere with the 64-Bit PCI extension connector.
3. J3802 and J4707 are not installed on 501-5672 or 501-5673.
4. AFB Insert 540-2868 is required if a second AFB is installed.
5. Three PCI slots are available when the AFB Insert is installed.

Graphics Notes

1. Creator and Creator 3D are not supported.
2. System Board 501-2996 does not support Elite3D (AFB).
3. AFB Power connectors are not on 501-5270, 501-5672, and 501-5673.
4. System Board 501-5028 was shipped in servers by Dev WO_14046.
5. Elite3D-m6 lower board ≤501-4231-06 is not compatible with the A20.
6. Elite3D-m6 assembly ≤540-3058-06 is not compatible with the A20.
7. The Wrench Icon is lit when AFB Blower 540-3023 or Loopback Plug 530-2509 (Pin-1 to 2) is not connected to J4705 on the System Board.
8. AFB Blower 540-3023 was not installed after August 1997.
9. A maximum of three Expert3D boards may be installed.
10. Each Expert3D requires Fan board 370-4272 in a lower, adjacent slot.

Module Notes

1. Each UltraSPARC module requires DC-DC Converter 300-1322.
2. The installation sequence is different between FABs ≤270-2996-03 and ≥270-2996-04 (04 to 10) and 270-2058.
3. The 400MHz module requires OBP ≥3.12 Version 1.
4. Empty slot A1 requires Air Baffle 330-2781 or 330-2805 if 400MHz modules are used. A Baffle is included with UGMB-A25AA-A25B.
5. The 400MHz module is not approved for use in the Ultra 450.
6. The 400MHz module is not compatible with System Board 501-2996.
7. Systems built prior to ≈11/98 are FCC Class A compliant with 400MHz.
8. The 480MHz module requires OBP ≥3.18 Version 0.
9. Airduct 540-4597 is required when 480MHz modules are installed.

Ultra 450 Ultra Enterprise 450 Enterprise 450
501-5028 501-2996 501-5270 501-5672 501-5673

Module Slot Numbering for FABs \geq 270-2996-04, 270-5028, and 270-5672

| SOCKET | UPA SLOT | LABEL | INSTALL | OBP/OS | DC-DC |
|--------|----------|--------|---------|--------|-------|
| J0101 | 1 | CPU-A1 | 4th | CPU 0 | DC-A1 |
| J0201 | 2 | CPU-A2 | 2nd | CPU 1 | DC-A2 |
| J0301 | 3 | CPU-B1 | 3rd | CPU 2 | DC-B1 |
| J0401 | 4 | CPU-B2 | 1st | CPU 3 | DC-B2 |

Memory Notes

- Four DIMMs of the same size form a bank.
- The installation sequence is AAAA, BBBB, CCCC, and DDDD.
- Use the **setenv memory-interleave** OBP command to override the default interleave setting of auto.
- The smallest DIMM size is used and the remaining memory is lost if interleaving is enabled and the bank sizes are different.

Memory Slot Numbering

| SOCKET | LABEL | INSTALL | BANK | DIMM# | ADDRESS |
|--------|-------|---------|------|-------|-----------------------|
| U1604 | D | 4th | 1 | 3 | 4000 0000 - 7fff ffff |
| U1603 | D | 4th | 1 | 2 | 4000 0000 - 7fff ffff |
| U1602 | D | 4th | 1 | 1 | 4000 0000 - 7fff ffff |
| U1601 | D | 4th | 1 | 0 | 4000 0000 - 7fff ffff |
| U1804 | B | 2nd | 3 | 3 | c000 0000 - ffff ffff |
| U1803 | B | 2nd | 3 | 2 | c000 0000 - ffff ffff |
| U1802 | B | 2nd | 3 | 1 | c000 0000 - ffff ffff |
| U1801 | B | 2nd | 3 | 0 | c000 0000 - ffff ffff |
| U1704 | C | 3rd | 0 | 3 | 0000 0000 - 3fff ffff |
| U1703 | C | 3rd | 0 | 2 | 0000 0000 - 3fff ffff |
| U1702 | C | 3rd | 0 | 1 | 0000 0000 - 3fff ffff |
| U1701 | C | 3rd | 0 | 0 | 0000 0000 - 3fff ffff |
| U1904 | A | 1st | 2 | 3 | 8000 0000 - bfff ffff |
| U1903 | A | 1st | 2 | 2 | 8000 0000 - bfff ffff |
| U1902 | A | 1st | 2 | 1 | 8000 0000 - bfff ffff |
| U1901 | A | 1st | 2 | 0 | 8000 0000 - bfff ffff |

SCSI Bus Notes

- The RMA Backplane is controlled by /pci@1f,4000/scsi@2.
- The 4-Slot Disk Backplane is controlled by /pci@1f,4000/scsi@3.
- The external A20/A25 SCSI bus is controlled by /pci@1f,4000/scsi@2.

References

- Ultra Enterprise 450 Server Owner's Guide*, 805-0429-10.
- Ultra 450 Workstation Owner's Guide*, 805-0430-10.
- Flash PROM Programming Guide*, 802-3233.

E3000 E4000 E5000 E6000

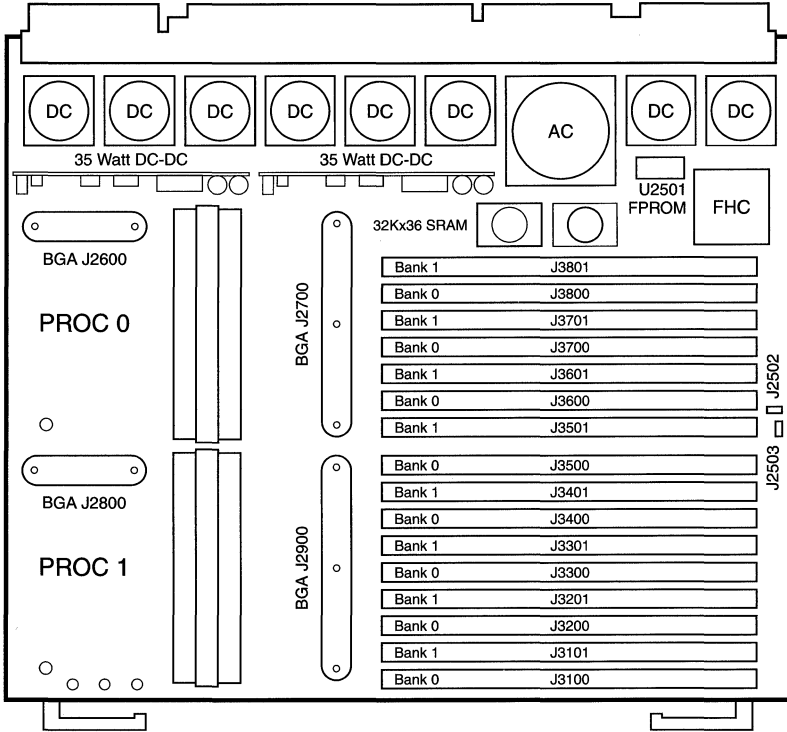
CPU/Memory Board

Option 2600

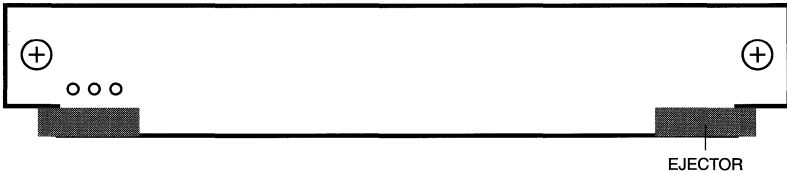
501-2976

OMB FRU w/o Module

83MHz Gigaplane



Backpanel



501-2976 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION | FAB 270-2976 |
|--------|------|---------|-------------|-----------------|
| J2502 | 1-2 | Out | Inv Adr 1 | -01 -02 -03 -04 |
| J2503 | 1-2 | In | | -01 -02 |

Notes

1. The minimum OS for the Ex000 is Solaris 2.5.1.
2. The minimum OS for the Ex500 is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. OBP $\geq 3.2v14$ is required when 83MHz and 100MHz boards are mixed.
4. OBP $\geq 3.2v23$ is required 256MB DIMMs are installed.
5. The message "status 'fail - Downrev AC'" is displayed when CPU Board <501-2976-03 is installed. The message indicates that the Address Controller is pre-FCS and lower than revision 5.

Compatibility Notes

1. The 501-2976 was shipped in the E3000 - E6000.
2. The 501-2976 was not shipped in the E3500 - E6500.
3. The 501-2976 is supported in the E3000 - E6000 and E3500 - E6500.

Flash PROM Notes

1. Use the Flash PROM Programming Utility to update the flash PROM.
2. Use the **prom-copy (src dst -)** command to copy a flash PROM.
ok 2 b **prom-copy 2** (copies from board 2 to board 11).
3. Use the **update-proms** command to synchronize the latest version of flash PROM installed in the system to all boards of the same type.

Module Notes

1. The 501-2976 supports up to 2MB of cache per module.
2. The 250MHz 1MB module requires OBP 3.2 Version 6.
3. The 250MHz 4MB module requires OBP 3.2 Version 7.
4. The 336MHz 4MB module requires OBP 3.2 Version 12.
5. The 400MHz 4MB module is not supported.
6. The 400MHz 8MB module requires OBP 3.2 Version 21.

References

1. *Ultra Enterprise 3000 System Manual*, 802-6051.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.
3. *System Flash PROM Programming Guide*, 802-5579.

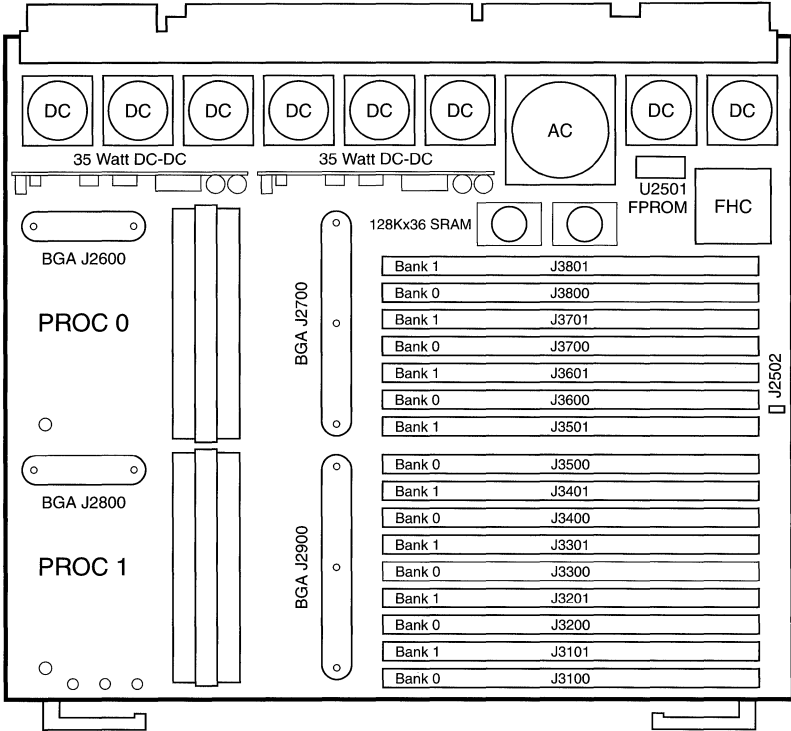
E3000 E4000 E5000 E6000

CPU/Memory Board

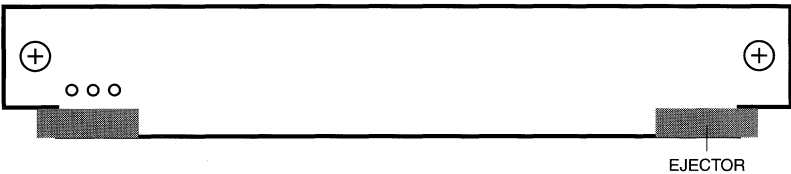
Option 2601

501-4312

OMB FRU w/o Module
83MHz Gigaplane



Backpanel



501-4312 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------|
| J2502 | 1-2 | Out | Inv Adr 1 |

Notes

1. The minimum OS for the Ex000 is Solaris 2.5.1.
2. The minimum OS for the Ex500 is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The first OBP release for the 501-4312 was 3.2 Version 7.
4. OBP $\geq 3.2v14$ is required when 83MHz and 100MHz boards are mixed.
5. OBP $\geq 3.2v23$ is required 256MB DIMMs are installed.

Compatibility Notes

1. The 501-4312 was shipped in the E3000 - E6000.
2. The 501-4312 was not shipped in the E3500 - E6500.
3. The 501-4312 is supported in the E3000 - E6000 and E3500 - E6500.

Flash PROM Notes

1. Use the Flash PROM Programming Utility to update the flash PROM.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy 2** (copies from board 2 to board 11).
3. Use the **update-proms** command to synchronize the latest version of flash PROM installed in the system to all boards of the same type.

Module Notes

1. The 501-4312 supports up to 8MB of cache per module.
2. The 250MHz 1MB module requires OBP 3.2 Version 6.
3. The 250MHz 4MB module requires OBP 3.2 Version 7.
4. The 336MHz 4MB module requires OBP 3.2 Version 12.
5. The 400MHz 4MB module is not supported.
6. The 400MHz 8MB module requires OBP 3.2 Version 21.

References

1. *Ultra Enterprise 3000 System Manual*, 802-6051.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.
3. *System Flash PROM Programming Guide*, 802-5579.

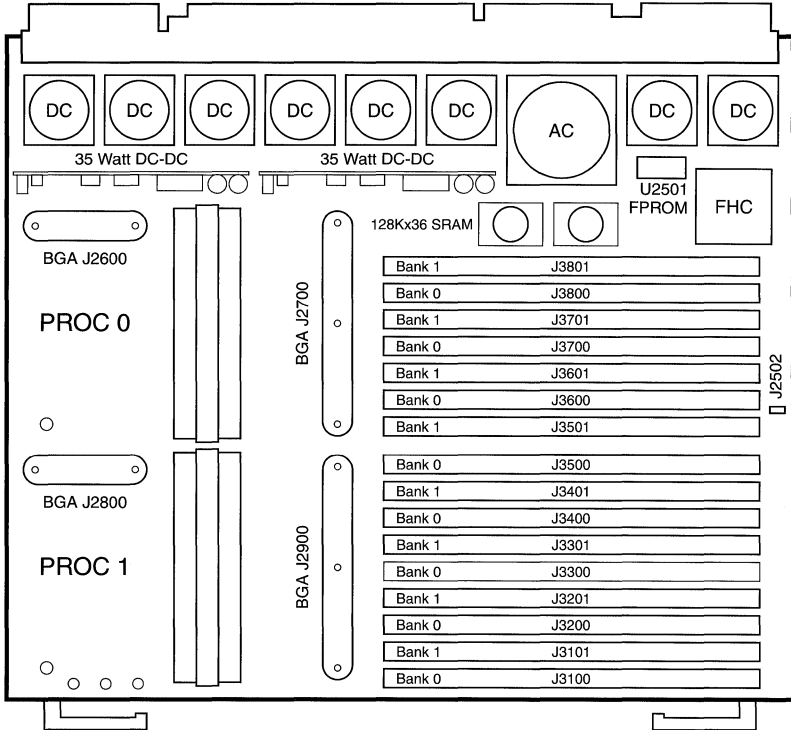
E3500 E4500 E5500 E6500

CPU/Memory Board

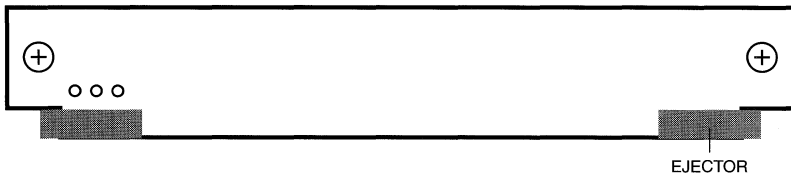
Option 2602

501-4882

OMB FRU w/o Module
83/90/100MHz Gigaplane



Backpanel



501-4882
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------|
| J2502 | 1-2 | Out | Inv Adr 1 |

Configured CPU/Memory FRUs

| PART# | DESCRIPTION | MODULE# |
|----------|-------------------------------|----------|
| 540-4516 | 0MB FRU with 2 400MHz Modules | 501-5762 |
| 540-4517 | 0MB FRU with 2 400MHz Modules | 501-5661 |
| 540-4575 | 2GB FRU with 2 400MHz Modules | 501-5762 |

Notes

1. The minimum OS for the Ex000 is Solaris 2.5.1.
2. The minimum OS for the Ex500 is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The first release of OBP for the 501-4882 was 3.2 Version 12.
4. The oldest supported release of OBP for the 501-4882 is 3.2v14.
5. OBP 3.2v14 is required when 83MHz and 100MHz boards are mixed.

Compatibility Notes

1. The 501-4882 was shipped in the E3500 - E6500.
2. The 501-4882 was not shipped in the E3000 - E6000.
3. The 501-4882 is supported in the E3000 - E6000 and E3500 - E6500.

Flash PROM Notes

1. Use the Flash PROM Programming Utility to update the flash PROM.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy** (copies from board 2 to board 11).
3. Use the **update-proms** command to synchronize the latest version of flash PROM installed in the system to all boards of the same type.

Module Notes

1. The 400MHz 4MB module requires OBP 3.2 Version 18.
2. The 400MHz 8MB module requires OBP 3.2 Version 21.

References

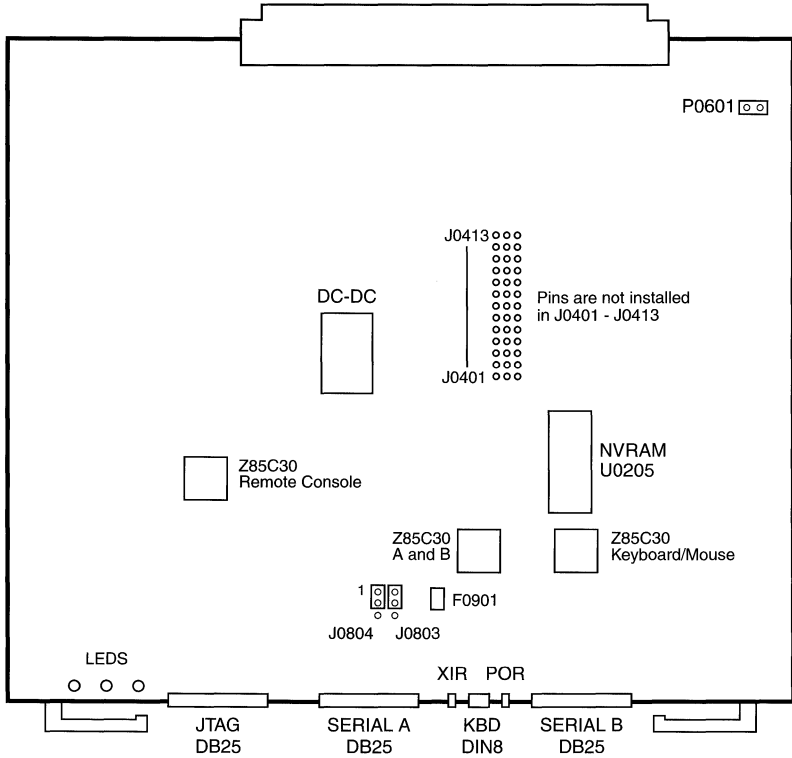
1. *Enterprise 3500 System Reference Manual*, 805-2630.
2. *Enterprise 4500/5500/6500 System Reference Manual*, 805-2632.
3. *System Flash PROM Programming Guide*, 802-5579.

E3000 E4000 E5000 E6000

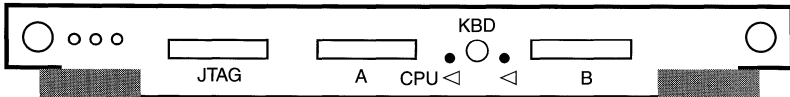
Clock Board

501-2975

83MHz Gigaplane



Backpanel and Connectors



Notes

1. Clock 501-4286 was shipped in the E3000 - E6000.
2. Clock 501-4286 was not shipped in the E3500 - E6500.
3. Clock 501-4286 is not supported in the E3500 - E6500.

501-2975
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------------|
| J04xx | 1-3 | N/A | Clock frequency selection |
| J0803 | 1-2 | In | RS232 (default) |
| J0803 | 2-3 | In | RS423 |
| J0804 | 1-2 | In | RS232 (default) |
| J0804 | 2-3 | In | RS423 |
| P0601 | 1-2 | In | FEPROM write enable (default) |
| P0601 | 1-2 | Out | FEPROM write protect |

Notes

1. The minimum operating system is Solaris 2.5.1.
2. The Clock Board is not a hot swap component.
3. Clock 501-2975 supports 167MHz modules.
4. Clock 501-2975 only supports a 1:2 clock ratio.
5. Use the POR button to perform a Power On Reset.
6. Use the XIR button to perform an Externally Initiated Reset.
7. After an XIR, memory is cleared and some CPU state is preserved.
8. An XIR does not override the NVRAM auto-boot? parameter.
9. Use the OBP **.xir-state-all** command to display the XIR information.

NVRAM Notes

1. The Clock Board, I/O Board, and I/O Graphics Board NVRAMs are automatically synchronized when the Clock Board NVRAM contents matches at least one I/O Board or I/O Graphics Board NVRAM.
2. Use the following OBP command to manually synchronize a new or replacement I/O Board to an existing Clock Board:
ok copy-clock-tod-to-io-boards
3. Use the following OBP command to manually synchronize a new or replacement Clock Board to an existing I/O Board:
ok (ioboard# in hex) copy-io-board-tod-to-clock-tod

Remote Console Notes

1. The remote console monitors input to ttya.
2. The secure position of the keyswitch disables the remote console.
3. A Power On Reset (POR), Externally Initiated Reset (XIR), or Power Cycle can be performed through the remote console.
4. Enter remote console characters with a 0.5 to 5 second delay.
5. Remote console commands are:
Power Cycle **SPACE CR ~ CNTL SHFT P**
POR **SPACE CR ~ CNTL SHFT R**
XIR **SPACE CR ~ CNTL SHFT X**

References

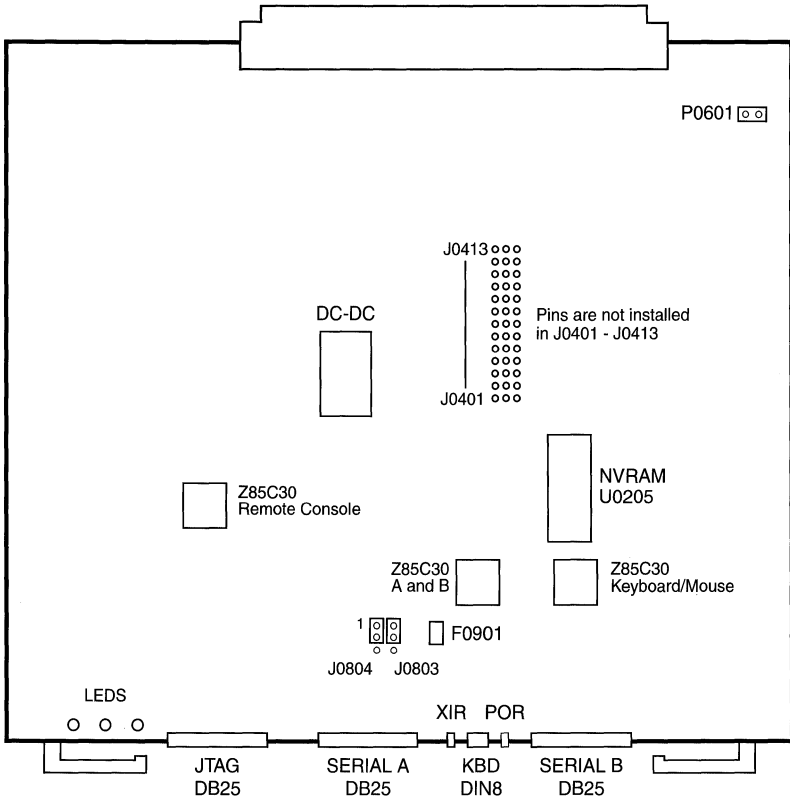
1. *Ultra Enterprise 3000 System Manual*, 802-6051.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.

E3000 E4000 E5000 E6000

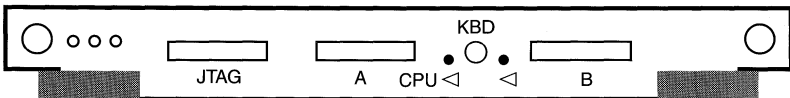
Clock Board

501-4286

83/100MHz E3000 Gigaplane
83MHz E4000/5000/6000 Gigaplane



Backpanel and Connectors



Notes

1. Clock 501-4286 was shipped in the E3000 - E6000.
2. Clock 501-4286 was not shipped in the E3500 - E6500.
3. Clock 501-4286 is not supported in the E3500 - E6500.

501-4286 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------------|
| J04xx | 1-3 | N/A | Clock frequency selection |
| J0803 | 1-2 | In | RS232 (default) |
| J0803 | 2-3 | In | RS423 |
| J0804 | 1-2 | In | RS232 (default) |
| J0804 | 2-3 | In | RS423 |
| P0601 | 1-2 | In | FEPROM write enable (default) |
| P0601 | 1-2 | Out | FEPROM write protect |

Notes

1. The minimum operating system is Solaris 2.5.1.
2. The Clock Board is not a hot swap component.
3. Clock 501-4286 supports 167, 250, 336, and 400MHz modules.
4. Clock 501-4286 supports 1:2, 1:3, and 1:4 clock ratios.
5. Use the POR button to perform a Power On Reset.
6. Use the XIR button to perform an Externally Initiated Reset.
7. After an XIR, memory is cleared and some CPU state is preserved.
8. An XIR does not override the NVRAM auto-boot? parameter.
9. Use the OBP **.xir-state-all** command to display the XIR information.

NVRAM Notes

1. The Clock Board, I/O Board, and I/O Graphics Board NVRAMs are automatically synchronized when the Clock Board NVRAM contents matches at least one I/O Board or I/O Graphics Board NVRAM.
2. Use the following OBP command to manually synchronize a new or replacement I/O Board to an existing Clock Board:
ok copy-clock-tod-to-io-boards
3. Use the following OBP command to manually synchronize a new or replacement Clock Board to an existing I/O Board:
ok (ioboard# in hex) copy-io-board-tod-to-clock-tod

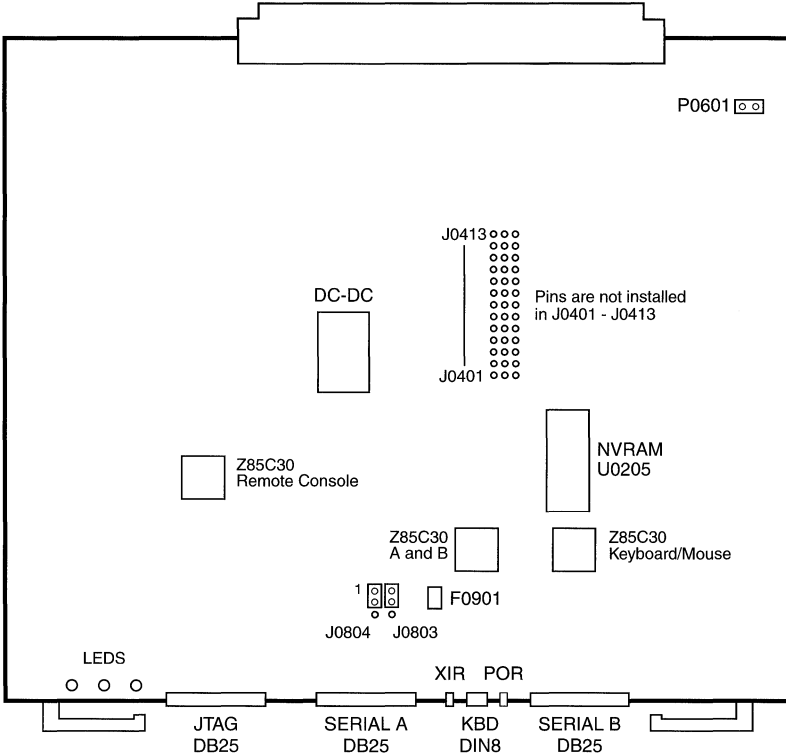
Remote Console Notes

1. The remote console monitors input to ttya.
2. The secure position of the keyswitch disables the remote console.
3. A Power On Reset (POR), Externally Initiated Reset (XIR), or Power Cycle can be performed through the remote console.
4. Enter remote console characters with a 0.5 to 5 second delay.
5. Remote console commands are:
Power Cycle **SPACE CR ~ CNTL SHFT P**
POR **SPACE CR ~ CNTL SHFT R**
XIR **SPACE CR ~ CNTL SHFT X**

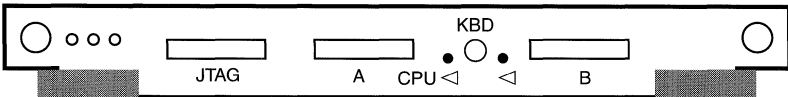
References

1. *Ultra Enterprise 3000 System Manual*, 802-6051.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.

E3500 E4500 E5500 E6500
 Clock Board
 501-4946
 83/90/100MHz Gigaplane



Backpanel and Connectors



Notes

1. Clock 501-4946 was shipped in the E3500 - E6500.
2. Clock 501-4946 was not shipped in the E3000 - E6000.
3. Clock 501-4946 is supported in the E3000 - E6000 and E3500 - E6500.

501-4946 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------------|
| J04xx | 1-3 | N/A | Clock frequency selection |
| J0803 | 1-2 | In | RS232 (default) |
| J0803 | 2-3 | In | RS423 |
| J0804 | 1-2 | In | RS232 (default) |
| J0804 | 2-3 | In | RS423 |
| P0601 | 1-2 | In | FEPROM write enable (default) |
| P0601 | 1-2 | Out | FEPROM write protect |

Notes

1. The minimum OS for the Ex000 is Solaris 2.5.1.
2. The minimum OS for the Ex500 is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The Clock Board is not a hot swap component.
4. Clock 501-4946 supports 167, 250, 336, and 400MHz modules.
5. Clock 501-4946 supports 1:2, 1:3, and 1:4 clock ratios.
6. Use the POR button to perform a Power On Reset.
7. Use the XIR button to perform an Externally Initiated Reset.
8. After an XIR, memory is cleared and some CPU state is preserved.
9. An XIR does not override the NVRAM auto-boot? parameter.
10. Use the OBP **.xir-state-all** command to display the XIR information.

NVRAM Notes

1. The Clock Board, I/O Board, and I/O Graphics Board NVRAMs are automatically synchronized when the Clock Board NVRAM contents matches at least one I/O Board or I/O Graphics Board NVRAM.
2. Use the following OBP command to manually synchronize a new or replacement I/O Board to an existing Clock Board:
ok **copy-clock-tod-to-io-boards**
3. Use the following OBP command to manually synchronize a new or replacement Clock Board to an existing I/O Board:
ok (**ioboard# in hex**) **copy-io-board-tod-to-clock-tod**

Remote Console Notes

1. The remote console monitors input to ttya.
2. The secure position of the keyswitch disables the remote console.
3. A Power On Reset (POR), Externally Initiated Reset (XIR), or Power Cycle can be performed through the remote console.
4. Enter remote console characters with a 0.5 to 5 second delay.
5. Remote console commands are:
Power Cycle **SPACE CR ~ CNTL SHFT P**
POR **SPACE CR ~ CNTL SHFT R**
XIR **SPACE CR ~ CNTL SHFT X**

References

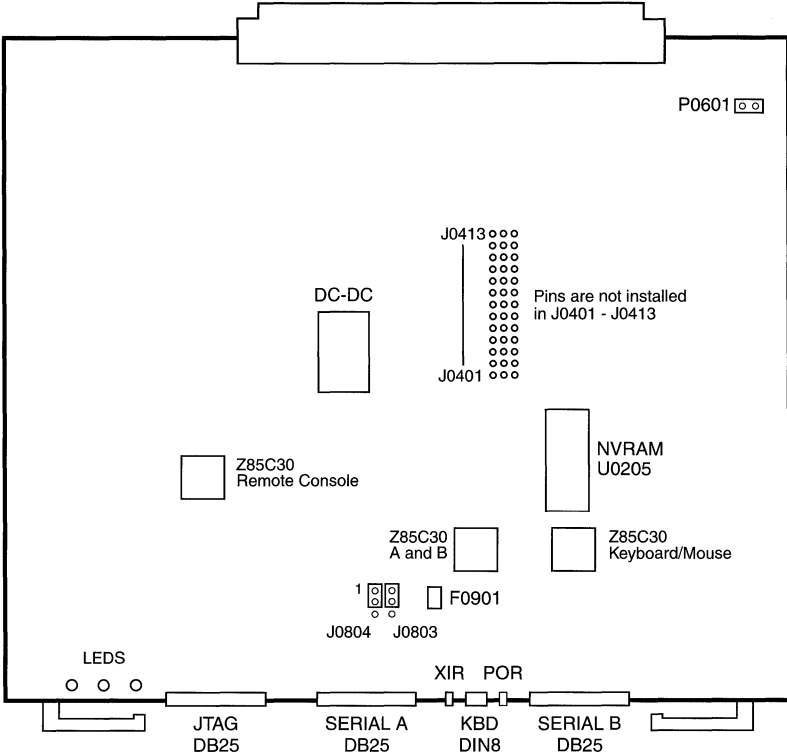
1. *Enterprise 3500 System Reference Manual*, 805-2630.
2. *Enterprise 4500/5500/6500 System Manual*, 805-2632.

E3500 E4500 E5500 E6500

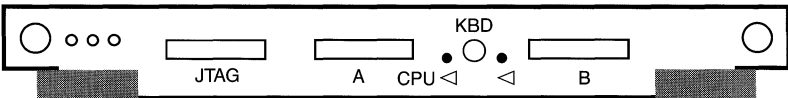
Clock Board

501-5365

83/90/100MHz Gigaplane



Backpanel and Connectors



Notes

- 1. Clock 501-5365 was shipped in the E3500 - E6500.
- 2. Clock 501-5365 was not shipped in the E3000 - E6000.
- 3. Clock 501-5365 is supported in the E3000 - E6000 and E3500 - E6500.

501-5365
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------------------------|
| J04xx | 1-3 | N/A | Clock frequency selection |
| J0803 | 1-2 | In | RS232 (default) |
| J0803 | 2-3 | In | RS423 |
| J0804 | 1-2 | In | RS232 (default) |
| J0804 | 2-3 | In | RS423 |
| P0601 | 1-2 | In | FEPROM write enable (default) |
| P0601 | 1-2 | Out | FEPROM write protect |

Notes

1. The minimum OS for the Ex000 is Solaris 2.5.1.
2. The minimum OS for the Ex500 is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The Clock Board is not a hot swap component.
4. Clock 501-5365 supports 167, 250, 336, and 400MHz modules.
5. Clock 501-5365 supports 1:2, 1:3, 1:4, 1:5, and 1:6 clock ratios.
6. Use the POR button to perform a Power On Reset.
7. Use the XIR button to perform an Externally Initiated Reset.
8. After an XIR, memory is cleared and some CPU state is preserved.
9. An XIR does not override the NVRAM auto-boot? parameter
10. Use the OBP **.xir-state-all** command to display the XIR information.

NVRAM Notes

1. The Clock Board, I/O Board, and I/O Graphics Board NVRAMs are automatically synchronized when the Clock Board NVRAM contents matches at least one I/O Board or I/O Graphics Board NVRAM.
2. Use the following OBP command to manually synchronize a new or replacement I/O Board to an existing Clock Board:
ok **copy-clock-tod-to-io-boards**
3. Use the following OBP command to manually synchronize a new or replacement Clock Board to an existing I/O Board:
ok (**ioboard# in hex**) **copy-io-board-tod-to-clock-tod**

Remote Console Notes

1. The remote console monitors input to ttya.
2. The secure position of the keyswitch disables the remote console.
3. A Power On Reset (POR), Externally Initiated Reset (XIR), or Power Cycle can be performed through the remote console.
4. Enter remote console characters with a 0.5 to 5 second delay.
5. Remote console commands are:
Power Cycle **SPACE CR ~ CNTL SHFT P**
POR **SPACE CR ~ CNTL SHFT R**
XIR **SPACE CR ~ CNTL SHFT X**

References

1. *Enterprise 3500 System Reference Manual*, 805-2630.
2. *Enterprise 4500/5500/6500 System Manual*, 805-2632.

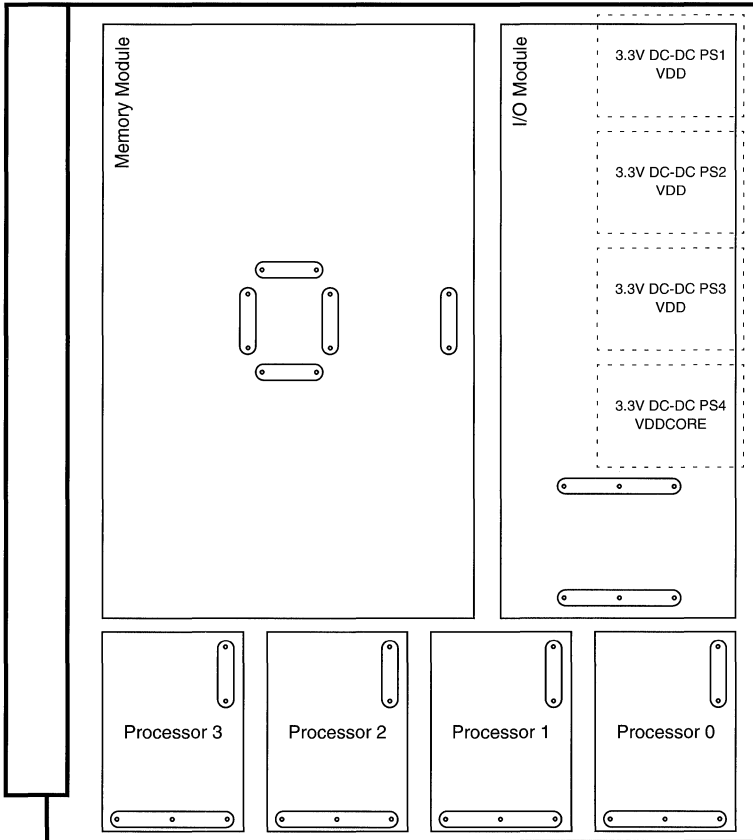
E10000 System Board

Option 2760

501-4347
 Tested at 83MHz
 Option 2760
 Released 2/97

501-4786
 Tested at 83MHz
 Option 2760
 Released 7/97

501-4903
 Tested at 83MHz
 Option 2760
 Released 2/98



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Do NOT remove the System Board if the Yellow LEDs are ON.
3. A minimum of one Processor Module per System Board is required.
4. Mixing module cache sizes on a single board is supported.
5. The smallest cache size is used if mixed size modules are installed.
6. Mixing module cache sizes within a system is supported.
7. Mixing module speeds within a system is supported.
8. Thermal calibration is required if a new System Board is added, or when a System Board is replaced or moved to a different slot.
9. System Boards 501-4347, 501-4786, and 501-4903 do not support 400MHz modules.

E10000 System Board

Option 2761

501-5240

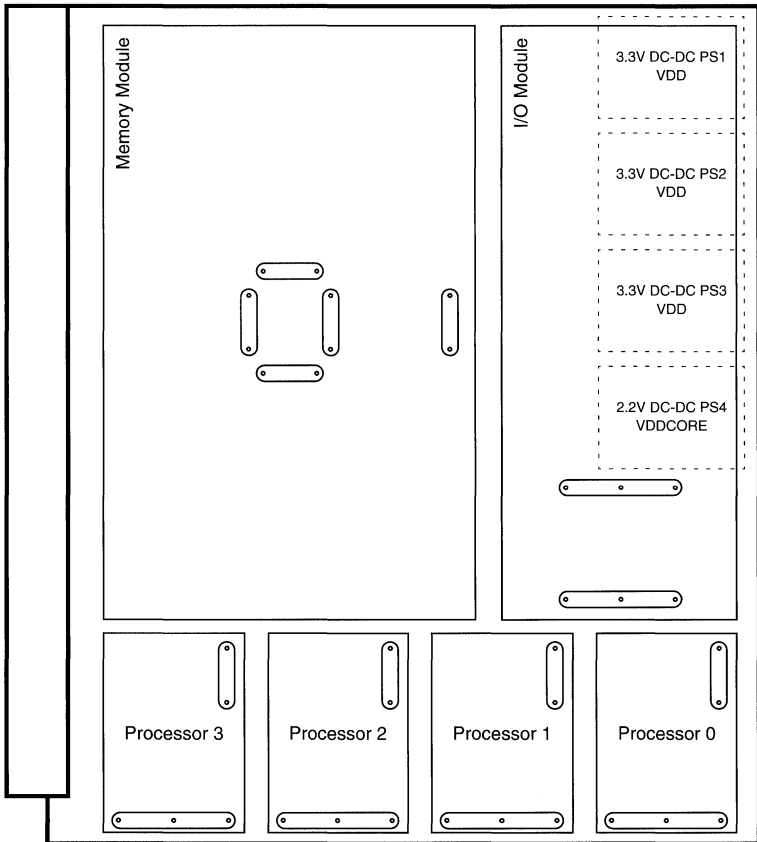
Made from 500-4903
Tested at 100MHz
Option 2761

501-5278

Made from 500-4347
Tested at 100MHz
No Option Number

501-5279

Made from 500-4786
Tested at 100MHz
No Option Number



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Do NOT remove the System Board if the Yellow LEDs are ON.
3. A minimum of one Processor Module per System Board is required.
4. Mixing module cache sizes on a single board is supported.
5. The smallest cache size is used if mixed size modules are installed.
6. Mixing module cache sizes within a system is supported.
7. Mixing module speeds within a system is supported.
8. Thermal calibration is required if a new System Board is added, or when a System Board is replaced or moved to a different slot.

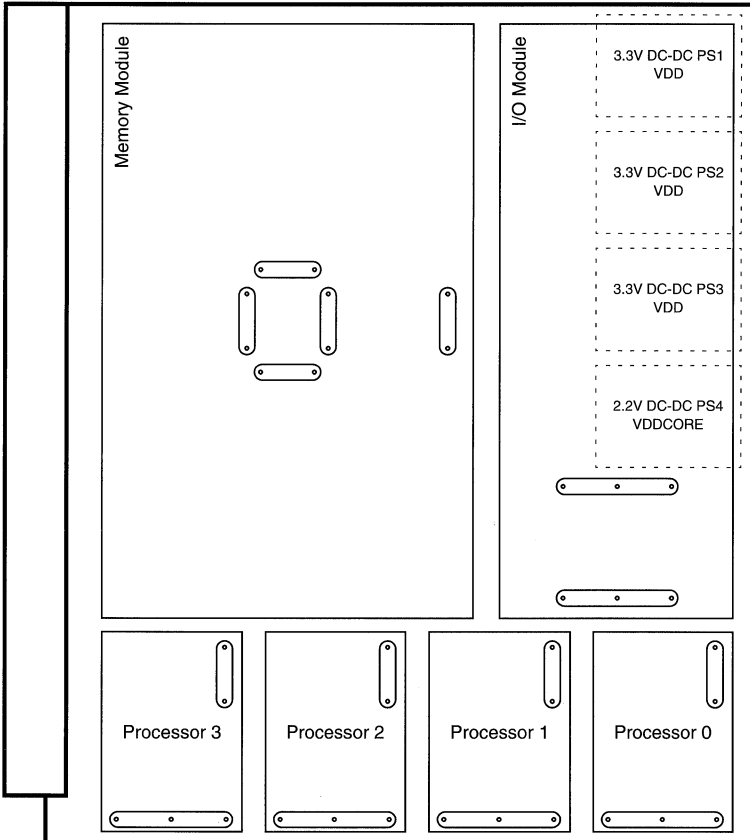
E10000 System Board

Option 2761

501-5693

FAB 270-5693

Tested at 100MHz



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Do NOT remove the System Board if the Yellow LEDs are ON.
3. A minimum of one Processor Module per System Board is required.
4. Mixing module cache sizes on a single board is supported.
5. The smallest cache size is used if mixed size modules are installed.
6. Mixing module cache sizes within a system is supported.
7. Mixing module speeds within a system is supported.
8. Thermal calibration is required if a new System Board is added, or when a System Board is replaced or moved to a different slot.
9. Patches 108536-01 and \geq 108930-02 (SSP 3.1.1), or \geq 108543-03 and 108677-01 (SSP 3.2), or 108885-01(SSP 3.3) are required. Refer to *Installation Instructions*, 806-5078.

E10000 System Board

501-4347

501-4786

501-4903

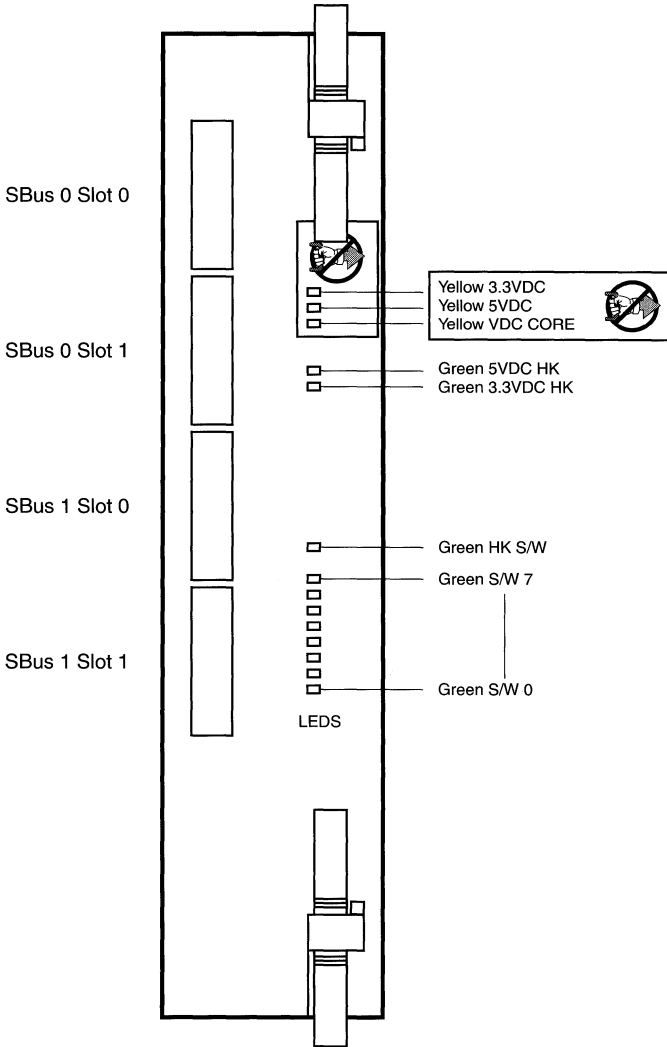
501-5240

501-5278

501-5279

501-5693

Backpanel and Connectors



References

1. Enterprise 10000 System Component Replacement Guide, 805-0311.
2. Enterprise 10000 System Service Manual, 805-2917.

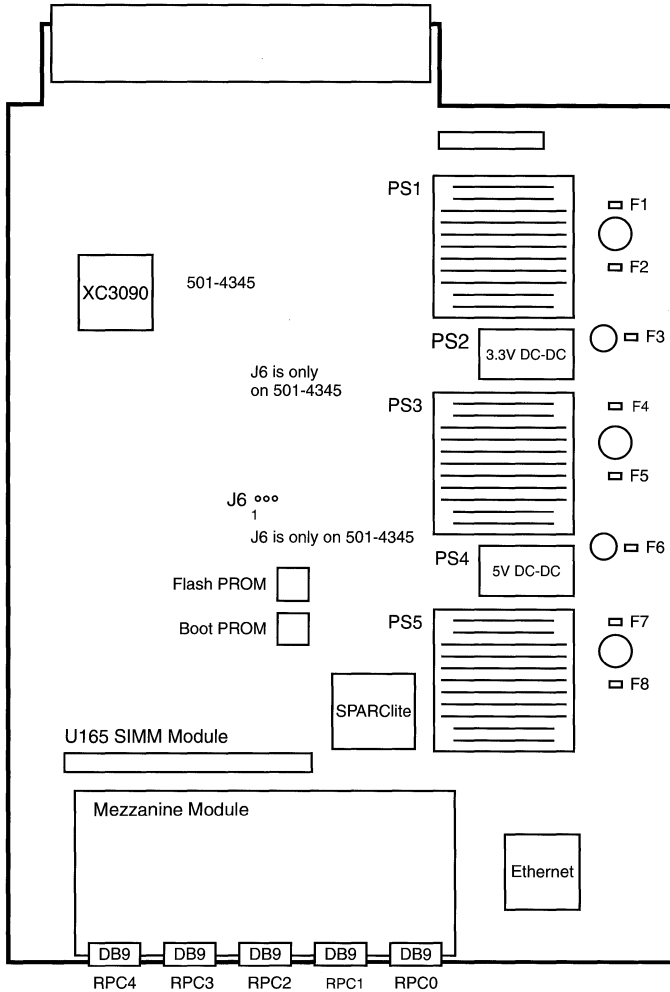
E10000 Control Board

Options 2720 2721 2722

501-4345
Option 2720
3:1 4:1 Clock+

501-4839
Option 2721
3:1 4:1 Clock+

501-5494
Option 2722
3:1 4:1 5:1 Clock+



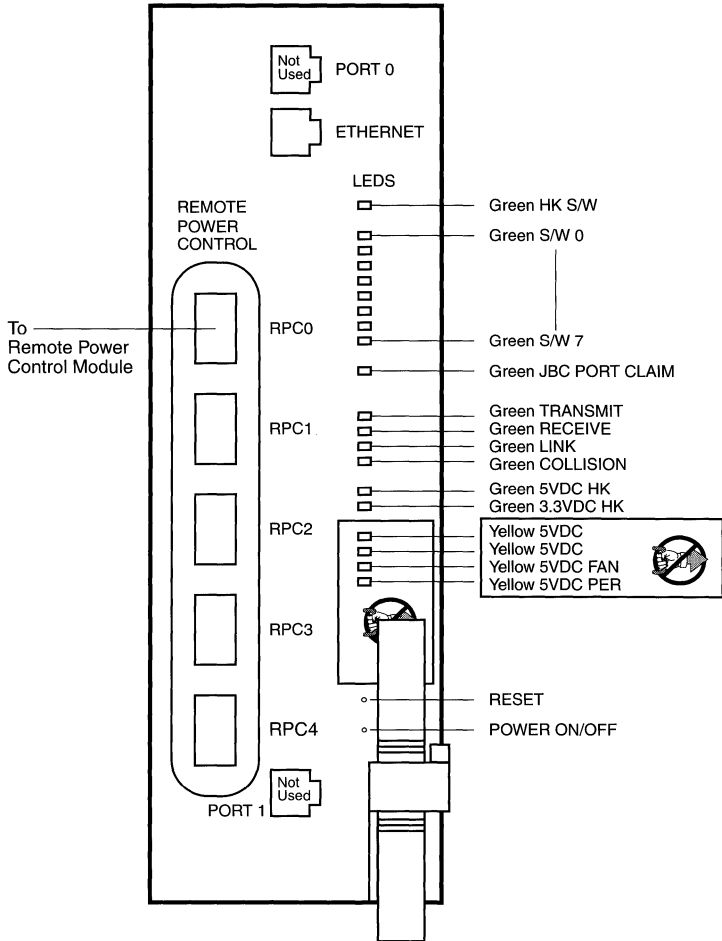
Notes

1. Do NOT install jumpers at location J6.
2. Do NOT remove the Control Board if the Yellow LEDs are ON.

References

1. *Enterprise 10000 System Component Replacement Guide*, 805-0311.
2. *Enterprise 10000 System Service Manual*, 805-2917.

E10000 Control Board
501-4345 501-4839 501-5494
Backpanel and Connectors



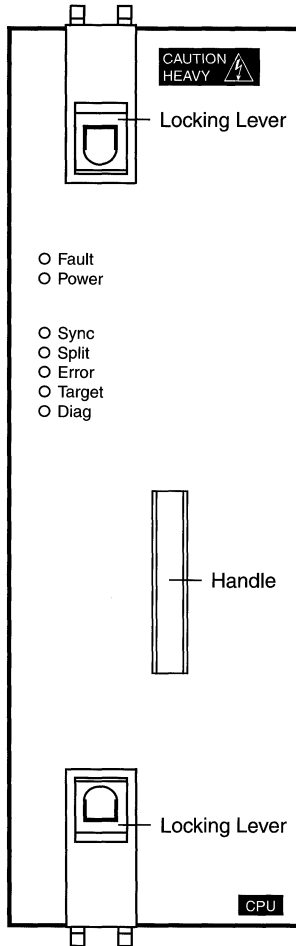
Netra ft 1800 CPUset

540-4007
 CPUSET-1P-256MB
 256MB Memory
 1 300MHz Module

540-4008
 CPUSET-2P-512MB
 512MB Memory
 2 300MHz Modules

540-4009
 CPUSET-4P-4GB
 4GB Memory
 4 300MHz Modules

540-4336
 CPUSET-1P-1GB
 1GB Memory
 1 300MHz Module



Notes

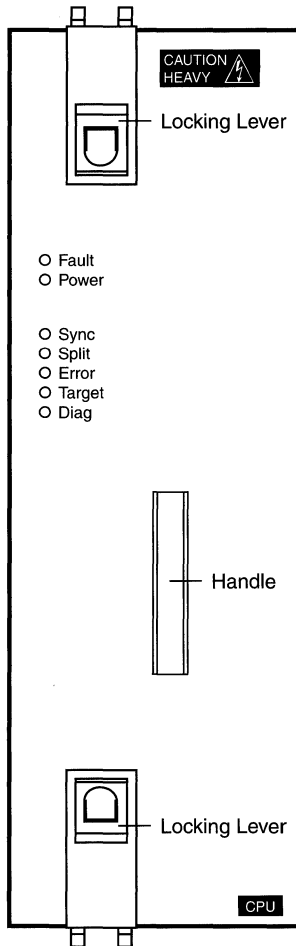
1. The minimum OS is Netra ft 1800 software based on 2.6 HW: 5/98.
2. Fault-tolerant mode requires two identical CPUsets.
3. Do NOT add or remove CPUset memory or processors.
4. CPUset System Boards 501-4684 and 501-5499 are not FRUs.

References

1. *Netra ft 1800 User's Guide*, 805-4529.
2. *Netra ft 1800 Installation Guide*, 805-4533.

Netra ft 1800 CPUset

540-4224
CPUSET-4P-4GB
4GB Memory
4 400MHz Modules
Option 6983



Notes

1. The minimum OS is Netra ft 1800 Update-01 based on Solaris 2.6.
2. Fault-tolerant mode requires two identical CPUsets.
3. Do NOT add or remove CPUset memory or processors.
4. CPUset System Board 501-5643 is not a FRU.

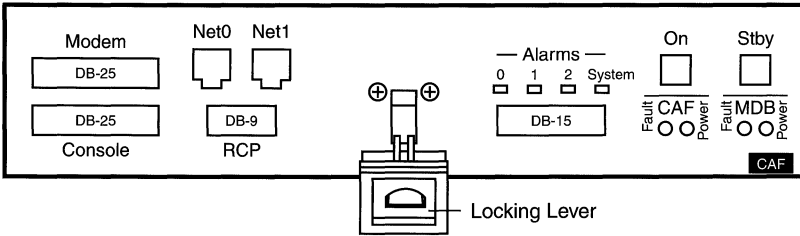
References

1. *Netra ft 1800 User's Guide*, 805-4529.
2. *Netra ft 1800 Installation Guide*, 805-4533.

Netra ft 1800 CAF Module

540-3926

Console, Alarms, and Fans



Notes

1. The minimum OS is Netra ft 1800 software based on 2.6 HW: 5/98.
2. Alarms 0, 1, and 2 are user-defined.

References

1. *Netra ft 1800 User's Guide*, 805-4529.
2. *Netra ft 1800 Installation Guide*, 805-4533.

CONFIGURATIONS

SUPERSPARC

SuperSPARC

| | |
|--|----|
| SPARC Processor Revision | 2 |
| SuperCache Revision | 7 |
| SM41 SuperSPARC Module with SuperCache | 8 |
| SM50 SuperSPARC Module | 11 |
| SM51 SuperSPARC Module with SuperCache | 13 |
| SM51-2 SuperSPARC Module with SuperCache | 21 |
| SM52X Dual SuperSPARC Module with SuperCache | 25 |
| SM61 SuperSPARC Module with SuperCache | 27 |
| SM61-2 SuperSPARC Module with SuperCache | 34 |
| SM71 SuperSPARC II Module with SuperCache | 36 |
| SM81 SuperSPARC II Module with SuperCache | 42 |
| SM81-2 SuperSPARC II Module with SuperCache | 45 |

SPARC Processor Revision

Several methods are available to determine the revision level of the SPARC Processor. Use the revision level to determine the operating system and patch requirements.

Open Boot PROM **module-info** Method

The **module-info** command displays the processor type and speed.

```
ok module-info (SuperSPARC)
CPU#0 : 40.3 Mhz SuperSPARC / SuperCache
CPU#1 : 40.3 Mhz SuperSPARC / SuperCache
CPU#0 : 50.0 Mhz SuperSPARC / SuperCache
```

```
ok module-info (microSPARC II)
CPU FMI,MB86904 Rev. 2.3 : 70.0 Mhz
CPU FMI,MB86904 Rev. 3.2 : 85.0 Mhz
```

Open Boot PROM **cpu-info** Method

The **cpu-info** command displays the processor and SBus speed of microSPARC II based system boards.

```
ok cpu-info
CPU FMI,MB86904 Rev. 3.2 : 70.0 Mhz
SBus (Divide by 3) : 23.3 Mhz
```

```
ok cpu-info
CPU FMI,MB86904 Rev. 3.2 : 85.0 Mhz
SBus (Divide by 4) : 21.2 Mhz
```

Open Boot PROM **.speed** Method

The **.speed** command displays the processor, UPA, and SBus speed of systems using OBP 3.x.

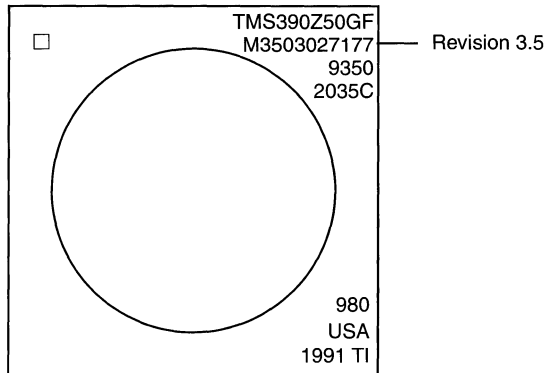
```
ok .speed
CPU Speed : 167.00 MHz
UPA Speed : 083.50 MHz
SBus Speed : 025.00 MHz
```

SPARC Processor Revision

Visual Inspection Method

Open the system or remove the system board to identify the SPARC module part number.

Four lines of alpha-numeric text are printed on the top corner of the SuperSPARC Processor. The first two numbers on the second line are the revision.

**Open Boot PROM .psr and .mcr Method**

Use the **.psr** and **.mcr** Open Boot PROM commands to display the contents of the %psr register and module control register.

```
ok cd /TI,TMS390Z55@f,f8ffffc
```

```
ok .psr
```

```
CWP:5 ET:1 PS:1 S:1 PIL:c EF:0 EC:0 ICC:nZvc VER:0 IMPL:0
```

```
ok .mcr
```

```
ME:1 NF:0 PSO:o DE:1 IE:1 SB:1 MB:1 PE:0 BM:0 SE:1 AC:0 TC:0 PF:0 VER:4 IMPL:0
```

Use the **switch-cpu** command to switch between modules.

```
ok 2 switch-cpu - switches to the second module
```

```
ok 0 switch-cpu - switches to the first module
```

SPARC Processor Revision

Open Boot PROM .psr and .mcr Method - continued

| SuperSPARC Revision | 2.x | 3.0 | 3.1 | 3.2 | 3.3 | 3.5 | 5.0 | 5.1 | 5.2 |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| .psr VER | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| .psr IMPL | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| .mcr VER | 0 | 1 | 1 | 1 | 1 | 4 | 3 | 3 | 3 |
| .mcr IMPL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| SuperSPARC II Revision | 1.x | 2.x |
|------------------------|-----|-----|
| .psr VER | 0 | 0 |
| .psr IMPL | 4 | 4 |
| .mcr VER | 8 | 9 |
| .mcr IMPL | 0 | 0 |

| microSPARC II Revision | 2.3 | 3.2 | 4.0.2 | 2.6 | 2.6.1 |
|------------------------|-----|-----|-------|-----|-------|
| | 2.5 | 3.3 | | | |
| .psr VER | 0 | 0 | 0 | 0 | 0 |
| .psr IMPL | 4 | 4 | 4 | 4 | 4 |
| .mcr VER | 4 | 4 | 4 | 4 | 4 |
| .mcr IMPL | 0 | 0 | 0 | 0 | 0 |

The microSPARC II uses the upper 8-bits of the Virtual Address Mask Register to identify the version number. The upper 4-bits identify the major rev and the lower 4-bits identify the minor rev.

adb -k /dev/ksyms /dev/mem

swift_version/X

swift_version:

swift_version: 23 (indicates microSPARC II version 2.3)

\$q

/usr/sbin/prtconf -vp

Node 0xffd43184

mask_rev: 00000032 (indicates microSPARC II version 3.2)

The microSPARC II version 2.6 used the same Mask ID as version 2.5. The Mask ID was changed in microSPARC II version 2.6.1.

SPARC Processor Revision

Open Boot PROM .attributes Method

Use the **.attributes** Open Boot PROM command to display the version and implementation.

```
ok cd /TI,TMS390Z50@f,f8ffffc
ok .attributes
implementation      00000000
version             00000004
name                TI,TMS390Z50
```

| SuperSPARC Revision | 2.x | 3.0 | 3.1 | 3.2 | 3.3 | 3.5 | 5.0 | 5.1 | 5.2 |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| version | 0 | 1 | 1 | 1 | 1 | 4 | 3 | 3 | 3 |
| implementation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Solaris 1.1.x devinfo -vp or Solaris 2.x prtconf -vp Method

On Sun4m-based systems, use the **devinfo -vp** or **prtconf -vp** command to display the implementation and version. Search for the node name TI,TMS390Z50 (SuperSPARC) or TI,TMS390Z55 (SuperSPARC with SuperCache).

```
# devinfo -vp
Node 0xffd66150
implementation:  00000000
version:        00000004
name:          'TI,TMS390Z50'
```

| SuperSPARC Revision | 2.x | 3.0 | 3.1 | 3.2 | 3.3 | 3.5 | 5.0 | 5.1 | 5.2 |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| version | 0 | 1 | 1 | 1 | 1 | 4 | 3 | 3 | 3 |
| implementation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Solaris 2.x prtdiag

The **prtdiag** command displays system configuration and diagnostic information including the location, cache size, and speed of processors installed.

```
/usr/kvm/prtdiag -v (Solaris ≤2.4)
```

```
/usr/platform/sun4d/sbin/prtdiag -v (Solaris 2.5 )
```

SPARC Processor Revision

SuperSPARC Processor Revisions 3.0, 3.1, 3.2, and 3.3 require the following operating system patches.

Solaris 1.1 Sun-4m Kernel Patch \geq 100726-12

Solaris 1.1 SuperSPARC Processor Patch \geq 101408-01

Solaris 1.1.1 Sun-4m Kernel Patch \geq 101508-01

Solaris 1.1.1 SuperSPARC Processor Patch \geq 101509-01

Solaris 2.3 Kernel Patch \geq 101318-12

Solaris 2.3 SuperSPARC Processor Patch \geq 101406-01

The Solaris 2.3 Supplement for SPARCsystem 10 Model 514, SPARCsystem 600MP Model 514, and SX Graphics Systems, 704-4195-10, contains Patches 101318-12 and 101406-01.

SuperSPARC Processor revisions 3.5 and 5.x do not require the SuperSPARC Processor Patch.

SPARC Processor Revision 3.5 is not compatible with Solaris 1.1.1 Version A (SunOS 4.1.3_U1 Version A).

SPARC Processor revisions lower than 3.5 should not be used in the SS10SX or SS20 due to design changes that affect system cooling and MSBI reliability.

SPARC Processor Revision 5.x is compatible with Solaris 1.1, Solaris 1.1.1 Version A, Solaris 1.1.1 Version B, and Solaris 2.x.

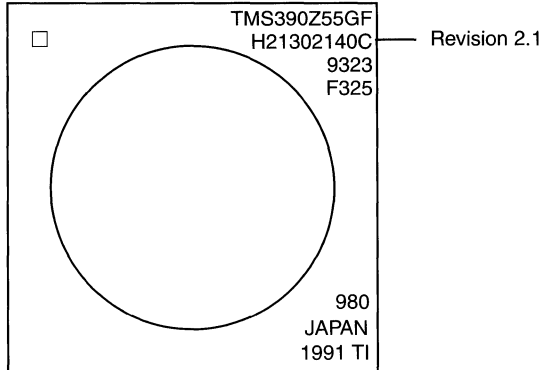
The SuperSPARC Processor Patch is automatically enabled on Sun-4d systems if modules that require the patch are installed.

The SuperSPARC Processor Patch is automatically enabled under Solaris 1.1.2 and Solaris 2.4 if modules that require the patch are installed.

The SuperSPARC Processor Patch is automatically enabled under Solaris 2.3 with Kernel Patch \geq 101318-57 if modules that require the patch are installed.

SuperCache Revision

Four lines of alpha-numeric text are printed on the top corner of the SuperCache Controller. The first two numbers on the second line are the revision.



SuperSPARC Modules with SuperCache revision 3.x are not compatible with SuperSPARC Modules with SuperCache revision 2.x when used in the same SPARCserver 600MP system.

SuperCache revision 3.x does not meet the SS600MP hold time requirements on the MBus and could cause module to module communication problems if used in combination with SuperCache revision 2.x modules. Module pairs using all SuperCache revision 2.x or all SuperCache revision 3.x will function reliably.

The SuperCache used on 85MHz modules introduced the multiple commands mode. Enabling the multiple commands mode permits the SuperCache to parallelize processor-to-memory transactions.

Solaris 2.4 Patch 101945-35 enables multiple commands mode. Multiple commands mode is enabled by default in Solaris 2.5.

Multiple commands mode can be disabled by adding **set use_multiple_cmds=0** to /etc/system.

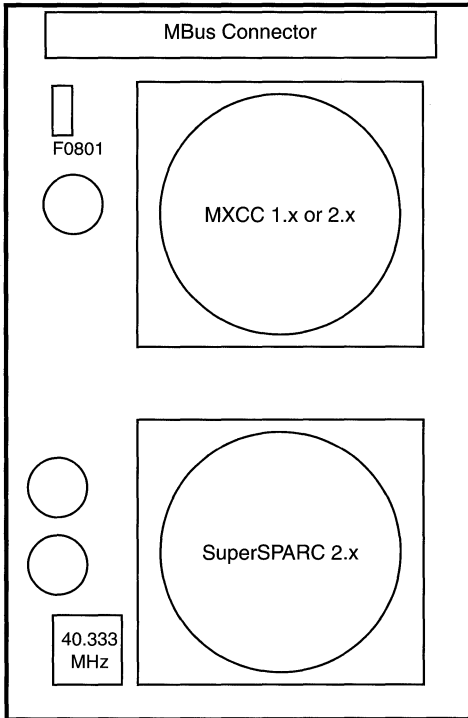
SM41 SuperSPARC Module

SS10 SS630 SS670 SS690 SS1000 SC2000

Option 1161

501-2270

40MHz



Power: 4.28 Amps @ +5Vdc
21.40 Watts

Notes

1. The minimum operating system is Solaris 1.1 (SunOS 4.1.3).
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. Set the SS10 clock speed to 80MHz.
5. The 501-2270-04 is supported in the SS1000 and SC2000.
6. This module is not compatible with 50MHz Sun-4d Control Boards.
7. Surface mounted Fuse F0801 is not field replaceable.

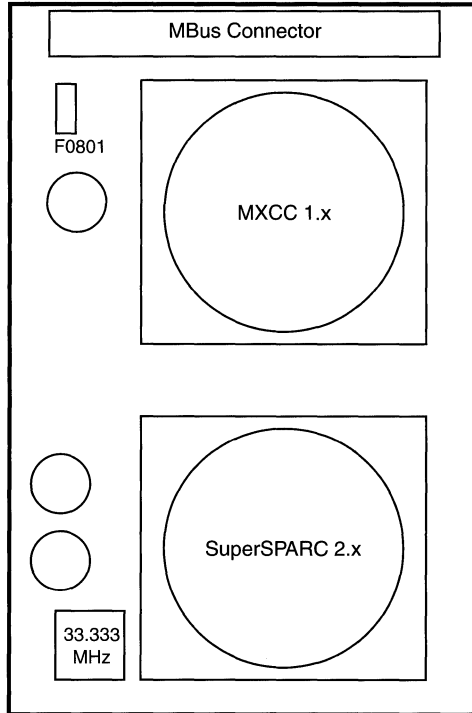
Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

SM41 SuperSPARC Module

SC2000

501-2318

33MHz

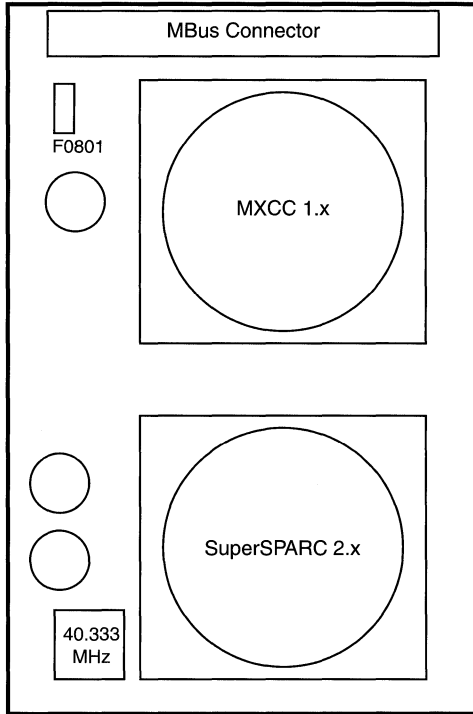


Notes

1. This module was used on early production SC2000 systems only.
2. The 66MHz Control Board 501-1671-04 is required.
3. This SM41 module is not compatible with SC2000 Control Board 501-1671-05, 501-2335, 501-2406, 501-2666, or 501-2674.
4. Mixing different module types is not supported.
5. Surface mounted Fuse F0801 is not field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

SM41 SuperSPARC Module
 SS10 SS630 SS670 SS690 SC2000
 Option 1164
 501-2359
 40MHz



Power: 4.28 Amps @ +5Vdc
 21.40 Watts

Notes

1. The minimum operating system is Solaris 1.1 (SunOS 4.1.3).
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. Set the SS10 clock speed to 80MHz.
5. This module is not compatible with the 50MHz SC2000 Control Board.
6. Surface mounted Fuse F0801 is not field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

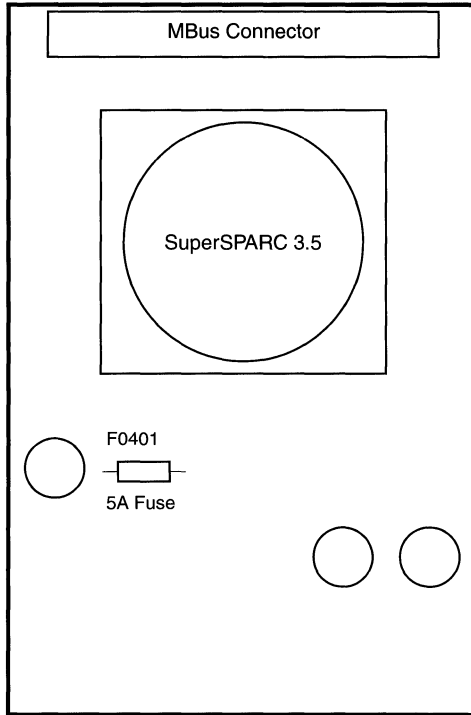
SM50 SuperSPARC Module

SS20

Option 1170

501-2528

50MHz



Notes

1. Solaris 1.1.1 Version A is not supported.
2. If two modules are installed, the minimum OS is Solaris 2.2.
3. Mixing different module types is not supported.
4. The 5A Fuse at F0401 is not field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

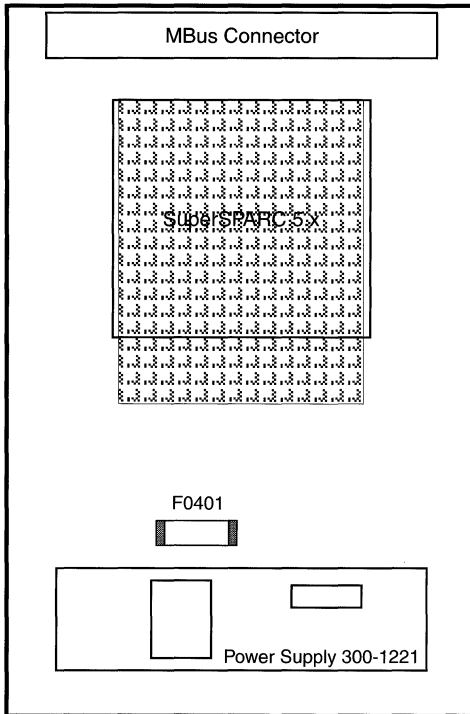
SM50 SuperSPARC Module

SS20

Option 1170

501-2708

50MHz

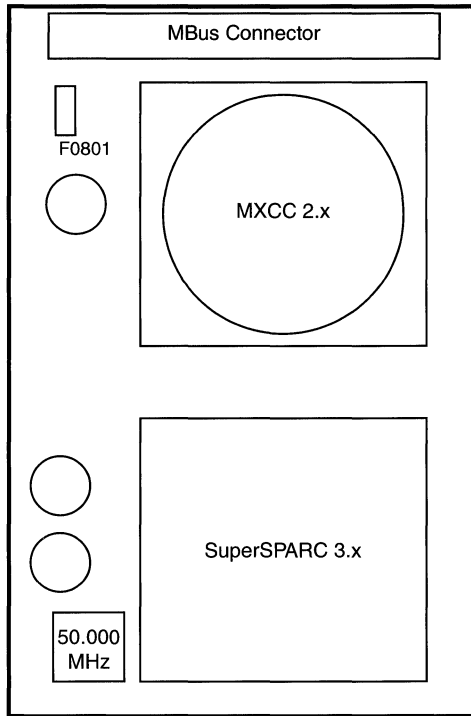


Notes

1. The minimum operating system is Solaris 1.1 (SunOS 4.1.3).
2. If two modules are installed, the minimum OS is Solaris 2.2.
3. Mixing different module types is not supported.
4. The 22W DC-DC Power Supply is not field replaceable.
5. The 8A Fuse 150-2246-01 at F0401 is field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

SM51 SuperSPARC Module
 SS10 SS630 SS670 SS690 SS1000
 Option 1166
 501-2360
 50MHz



Notes

1. The minimum operating system is Solaris 1.1 (SunOS 4.1.3).
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. Set the SS10 clock speed to 80MHz.
5. The maximum MBus and XDBus speed of the MXCC is 40MHz.
6. This module is not compatible with the 50MHz SS1000 Control Board.
7. The SS600MP requires Boot PROM 2.10.
8. The SS1000 requires Boot PROM 2.11.
9. Surface mounted Fuse F0801 is not field replaceable.

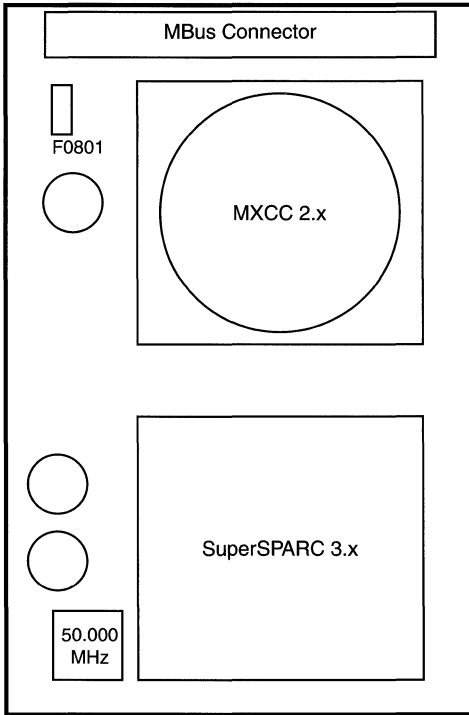
Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

SM51 SuperSPARC Module

SS10 SS630 SS670 SS690 SS1000

501-2387

50MHz



Notes

1. The minimum operating system is Solaris 1.1 (SunOS 4.1.3).
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. The 501-2387-01 is for Sun internal use only.
5. The 501-2387-01 is tested for operation at room temperature only.
6. Set the SS10 clock speed to 80MHz.
7. The maximum MBus and XDBus speed of the MXCC is 40MHz.
8. This module is not compatible with the 50MHz SS1000 Control Board.
9. The SS600MP requires Boot PROM 2.10.
10. The SS1000 requires Boot PROM 2.11.
11. Surface mounted Fuse F0801 is not field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

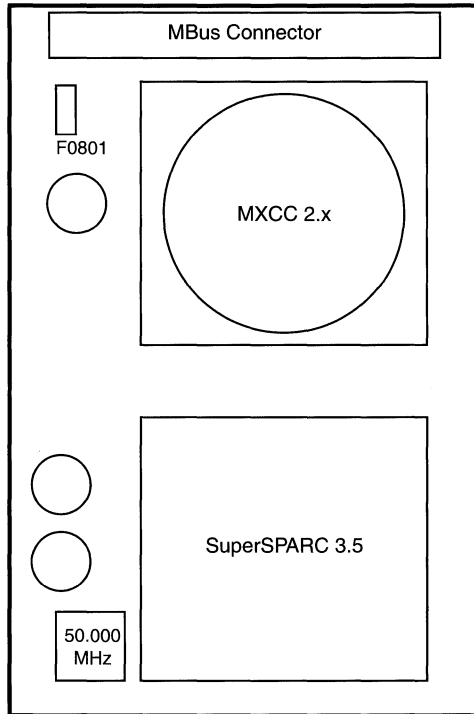
SM51 SuperSPARC Module

SS10 SS10SX SS20 SS630 SS670 SS690

Option 1163

501-2607

50MHz



Notes

1. Solaris 1.1.1 Version A is not supported.
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. Set the SS10 clock speed to 80MHz.
5. The maximum MBus speed of the MXCC is 40MHz.
6. The SS600MP requires Boot PROM 2.10.
7. Surface mounted Fuse F0801 is not field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

SM51 SuperSPARC Module

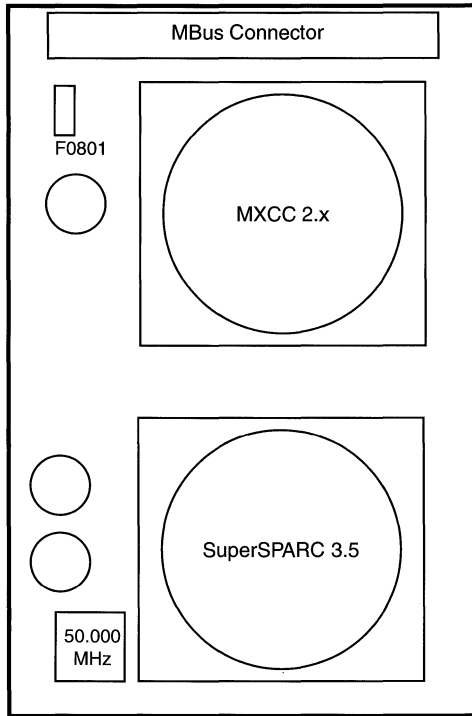
SS10 SS10SX

SS630 SS670 SS690 SS1000

Option 1166

501-2562-01

50MHz



Notes

1. Solaris 1.1.1 Version A is not supported.
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. Set the SS10 clock speed to 80MHz.
5. The maximum MBus and XDBus speed of the MXCC is 40MHz.
6. This module is not compatible with the 50MHz SS1000 Control Board.
7. The SS600MP requires Boot PROM 2.10.
8. The SS1000 requires Boot PROM 2.11.
9. Do NOT use the 501-2562-01 in the SS20.
10. Surface mounted Fuse F0801 is not field replaceable

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

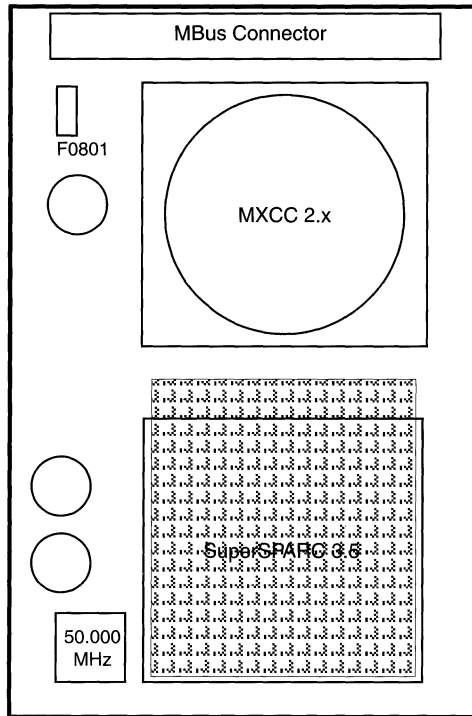
SM51 SuperSPARC Module

SS10 SS10SX SS20 SS630 SS670 SS690 SS1000

Options 1166 1169 1173

501-2562-02

50MHz



Notes

1. Solaris 1.1.1 Version A is not supported.
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. Set the SS10 clock speed to 80MHz.
5. The maximum MBus and XDBus speed of the MXCC is 40MHz.
6. This module is not compatible with the 50MHz SS1000 Control Board.
7. The SS600MP requires Boot PROM 2.10.
8. The SS1000 requires Boot PROM 2.11.
9. Do NOT use the 501-2562-01 in the SS20.
10. Surface mounted Fuse F0801 is not field replaceable.

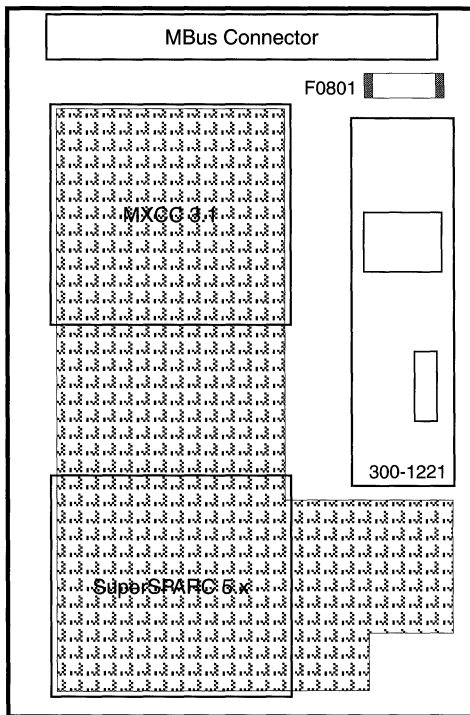
Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

SM51 SuperSPARC Module

SS10 SS10SX SS20 SS1000

501-2617

50MHz



Notes

1. The minimum operating system is Solaris 1.1 (SunOS 4.1.3).
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. The maximum Mbus and XDBus speed of the MXCC is 40MHz.
5. This module is not compatible with the 50MHz SS1000 Control Board.
6. The 501-2617 is not supported in the SPARCserver 600MP.
7. The SS1000 requires OBP 2.18 to support MXCC 3.x.
8. The 22W DC-DC Power Supply is not field replaceable.
9. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

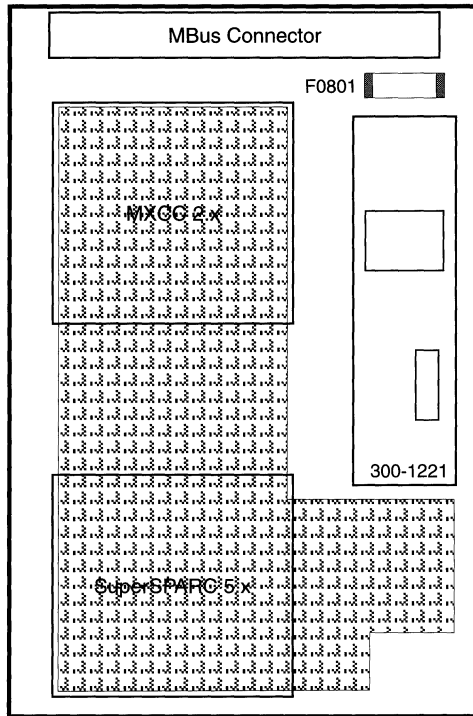
SM51 SuperSPARC Module

SS10 SS10SX SS20 SS630 SS670 SS690 SS1000

Options 1169 1173

501-2707

50MHz



Notes

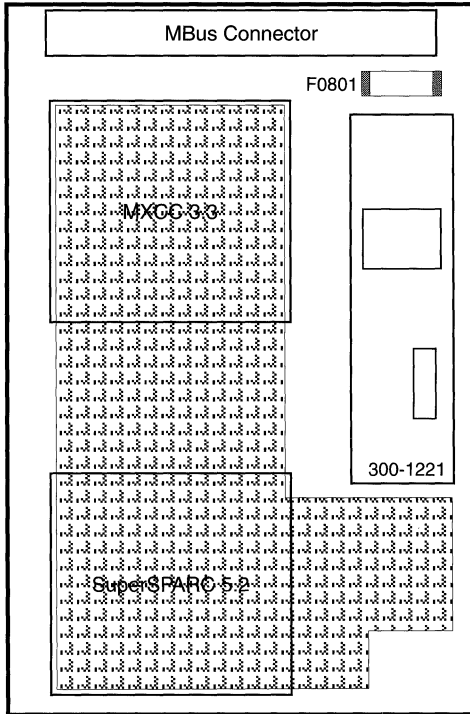
1. The minimum operating system is Solaris 1.1 (SunOS 4.1.3).
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. The maximum MBus and XDBus speed of the MXCC is 40MHz.
5. This module is not compatible with the 50MHz SS1000 Control Board.
6. The 22W DC-DC Power Supply is not field replaceable.
7. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

SM51 SuperSPARC Module

SS10 SS10SX SS20 SS1000

501-2754
50MHz



Notes

1. The minimum operating system is Solaris 1.1 (SunOS 4.1.3).
2. If two modules are installed, the minimum OS is Solaris 2.1.
3. Mixing different module types is not supported.
4. The maximum MBus and XDBus speed of the MXCC is 40MHz.
5. This module is not compatible with the 50MHz SS1000 Control Board.
6. The SS1000 requires OBP 2.18 to support MXCC 3.x.
7. The 22W DC-DC Power Supply is not field replaceable.
8. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

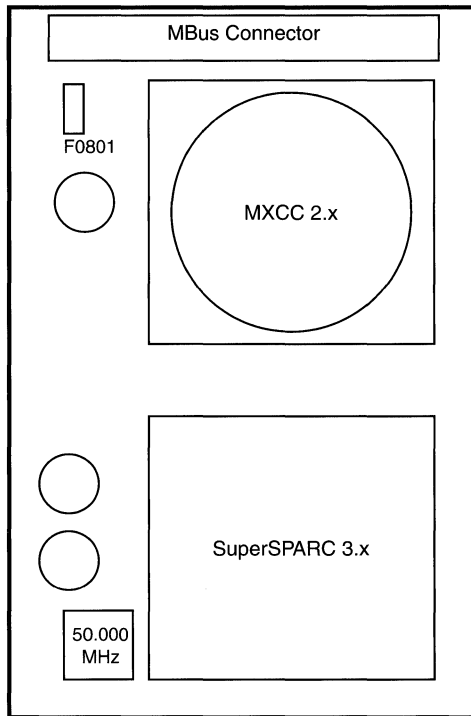
SM51-2 SuperSPARC Module

SC2000

Option 1165

501-2353

50MHz



Notes

1. The minimum operating system is Solaris 2.2 (SunOS 5.2).
2. The SC2000 requires Boot PROM 2.11.
3. Mixing different module types is not supported.
4. The maximum XDBus speed of the MXCC is 40MHz.
5. This module is not compatible with the 50MHz SC2000 Control Board.
6. System Board 501-1866-xx can only access 1MB of cache.
7. Surface mounted Fuse F0801 is not field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

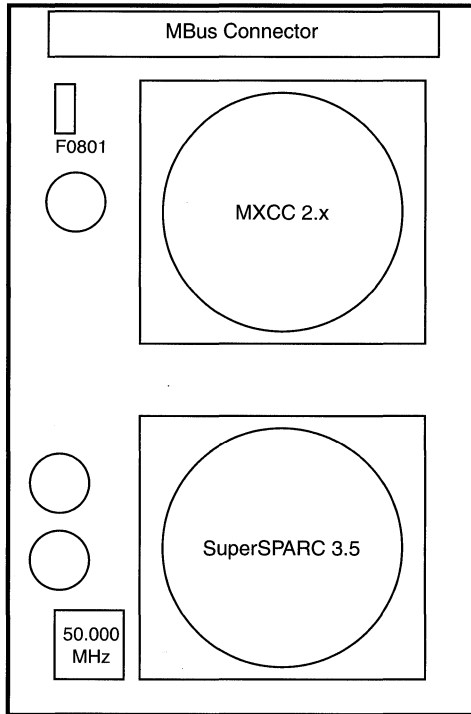
SM51-2 SuperSPARC Module

SC2000

Option 1165

501-2601

50MHz

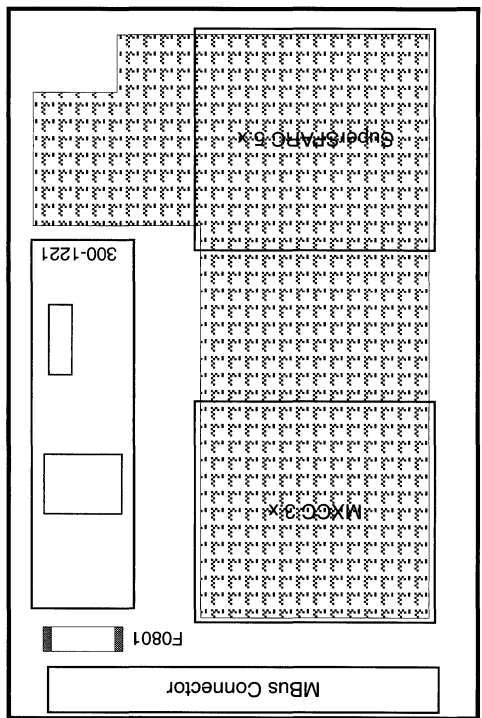


Notes

1. The minimum operating system is Solaris 2.2 (SunOS 5.2).
2. The SC2000 requires Boot PROM 2.11.
3. Mixing different module types is not supported.
4. The maximum XDBus speed of the MXCC is 40MHz.
5. This module is not compatible with the 50MHz SC2000 Control Board.
6. System Board 501-1866-xx can only access 1MB of cache.
7. Surface mounted Fuse F0801 is not field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

SM51-2 SuperSPARC Module SC2000 Option 1165 501-2618 50MHz



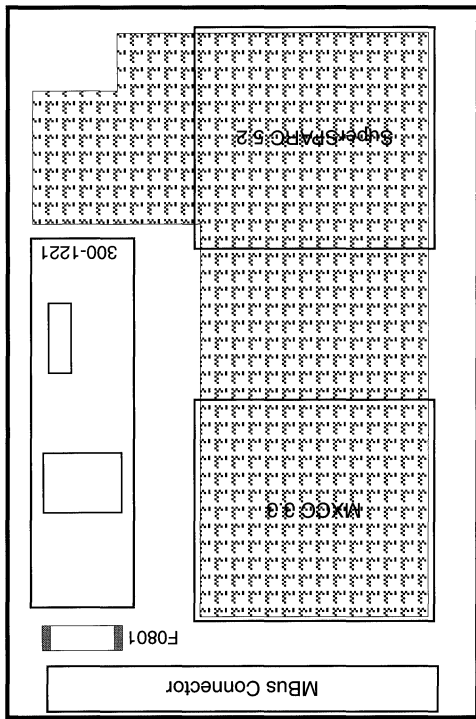
Notes

1. The minimum operating system is Solaris 2.2 (SunOS 5.2).
2. The SC2000 requires Boot PROM 2.18.
3. Mixing different module types is not supported.
4. The maximum XDBus speed of the MXCC is 40MHz.
5. This module is not compatible with the 50MHz SC2000 Control Board.
6. System Board 501-1866-xx can only access 1MB of cache.
7. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

Reference: SuperSPARC Module Installation Guide, 801-2035-12.

SM51-2 SuperSPARC Module

SC2000
501-2755
50MHz

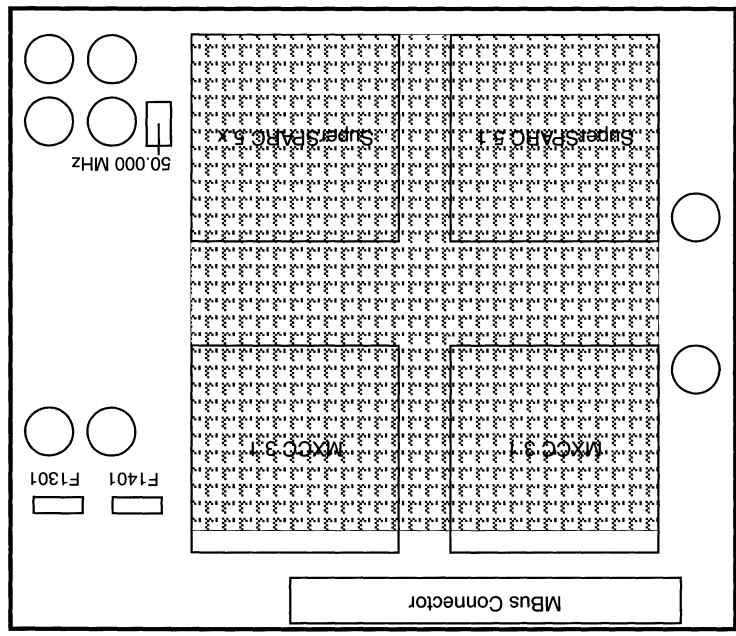


Notes

1. The minimum operating system is Solaris 2.2 (SunOS 5.2).
2. The SC2000 requires Boot PROM 2.18.
3. Mixing different module types is not supported.
4. The maximum XDBus speed of the MXCC is 40MHz.
5. This module is not compatible with the 50MHz SC2000 Control Board.
6. System Board 501-1866-xx can only access 1MB of cache.
7. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

Reference: *SuperSPARC Module Installation Guide*, 801-2035-12.

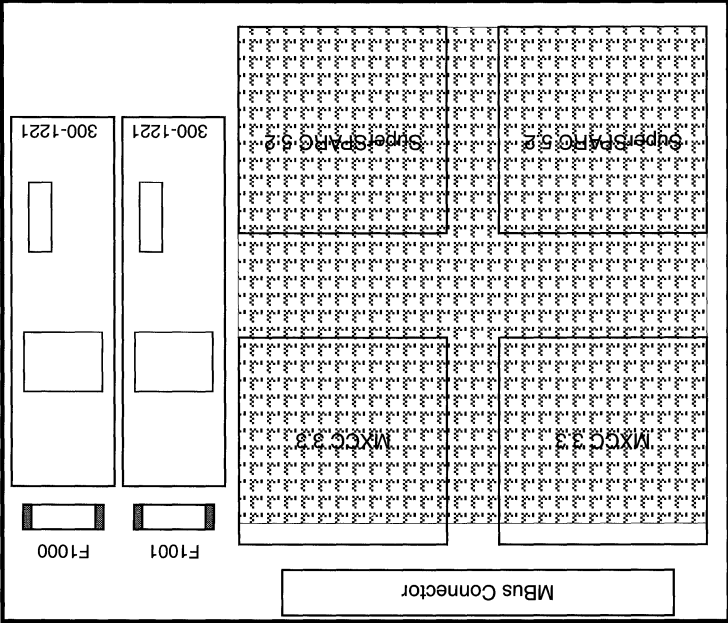
SM52X SuperSPARC Module
 SS10 SS10SX SS20
 501-2780
 50MHz



- Notes
1. The minimum operating system is Solaris 2.3 (SunOS 5.3).
 2. The SM52 covers SBus Slots 0 and 1.
 3. Mixing different module types is not supported.
 4. The 8A Fuse 150-2246-01 is field replaceable.

Reference: SuperSPARC Module Installation Guide, 801-2035-12.

SM52X SuperSPARC Module
 SS10 SS10SX SS20
 501-2756
 50MHz



Notes

1. The minimum operating system is Solaris 2.3 (SunOS 5.3).
2. The SM52 covers SBus Slots 0 and 1.
3. Mixing different module types is not supported.
4. The 8A Fuse 150-2246-01 is field replaceable.

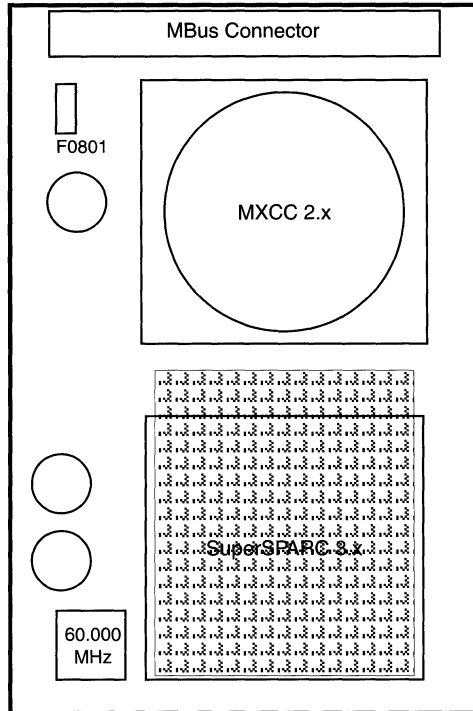
Reference: SuperSPARC Module Installation Guide, 801-2035-12.

SM61 SuperSPARC Module

SS20

501-2571

60MHz



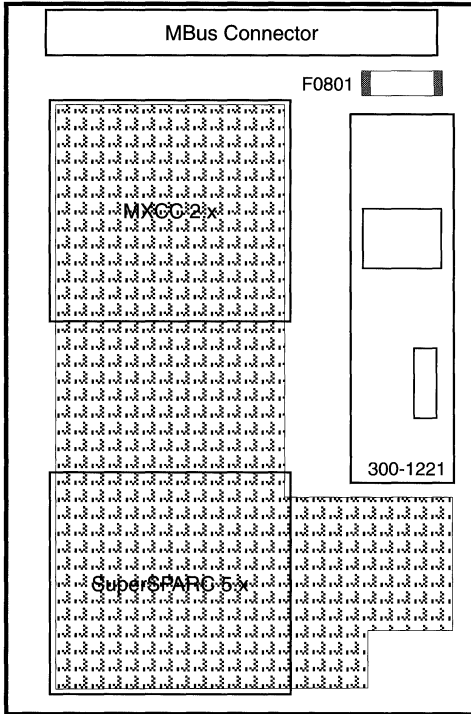
Notes

1. The minimum operating system is Solaris 1.1.1 Version B.
2. If two modules are installed, the minimum OS is Solaris 2.3.
3. Mixing different module types is not supported.
4. This unreleased module was shipped by the Advanced Products Group.
5. The maximum MBus speed of the MXCC is 40MHz.
6. The 5A Fuse at F0801 is not field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 801-2035-12.
2. *SuperSPARC Module Installation Guide*, 802-1372-11.

SM61 SuperSPARC Module
 SS10 SS10SX SS20 SS600MP
 Options 1168 1174
 501-2613
 60MHz



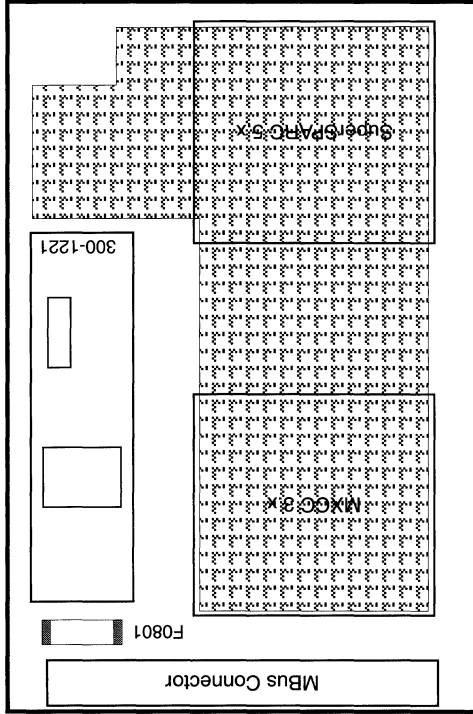
Notes

1. The minimum operating system is Solaris 1.1.1 Version B.
2. If two modules are installed, the minimum OS is Solaris 2.3.
3. Mixing different module types is not supported.
4. The maximum Mbus speed of the MXCC is 50MHz.
5. The 501-2613 is not tested or approved for use in the SS1000.
6. The 22W DC-DC Power Supply is not field replaceable.
7. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 801-2035-12.
2. *SuperSPARC Module Installation Guide*, 802-1372-11.

SM61 SuperSPARC Module
 SS10 SS10SX SS20 SS1000
 Options 1168 1171
 501-2519
 60MHz



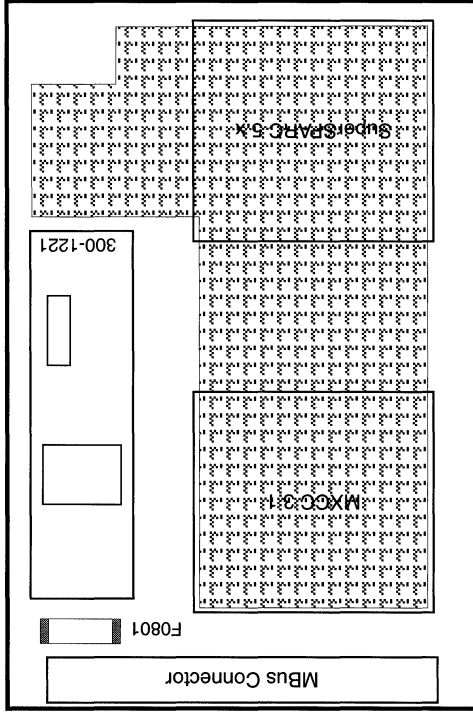
Notes

1. The minimum operating system is Solaris 1.1.1 Version B.
2. If two modules are installed, the minimum OS is Solaris 2.3.
3. The SS1000 requires OBP 2.18 to support MXCC 3.x.
4. Mixing different module types is not supported.
5. The maximum MBus speed of the MXCC is 50MHz.
6. The maximum XDBus speed of the MXCC is 50MHz.
7. The 22W DC-DC Power Supply is not field replaceable.
8. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

References

1. SuperSPARC Module Installation Guide, 801-2035-12.
2. SuperSPARC Module Installation Guide, 802-1372-11.

SM61 SuperSPARC Module
 SS10 SS10SX SS20
 501-2769
 60MHZ



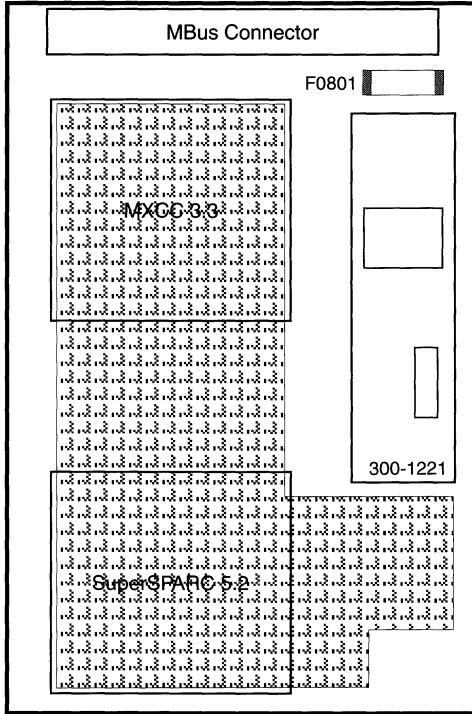
Notes

1. The minimum operating system is Solaris 1.1.1 Version B.
2. If two modules are installed, the minimum OS is Solaris 2.3.
3. Mixing different module types is not supported.
4. The maximum MBus speed of the MXCC is 50MHZ.
5. The 501-2769 is not tested or approved for use in the SS1000.
6. The 501-2769 is not compatible with the SS1000E Control Board.
7. The 22W DC-DC Power Supply is not field replaceable.
8. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

References

1. SuperSPARC Module Installation Guide, 801-2035-12.
2. SuperSPARC Module Installation Guide, 802-1372-11.

SM61 SuperSPARC Module
 SS10 SS10SX SS20 SS600MP
 501-2752
 60MHz



Notes

1. The minimum operating system is Solaris 1.1.1 Version B.
2. If two modules are installed, the minimum OS is Solaris 2.3.
3. Mixing different module types is not supported.
4. The maximum MBus speed of the MXCC is 50MHz.
5. The 501-2752 is not compatible with the Sun4d XDBus.
6. OBP 2.14v3 was used to test the 501-2752 in the SS600MP.
7. The 22W DC-DC Power Supply is not field replaceable.
8. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

References

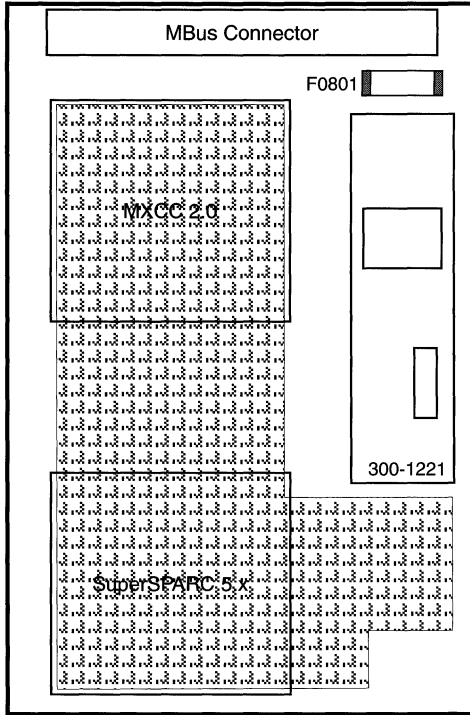
1. *SuperSPARC Module Installation Guide*, 801-2035-12.
2. *SuperSPARC Module Installation Guide*, 802-1372-11.

SM61 SuperSPARC Module

SS10 SS10SX SS20

501-2782

60MHz



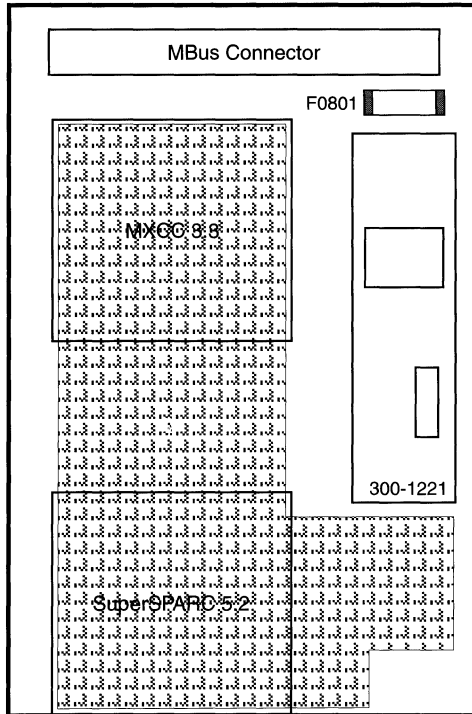
Notes

1. The minimum operating system is Solaris 1.1.1 Version B.
2. If two modules are installed, the minimum OS is Solaris 2.3.
3. Mixing different module types is not supported.
4. The maximum MBus speed of the MXCC is 50MHz.
5. The 501-2782 is not tested or approved for use in the SS1000.
6. The 22W DC-DC Power Supply is not field replaceable.
7. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 801-2035-12.
2. *SuperSPARC Module Installation Guide*, 802-1372-11.

SM61 SuperSPARC Module
 SS10 SS10SX SS20 SS600MP SS1000
 Options 1168 1171
 501-2825
 60MHz



Notes

1. The minimum operating system is Solaris 1.1.1 Version B.
2. If two modules are installed, the minimum OS is Solaris 2.3.
3. Mixing different module types is not supported.
4. The SS1000 requires OBP 2.18 to support MXCC 3.x.
5. The maximum MBus speed of the MXCC is 50MHz.
6. The maximum XDBus speed of the MXCC is 50MHz.
7. OBP 2.14v3 was used to test the 501-2825 in the SS600MP.
8. The 22W DC-DC Power Supply is not field replaceable.
9. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 801-2035-12.
2. *SuperSPARC Module Installation Guide*, 802-1372-11.

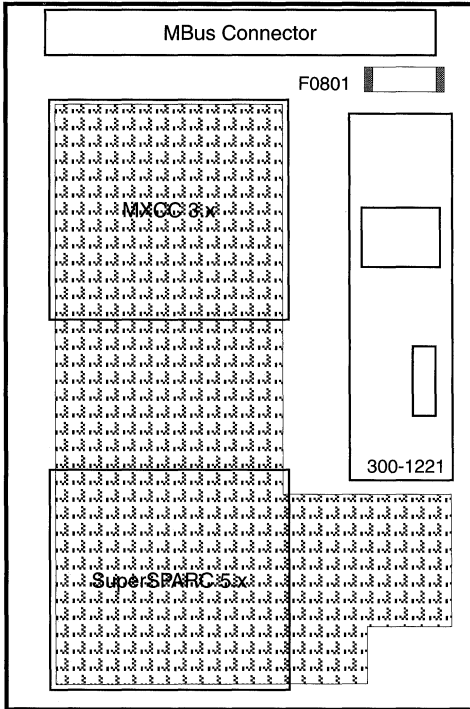
SM61-2 SuperSPARC Module

SC2000

Option 1167

501-2543

60MHz



Notes

1. The minimum operating system is Solaris 2.3.
2. The SC2000 requires OBP 2.18 to support MXCC 3.x.
3. Mixing different module types is not supported.
4. The maximum XDBus speed of the MXCC is 50MHz.
5. System Board 501-1866-xx can only access 1MB of cache.
6. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 801-2035-12.
2. *SuperSPARC Module Installation Guide*, 802-1372-11.

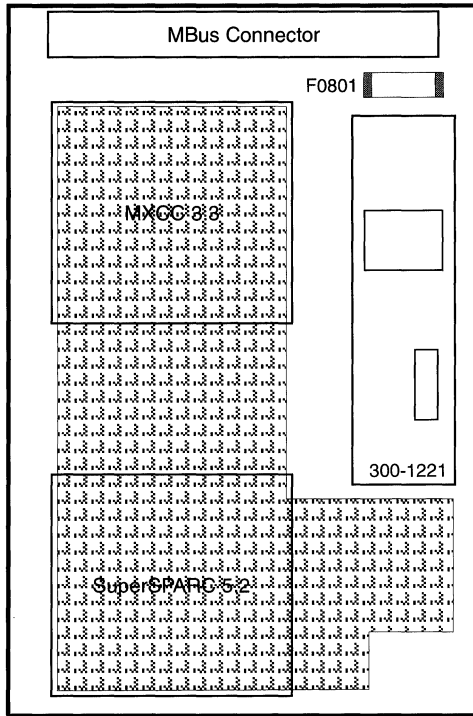
SM61-2 SuperSPARC Module

SC2000

Option 1167

501-2757

60MHz



Notes

1. The minimum operating system is Solaris 2.3.
2. The SC2000 requires OBP 2.18 to support MXCC 3.x.
3. Mixing different module types is not supported.
4. The maximum XDBus speed of the MXCC is 50MHz.
5. System Board 501-1866-xx can only access 1MB of cache.
6. The 8A Fuse 150-2246-01 at F0801 is field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 801-2035-12.
2. *SuperSPARC Module Installation Guide*, 802-1372-11.

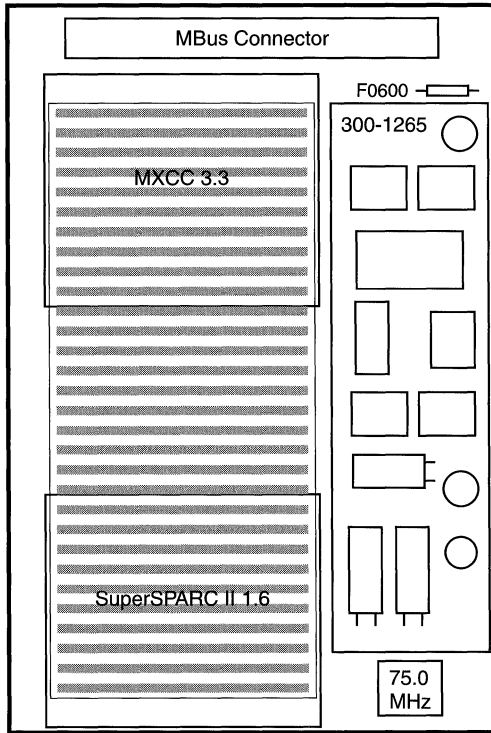
SM71 SuperSPARC II Module

SS10 SS20

Option 1175

501-2520

75MHz



Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 HW: 8/94.
2. The SS10 and SS20 require Boot PROM 2.22.
3. Mixing different module types is not supported.
4. The maximum MBus speed of the MXCC is 50MHz.
5. The 501-2520 is not compatible with the Sun4d XDBus.
6. The 15A Fuse at F0600 is not field replaceable.

References

1. *SPARCstation 20 SuperSPARC II Module Upgrade*, 802-2566-10.
2. *SPARCstation 10 SuperSPARC II Module Upgrade*, 802-2567-10.
3. *SPARCstation 20 SuperSPARC II Module X-Option*, 802-2568-10.
4. *SPARCstation 10 SuperSPARC II Module X-Option*, 802-2569-10.
5. *Product Note: SPARCstation 20 Software*, 802-2942-10.

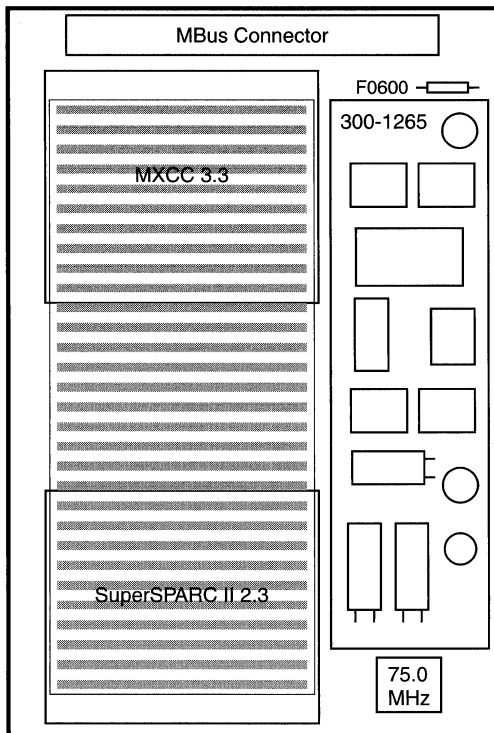
SM71 SuperSPARC II Module

SS10 SS20

Option 1175

501-2904

75MHz



Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 HW: 8/94.
2. The SS10 and SS20 require Boot PROM 2.22.
3. Mixing different module types is not supported.
4. The maximum MBus speed of the MXCC is 50MHz.
5. The 501-2904 is not compatible with the XDBus.
6. The 15A Fuse at F0600 is not field replaceable.

References

1. *SPARCstation 20 SuperSPARC II Module Upgrade*, 802-2566-10.
2. *SPARCstation 10 SuperSPARC II Module Upgrade*, 802-2567-10.
3. *SPARCstation 20 SuperSPARC II Module X-Option*, 802-2568-10.
4. *SPARCstation 10 SuperSPARC II Module X-Option*, 802-2569-10.
5. *Product Note: SPARCstation 20 Software*, 802-2942-10.

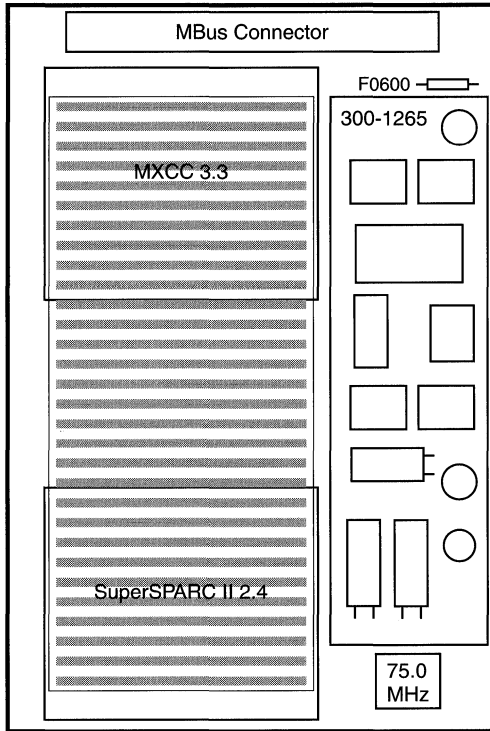
SM71 SuperSPARC II Module

SS10 SS20

Option 1175

501-2940

75MHz



Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 HW: 8/94.
2. The SS10 and SS20 require Boot PROM 2.22.
3. Mixing different module types is not supported.
4. The maximum Mbus speed of the MXCC is 50MHz.
5. The 501-2940 is not compatible with the XDBus.
6. The 15A Fuse at F0600 is not field replaceable.

References

1. *SPARCstation 20 SuperSPARC II Module Upgrade*, 802-2566-10.
2. *SPARCstation 10 SuperSPARC II Module Upgrade*, 802-2567-10.
3. *SPARCstation 20 SuperSPARC II Module X-Option*, 802-2568-10.
4. *SPARCstation 10 SuperSPARC II Module X-Option*, 802-2569-10.
5. *Product Note: SPARCstation 20 Software*, 802-2942-10.

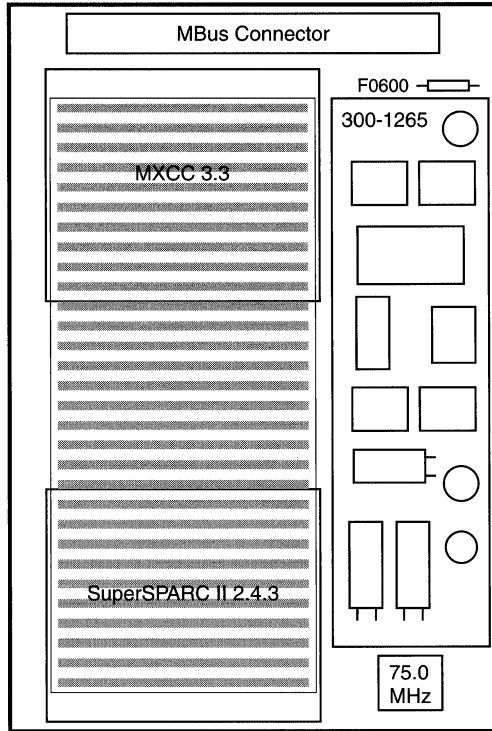
SM71 SuperSPARC II Module

SS10 SS20

Option 1175

501-3001

75MHz



Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 HW: 8/94.
2. The SS10 and SS20 require Boot PROM 2.22.
3. Mixing different module types is not supported.
4. The maximum Mbus speed of the MXCC is 50MHz.
5. The 501-3001 is not compatible with the XDBus.
6. The 15A Fuse at F0600 is not field replaceable.

References

1. *SPARCstation 20 SuperSPARC II Module Upgrade*, 802-2566-10.
2. *SPARCstation 10 SuperSPARC II Module Upgrade*, 802-2567-10.
3. *SPARCstation 20 SuperSPARC II Module X-Option*, 802-2568-10.
4. *SPARCstation 10 SuperSPARC II Module X-Option*, 802-2569-10.
5. *Product Note: SPARCstation 20 Software*, 802-2942-10.

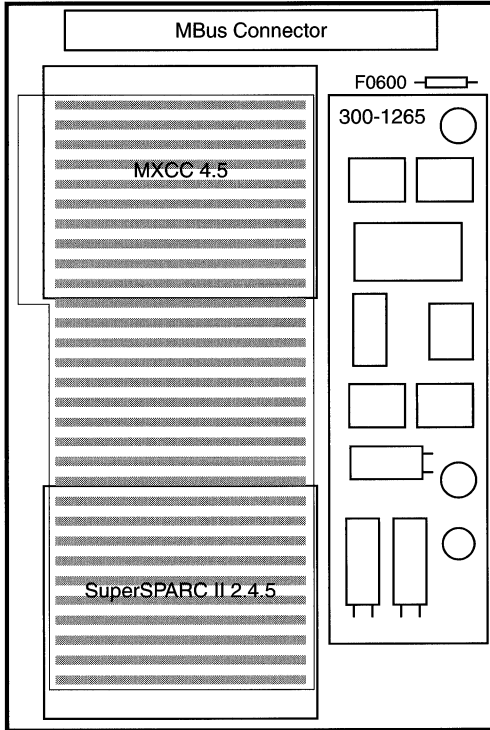
SM71 SuperSPARC II Module

SS10 SS20

Option 1175

501-2925

75MHz



Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 HW: 8/94.
2. The SS10 and SS20 require Boot PROM 2.22.
3. Mixing different module types is not supported.
4. The maximum Mbus speed of the MXCC is 50MHz.
5. The 501-2925 is not tested or approved for use in the SS1000.
6. The 15A Fuse at F0600 is not field replaceable.

References

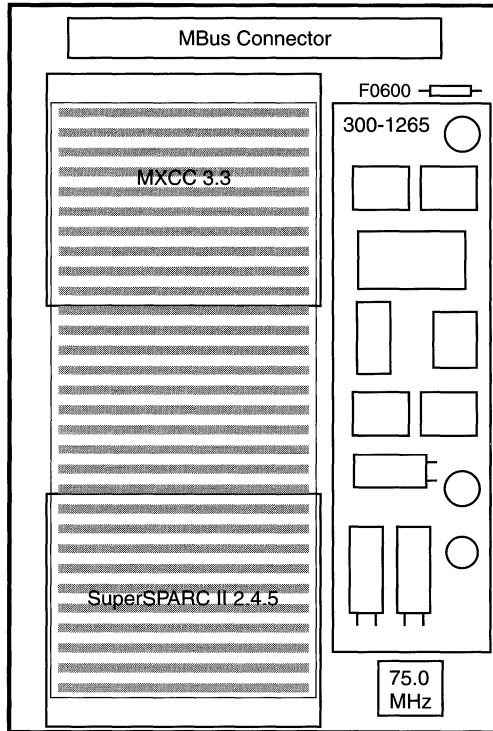
1. *SPARCstation 20 SuperSPARC II Module Upgrade*, 802-2566-10.
2. *SPARCstation 10 SuperSPARC II Module Upgrade*, 802-2567-10.
3. *SPARCstation 20 SuperSPARC II Module X-Option*, 802-2568-10.
4. *SPARCstation 10 SuperSPARC II Module X-Option*, 802-2569-10.
5. *Product Note: SPARCstation 20 Software*, 802-2942-10.

SM71 SuperSPARC II Module

SS10 SS20

501-4130

75MHz



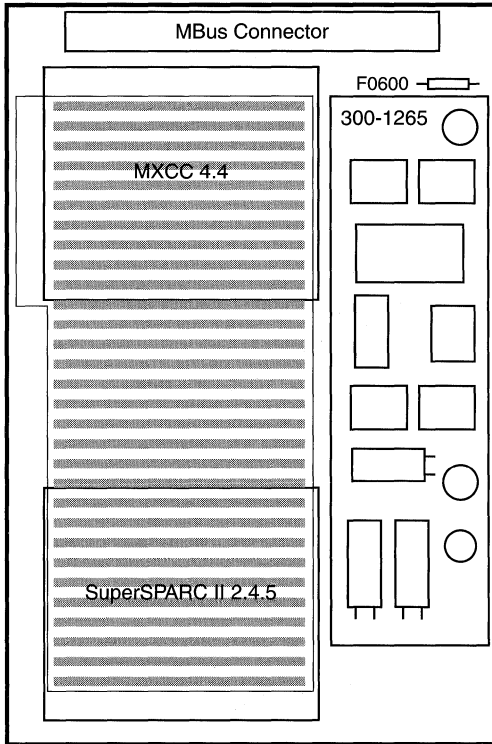
Notes

1. The minimum OS is Solaris 1.1.1 Version B or Solaris 2.3 HW: 8/94.
2. The SS10 and SS20 require Boot PROM 2.22.
3. Mixing different module types is not supported.
4. The maximum MBus speed of the MXCC is 50MHz.
5. The 501-4130 is not compatible with the XDBus.
6. The 15A Fuse at F0600 is not field replaceable.

References

1. *SPARCstation 20 SuperSPARC II Module Upgrade*, 802-2566-10.
2. *SPARCstation 10 SuperSPARC II Module Upgrade*, 802-2567-10.
3. *SPARCstation 20 SuperSPARC II Module X-Option*, 802-2568-10.
4. *SPARCstation 10 SuperSPARC II Module X-Option*, 802-2569-10.
5. *Product Note: SPARCstation 20 Software*, 802-2942-10.

SM81 SuperSPARC II Module
 SS1000
 Option 1177
 501-3033
 85MHz



Notes

1. The minimum operating system is Solaris 2.4 and Patch \geq 101945-35.
2. Patch 101945-35 enables the Multiple Command Mode.
3. Solaris 2.4 requires Patch \geq 102001-08 if SunFastEthernet is installed.
4. SS1000 Boot PROM 2.23 is required on all system boards.
5. Mixing different module types is not supported.
6. The SS1000 requires Left/Right Side Panel 330-1869.
7. Side Panel 330-1869 is used on systems produced after July 1995.
8. The maximum XDBus speed of the MXCC is 50MHz.
9. The 15A Fuse at F0600 is not field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 802-1372-11.
2. *SS1000 and SS1000E Side Vent Product Note*, 802-2896-10.
3. *SuperSPARC Module Product Note*, 801-5015-10.

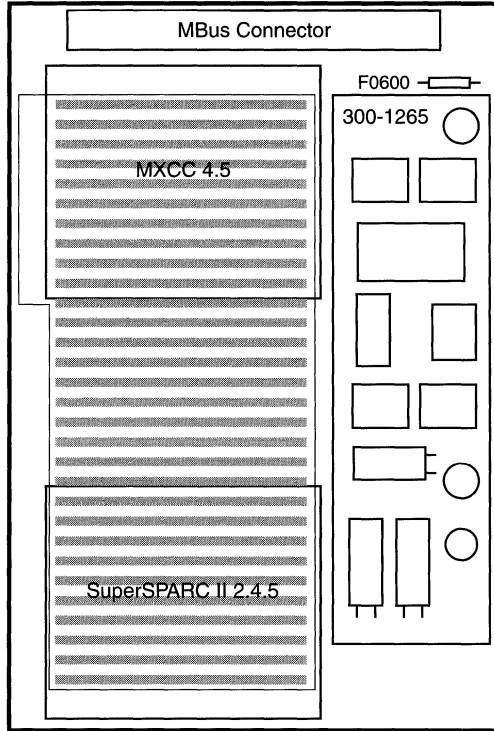
SM81 SuperSPARC II Module

SS1000

Option 1177

501-2953

85MHz



Notes

1. The minimum operating system is Solaris 2.4 and Patch \geq 101945-35.
2. Patch 101945-35 enables the Multiple Command Mode.
3. Solaris 2.4 requires Patch \geq 102001-08 if SunFastEthernet is installed.
4. SS1000 Boot PROM 2.23 is required on all system boards.
5. Mixing different module types is not supported.
6. The SS1000 requires Left/Right Side Panel 330-1869.
7. Side Panel 330-1869 is used on systems produced after July 1995.
8. The maximum XDBus speed of the MXCC is 50MHz.
9. The 15A Fuse at F0600 is not field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 802-1372-11.
2. *SS1000 and SS1000E Side Vent Product Note*, 802-2896-10.
3. *SuperSPARC Module Product Note*, 801-5015-10.

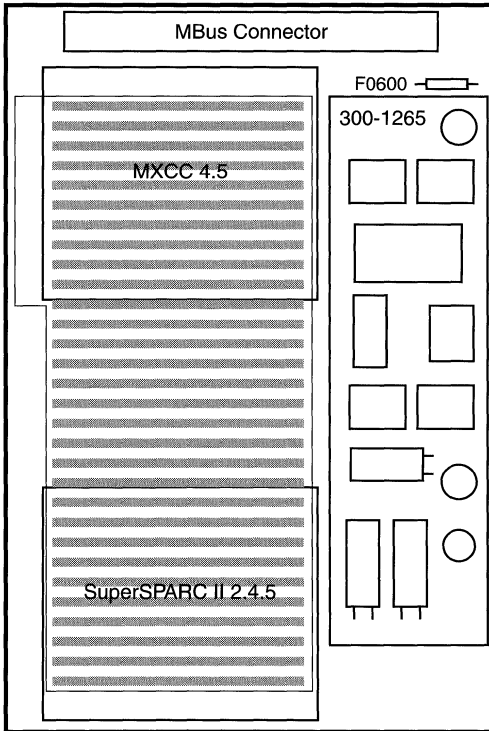
SM81 SuperSPARC II Module

SS1000

Option 1177

501-4810

85MHz



Notes

1. The minimum operating system is Solaris 2.4 and Patch $\geq 101945-35$.
2. Patch 101945-35 enables the Multiple Command Mode.
3. Solaris 2.4 requires Patch $\geq 102001-08$ if SunFastEthernet is installed.
4. SS1000 Boot PROM 2.23 is required on all system boards.
5. Mixing different module types is not supported.
6. The SS1000 requires Left/Right Side Panel 330-1869.
7. Side Panel 330-1869 is used on systems produced after July 1995.
8. The maximum XDBus speed of the MXCC is 50MHz.
9. The 15A Fuse at F0600 is not field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 802-1372-11.
2. *SS1000 and SS1000E Side Vent Product Note*, 802-2896-10.
3. *SuperSPARC Module Product Note*, 801-5015-10.

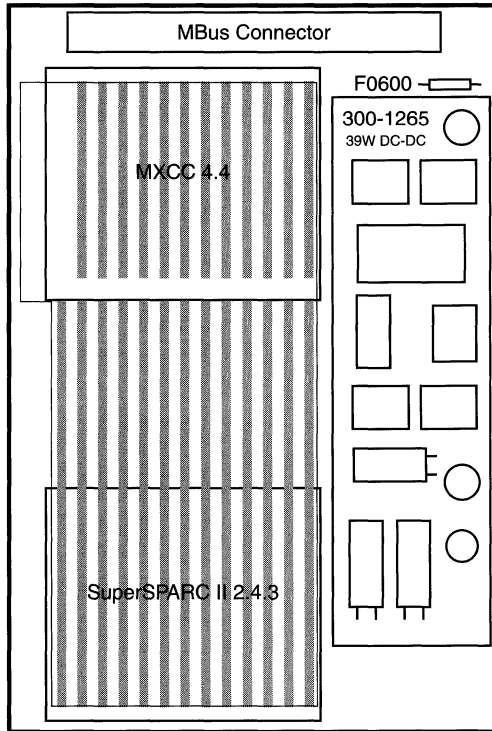
SM81-2 SuperSPARC II Module

SC2000

Option 1178

501-3022

85MHz



Notes

1. The minimum operating system is Solaris 2.4 and patch $\geq 101945-35$.
2. Patch 101945-35 enables the Multiple Command Mode.
3. Patch 101945-35 fixes a watchdog reset problem that may occur when more than 12 modules are installed.
4. Solaris 2.4 requires Patch $\geq 102001-08$ if SunFastEthernet is installed.
5. SC2000 Boot PROM 2.23 is required on all system boards.
6. Mixing different module types is not supported.
7. The maximum XDBus speed of the MXCC is 50MHz.
8. The 15A Fuse at F0600 is not field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 802-1372-11.
2. *SuperSPARC Module Product Note*, 801-5015-10.

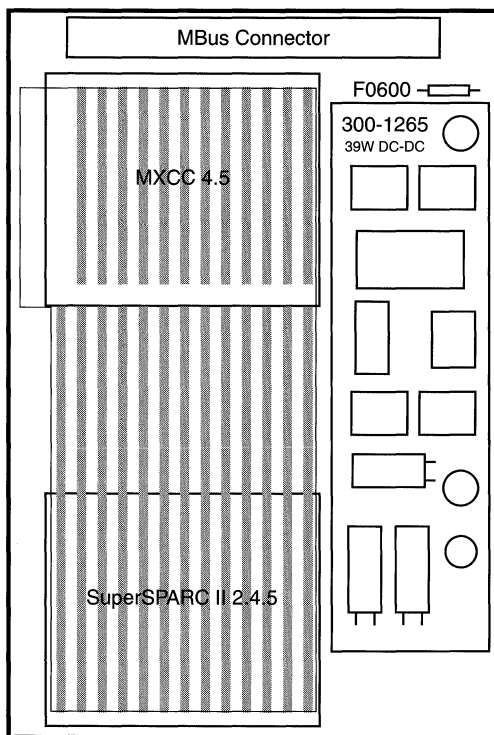
SM81-2 SuperSPARC II Module

SC2000

Option 1178

501-3098

85MHz



Notes

1. The minimum operating system is Solaris 2.4 and Patch $\geq 101945-35$.
2. Patch 101945-35 enables the Multiple Command Mode.
3. Patch 101945-35 fixes a watchdog reset problem that may occur when more than 12 modules are installed.
4. Solaris 2.4 requires Patch $\geq 102001-08$ if SunFastEthernet is installed.
5. SC2000 Boot PROM 2.23 is required on all system boards.
6. Mixing different module types is not supported.
7. The maximum XDBus speed of the MXCC is 50MHz.
8. The 15A Fuse at F0600 is not field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 802-1372-11.
2. *SuperSPARC Module Product Note*, 801-5015-10.

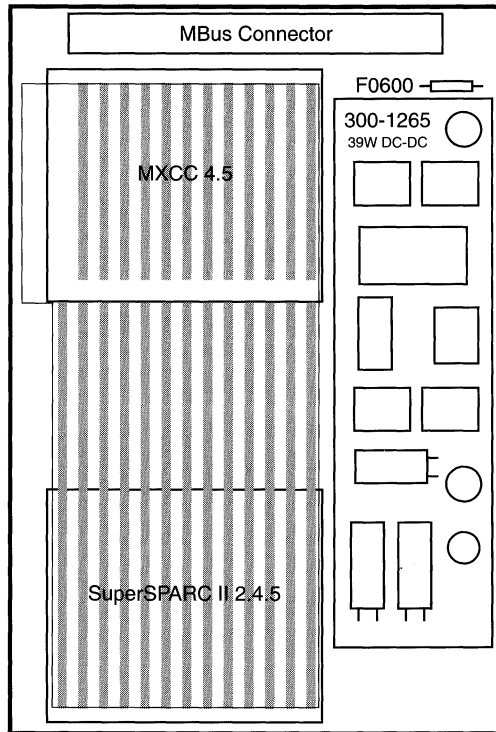
SM81-2 SuperSPARC II Module

SC2000

Option 1178

501-4780

85MHz



Notes

1. The minimum operating system is Solaris 2.4 and Patch \geq 101945-35.
2. Patch 101945-35 enables the Multiple Command Mode.
3. Patch 101945-35 fixes a watchdog reset problem that may occur when more than 12 modules are installed.
4. Solaris 2.4 requires Patch \geq 102001-08 if SunFastEthernet is installed.
5. SC2000 Boot PROM 2.23 is required on all system boards.
6. Mixing different module types is not supported.
7. The maximum XDBus speed of the MXCC is 50MHz.
8. The 15A Fuse at F0600 is not field replaceable.

References

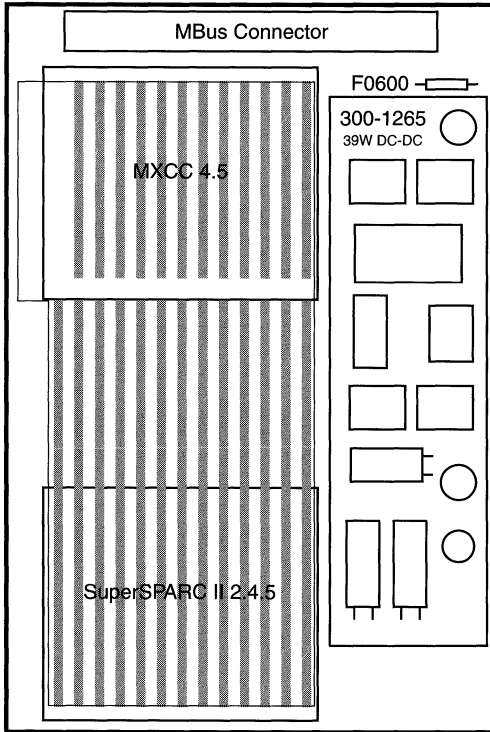
1. *SuperSPARC Module Installation Guide*, 802-1372-11.
2. *SuperSPARC Module Product Note*, 801-5015-10.

SM81-2 SuperSPARC II Module

SC2000

501-5056

85MHz



Notes

1. The minimum operating system is Solaris 2.4 and Patch \geq 101945-35.
2. Patch 101945-35 enables the Multiple Command Mode.
3. Patch 101945-35 fixes a watchdog reset problem that may occur when more than 12 modules are installed.
4. Solaris 2.4 requires Patch \geq 102001-08 if SunFastEthernet is installed.
5. SC2000 Boot PROM 2.23 is required on all system boards.
6. Mixing different module types is not supported.
7. The maximum XDBus speed of the MXCC is 50MHz.
8. The 15A Fuse at F0600 is not field replaceable.

References

1. *SuperSPARC Module Installation Guide*, 802-1372-11.
2. *SuperSPARC Module Product Note*, 801-5015-10.

CONFIGURATIONS

HYPERSPARC

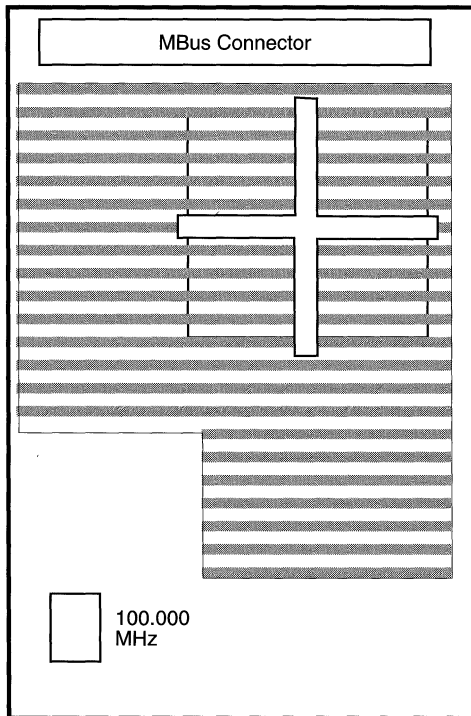
hyperSPARC

| | |
|-------------------------------|---|
| HS11 hyperSPARC Module | 2 |
| HS14 hyperSPARC Module | 4 |
| HS21 hyperSPARC Module | 5 |
| SM151 hyperSPARC Module | 6 |

HS11 hyperSPARC Module

SS10 SS10SX SS20

370-1864
100MHz



Notes

1. The minimum OS is Solaris 1.1.2 or Solaris 2.4 Hardware: 11/94.
2. Only one 370-1864-01 is supported in order to meet FCC Class B.
3. The SS10, SS10SX, and SS20 require OBP 2.19.
4. The hyperSPARC Module is not compatible with the Sun4d XDBus.

References

1. *SPARCstation 10 hyperSPARC Module Upgrade*, 802-1652-11.
2. *SPARCstation 20 hyperSPARC Module Upgrade*, 802-1214-11.
3. *SPARCstation 10 hyperSPARC Module X-Option*, 802-2565-10.
4. *SPARCstation 20 hyperSPARC Module X-Option*, 802-2564-10.

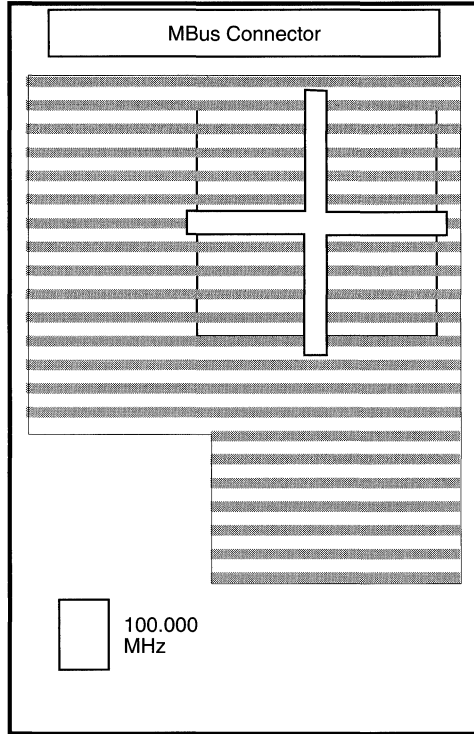
HS11 hyperSPARC Module

SS10 SS10SX SS20

Option 1181

370-1866

100MHz



Notes

1. The minimum OS is Solaris 1.1.2 or Solaris 2.4 Hardware: 11/94.
2. If two modules are installed, the minimum OS is Solaris 2.4 HW: 11/94.
3. The SS10, SS10SX, and SS20 require OBP 2.19.
4. The hyperSPARC Module is not compatible with the Sun4d XDBus.

References

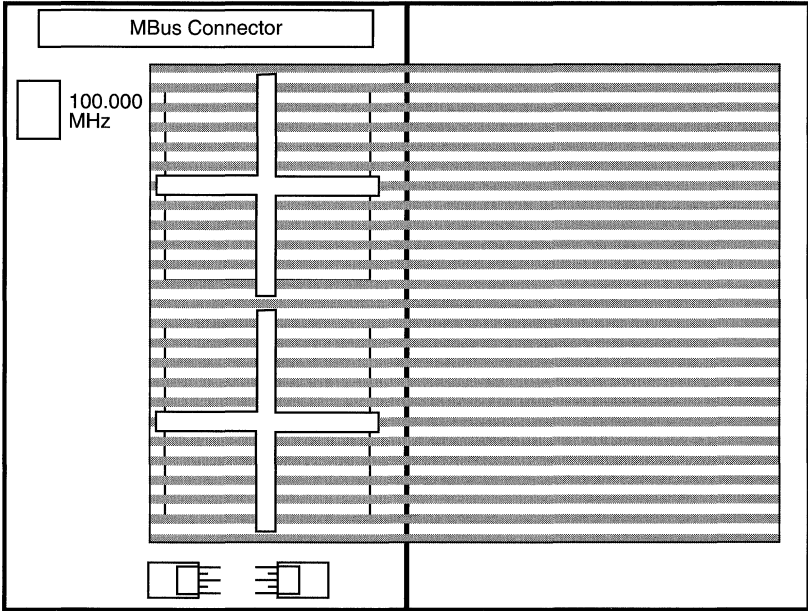
1. *SPARCstation 10 hyperSPARC Module Upgrade*, 802-1652-11.
2. *SPARCstation 20 hyperSPARC Module Upgrade*, 802-1214-11.
3. *SPARCstation 10 hyperSPARC Module X-Option*, 802-2565-10.
4. *SPARCstation 20 hyperSPARC Module X-Option*, 802-2564-10.

HS14 hyperSPARC Module

SS10 SS10SX SS20

370-1867
100MHz

370-3720
100MHz



FAB 270-6216-60

Notes

1. The minimum operating system is Solaris 2.4 Hardware: 11/94.
2. The SS10, SS10SX, and SS20 require OBP 2.19.
3. The hyperSPARC Module is not compatible with the Sun4d XDBus.

References

1. *SPARCstation 10 hyperSPARC Module Upgrade*, 802-1652-11.
2. *SPARCstation 20 hyperSPARC Module Upgrade*, 802-1214-11.
3. *SPARCstation 10 hyperSPARC Module X-Option*, 802-2565-10.
4. *SPARCstation 20 hyperSPARC Module X-Option*, 802-2564-10.

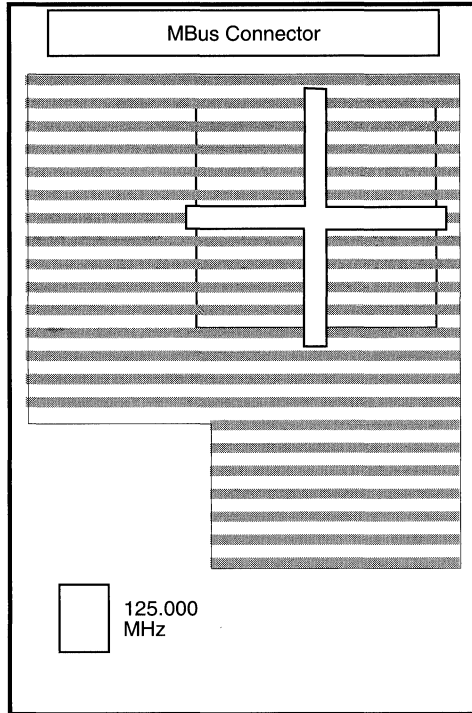
HS21 hyperSPARC Module

SS10 SS10SX SS20

Option 1183

370-1865

125MHz 256KB Cache



Notes

1. The minimum OS is Solaris 1.1.2 or Solaris 2.4 Hardware: 11/94.
2. If two modules are installed, the minimum OS is Solaris 2.4 HW: 11/94.
3. The SS10, SS10SX, and SS20 require OBP 2.19.
4. The hyperSPARC Module is not compatible with the Sun4d XDBus.

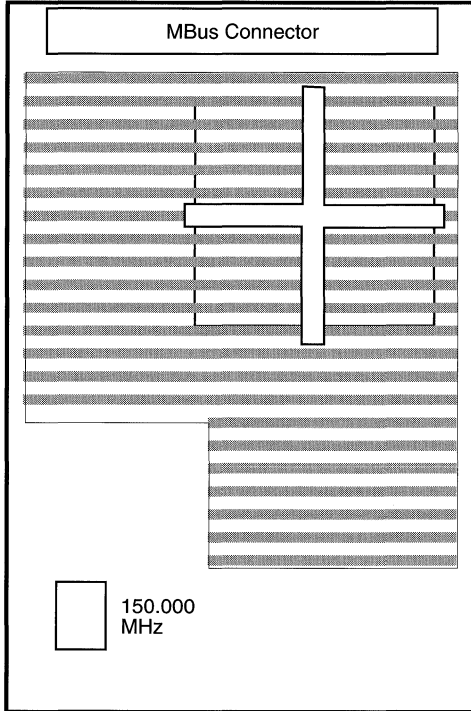
References

1. *SPARCstation 10 hyperSPARC Module Upgrade*, 802-1652-11.
2. *SPARCstation 20 hyperSPARC Module Upgrade*, 802-1214-11.
3. *SPARCstation 10 hyperSPARC Module X-Option*, 802-2565-10.
4. *SPARCstation 20 hyperSPARC Module X-Option*, 802-2564-10.

SM151 hyperSPARC Module

SS10 SS10SX SS20

370-2162
150MHz



Notes

1. The minimum OS is Solaris 1.1.2 or Solaris 2.4 Hardware: 11/94.
2. If two modules are installed, the minimum OS is Solaris 2.4 HW: 11/94.
3. The SS10, SS10SX, and SS20 require OBP 2.25.
4. The hyperSPARC Module is not compatible with the Sun4d XDBus.

CONFIGURATIONS

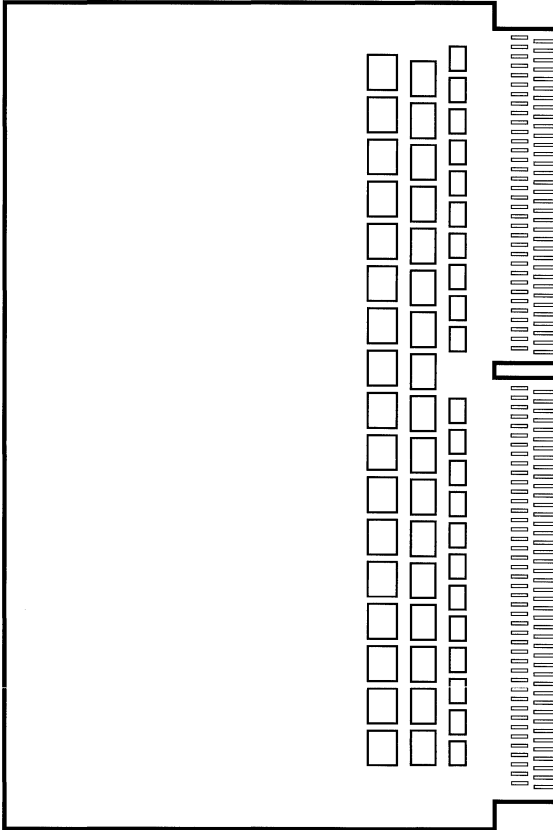
ULTRASPARC

UltraSPARC

| | | | | | | |
|--------------------------------------|----------|----------|----------|--------|------|----|
| Ultra 2 | Ultra 30 | Ultra 60 | Ultra 80 | E250 | E450 | |
| UPA Terminator | | | | | | 2 |
| 167MHz UltraSPARC I Module | | | | | | 3 |
| 200MHz UltraSPARC I Module | | | | | | 5 |
| 250MHz UltraSPARC II Module | | | | | | 7 |
| 300MHz UltraSPARC II Module | | | | | | 9 |
| 360MHz UltraSPARC II Module | | | | | | 11 |
| 400MHz UltraSPARC II Module | | | | | | 14 |
| 440MHz UltraSPARC II Module | | | | | | 19 |
| 450MHz UltraSPARC II Module | | | | | | 20 |
| 480MHz UltraSPARC II Module | | | | | | 22 |
| E3x00 | E4x00 | E5x00 | E6x00 | E10000 | | |
| UltraSPARC Module Installation | | | | | | 24 |
| 167MHz UltraSPARC I Module | | | | | | 26 |
| 250MHz UltraSPARC II Module | | | | | | 28 |
| 333MHz UltraSPARC II Module | | | | | | 31 |
| 336MHz UltraSPARC II Module | | | | | | 32 |
| 400MHz UltraSPARC II Module | | | | | | 33 |
| Ultra 5 | Ultra 10 | | | | | |
| 270MHz UltraSPARC Ili Module | | | | | | 45 |
| 300MHz UltraSPARC Ili Module | | | | | | 47 |
| 333MHz UltraSPARC Ili Module | | | | | | 49 |
| 360MHz UltraSPARC Ili Module | | | | | | 51 |
| 400MHz UltraSPARC Ili Module | | | | | | 53 |
| 440MHz UltraSPARC Ili Module | | | | | | 55 |
| Sun Blade 1000 | | | | | | |
| 600MHz UltraSPARC III Module | | | | | | 56 |
| 750MHz UltraSPARC III Module | | | | | | 57 |
| 900MHz UltraSPARC III Module | | | | | | 58 |

UPA Terminator

Ultra 2
501-4843



Notes

- 1. Ultra 2 requires 501-4843 if only one 300MHz module is installed.
- 2. The UPA Terminator is included with UG-M1XXX-M1300.
- 3. The UPA Terminator is not included with Option X1191A.

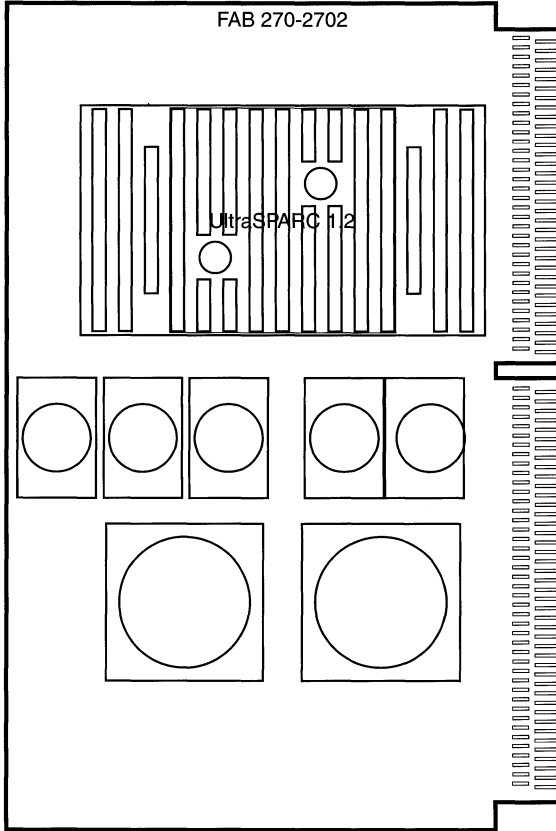
Reference: *Sun Ultra 2 UltraSPARC-II Module Upgrade*, 805-0936-11.

167MHz UltraSPARC I Module

Ultra 2

501-2702-03

512KB Cache Spitfire



Reference: *Ultra 2 UltraSPARC Module X-Option*, 802-6079-10.

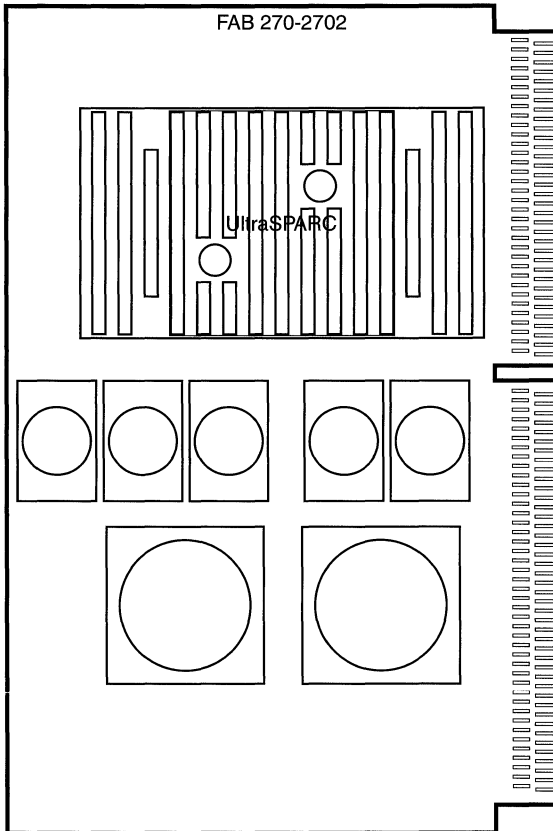
167MHz UltraSPARC I Module

Ultra 2

Option 1187

501-2942

512KB Cache Spitfire



Notes

1. UltraSPARC 2.2 is installed on 501-2942-01.
2. UltraSPARC 4.0.2 is installed on 501-2942-02.
3. When 501-2942-01 and 501-2942-02 are mixed and OBP is $\leq 3.1.2$, the module speed is set to 148MHz. OBP 3.1.3 fixes this problem.

Reference: *Ultra 2 UltraSPARC Module X-Option*, 802-6079-10.

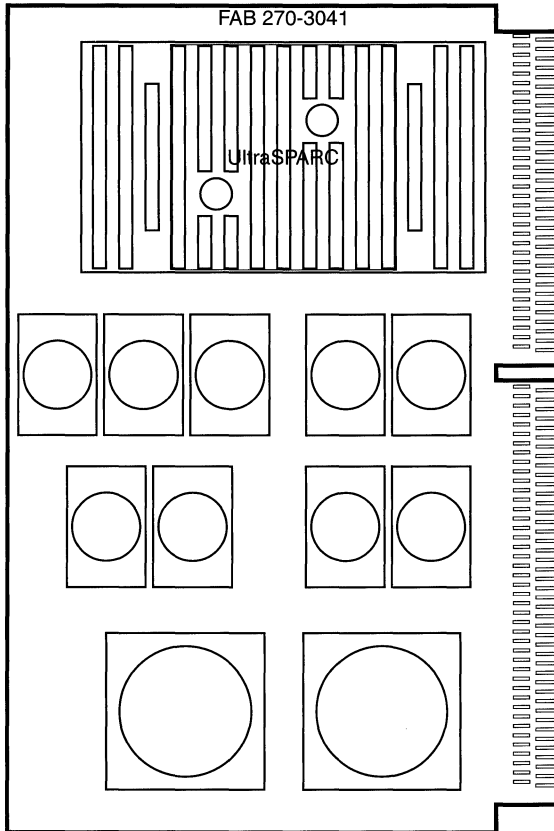
200MHz UltraSPARC I Module

Ultra 2

Option 1188

501-3041

1MB Cache Spitfire



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Ultra 2 OBP 3.1 Beta 1 is required.
3. Ultra 2 System Board \geq 501-3132-07 is required.
4. Ultra 2 System Board 501-2487 is not compatible with this 501-3041.
5. Mixing module speeds is not supported.

Reference: *Ultra 2 UltraSPARC Module X-Option*, 802-6079-10.

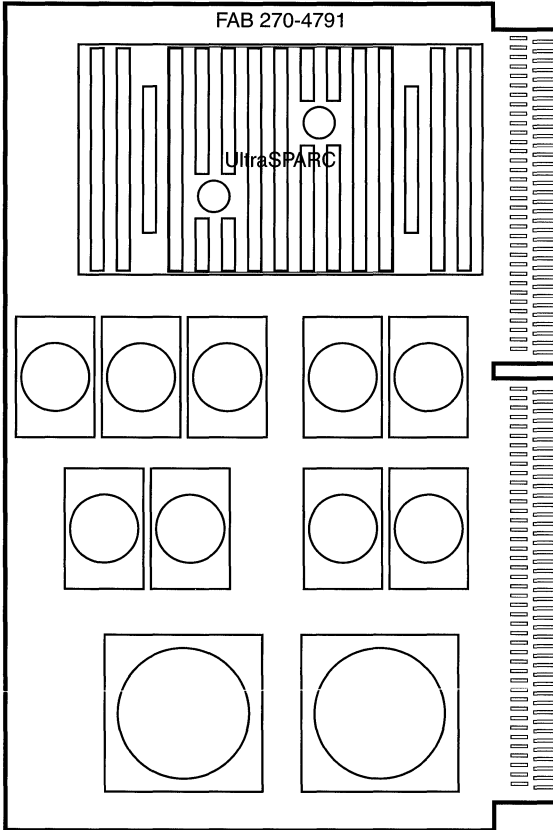
200MHz UltraSPARC I Module

Ultra 2

Option 1188

501-4791

1MB Cache Spitfire

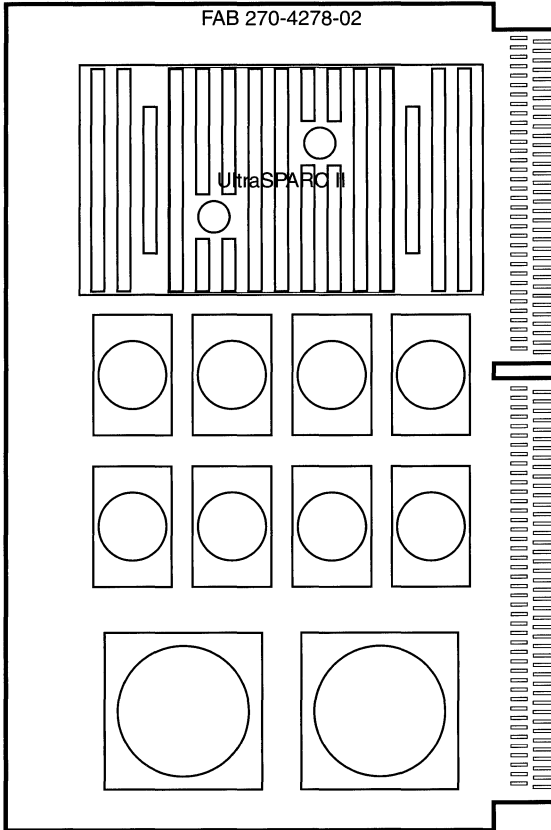


Notes

1. The minimum operating system is Solaris 2.5.1.
2. Ultra 2 OBP 3.1 Beta 1 and System Board \geq 501-3132-07 is required.
3. Ultra 2 System Board 501-2487 is not compatible with 501-4791.
4. UltraSPARC is made by TI (MANUF=17) or NEC (MANUF=22).
5. UltraSPARC on 501-4791-02 is only made by NEC (MANUF=22).
6. Use the **.ver** and **switch-cpu** OBP commands to see the MANUF code.
7. Mixing module cache sizes or speeds is not supported.

Reference: *Ultra 2 UltraSPARC Module X-Option*, 802-6079-10.

250MHz UltraSPARC II Module
Ultra 2 Enterprise 450 Netra t 1100
Option 2230
501-4278
1MB Cache Blackbird



Notes

- 1. The minimum operating system is Solaris 2.5.1 Hardware:4/97.
- 2. This module is not supported in the Ultra 2.
- 3. The 501-4278 was not shipped in Enterprise 250 systems.
- 4. The 250MHz module was not shipped in Ultra 450 Workstations.
- 5. Mixing module speeds is not supported.
- 6. The Enterprise 450 requires DC-DC Converter 300-1322.
- 7. Option X2230A includes a Module and DC-DC Converter 300-1322.

Reference

Ultra Enterprise 450 UltraSPARC II Module X-Option, 805-1704-10.

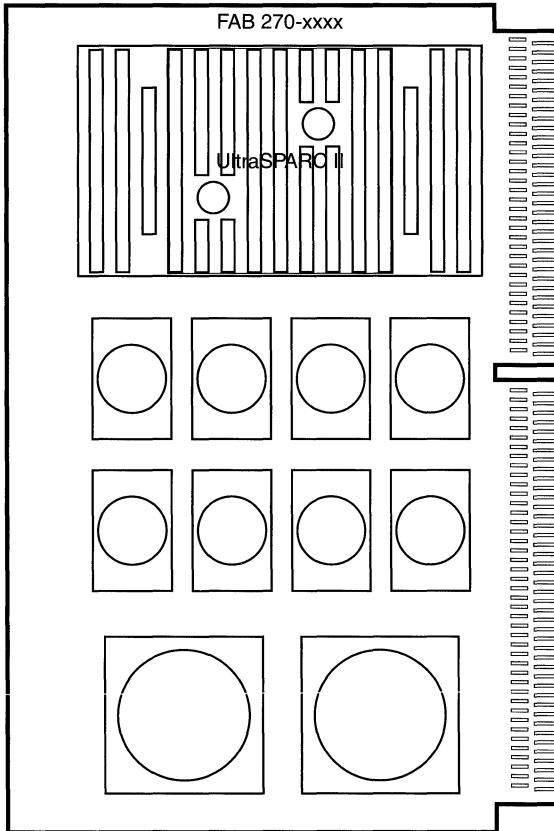
250MHz UltraSPARC II Module

Ultra 30 Enterprise 250 Enterprise 450 Netra t 1100

Options 1190 2230

501-4857

1MB Cache Blackbird



Notes

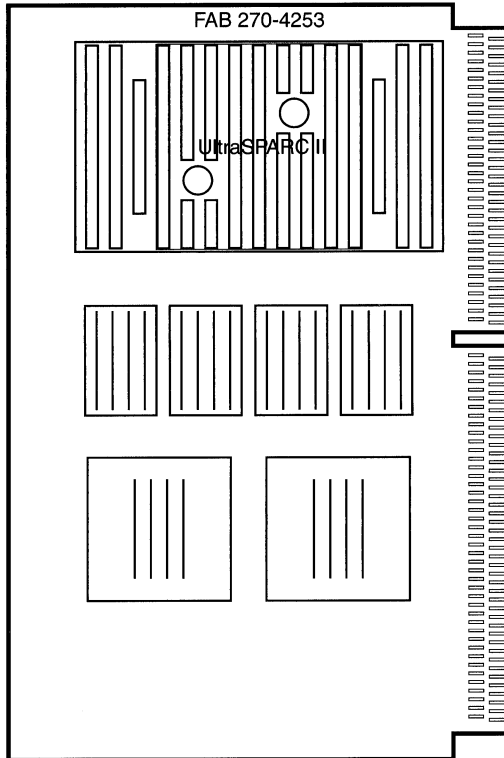
1. The minimum operating system is Solaris 2.5.1 Hardware:4/97.
2. This module is not supported in the Ultra 2.
3. Mixing module speeds is not supported.
4. The 250MHz module was not shipped in Ultra 450 Workstations.
5. The Enterprise 450 requires DC-DC Converter 300-1322.
6. Option X2230A includes a Module and a DC-DC Converter 300-1322.

Reference

Ultra Enterprise 450 UltraSPARC II Module X-Option, 805-1704-10.

300MHz UltraSPARC II Module

Ultra 2 Ultra 30 Enterprise 450 Netra t 1120 Netra t 1125
 Options 1191 2240
 501-4196
 2MB Cache Blackbird



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Ultra 2 OBP 3.7v0 and CPU \geq 501-3132-07 is required.
3. UPA Terminator 501-4843 is required if only one module is installed on Ultra 2 CPU \leq 501-3132-12.
4. The 501-4196 is not compatible with the Ultra 60 (A23).
5. The 501-4196 was not shipped in A20, A23, or A26 systems.
6. Mixing module speeds is not supported.
7. The Enterprise 450 requires DC-DC Converter 300-1322.
8. Option X2240A includes a Module and DC-DC Converter 300-1322.

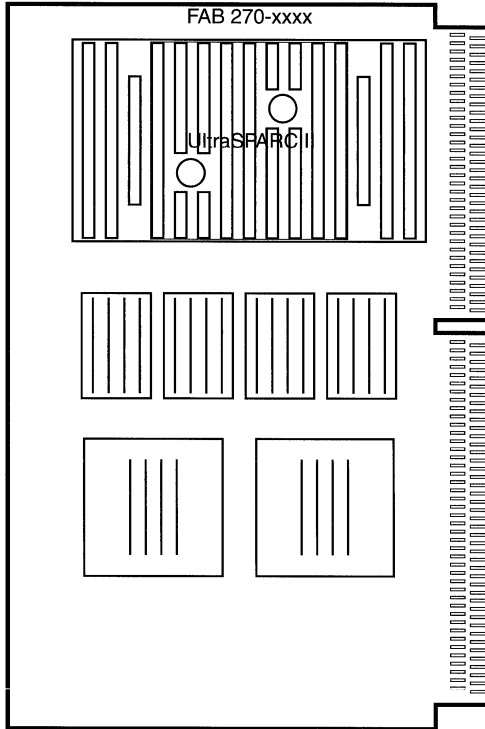
References

1. *Sun Ultra 2 Module Upgrade*, 805-0936-11.
2. *Sun Ultra 2 UltraSPARC II Module X-Option*, 805-0937-10.
3. *Ultra Enterprise 450 UltraSPARC II Module X-Option*, 805-1704-10.

300MHz UltraSPARC II Module

Ultra 2 Ultra 30 Ultra 60 Ultra 450 Enterprise 250
 Enterprise 450 Netra t 1120 Netra t 1125 Netra ft 1800
 Options 1191 2240

501-4849
 2MB Cache Blackbird



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Ultra 2 OBP 3.7v0 and CPU ≥501-3132-07 is required.
3. UPA Terminator 501-4843 is required if only one module is installed on Ultra 2 CPU ≤501-3132-12.
4. Modules ≤501-4849-02 are not compatible with the Ultra 60.
5. UltraSPARC II revision 1.1 is not compatible with the Netra ft 1800.
6. Mixing module speeds is not supported.
7. The Ultra 450 and Enterprise 450 requires DC-DC Converter 300-1322.
8. Option X2240A includes a Module and DC-DC Converter 300-1322.

References

1. *Sun Ultra 2 Module Upgrade*, 805-0936-11.
2. *Sun Ultra 2 UltraSPARC II Module X-Option*, 805-0937-10.
3. *Ultra Enterprise 450 UltraSPARC II Module X-Option*, 805-1704-10.

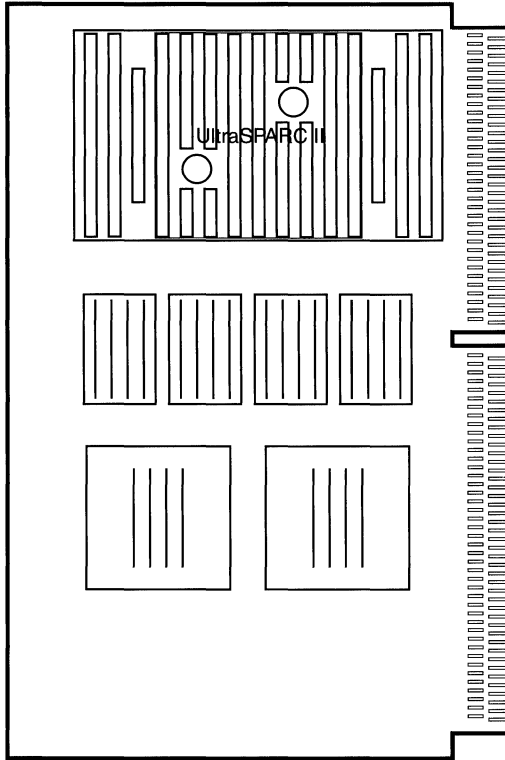
360MHz UltraSPARC II Module

Ultra 60

Option 1192

501-5129

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is Solaris 2.5.1.
2. The Ultra 60 UPA speed is 120MHz using a +3 clock.
3. Mixing module speeds is not supported.
4. UltraSPARC on 501-5129 is mask# <80 (Blackbird).
5. UltraSPARC on 501-4781 is mask# ≥80 (Sapphire).
6. Ultra 60 requires OBP 3.11v26 when mask# <80 and ≥80 are mixed.
7. Use the **.ver** or **.properties** OBP commands to see the mask#.
8. Use the **switch-cpu** OBP command to switch CPUs.

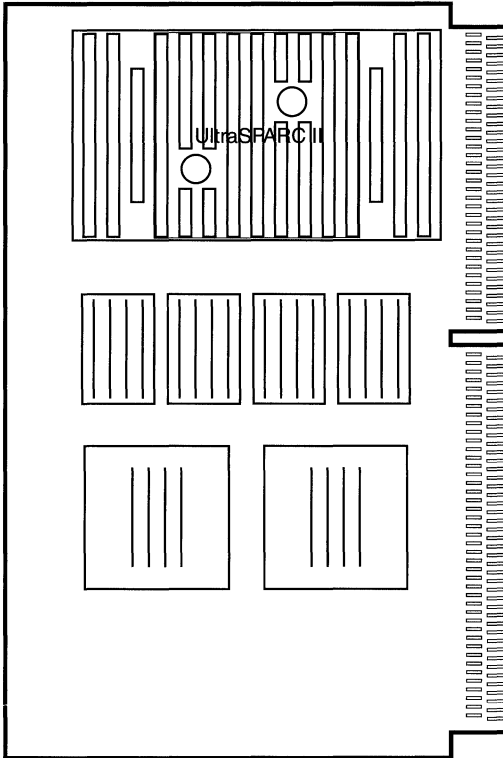
360MHz UltraSPARC II Module

Ultra 60

Option 1192

501-4781

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is Solaris 2.5.1.
2. The Ultra 60 UPA speed is 120MHz using a +3 clock.
3. Mixing module speeds is not supported.
4. UltraSPARC on 501-5129 is mask# <80 (Blackbird).
5. UltraSPARC on 501-4781 is mask# ≥80 (Sapphire).
6. Ultra 60 requires OBP 3.11v26 when mask# <80 and ≥80 are mixed.
7. Use the **.ver** or **.properties** OBP commands to see the mask#.
8. Use the **switch-cpu** OBP command to switch CPUs.

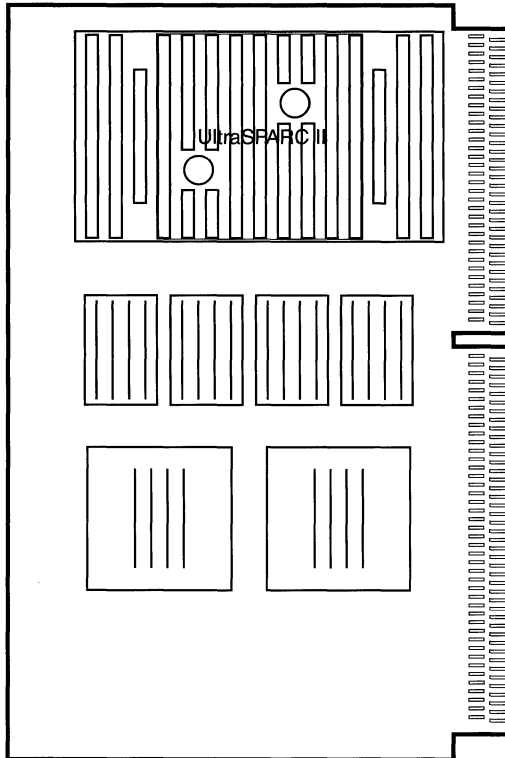
360MHz UltraSPARC II Module

Ultra 60

Option 1192

501-5552

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is Solaris 2.5.1.
2. The Ultra 60 UPA speed is 120MHz using a +3 clock.
3. Mixing module speeds is not supported.
4. Use the **.ver** or **.properties** OBP commands to see the mask#.
5. Use the **switch-cpu** OBP command to switch CPUs.

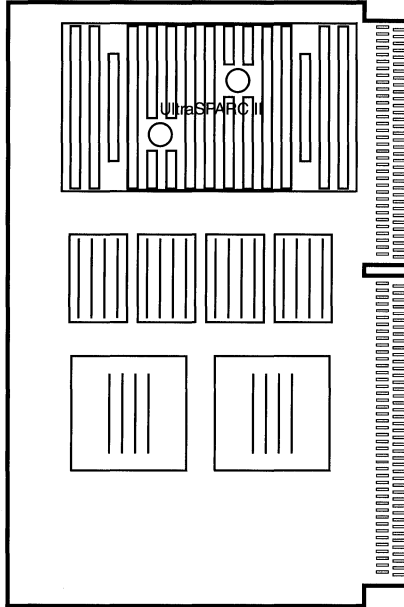
400MHz UltraSPARC II Module

Enterprise 250

Option 1194

501-5237

2MB Cache Sapphire-Black



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module cache sizes or speeds is not supported.
3. This module is not qualified for use in the Ultra 2.
4. The Enterprise 250 requires OBP \geq 3.12 Version 10.

Enterprise 250 Chassis Notes

1. Rear cardguides installed prior to \approx 2/99 may require replacement to prevent component damage on the 400MHz Module. Two guides, part number 250-1390 or 250-1484, are included with the module option.
2. Chassis \leq 540-3272-02 is FCC Class B EMI compliant when 250MHz and 300MHz modules are installed.
3. Chassis \leq 540-3272-02 is FCC Class A EMI compliant when 400MHz modules are installed.
4. Chassis \geq 540-3272-03 is FCC Class B EMI compliant when 250MHz, 300MHz, and 400MHz modules are installed.
5. Front Bottom Door 540-3352-03 is required for FCC Class B.
6. Removable Media Tray 540-3351-02 is required for FCC Class B.
7. Chassis 540-3273-03 includes 540-3351-02 and 540-3352-03.

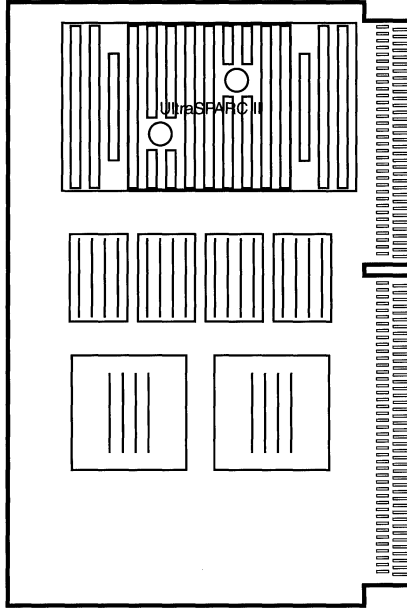
400MHz UltraSPARC II Module

Ultra 2

Option 1193

501-5541

2MB Cache Sapphire-Black



Notes

- 1. The minimum operating system is Solaris 2.5.1.
- 2. Mixing module cache sizes or speeds is not supported.
- 3. The Ultra 2 requires System Board \geq 501-3132-13.
- 4. The Ultra 2 requires OBP \geq 3.11 Version 2 POST \geq 3.3.8.

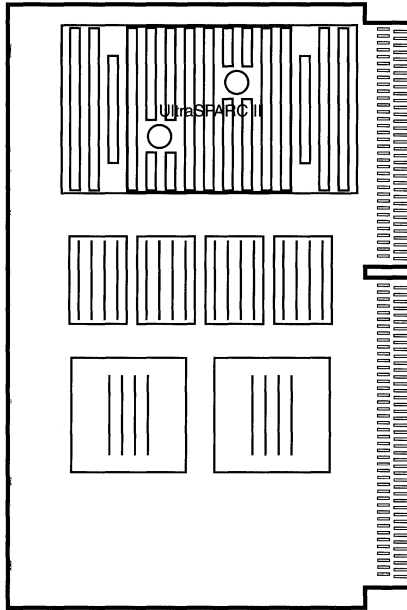
400MHz UltraSPARC II Module

Ultra 2 Enterprise 250

Options 1193 1194

501-5445

2MB Cache Sapphire-Black



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module cache sizes or speeds is not supported.
3. The Ultra 2 requires System Board \geq 501-3132-13.
4. The Ultra 2 requires OBP \geq 3.11 Version 2 POST \geq 3.3.8.
5. The Enterprise 250 requires OBP \geq 3.12 Version 10.

Enterprise 250 Chassis Notes

1. Chassis \leq 540-3272-02 is FCC Class B EMI compliant when 250MHz and 300MHz modules are installed.
2. Chassis \leq 540-3272-02 is FCC Class A EMI compliant when 400MHz modules are installed.
3. Chassis \geq 540-3272-03 is FCC Class B EMI compliant when 250MHz, 300MHz, and 400MHz modules are installed.
4. Front Bottom Door 540-3352-03 is required for FCC Class B.
5. Removable Media Tray 540-3351-02 is required for FCC Class B.
6. Chassis 540-3273-03 includes 540-3351-02 and 540-3352-03.

400MHz UltraSPARC II Module

Enterprise 450 Ultra AXmp

Options 2244 5224

501-5239

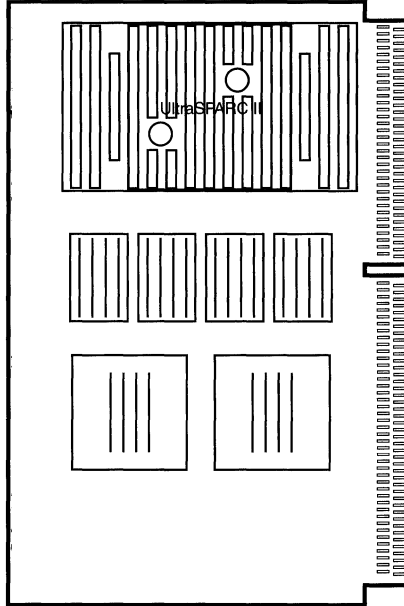
501-5420

4MB Cache Sapphire-Black
X2244A

4MB Cache Sapphire-Black
SME5224UPA-400

w/o Cover for A25

w Cover for Ultra AXmp



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module cache sizes or speeds is not supported.
3. The Enterprise 450 requires System Board 501-5270.
4. The Enterprise 450 requires DC-DC Converter 300-1322.
5. Option 2244 includes 501-5239 and DC-DC Converter 300-1322.
6. Empty E450 slot CPU-A1 requires Air Baffle 330-2781 or 330-2805.
7. Do NOT install a cover on the 400MHz module for the E450 or AXmp.
8. The 400MHz module is not qualified for the Ultra 450 Workstation.
9. The 400MHz module is not compatible with System Board 501-2996.

Ultra Enterprise 450 Chassis Notes

1. Chassis \leq 540-2833-04 is FCC Class B EMI compliant when 250MHz and 300MHz modules are installed.
2. Chassis \leq 540-2833-04 is FCC Class A EMI compliant when 400MHz modules are installed.
3. Chassis \geq 540-2833-05 is FCC Class B EMI compliant when 250MHz, 300MHz, and 400MHz modules are installed.
4. Front Disk Door 540-2832-03 is required for FCC Class B.
5. Removable Media Tray 540-2903-03 is required for FCC Class B.
6. Chassis 540-2833-05 includes 540-2832-03 and 540-2903-03.

400MHz UltraSPARC II Module

Enterprise 450 Ultra AXmp

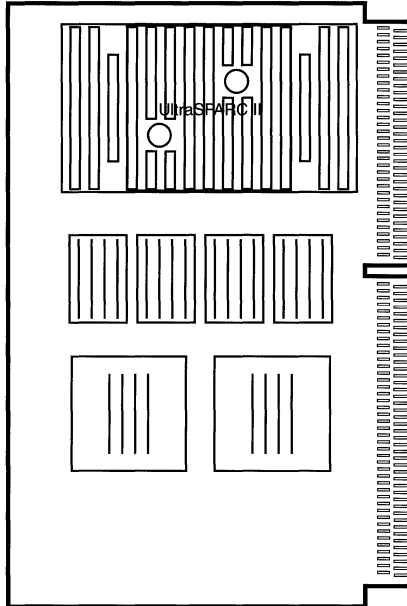
Options 2244 5224

501-5446

501-5500

4MB Cache Sapphire-Black
X2244A
w/o Cover for A25

4MB Cache Sapphire-Black
SME5224UPA-400
w Cover for Ultra AXmp



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module cache sizes or speeds is not supported.
3. The Enterprise 450 requires System Board 501-5270.
4. The Enterprise 450 requires DC-DC Converter 300-1322.
5. Option 2244 includes 501-5446 and DC-DC Converter 300-1322.
6. Empty E450 slot CPU-A1 requires Air Baffle 330-2781 or 330-2805.
7. Do NOT install a cover on the 400MHz module for the E450 or AXmp.
8. The 400MHz module is not qualified for the Ultra 450 Workstation.
9. The 400MHz module is not compatible with System Board 501-2996.

Ultra Enterprise 450 Chassis Notes

1. Chassis \leq 540-2833-04 is FCC Class B EMI compliant when 250MHz and 300MHz modules are installed.
2. Chassis \leq 540-2833-04 is FCC Class A EMI compliant when 400MHz modules are installed.
3. Chassis \geq 540-2833-05 is FCC Class B EMI compliant when 250MHz, 300MHz, and 400MHz modules are installed.
4. Front Disk Door 540-2832-03 is required for FCC Class B.
5. Removable Media Tray 540-2903-03 is required for FCC Class B.
6. Chassis 540-2833-05 includes 540-2832-03 and 540-2903-03.

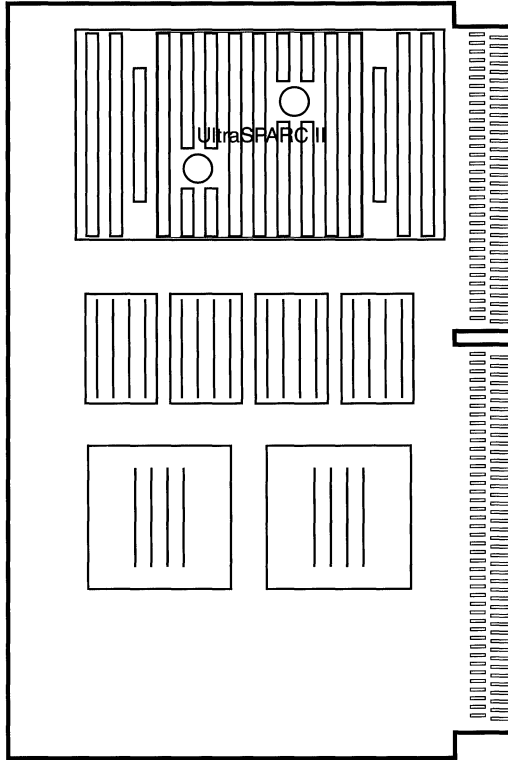
440MHz UltraSPARC II Module

Netra t 1120/1125 Netra t 1400/1405

Option 1197

501-5682

4MB Cache Sapphire-Black



Ultra 60 System Board Notes

1. The Netra t 1120 and Netra t 1250 use the Ultra 60 System Board.
2. The minimum OS is 2.5.1 HW: 11/97, 2.6 HW: 5/98, or 7 HW: 3/99.
3. The *Operating Environment Installation CD* is required to install Solaris 2.5.1 HW: 11/97 and Solaris 2.6 HW: 5/98.
4. OBP \geq 3.17 Version 0 is required.

Ultra 80 System Board Notes

1. The Netra t 1400 and Netra t 1405 use the Ultra 80 System Board.
2. The minimum Netra t 1400/1405 OS is Solaris 2.6 HW: 5/98.
3. The *Operating Environment Installation CD* is required to install Solaris 2.6 HW: 5/98.

Reference: *Ultra 60 Module Upgrade*, 806-1055.

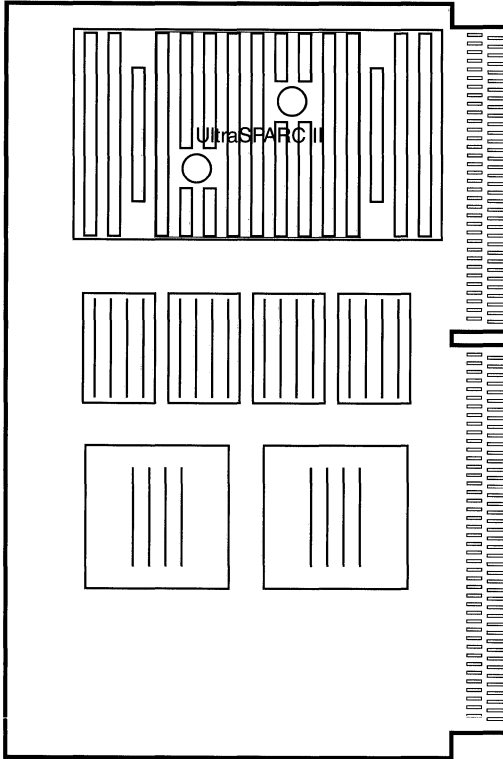
450MHz UltraSPARC II Module

Ultra 60 Ultra 80

Option 1195

501-5344

4MB Cache Sapphire-Black



Ultra 60 Notes

1. The minimum OS is 2.5.1 HW: 11/97, 2.6 HW: 5/98, or 7 HW: 3/99.
2. The *Operating Environment Installation CD* is required to install Solaris 2.5.1 HW: 11/97 and Solaris 2.6 HW: 5/98.
3. OBP \geq 3.17 Version 0 is required.

Reference: *Ultra 60 Module Upgrade*, 806-1055.

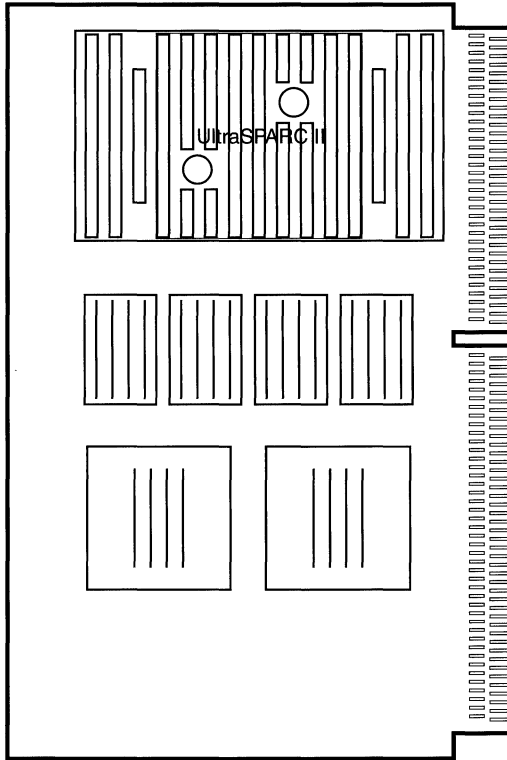
450MHz UltraSPARC II Module

Ultra 60 Ultra 80

Option 1195

501-5539

4MB Cache Sapphire-Black



Ultra 60 Notes

1. The minimum OS is 2.5.1 HW: 11/97, 2.6 HW: 5/98, or 7 HW: 3/99.
2. The *Operating Environment Installation CD* is required to install Solaris 2.5.1 HW: 11/97 and Solaris 2.6 HW: 5/98.
3. OBP \geq 3.17 Version 0 is required.

Reference: *Ultra 60 Module Upgrade*, 806-1055.

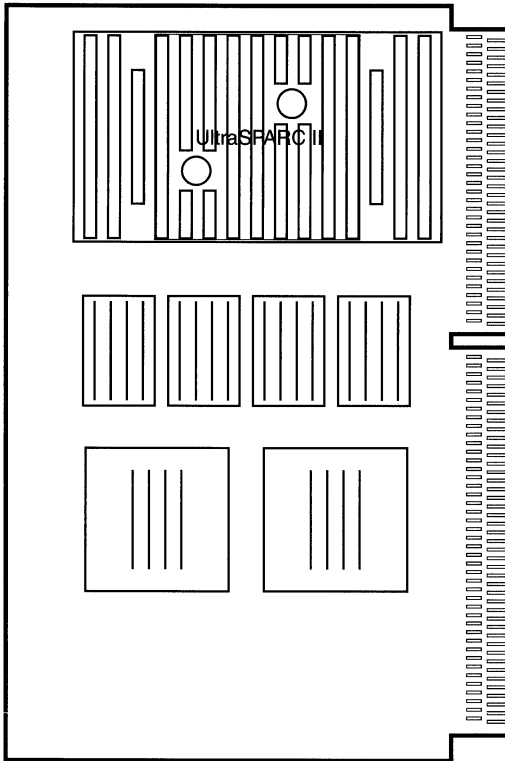
480MHz UltraSPARC II Module

Enterprise 450

Option 2248

501-5729

8MB Cache Blaze



Enterprise 450 Notes

1. The minimum operating system is Solaris 2.6.
2. Mixing module cache sizes or speeds is not supported.
3. OBP \geq 3.18 Version 0 is required.
4. System Board 501-5673 is required.
5. DC-DC Converter 300-1322 is required.
6. Airduct 540-4597 is required.
7. Airduct 540-4597 is included with the 480MHz upgrade.
8. Empty Slot CPU-A1 requires Cover 330-3127.
9. Empty CPU Slots require Filler Panel 330-3102.
10. This module is not compatible with System Boards 501-2996, 501-5028, 501-5270, and 501-5672.

Reference: *Enterprise 450 Upgrade Guide*, 806-4667.

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UltraSPARC Module Installation

E3x00-6x00 UltraSPARC Module installation methods are:

Method A

1. Finger tighten all screws following the sequence #1, #2, and #3.
2. Tighten screws #1, #2, and #3 almost all the way.
3. Tighten screws #1, #2, and #3 until medium resistance is met.
4. Finally, tighten screws #1, #2, and #3 an additional 3/4 turn.

Method A References

1. *Ultra Enterprise 3000 System Manual*, 802-6051-10.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845-10.

Method B (Installation method from September 1997 to September 1998)

1. Finger tighten all screws.
2. Tighten screws #1, #2, #3, #4, and #5, in sequence, to 3 in-lb (.34Nm).
3. Tighten screws #1, #2, #3, #4, and #5, in sequence, to 6 in-lb (.68Nm).

Method B References

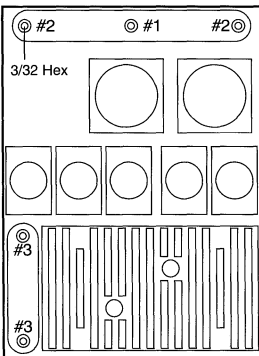
1. *Ultra Enterprise CPU Installation Guide*, 802-5031-11.
2. *Ultra Enterprise 3000 System Manual*, 802-6051-11.
3. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845-11.
4. *Enterprise 3500 System Reference Manual*, 805-2630-10.
5. *Enterprise 4500/5500/6500 System Reference Manual*, 805-2632-10.
6. *Ultra Enterprise 3000/4000 Module Installation*, 805-0323-10.
7. *4 Mbyte UltraSPARC II Installation Guide*, 805-1150-10.
8. *CPU Module Installation Guide*, 805-7345-10.
9. *Torque Screwdriver for UltraSPARC Module Installation*, 805-2634-10.

Method C (Preferred installation method after September 1998)

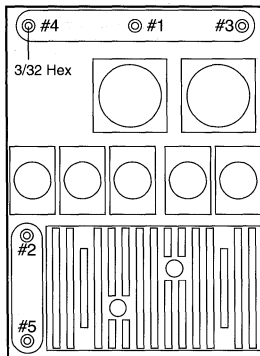
1. Finger tighten all screws.
2. Tighten screws #1, #2, #3, #4, and #5, in sequence, to 3 in-lb (.34Nm).
3. Tighten screws #1, #2, #3, #4, and #5, in sequence, to 6 in-lb (.68Nm).

Method C Reference: *CPU Module Installation Guide*, 805-7345-11.

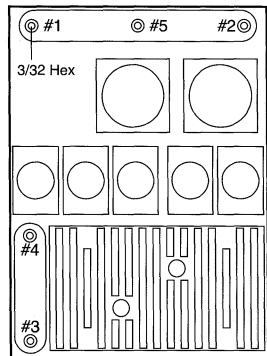
Method A



Method B



Method C



UltraSPARC Module Installation - Continued

E10000 UltraSPARC Module installation methods are:

Method A

1. Remove the blue plastic strip from the system board thermal pad.
2. Wipe the system board gold pads with a lint-free non-abrasive cloth.
3. Wipe the module connectors with a lint-free non-abrasive cloth.
4. Finger tighten all screws.
5. Tighten screws #1, #2, #3, #4, and #5, in sequence, to 3 in-lb (.34Nm).
6. Tighten screws #1, #2, #3, #4, and #5, in sequence, to 6 in-lb (.68Nm).

Method A References (Installation method before July 1998)

1. *Enterprise 10000 Component Replacement Guide*, 805-0311-10.
2. *Enterprise 10000 System Service Manual*, 805-2917-10.
3. *Enterprise 10000 System Service Manual*, 805-2917-11.
4. *Enterprise 10000 System Service Manual*, 805-2917-12.
5. *Enterprise 10000 System Service Manual*, 805-2917-13.
6. *Enterprise 10000 333MHz Upgrade Instructions*, 805-4500-10.

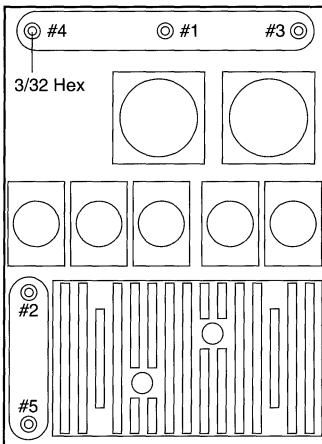
Method B (Preferred installation method after June 1998)

1. Remove the blue plastic strip from the system board thermal pad.
2. Wipe the system board gold pads with a lint-free non-abrasive cloth.
3. Wipe the module connectors with a lint-free non-abrasive cloth.
4. Finger tighten all screws.
5. Tighten screws #1, #2, #3, #4, and #5, in sequence, to 3 in-lb (.34Nm).
6. Tighten screws #1, #2, #3, #4, and #5, in sequence, to 6 in-lb (.68Nm).

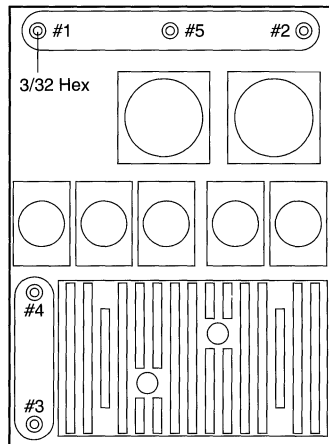
Method B References

1. *Enterprise 10000 System Service Manual*, 805-2917-14.
2. *Enterprise 10000 333MHz Upgrade Instructions*, 805-4500-11.
3. *System Board Installation and Configuration Guide*, 805-7189-10.

Method A



Method B



167MHz UltraSPARC I Module

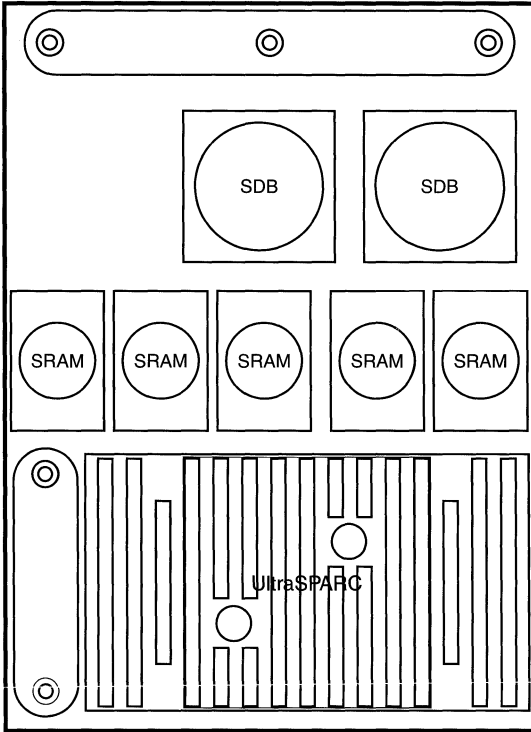
E3000 E4000 E5000 E6000

E3500 E4500 E5500 E6500

Option 2500

501-2941

512KB Cache Blackbird



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module cache sizes on a single board is not supported.
3. Mixing module cache sizes within a system is supported.
4. Mixing module speeds within a system is not supported.
5. The speed is 167MHz with Clock 501-2975.
6. The speed is 167MHz with Clock 501-4286/501-4946 and OBP <3.2v6.
7. The speed is 168MHz with Clock 501-4286/501-4946 and OBP ≥3.2v6.
8. E3500-E6500 systems were not shipped with 167MHz modules.

167MHz UltraSPARC I Module

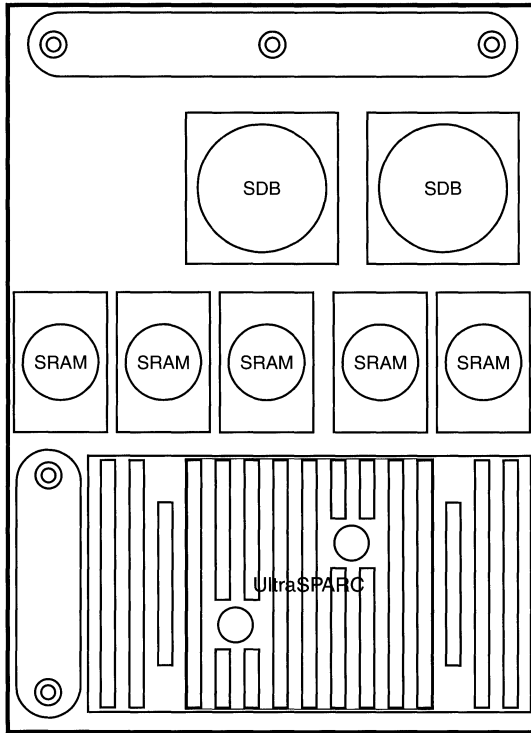
E3000 E4000 E5000 E6000

E3500 E4500 E5500 E6500

Option 2510

501-2959

1MB Cache Blackbird



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module cache sizes on a single board is not supported.
3. Mixing module cache sizes within a system is supported.
4. Mixing module speeds within a system is not supported.
5. The speed is 167MHz with Clock 501-2975.
6. The speed is 167MHz with Clock 501-4286/501-4946 and OBP <3.2v6.
7. The speed is 168MHz with Clock 501-4286/501-4946 and OBP ≥3.2v6.
8. E3500-E6500 systems were not shipped with 167MHz modules.

250MHz UltraSPARC II Module

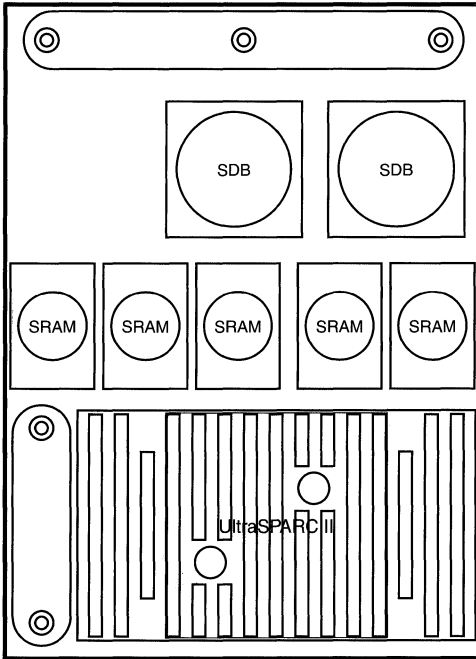
E3000 E4000 E5000 E6000 E10000

E3500 E4500 E5500 E6500

Option 2530

501-4178

1MB Cache Blackbird



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Solaris 2.5.1 Patch 103640-06 is recommended.
3. Mixing module cache sizes within a system is supported.

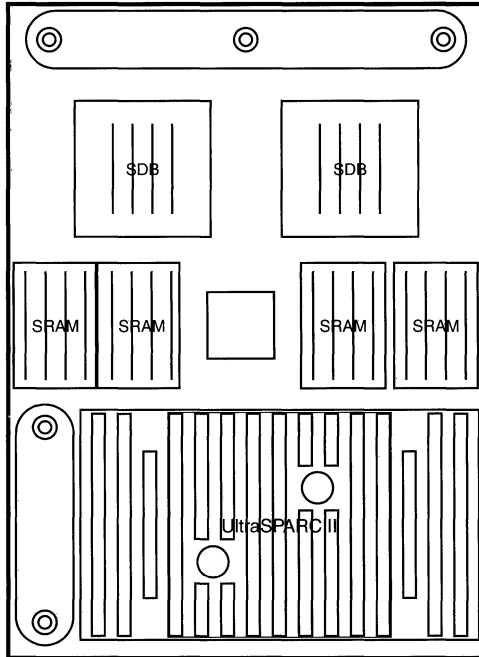
E3000 - E6000 Notes

1. OBP 3.2 Version 6 is required to support 250MHz 1MB modules.
2. Clock Board 501-4286 is required to support 250MHz modules.
3. Clock Board 501-4946 also supports 250MHz modules.
4. Mixing module speeds within a system is not supported.
5. Mixing module cache sizes on a single board requires OBP ≥3.2.21.
6. Ex500 systems were not shipped with 1MB 250MHz modules installed.

E10000 Notes

1. A minimum of one processor per System Board is required.
2. Mixing module speeds within a system is supported.
3. Set the clock multiplier to 3:2 with the sys_clock (1m) ssp command.

250MHz UltraSPARC II Module
 E3000 E4000 E5000 E6000 E10000
 E3500 E4500 E5500 E6500
 Option 2550
 501-4249
 4MB Cache Blackbird
 SRAM 100-4777



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module cache sizes within a system is supported.

E3000 - E6500 Notes

1. OBP 3.2 Version 7 is required to support 250MHz 4MB modules.
2. Clock Board 501-4286 is required to support 250MHz modules.
3. Clock Board 501-4946 also supports 250MHz modules.
4. Mixing module speeds within a system is not supported.
5. Mixing module cache sizes on a single board requires OBP \geq 3.2.21.
6. CPU/Memory Board 501-2976 supports up to 2MB of cache per module.
7. CPU/Memory Board 501-4312 supports up to 8MB of cache per module.
8. CPU/Memory Board 501-4882 supports up to 8MB of cache per module.

E10000 Notes

1. A minimum of one processor per System Board is required.
2. Mixing module speeds within a system is not supported.
3. Set the clock multiplier to 3:2 with the sys_clock (1m) ssp command.

250MHz UltraSPARC II Module

E3000 E4000 E5000 E6000 E10000

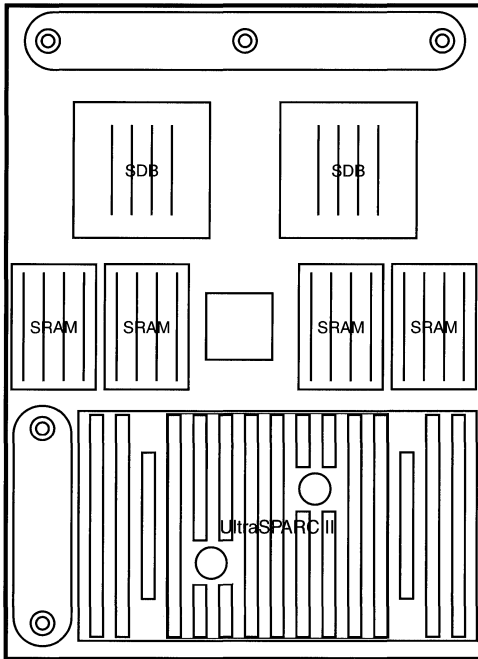
E3500 E4500 E5500 E6500

Option 2550

501-4836

4MB Cache Blackbird

SRAM 100-5528



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module cache sizes within a system is supported.

E3000 - E6500 Notes

1. OBP 3.2 Version 7 is required to support 250MHz 4MB modules.
2. Clock Board 501-4286 is required to support 250MHz modules.
3. Clock Board 501-4946 also supports 250MHz modules.
4. Mixing module speeds within a system is not supported.
5. Mixing module cache sizes on a single board requires OBP $\geq 3.2.21$.
6. CPU/Memory Board 501-2976 supports up to 2MB of cache per module.
7. CPU/Memory Board 501-4312 supports up to 8MB of cache per module.
8. CPU/Memory Board 501-4882 supports up to 8MB of cache per module.

E10000 Notes

1. A minimum of one processor per System Board is required.
2. Mixing module speeds within a system is supported.
3. Set the clock multiplier to 3:2 with the `sys_clock (1m) ssp` command.

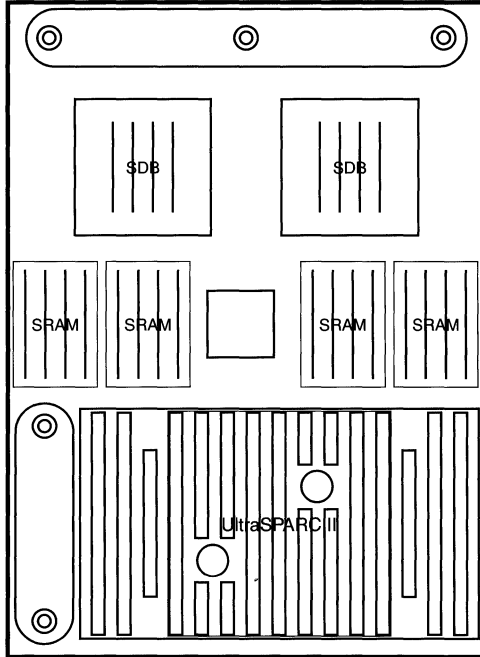
333MHz UltraSPARC II Module

E10000

Option 2560

501-4363

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module speeds within a system is supported.
3. The module runs at 333MHz from an 83.33MHz clock.
4. A minimum of one processor per System Board is required.
5. Set the clock multiplier to 2:1 with the `sys_clock (1m) ssp` command.

336MHz UltraSPARC II Module

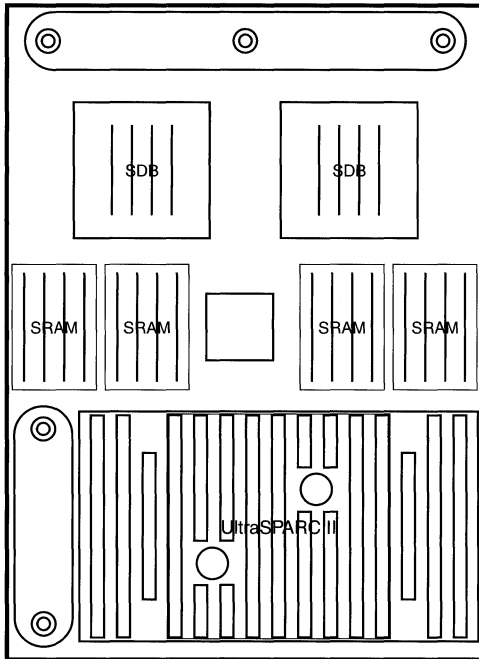
E3000 E4000 E5000 E6000

E3500 E4500 E5500 E6500

Option 2560

501-4363

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Mixing module speeds within a system is not supported.
3. The module runs at 336MHz from an 84MHz clock.
4. OBP 3.2 Version 12 is required to support 336MHz 4MB modules.
5. Clock Board 501-2975 does not support 336MHz modules.
6. Clock Boards 501-4286 and 501-4946 support 336MHz modules.
7. CPU/Memory Board 501-2976 supports up to 2MB of cache per module.
8. CPU/Memory Board 501-4312 supports up to 8MB of cache per module.
9. CPU/Memory Board 501-4882 supports up to 8MB of cache per module.

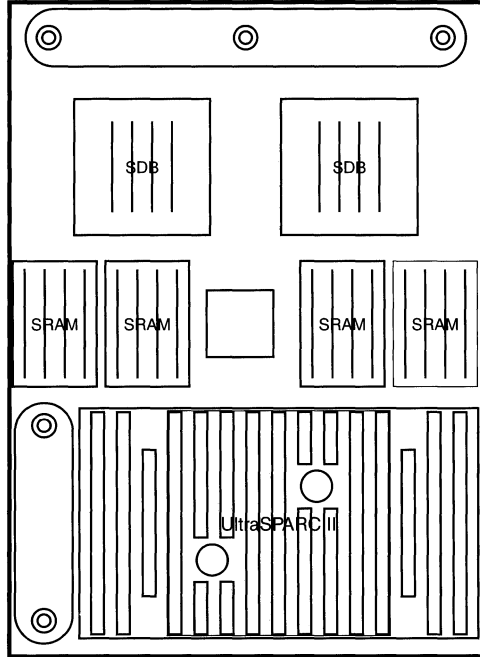
400MHz UltraSPARC II Module

E3000 E4000 E5000 E3500 E4500 E5500

Option 2570

501-4995

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. Solaris 2.5.1 patches $\geq 103640-06$ and $\geq 104595-03$ are required.
3. OBP 3.2 Version 18 is required.
4. Mixing module cache sizes on a single board requires OBP $\geq 3.2.21$.
5. Mixing module speeds within a system is not supported.
6. N+1 Power is not supported if seven CPU/Memory boards are installed.

Compatibility Notes

1. Clock 501-2975 is not supported.
2. This module requires 100MHz CPU/Memory and I/O boards.
3. The E3x00 supports Clocks 501-4286, 501-4946, and 501-5365.
4. The E4x00 and E5x00 do not support Clock 501-4286.
5. The E4x00 and E5x00 support Clocks 501-4946 and 501-5365.
6. The E4000 and E5000 require a 100MHz Centerplane upgrade.
7. This module is not supported in the E6000 or E6500.

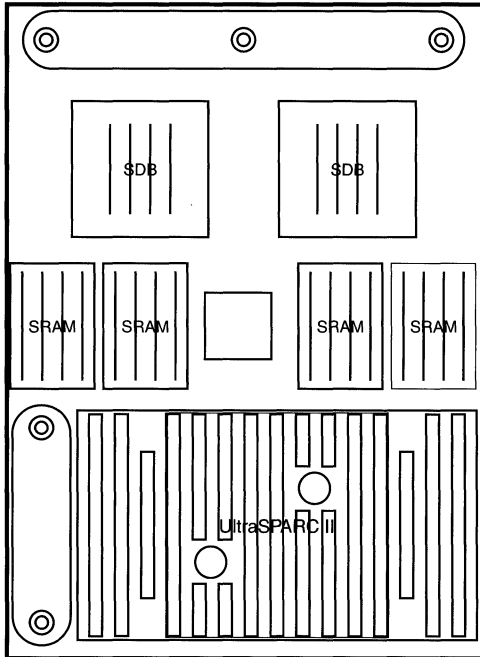
400MHz UltraSPARC II Module

E10000

Option 2570

501-4995

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. Mixing module speeds within a system is supported.
3. A minimum of one processor per System Board is required.
4. Set the clock multiplier to 2:1 with the `sys_clock (1m) ssp` command.
5. System Boards 501-4347, 501-4786, and 501-4903 are not compatible with the 400MHz UltraSPARC module.
6. System Boards 501-5240, 501-5278, and 501-5279 are compatible with the 400MHz UltraSPARC module.

Reference

System Board Installation and Configuration Guide, 805-7189-10.

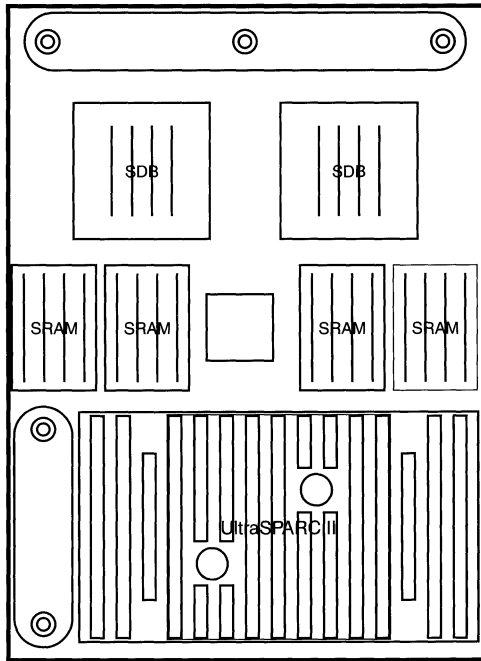
400MHz UltraSPARC II Module

E3000 E4000 E5000 E3500 E4500 E5500

Option 2570

501-5425

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. Solaris 2.5.1 patches $\geq 103640-06$ and $\geq 104595-03$ are required.
3. OBP 3.2 Version 18 is required.
4. Mixing module cache sizes on a single board requires OBP $\geq 3.2.21$.
5. Mixing module speeds within a system is not supported.
6. N+1 Power is not supported if seven CPU/Memory boards are installed.

Compatibility Notes

1. Clock 501-2975 is not supported.
2. This module requires 100MHz CPU/Memory and I/O boards.
3. The E3x00 supports Clocks 501-4286, 501-4946, and 501-5365.
4. The E4x00 and E5x00 do not support Clock 501-4286.
5. The E4x00 and E5x00 support Clocks 501-4946 and 501-5365.
6. The E4000 and E5000 require a 100MHz Centerplane upgrade.
7. This module is not supported in the E6000 or E6500.

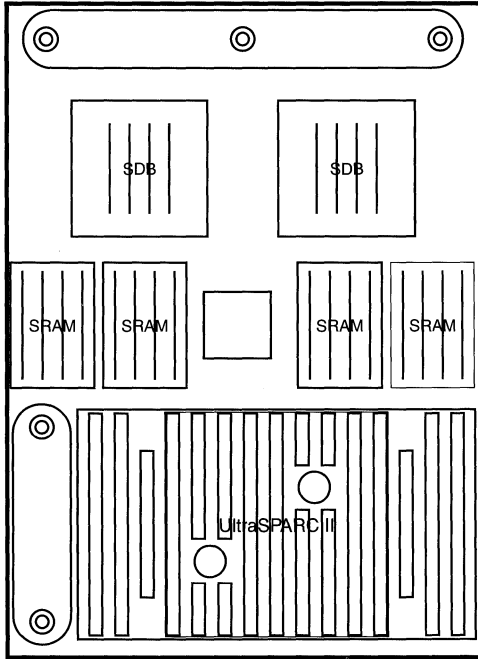
400MHz UltraSPARC II Module

E10000

Option 2570

501-5425

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. Mixing module speeds within a system is supported.
3. A minimum of one processor per System Board is required.
4. Set the clock multiplier to 2:1 with the sys_clock (1m) ssp command.
5. System Boards 501-4347, 501-4786, and 501-4903 are not compatible with the 400MHz UltraSPARC module.
6. System Boards 501-5240, 501-5278, and 501-5279 are compatible with the 400MHz UltraSPARC module.

Reference

System Board Installation and Configuration Guide, 805-7189-10.

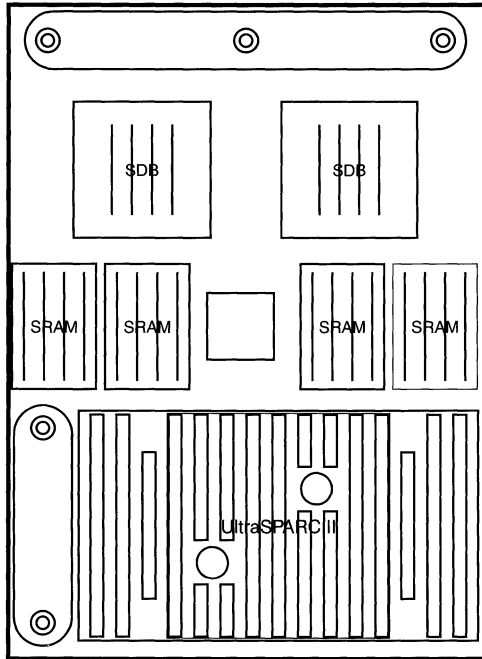
400MHz UltraSPARC II Module

E3000 E4000 E5000 E3500 E4500 E5500

Option 2570

501-5585

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. Solaris 2.5.1 patches $\geq 103640-06$ and $\geq 104595-03$ are required.
3. OBP 3.2 Version 18 is required.
4. Mixing module cache sizes on a single board requires OBP $\geq 3.2.21$.
5. Mixing module speeds within a system is not supported.
6. N+1 Power is not supported if seven CPU/Memory boards are installed.

Compatibility Notes

1. Clock 501-2975 is not supported.
2. This module requires 100MHz CPU/Memory and I/O boards.
3. The E3x00 supports Clocks 501-4286, 501-4946, and 501-5365.
4. The E4x00 and E5x00 do not support Clock 501-4286.
5. The E4x00 and E5x00 support Clocks 501-4946 and 501-5365.
6. The E4000 and E5000 require a 100MHz Centerplane upgrade.
7. This module is not supported in the E6000 or E6500.

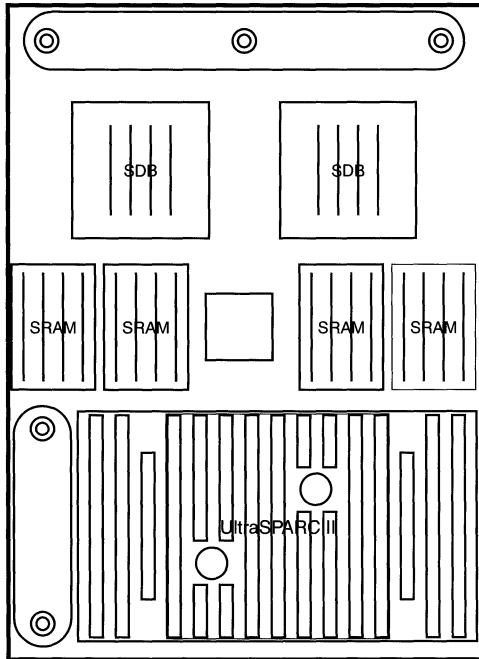
400MHz UltraSPARC II Module

E10000

Option 2570

501-5585

4MB Cache Sapphire-Black



Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. Mixing module speeds within a system is supported.
3. A minimum of one processor per System Board is required.
4. Set the clock multiplier to 2:1 with the sys_clock (1m) ssp command.
5. System Boards 501-4347, 501-4786, and 501-4903 are not compatible with the 400MHz UltraSPARC module.
6. System Boards 501-5240, 501-5278, and 501-5279 are compatible with the 400MHz UltraSPARC module.

Reference

System Board Installation and Configuration Guide, 805-7189-10.

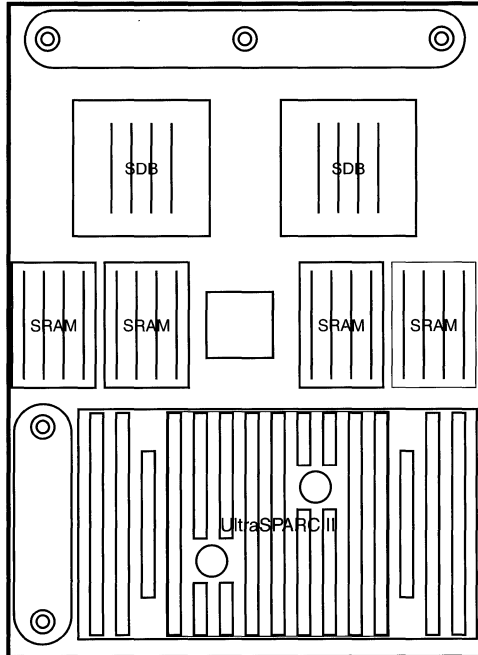
400MHz UltraSPARC II Module

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2580

501-5235

4:1 and 5:1 Clock Ratios
8MB Cache Sapphire-Black



Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. Solaris 2.5.1 patch $\geq 103640-27$ and 2.6 patch $\geq 105181-14$ are required.
3. OBP 3.2 Version 21 is required.
4. Use the *limit-ecache-size* OBP command before installing Solaris 2.5.1 and before booting Solaris 2.5.1 without patch 103640-27.
5. Use the *limit-ecache-size* OBP command before installing Solaris 2.6 and before booting Solaris 2.6 without patch 105181-14.
6. Mixing module speeds within a system is not supported.
7. N+1 Power is not supported if seven CPU/Memory boards are installed.

Compatibility Notes

1. Clock 501-2975 is not supported.
2. The E6000 and E6500 require Clock 501-5365 for a 5:1 clock ratio.
3. The E3x00, E4x00, and E5x00 require Clock 501-5365 for a 5:1 clock ratio if 84MHz system boards are installed.
4. Clock 501-4286 or 501-4946 is supported in the E3x00, E4x00, and E5x00 if the centerplane and all system boards are 100MHz.
5. Clock 501-5365 is supported if 84MHz or 100MHz system boards are installed in the E3x00, E4x00, and E5x00.

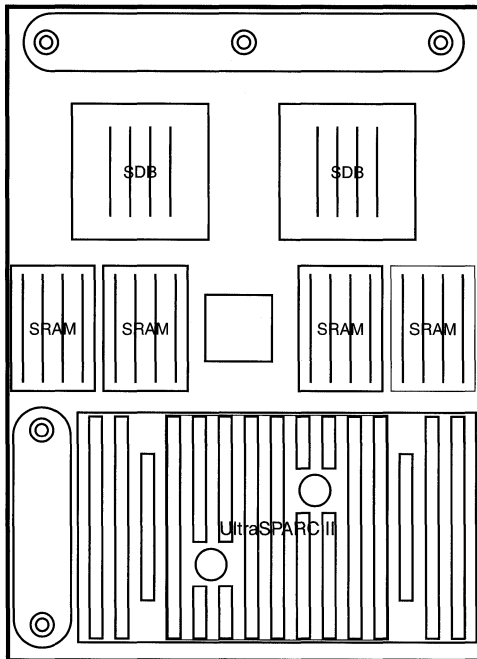
400MHz UltraSPARC II Module

E10000

Option 2580

501-5235

8MB Cache Sapphire-Black



Notes

1. Mixing module speeds within a system is supported.
2. A minimum of one processor per System Board is required.
3. Set the clock multiplier to 2:1 with the `sys_clock (1m) ssp` command.
4. System Boards 501-4347, 501-4786, and 501-4903 are not compatible with the 400MHz UltraSPARC module.
5. System Boards 501-5240, 501-5278, and 501-5279 are compatible with the 400MHz UltraSPARC module.

Reference

System Board Installation and Configuration Guide, 805-7189-10.

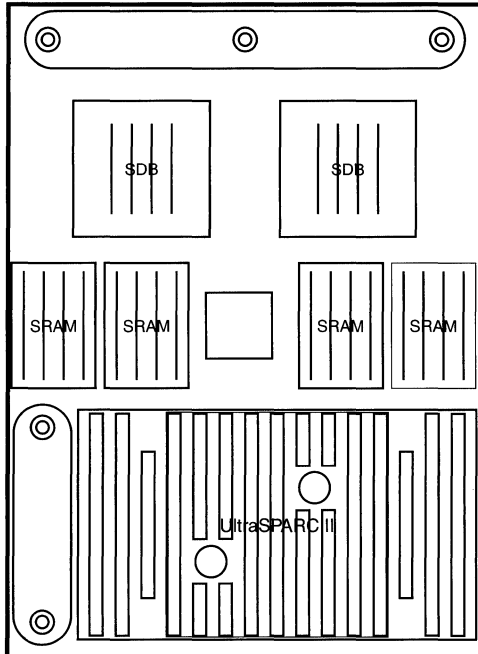
400MHz UltraSPARC II Module

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2580

501-5661

4:1 and 5:1 Clock Ratios
8MB Cache Sapphire-Black



Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. Solaris 2.5.1 patch $\geq 103640-27$ and 2.6 patch $\geq 105181-14$ are required.
3. OBP 3.2 Version 21 is required.
4. Use the *limit-ecache-size* OBP command before installing Solaris 2.5.1 and before booting Solaris 2.5.1 without patch 103640-27.
5. Use the *limit-ecache-size* OBP command before installing Solaris 2.6 and before booting Solaris 2.6 without patch 105181-14.
6. Mixing module speeds within a system is not supported.
7. N+1 Power is not supported if seven CPU/Memory boards are installed.

Compatibility Notes

1. Clock 501-2975 is not supported.
2. The E6000 and E6500 require Clock 501-5365 for a 5:1 clock ratio.
3. The E3x00, E4x00, and E5x00 require Clock 501-5365 for a 5:1 clock ratio if 84MHz system boards are installed.
4. Clock 501-4286 or 501-4946 is supported in the E3x00, E4x00, and E5x00 if the centerplane and all system boards are 100MHz.
5. Clock 501-5365 is supported if 84MHz or 100MHz system boards are installed in the E3x00, E4x00, and E5x00.

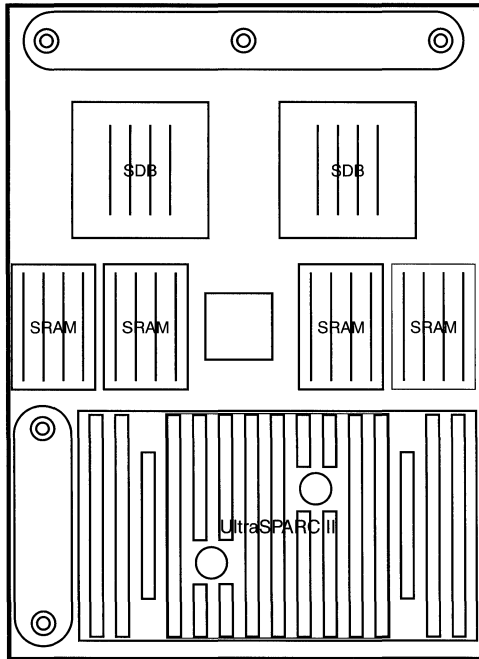
400MHz UltraSPARC II Module

E10000

Option 2580

501-5661

8MB Cache Sapphire-Black



Notes

1. Mixing module speeds within a system is supported.
2. A minimum of one processor per System Board is required.
3. Set the clock multiplier to 2:1 with the `sys_clock (1m) ssp` command.
4. System Boards 501-4347, 501-4786, and 501-4903 are not compatible with the 400MHz UltraSPARC module.
5. System Boards 501-5240, 501-5278, and 501-5279 are compatible with the 400MHz UltraSPARC module.

Reference

System Board Installation and Configuration Guide, 805-7189-10.

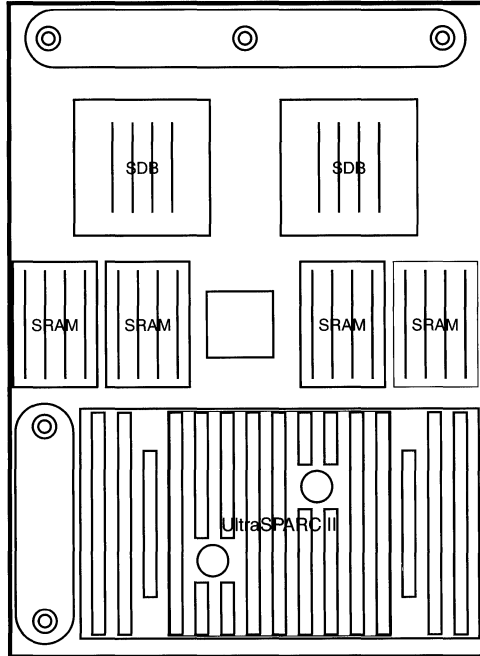
400MHz UltraSPARC II Module

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2580

501-5762

4:1 and 5:1 Clock Ratios
8MB Cache Sapphire-Black



Notes

1. The minimum operating system is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. Solaris 2.5.1 patch $\geq 103640-27$ and 2.6 patch $\geq 105181-14$ are required.
3. OBP 3.2 Version 21 is required.
4. Use the *limit-cache-size* OBP command before installing Solaris 2.5.1 and before booting Solaris 2.5.1 without patch 103640-27.
5. Use the *limit-cache-size* OBP command before installing Solaris 2.6 and before booting Solaris 2.6 without patch 105181-14.
6. Mixing module speeds within a system is not supported.
7. N+1 Power is not supported if seven CPU/Memory boards are installed.

Compatibility Notes

1. Clock 501-2975 is not supported.
2. The E6000 and E6500 require Clock 501-5365 for a 5:1 clock ratio.
3. The E3x00, E4x00, and E5x00 require Clock 501-5365 for a 5:1 clock ratio if 84MHz system boards are installed.
4. Clock 501-4286 or 501-4946 is supported in the E3x00, E4x00, and E5x00 if the centerplane and all system boards are 100MHz.
5. Clock 501-5365 is supported if 84MHz or 100MHz system boards are installed in the E3x00, E4x00, and E5x00.

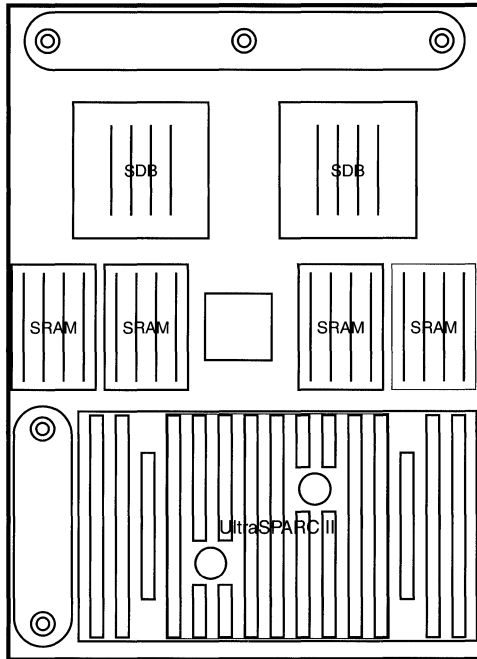
400MHz UltraSPARC II Module

E10000

Option 2580

501-5762

8MB Cache Sapphire-Black



Notes

1. Mixing module speeds within a system is supported.
2. A minimum of one processor per System Board is required.
3. Set the clock multiplier to 2:1 with the `sys_clock (1m) ssp` command.
4. System Boards 501-4347, 501-4786, and 501-4903 are not compatible with the 400MHz UltraSPARC module.
5. System Boards 501-5240, 501-5278, and 501-5279 are compatible with the 400MHz UltraSPARC module.

Reference

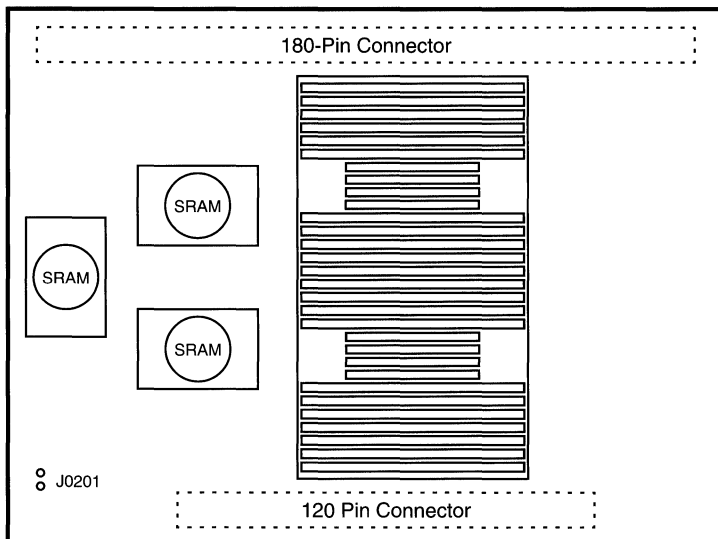
System Board Installation and Configuration Guide, 805-7189-10.

270MHz UltraSPARC Ili Module

Ultra 5

501-4477

256KB Cache Sabre
Plastic UltraSPARC Ili



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The Ultra 10 was not shipped with 270MHz Modules.
3. This module shipped with System Boards 375-0009 and 375-0066.
4. This module is compatible with System Boards 375-0079 and 375-0115.
5. This module was phased out of production in late March 1998.

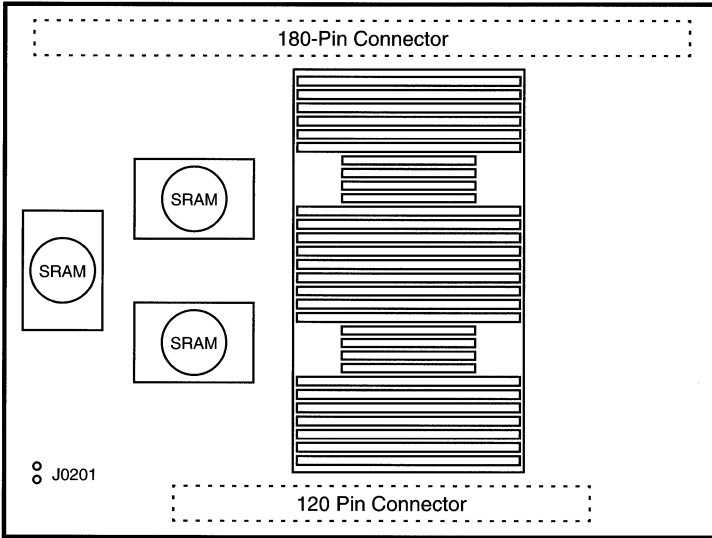
Reference: *Ultra 5 Setup and Installation Guide*, 805-0422.

270MHz UltraSPARC Ili Module

Ultra 5

501-5039

256KB Cache Sabre
Ceramic UltraSPARC Ili



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The Ultra 10 was not shipped with 270MHz Modules.
3. This module shipped with System Boards 375-0009 and 375-0066.
4. This module is compatible with System Boards 375-0079 and 375-0115.
5. This module shipped with System Board 375-0079 after July 1999.

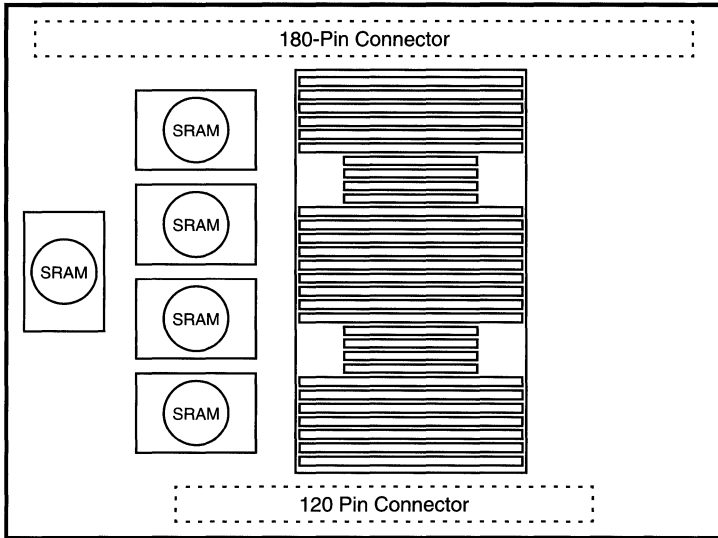
Reference: *Ultra 5 Setup and Installation Guide*, 805-0422.

300MHz UltraSPARC Ili Module

Ultra 10

501-4379

512KB Cache Sabre
Plastic UltraSPARC Ili



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The Ultra 5 was not shipped with 300MHz Modules.
3. This module shipped with System Boards 375-0009 and 375-0066.
4. This module is compatible with System Boards 375-0079 and 375-0115.

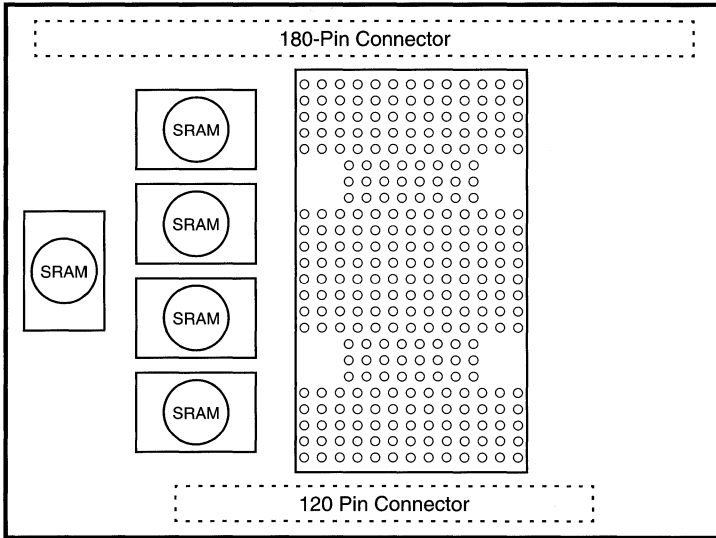
Reference: *Ultra 10 Setup and Installation Guide*, 805-0424.

300MHz UltraSPARC III Module

Ultra 10

501-5040

512KB Cache Sabre
Ceramic UltraSPARC III



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The Ultra 5 was not shipped with 300MHz Modules.
3. This module shipped with System Boards 375-0009 and 375-0066.
4. This module is compatible with System Boards 375-0079 and 375-0115.

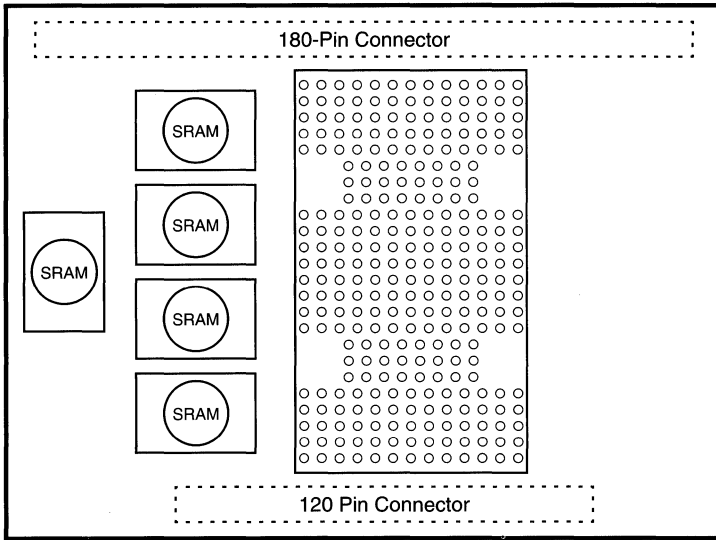
Reference: *Ultra 10 Setup and Installation Guide*, 805-0424.

333MHz UltraSPARC Ili Module

Ultra 5 Ultra 10

501-5090

2MB Cache Sabre
Ceramic UltraSPARC Ili



Note

- 1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
- 2. The Ultra 5/10 PGX8 was not shipped with 333MHz Modules.
- 3. This module shipped with System Board 375-0066 before July 1999.
- 4. This module shipped with System Board 375-0079 after July 1999.
- 5. This module is compatible with System Board 375-0115.

References

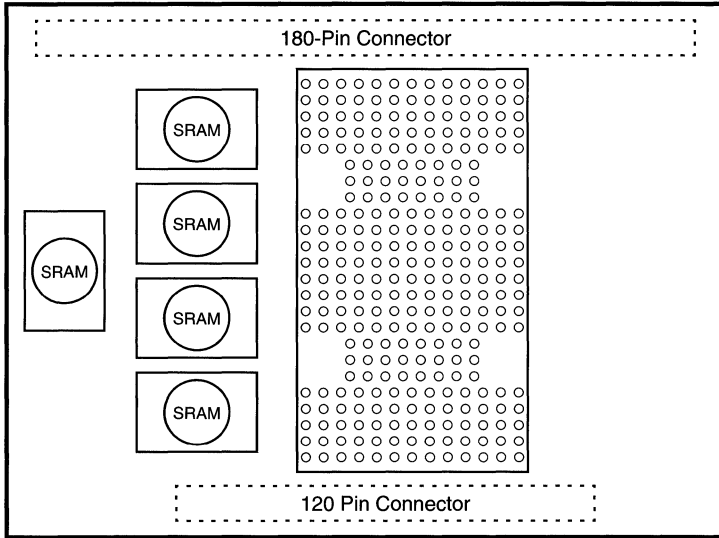
- 1. *Ultra 5 Setup and Installation Guide*, 805-0422.
- 2. *Ultra 10 Setup and Installation Guide*, 805-0424.

333MHz UltraSPARC III Module

Ultra 5 Ultra 10

501-5568

2MB Cache Sapphire-Red
Ceramic UltraSPARC III



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The Ultra 5/10 PGX8 was not shipped with 333MHz Modules.
3. This module requires Ultra 5/10 OBP $\geq 3.19v4$.
4. This module was not shipped with System Board 375-0066.
5. This module shipped with System Board 375-0079 after July 1999.
6. This module is compatible with System Board 375-0115.

References

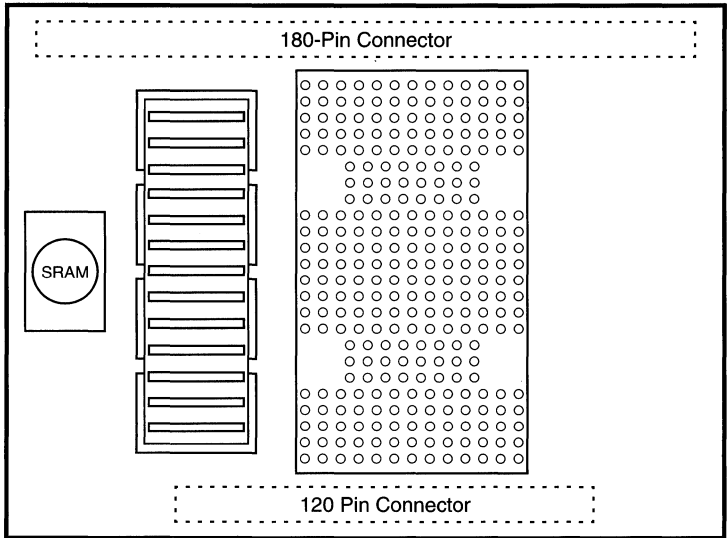
1. *Ultra 5 Setup and Installation Guide*, 805-0422.
2. *Ultra 10 Setup and Installation Guide*, 805-0424.

360MHz UltraSPARC III Module

Ultra 5

501-5148

256KB Cache Sapphire-Red
Ceramic UltraSPARC III



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. This module requires Ultra 5/10 OBP \geq 3.19v4.
3. The Ultra 5 PGX8 was not shipped with 360MHz Modules.
4. The Ultra 10 was not shipped with this 360MHz Module.
5. This module shipped with System Boards 375-0079 and 375-0115.

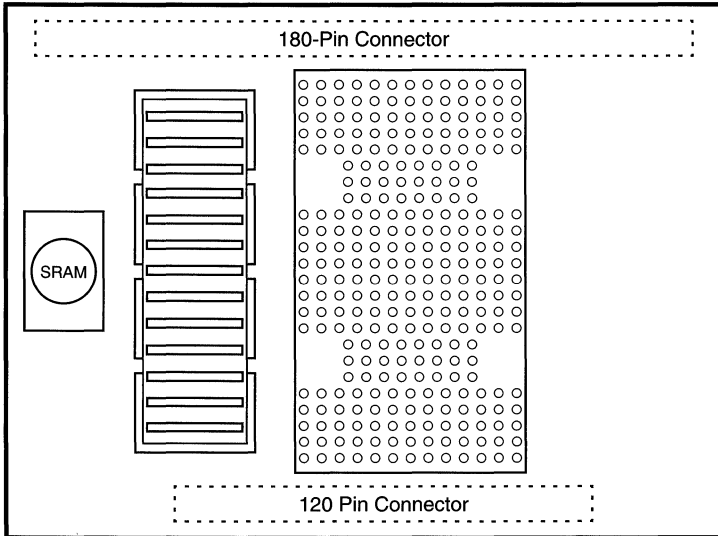
Reference: *Ultra 5 Setup and Installation Guide*, 805-0422.

360MHz UltraSPARC Ili Module

Ultra 10

501-5222

2MB Cache Sabre
Ceramic UltraSPARC Ili



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The Ultra 5/10 PGX8 was not shipped with 360MHz Modules.
3. The Ultra 5 PGX24 was not shipped with this 360MHz Module.
4. This module shipped with System Board 375-0066.
5. This module shipped with System Board 375-0079 after July 1999.
6. This module is compatible with System Board 375-0115.

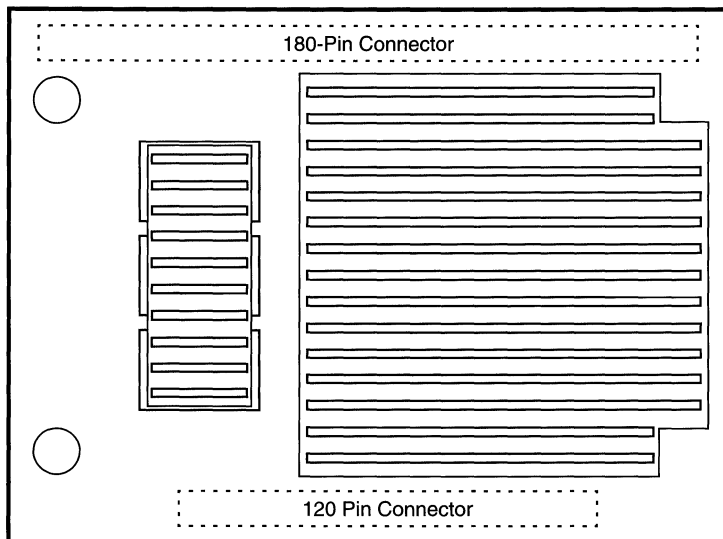
Reference: *Ultra 10 Setup and Installation Guide*, 805-0424.

400MHz UltraSPARC Ili Module

Ultra 5

501-5740

2MB Cache Sapphire-Red
Ceramic UltraSPARC III



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. This module requires Ultra 5/10 OBP $\geq 3.25v1$.
3. This module was not tested with System Board 375-0009.
4. This module ships with System Boards 375-0079 and 375-0115.

References

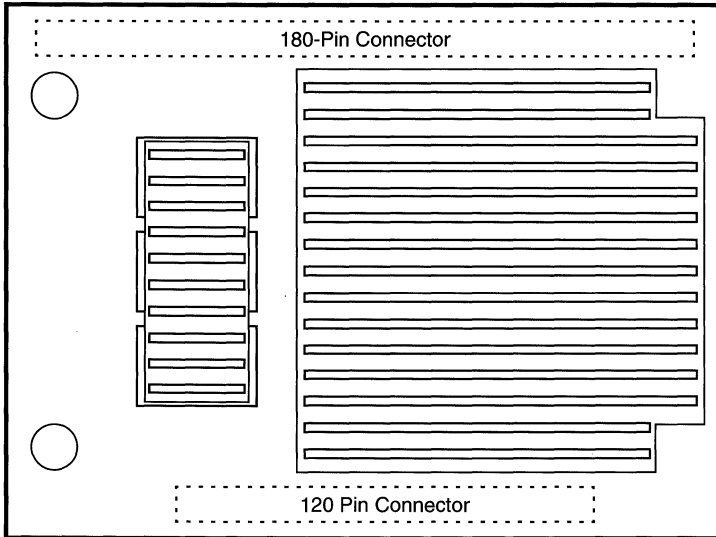
1. *Ultra 5 Setup and Installation Guide*, 805-0422.
2. *Ultra 10 Setup and Installation Guide*, 805-0424.

400MHz UltraSPARC Ili Module

Ultra 5

501-5741

2MB Cache Sapphire-Red
Ceramic UltraSPARC Ili



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. This module requires Ultra 5/10 OBP $\geq 3.25v1$.
3. This module was not tested with System Board 375-0009.
4. This module ships with System Boards 375-0079 and 375-0115.

References

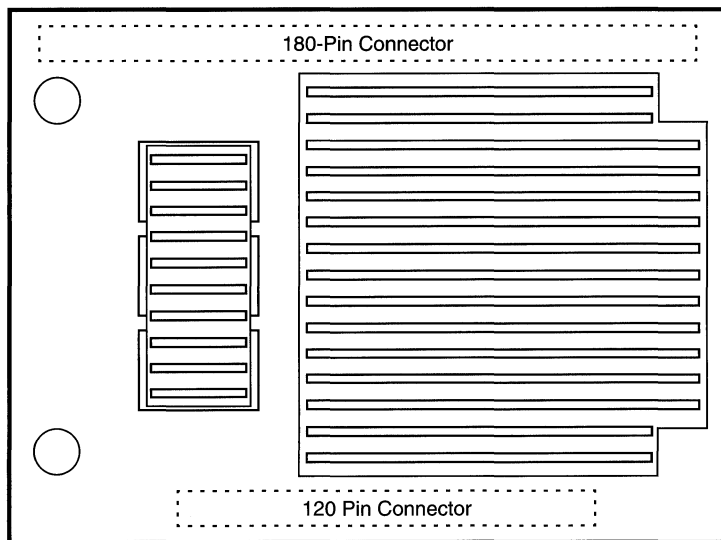
1. *Ultra 5 Setup and Installation Guide*, 805-0422.
2. *Ultra 10 Setup and Installation Guide*, 805-0424.

440MHz UltraSPARC Ili Module

Ultra 10

501-5149

2MB Cache Sapphire-Red
Ceramic UltraSPARC Ili



Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 5/98.
2. The *Operating Environment Installation CD* is required to install Solaris 2.5.1 HW: 11/97 and Solaris 2.6 HW: 5/98.
3. This module requires Ultra 5/10 OBP $\geq 3.19v4$.
4. This module ships with System Boards 375-0079 and 375-0115.
5. OBP 3.25v2 fixes memory timing BugID 4342398.

References

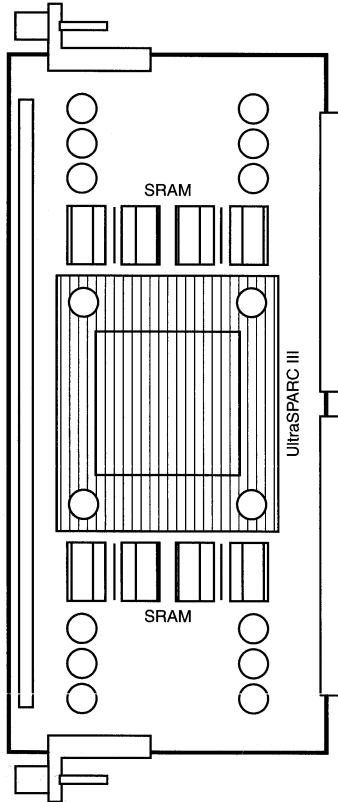
1. *Ultra 5 Setup and Installation Guide*, 805-0422.
2. *Ultra 10 Setup and Installation Guide*, 805-0424.

600MHz UltraSPARC III Module

Sun Blade 1000

501-4999

4MB Cache Cheetah



Notes

1. The minimum Operating System is Solaris 8.
1. Use torque tool 340-6395 to install the module.
2. Torque tool 340-6395 is included with systems that use this module.

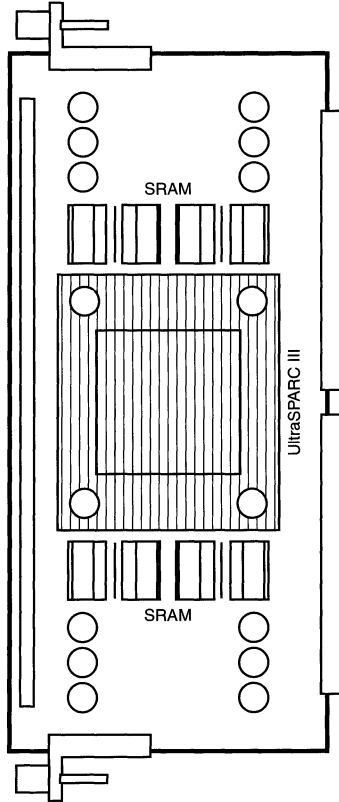
Reference: *Sun Blade 1000 Service Manual*, 805-6618.

750MHz UltraSPARC III Module

Sun Blade 1000

501-5675

8MB Cache Cheetah



Notes

1. The minimum Operating System is Solaris 8.
1. Use torque tool 340-6395 to install the module.
2. Torque tool 340-6395 is included with systems that use this module.

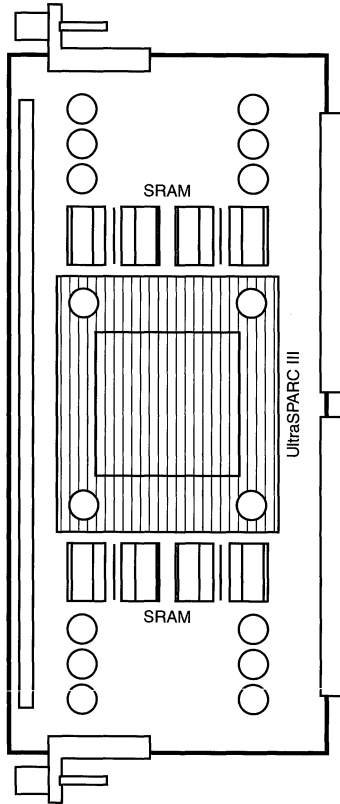
Reference: *Sun Blade 1000 Service Manual*, 805-6618.

900MHz UltraSPARC III Module

Sun Blade 1000

501-5770

8MB Cache Cheetah



Notes

1. The minimum Operating System is Solaris 8.
1. Use torque tool 340-6395 to install the module.
2. Torque tool 340-6395 is included with systems that use this module.

Reference: *Sun Blade 1000 Service Manual*, 805-6618.

CONFIGURATIONS

MEMORY

Memory

| | |
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| Memory Module Compatibility | 2 |
| SBus Prestoserve | 6 |
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| SS10 SS20 | 12 |
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| Ultra 2 | 16 |
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Memory Module Compatibility

An **x** indicates the Memory Module was installed at the factory or included in a memory expansion option. An **s** indicates the Memory Module was tested and is supported in other systems.

JavaStation JJ and JavaStation JK Memory Modules

| SIZE | SPEED | PINS | PART# | DESCRIPTION | JavaStation JJ-xx | JavaStation JK-xx |
|------|-------|------|----------|-------------|-------------------|-------------------|
| 4MB | 150ns | 80 | 501-4733 | SIMM | x | |
| 8MB | 150ns | 80 | 501-4732 | SIMM | x | |
| 16MB | 60ns | 168 | 501-4637 | SIMM | x | |
| 32MB | 60ns | 168 | 501-4639 | SIMM | x | |
| 4MB | 150ns | 80 | 501-4733 | Flash SIMM | | x |
| 8MB | 150ns | 80 | 501-4732 | Flash SIMM | | x |
| 16MB | 60ns | 168 | 501-4637 | DIMM | | x |
| 32MB | 60ns | 168 | 501-4639 | DIMM | | x |

Sun-4m DIMMs

| SIZE | SPEED | PINS | PART# | SS4 | SS5 | SS10 | SS20 |
|------|-------|------|----------|-----|-----|------|------|
| 8MB | 60ns | 168 | 501-2470 | x | x | | |
| 16MB | 80ns | 200 | 501-1785 | | | x | |
| 16MB | 80ns | 200 | 501-2273 | | | x | |
| 16MB | 60ns | 200 | 501-2479 | | | x | x |
| 32MB | 60ns | 168 | 501-2471 | x | x | | |
| 32MB | 60ns | 200 | 501-2622 | | | | x |
| 64MB | 80ns | 200 | 501-1930 | | | x | |
| 64MB | 60ns | 200 | 501-2480 | | | x | x |
| 64MB | 60ns | 200 | 501-2771 | | | | x* |

* For Sun internal use only.

Sun-4d and Sun-4d6 DIMMs

| SIZE | PINS | PART# | SS1000 | SC2000 | CS6400 |
|------|---------|----------|--------|--------|--------|
| 8MB | 68 | 501-1817 | x | x | |
| 32MB | 68 | 501-2196 | x | x | |
| 8MB | Unknown | 370-2746 | | | x |
| 32MB | Unknown | 370-2747 | | | x |

Memory Module Compatibility

Sun-4u DIMMs

| MB | NS | PIN | PART# | U1 | U1 | U2 | U30 | U60 | U80 | E450 | E250 |
|-----|----|-----|----------|-----|-----|-----|-----|-----|-----|------------|------|
| | | | | A11 | A12 | A14 | A16 | A23 | A27 | A20 A25 | A26 |
| 16 | 60 | 200 | 501-2479 | x | x | x | x | x | | * | x |
| 32 | 60 | 200 | 501-2622 | x | x | x | x | x | | x | x |
| 64 | 60 | 200 | 501-2480 | x | x | x | x | x | | x | x |
| 64 | 60 | 200 | 501-5691 | x | x | x | x | x | x | x | x |
| 128 | 60 | 200 | 501-3136 | x | x | x | x | x | | x | x |
| 256 | 60 | 200 | 501-4743 | † | † | † | † | ‡ | x | x | † |
| 256 | 60 | 200 | 501-5896 | | | | | | | x | |

- * Not supported. May cause correctable ECC errors.
- † The memory controller does not support 256MB DIMMs.
- ‡ OBP limits the bank address size to .5GB.

Sun-4u DIMMs - Continued

| MB | NS | PIN | PART# | U5 | U10 |
|-----|----|-----|----------|-----|-----|
| | | | | A21 | A22 |
| 16 | 60 | 168 | 370-3211 | x | x |
| 32 | 60 | 168 | 370-3198 | x | x |
| 64 | 60 | 168 | 370-3199 | x | x |
| 128 | 60 | 168 | 370-3200 | x | x |
| 256 | 60 | 168 | 370-3201 | * | x |
| 32 | 50 | 168 | 370-3796 | x† | x† |
| 64 | 50 | 168 | 370-3797 | x† | x† |
| 128 | 50 | 168 | 370-3798 | x† | x† |
| 256 | 50 | 168 | 370-3799 | x*† | x† |

- * The chassis does not support 256MB DIMMs.
- † The 50ns DIMMs are sold in the Ultra 5/10 ≥360MHz 24-Bit PGX.

Sun-4u DIMMs - Continued

| SIZE | SPEED | PINS | PART# | E3000 E3500 | E4000 E4500 | E5000 E5500 | E6000 E6500 |
|-------|-------|------|----------|----------------|----------------|----------------|----------------|
| 8MB | 60ns | 168 | 501-2652 | x | x | x | x |
| 32MB | 60ns | 168 | 501-2653 | x | x | x | x |
| 128MB | 60ns | 168 | 501-2654 | x | x | x | x |
| 256MB | 60ns | 168 | 501-5658 | x | x | x | x |

Memory Module Compatibility

Sun-4u DIMMs - Continued

| SIZE | SPEED | PINS | PART# | Netra t1 AC/DC200 | SunBlade 100 | SunBlade 1000 |
|-------|-------|------|----------|----------------------|-----------------|------------------|
| 256MB | | | 370-4237 | x | | |
| 512MB | | | 370-4281 | x | | |
| 128MB | 10ns | 168 | 370-4149 | | x | |
| 256MB | 10ns | 168 | 370-4150 | | x | |
| 512MB | 10ns | 168 | 370-4151 | | x | |
| 128MB | 7ns | 232 | 501-4489 | | | x |
| 256MB | 7ns | 232 | 501-5401 | | | x |
| 512MB | 7ns | 232 | 501-5030 | | | |
| 1GB | 7ns | 232 | 501-5031 | | | x |

Sun-4u1 DIMMs

| SIZE | SPEED | PINS | PART# | E10000 SYSTEM BD | E10000 CONTROL BD |
|-------|-------|------|----------|---------------------|----------------------|
| 8MB | 70ns | 80 | 100-5677 | | x |
| 32MB | 60ns | 168 | 501-2653 | x | |
| 128MB | 60ns | 168 | 501-2654 | x | |

Memory Module Compatibility

Miscellaneous Memory Modules

| SIZE | PINS | PART# | A3000 A3500 | A1000 | T3 | HSI/P | SunPCi | L1000 L11000 | SRC/P |
|-------|------|----------|----------------|-------|----|-------|--------|-----------------|-------|
| 8MB | 72 | 370-2438 | x | | | | | | |
| 32MB | 72 | 370-2439 | x | x | | | | | |
| 4MB | 72 | None | | | | x* | | | |
| 4MB | 72 | None | | | | x† | | | |
| 4MB | 72 | None | | x | | | | | |
| 8MB | 72 | None | | x | | | | | |
| 32MB | 168 | None | | | x | | | | |
| 128MB | 168 | None | | | x | | | | |
| 64MB | 168 | 370-3800 | | | | | x | | |
| 128MB | 168 | 370-3801 | | | | | x | | |
| 16MB | 144 | None | | | | | | x‡ | |
| 64MB | 72 | None | | | | | | | § |

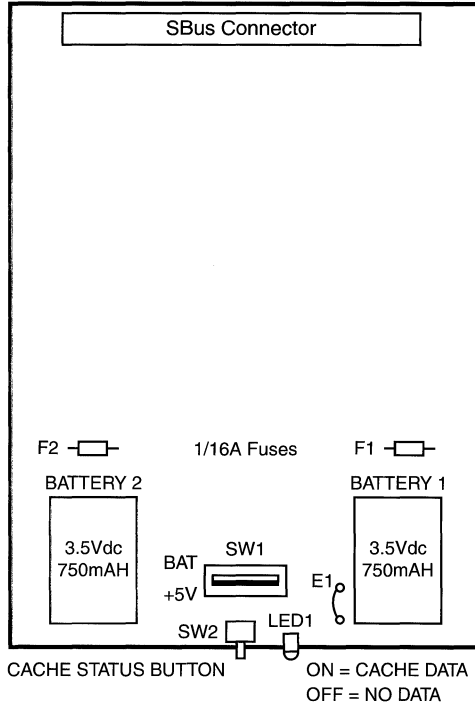
- * Tin plated SIMM and gold socket on 370-2728-01.
- † Gold plated SIMM and gold socket on 370-2728-02.
- ‡ ATL part number 6220340.
- § DPT part number DM4050-64. A DM4050-16 is available from DPT.

Prestoserve

Sun-4/15/30/50/75 SS4 SS5
 SS10 SS20 SS600 A11 A12 A14
 Option 1021
 370-1401

Software Compatibility

| OS | PRESTOSERVE |
|-------|-----------------|
| 4.1.1 | 2.3 |
| 4.1.2 | 2.3 |
| 4.1.3 | 2.3 |
| 2.1 | 2.4/2.4.1/2.4.2 |
| 2.2 | 2.4/2.4.1/2.4.2 |
| 2.3 | 2.4/2.4.1/2.4.2 |
| 2.4 | 2.4/2.4.1/2.4.2 |
| 2.5 | 2.4.2 |
| 2.5.1 | 2.4.2 |



Notes

1. Set SW1 to BAT when the board is installed. Software will not initialize Prestoserve unless battery backup is enabled.
2. Set SW1 to +5V when the board is removed and cache data does not need saving.
3. Cache is cleared when SW1 is set to +5V for more than five minutes.
4. Do NOT accelerate the root file system.
5. Install Patch 101714-01 for Prestoserve 2.4 and 2.4.1.
6. The Prestoserve hardware design is not compatible with 64-bit DVMA. Disable 64-bit DVMA when Prestoserve is used with Ultra 1 Model 170E, Ultra 2, and SunSwift. Refer to BugID 1224649. Add the following to /etc/system:
 set fas:fas_enable_sbus64 = 0

References

1. *Prestoserve User's Manual*, 800-6396-12
2. *Prestoserve User's Guide*, 801-4896-10.

32MB NVRAM Board

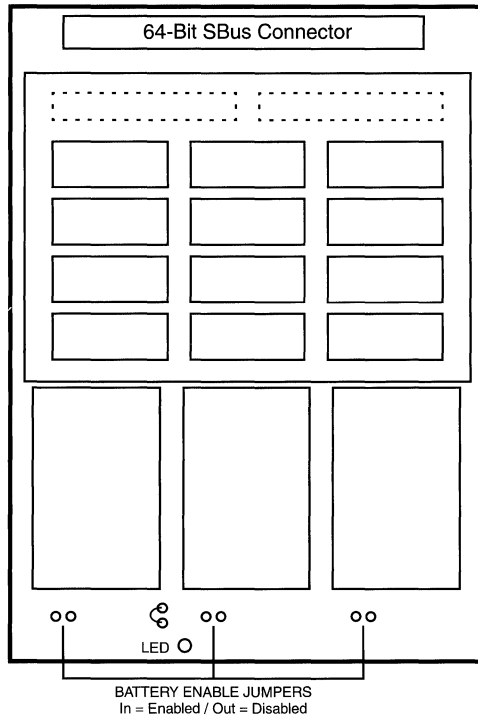
A14

Option 1075

375-0012

Micro Memory MM-1360C

32MB ECC



Notes

1. The minimum operating system is Solaris 2.5.1.
2. Device drivers for the NVRAM Board are in Netra NFS 1.2.
3. The 375-0012-02 fixes BugID 4085112.
4. Use the **nvadm -v** command to display the board status bits.

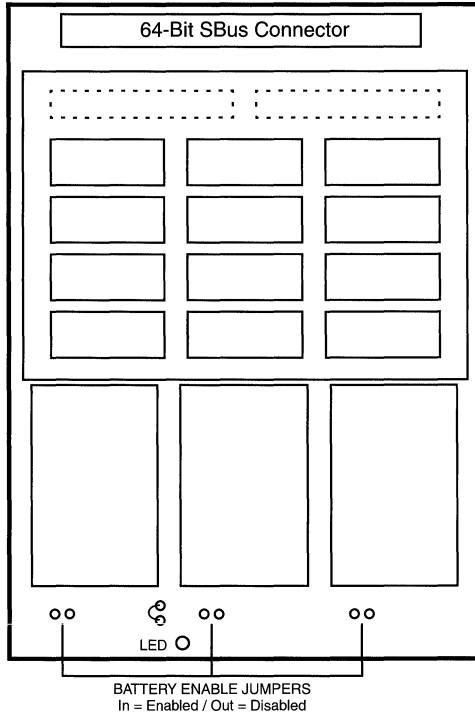
| | | |
|-----------|------|---|
| Battery | 0x00 | Normal operation |
| Battery | 0x01 | Battery 1 has open fuse or is not enabled |
| Battery | 0x02 | Battery 1 has low voltage |
| Battery | 0x04 | Battery 2 has open fuse or is not enabled |
| Battery | 0x08 | Battery 2 has low voltage |
| Battery | 0x10 | Battery 3 has open fuse or is not enabled |
| Battery | 0x20 | Battery 3 has low voltage |
| Dirty Bit | 0x00 | No valid data is present (Cache Data LED if Off) |
| Dirty Bit | 0x01 | Valid data is present and the cache is dirty (Cache Data LED is On) |

Reference: *Installation and User's Guide*, 805-1378-10.

32MB NVRAM Board

E3000 E4000 E5000 E6000
E3500 E4500 E5500 E6500 E10000
Options 6738 6745

375-0087
Micro Memory MM-1360C
32MB ECC



Notes

1. The minimum operating system is Solaris 2.6 HW: 3/98.
2. Solaris 7 requires Fast Write Cache ≥ 1.2 .
3. Two boards are included with Options 6738 and 6745.
4. Two boards per system are required.
5. The 375-0087 is not compatible with Netra NFS.
6. The 375-0012-03 is not compatible with Netra NFS.

References

1. *Installation and User's Guide*, 805-7709-10.
2. *Fast Write Cache 2.0 Installation Guide*, 806-4405-10

64MB NVRAM Board

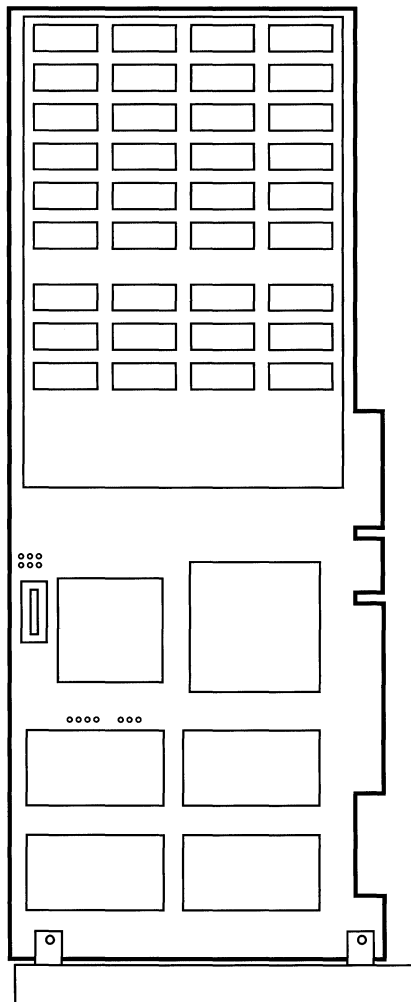
A23 A25 A26 A27

Option 6739

375-0086

64MB ECC

5V 64Bit 33MHz



Notes

- 1. The minimum operating system is Solaris 2.6.
- 2. Two boards are included with Option 6739.
- 3. Two boards per system are required.

Reference: *Fast Write Cache 2.0 Installation Guide*, 806-4405-10.

SPARCengine CP1500 Memory

Netra t1 100/105 Netra ct 400/800 SPARCengine CP1500

370-4096
256MB

370-4155
256MB

501-5209
128MB FRU

501-5210
64MB FRU

501-5388
256MB FRU

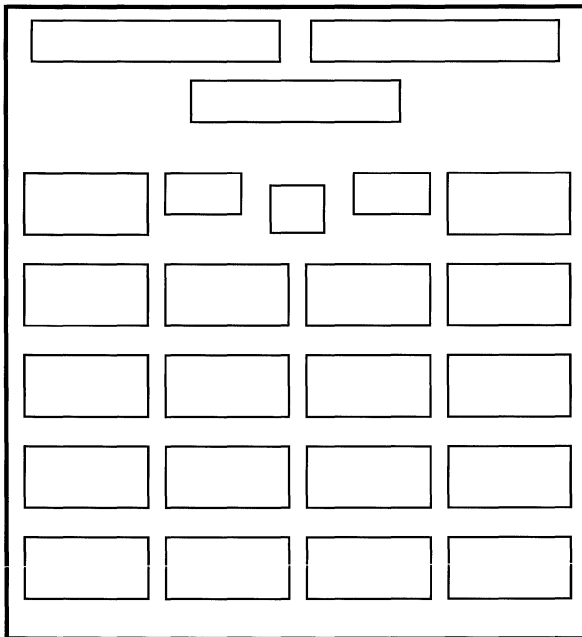
501-5359
512MB FRU

540-5358
64MB FRU
501-5210

540-4349
256MB FRU
501-5388 <12/99
370-4096 >12/99

540-4350
512MB FRU
501-5359

540-4547
256MB FRU
370-4155



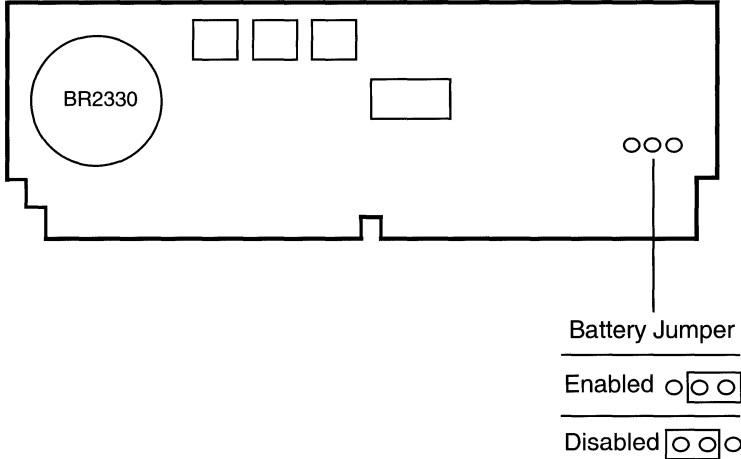
Notes.

1. Install the highest capacity memory board first.
2. The 370-4155 was sold for use in the Netra t1 100/105.
3. Up to four 370-4155 256MB Memory Boards can be installed.
4. Only one 370-4155 can be mixed with any other memory board.

References

1. *SPARCengine CP1500 OEM Technical Manual*, 805-5871.
2. *SPARCengine CP1500 Technical Reference Manual*, 806-2104.

1MB NVSIMM
SS1000 SC2000
Option 172
501-2197



Notes

1. The minimum operating system is Solaris 2.2 and Prestoserve 2.4.1.
2. The SS1000 supports two banks of four NVSIMMs.
3. The SC2000 supports one bank of eight NVSIMMs.
4. The Panasonic BR2330 Battery is not replaceable.
5. If Prestoserve 2.4.1 is installed on SS1000 or SC2000 systems, install Patch 101714-03 or remove the SUNWprsto package before upgrading to Solaris 2.4.
6. If Solaris 2.4 is installed, do not install Prestoserve 2.4.1 or Patch 101714-03 on SS1000 or SC2000 systems.

References

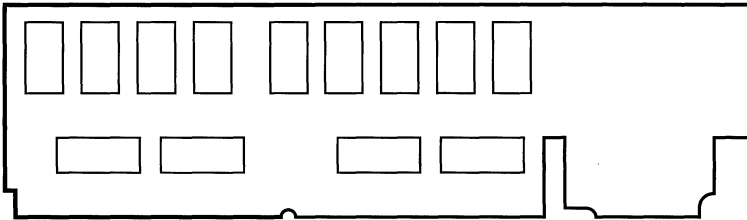
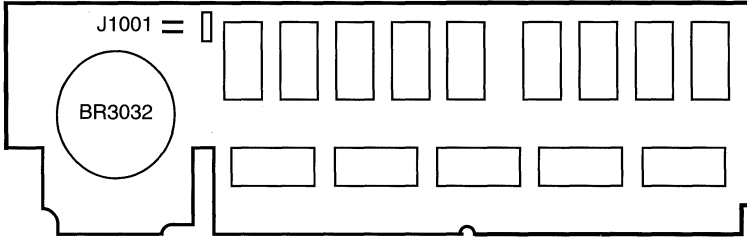
1. *Memory Module Installation Guide*, 801-2030-11.
2. *Prestoserve User's Guide*, 801-4896-10.
3. *2.4.1 Prestoserve Release Note*, 801-4897-10.

2MB NVSIMM

SS10 SS20

Option 178

501-2001



Notes

1. The minimum operating system is Solaris 2.2 and Prestoserve 2.4.1.
2. One NVSIMM or one SBus Prestoserve is supported.
3. Install the NVSIMM in SS10 connector J0301 or J0202.
4. Install the NVSIMM in SS20 connector J0305 or J0304.
5. Install a shunt at J1001 to enable the battery backup mode.
6. The SS20 requires NVSIMM \geq 501-2001-02.
7. The Panasonic BR3032 Battery is not replaceable.

References

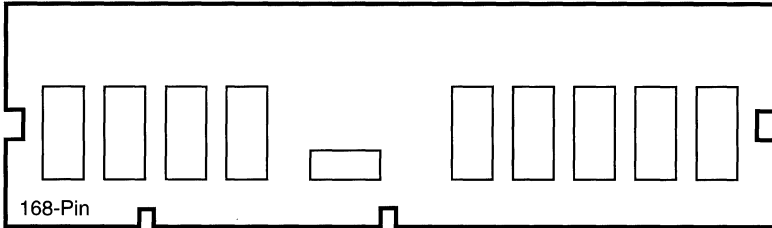
1. *SPARCstation 10 NVSIMM Installation*, 801-3386-10.
2. *Prestoserve User's Guide*, 801-4896-10.
3. *2.4.1 Prestoserve Release Note*, 801-4897-10.

SS4 SS5

Options 108 132

501-2470
 8MB 5.0V ECC
 1Mx72 Fast Page
 60ns DIMM
 Option 108

501-2471
 32MB 5.0V ECC
 4Mx66 Fast Page
 60ns DIMM
 Option 132



Memory Map

| SS4 SOCKET | SS5 SOCKET | DIMM | ADDRESS RANGE |
|------------|------------|--------|---------------------|
| None | J0403 | DIMM 7 | 0e000000 - 0ffffff |
| None | J0402 | DIMM 6 | 0c000000 - 0dffffff |
| None | J0401 | DIMM 5 | 0a000000 - 0bffffff |
| J0305 | J0400 | DIMM 4 | 08000000 - 09ffffff |
| J0304 | J0303 | DIMM 3 | 06000000 - 07ffffff |
| J0303 | J0302 | DIMM 2 | 04000000 - 05ffffff |
| J0302 | J0301 | DIMM 1 | 02000000 - 03ffffff |
| J0301 | J0300 | DIMM 0 | 00000000 - 01ffffff |

Notes

1. Install the highest capacity DIMM in Slot 0 under Solaris 1.x.
2. The minimum memory requirement is one DIMM in Bank 0.
3. The SS4 and SS5 use a 66-bit parity protected memory subsystem.
4. If a memory error occurs and the DIMM location is not reported, use the MFAR (memory fault address register) value as the physical address of the memory error.

References

1. *SPARCstation 4 Service Manual*, 802-1529-10.
2. *SPARCstation 5 Service Manual*, 801-6396-10.

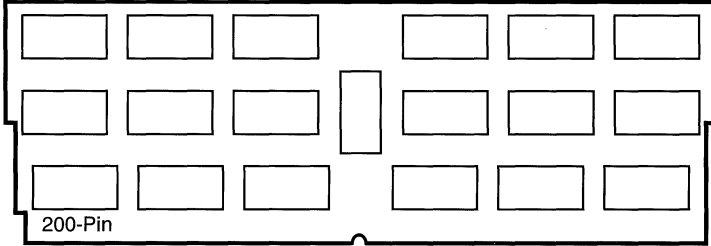
SS20

Options 116 132 164

501-2479
16MB 5.0V ECC
60ns DIMM
Option 116

501-2480
64MB 5.0V ECC
60ns DIMM
Option 132

501-2622
32MB 5.0V ECC
60ns DIMM
Option 164



Memory Map

| SOCKET | DIMM * | DIMM † | BANK | ADDRESS RANGE |
|--------|--------|--------|--------|---------------------|
| J0201 | DIMM 0 | DIMM 0 | Bank 0 | 00000000 - 03ffffff |
| J0202 | DIMM 1 | DIMM 2 | Bank 2 | 08000000 - 0bffffff |
| J0203 | DIMM 2 | DIMM 5 | Bank 5 | 14000000 - 17ffffff |
| J0301 | DIMM 3 | DIMM 3 | Bank 3 | 0c000000 - 0fffffff |
| J0302 | DIMM 4 | DIMM 6 | Bank 6 | 18000000 - 1bffffff |
| J0303 | DIMM 5 | DIMM 1 | Bank 1 | 04000000 - 07ffffff |
| J0304 | DIMM 6 | DIMM 7 | Bank 7 | 1c000000 - 1fffffff |
| J0305 | DIMM 7 | DIMM 4 | Bank 4 | 10000000 - 13ffffff |

* This installation sequence does not match the bank order.

* *SS20 Service Manual*, 801-6189-11.

† This installation sequence matches the bank order.

† *SS20 DSIMM Installation*, 801-6185-11.

† *SS10SX and SS20 System Configuration Guide*, 801-7287-10.

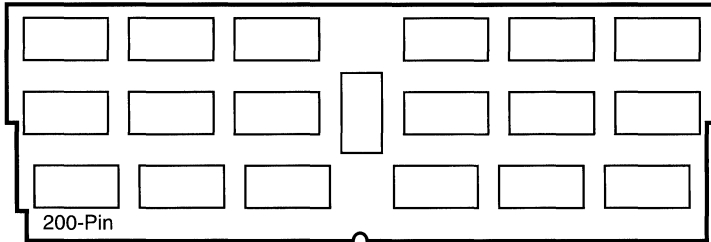
Notes

1. The 32MB DIMM is not supported in the SS10 or SS10SX.
2. The minimum memory requirement is one DIMM in Bank 0.
3. Install Solaris 2.3 Patch $\geq 101318-34$ when:
 One 32MB DIMM is mixed with seven 16 or 64MB DIMMs.
 Two 32MB DIMMs are mixed with five or more 16 or 64MB DIMMs.
 Three 32MB DIMMs are mixed with three or more 16 or 64MB DIMMs.
 Four 32MB DIMMs are mixed with one or more 16, 32, or 64MB DIMMs.
4. Use the **sxconfig** (1M) command to configure contiguous memory.

Ultra 1

Options 7001 7002 7003 7004 7043

| | | | | |
|---|---|---|--|---|
| 501-2479 16MB 5V ECC 60ns DIMM Option 7001 | 501-2480 64MB 5V ECC 60ns DIMM Option 7003 | 501-2622 32MB 5V ECC 60ns DIMM Option 7002 | 501-3136 128MB 5V ECC 60ns DIMM Option 7004 | 501-5691 64MB 5V ECC 60ns DIMM Option 7043 |
|---|---|---|--|---|



Memory Map

| SOCKET | BANK | BYTE | BITS | ADDRESS RANGE |
|--------|--------|---------|-----------|---------------------|
| U0604 | Bank 3 | 16 - 31 | 128 - 255 | 30000000 - 3fffffff |
| U0704 | Bank 3 | 00 - 15 | 000 - 127 | 30000000 - 3fffffff |
| U0603 | Bank 2 | 16 - 31 | 128 - 255 | 20000000 - 2fffffff |
| U0703 | Bank 2 | 00 - 15 | 000 - 127 | 20000000 - 2fffffff |
| U0602 | Bank 1 | 16 - 31 | 128 - 255 | 10000000 - 1fffffff |
| U0702 | Bank 1 | 00 - 15 | 000 - 127 | 10000000 - 1fffffff |
| U0601 | Bank 0 | 16 - 31 | 128 - 255 | 00000000 - 0fffffff |
| U0701 | Bank 0 | 00 - 15 | 000 - 127 | 00000000 - 0fffffff |

Notes

1. Each bank requires two DIMMs.
2. The minimum memory requirement is two DIMMs in Bank 0.
3. DIMMs can be installed in Bank 1, Bank 2, or Bank 3 in any order.
4. Each bank addresses 256MB of memory. Unused memory is mapped out by the memory management hardware.

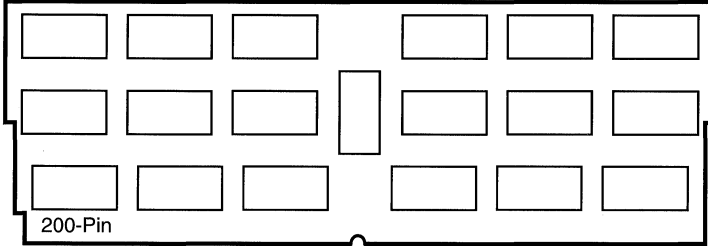
References

1. *Sun Ultra 1 Series Service Manual*, 802-3819-10.
2. *Sun Ultra 1 Creator Series Service Manual*, 802-4148-10.

Ultra 2

Options 7001 7002 7003 7004 7043

| | | | | |
|---|---|---|--|---|
| 501-2479 16MB 5V ECC 60ns DIMM Option 7001 | 501-2480 64MB 5V ECC 60ns DIMM Option 7003 | 501-2622 32MB 5V ECC 60ns DIMM Option 7002 | 501-3136 128MB 5V ECC 60ns DIMM Option 7004 | 501-5691 64MB 5V ECC 60ns DIMM Option 7043 |
|---|---|---|--|---|



Memory Map

| SOCKET | GROUP | BANK | ADDRESS RANGE | WORD | BYTE |
|--------|---------|--------|---------------------|---------|-------|
| U0604 | Group 3 | Bank 1 | 60000000 - 7fffffff | 2nd Dbl | 16-31 |
| U0704 | Group 3 | Bank 1 | 60000000 - 7fffffff | 2nd Dbl | 00-15 |
| U0404 | Group 3 | Bank 0 | 60000000 - 7fffffff | 1st Dbl | 16-31 |
| U0504 | Group 3 | Bank 0 | 60000000 - 7fffffff | 1st Dbl | 00-15 |
| U0603 | Group 2 | Bank 1 | 40000000 - 5fffffff | 2nd Dbl | 16-31 |
| U0703 | Group 2 | Bank 1 | 40000000 - 5fffffff | 2nd Dbl | 00-15 |
| U0403 | Group 2 | Bank 0 | 40000000 - 5fffffff | 1st Dbl | 16-31 |
| U0503 | Group 2 | Bank 0 | 40000000 - 5fffffff | 1st Dbl | 00-15 |
| U0602 | Group 1 | Bank 1 | 20000000 - 3fffffff | 2nd Dbl | 16-31 |
| U0702 | Group 1 | Bank 1 | 20000000 - 3fffffff | 2nd Dbl | 00-15 |
| U0402 | Group 1 | Bank 0 | 20000000 - 3fffffff | 1st Dbl | 16-31 |
| U0502 | Group 1 | Bank 0 | 20000000 - 3fffffff | 1st Dbl | 00-15 |
| U0601 | Group 0 | Bank 1 | 00000000 - 1fffffff | 2nd Dbl | 16-31 |
| U0701 | Group 0 | Bank 1 | 00000000 - 1fffffff | 2nd Dbl | 00-15 |
| U0401 | Group 0 | Bank 0 | 00000000 - 1fffffff | 1st Dbl | 16-31 |
| U0501 | Group 0 | Bank 0 | 00000000 - 1fffffff | 1st Dbl | 00-15 |

Notes

1. Two pair of DIMMs form a group of four DIMMs.
2. All four DIMMs within a group must be the same size.
3. The minimum memory requirement is four DIMMs in Group 0.
4. DIMMs can be installed in Group 1, Group 2, or Group 3 in any order.
5. Each group addresses 512MB of memory. Unused memory is mapped out by the memory management hardware.

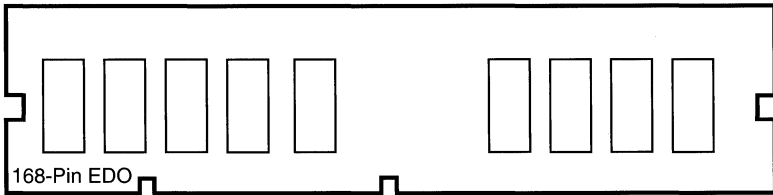
Reference: *Ultra 2 Creator Series Service Manual*, 802-2561-10

Ultra 5 Ultra 10

Options 7030 7031 7032 7033 7036 7037 7038 7039

| | | | | |
|--|--|--|---|---|
| 370-3211 16MB 3.3V ECC 60ns DIMM No Option | 370-3198 32MB 3.3V ECC 60ns DIMM Option 7030 | 370-3199 64MB 3.3V ECC 60ns DIMM Option 7031 | 370-3200 128MB 3.3V ECC 60ns DIMM Option 7032 | 370-3201 256MB 3.3V ECC 60ns DIMM Option 7033 |
|--|--|--|---|---|

| | | | |
|--|--|---|---|
| 370-3796 32MB 3.3V ECC 50ns DIMM Option 7036 | 370-3797 64MB 3.3V ECC 50ns DIMM Option 7037 | 370-3798 128MB 3.3V ECC 50ns DIMM Option 7038 | 370-3799 256MB 3.3V ECC 50ns DIMM Option 7039 |
|--|--|---|---|



Memory Map

| SOCKET | BANK | ADDRESS RANGE | ADDRESS RANGE |
|--------|--------|--------------------|--------------------|
| DIMM 1 | Bank 0 | 00000000 - 0ffffff | 20000000 - 2ffffff |
| DIMM 2 | Bank 0 | 00000000 - 0ffffff | 20000000 - 2ffffff |
| DIMM 3 | Bank 1 | 10000000 - 1ffffff | 30000000 - 3ffffff |
| DIMM 4 | Bank 1 | 10000000 - 1ffffff | 30000000 - 3ffffff |

Notes

1. The minimum memory requirement is two DIMMs in any bank.
2. The 16MB DIMM uses 10-bit column addressing and was not sold.
3. The 32, 64, 128, and 256MB DIMMs use 11-bit column addressing.
4. If 10-bit and 11-bit DIMMs are mixed, either pair will be ignored.
5. The 256MB DIMMs are not supported in the Ultra 5.
6. Memory speed is 60ns if 50ns and 60ns DIMMs are mixed.
7. UltraSPARC Ili speeds ≥ 360 MHz support 50ns memory speed.
8. Boards 375-0066, 375-0079, and 375-0115 support 50ns memory.
9. OBP ≥ 3.25 v3 is required when DIMMs manufactured by Micron are installed with 360MHz, 400MHz, or 440MHz CPU modules.

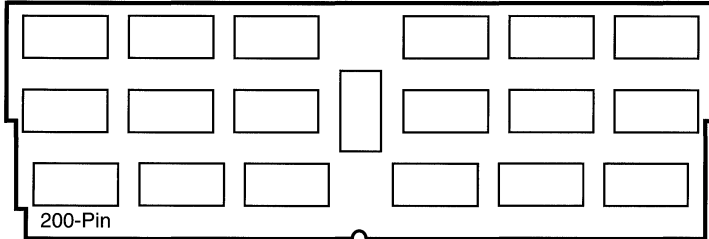
References

1. Sun Ultra 5/10 Service Manual, 805-0423-10.
1. Sun Ultra 5 Service Manual, 805-7763.
2. Sun Ultra 10 Service Manual, 805-7764.
3. Sun Ultra 5/10 Product Note, 805-3647-10.
4. Sun Ultra 5/10 Product Note, 805-4970-10.
5. Sun Ultra 5 ShowMe How CD-ROM, 704-5753.
6. Sun Ultra 10 ShowMe How CD-ROM, 704-5983.

Ultra 30 Netra t 1100

Options 7001 7002 7003 7004 7043

| | | | | |
|---|---|---|--|---|
| 501-2479 16MB 5V ECC 60ns DIMM Option 7001 | 501-2480 64MB 5V ECC 60ns DIMM Option 7003 | 501-2622 32MB 5V ECC 60ns DIMM Option 7002 | 501-3136 128MB 5V ECC 60ns DIMM Option 7004 | 501-5691 64MB 5V ECC 60ns DIMM Option 7043 |
|---|---|---|--|---|



Memory Map

| SOCKET | QUAD | PAIR | PAIR ADDRESS | QUAD ADDRESS |
|--------|--------|--------|---------------------|---------------------|
| U1004 | Quad 3 | Pair 1 | 70000000 - 7fffffff | 60000000 - 7fffffff |
| U0904 | Quad 3 | Pair 1 | 70000000 - 7fffffff | 60000000 - 7fffffff |
| U0804 | Quad 3 | Pair 0 | 60000000 - 6fffffff | 60000000 - 7fffffff |
| U0704 | Quad 3 | Pair 0 | 60000000 - 6fffffff | 60000000 - 7fffffff |
| U1003 | Quad 2 | Pair 1 | 50000000 - 5fffffff | 40000000 - 5fffffff |
| U0903 | Quad 2 | Pair 1 | 50000000 - 5fffffff | 40000000 - 5fffffff |
| U0803 | Quad 2 | Pair 0 | 40000000 - 4fffffff | 40000000 - 5fffffff |
| U0703 | Quad 2 | Pair 0 | 40000000 - 4fffffff | 40000000 - 5fffffff |
| U1002 | Quad 1 | Pair 1 | 30000000 - 3fffffff | 20000000 - 3fffffff |
| U0902 | Quad 1 | Pair 1 | 30000000 - 3fffffff | 20000000 - 3fffffff |
| U0802 | Quad 1 | Pair 0 | 20000000 - 2fffffff | 20000000 - 3fffffff |
| U0702 | Quad 1 | Pair 0 | 20000000 - 2fffffff | 20000000 - 3fffffff |
| U1001 | Quad 0 | Pair 1 | 10000000 - 1fffffff | 00000000 - 1fffffff |
| U0901 | Quad 0 | Pair 1 | 10000000 - 1fffffff | 00000000 - 1fffffff |
| U0801 | Quad 0 | Pair 0 | 00000000 - 0fffffff | 00000000 - 1fffffff |
| U0701 | Quad 0 | Pair 0 | 00000000 - 0fffffff | 00000000 - 1fffffff |

Notes

1. Two DIMMs form a pair. Two pair of DIMMs form a quad.
2. The minimum requirement is two DIMMs in any adjacent pair.
3. DIMMs can be installed in any order of pairs.
4. Interleaving requires a fully populated quad.
5. Each quad addresses up to 512MB of memory.

Reference: *Ultra 30 Service Manual*, 802-7719.

Ultra 60 Enterprise 220R Netra t 1120/1125

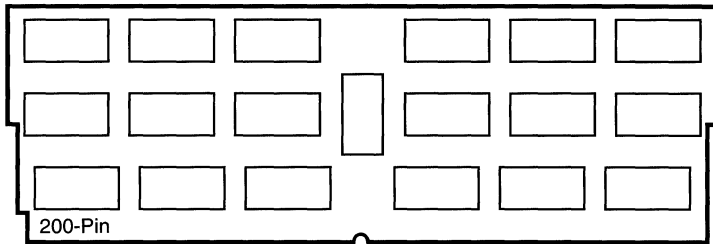
Options 7002 7003 7004 7043

501-2480
64MB 5.0V ECC
60ns DIMM
Option 7003

501-2622
32MB 5.0V ECC
60ns DIMM
Option 7002

501-3136
128MB 5.0V ECC
60ns DIMM
Option 7004

501-5691
64MB 5.0V ECC
60ns DIMM
Option 7043



Memory Map

| SOCKET | BANK | ADDRESS RANGE |
|--------|--------|---------------------|
| U1004 | Bank 3 | a0000000 - bfffffff |
| U1003 | Bank 3 | a0000000 - bfffffff |
| U1002 | Bank 3 | a0000000 - bfffffff |
| U1001 | Bank 3 | a0000000 - bfffffff |
| U0904 | Bank 2 | 80000000 - 9fffffff |
| U0903 | Bank 2 | 80000000 - 9fffffff |
| U0902 | Bank 2 | 80000000 - 9fffffff |
| U0901 | Bank 2 | 80000000 - 9fffffff |
| U0804 | Bank 1 | 20000000 - 3fffffff |
| U0803 | Bank 1 | 20000000 - 3fffffff |
| U0802 | Bank 1 | 20000000 - 3fffffff |
| U0801 | Bank 1 | 20000000 - 3fffffff |
| U0704 | Bank 0 | 00000000 - 1fffffff |
| U0703 | Bank 0 | 00000000 - 1fffffff |
| U0702 | Bank 0 | 00000000 - 1fffffff |
| U0701 | Bank 0 | 00000000 - 1fffffff |

Notes

1. The minimum requirement is four DIMMS in any bank.
2. DIMMs can be installed in any bank order.
3. Each bank addresses 512MB of memory.
4. Interleaving is not supported.

References

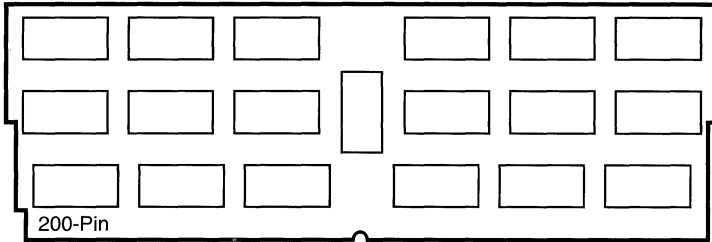
1. *Ultra 60 Service Manual*, 805-1709-10.
2. BugID 4091708 against the *Ultra 60 Service Manual*.

Ultra 80 Enterprise 420R Netra t 1400/1405

Options 7043 7005

501-5691
64MB 5.0V ECC
60ns DIMM
Option 7043

501-4743
256MB 5.0V ECC
60ns DIMM
Option 7005



Memory Map

| RISER BOARD | SYSTEM BOARD | BANK | ADDRESS |
|-------------|--------------|------|-----------------------|
| U0301 | | 0 | 0000 0000 - 3fff ffff |
| U0302 | | 0 | 0000 0000 - 3fff ffff |
| | U1301 | 0 | 0000 0000 - 3fff ffff |
| | U1302 | 0 | 0000 0000 - 3fff ffff |
| U0401 | | 1 | 4000 0000 - 7fff ffff |
| U0402 | | 1 | 4000 0000 - 7fff ffff |
| | U1401 | 1 | 4000 0000 - 7fff ffff |
| | U1402 | 1 | 4000 0000 - 7fff ffff |
| U0303 | | 2 | 8000 0000 - bfff ffff |
| U0304 | | 2 | 8000 0000 - bfff ffff |
| | U1303 | 2 | 8000 0000 - bfff ffff |
| | U1304 | 2 | 8000 0000 - bfff ffff |
| U0403 | | 3 | c000 0000 - ffff ffff |
| U0404 | | 3 | c000 0000 - ffff ffff |
| | U1403 | 3 | c000 0000 - ffff ffff |
| | U1404 | 3 | c000 0000 - ffff ffff |

Notes

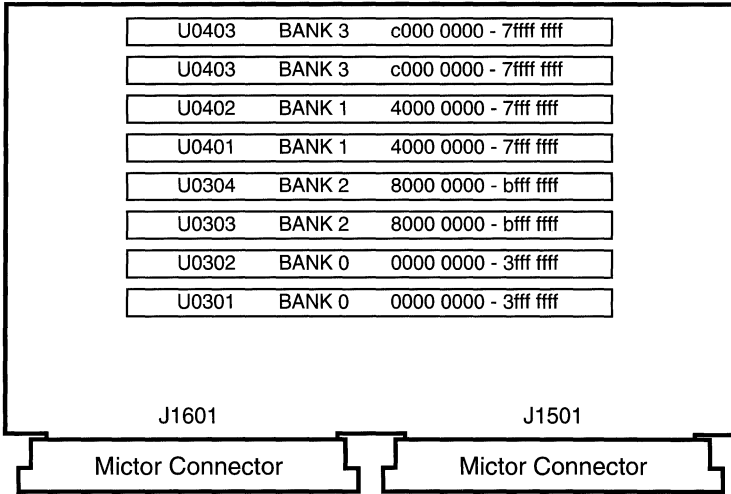
1. The minimum requirement is four DIMMs in any bank.
2. DIMMs are required on both the Riser Board and the System Board.
3. The recommended installation sequence is Bank 0, 2, 1, 3.
4. Each bank addresses 1GB of memory.
5. 64MB DIMM 501-2480 and 128MB DIMM 501-3136 are not supported.
6. 16MB and 32MB DIMMs are not sold for the Ultra 80.

Reference: *Ultra 80 Service Manual*, 805-6618.

Ultra 80 Memory Riser

Ultra 80 Enterprise 420R Netra t 1400/1405

501-5218
OMB FRU



Notes

1. The minimum requirement is four DIMMs in any bank.
2. The recommended installation sequence is Bank 0, 2, 1, 3.
3. DIMMs are required on both the Riser Board and the System Board.
4. Memory is 2-way interleaved when the same size DIMMs are installed in Banks 0 and 1.
5. Memory is 4-way interleaved when the same size DIMMs are installed in Banks 0, 1, 2, and 3.
6. Damage to the Microribbon Connectors can occur if DIMMs are installed or removed when the Riser Board is installed on the System Board.
7. Each bank addresses 1GB of memory

Torque Requirements

1. Use torque tool 340-6091 to install the memory riser board.
2. Tool 340-6091 is included with systems that use the memory riser board.
3. A torque driver set to 4.0 - 4.5 in/lbs with a #2 Square Drive bit may be used to install the memory riser board.

References

1. *Ultra 80 Service Manual*, 805-6618.
2. *Ultra 80 Product Note*, 806-1457.
3. *Memory Riser Assembly Damage Caution*, 806-2892.

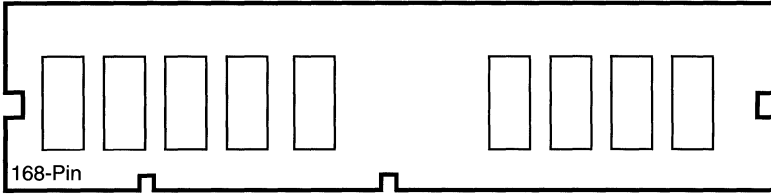
Sun Blade 100

Options 6691 6692 6693

370-4149
 128MB 3.3V ECC
 10ns SDRAM DIMM
 Option 6691

370-4150
 256MB 3.3V ECC
 10ns SDRAM DIMM
 Option 6692

370-4151
 512MB 3.3V ECC
 10ns SDRAM DIMM
 Option 6693



Memory Map

| | | | | |
|----|--------|-------------------|----|-------------------|
| U5 | DIMM 3 | 60000000-7fffffff | or | c0000000-fffffff |
| U4 | DIMM 2 | 40000000-5fffffff | or | 80000000-bfffffff |
| U3 | DIMM 1 | 20000000-3fffffff | or | 40000000-7fffffff |
| U2 | DIMM 0 | 00000000-1fffffff | or | 00000000-3fffffff |

Notes

1. The minimum memory requirement is one DIMM in U2.
2. The memory installation sequence is U2, U3, U4, and U5.
3. Each bank addresses 512MB of memory with 500MHz UltraSPARC.
4. Each bank addresses 1GB of memory with ≥550MHz UltraSPARC.

Reference: *Sun Blade 100 Service Manual*, 806-3416.

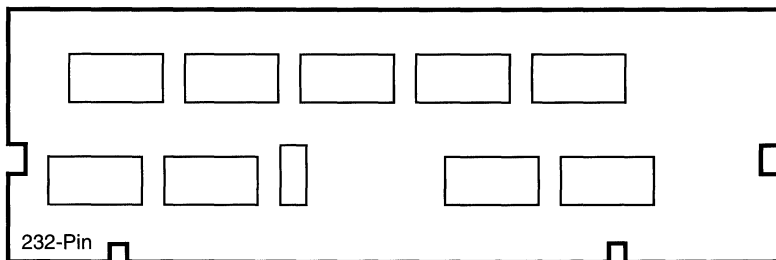
Sun Blade 1000

Options 7050 7052 7053

501-4489
128MB 3.3V ECC
7ns SDRAM DIMM
Option 7050

501-5031
1GB 3.3V ECC
7ns SDRAM DIMM
Option 7052

501-5401
256MB 3.3V ECC
7ns SDRAM DIMM
Option 7053



Memory Map

| | | | |
|-------|---------|----------|---------------------|
| U0407 | Group 1 | Bank 1/3 | fa000000 - 1f3fffff |
| U0406 | Group 0 | Bank 0/2 | 00000000 - f9ffff |
| U0305 | Group 1 | Bank 1/3 | fa000000 - 1f3fffff |
| U0305 | Group 0 | Bank 0/2 | 00000000 - f9ffff |
| U0203 | Group 1 | Bank 1/3 | fa000000 - 1f3fffff |
| U0202 | Group 0 | Bank 0/2 | 00000000 - f9ffff |
| U0101 | Group 1 | Bank 1/3 | fa000000 - 1f3fffff |
| U0100 | Group 0 | Bank 0/2 | 00000000 - f9ffff |

Notes

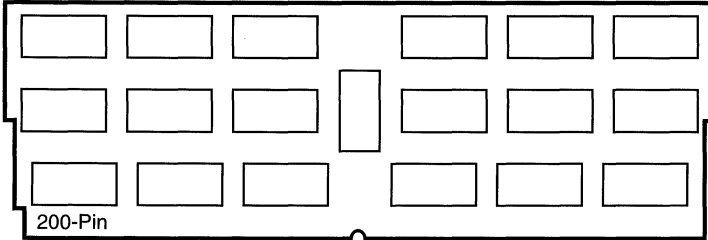
1. The minimum requirement is four DIMMs in any Group.
2. DIMMs can be installed in any Group order.
3. Each Group addresses 4GB of memory.

Reference: *Sun Blade 1000 Service Manual*, 805-4496.

Enterprise 250

Options 7001 7002 7003 7004 7043

| | | | | |
|---|---|---|--|---|
| 501-2479 16MB 5V ECC 60ns DIMM Option 7001 | 501-2480 64MB 5V ECC 60ns DIMM Option 7003 | 501-2622 32MB 5V ECC 60ns DIMM Option 7002 | 501-3136 128MB 5V ECC 60ns DIMM Option 7004 | 501-5691 64MB 5V ECC 60ns DIMM Option 7043 |
|---|---|---|--|---|



Memory Map

| SOCKET | LABEL | BANK | DIMM# | ADDRESS |
|--------|-------|------|-----------|-----------------------|
| U1004 | D | 3 | dimmm@0,2 | 6000 0000 - 7fff ffff |
| U0904 | D | 3 | dimmm@0,3 | 6000 0000 - 7fff ffff |
| U0804 | D | 3 | dimmm@0,0 | 6000 0000 - 7fff ffff |
| U0704 | D | 3 | dimmm@0,1 | 6000 0000 - 7fff ffff |
| U1003 | B | 2 | dimmm@0,2 | 4000 0000 - 5fff ffff |
| U0903 | B | 2 | dimmm@0,3 | 4000 0000 - 5fff ffff |
| U0803 | B | 2 | dimmm@0,0 | 4000 0000 - 5fff ffff |
| U0703 | B | 2 | dimmm@0,1 | 4000 0000 - 5fff ffff |
| U1002 | C | 1 | dimmm@0,2 | 2000 0000 - 3fff ffff |
| U0902 | C | 1 | dimmm@0,3 | 2000 0000 - 3fff ffff |
| U0802 | C | 1 | dimmm@0,0 | 2000 0000 - 3fff ffff |
| U0702 | C | 1 | dimmm@0,1 | 2000 0000 - 3fff ffff |
| U1001 | A | 0 | dimmm@0,2 | 0000 0000 - 1fff ffff |
| U0901 | A | 0 | dimmm@0,3 | 0000 0000 - 1fff ffff |
| U0801 | A | 0 | dimmm@0,0 | 0000 0000 - 1fff ffff |
| U0701 | A | 0 | dimmm@0,1 | 0000 0000 - 1fff ffff |

Notes

1. Four DIMMs of the same size form a bank.
2. The recommended installation sequence is Bank A, B, C, D.
3. Each bank addresses 512MB of memory.

References

1. *Enterprise 250 Owner's Guide*, 805-5160.
2. *Enterprise 250 ShowMe How*, 724-2974.

Ultra 450 Ultra Enterprise 450

Options 7002 7003 7004 7005 7043

501-2480
64MB 5V ECC
60ns DIMM
Option 7003

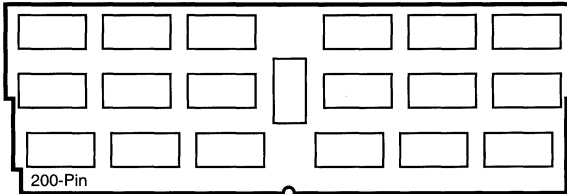
501-2622
32MB 5V ECC
60ns DIMM
Option 7002

501-3136
128MB 5V ECC
60ns DIMM
Option 7004

501-4743
256MB 5V ECC
60ns DIMM
Option 7005

501-5691
64MB 5V ECC
60ns DIMM
Option 7043

501-5896
256MB 5V ECC
60ns DIMM w GAL
Option 7005



Memory Map

| SOCKET | LABEL | INSTALL | BANK | DIMM# | ADDRESS |
|--------|-------|---------|------|-------|-----------------------|
| U1604 | D | 4th | 1 | 3 | 4000 0000 - 7fff ffff |
| U1603 | D | 4th | 1 | 2 | 4000 0000 - 7fff ffff |
| U1602 | D | 4th | 1 | 1 | 4000 0000 - 7fff ffff |
| U1601 | D | 4th | 1 | 0 | 4000 0000 - 7fff ffff |
| U1804 | B | 2nd | 3 | 3 | c000 0000 - ffff ffff |
| U1803 | B | 2nd | 3 | 2 | c000 0000 - ffff ffff |
| U1802 | B | 2nd | 3 | 1 | c000 0000 - ffff ffff |
| U1801 | B | 2nd | 3 | 0 | c000 0000 - ffff ffff |
| U1704 | C | 3rd | 0 | 3 | 0000 0000 - 3fff ffff |
| U1703 | C | 3rd | 0 | 2 | 0000 0000 - 3fff ffff |
| U1702 | C | 3rd | 0 | 1 | 0000 0000 - 3fff ffff |
| U1701 | C | 3rd | 0 | 0 | 0000 0000 - 3fff ffff |
| U1904 | A | 1st | 2 | 3 | 8000 0000 - bfff ffff |
| U1903 | A | 1st | 2 | 2 | 8000 0000 - bfff ffff |
| U1902 | A | 1st | 2 | 1 | 8000 0000 - bfff ffff |
| U1901 | A | 1st | 2 | 0 | 8000 0000 - bfff ffff |

Notes

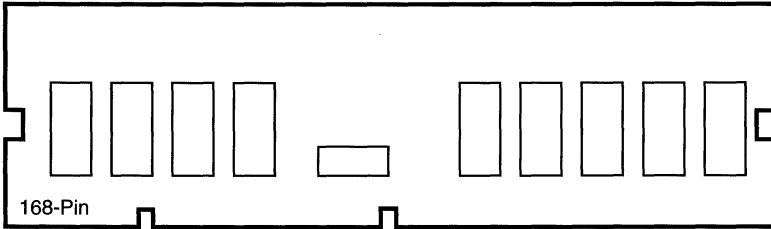
1. Four DIMMs of the same size form a bank.
2. The installation sequence is AAAA, BBBB, CCCC, and DDDD.
3. Use the **setenv memory-interleave** OBP command to set interleaving.
4. The smallest DIMM size is used and the remaining memory is lost if interleaving is enabled and the bank sizes are different.

References

1. *Ultra Enterprise 450 Server Owner's Guide*, 805-0429-10.
2. *Ultra 450 Workstation Owner's Guide*, 805-0430-10.

| | | | |
|--------------------------------------|-------|-------|-------|
| E3000 | E4000 | E5000 | E6000 |
| E3500 | E4500 | E5500 | E6500 |
| Options 7021 7022 7023 7026 | | | |

| | | | |
|--------------|---------------|----------------|----------------|
| 501-2652 | 501-2653 | 501-2654 | 501-5658 |
| 8MB 3.3V ECC | 32MB 3.3V ECC | 128MB 3.3V ECC | 256MB 3.3V ECC |
| 60ns DIMM | 60ns DIMM | 60ns DIMM | 60ns DIMM |
| Option 7021 | Option 7022 | Option 7023 | Option 7026 |



Notes

1. Eight DIMMs form a bank.
2. All DIMMs within a bank must be the same size.
3. The first bank of memory can be either Bank 0 or Bank 1.
4. Install one bank on each CPU/Memory board before installing the second bank on any board.
5. Install the largest density banks first, then medium density banks, and finally the smallest density banks.
6. The 256MB DIMMs require OBP $\geq 3.2.23$.
7. The Solaris 2.5.1 **prtdiag** command displays incorrect memory capacity. Install Patch 104595-10.
8. OBP 3.2v26 fixes 2GB memory bank BugID 4323635.

References

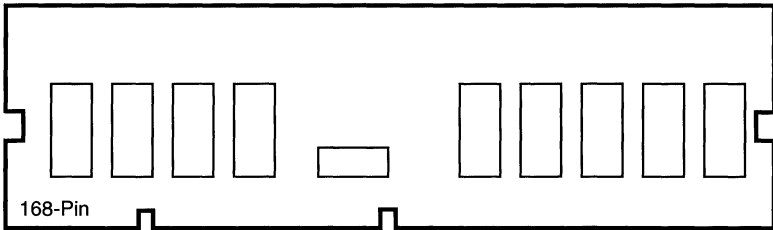
1. *Ultra Enterprise 3000 System Manual*, 802-6051-10.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845-10.
3. *DIMM Installation Guide*, 802-5032-14.

E10000

Options 7022 7023

501-2653
32MB 3.3V ECC
60ns DIMM
Option 7022

501-2654
128MB 3.3V ECC
60ns DIMM
Option 7023



DIMM Installation

| # DIMMs | MEMORY ASIC 0 | | MEMORY ASIC 1 | |
|---------|---------------|--------|---------------|--------|
| | BANK 0 | BANK 2 | BANK 1 | BANK 3 |
| 16 | x | | x | |
| 16 | x | | | x |
| 16 | | x | x | |
| 16 | | x | | x |
| 32 | x | x | x | x |

Notes

1. All DIMMs on the E10000 Memory Board must be the same size.
2. Memory Board configurations of 512MB or 1GB are supported using 32MB DIMMs. Configurations of 768MB are not supported.
3. Memory Board configurations of 2GB or 4GB are supported using 128MB DIMMs. Configurations of 3GB are not supported.

Reference

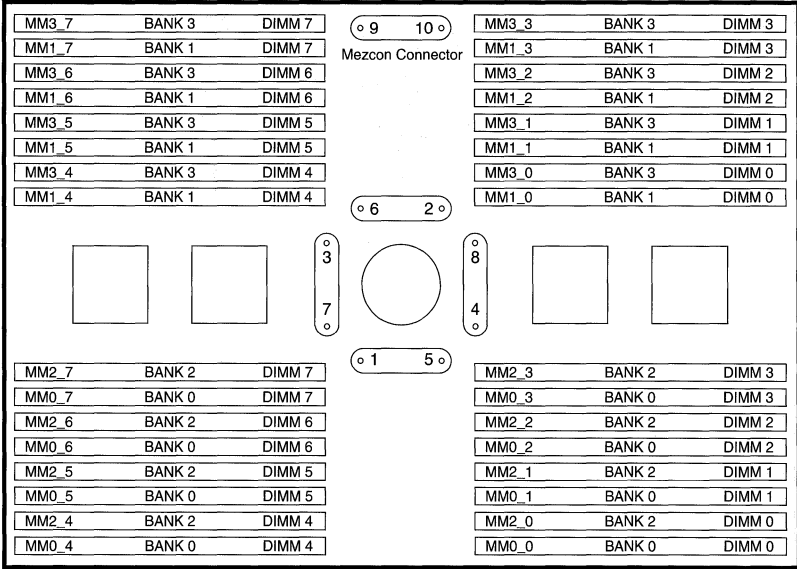
Ultra Enterprise 10000 Component Replacement Guide, 805-0311.

E10000 Memory Board

Option 7025

501-4351
OMB FRU

501-4776
OMB FRU



Notes

1. Tighten the Mezccon Connector screws to 6 in/lb in the sequence shown.
2. All DIMMs on the Memory Board must be the same size.

References

1. *Enterprise 10000 Component Replacement Guide*, 805-0311.
2. *Enterprise 10000 System Service Manual*, 805-2917.

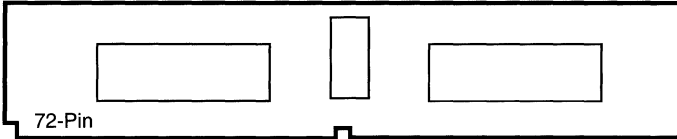
RSM Array 2000 StorEdge A3000
StorEdge A3500 StorEdge A3500FC

Option 7020

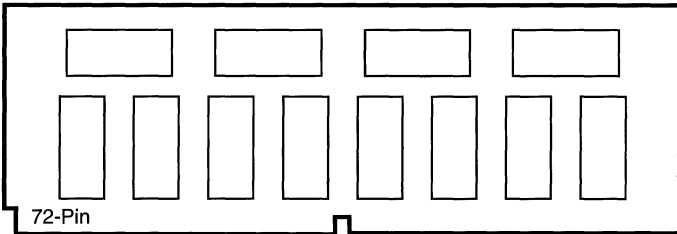
370-2438
8MB MPU SIMM
No Option Number

370-2439
32MB RPA SIMM
Option 7020

8MB MPU SIMM 370-2438



32MB RPA SIMM 370-2439



Notes

1. The Main Processor Unit (MPU) SIMMs serve as processor memory.
2. The RAID Parity Assist (RPA) SIMMs serve as cache memory.
3. Install 501-2439 in SIMM-1 and SIMM-3 for RPA High Bank.
4. Install 501-2439 in SIMM-2 and SIMM-4 for RPA Low Bank.
5. Install 501-2438 in SIMM-5 and SIMM-6 for MPU DRAM.
6. Memory failures are reported as a pair of two SIMMs.
7. The 370-2438 or 370-2439 are not labeled with a Sun part number.

References

1. *RSM Array 2000 Controller Module Installation Guide*, 802-7602.
2. *RSM Array 2000 Installation and System Manual*, 802-7603.

StorEdge A1000

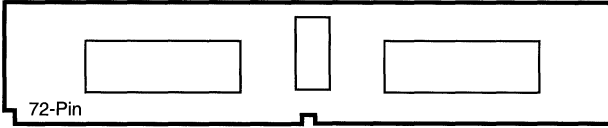
Option 7040

No Sun Part Number
4MB MPU SIMM
No Option Number

No Sun Part Number
8MB MPU/RPA SIMM
No Option Number

370-2439
32MB RPA SIMM
Option 7040

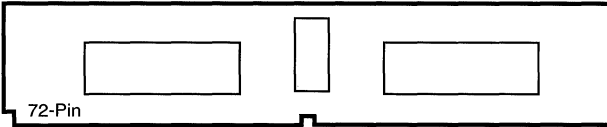
Front View of 4MB MPU SIMM



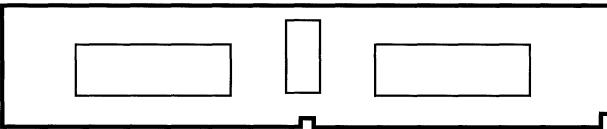
Rear View of 4MB MPU SIMM



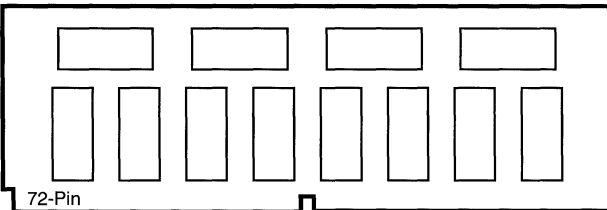
Front View of 8MB MPU/RPA SIMM



Rear View of 8MB MPU/RPA SIMM



Front View of 32MB RPA SIMM 370-2439



Notes

1. The Main Processor Unit (MPU) SIMMs serve as processor memory.
2. The RAID Parity Assist (RPA) SIMMs serve as cache memory.
3. Install 8MB or 32MB SIMMs in RPA slots SIMM-1 and SIMM-2.
4. Install 4MB or 8MB SIMMs in MPU slots SIMM-3 and SIMM-4.

Reference

A1000 Installation, Operation, and Service Manual, 805-2624-10.

CONFIGURATIONS

GRAPHICS

Graphics

SBus

| | |
|-------------------|----|
| MG1 | 3 |
| MG2 | 4 |
| CG3 | 6 |
| GX | 9 |
| GXplus | 10 |
| ZX | 11 |
| TurboZX | 14 |
| VideoPix | 18 |
| SunVideo | 19 |
| TurboGX | 21 |
| TurboGXplus | 23 |

| | |
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| SS4 1MB Video SIMM | 25 |
|--------------------------|----|

| | |
|---------------|----|
| SS5 S24 | 26 |
|---------------|----|

| | |
|----------------------------------|----|
| SS20 Auxiliary Video Board | 27 |
|----------------------------------|----|

| | |
|-----------------|----|
| SS20 CG14 | 28 |
|-----------------|----|

UPA Bus

| | | |
|--------------------|-------------|----|
| Elite3D | AFB | 30 |
| Creator Series 1 | FFB | 38 |
| Creator3D Series 1 | FFB | 40 |
| Creator Series 2 | FFB2 | 43 |
| Creator3D Series 2 | FFB2 | 44 |
| Creator Series 3 | FFB2+ | 46 |
| Creator3D Series 3 | FFB2+ | 47 |

PCI

| | |
|---------------------|----|
| PGX | 49 |
| PGX32 | 50 |
| SunVideo Plus | 51 |
| Expert 3D | 52 |

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MG1

1-Bit ECL Monochrome Frame Buffer

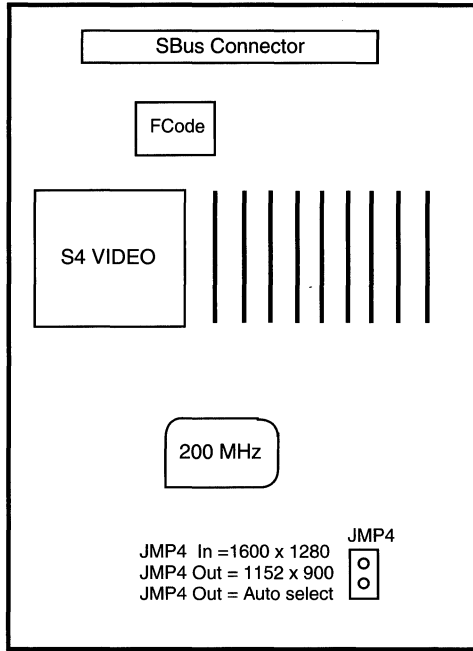
Sun-4/15/30/40/50/60/65/75 Sun-4/E SS10 SS20

SS600 SC2000

501-1419

501-8043

w 4/E Backpanel



DB9

Screen Resolutions

| | | |
|-------------|---------|------|
| 1152 x 900 | 61.8KHz | 66Hz |
| 1600 x 1280 | 89.0KHz | 66Hz |

UNIX ID: /dev/bwtwo0

Power: 1.3 Amps @ +5Vdc
6.5 Watts

Note: The final software release is Solaris 2.6

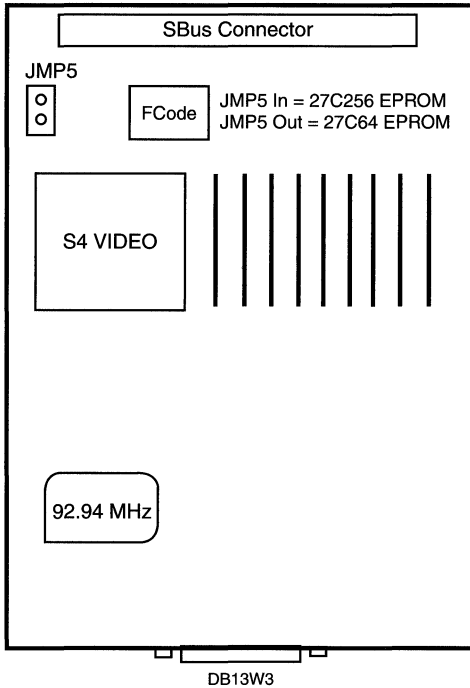
MG2

1-Bit Analog Frame Buffer

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20 SS600

501-1455

501-8062
w 4/E Backpanel



Screen Resolution
1152 x 900 61.8KHz 66Hz

UNIX ID: /dev/bwtwo0

Power: 0.4 Amps @ +5Vdc
2.0 Watts

Note

- 1. The final software release is Solaris 2.6.
- 2. The MG2 Frame Buffer produces a 1-bit Analog output.

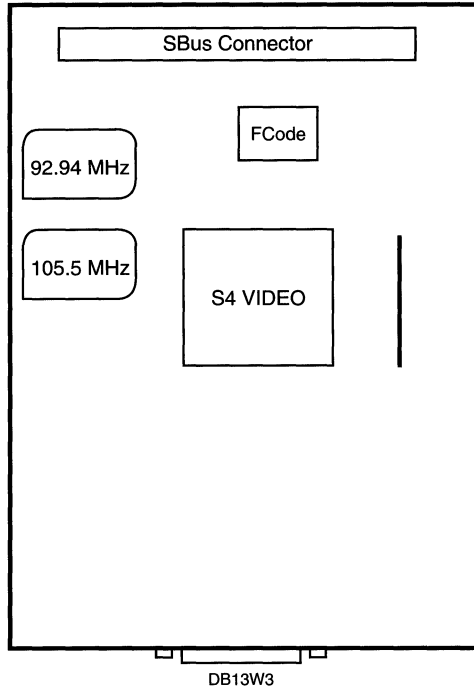
MG2

1-Bit Analog Frame Buffer

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20 SS600

501-1561

501-8077
w 4/E Backpanel



Screen Resolutions

| | | |
|------------|---------|-------|
| 1152 x 900 | 61.8KHz | 66Hz |
| 1152 x 900 | 71.7KHz | 76Hz* |

*Default

UNIX ID: /dev/bwtwo0

Power: 0.3 Amps @ +5Vdc
1.6 Watts

Note

1. The final software release is Solaris 2.6.
2. The MG2 Frame Buffer produces a 1-bit Analog output.

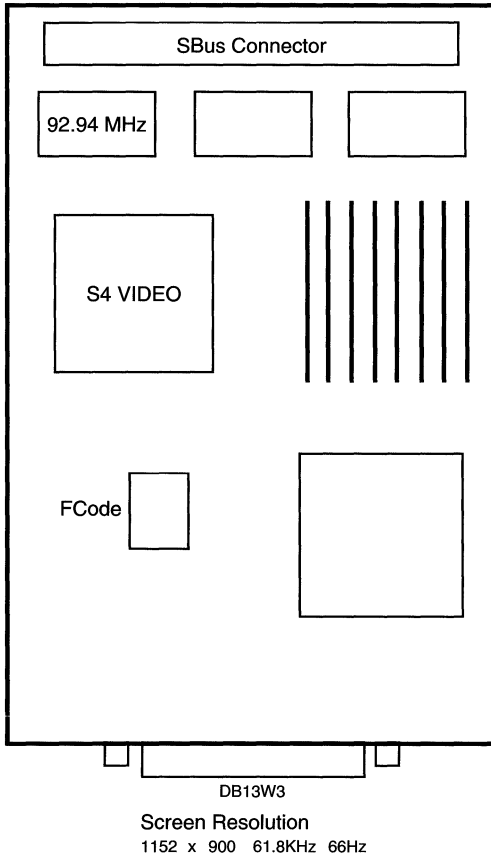
CG3

8-Bit Color Frame Buffer

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20

501-1415
FAB 270-1415

501-8044
w 4/E Backpanel



UNIX ID: /dev/cgthree0

Power: 0.7 Amps @ +5Vdc
3.5 Watts

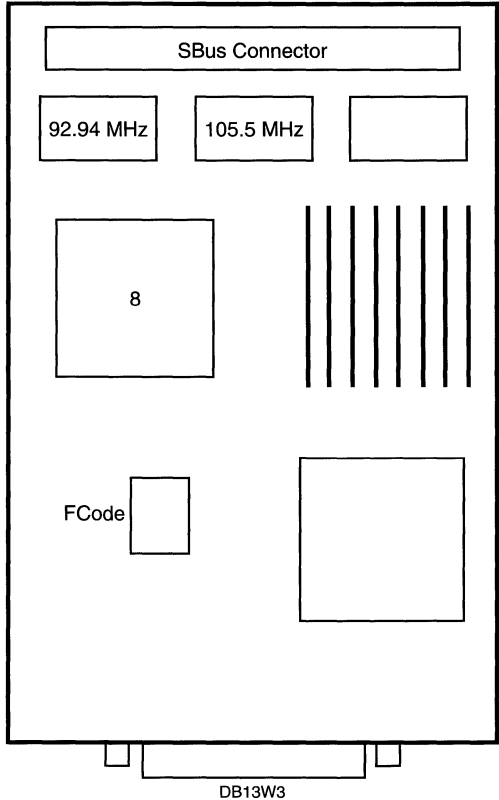
CG3

8-Bit Color Frame Buffer

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20

501-1718
FAB 270-1415

501-1909
FAB 270-1909

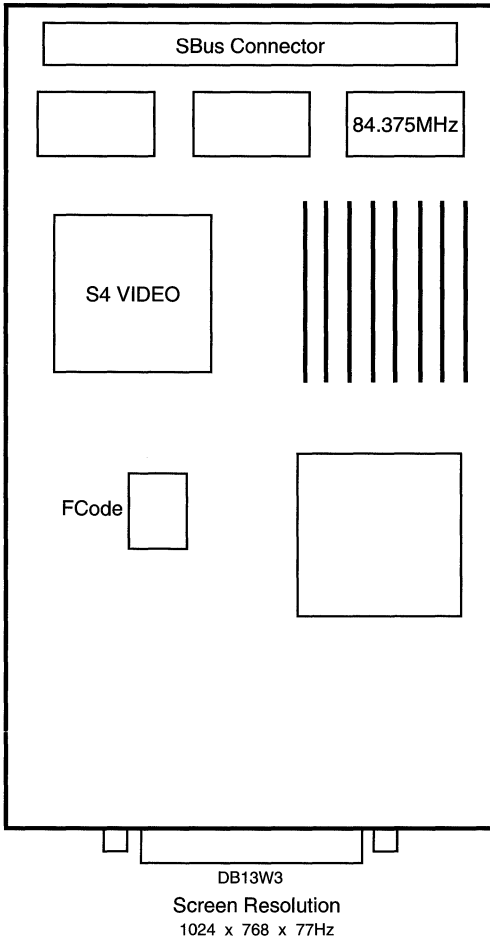


Screen Resolutions
 1152 x 900 61.8KHz 66Hz
 1152 x 900 71.7KHz 76Hz*
 *Default

UNIX ID: /dev/cgthree0

Power: 1.1 Amps @ +5Vdc
5.5 Watts

CG3
8-Bit Color Frame Buffer
SS5
501-2691



UNIX ID: /dev/cgthree0

Power: 0.7 Amps @ +5Vdc
3.5 Watts

GX

8-Bit Color Frame Buffer

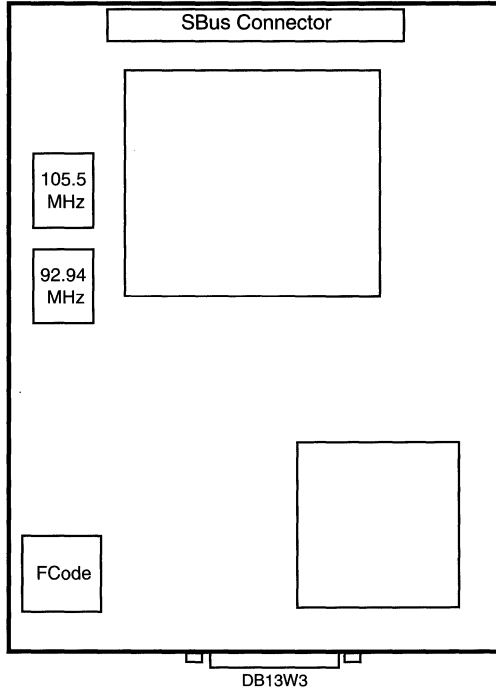
Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20 SS600

SS1000 SC2000

501-1672

501-1996

w/o 340-2348



Screen Resolutions
 1152 x 900 61.8KHz 66Hz
 1152 x 900 71.7KHz 76Hz*
 *Default

UNIX ID: /dev/cgsix0

Power: 1.0 Amps @ +5Vdc
5.0 Watts

GXplus

8-Bit Color Frame Buffer

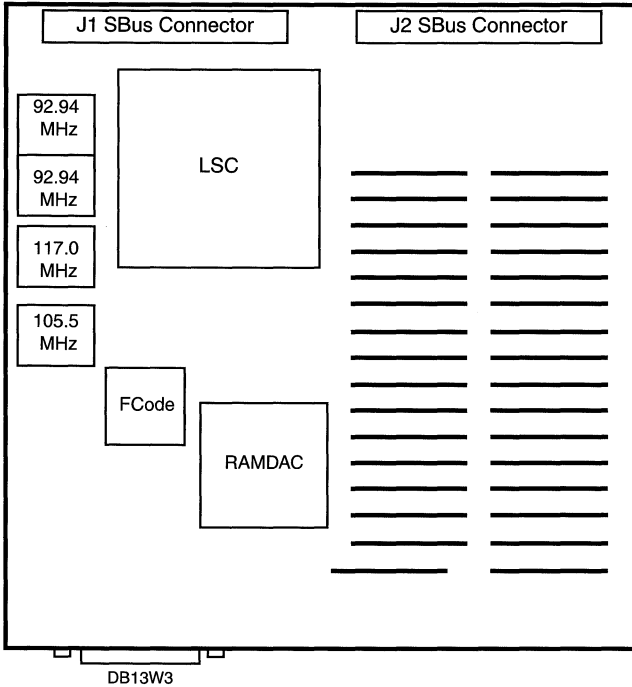
Sun-4/15/30/50/75 SS4 SS5 SS10 SS20 SS600

SS1000 SC2000

501-1717

501-2018
w/o 340-2349

501-2039



Screen Resolutions

| | | |
|-------------|---------|-------|
| 1152 x 900 | 61.8KHz | 66Hz |
| 1152 x 900 | 71.7KHz | 76Hz |
| 1024 x 800 | 71.7KHz | 85Hz |
| 1280 x 1024 | 71.7KHz | 67Hz* |

*Default

UNIX ID: /dev/cgsix0

Power: 2.5 Amps @ +5Vdc
12.5 Watts

Reference: *GXplus Installation Guide*, 800-5940-10.

ZX

24-Bit Color Frame Buffer

Sun-4/15/30/75 SS5 SS10 SS20 SS1000 SC2000

A11 A12 A14

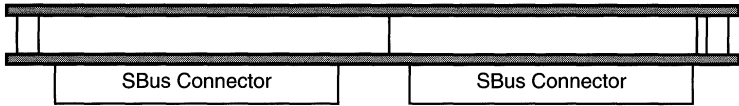
Option 1094

501-1845
2 Board Set
w/o 340-2349

501-1843
Upper Board

501-1844
Lower Board

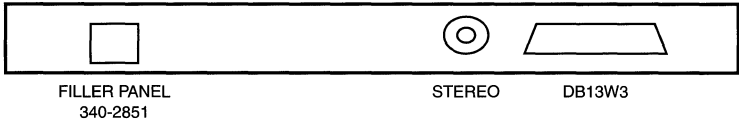
501-1845 Rear View



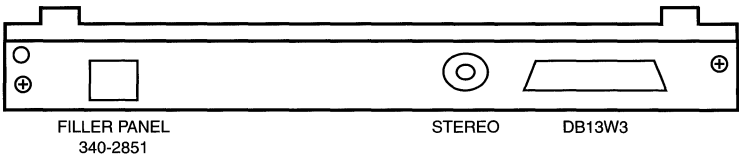
501-1845 Front View without Backpanel



501-1845 Front View with Backpanel



501-1845 with Backpanel and Upper Backpanel 340-2349

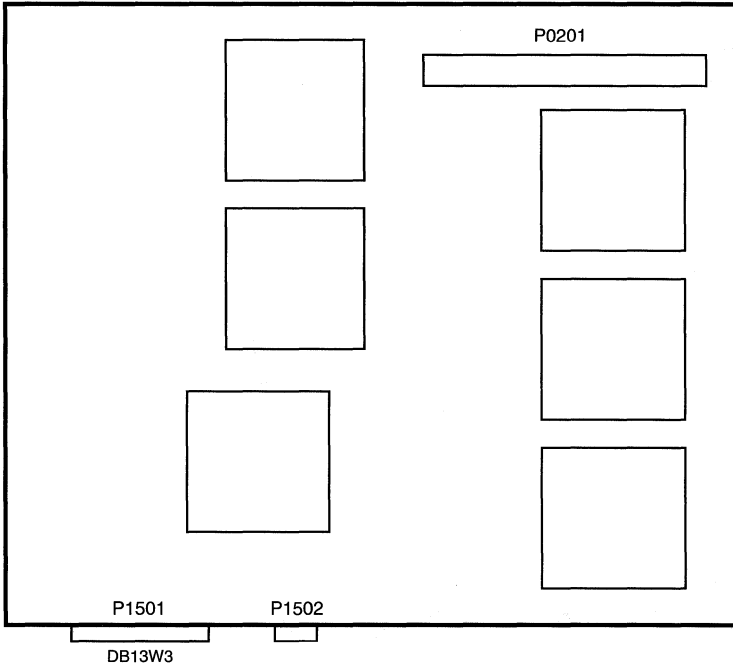


UNIX ID: /dev/leo0

Power: 6.8 Amps @ +5Vdc
34.0 Watts

ZX Upper Board
501-1843

Bottom Side

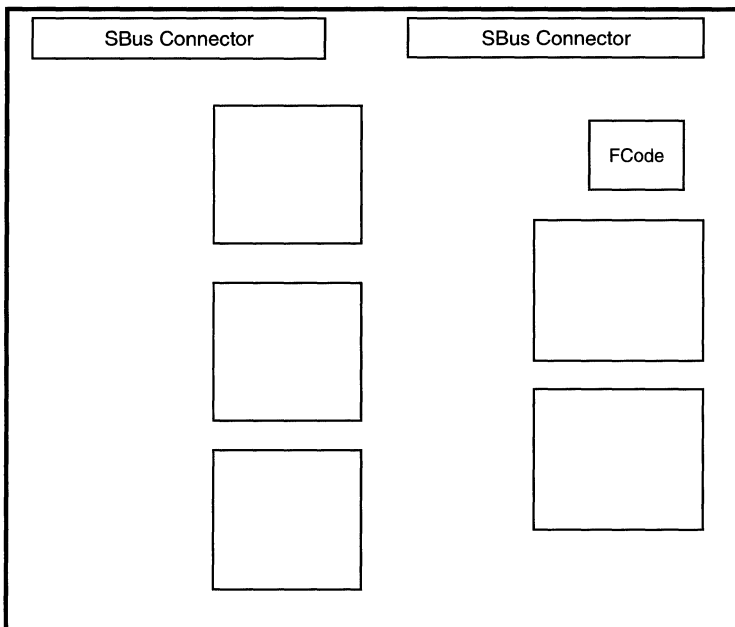


Screen Resolutions

| | |
|-------------|-------|
| 640 x 480 | 60Hz |
| 770 x 575 | 50Hz |
| 960 x 680 | 108Hz |
| 960 x 680 | 112Hz |
| 1024 x 768 | 60Hz |
| 1024 x 768 | 76Hz |
| 1152 x 900 | 66Hz |
| 1152 x 900 | 76Hz |
| 1280 x 1024 | 76Hz |
| 1280 x 1024 | 67Hz |

ZX Lower Board 501-1844

Bottom Side



Notes

1. The minimum operating system is Solaris 2.2.
2. The GT/ZX Supplement to Solaris 2.2 is recommended.
3. The final software release is Solaris 2.6.
4. The ZX Graphics Accelerator uses the /opt/SUNWleo device driver.
5. Standoff 240-2716 and Screw 240-2102 fasten the boards together.
6. The Sun-4/15/30/75 requires three 250-1195-01 rubber bumpers.
7. The SC1000 and SC2000 require three 240-2090-01 nylon screws.
8. The SC1000 and SC2000 require three 240-2103-01 nylon standoffs.
9. The A11 and A12 require SBus Extender Cable 530-2290.
10. The A11 and A12 require Ferrite 150-2633 if the stereo output is used.

Screen Resolution

1. The variable monitor_type is defined in /etc/init.d/leoconfig.
2. Make temporary changes to the screen resolution with the following command: **/etc/opt/SUNWleo/bin/leoconfig -M monitor_type**.
3. Make permanent changes to the screen resolution by removing the comment symbol # from the desired setting in /etc/init.

Reference: ZX Graphics Accelerator Installation Manual, 800-7213-10.

TurboZX

24-Bit Color Frame Buffer

SS10 SS10SX SS20

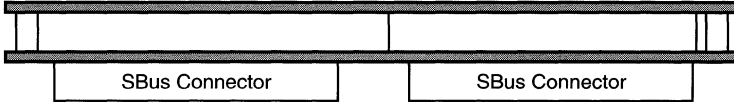
Option 1096

501-2503
2 Board Set
w/o 340-2349

501-2711
Upper Board

501-2502
Lower Board

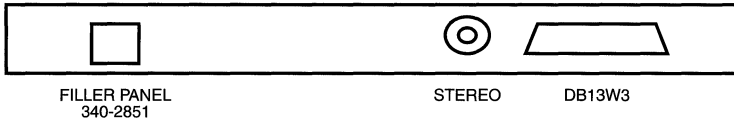
501-2503 Rear View



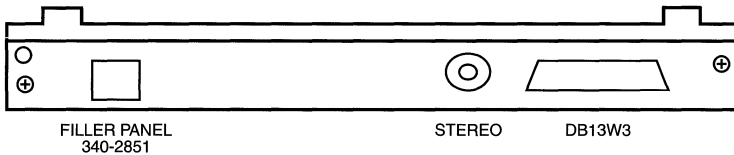
501-2503 Front View without Backpanel



501-2503 Front View with Backpanel



501-2503 with Backpanel and Upper Backpanel 340-2349

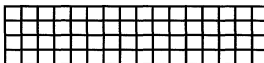


SS20 Cooling

Systems manufactured prior to May 1995 require Left Vent 330-1661-02 and Right Vent 540-2548-02.



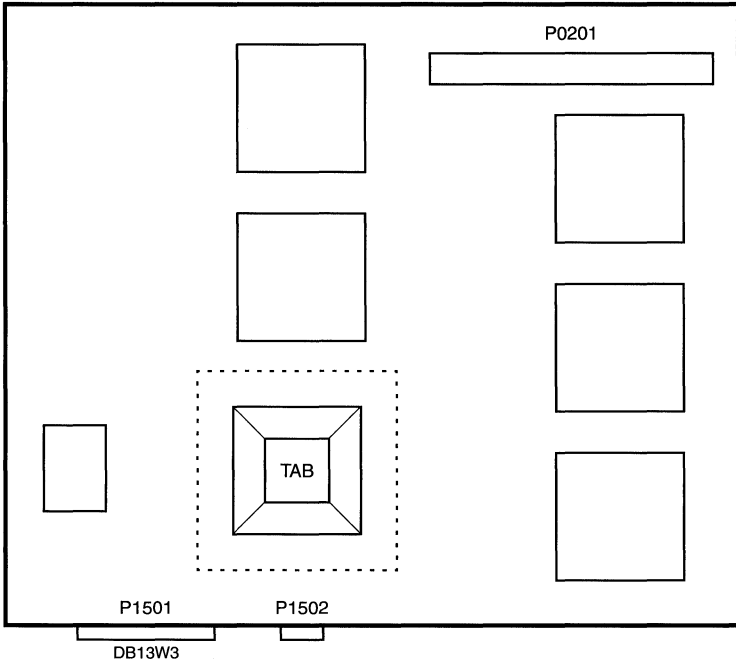
Side View
330-1661-02 and 540-2548-02



Side View
330-1661-01 and 540-2548-01

TurboZX Upper Board 501-2711

Bottom Side



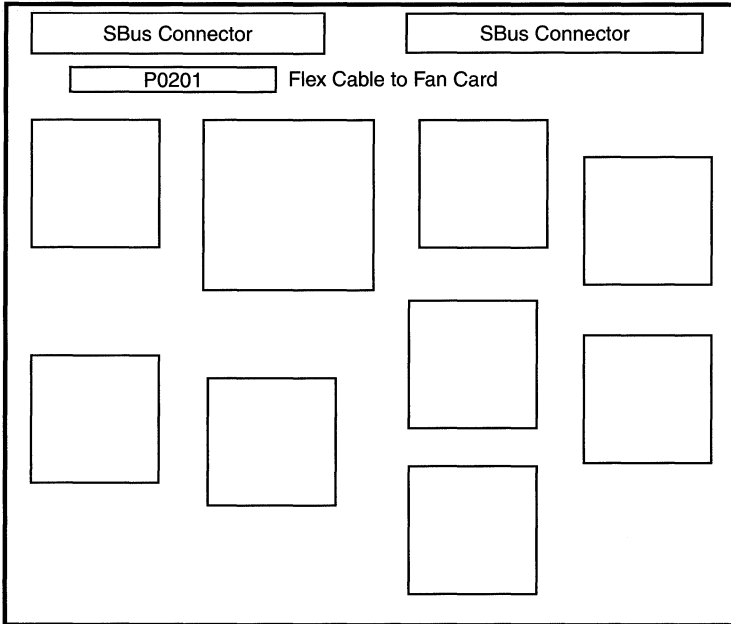
Screen Resolutions

| | |
|-------------|-------|
| 640 x 480 | 60Hz |
| 770 x 575 | 50Hz |
| 960 x 680 | 108Hz |
| 960 x 680 | 112Hz |
| 1024 x 768 | 60Hz |
| 1024 x 768 | 76Hz |
| 1152 x 900 | 66Hz |
| 1152 x 900 | 76Hz |
| 1280 x 1024 | 76Hz |
| 1280 x 1024 | 67Hz |

UNIX ID: /dev/leo0

TurboZX Lower Board 501-2502

Bottom Side



Notes

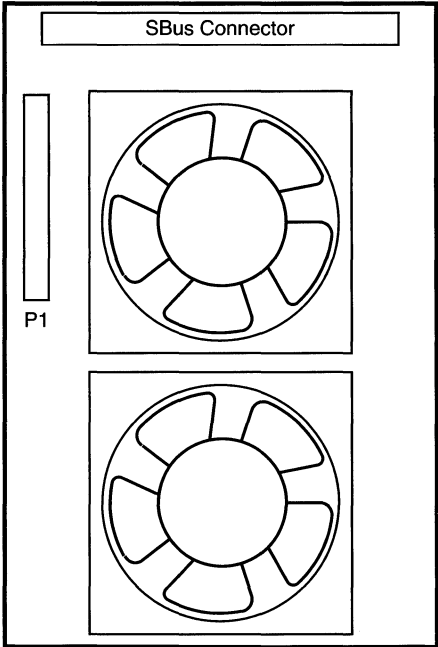
1. Solaris 2.3 requires Patch 101284-12.
2. Solaris 2.4 requires Patch 101921.
3. Solaris 2.4 with hyperSPARC requires Patch 101945.
4. The final software release is Solaris 2.6.
5. TurboZX was announced in May 1995 and discontinued in Nov 1995.
6. TurboZX uses the `/opt/SUNWleo/bin/leoconfig` device driver.
7. Standoff 240-2716 and Screw 240-2102 fasten the boards together.
8. The SS10 and SS20 require two 501-2840 Fan Cards.

Screen Resolution

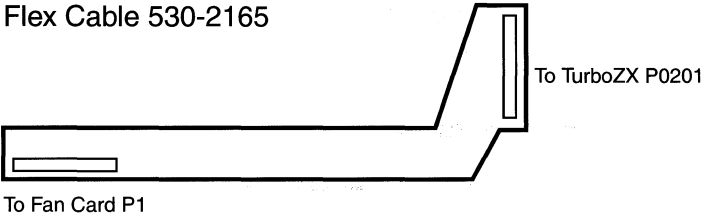
1. The variable `monitor_type` is defined in `/etc/init.d/leoconfig`.
2. Make temporary changes to the screen resolution with the following command: `/etc/opt/SUNWleo/bin/leoconfig -M monitor_type`.
3. Make permanent changes to the screen resolution by removing the comment symbol `#` from the desired setting in `/etc/init`.

Reference: *TurboZX Installation Manual*, 801-7829-10.

TurboZX Fan Card
501-2840



Flex Cable 530-2165



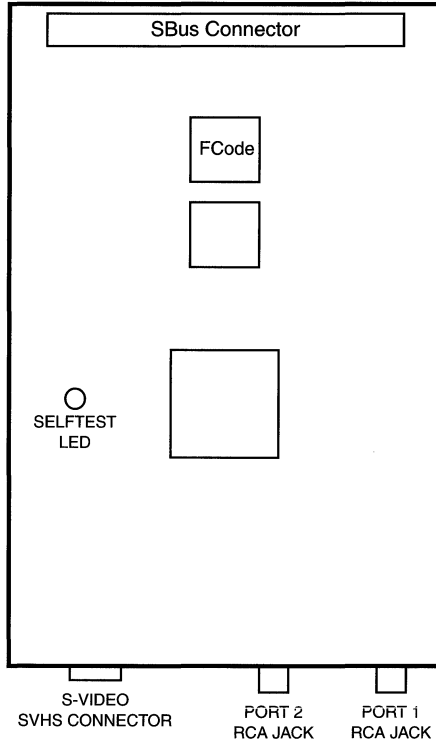
Notes

- 1. The SS10 and SS20 require two 501-2840 Fan Cards.
- 2. Flex Cable 530-2165 provides additional power to the TurboZX.

Reference: *TurboZX Installation Manual*, 801-7829-10.

VideoPix

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20
Option 218
501-1706



UNIX ID: /dev/vfc0

Power: 1.0 Amps @ +5Vdc
5.0 Watts

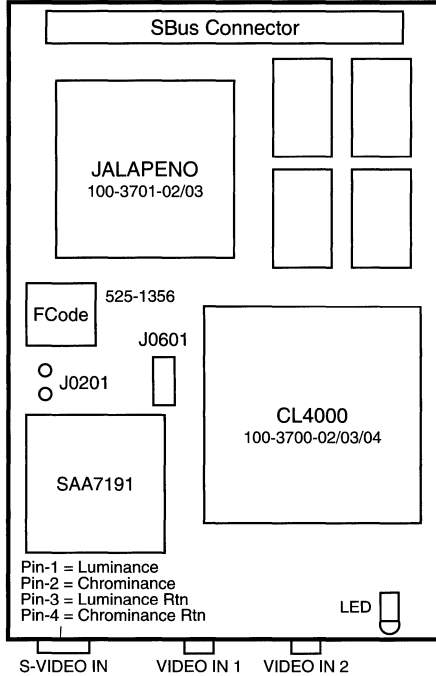
Notes

1. VideoPix is not supported in SunOS 4.1.3_U1 Version B.
2. VideoPix is not supported in SunOS 4.1.4.
3. VideoPix is not supported in Solaris 2.x.

Reference: *Using VideoPix*, 800-5099-10.

SunVideo

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS10SX
 SS20 SS600 A11 A12 A14
 Option 1085
 501-2232



UNIX ID: /dev/rtvc0

Power: 1.8 Amps @ +5Vdc
9.0 Watts

Notes

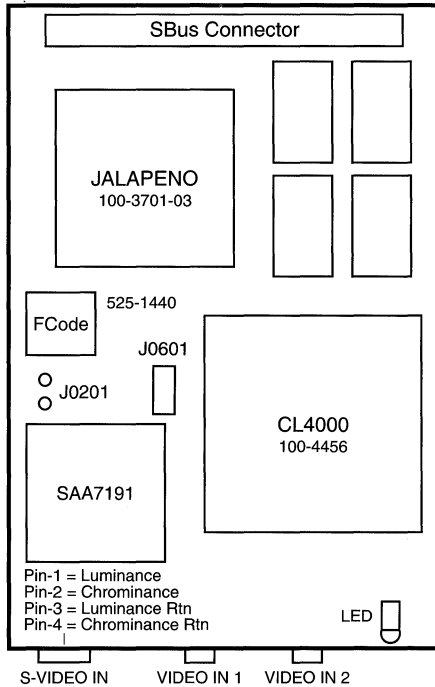
1. The minimum operating system is Solaris 2.3.
2. Jalapeno revision 3 is not compatible with Solaris 2.3 SunDiag. Install Patch 101330-05.
3. The SUNWrtvc package is required.
4. The XIL runtime packages are required.
5. SunVideo input is NTSC or PAL format.
6. SunVideo uses the Philips square pixel decoder chip set.

References

1. *SunVideo User's Guide*, 801-5179-10.
2. *SunVideo User's Guide*, 802-1318-10.

SunVideo

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS10SX
 SS20 SS600 A11 A12 A14
 Option 1085
 501-3019



UNIX ID: /dev/rtvc0

Power: 1.8 Amps @ +5Vdc
 9.0 Watts

Notes

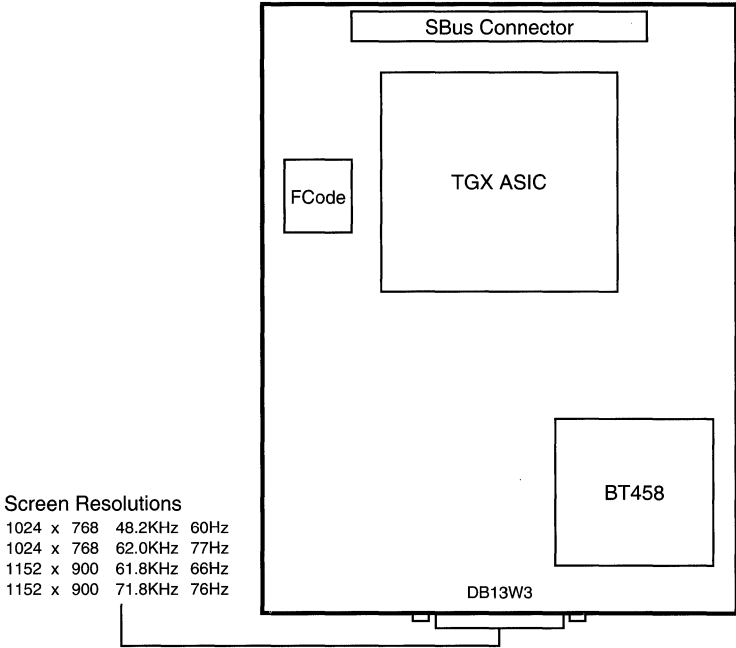
1. The minimum operating system is Solaris 2.3.
2. Jalapeno revision 3 is not compatible with Solaris 2.3 SunDiag. Install Patch 101330-05.
3. The SUNWrtvc package is required.
4. The XIL runtime packages are required.
5. SunVideo input is NTSC or PAL format.
6. SunVideo uses the Philips square pixel decoder chip set.

Reference: *SunVideo User's Guide*, 802-1318-10.

TurboGX

8-Bit Color Frame Buffer

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20 SS600
 SS1000 SC2000 A11 A12 A14 E150
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 Options 322 359
 501-2325



Screen Resolutions
 1024 x 768 48.2KHz 60Hz
 1024 x 768 62.0KHz 77Hz
 1152 x 900 61.8KHz 66Hz
 1152 x 900 71.8KHz 76Hz

UNIX ID: /dev/cgsix0

Notes

1. The minimum operating system is SunOS 4.0.3.
2. If multiple cards are installed, the minimum OS is SunOS 4.1.1.
3. To test multiple cards with SunDiag, 4.1.1 requires 4.1.1 GFX Rev 2.
4. The SS1, SS1+, and IPC require OBP 2.x.
5. OBP 2.x for the SS1, SS1+, and IPC requires SunOS 4.1.1.
6. The SS2 requires OBP ≥2.4.

References

1. *TurboGX/TurboGXplus Hardware Installation Guide*, 801-5399-10.
2. *TurboGXplus Hardware Installation Guide*, 800-7579-10.
3. *Platform Notes: SMCC Frame Buffers*, 802-2661-10.
4. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-5011-10.

TurboGX

8-Bit Color Frame Buffer

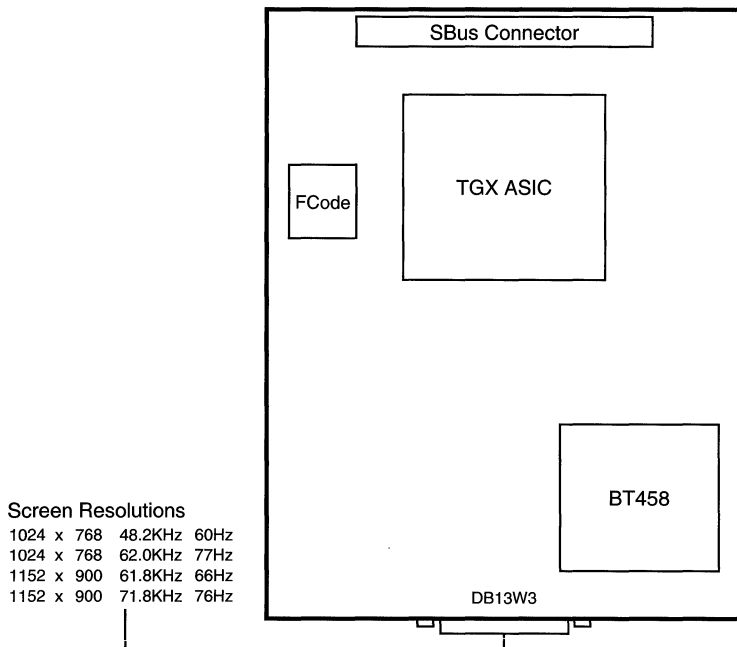
Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20 SS600

SS1000 SC2000 A11 A12 A14 E150

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 322 359 7110

501-2922



UNIX ID: /dev/cgsix0

Notes

1. The minimum operating system is SunOS 4.0.3.
2. If multiple cards are installed, the minimum OS is SunOS 4.1.1.
3. To test multiple cards with SunDiag, 4.1.1 requires 4.1.1 GFX Rev 2.
4. The SS1, SS1+, and IPC require OBP 2.x.
5. OBP 2.x for the SS1, SS1+, and IPC requires SunOS 4.1.1.
6. The SS2 requires OBP ≥ 2.4 .

References

1. *TurboGX/TurboGXplus Hardware Installation Guide*, 801-5399-10.
2. *TurboGXplus Hardware Installation Guide*, 800-7579-10.
3. *Platform Notes: SMCC Frame Buffers*, 802-2661-10.
4. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-5011-10.

TurboGXplus

8-Bit Color Frame Buffer

Sun-4/15/30/50/75 SS4 SS5 SS10 SS20 SS600

SS1000 SC2000 A11 A12 A14

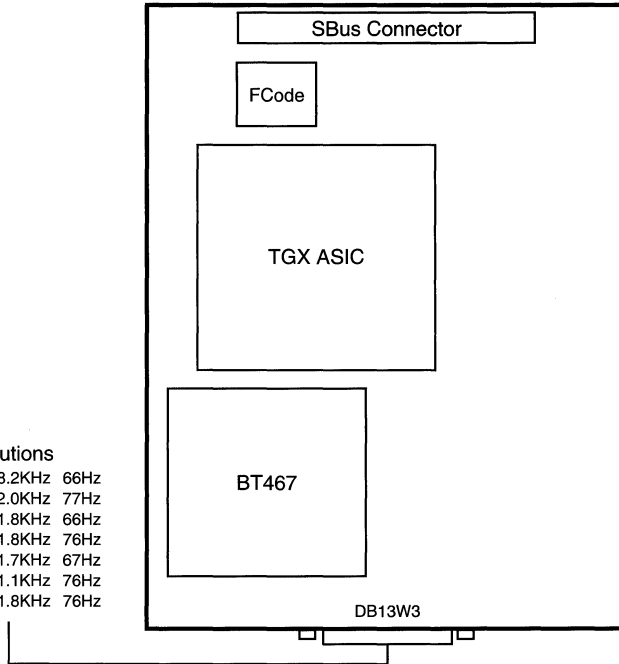
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 367

501-2253

Screen Resolutions

| | | |
|-------------|----------|------|
| 1024 x 768 | 48.2KHz | 66Hz |
| 1024 x 768 | 62.0KHz | 77Hz |
| 1152 x 900 | 61.8KHz | 66Hz |
| 1152 x 900 | 71.8KHz | 76Hz |
| 1280 x 1024 | 71.7KHz | 67Hz |
| 1280 x 1024 | 81.1KHz | 76Hz |
| 1600 x 1280 | 101.8KHz | 76Hz |



UNIX ID: /dev/cgsix0

Notes

1. The minimum operating system is SunOS 4.1.1.
2. To test multiple cards with SunDiag, 4.1.1 requires 4.1.1 GFX Rev 2.
3. The 501-2253-05 is required to support 1600x1280x76.
4. The SS2 requires OBP ≥2.4.

References

1. *TurboGX/TurboGXplus Hardware Installation Guide*, 801-5399-10.
2. *TurboGXplus Hardware Installation Guide*, 800-7579-10.
3. *Platform Notes: SMCC Frame Buffers*, 802-2661-10.
4. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-5011-10.

TurboGXplus

8-Bit Color Frame Buffer

Sun-4/15/30/50/75 SS4 SS5 SS10 SS20 SS600

SS1000 SC2000 A11 A12 A14

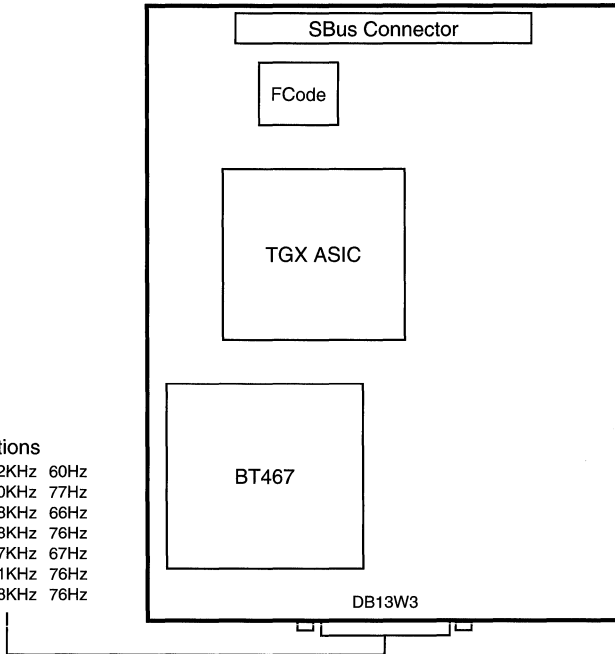
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 367 3655

501-2955

Screen Resolutions

| | | |
|-------------|----------|------|
| 1024 x 768 | 48.2KHz | 60Hz |
| 1024 x 768 | 62.0KHz | 77Hz |
| 1152 x 900 | 61.8KHz | 66Hz |
| 1152 x 900 | 71.8KHz | 76Hz |
| 1280 x 1024 | 71.7KHz | 67Hz |
| 1280 x 1024 | 81.1KHz | 76Hz |
| 1600 x 1280 | 101.8KHz | 76Hz |



UNIX ID: /dev/cgsix0

Notes

1. The minimum operating system is SunOS 4.1.1.
2. To test multiple cards with SunDiag, 4.1.1 requires 4.1.1 GFX Rev 2.
3. The 501-2955 is not compatible with the SS5 on Solaris 1.x.
4. The SS2 requires OBP ≥2.4.

References

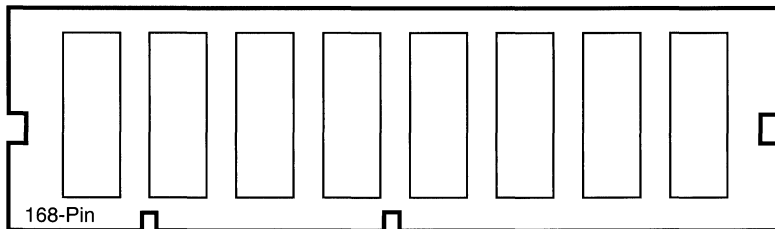
1. *TurboGX/TurboGXplus Hardware Installation Guide*, 801-5399-10.
2. *TurboGXplus Hardware Installation Guide*, 800-7579-10.
3. *Platform Notes: SMCC Frame Buffers*, 802-2661-10.
4. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-5011-10.

1MB Video SIMM

SS4

Option 102

501-2576



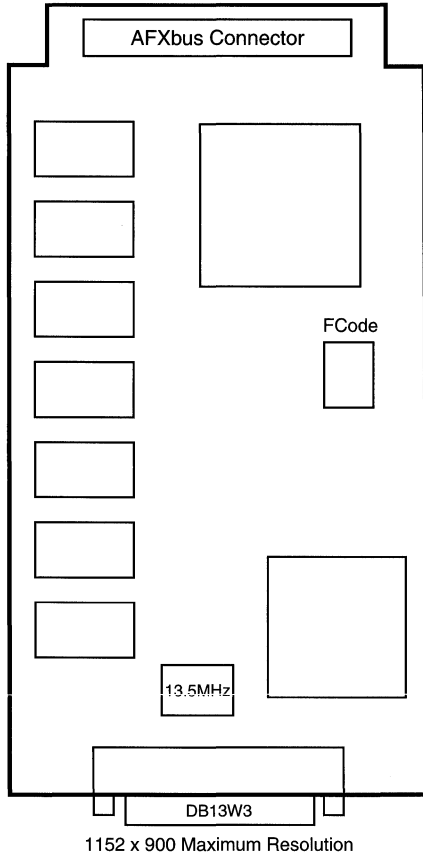
UNIX ID: /dev/txc0

Notes

1. The minimum operating system is Solaris 1.1.2 or 2.4 Hardware:11/94.
2. Video memory without the VSIMM installed is 1MB.
3. Video memory with the VSIMM installed is 2MB.
4. The VSIMM adds support for 1280 x 1024 resolution.

Reference: *SPARCstation 4 VSIMM Installation Guide*, 802-1898.

S24
24-Bit Color Frame Buffer
SS5
Options 323 324
501-2337



UNIX ID: /dev/tcx0

Notes

- 1. The minimum operating system is Solaris 2.3 Hardware: 8/94.
- 2. Solaris 2.3 HW: 8/94 on the Model 110 requires Patch 101863-02.
- 3. Solaris 2.4 HW: 11/94 on the Model 110 requires Patch 101923-05.
- 4. Solaris 2.4 HW: 3/95 on the Model 110 requires Patch 101923-05.
- 5. The S24 uses the backpanel opening for SBus Slot 3.

Reference: *S24 Frame Buffer Installation Manual*, 801-5519-10.

Auxiliary Video Board

SS10SX SS20

Options 325 326 327 345 346 347

501-2020

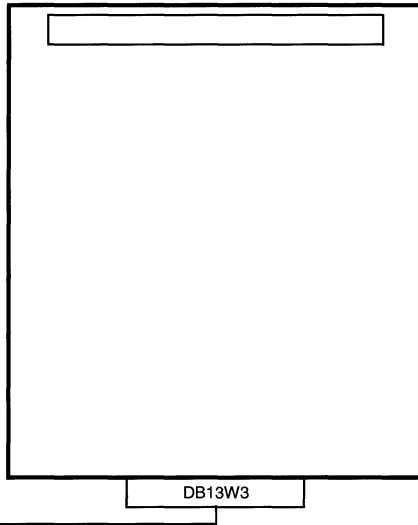
501-2488

SS10SX

SS20

83.8 mm x 98.4 mm

83.8 mm x 95.6 mm



Screen Resolutions

| | |
|-------------|------|
| 1024 x 768 | 60Hz |
| 1024 x 768 | 60Hz |
| 1024 x 768 | 70Hz |
| 1024 x 800 | 84Hz |
| 1152 x 900 | 66Hz |
| 1152 x 900 | 76Hz |
| 1280 x 1024 | 66Hz |
| 1600 x 1280 | 66Hz |

Notes

1. The minimum operating system is Solaris 2.3.
2. Solaris 2.3 requires the Solaris 2.3 Supplement CD, 704-4195-10.
3. Solaris 2.6 does not support XIL compute acceleration for the SX.
4. The Auxiliary Video Board is required if two VSIMMs are installed.
5. Install the second VSIMM in J0202 on the SS10SX CPU.
6. Install the second VSIMM in J0406 on the SS20 CPU.
7. Use the **sxconfig** (1M) command to configure contiguous memory.
8. Use the **cg14config** (1M) command to change resolutions.

References

1. *SPARCstation 10SX VSIMMs Installation*, 801-2535-10.
2. *SPARCstation 20 VSIMMs Installation*, 801-6185-10.
3. *SS10SX System Configuration Guide*, 801-5498-10.
4. *SS10SX and SS20 System Configuration Guide*, 801-7287-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-2661-10.
6. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
7. *Platform Notes: SMCC Frame Buffers*, 802-5011-10.

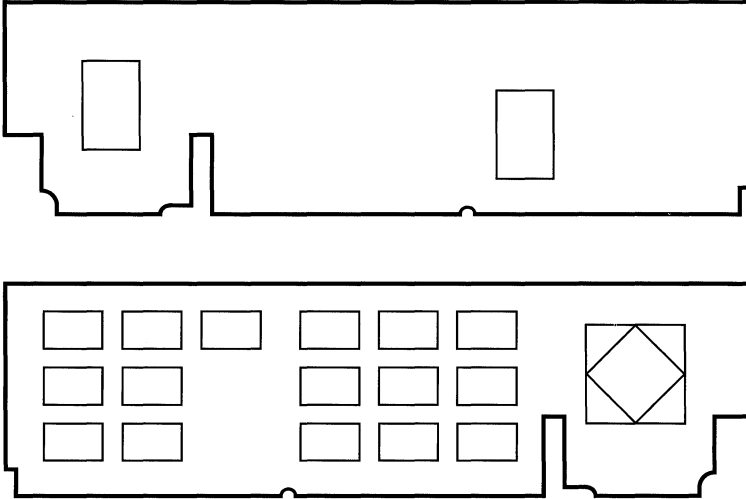
CG14

4MB 60ns 24-Bit VSIMM

SS20

Options 325 327

501-2481



- Screen Resolutions
- 1024 x 768 60Hz
 - 1024 x 768 60Hz
 - 1024 x 768 70Hz
 - 1024 x 800 84Hz
 - 1152 x 900 66Hz
 - 1152 x 900 76Hz
 - 1280 x 1024 66Hz
 - 1600 x 1280 67Hz

UNIX ID: /dev/cgfourteen0

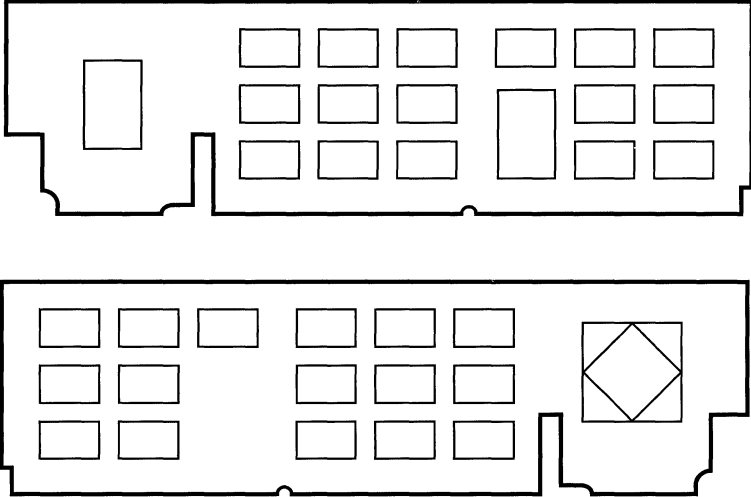
Notes

1. The minimum operating system is Solaris 2.3.
2. Solaris 2.3 requires the Solaris 2.3 Supplement CD, 704-4195-10.
3. Solaris 2.6 does not support XIL compute acceleration for the SX.
4. Install the first VSIMM in J0407 and the second VSIMM in J0406.
5. The Auxiliary Video Board is required if two VSIMMs are installed.
6. Use the **sxconfig** (1M) command to configure contiguous memory.
7. Use the **cg14config** (1M) command to change resolutions.

References

1. *SPARCstation 20 VSIMMs Installation*, 801-6185-10.
2. *SS10SX and SS20 System Configuration Guide*, 801-7287-10.

CG14
 8MB 60ns 24-Bit VSIMM
 SS20
 Option 326
 501-2482



Screen Resolutions

| | |
|-------------|------|
| 1024 x 768 | 60Hz |
| 1024 x 768 | 60Hz |
| 1024 x 768 | 70Hz |
| 1024 x 800 | 84Hz |
| 1152 x 900 | 66Hz |
| 1152 x 900 | 76Hz |
| 1280 x 1024 | 66Hz |
| 1600 x 1280 | 66Hz |

UNIX ID: /dev/cgfourteen0

Notes

1. The minimum operating system is Solaris 2.3.
2. Solaris 2.3 requires the Solaris 2.3 Supplement CD, 704-4195-10.
3. Solaris 2.6 does not support XIL compute acceleration for the SX.
4. Install the first VSIMM in J0407 and the second VSIMM in J0406.
5. The Auxiliary Video Board is required if two VSIMMs are installed.
6. Use the **sxconfig** (1M) command to configure contiguous memory.
7. Use the **cg14config** (1M) command to change resolutions.

References

1. *SPARCstation 20 VSIMMs Installation*, 801-6185-10.
2. *SS10SX and SS20 System Configuration Guide*, 801-7287-10.

Elite3D-m3 Elite3D-m6 AFB Series 1

24-Bit Color Frame Buffer

A16 A22 A23 A27

Options 3664 3665

501-4860
Elite3D-m3/FRU

501-5268
Elite3D-m3/FRU

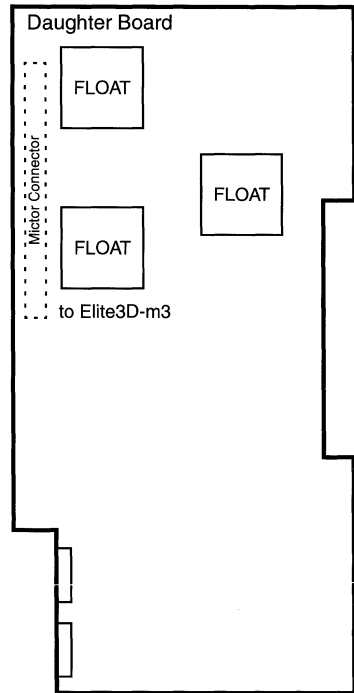
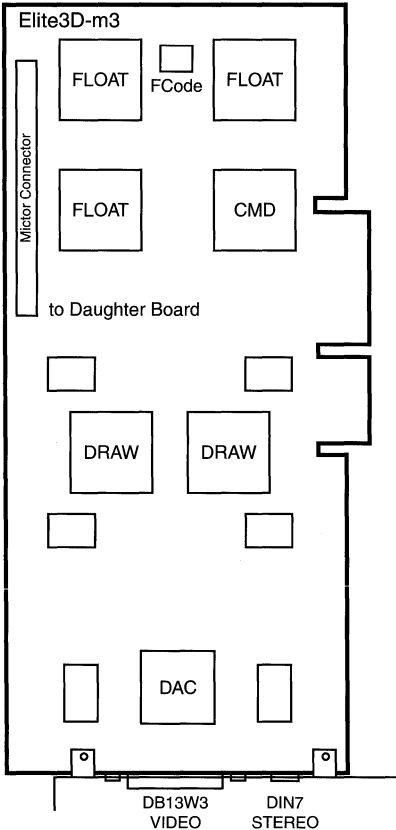
501-5201
Elite3D-m3

501-5484
Elite3D-m3/FRU

540-3623
Elite3D-m6/FRU
501-4860 + 501-5058

540-3902
Elite3D-m6/FRU
501-5201 + 501-5058

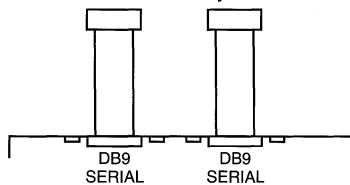
501-5058
Daughter Board



Screen Resolutions

| | | | |
|------------|-------|-------------|------|
| 640 x 480 | 60Hz | 1024 x 800 | 84Hz |
| i640 x 480 | 60Hz | 1152 x 900 | 76Hz |
| i768 x 575 | 50Hz | 1152 x 900 | 66Hz |
| s960 x 680 | 108Hz | 1280 x 800 | 76Hz |
| s960 x 680 | 112Hz | 1280 x 1024 | 76Hz |
| 1024 x 768 | 77Hz | 1280 x 1024 | 67Hz |
| 1024 x 768 | 75Hz | 1280 x 1024 | 60Hz |
| 1024 x 768 | 70Hz | | |

Ribbon Cable Assembly 530-2672



| | | | |
|----------|----------|----------|----------|
| 501-4860 | 501-5268 | 501-5201 | 501-5484 |
| 540-3623 | 540-3902 | 501-5058 | |

Operating System Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or Solaris 2.6 HW: 3/98.
2. The *Elite3D Supplemental CD for Solaris 2.5.1* is required.
3. Elite3D device drivers are bundled in Solaris 2.6 Hardware: 3/98.

Board Notes

1. Do NOT assemble or disassemble an Elite3D-m6. The Mictor connector can be damaged during assembly and disassembly.
2. Elite3D-m6 assembly 540-3623 includes 501-4860 and 501-5058.
3. Elite3D-m6 assembly 540-3902 includes 501-5201 and 501-5058.
4. Elite3D-m3 501-5484 includes 501-5201 and barcode label 262-5463.
5. Elite3D-m3 501-5268 includes 501-4860 and barcode label 262-5565.

Compatibility Notes

1. Elite3D-m3 is not compatible with 300MHz Module ≤501-4379-05.
2. Elite3D-m3 is not compatible with 300MHz Module ≤501-5040-02.

References

1. *afbconfig* (1M) and *afb* (7D) manual pages.
2. *Elite3D Installation Guide*, 805-4391-10.

Elite3D-m3 Elite3D-m6 AFB Series 2

24-Bit Color Frame Buffer

A16 A22 A23 A27

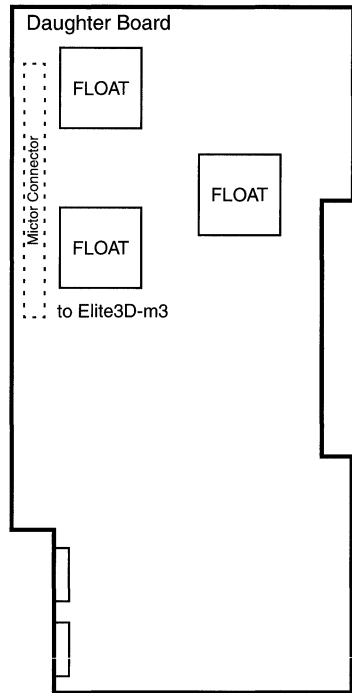
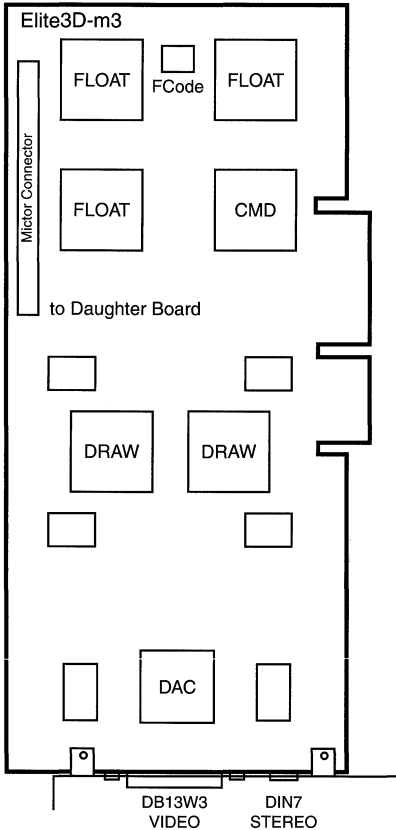
Options 3677 3679

501-5574
Elite3D-m3/FRU

501-5575
Elite3D-m3

540-4313
Elite3D-m6/FRU
501-5575 + 501-5058

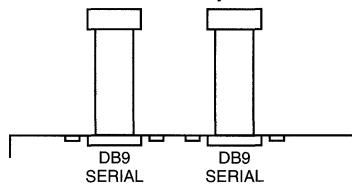
501-5058
Daughter Board



Screen Resolutions

| | | | |
|------------|-------|-------------|------|
| 640 x 480 | 60Hz | 1024 x 800 | 84Hz |
| i640 x 480 | 60Hz | 1152 x 900 | 76Hz |
| i768 x 575 | 50Hz | 1152 x 900 | 66Hz |
| s960 x 680 | 108Hz | 1280 x 800 | 76Hz |
| s960 x 680 | 112Hz | 1280 x 1024 | 76Hz |
| 1024 x 768 | 77Hz | 1280 x 1024 | 67Hz |
| 1024 x 768 | 75Hz | 1280 x 1024 | 60Hz |
| 1024 x 768 | 70Hz | | |

Ribbon Cable Assembly 530-2672



501-5574

501-5575

540-4313

501-5058

Operating System Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or Solaris 2.6 HW: 3/98.
2. The *Elite3D Supplemental CD for Solaris 2.5.1* is required.
3. Elite3D device drivers are bundled in Solaris 2.6 Hardware: 3/98.

Board Notes

1. Do NOT assemble or disassemble an Elite3D-m6. The Mictor connector can be damaged during assembly and disassembly.
2. Elite3D-m6 assembly 540-3623 includes 501-4860 and 501-5058.
3. Elite3D-m6 assembly 540-3902 includes 501-5201 and 501-5058.
4. Elite3D-m3 501-5484 includes 501-5201 and barcode label 262-5463.
5. Elite3D-m3 501-5268 includes 501-4860 and barcode label 262-5565.

Compatibility Notes

1. Elite3D-m3 is not compatible with 300MHz Module ≤501-4379-05.
2. Elite3D-m3 is not compatible with 300MHz Module ≤501-5040-02.

References

1. *afbconfig* (1M) and *afb* (7D) manual pages.
2. *Elite3D Installation Guide*, 805-4391-10.

Elite3D-m6 AFB

24-Bit Color Frame Buffer

A14 A20

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

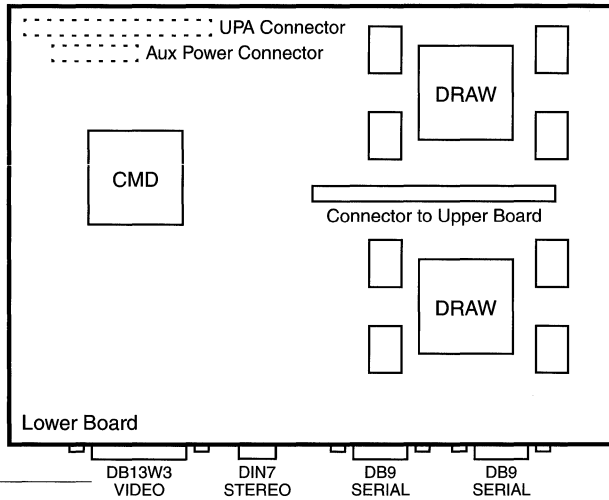
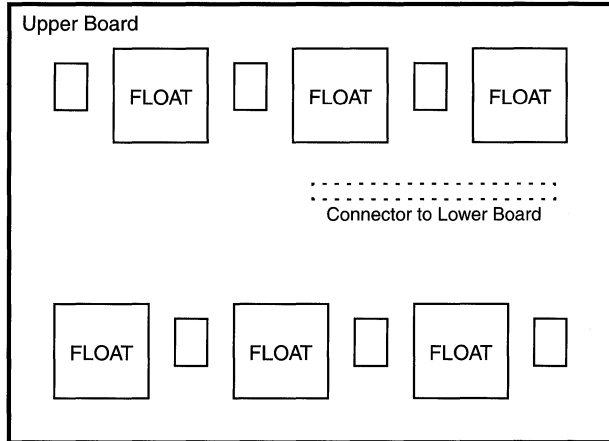
Options 3666 3667

540-3058
AFB Assembly

540-3979
AFB Assembly

501-4231
Lower Board

501-4232
Upper Board



Screen Resolutions

- 640 x 480 60Hz
- 640 x 480 60Hz
- 1768 x 575 50Hz
- s960 x 680 108Hz
- s960 x 680 112Hz
- 1024 x 768 77Hz
- 1024 x 768 75Hz
- 1024 x 768 70Hz
- 1024 x 768 60Hz
- 1024 x 800 84Hz
- 1152 x 900 76Hz
- 1152 x 900 66Hz
- 1280 x 800 76Hz
- 1280 x 1024 76Hz
- 1280 x 1024 67Hz
- 1280 x 1024 60Hz

540-3058

540-3979

501-4231

501-4232

Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or Solaris 2.6 HW: 3/98.
2. The *Elite3D Supplemental CD for Solaris 2.5.1* is required.
3. Elite3D device drivers are bundled in Solaris 2.6 Hardware: 3/98.
4. Use Y-Cable 180-1910 to drive multiple monitors from the stereo port.

Compatibility Notes

1. Lower board ≤501-4231-06 is not compatible with the A20.
2. Assembly ≤540-3058-06 is not compatible with the A20.
3. Assembly 540-3058 is not compatible with the E3x00-E6x00.

References

1. *afbconfig* (1M) and *afb* (7D) manual pages.
2. *Elite3D Installation Guide*, 805-3321-10.
3. *Elite3D Installation on Sun Enterprise Servers*, 805-6938-10.

Elite3D-m6 AFB

24-Bit Color Frame Buffer

A14 A20

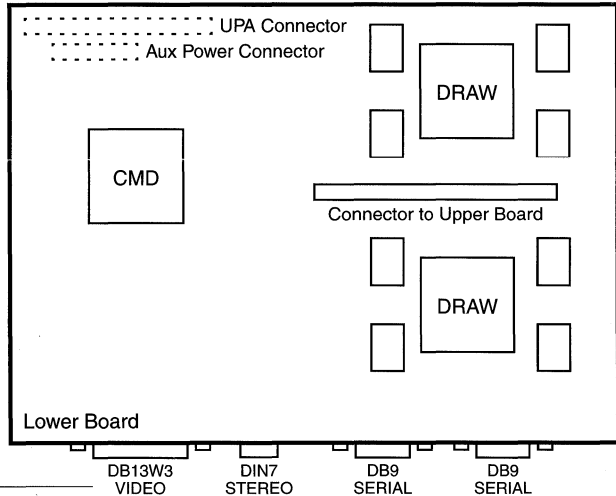
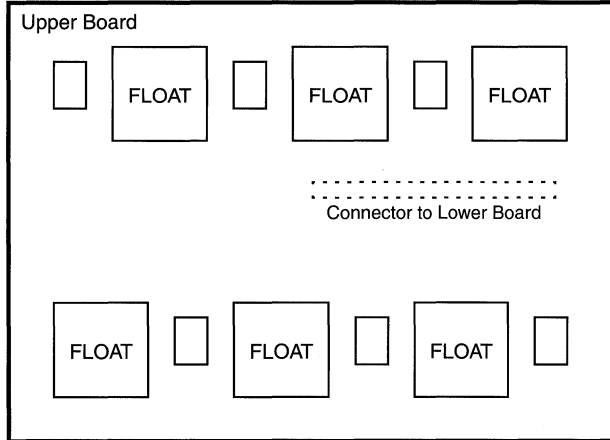
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 3680

540-4335
AFB Assembly

501-5608
Lower Board

501-4232
Upper Board



Screen Resolutions

- 640 x 480 60Hz
- i640 x 480 60Hz
- i768 x 575 50Hz
- s960 x 680 108Hz
- s960 x 680 112Hz
- 1024 x 768 77Hz
- 1024 x 768 75Hz
- 1024 x 768 70Hz
- 1024 x 768 60Hz
- 1024 x 800 84Hz
- 1152 x 900 76Hz
- 1152 x 900 66Hz
- 1280 x 800 76Hz
- 1280 x 1024 76Hz
- 1280 x 1024 67Hz
- 1280 x 1024 60Hz

540-4335

501-5608

501-4232

Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or Solaris 2.6 HW: 3/98.
2. The *Elite3D Supplemental CD for Solaris 2.5.1* is required.
3. Elite3D device drivers are bundled in Solaris 2.6 Hardware: 3/98.
4. Use Y-Cable 180-1910 to drive multiple monitors from the stereo port.

References

1. *afbconfig* (1M) and *afb* (7D) manual pages.
2. *Elite3D Installation Guide*, 805-3321-10.
3. *Elite3D Installation on Sun Enterprise Servers*, 805-6938-10.

Creator Series 1 FFB

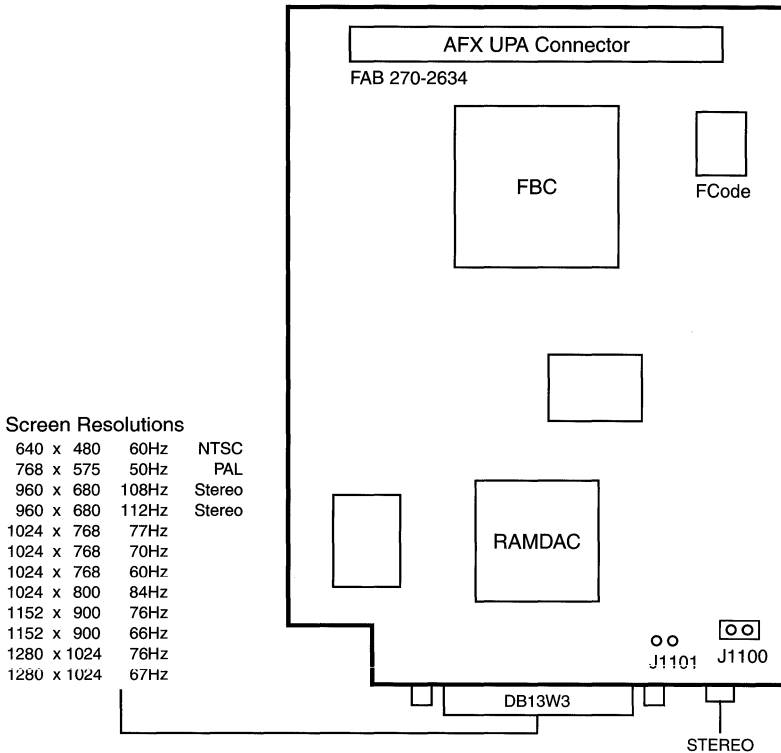
24-Bit Color Frame Buffer

A12 A14

Option 3651

501-2634

67MHz Clock



UNIX ID: /dev/ffb0

Notes

1. Revisions ≤501-2634-04 are not compatible with the E3x00, E4x00, E5x00, or E6x00. Use 501-2634-05 or 501-4127.
2. The FFB has a combined framebuffer and graphics clock.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-6682-11.
3. *Creator Installation Guide*, 802-7731-11.
4. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-5011-10.

Creator Series 1 FFB

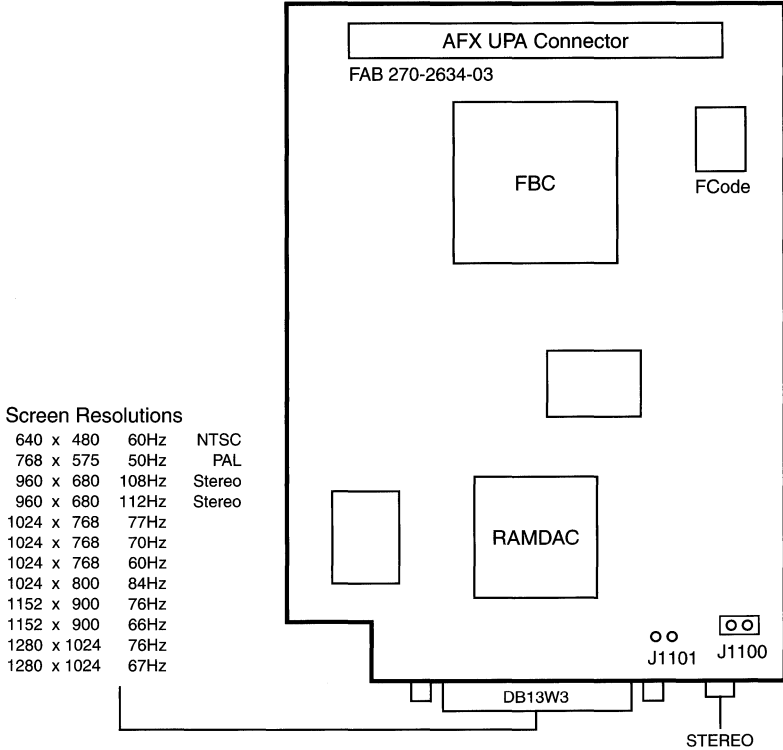
24-Bit Color Frame Buffer

A12 A14

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 3651 3653 3669

501-4127
67MHz Clock



UNIX ID: /dev/ffb0

Notes

1. Revisions ≤501-2634-04 are not compatible with the E3x00, E4x00, E5x00, or E6x00. Use 501-2634-05 or 501-4127.
2. The FFB has a combined framebuffer and graphics clock.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-6682-11.
3. *Creator Installation Guide*, 802-7731-11.
4. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-5011-10.

Creator3D Series 1 FFB

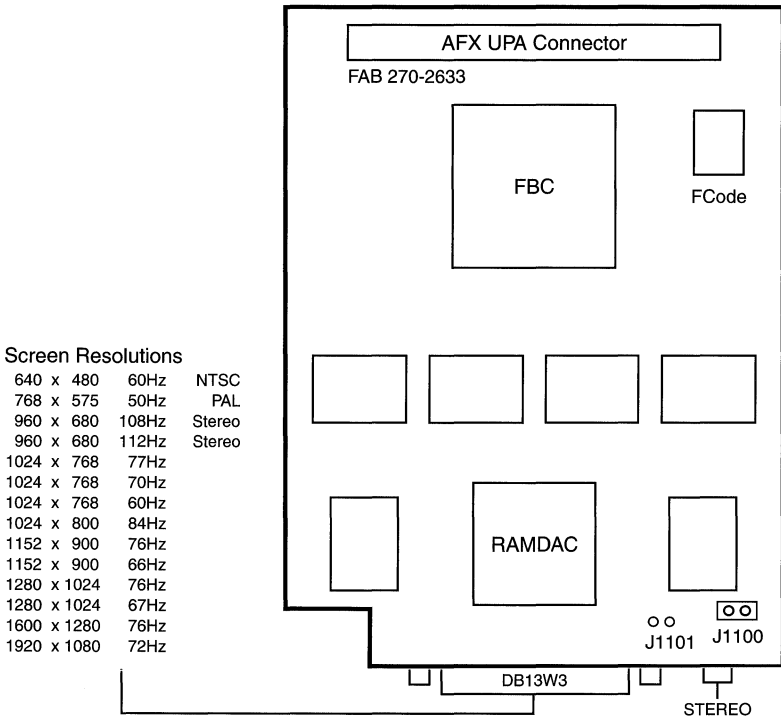
24-Bit Color Frame Buffer

A12 A14

Option 3652

501-2633

67MHz Clock



UNIX ID: /dev/ffb0

Notes

1. Revisions \leq 501-2633-05 are not compatible with the E3x00, E4x00, E5x00, or E6x00. Use 501-2633-06 or 501-4126.
2. The FFB has a combined framebuffer and graphics clock.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-6682-11.
3. *Creator Installation Guide*, 802-7731-11.
4. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-5011-10.

Creator3D Series 1 FFB

24-Bit Color Frame Buffer

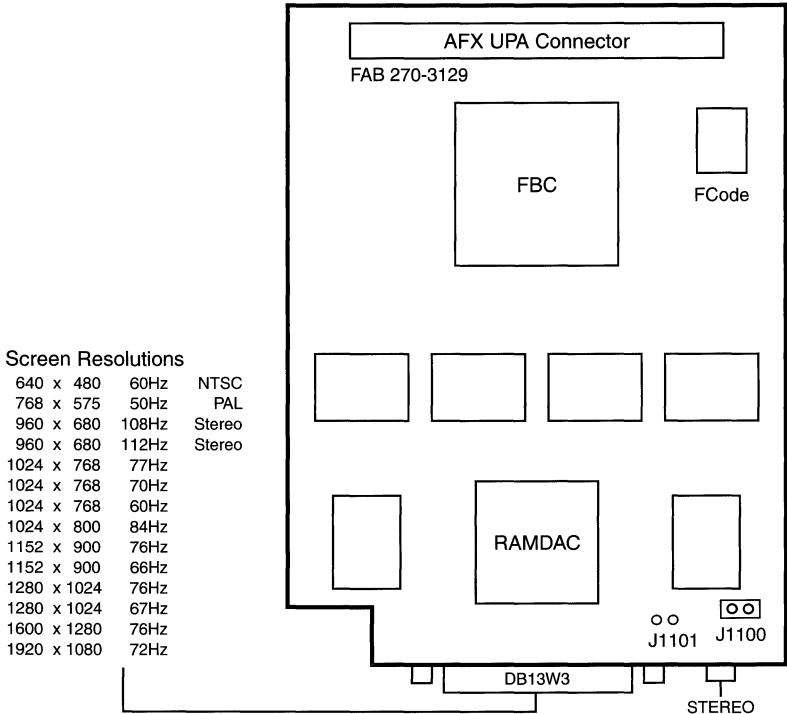
A12 A14

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 3652

501-3129

75MHz Clock



UNIX ID: /dev/ffb0

Notes

1. The 501-3129 was released in May 1996 without an option number.
2. The 501-3129 was assigned Option number 3652 in November 1996.
3. The I/O Graphics board requires iPOST 3.2.6. Refer to BugID 1256295.
4. The FFB has a combined framebuffer and graphics clock.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-6682-11.
3. *Creator Installation Guide*, 802-7731-11.
4. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-5011-10

Creator3D Series 1 FFB

24-Bit Color Frame Buffer

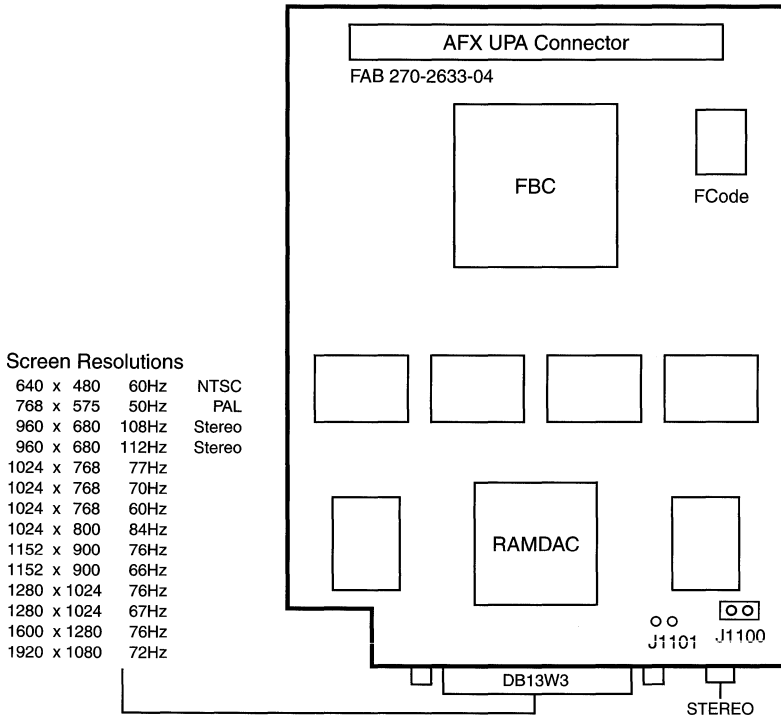
A12 A14

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 3652 3654

501-4126

67MHz Clock



UNIX ID: /dev/ffb0

Note: The FFB has a combined framebuffer and graphics clock.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-6682-11.
3. *Creator Installation Guide*, 802-7731-11.
4. *Platform Notes: SMCC Frame Buffers*, 802-3755-10.
5. *Platform Notes: SMCC Frame Buffers*, 802-5011-10.

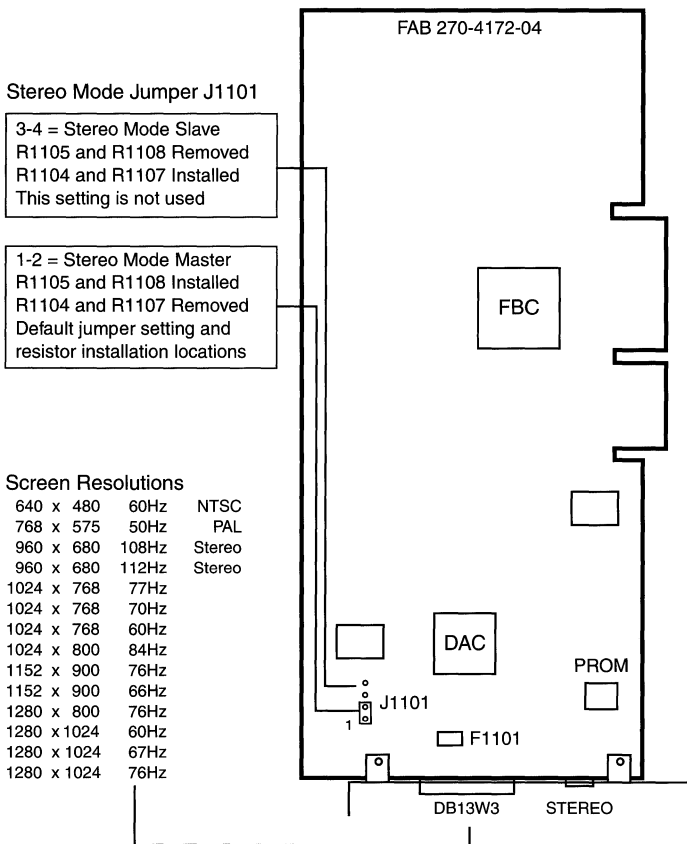
Creator Series 2 FFB2

24-Bit Color Frame Buffer

A16 A23

Options 3658 7131

501-4174



UNIX ID: /dev/ffb0

Note: The minimum operating system is Solaris 2.5.1 Hardware: 4/97.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-7731-11.

Creator3D Series 2 FFB2

24-Bit Color Frame Buffer

A12 A14

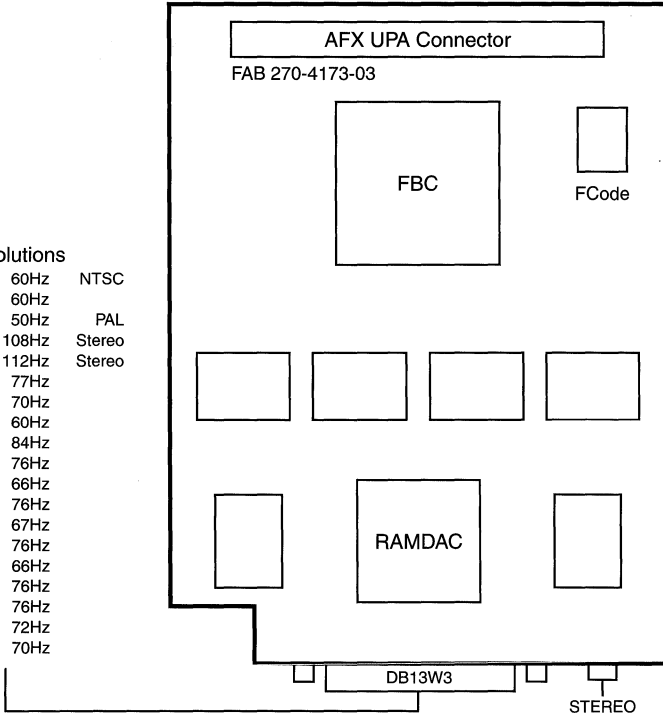
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 3657 3675 7132 7140

501-4173

Screen Resolutions

| | | |
|-------------|-------|--------|
| 640 x 480 | 60Hz | NTSC |
| 640 x 480 | 60Hz | |
| 768 x 575 | 50Hz | PAL |
| 960 x 680 | 108Hz | Stereo |
| 960 x 680 | 112Hz | Stereo |
| 1024 x 768 | 77Hz | |
| 1024 x 768 | 70Hz | |
| 1024 x 768 | 60Hz | |
| 1024 x 800 | 84Hz | |
| 1152 x 900 | 76Hz | |
| 1152 x 900 | 66Hz | |
| 1280 x 1024 | 76Hz | |
| 1280 x 1024 | 67Hz | |
| 1440 x 900 | 76Hz | |
| 1600 x 1000 | 66Hz | |
| 1600 x 1000 | 76Hz | |
| 1600 x 1280 | 76Hz | |
| 1920 x 1080 | 72Hz | |
| 1920 x 1200 | 70Hz | |



UNIX ID: /dev/ffb0

Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. The E4000 CPU/Memory Board requires OBP 3.2 Version 9.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-7731-11.

Creator3D Series 2 FFB2

24-Bit Color Frame Buffer

A16 A23

Options 3659 7133 7141

501-4172

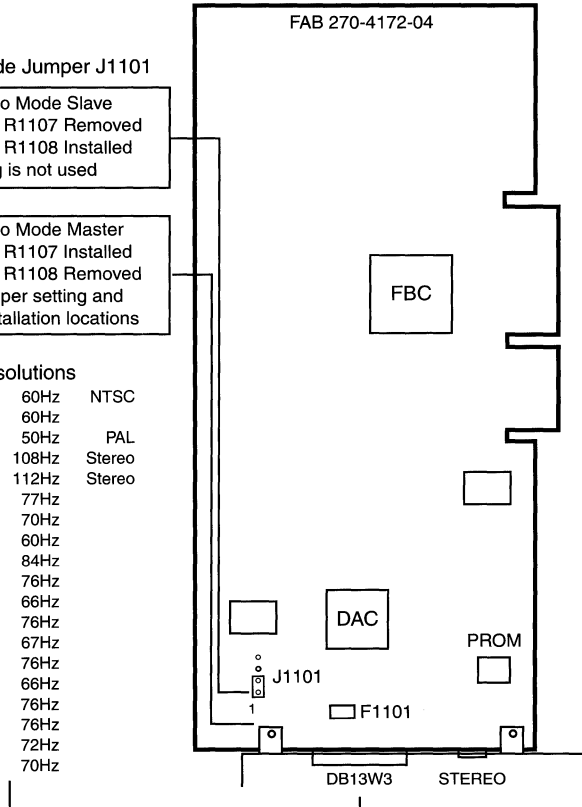
Stereo Mode Jumper J1101

3-4 = Stereo Mode Slave
 R1105 and R1107 Removed
 R1104 and R1108 Installed
 This setting is not used

1-2 = Stereo Mode Master
 R1105 and R1107 Installed
 R1104 and R1108 Removed
 Default jumper setting and
 resistor installation locations

Screen Resolutions

| | | |
|-------------|-------|--------|
| 640 x 480 | 60Hz | NTSC |
| 640 x 480 | 60Hz | |
| 768 x 575 | 50Hz | PAL |
| 960 x 680 | 108Hz | Stereo |
| 960 x 680 | 112Hz | Stereo |
| 1024 x 768 | 77Hz | |
| 1024 x 768 | 70Hz | |
| 1024 x 768 | 60Hz | |
| 1024 x 800 | 84Hz | |
| 1152 x 900 | 76Hz | |
| 1152 x 900 | 66Hz | |
| 1280 x 1024 | 76Hz | |
| 1280 x 1024 | 67Hz | |
| 1440 x 900 | 76Hz | |
| 1600 x 1000 | 66Hz | |
| 1600 x 1000 | 76Hz | |
| 1600 x 1280 | 76Hz | |
| 1920 x 1080 | 72Hz | |
| 1920 x 1200 | 70Hz | |



UNIX ID: /dev/ffb0

Note: The minimum operating system is Solaris 2.5.1 Hardware: 4/97.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-7731-11.

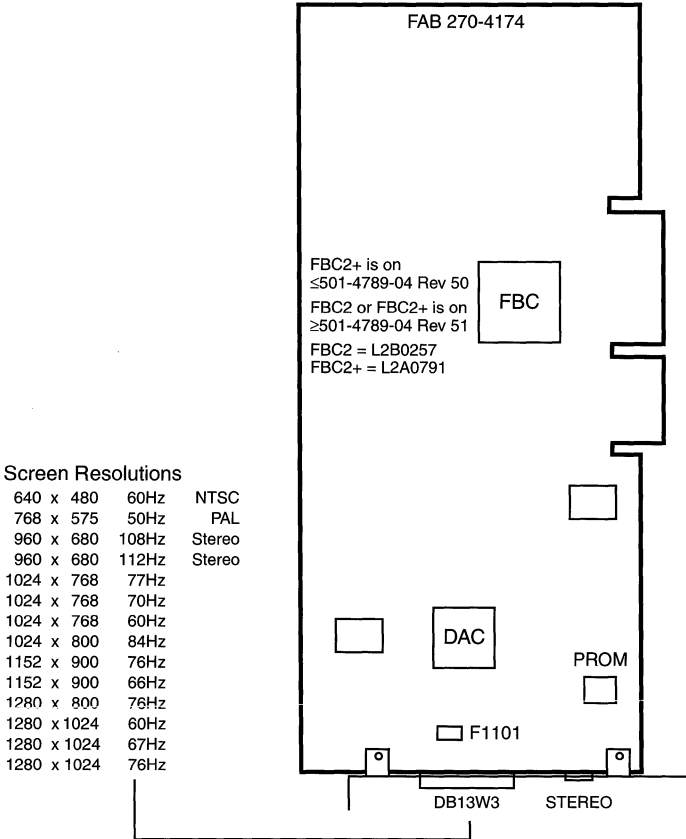
Creator Series 3 FFB2+

24-Bit Color Frame Buffer

A16 A22 A23

Options 3662 3672

501-4789



UNIX ID: /dev/ffb0

Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The FFB2+ is not compatible with 300MHz Module 501-4196.
3. The FFB2+ is not compatible with 300MHz Module ≤501-4849-02.
4. The 300MHz Module is not compatible with FFB2+ ≤501-4789-02.
5. Errors may occur using SunVTS 2.1.2 with ≥501-4789-04 Rev 51.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-7731-11.

Creator3D Series 3 FFB2+

24-Bit Color Frame Buffer

A14

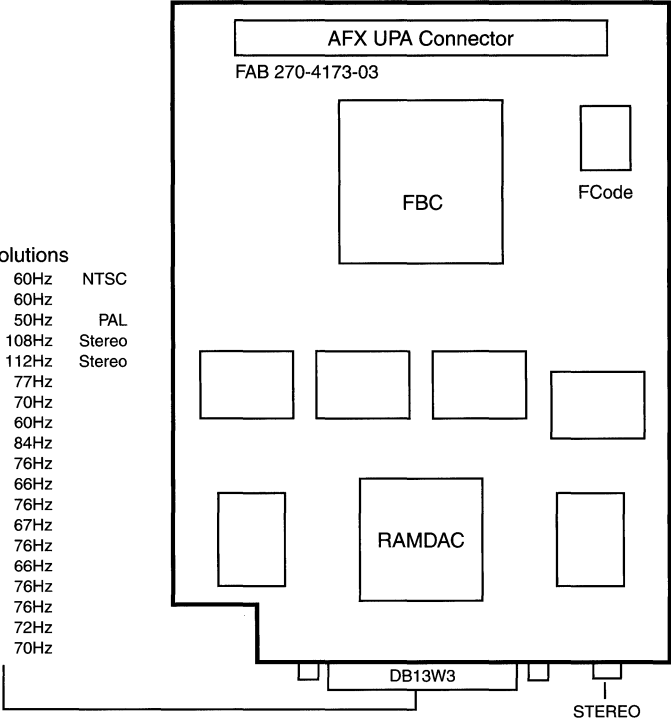
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 3661 3671

501-4790

Screen Resolutions

| | | |
|-------------|-------|--------|
| 640 x 480 | 60Hz | NTSC |
| 640 x 480 | 60Hz | |
| 768 x 575 | 50Hz | PAL |
| 960 x 680 | 108Hz | Stereo |
| 960 x 680 | 112Hz | Stereo |
| 1024 x 768 | 77Hz | |
| 1024 x 768 | 70Hz | |
| 1024 x 768 | 60Hz | |
| 1024 x 800 | 84Hz | |
| 1152 x 900 | 76Hz | |
| 1152 x 900 | 66Hz | |
| 1280 x 1024 | 76Hz | |
| 1280 x 1024 | 67Hz | |
| 1440 x 900 | 76Hz | |
| 1600 x 1000 | 66Hz | |
| 1600 x 1000 | 76Hz | |
| 1600 x 1280 | 76Hz | |
| 1920 x 1080 | 72Hz | |
| 1920 x 1200 | 70Hz | |



UNIX ID: /dev/ffb0

Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The E3000-E6000 CPU/Memory Board requires OBP 3.2 Version 9.
3. The FFB2+ is not compatible with 300MHz Module 501-4196.
4. The FFB2+ is not compatible with 300MHz Module ≤501-4849-02.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-7731-11.

Creator3D Series 3 FFB2+

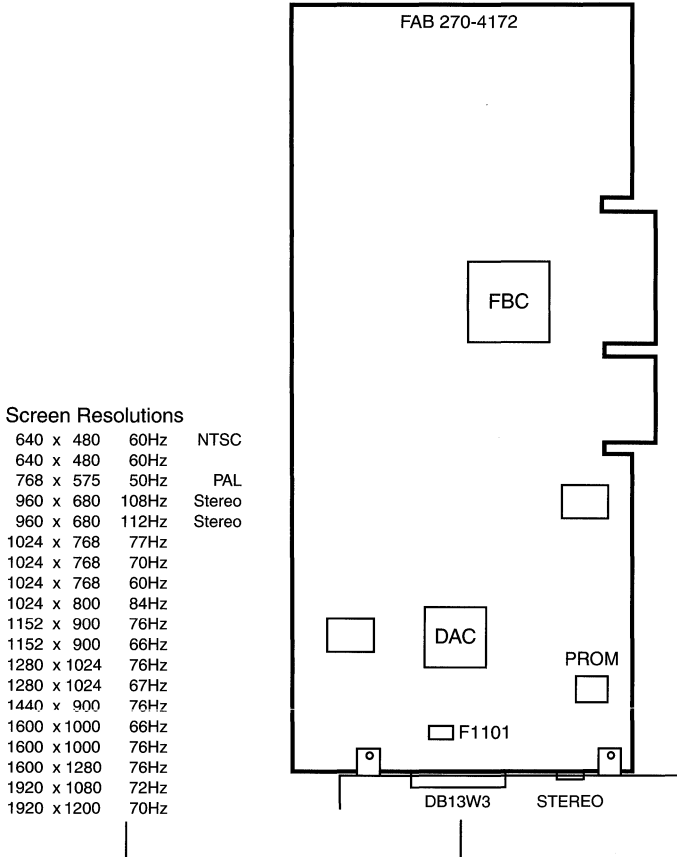
24-Bit Color Frame Buffer

A16 A22 A23

Options 3663 3670

501-4788

501-5690



UNIX ID: /dev/ffb0

Notes

1. The minimum OS is Solaris 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
2. The FFB2+ is not compatible with 300MHz Module 501-4196.
3. The FFB2+ is not compatible with 300MHz Module ≤501-4849-02.
4. The 300MHz Module is not compatible with FFB2+ ≤501-4788-02.

References

1. *ffbconfig* (1M) and *ffb* (7D) manual pages.
2. *Creator Installation Guide*, 802-7731-11.

PGX

8-Bit Color Frame Buffer

A16 A20 A21 A22 A23 A25 A26

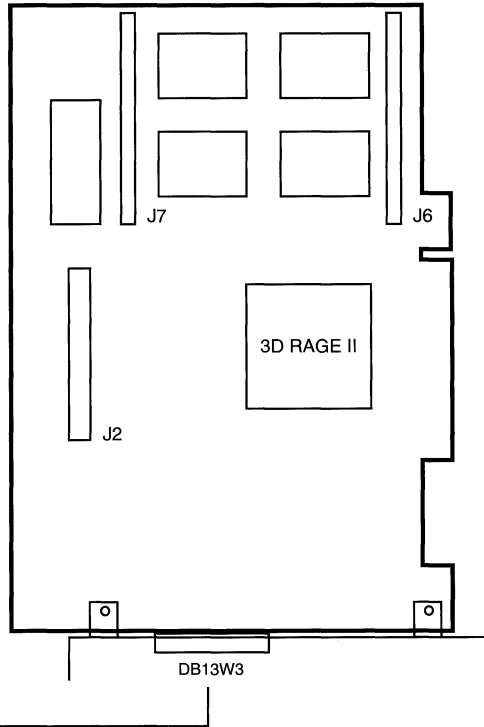
Options 3660 7128 7138 7148

370-2256

5V 32Bit 33MHz

Screen Resolutions

| | | |
|-------------|---------|------|
| 1600 x 1000 | 79.9KHz | 76Hz |
| 1600 x 1000 | 65.5KHz | 66Hz |
| 1440 x 900 | 71.8KHz | 76Hz |
| 1280 x 1024 | 81.1KHz | 76Hz |
| 1280 x 1024 | xx.xKHz | 75Hz |
| 1280 x 1024 | 71.7KHz | 67Hz |
| 1280 x 1024 | xx.xKHz | 60Hz |
| 1280 x 800 | xx.xKHz | 76Hz |
| 1152 x 900 | 71.7KHz | 76Hz |
| 1152 x 900 | 61.8KHz | 66Hz |
| 1024 x 768 | xx.xKHz | 75Hz |
| 1024 x 768 | xx.xKHz | 70Hz |
| 1024 x 768 | 48.3KHz | 60Hz |
| 800 x 600 | 46.8KHz | 75Hz |
| 768 x 575 | xx.xKHz | 50Hz |
| 640 x 480 | xx.xKHz | 60Hz |



UNIX ID: /dev/fbs/m640

Notes

1. The minimum operating system is 2.5.1 Hardware: 4/97.
2. The A20/A25 is not compatible with FCode 1.06 on 370-2256-02.
3. The A20/A25 displays black lines with FCode 1.09. Use FCode 1.11.

Reference: *M64 Installation Guide*, 802-5787-10.

PGX32

8/24-Bit Color Frame Buffer

A16 A20 A21 A22 A23 A25 A26 A27

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

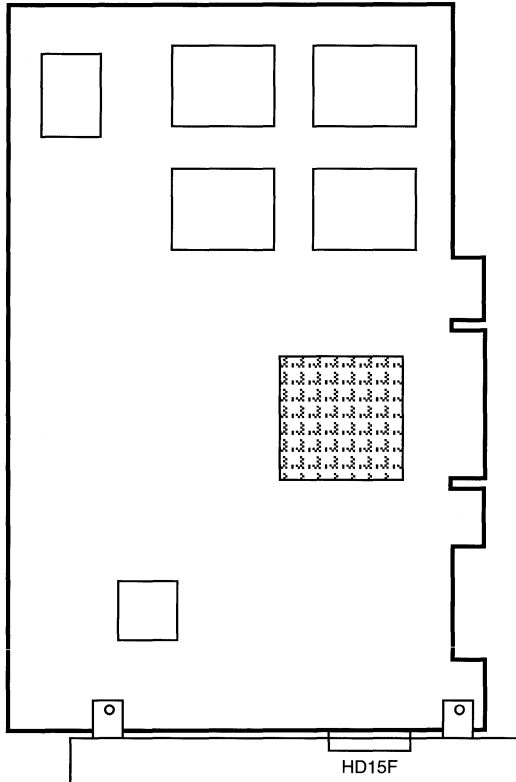
Option 3668

370-3753

3.3/5V 32Bit 33MHz

Screen Resolutions

| | | |
|-------------|------|---------|
| 1600 x 1200 | 80Hz | Mode 33 |
| 1600 x 1200 | 76Hz | Mode 32 |
| 1600 x 1200 | 75Hz | Mode 31 |
| 1600 x 1200 | 70Hz | Mode 30 |
| 1600 x 1200 | 65Hz | Mode 29 |
| 1600 x 1200 | 60Hz | Mode 28 |
| 1600 x 1200 | 76Hz | Mode 27 |
| 1600 x 1200 | 66Hz | Mode 26 |
| 1280 x 1024 | 85Hz | Mode 25 |
| 1280 x 1024 | 76Hz | Mode 24 |
| 1280 x 1024 | 75Hz | Mode 23 |
| 1280 x 1024 | 67Hz | Mode 22 |
| 1280 x 1024 | 60Hz | Mode 21 |
| 1280 x 800 | 76Hz | Mode 20 |
| 1152 x 900 | 85Hz | Mode 19 |
| 1152 x 900 | 76Hz | Mode 18 |
| 1152 x 900 | 75Hz | Mode 17 |
| 1152 x 900 | 70Hz | Mode 16 |
| 1152 x 900 | 66Hz | Mode 15 |
| 1152 x 900 | 60Hz | Mode 14 |
| 1024 x 800 | 85Hz | Mode 13 |
| 1024 x 768 | 85Hz | Mode 12 |
| 1024 x 768 | 77Hz | Mode 11 |
| 1024 x 768 | 75Hz | Mode 10 |
| 1024 x 768 | 70Hz | Mode 9 |
| 1024 x 768 | 60Hz | Mode 8 |
| 800 x 600 | 85Hz | Mode 7 |
| 800 x 600 | 75Hz | Mode 6 |
| 800 x 600 | 72Hz | Mode 5 |
| 800 x 600 | 60Hz | Mode 4 |
| 640 x 480 | 85Hz | Mode 3 |
| 640 x 480 | 75Hz | Mode 2 |
| 640 x 480 | 72Hz | Mode 1 |
| 640 x 480 | 60Hz | Mode 0 |



UNIX ID: /dev/fbs/gfxp0

Notes

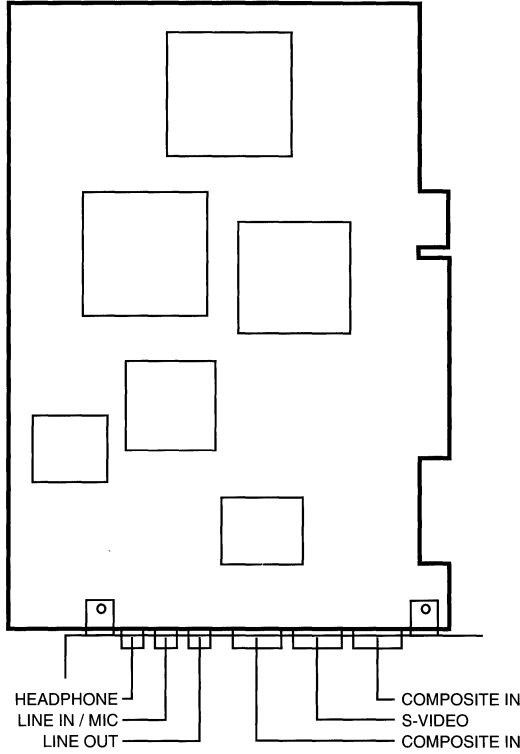
1. The minimum OS is 2.6 with the TSIgfxdrv and TSIgfxOW packages.
2. The TSIgpx package is integrated in Solaris 7 Hardware: 5/99.
3. Testing on Solaris 2.5.1 has not been completed as of 3/26/99.
4. The A20/A25 OBP **banner** command fails with PGX32 <370-3753-03.
5. The E3000-6000 and E3500-E6500 require PGX32 370-3753-04.
6. Option 3668 includes HD15 to DB13W3 Adapter 530-2357 or 530-2917.
7. Resolutions up to 1280 x 1024 default to 8/24-bit mode.
8. Resolutions over 1280 x 1024 default to 8-bit mode.

Reference: *PGX32 PCI Graphics Card Installation Guide*, 805-7770-10.

SunVideo Plus

| | | | | | |
|---------|------|------|------|------|------|
| A16 | A20 | A21 | A22 | A23 | A27 |
| Options | 1086 | 1087 | 1088 | 1088 | 1089 |

370-3278
5V 32Bit 33MHz



UNIX ID: /dev/olk0

Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. SunVideo Plus 1.0 device drivers are on CD-ROM 704-5994-10.
3. Solaris 2.6 requires SunVideo Plus ≥ 1.1 (CD-ROM 704-5994-11).
4. Solaris 7 requires SunVideo Plus ≥ 1.2 (CD-ROM 704-5994-12).
5. SunVideo Plus uses the SUNWolkpd device driver.
6. SunVideo Plus uses the SUNWolkpu runtime scripts.

Reference: *SunVideoPlus User's Guide*, 805-2682-10.

Expert3D

24-Bit Color Frame Buffer

A23 A25 A27 A34

Option 3678

370-3987

Intense3D Wildcat 4110
3.3/5V 64Bit 66MHz

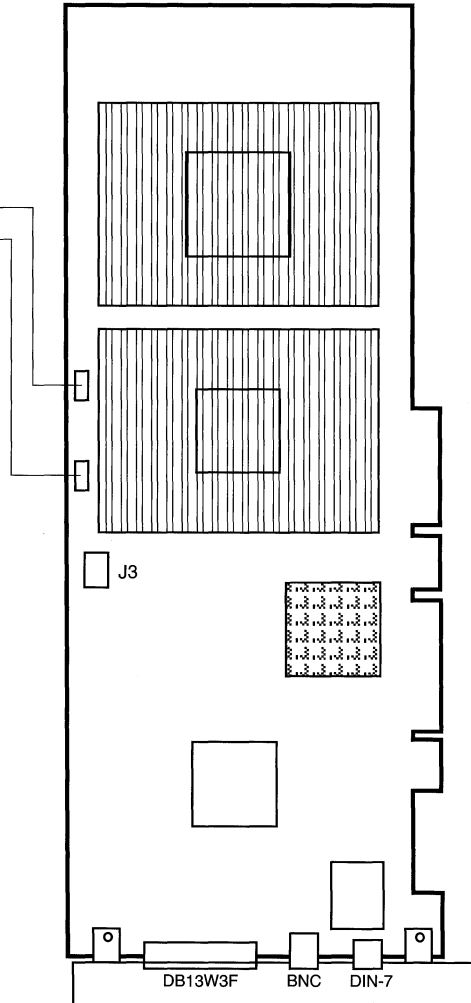
J2 Multiview-Out Connector

J1 Multiview-In Connector

Cable 530-2927 or 530-2989 connects J2 on a Master Expert3D to J1 on a SlaveExpert3D

Screen Resolutions

| | | |
|-------------|-------|------------|
| 1920 x 1200 | 75Hz | |
| 1920 x 1200 | 70Hz | |
| 1920 x 1080 | 72Hz | Composite |
| 1792 x 1344 | 75Hz | VESA |
| 1600 x 1280 | 76Hz | |
| 1600 x 1200 | 75Hz | VESA |
| 1600 x 1000 | 76Hz | Composite |
| 1600 x 1000 | 66Hz | |
| 1440 x 900 | 76Hz | Composite |
| 1280 x 1024 | 112Hz | Stereo |
| 1280 x 1024 | 85Hz | VESA |
| 1280 x 1024 | 76Hz | Composite |
| 1280 x 1024 | 75Hz | VESA |
| 1280 x 1024 | 67Hz | Composite |
| 1280 x 1024 | 60Hz | VESA |
| 1280 x 800 | 76Hz | |
| 1152 x 900 | 76Hz | Composite |
| 1152 x 900 | 66Hz | Composite |
| 1024 x 800 | 84Hz | Composite |
| 1024 x 768 | 77Hz | |
| 1024 x 768 | 75Hz | VESA |
| 1024 x 768 | 70Hz | |
| 1024 x 768 | 60Hz | Composite |
| 960 x 680 | 112Hz | Stereo |
| 960 x 680 | 108Hz | Stereo |
| 768 x 575 | 50Hz | Interlaced |
| 640 x 480 | 60Hz | VESA |
| 640 x 480 | 60Hz | Composite |



UNIX ID: /dev/fbs/ifb0

References

1. *fbconfig* and *SUNWifb_config* manual pages.
2. *Expert3D Graphics Card Installation Guide*, 806-1859.

CONFIGURATIONS

FIBRE CHANNEL

Fibre Channel

SPARCstorage Array Model 100 and Model 200 Series

- Fibre Channel Host Adapter FC25/S 2
- Fibre Channel Optical Module FC/OM 4
- Battery Module 5
- SSA Model 101 Array Controller 6
- SSA Model 102 Array Controller 6
- SSA Model 112 Array Controller 8
- Chassis Backplane 10
- 8-Slot SCSI Disk Backplane 11
- SSA Model 200 Array Controller 12
- SSA Model 210 Array Controller 14
- Differential SCSI Adapter 16
- LCD Assembly 17
- Chassis Backplane 18
- FC-AL Host Adapter FC100/S 19
- FC-AL Host Adapter FC100/P 22
- Dual FC-AL Host Adapter 23
- FC-AL SW-GBIC 24
- FC-AL LW-GBIC 25
- FC-100 Hub StorEdge F100 Hub 26
- Enterprise Network Array A5000 StorEdge A5x00

 - Interface Board 27
 - 7-Slot FC-AL Disk Drive Backplane 28
 - 11-Slot FC-AL Disk Drive Backplane 29
 - Vertical Interconnect Board 30
 - Horizontal Interconnect Board 31

- E3500 FC-AL Interface Board 32
- StorEdge T3

 - RAID Controller 33
 - Interconnect Card 34

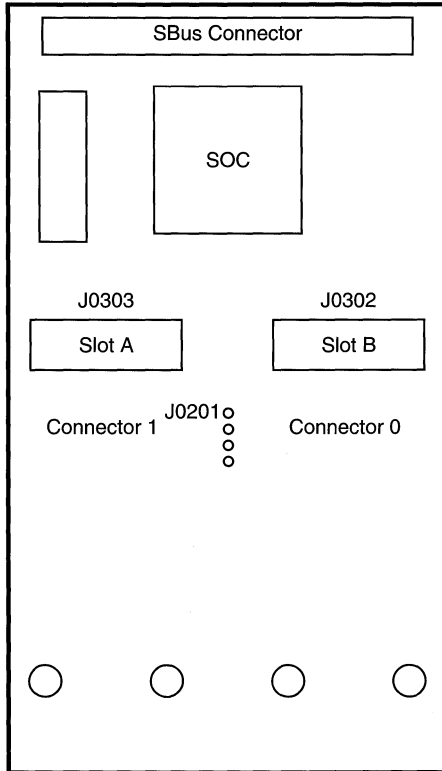
Fibre Channel Host Adapter FC25/S

SS4 SS5 SS10 SS20 SS600 SS1000 SC2000
A11 A12 A14 E3000 E4000 E5000 E6000
E3500 E4500 E5500 E6500 E10000

Option 1057

501-2069
FRU w/o 370-1426

501-2553
w 370-1426



501-2069

501-2553

Notes

- 1. The minimum operating system is Solaris 2.3.
- 2. Filler Panel 340-2895 cannot be installed in Slot B.
- 3. Install the first Fibre Channel Optical Module in Slot B.

Firmware Notes

- 1. The FC25/S requires firmware ≥ 1.33 to boot the SPARCstorage Array.
- 2. Firmware 1.33 is on FC25/S 501-2069-07 and 501-2553-03.
- 3. Use the OBP **sccsid** command to display the FC25/S firmware level:

```
ok setenv fcode-debug? true
ok cd /io-unit@f,e120000/sbi@0,0/SUNW,soc@3,0
ok sccsid type
1.18 94/03/15
ok device-end
```
- 4. Use the **fc_update** command to download the FC25/S firmware, then halt the system and power cycle the SPARCstorage Array:

```
# /cdrom/ssa_2_1_sparc/fc_update/fc_update
```
- 5. The **fc_update** command is not supported on the SS4 or SS5.

Firmware Revisions

| PART# | FCode | REVISION |
|-------------|-------------|----------|
| 501-2069-05 | 525-1386-02 | 1.18 |
| 501-2069-07 | 525-1386-03 | 1.33 |
| 501-2069-09 | 525-1386-04 | 1.52 |

Booting Notes

- 1. Solaris 2.3 does not support booting from the Array Controller.
- 2. Solaris 2.4 Hardware: 3/95, SPARCstorage Array Software 2.1, and FC25/S firmware ≥ 1.33 are required to boot the SPARCstorage Array.

References

- 1. *Fibre Channel SBus Card Installation Manual*, 801-6313-10.
- 2. *Fibre Channel Optical Module Installation Manual*, 801-6326-10.
- 3. *Fibre Channel SBus Card Product Note*, 802-3237-10.
- 4. *SPARCstorage Array 2.0 CD Insert Product Note*, 804-4793-11.
- 5. *SPARCstorage Array 2.1 CD Insert Product Note*, 804-4996-10.
- 6. *SPARCstorage Array 2.1.1 Product Note*, 802-2043-11.
- 7. *SPARCstorage Array 2.1.1 CD Product Note*, 802-5314-10.

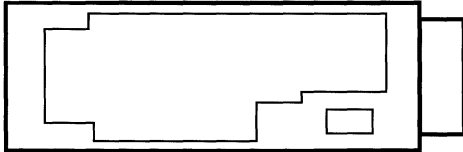
Fibre Channel Optical Module FC/OM

Option 595

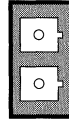
370-1426

Eldec IBM Vixel Western Digital

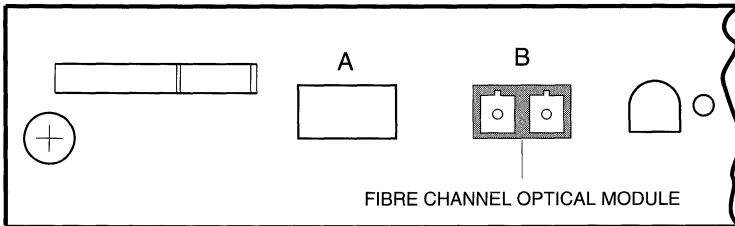
Fibre Channel Optical Module



End View



SPARCstorage Array Controller

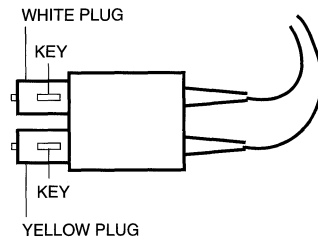


Optical Channel Host Adapter



FIBRE CHANNEL OPTICAL MODULE
2 Meter 50/125 Cable 537-1004
5 Meter 50/125 Cable 537-1020
15 Meter 50/125 Cable 537-1006

Optical Cable Connector



Notes

1. The minimum operating system is Solaris 2.3.
2. Install the first card in Slot B on the FC25/S.
3. Install the first card in Slot B on the Array Controller.
4. The following cable types are supported:
50/125 Multimode Fiber up to 2 Kilometers
62.5/125 Multimode Fiber up to 500 meters

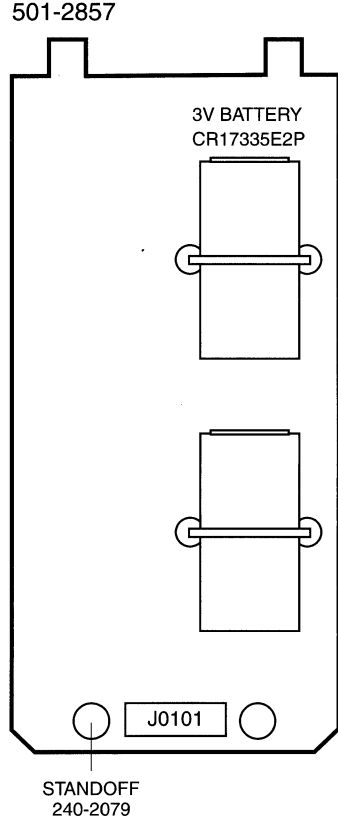
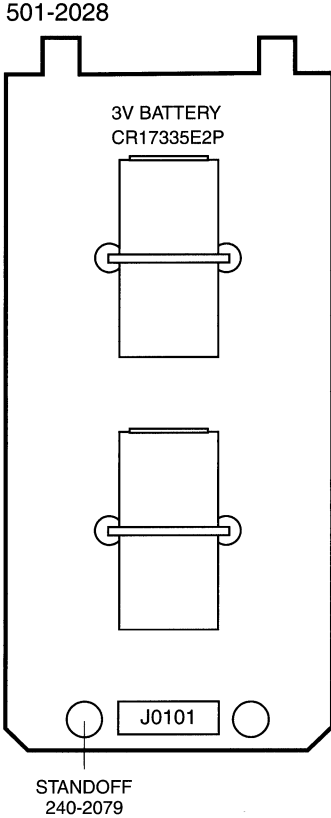
Reference

Fibre Channel Optical Module Installation Manual, 801-6326-10.

Battery Module

501-2028
Obsolete

501-2857



Notes

1. The minimum operating system is Solaris 2.3.
2. SPARCstorage Array Software 1.0 and 2.0 do not support fast writes.
3. SPARCstorage Array Software 2.1 supports fast writes.
4. The 3V batteries are not field replaceable.
5. The battery provides approximately 72 days of backup power.
6. The low battery warning signal activates when there are 10 to 15 days of battery backup life remaining.

References

1. *SPARCstorage Array 100 Series Service Manual*, 801-2206-12.
2. *SPARCstorage Array 200 Series Service Manual*, 802-2028-10.

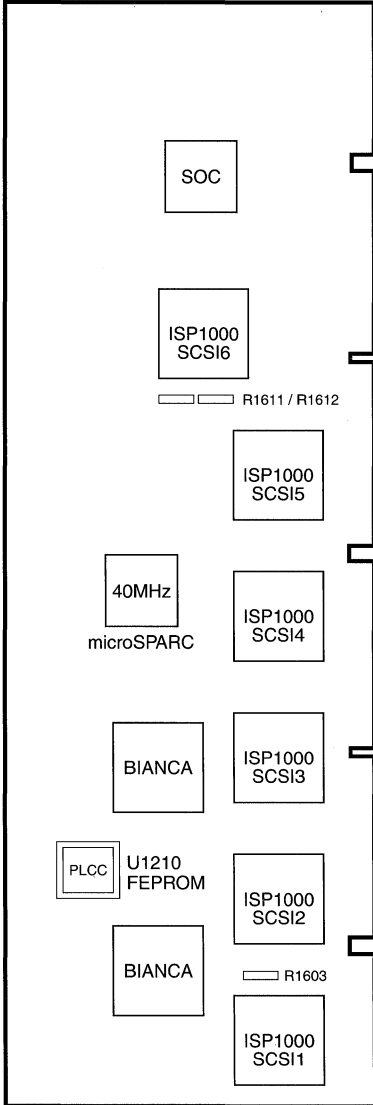
SSA Model 100 Series Array Controller

SPARCstorage Array Models 101 and 102

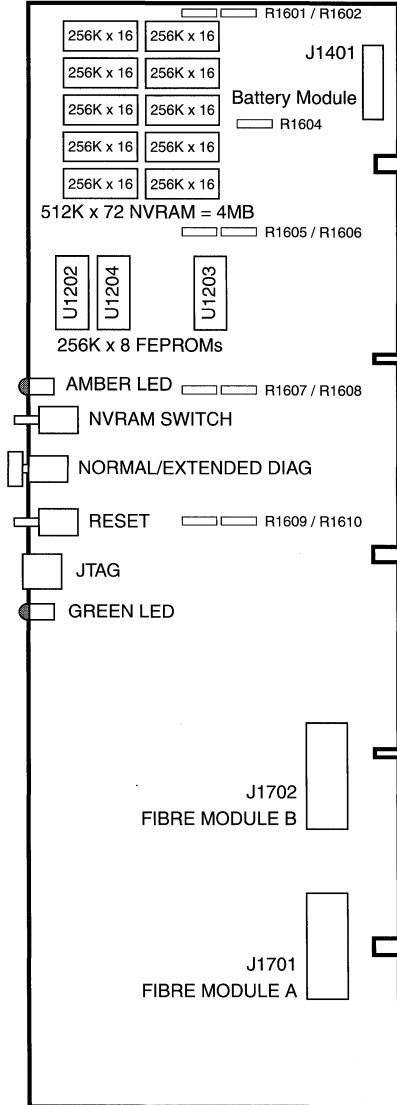
501-2080
FRU

501-2552
w Battery and Optical Module

Top Side



Bottom Side



501-2080

501-2552

Notes

1. The minimum operating system is Solaris 2.3.
2. Install the first Fibre Channel Optical Module in Slot B.

Array Controller Firmware Notes

1. Firmware ≥ 1.9 is required with Solaris 2.3 and SSA 2.0.
2. Firmware ≥ 1.10 is required with Solaris 2.3 and SSA 2.1.
3. Firmware ≥ 2.0 is required with Solaris 2.4 and SSA 2.1.
Firmware ≥ 2.1 is recommended.
4. Use the SSA 1.0 or 2.0 **ssacli** command to program the firmware, then halt the system and power cycle the SPARCstorage Array:
ssacli -s -f /opt/SUNWssa/lib/1.x/ssf firmware download <ctrl>
ssacli -s -f /opt/SUNWssa/lib/2.x/ssf firmware download <ctrl>
5. Use the SSA 1.0 or 2.0 **ssacli** command to display the Array Controller status, Firmware level, and Device status:
ssacli display <ctrl>
6. Use the SSA 2.1 **ssaadm** command to program the firmware, then halt the system and power cycle the SPARCstorage Array:
ssaadm download -f /usr/lib/firmware/ssa/ssf firmware <ctrl>
7. Use the SSA 2.1 **ssaadm** command to display the Array Controller firmware level, Controller status, and Device status:
ssaadm display <ctrl>
8. Array Controllers 501-2080-09 and 501-2552-06 contain Firmware 2.0 and Diagnostic PROM 525-1366-06.
9. Array Controllers manufactured after June 1994 use LSI Logic or Toshiba/QLogic ISP Controllers. Toshiba/QLogic ISP Controllers are not compatible with firmware ≤ 1.9 .
10. Solaris 2.3 Patch 103351-01, Solaris 2.4 Patch 103290-02, or Solaris 2.5 Patch 103017-04 includes Array Controller Firmware 3.6.
11. Firmware revisions > 3.6 are not supported by Solaris 2.3 as of 7/21/97.

Fast Write Notes

1. Fast Writes are not supported in SSA 1.0, SSA 2.0, or Solaris 2.3.
2. Fast Writes are supported in SSA 2.1.
3. Fast Writes require diagnostic PROM $\geq 525-1366-06$ at U1210.
4. Array Controllers 501-2080-09 and 501-2552-06 contain Firmware 2.0 and Diagnostic PROM 525-1366-06.
5. Fast writes require Array Controller Firmware 3.6.

References

1. *SPARCstorage Array 100 Series Service Manual*, 801-2206-12.
2. *SPARCstorage Array Installation Manual*, 801-2205-12.
3. *SPARCstorage Array Configuration Guide*, 801-6530-11.
4. *SPARCstorage Array User's Guide*, 801-2204-12.
5. *SPARCstorage Array 2.0 CD Insert Product Note*, 804-4793-11.
6. *SPARCstorage Array 2.1 CD Insert Product Note*, 804-4996-10.
7. *SPARCstorage Array 2.1.1 Product Note*, 802-2043-11.
8. *SPARCstorage Array 2.1.1 CD Product Note*, 802-5314-10.

SSA Model 100 Series Array Controller

SPARCstorage Array Model 112

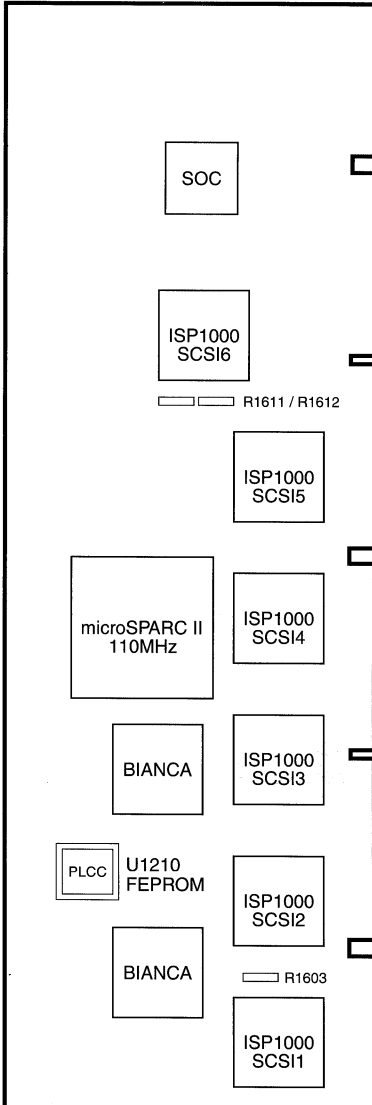
501-2872
Light Grey
FRU

501-2982
Light Grey
w Battery
w Optical Module

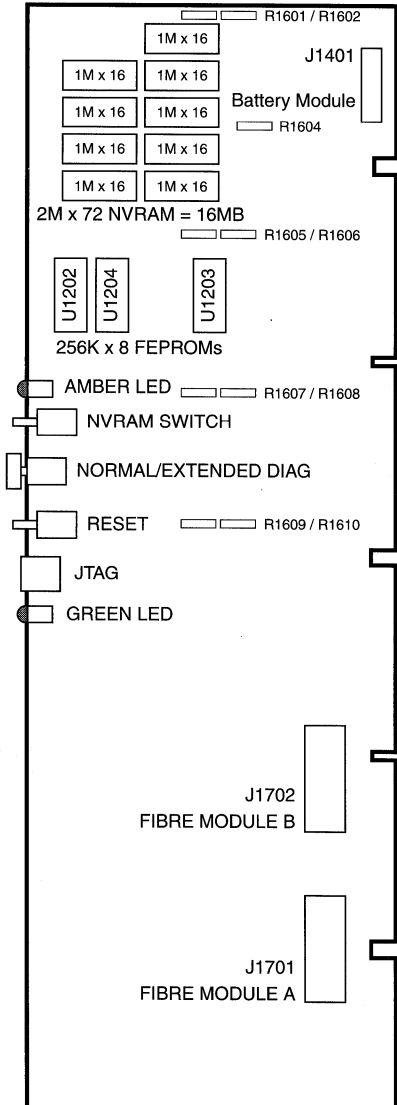
501-4271
Medium Grey
FRU

501-4272
Medium Grey
w Battery
w Optical Module

Top Side



Bottom Side



501-2872

501-2982

501-4271

501-4272

Notes

1. The minimum operating system is Solaris 2.3.
2. SPARCstorage Array Software 2.1.1 is required.
3. Install the first Fibre Channel Optical Module in Slot B.
4. The 2.1GB Disk Drive requires Firmware 0417 ($\geq 370-1412-02$).
5. The 2.9GB Disk Drive requires Firmware 0404 ($\geq 370-1695-01$).

Array Controller Firmware Notes

1. Firmware revision $\geq 3.x$ is required to support microSPARC II.
2. Use the **ssaadm** command to program the Array Controller firmware, then halt the system and power cycle the SPARCstorage Array:
ssaadm download -f /usr/lib/firmware/ssa/ssafirmware <ctlr>
3. Use the **ssaadm display** command to display the Array Controller firmware level, Controller status, and Device status:
ssaadm display <ctlr>
4. Use the **ssaadm** command to spin-up a disk tray after a warm-plug. The differential SCSI disk tray will not automatically spin-up:
ssaadm start <ctrlunit>
5. Fast writes require firmware 3.6.
6. Solaris 2.3 Patch 103351-01, Solaris 2.4 Patch 103290-02, or Solaris 2.5 Patch 103017-04 includes Array Controller Firmware 3.6.
7. Firmware revisions >3.6 are not supported by Solaris 2.3 as of 7/21/97.

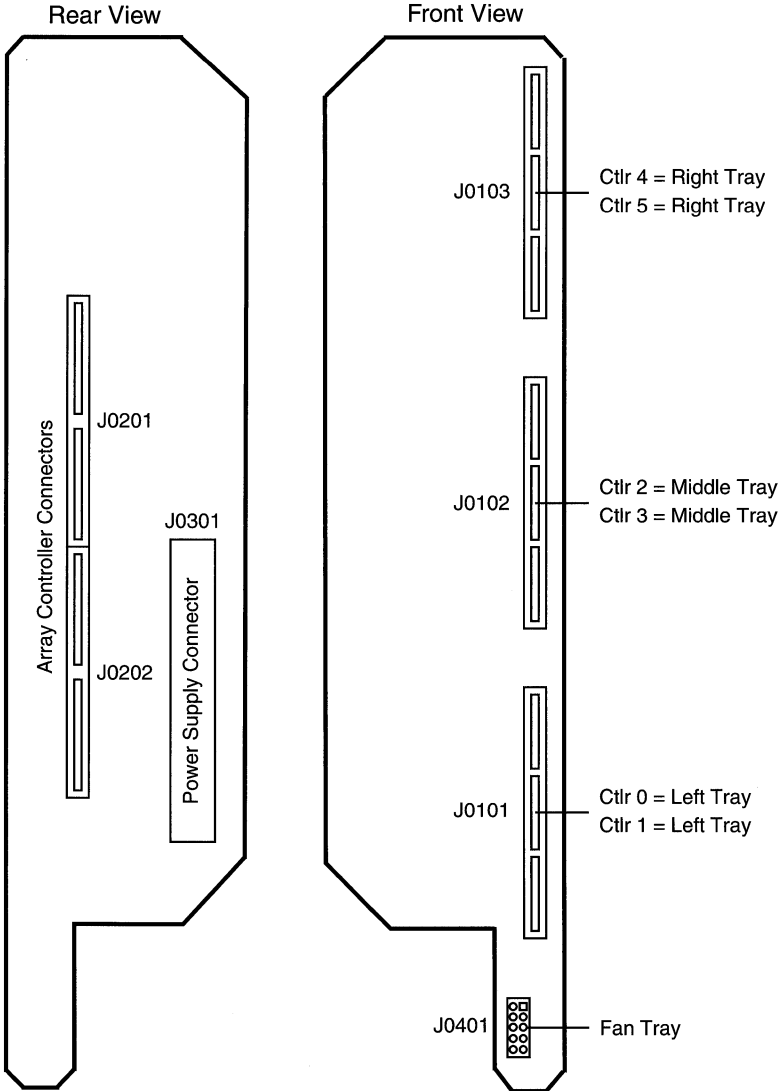
References

1. *SPARCstorage Array 200 Series Service Manual*, 802-2028-12.
2. *SPARCstorage Array 200 Installation Manual*, 802-2027-12.
3. *SPARCstorage Array Configuration Guide*, 801-6530-11.
4. *SPARCstorage Array User's Guide*, 801-2204-12.
5. *SPARCstorage Array 2.1.1 Product Note*, 802-2043-11.
6. *SPARCstorage Array 2.1.1 CD Product Note*, 802-5314-10.

Chassis Backplane

SPARCstorage Array Model 100 Series

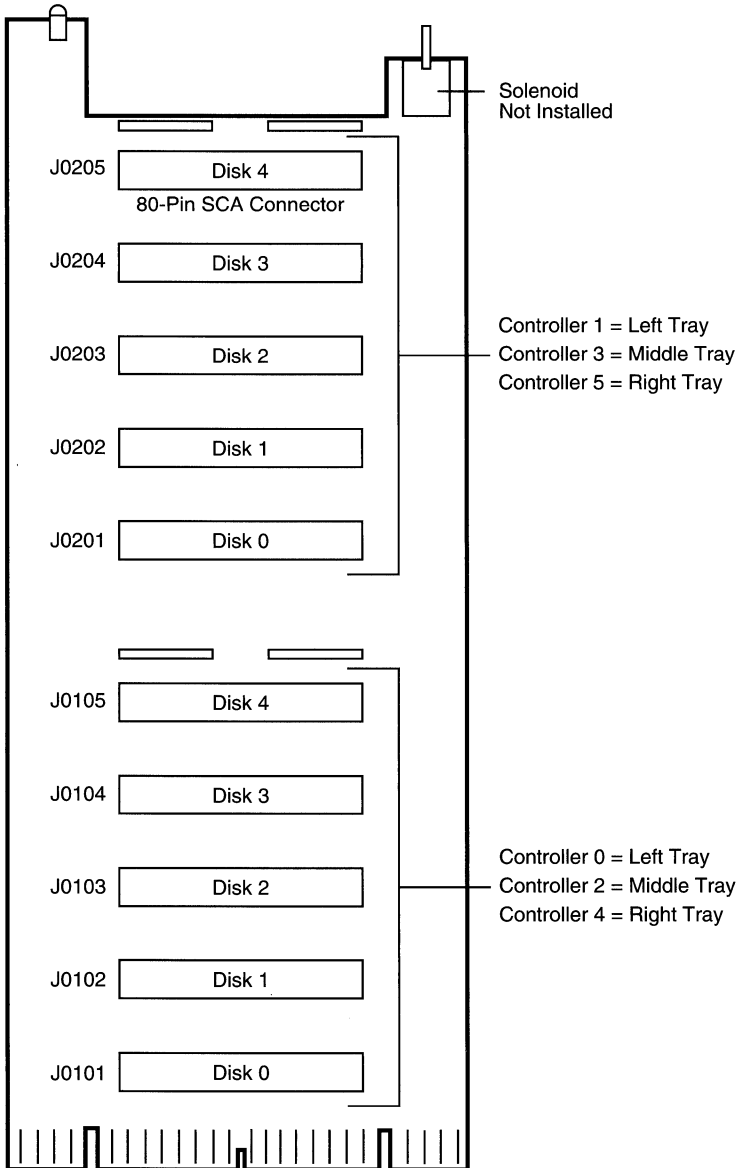
501-2029



8-Slot SCSI Disk Backplane

SPARCstorage Array Model 100 Series

501-2010



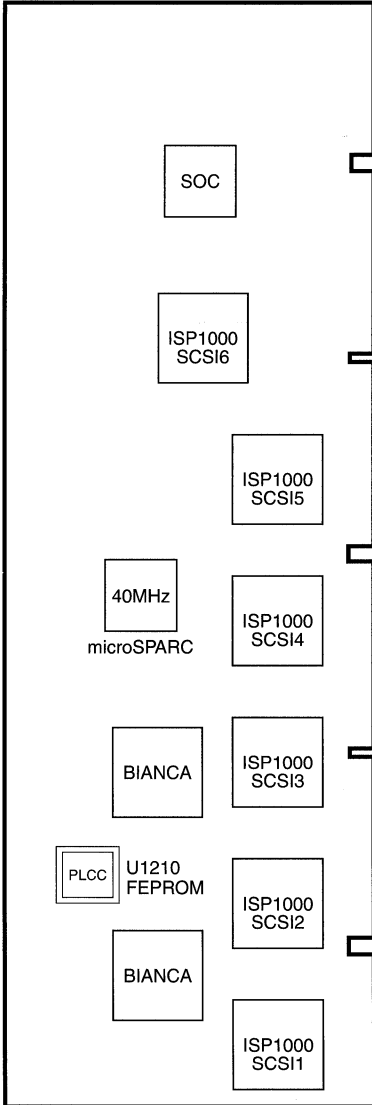
SSA Model 200 Series Array Controller

SPARCstorage Array Model 200

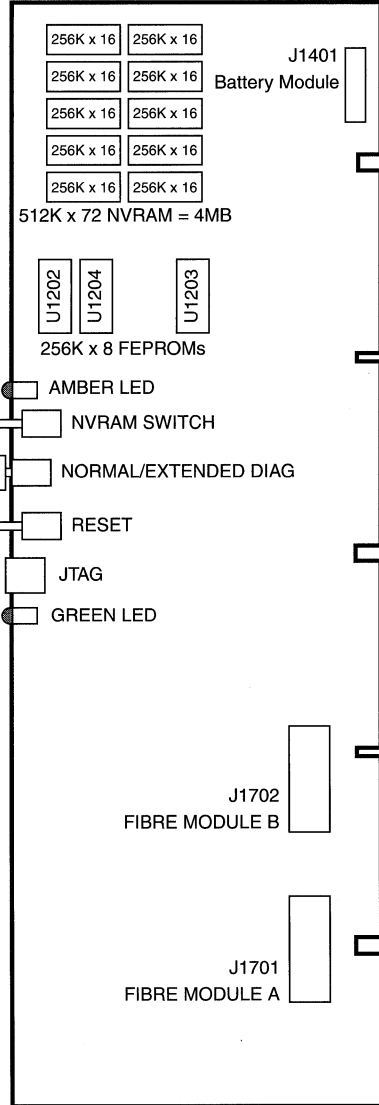
501-2651
FRU

501-2786
w Battery and Optical Module

Top Side



Bottom Side



501-2651

501-2786

Notes

1. The minimum operating system is Solaris 2.3.
2. SPARCstorage Array Software 2.1 is required.
3. Install the first Fibre Channel Optical Module in Slot B.
4. The 2.1GB Disk Drive requires Firmware 0417 ($\geq 370-1412-02$).
5. The 2.9GB Disk Drive requires Firmware 0404 ($\geq 370-1695-01$).

Array Controller Firmware Notes

1. Use the **ssaadm** command to program the Array Controller firmware, then halt the system and power cycle the SPARCstorage Array:
ssaadm download -f /usr/lib/firmware/ssa/ssafirmware <ctrl>
2. Use the **ssaadm display** command to display the Array Controller firmware level, Controller status, and Device status:
ssaadm display <ctrl>
3. Use the **ssaadm** command to spin-up a disk tray after a warm-plug. The differential SCSI disk tray will not automatically spin-up:
ssaadm start <ctrlunit>
4. Array Controllers manufactured after June 1994 use LSI Logic or Toshiba/QLogic ISP Controllers. Toshiba/QLogic ISP Controllers are not compatible with firmware ≤ 1.9 . Use firmware ≥ 1.10 .
5. Fast writes require Firmware 3.6.
6. Solaris 2.3 Patch 103351-01, Solaris 2.4 Patch 103290-02, or Solaris 2.5 Patch 103017-04 includes Array Controller Firmware 3.6.
7. Firmware revisions > 3.6 are not supported by Solaris 2.3 as of 7/21/97.

References

1. *SPARCstorage Array 200 Series Service Manual*, 802-2028-12.
2. *SPARCstorage Array 200 Installation Manual*, 802-2027-12.
3. *SPARCstorage Array Configuration Guide*, 801-6530-11.
4. *SPARCstorage Array User's Guide*, 801-2204-12.
5. *SPARCstorage Array 2.1 CD Insert Product Note*, 804-4996-10.
6. *SPARCstorage Array 2.1.1 Product Note*, 802-2043-11.
7. *SPARCstorage Array 2.1.1 CD Product Note*, 802-5314-10.

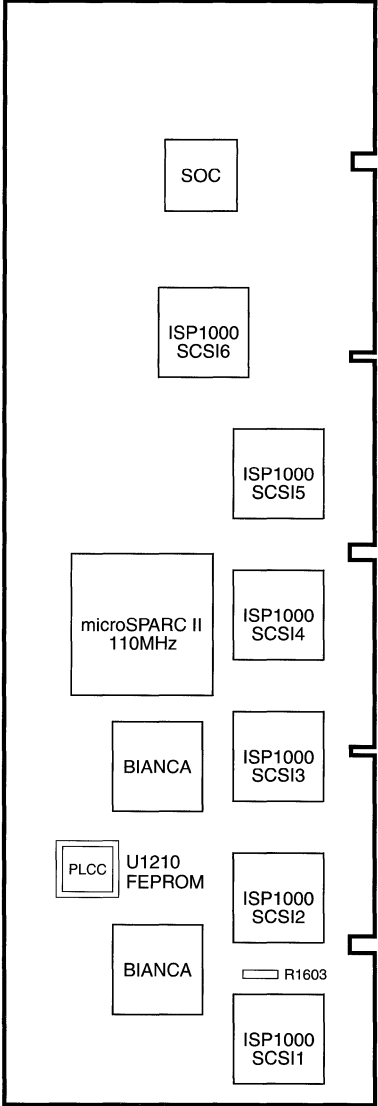
SSA Model 200 Series Array Controller

SPARCstorage Array Model 210

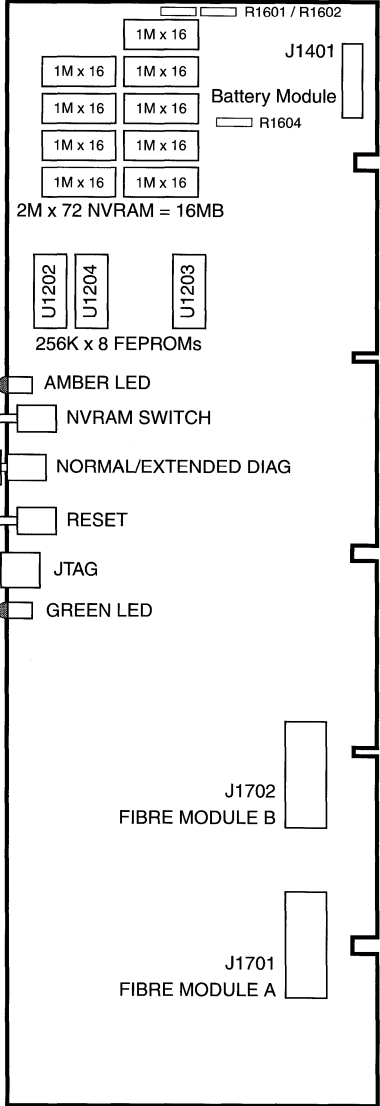
501-3021
FRU

501-3024
w Battery and Optical Module

Top Side



Bottom Side



501-3021

501-3024

Notes

1. The minimum operating system is Solaris 2.3.
2. SPARCstorage Array Software 2.1.1 is required.
3. Install the first Fibre Channel Optical Module in Slot B.
4. The 2.1GB Disk Drive requires Firmware 0417 (≥370-1412-02).
5. The 2.9GB Disk Drive requires Firmware 0404 (≥370-1695-01).

Array Controller Firmware Notes

1. Firmware revision ≥3.x is required to support microSPARC II.
2. Use the **ssaadm** command to program the Array Controller firmware, then halt the system and power cycle the SPARCstorage Array:
ssaadm download -f /usr/lib/firmware/ssa/ssafirmware <ctlr>
3. Use the **ssaadm display** command to display the Array Controller firmware level, Controller status, and Device status:
ssaadm display <ctlr>
4. Use the **ssaadm** command to spin-up a disk tray after a warm-plug. The differential SCSI disk tray will not automatically spin-up:
ssaadm start <ctrlunit>
5. Fast writes require Firmware 3.6.
6. Solaris 2.3 Patch 103351-01, Solaris 2.4 Patch 103290-02, or Solaris 2.5 Patch 103017-04 includes Array Controller Firmware 3.6
7. Firmware revisions >3.6 are not supported by Solaris 2.3 as of 7/21/97.

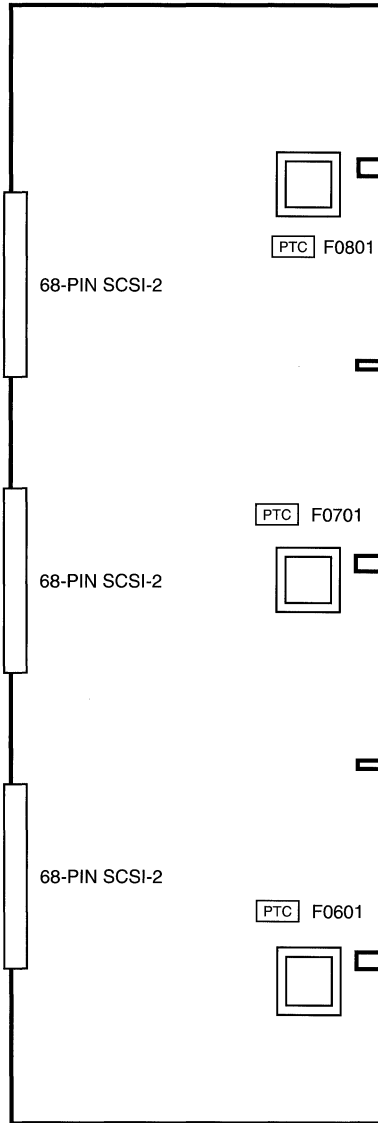
References

1. *SPARCstorage Array 200 Series Service Manual*, 802-2028-12.
2. *SPARCstorage Array 200 Installation Manual*, 802-2027-12.
3. *SPARCstorage Array Configuration Guide*, 801-6530-11.
4. *SPARCstorage Array User's Guide*, 801-2204-12.
5. *SPARCstorage Array 2.1.1 Product Note*, 802-2043-11.
6. *SPARCstorage Array 2.1.1 CD Product Note*, 802-5314-10.

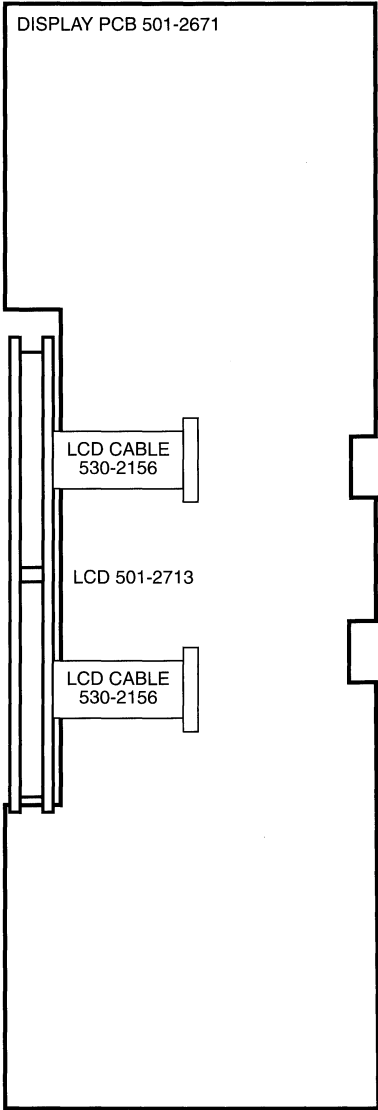
Differential SCSI Adapter

SPARCstorage Array Model 200 Series

501-2670



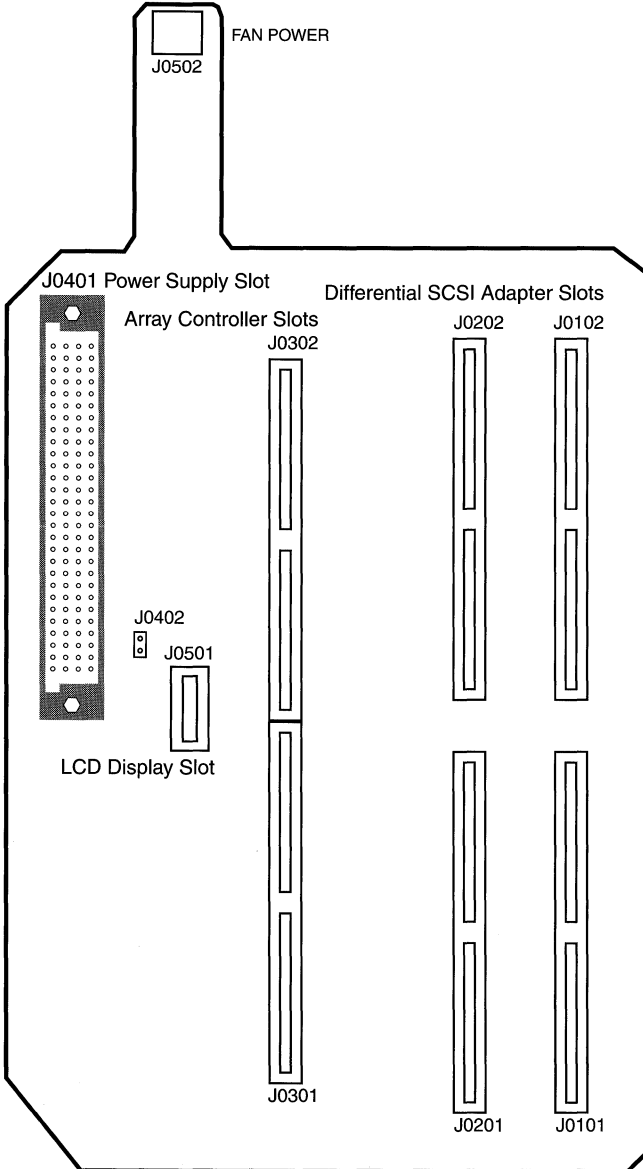
LCD Assembly
SPARCstorage Array Model 200 Series
501-2781



Chassis Backplane

SPARCstorage Array Model 200 Series

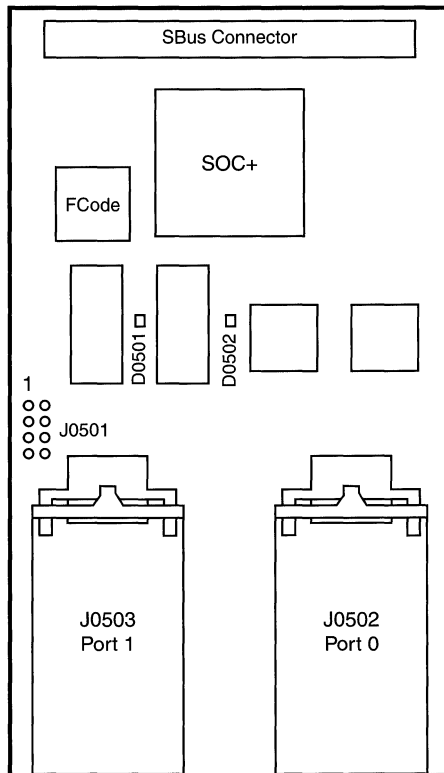
501-2664
Pressfit



FC-AL Host Adapter FC100/S
 SS1000E SC2000E
 E3000 E4000 E5000 E6000
 E3500 E4500 E5500 E6500 E10000
 Option 6730

501-3060
 FRU
 w/o 370-2303

540-2989
 ≤540-2989-03
 w 501-3060
 w 370-2303



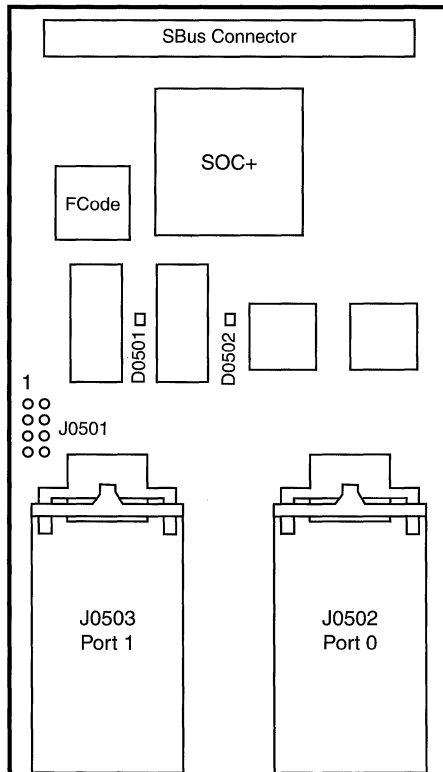
Notes

1. The minimum operating system is Solaris 2.5.1 Hardware 8/97.
2. The Ultra 2 is not compatible with FC100/S 501-3060.
3. The A3500-FC is not compatible with FC100/S 501-3060.
4. The following cable type is supported with GBIC 370-2303:
50/125 Multimode Fiber up to 500 meters

References

1. *FC-AL SBus Card Installation and Service Manual*, 802-7572.
2. *A5000 Installation and Service Manual*, 802-7573.

FC-AL Host Adapter FC100/S
 SS1000E SC2000E A14
 E3000 E4000 E5000 E6000
 E3500 E4500 E5500 E6500 E10000
 Option 6730
 501-5202 540-2989
 FRU 540-2989-04
 w/o 370-2303 w 501-5202
 w 370-2303



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware 8/97.
2. The following cable type is supported with GBIC 370-2303:
 50/125 Multimode Fiber up to 500 meters

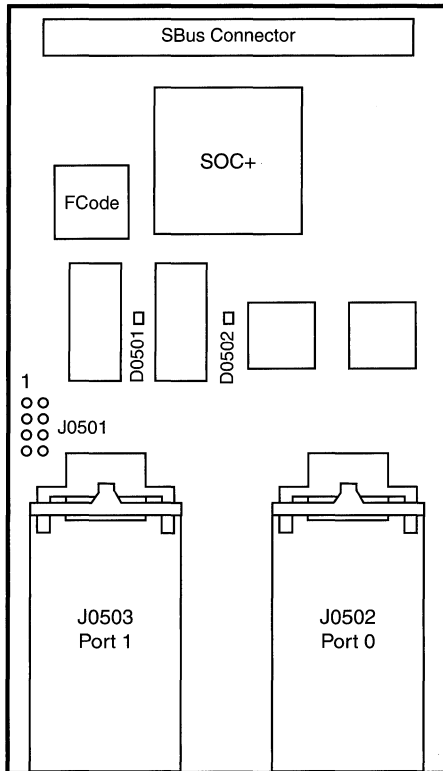
References

1. *FC-AL SBus Card Installation and Service Manual*, 802-7572.
2. *A5000 Installation and Service Manual*, 802-7573.

FC-AL Host Adapter FC100/S
 SS1000E SC2000E A14
 E3000 E4000 E5000 E6000
 E3500 E4500 E5500 E6500 E10000
 Option 6730

501-5266
 FRU
 w/o 370-2303

540-2989
 ≥540-2989-05
 w 501-5266
 w 370-2303



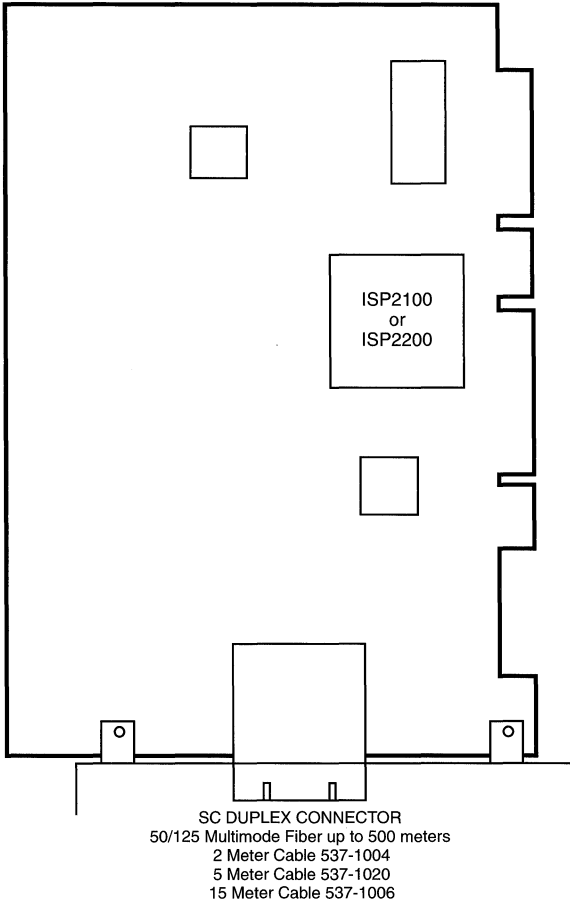
Notes

1. The minimum operating system is Solaris 2.5.1 Hardware 8/97.
2. The following cable type is supported with GBIC 370-2303:
 50/125 Multimode Fiber up to 500 meters

References

1. *FC-AL SBus Card Installation and Service Manual*, 802-7572.
2. *A5000 Installation and Service Manual*, 802-7573.

FC-AL Host Adapter FC100/P
A23 A25 A26 A27 Netra t1 100/105
Option 6729
375-0040
QLogic QLA2100F
3.3/5V 32/64Bit 33/66MHz



Notes

- 1. The minimum operating system is Solaris 2.6.
- 2. The minimum StorEdge A5000 firmware is 1.05.

Reference: *Installation Manual*, 805-3682.

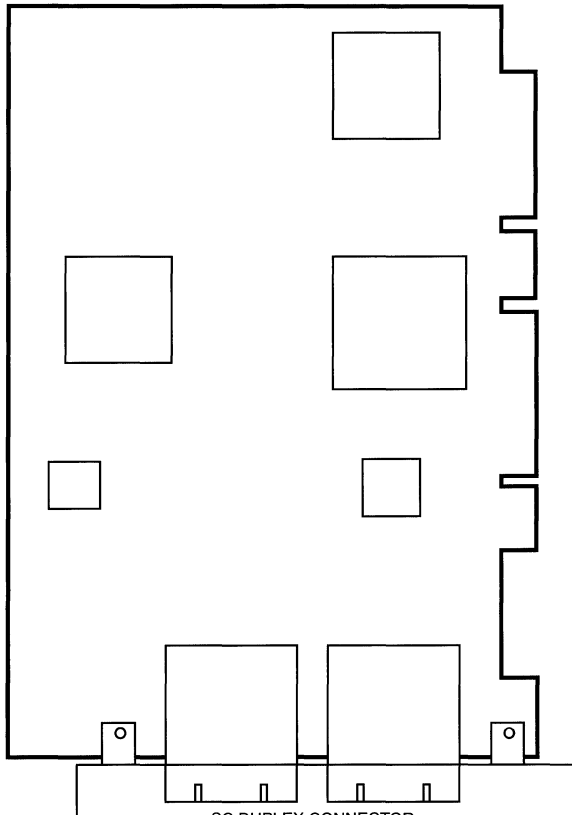
Dual FC-AL Host Adapter

Option 6726

375-0099

QLogic

3.3/5V 32/64Bit 33/66MHz



SC DUPLEX CONNECTOR
50/125 Multimode Fiber up to 500 meters
2 Meter Cable 537-1004
5 Meter Cable 537-1020
15 Meter Cable 537-1006

Notes

1. The minimum OS is Solaris 7 HW: 11/99 or Solaris 8 HW: 6/00.
2. The minimum StorEdge A5000 firmware is 1.05.
3. Supported systems are not listed in the *Installation Manual*.

Reference: *Host Adapter Installation Manual*, 806-4199.

FC-AL SW-GBIC

FC100/S FC100/P

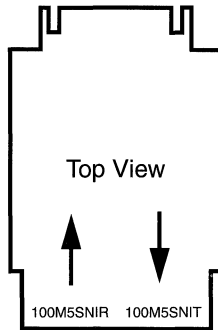
Option 6731

370-2303-02
 IBM 21H9750
 Vixel 00550037-904
 CD-ROM Laser
 830 - 870 nm

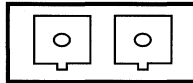
370-2303-03
 IBM 21H9870
 Vixel 00651050-70
 VCSEL Laser
 830-870 nm

370-3975
 IBM 21H9750
 Relabeled 370-2303-02
 CD-ROM Laser
 830 - 870 nm

Internal End View



External End View



SC DUPLEX CONNECTOR
 50/125 Multimode Fiber up to 500 meters
 2 Meter Cable 537-1004
 5 Meter Cable 537-1020
 15 Meter Cable 537-1006

Note: The minimum operating system is Solaris 2.5.1 Hardware 8/97.

References

1. *GBIC Installation and Removal*, 805-3885-10.
2. *FC-AL SBus Card Installation and Service Manual*, 802-7572.
3. *A5000 Installation and Service Manual*, 802-7573.

FC-AL LW-GBIC

FC100/S FC100/P

Option 6737

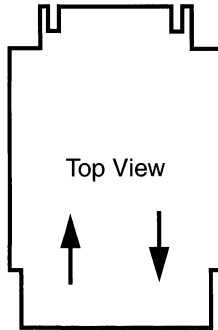
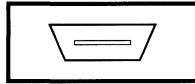
370-3722

IBM 21H9154

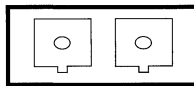
VCSEL Laser

1270 - 1350 nm

Internal End View



External End View



SC DUPLEX CONNECTOR
9/125 Singlemode Fiber up to 10 Kilometers
15 Meter 9/125 Cable 537-1014

Notes

1. The minimum operating system is Solaris 2.5.1 Hardware 8/97.
2. Sun supplies 15 meter Singlemode 9/125 Fiber Cable 537-1014.
3. The A5x00 Interface Board requires Firmware v1.09.
4. The A5x00 Horizontal Interconnect Board requires Firmware v1.09.

References

1. *Long Wave GBIC and Cable Specification*, 806-1527-10.
2. *Long Wave GBIC Installation and Removal*, 805-6965-10.
3. *FC-AL SBus Card Installation and Service Manual*, 802-7572.
4. *A5000 Installation /Service Manual*, 802-7573.

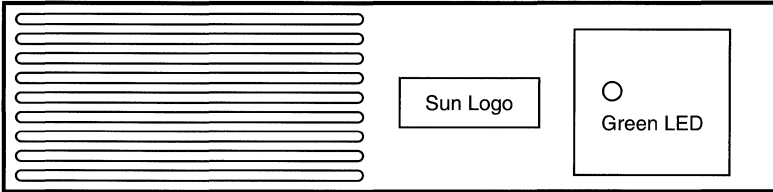
FC-100 Hub StorEdge F100 Hub

Option 6732

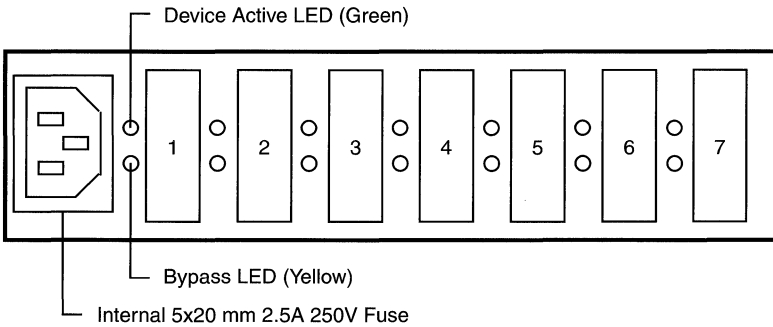
370-3012

Vixel Corporation
IntraLink 1000

Front View



Rear View



Notes

- 1. The Bypass LED is On when a port is not connected.
- 2. The Device Active LED is Off when a port is not connected.
- 3. The following cable type is supported with GBIC 370-2303:
50/125 Multimode Fiber up to 500 meters

Reference: *Hub Installation and Service Manual*, 805-0315.

Interface Board

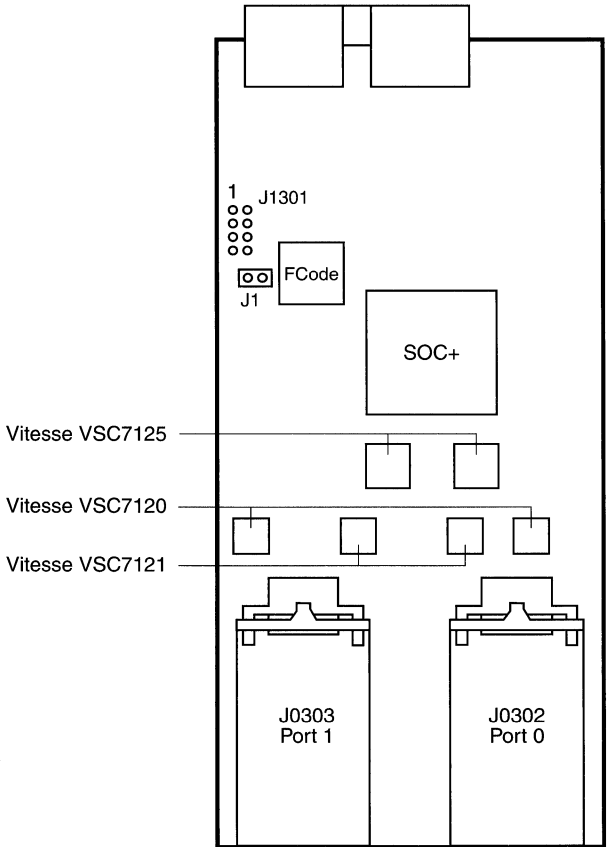
Enterprise Network Array A5000

StorEdge A5000 StorEdge A5100 StorEdge A5200

Option 6734

501-2951
FRU w/o 370-2303

540-2988
w 370-2303



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware 8/97.
2. The following cable type is supported with GBIC 370-2303:
50/125 Multimode Fiber up to 500 meters

References

1. *FC-AL SBus Card Installation and Service Manual*, 802-7572.
2. *A5000 Installation and Service Manual*, 802-7573.

7-Slot FC-AL Disk Backplane

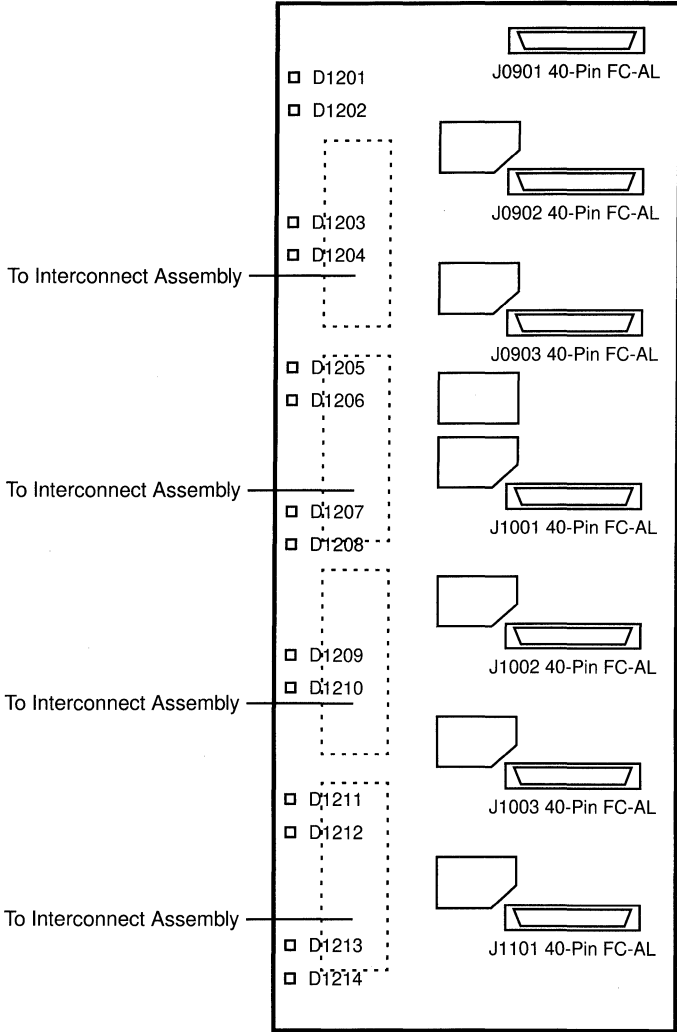
Enterprise Network Array A5000

StorEdge A5000 StorEdge A5100

501-4372

501-5316

Released 12/98
 Inactivated 8/99
 Not Manufactured

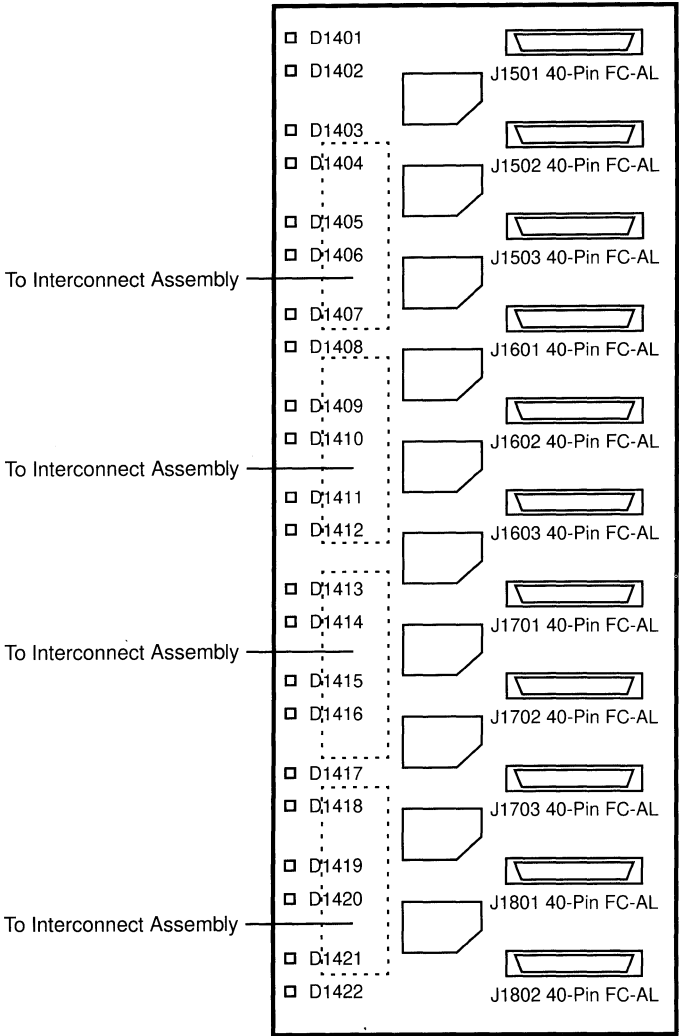


Note: The minimum configuration is 5 disk drives installed in Front Backplane Slots 3 and 6 and Rear Backplane Slots 0, 3, and 6.

Reference: *A5000 Installation and Service Manual*, 802-7573.

11-Slot FC-AL Disk Backplane

StorEdge A5200
501-4158



Note: The minimum configuration is 7 disk drives installed in Front Backplane Slots 0, 5, and 10 and Rear Backplane Slots 0, 3, 6, and 10.

Reference: *A5000 Installation and Service Manual*, 802-7573.

Vertical Interconnect Board

Enterprise Network Array A5000

StorEdge A5000 StorEdge A5100 StorEdge A5200

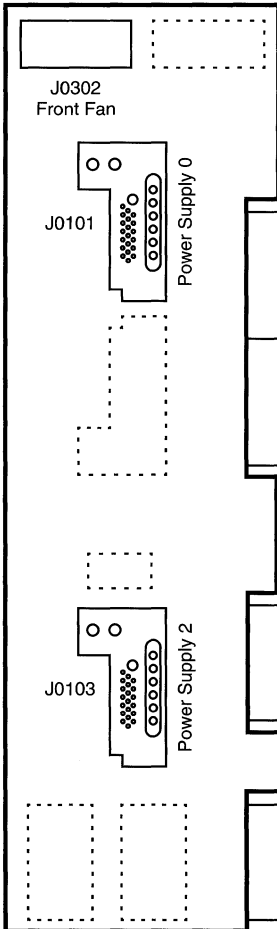
540-2864

501-2947

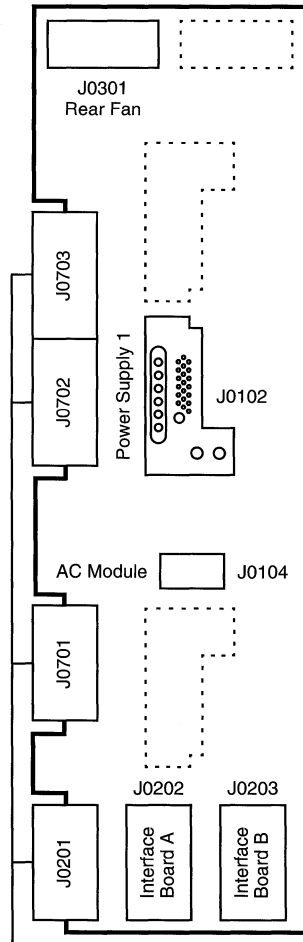
Interconnect Assembly
w 501-2947 and 501-2948

Vertical Board

Front



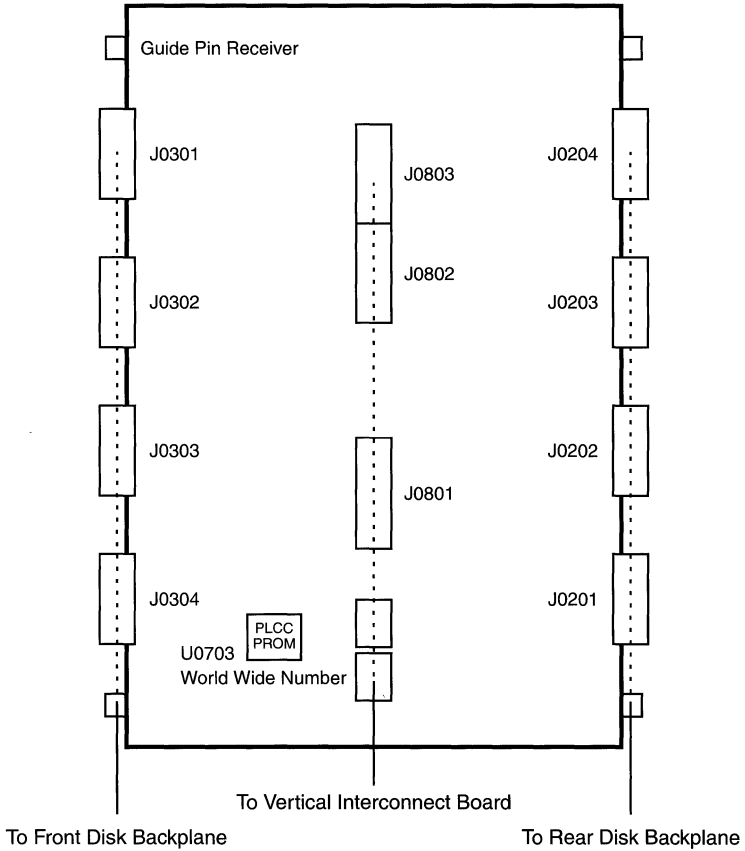
Rear



To Vertical Interconnect Board

Reference: A5000 Installation and Service Manual, 802-7573.

Horizontal Interconnect Board
Enterprise Network Array A5000
StorEdge A5000 StorEdge A5100 StorEdge A5200
540-2864 501-2948
Interconnect Assembly Horizontal Board
w 501-2947 and 501-2948



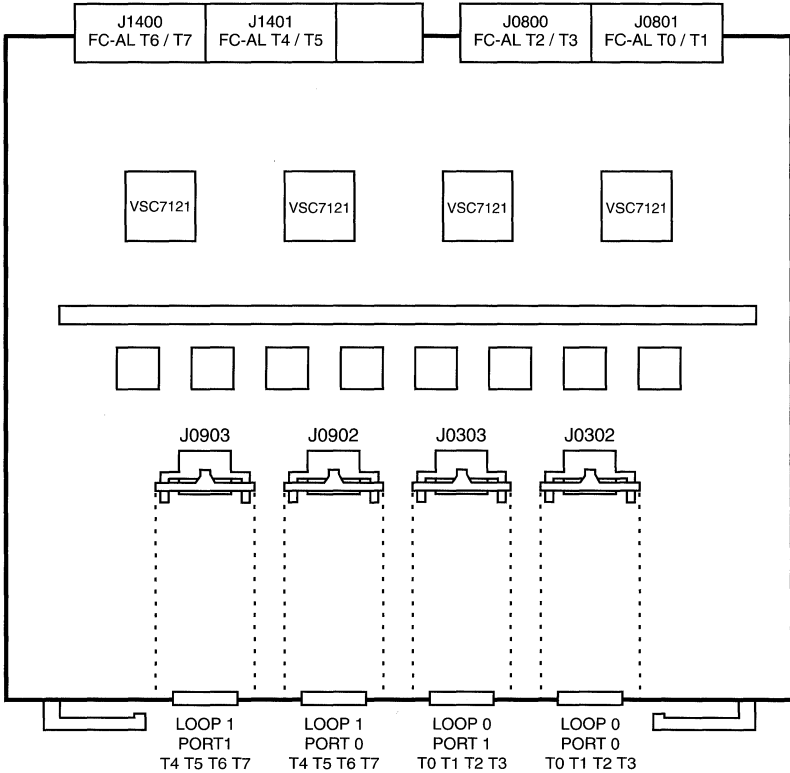
Reference: *A5000 Installation and Service Manual*, 802-7573.

E3500 FC-AL Interface Board

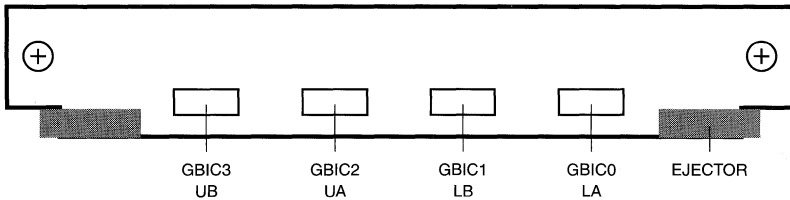
Option 2652

501-4820
FRU w/o GBIC

595-4739
Option 2652
w 2 370-2303 GBICs
w 1 537-1004 Cable



Backpanel and Connectors



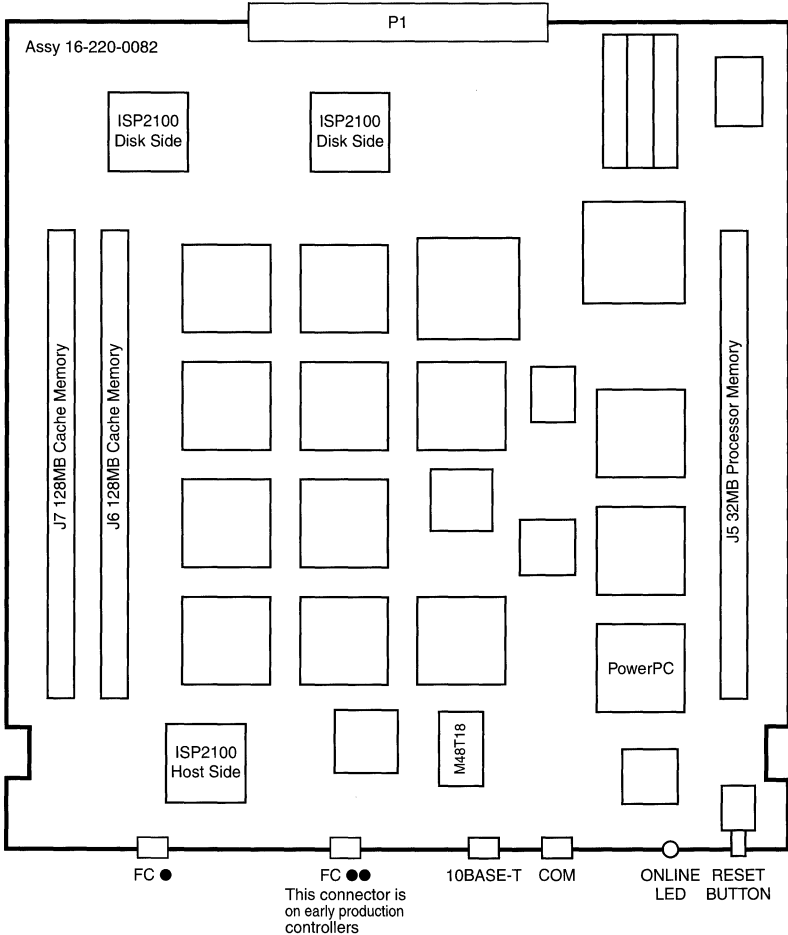
Reference: *Enterprise 3500 Reference Manual*, 805-2630.

RAID Controller

StorEdge T3

375-0084

w 32MB Processor Memory
w 256MB Cache Memory



Notes

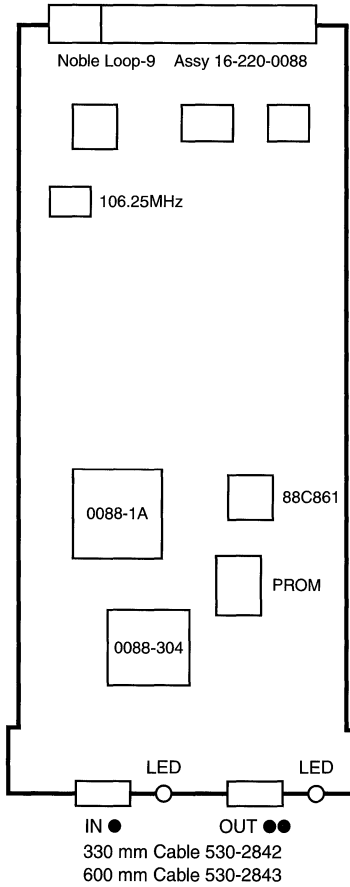
1. The minimum operating system is Solaris 2.6.
2. There is no Sun Part Number for the 32MB Processor Memory.
3. There is no Sun Part Number for the 128MB Cache Memory.

Reference: *T3 Installation, Operation, and Service Manual*, 806-1062.

Interconnect Card

StorEdge T3

375-0085



Notes

1. Interconnect Card 1 controls Drives 4 to 9.
2. Interconnect Card 2 controls Drives 1 to 3 and the cache mirror.
3. Cache mirroring is disabled when Interconnect Card 2 fails.

Reference: *T3 Installation, Operation, and Service Guide*, 806-1062.

CONFIGURATIONS

SCSI

SCSI

SBus SCSI Host Adapters

| | | |
|----------------------------|----------------|----|
| SCSI | SSHA | 3 |
| SCSI/Ethernet | SBE/S | 4 |
| Fast SCSI/Ethernet | FSBE/S | 5 |
| Differential SCSI/Ethernet | DSBE/S | 6 |
| Single-Ended Fast/Wide | SWIS/S | 7 |
| Differential Fast/Wide | DWIS/S | 8 |
| Differential Ultra/Wide | UDWIS/S | 9 |
| Single Ended Fast/Wide | SunSwift | 10 |

PCI SCSI Host Adapters

| | | |
|------------------------------------|----------------|----|
| Single Ended Ultra/Wide | SunSwift | 12 |
| Single Ended Ultra/Wide | | 13 |
| Dual Single-Ended Ultra/Wide | | 14 |
| Dual Differential Ultra/Wide | | 15 |
| SCSI RAID Controller | SRC/P | 16 |

SCSI Adapters

| | |
|---------------------------------|----|
| SS4 SS5 SS20 | 18 |
| Ultra 1 | 19 |
| Ultra 30 Ultra 60 | 20 |
| Ultra 80 | 21 |
| Netra t 1100 | 22 |
| Netra t 1120 Netra t 1125 | 23 |
| E220R E420R | 24 |
| E4x00 E5x00 E6x00 | 25 |
| MediaCenter 1000E | 26 |
| Desktop Storage Pack | 28 |
| SPARCstorage Unipack | 29 |
| StorEdge Unipack | 29 |
| SPARCstorage FlexiPack | 33 |
| StorEdge FlexiPack | 33 |

SCSI - Continued

SCSI Backplanes

| | |
|---|----|
| MultiPack 6-Slot SCSI Disk Backplane | 36 |
| MultiPack 12-Slot SCSI Disk Backplane | 38 |
| E150 12-Slot SCSI Disk Backplane | 39 |
| E450 Removable Media Backplane | 40 |
| E450 4-Slot SCSI Disk Backplane | 41 |
| E450 8-Slot SCSI Disk Backplane | 42 |
| E250 6-Slot SCSI Disk Backplane | 43 |

SPARCstorage RSM

| | |
|----------------------------------|----|
| Operator Panel | 44 |
| WD2S SCSI Adapter | 45 |
| Environmental Sensor | 46 |
| 7-Slot SCSI Disk Backplane | 47 |

RSM Array 2000 StorEdge A3000/A3500/A3500FC

| | |
|---|----|
| RSM Array 2000 Array Controller | 48 |
| StorEdge A3000 Array Controller | 48 |
| StorEdge A3500 Array Controller | 50 |
| StorEdge A3500FC Array Controller | 52 |
| Chassis Backpanel | 54 |

Disk Cards

| | |
|----------------------------------|----|
| SS1000 2.1-Gbyte Disk Card | 55 |
| SS1000 4.2-Gbyte Disk Card | 56 |
| SS1000 8.4-Gbyte Disk Card | 57 |
| E4x00/5x00/6x00 Disk Board | 58 |

StorEdge A1000 StorEdge D1000

| | |
|--|----|
| A1000 RAID Controller | 60 |
| D1000 Differential SCSI Controller | 62 |
| 8-Slot SCSI Disk Backplane | 64 |
| 12-Slot SCSI Disk Backplane | 65 |

SCSI SSHA

Sun-4/15/30/40/50/60/65/75

SS4 SS5 SS10 SS20 A11 A12 A14

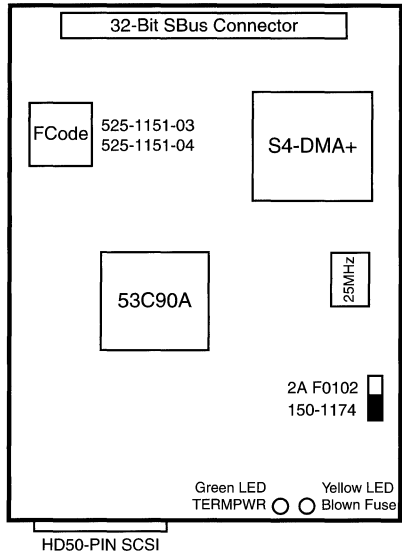
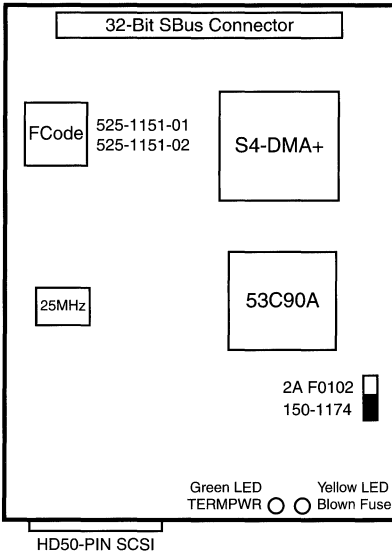
Option 1055

501-1759
FCC-A/VCCI-1
15/30/40/50/60/65/75

501-1850
FCC-B/VCCI-2
15/30/40/50/60/65/75
SS4/SS5/SS10/SS20
A11/A12/A14

501-1759

501-1850



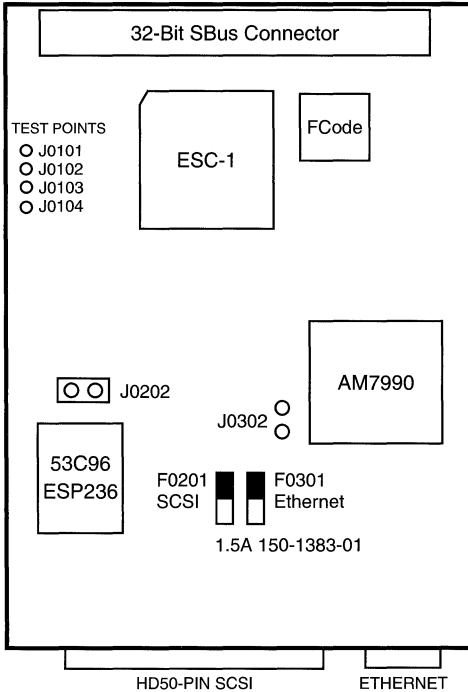
Power: 0.6Amps @ +5Vdc
3.0 Watts

Notes

1. The Sun-4/60 CPU requires Boot PROM 1.3 Version 3.
2. This card is not compatible with Slot-3 of the Sun-4/60/65.
3. Disable the SS10 on-board Ethernet if two or more SCSI host adapters are installed. Use an SBE/S or FSBE/S for Ethernet.
4. FCode on SSHA 501-1759 is not compatible with the SS10, SS20, A11, A12, and A14. The 501-1759 was discontinued in March 1991.
5. The SS4, SS5, SS10, SS20, A11, A12, and A14 require 501-1850-02. Refer to BugID 1264704.
6. Add the following to /etc/system on Solaris 2.6: forceload: drv/dma. Refer to BugID 4078972.

Reference: *SBus SCSI Host Adapter Installation Guide*, 800-5385-10.

SCSI/Ethernet SBE/S
 SS5 SS10 SS20 SS60
 SS1000 SC2000 A11 A12 A14
 Option 1054
 501-1869



| JUMPER | SETTING | DESCRIPTION |
|--------|---------|-------------------|
| J0202 | In | Enable SCSI clock |
| J0302 | In | Enable 10BASE5 |
| J0302 | Out | Enable 10BASE-T |

Power: 1.9 Amps @ +5Vdc
 9.5 Watts not including MAU +12Vdc power requirements

Notes

1. Use Adapter Cable 530-1812 for 10BASE5 Ethernet.
2. Use Adapter Cable 530-1813 for 10BASE-T Ethernet.
3. The SBE/S does not provide Link Test. Disable Link Test on the Hub.

Reference: *SBE/S SBus User's Guide*, 800-6475.

Fast SCSI/Ethernet FSBE/S

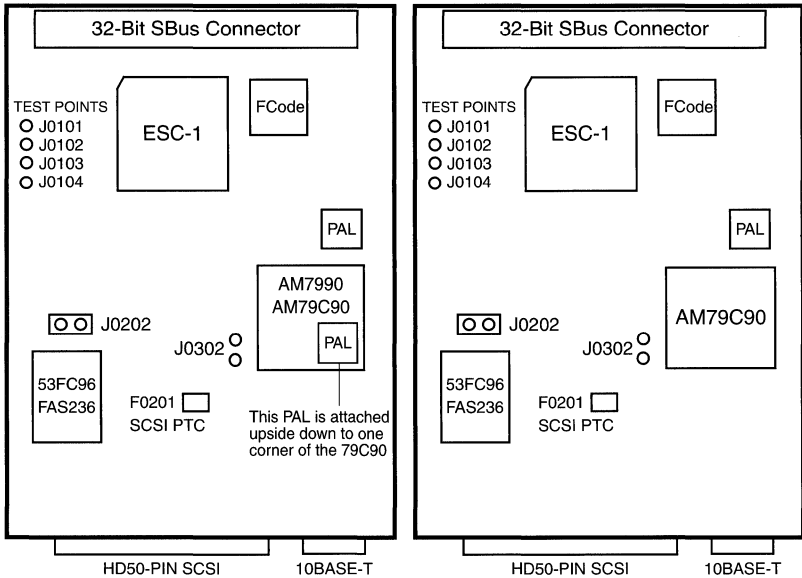
Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10
 SS20 SS600 SS1000 SC2000 A11 A12 A14
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 E10000

Option 1053

501-2015 501-2981

501-2015

501-2981



Power: 1.9 Amps @ +5Vdc
 9.5 Watts not including MAU +12Vdc power requirements

Notes

1. The minimum operating system is Solaris 1.1 (SunOS 4.1.3)
2. Open Boot PROM 2.x is required.
3. Install J0202 to enable the SCSI clock.
4. Install J0302 to disable the TPE link integrity test.
5. Remove J0302 to enable the TPE link integrity test.
6. The 501-2015-05 uses a modified AM79C90 Ethernet Controller and a piggyback mounted PAL to make the AM79C90 act like a AM7990.
7. The 501-2981 uses a modified AM79C90 Ethernet Controller.

Reference: *FSBE/S SBus Card Installation Guide*, 800-7508.

Differential SCSI/Ethernet DSBE/S

4/75 SS5 SS10 SS20 SS600

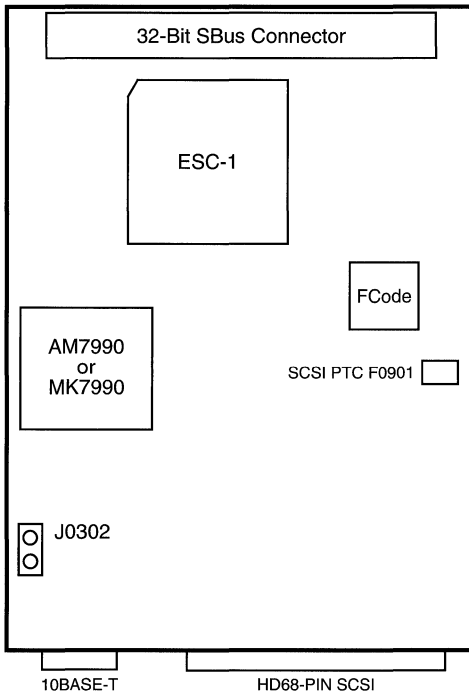
SS1000 SC2000 A11 A12 A14

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

E10000

Option 1052

501-1902



Power: 1.9 Amps @ +5Vdc
9.5 Watts

Notes

1. Install J0302 to disable the TPE link integrity test.
2. Remove J0302 to enable the TPE link integrity test.

Reference: *DSBE/S+ SBus Card Manual*, 800-7176-10.

Single-Ended Fast/Wide SWIS/S

SS4 SS5 SS10 SS20 SS600

SS1000 SC2000 A11 A12 A14

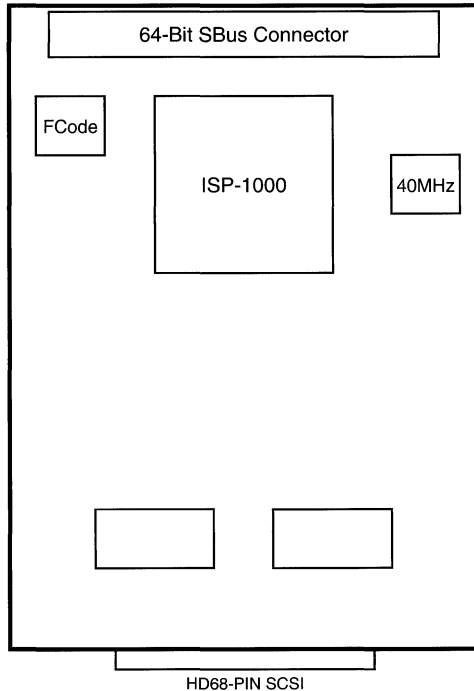
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

E10000

Option 1063

370-1703

QLogic SP1610402



Power: 1.6 Amps @ +5Vdc
8.0 Watts maximum

Notes

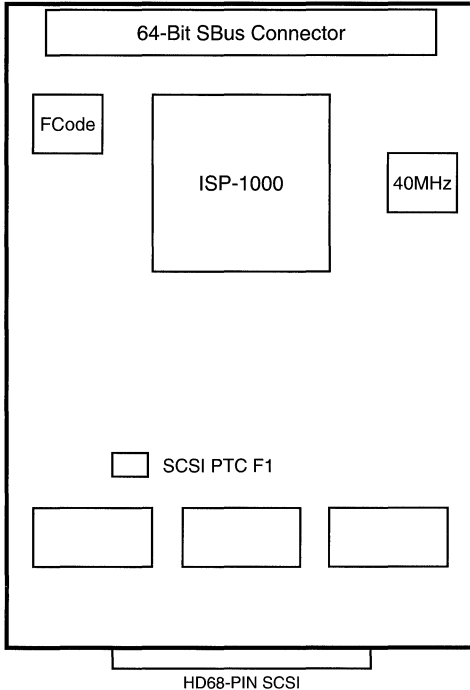
1. The minimum operating system is Solaris 2.3.
2. The SWIS/S supports up to 15 targets on the SCSI bus.
3. Do NOT mix narrow (8-bit) and wide (16-bit) SCSI devices on the same controller under Solaris 2.3. Install Patch 101378-01.
4. Warning messages are displayed if fast/wide SCSI is enabled under Solaris 2.3. Install Patch 101378-01.
5. Set `scsi_options=0x3f8` in `/etc/system` to enable fast/wide transfers.

Reference: *SBus Intelligent SCSI Host Adapter*, 801-5355-11.

Differential Fast/Wide SCSI DWIS/S

SS5 SS10 SS20 SS600 SS1000 SC2000 A11 A12 A14
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
E10000

Option 1062
370-1704
QLogic SP1710401



Notes

1. The minimum operating system is Solaris 2.3.
2. The DWIS/S supports up to 15 targets on the SCSI bus.
3. Do NOT mix narrow (8-bit) and wide (16-bit) SCSI devices on the same controller under Solaris 2.3. Install Patch 101378-01.
4. Warning messages are displayed if fast/wide SCSI is enabled under Solaris 2.3. Install Patch 101378-01.
5. Set `scsi_options=0x3f8` in `/etc/system` to enable fast/wide transfers.
6. The 2.1GB Disk Drive requires 0420 Firmware (370-1412-03) for optimal performance. Set `scsi_options=0xf8` in the `/etc/system` file if older disk drive firmware is used.
7. Install SunSwift in Slot 0 and DWIS/S in Slot 1 when installing SunSwift and DWIS/S on an E10000 I/O board. Refer to BugIDs 4046986, 4049704, and 4091053.

Reference: *SBus Intelligent SCSI Host Adapter*, 801-5355-12.

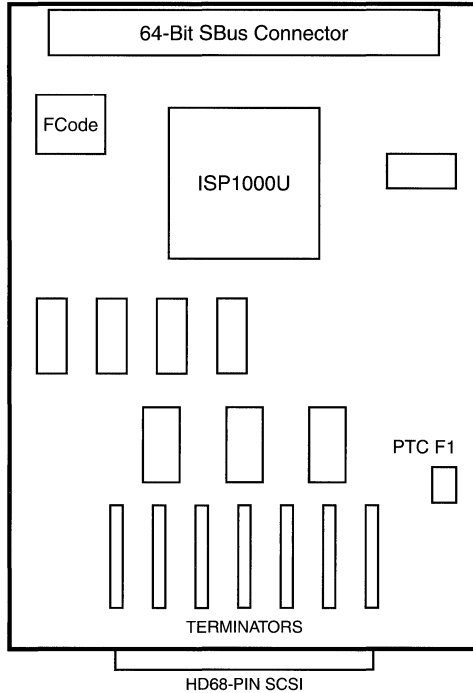
Differential Ultra/Wide SCSI UDWIS/S

SS1000 SC2000 A11 A12 A14 E150
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
E10000

Option 1065

370-2443

QLogic SP710401



Notes

1. The minimum operating system is Solaris 2.4.
2. Install Solaris 2.4 Patch 102509-06.
3. Install Solaris 2.5 Patch 103936-01.
4. Install Solaris 2.5.1 Patch 103934-01.
5. The UDWIS/S supports up to fifteen targets on the SCSI bus.
6. FCode 1.26 on 370-2443-02 fixes BugID 4230719.
7. Install the UDWIS/S and SCI on separate E10000 SBus channels.

Reference

SBus Wide Intelligent Ultra SCSI Differential Host Adapter Guide, 802-7748.

Single-Ended Fast/Wide SCSI SunSwift

4/15/30 SS5 SS10 SS20 SS600

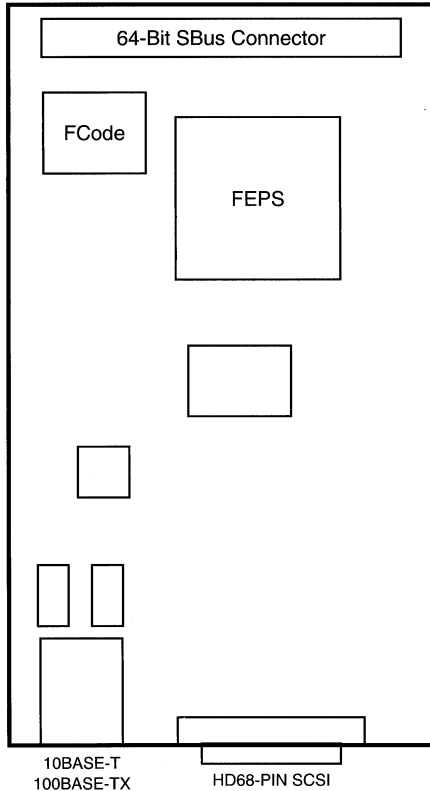
SS1000 SC2000 A11 A12 A14

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

E10000

Option 1018

501-2739



Notes

1. The minimum operating system is Solaris 2.4.
2. The SUNWhmd and SUNWhmdu packages are bundled in Solaris 2.5.
3. Solaris 2.4 packages are on CD-ROM 794-5626-01.
4. The SS1000 and SC2000 require OBP 2.26. Refer to BugID 1228182.
5. Install SunSwift in Slot 0 and DWIS/S in Slot 1 on E10000 SBus I/O board 501-4349.

Reference: *SunSwift Installation and User's Guide*, 802-6021-10.

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Single-Ended Ultra/Wide SCSI SunSwift

A16 A20 A21 A22 A23 A25 A26 A27 Netra t1 100/105

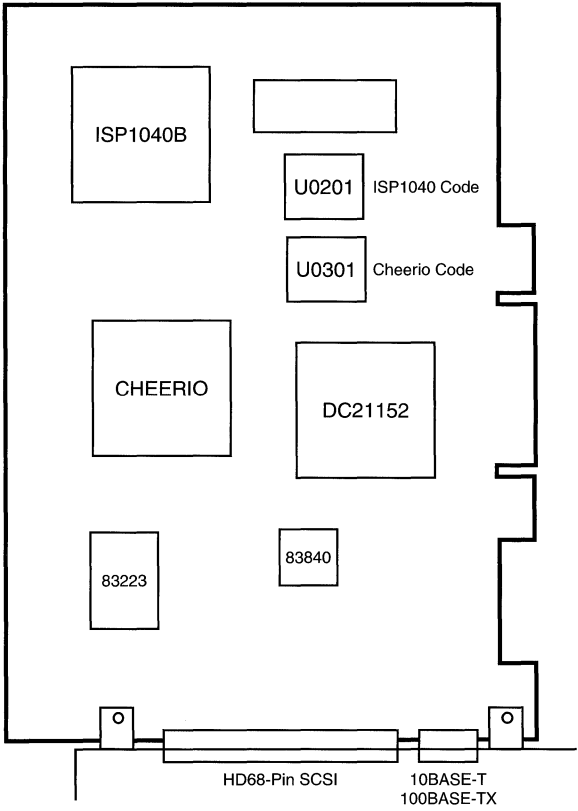
Netra t 1100 Netra t 1120/1125 Netra t 1400/1405

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 1032

501-2741

3.3/5V 32Bit 33MHz



Notes

- 1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
- 2. Use Auto-negotiation to select ethernet operating mode and speed.

Reference: *SunSwift PCI Adapter Guide*, 802-6628-10.

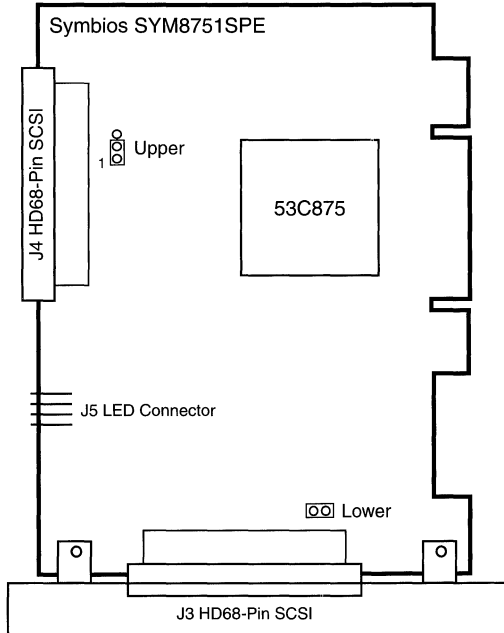
Single-Ended Ultra/Wide SCSI

A21 A22

Option 5010

375-0097

3.3/5V 32Bit 33MHz



| LOWER | UPPER | DESCRIPTION |
|-------|-------|---------------------------------|
| 1-2 | 1-2 | Automatic Termination Enabled |
| Out | - | Lower Byte Termination Disabled |
| - | Out | Upper Byte Termination Disabled |
| - | 2-3 | Upper Byte Termination Enabled |

Notes

1. The minimum OS is 2.5.1 HW: 11/97, 2.6 HW: 5/98, or 7 HW: 3/99.
2. The default jumper configuration enables automatic termination.

Reference: *PCI UltraSCSI Host Adapter Installation Guide*, 806-3126.

Dual Single-Ended Ultra/Wide SCSI

A20 A21 A22 A23 A25 A26 A27 Netra t1 100/105
Netra t 1120/1125 Netra t 1400/1405

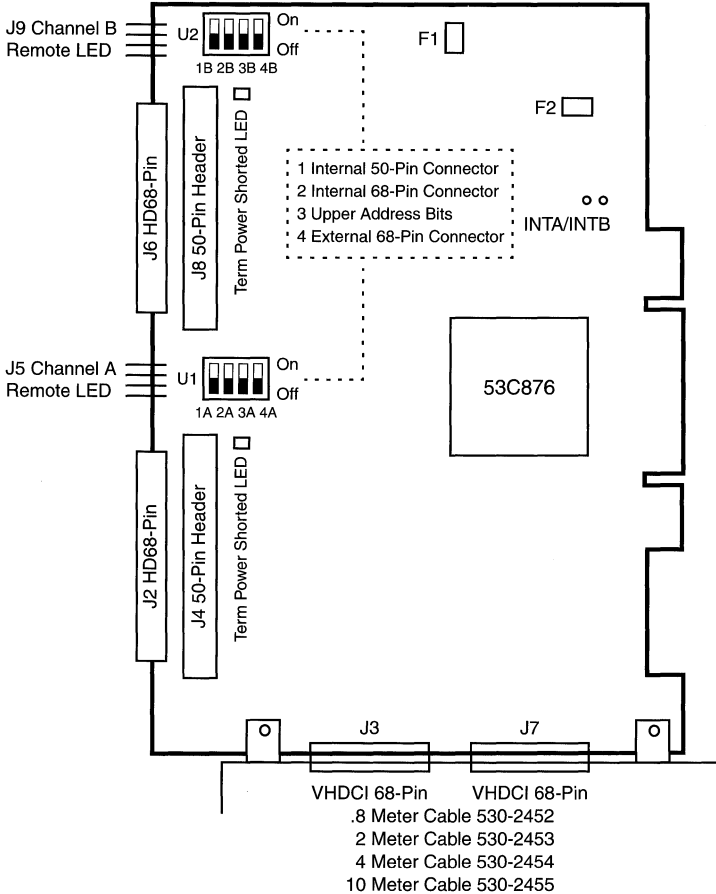
Option 6540

375-0005

Symbios SYM22801
w/o FCode
3.3/5V 32Bit 33MHz

375-0013

Symbios SYM22801
w FCode
3.3/5V 32Bit 33MHz



Notes

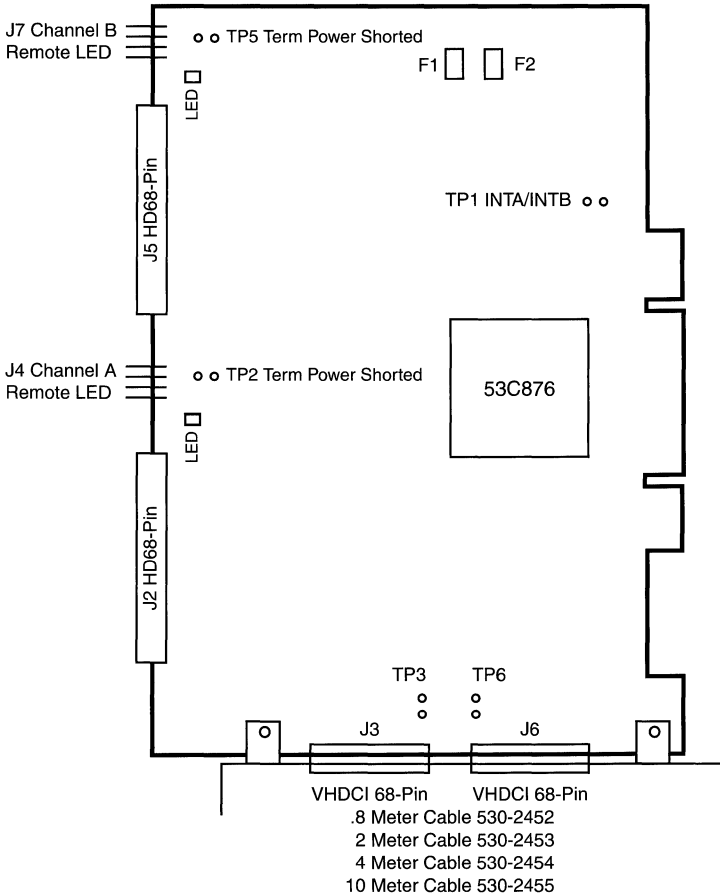
1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. Dip switches enable/disable termination.
3. Ultra 5/10 OBP 3.11 Version 9 fixes BugID 4114784.
4. VHDCI is the Very High Density Cable Interconnect Standard.

Reference: *PCI Host Adapter User's Guide*, 805-1271-10.

Dual Differential Ultra/Wide SCSI

A16 A20 A21 A22 A23 A25 A26 A27 Netra t1 100/105
 Netra t 1120/1125 Netra t 1400/1405 Netra ft 1800
 Options 6541 6935

| | | |
|--------------------|--------------------|-------------------|
| 375-0006 | 375-0014 | 540-3980 |
| Symbios SYM22802 | Symbios SYM22802 | Netra ft 1800 FRU |
| w/o FCode | w FCode | w 375-0006 |
| 3.3/5V 32Bit 33MHz | 3.3/5V 32Bit 33MHz | |



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. Ultra 5/10 OBP 3.11 Version 9 fixes BugID 4114784.
3. Ultra 30 OBP 3.11 Version 2 fixes BugID 4114784.
4. Ultra 60 OBP 3.11 Version 26 fixes BugID 4114784.
5. VHDCI is the Very High Density Cable Interconnect Standard.

Reference: *PCI Host Adapter User's Guide*, 805-1271-10.

SCSI RAID Controller SRC/P

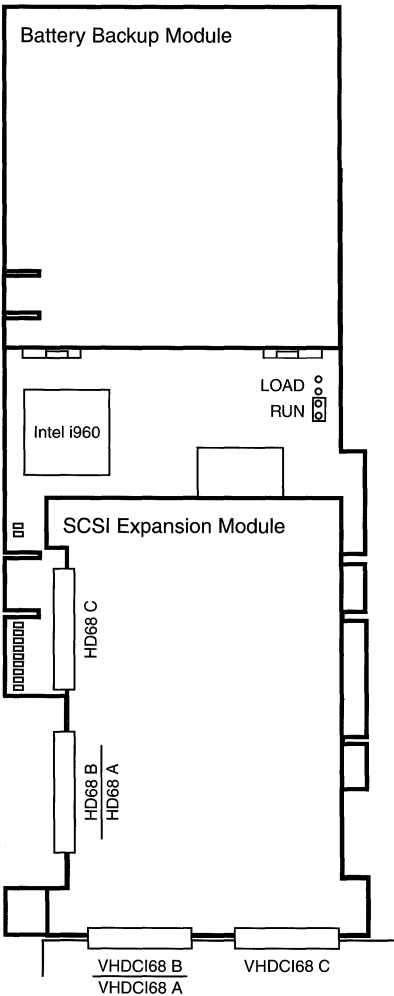
A25 A26

Options 6542 6602

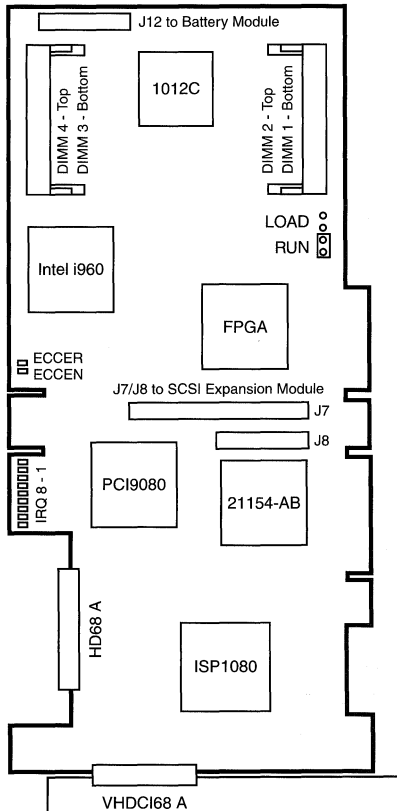
375-0078

DPT SmartRAID Millennium PM3755U2B
w Battery Backup Module BB4050
w SCSI Expansion Module SX4055U2-2
w 64MB ECC EDO DIMM DM4050-64
3.3/5V 64Bit 33MHz

SRC/P 375-0078

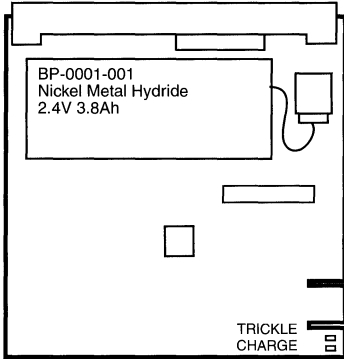


SmartRAID Millennium DPT PM3755U2B No Sun part number

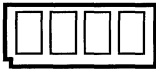


375-0078

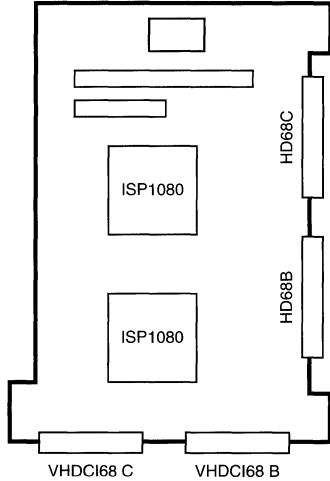
Battery Backup Module
DPT BB4550
375-0082



64MB DIMM
DPT DM4050-64
No Sun Part Number



SCSI Expansion Module
DPT SX4055U2-2
No Sun Part Number



Notes

1. The minimum operating system is Solaris 2.6 Hardware: 3/98.
2. The E250 and E450 require OBP \geq 3.12.
3. The SRC/P requires a 64-Bit PCI slot.
4. Internal option 6602 is only available for the E450 (A25).
5. The maximum high-speed disk cache memory is 256MB.

Cable Notes

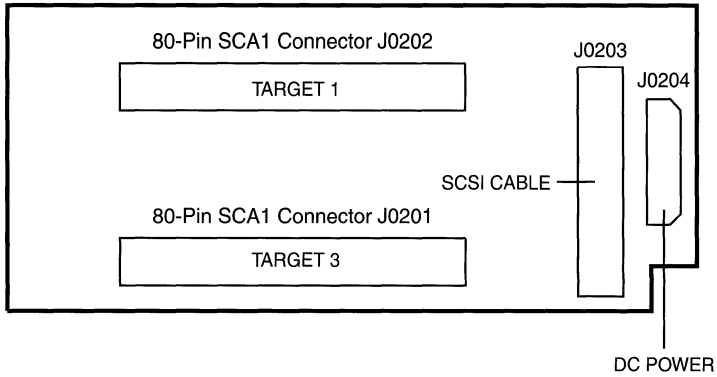
1. The A25 requires internal 8-Disk Backplane Cable 530-2744.
2. External cable 530-2452-02 is Option X3832A.
3. The housing on cable 530-2452-02 is 0.280" thick.
4. The housing on cables 530-2452-01 and 530-2453-01 is 0.355" thick.
5. Cables with 0.355" housings are not usable at the same time on the A and B ports due to the thickness of the housing.

References

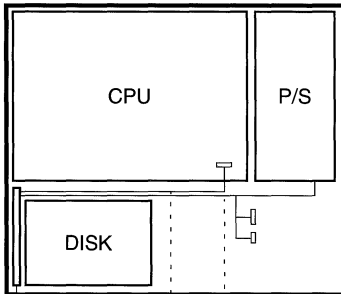
1. *SRC/P Installation Guide*, 805-7752.
2. *E450 Internal RAID Storage Option Installation Guide*, 805-6765.

SCSI Adapter

SS4 SS5 SS20
501-2462

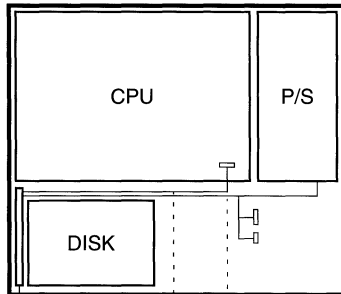


SS5 and SS20
Chassis 540-2438



- SCSI Adapter
- SCSI Cable 530-2053
- DC Wire Harness 530-2066

SS5 and SS20
Chassis 540-2850



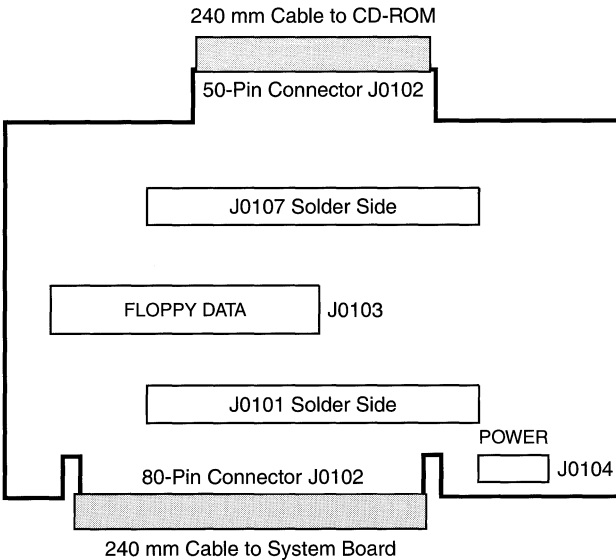
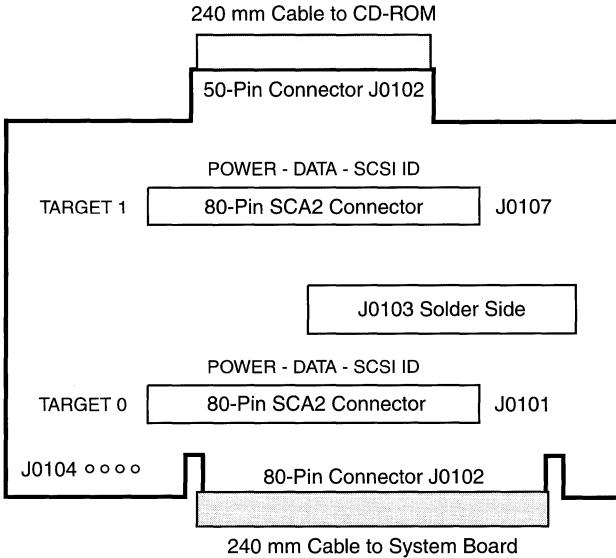
- SCSI Adapter
- SCSI Cable 530-2278
- DC Wire Harness 530-2279

Notes

1. SCSI target assignments are hardwired and cannot be changed.
2. A SCSI command conflict occurs when a Conner 1GB Disk Drive (370-1822, FRU 540-2560) and an IBM 1GB Disk Drive (370-2072, FRU 540-2560) are installed.
3. Chassis 540-2438 was phased out of production in Nov/Dec 1996.
4. Chassis 540-2850 was phased into production in July 1996.
5. Vibration Kit 540-3346, for the SS4 with Quantum 1080S Disk Drive, includes a SCSI Adapter, SCSI Cable, and DC Wire Harness.
6. Only one drive is supported in the SS4 in the Target 3 connector. The Target 1 connector is not supported in the SS4.

Floppy and SCSI Adapter

Ultra 1 140/170 Ultra 1 140E/170E/200E
530-2153

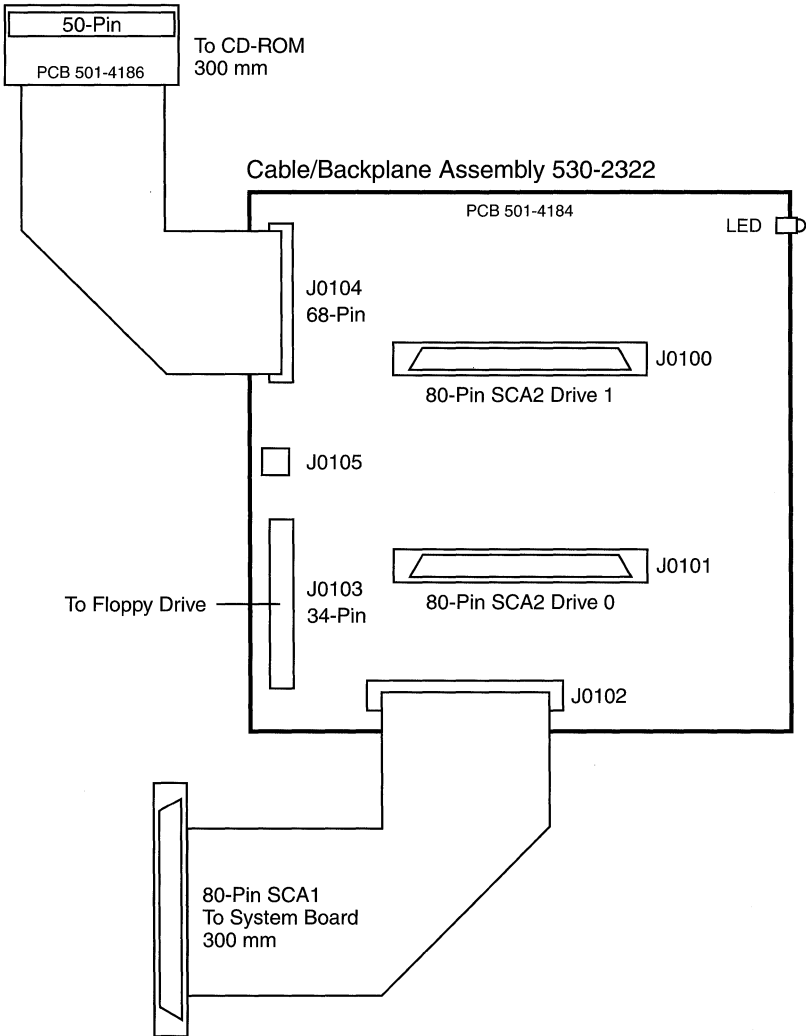


Floppy and SCSI Adapter

Ultra 30 Ultra 60

530-2322
Cable Assembly

540-3016
Drive Bay FRU



Notes

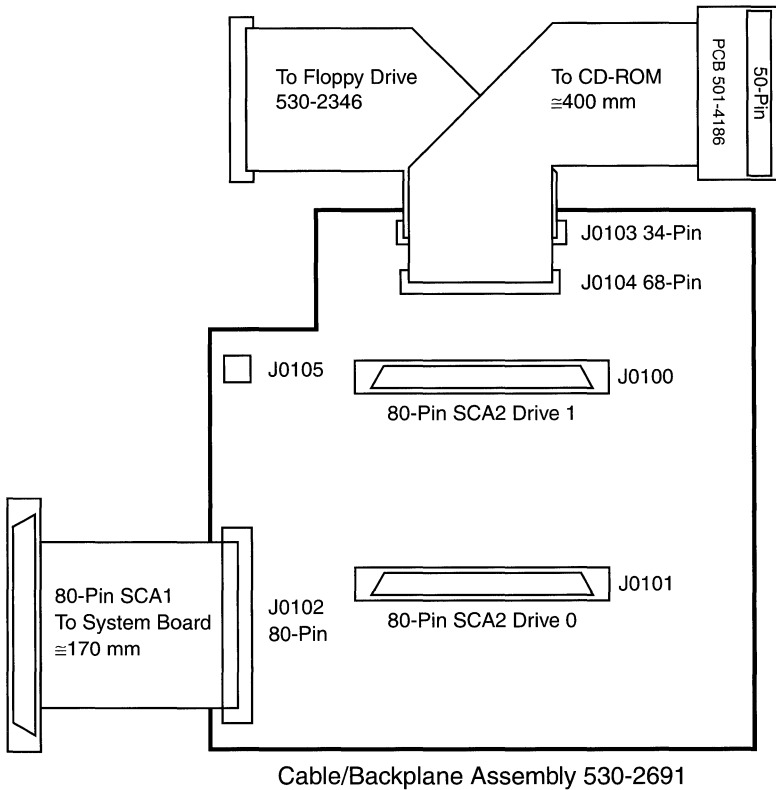
- 1. FRU 540-3016 includes the Cardcage and Cable Assembly.
- 2. Cable Assembly 530-3022 includes the PCBs and Cables.
- 3. Cables are soldered to the PCBs.

Floppy and SCSI Adapter

Ultra 80

530-2691
Cable Assembly

540-3874
Drive Bay FRU

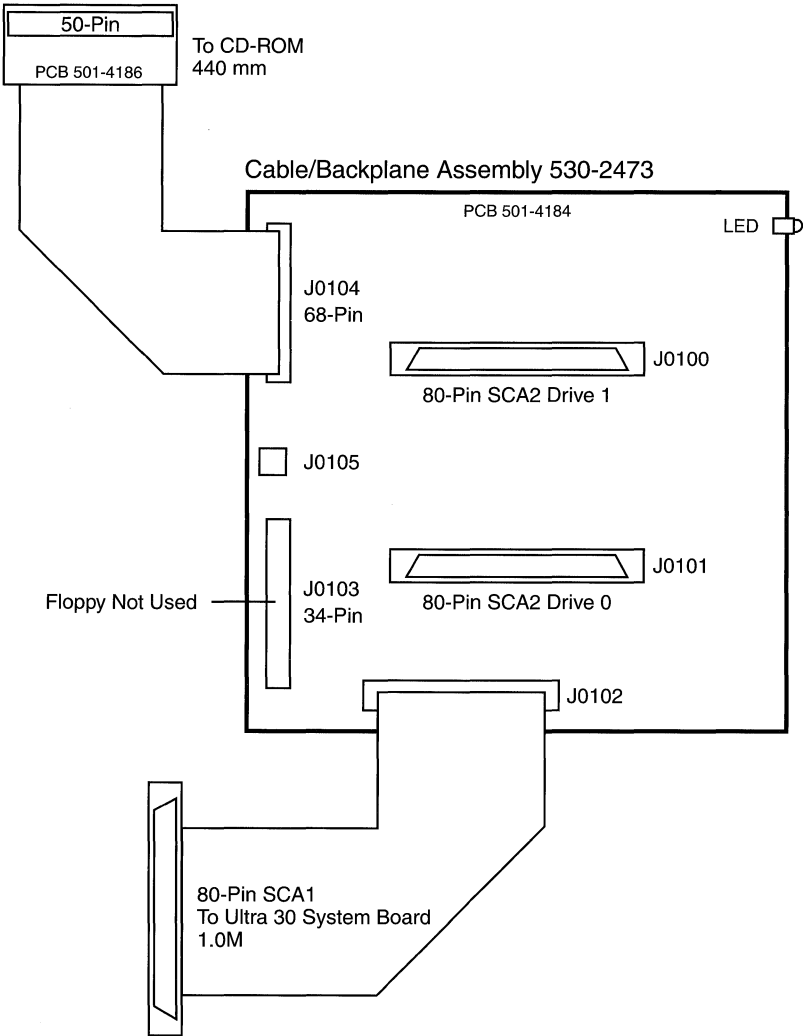


Notes

1. Assembly 540-3874 includes the Cardcage and Cable Assembly.
2. Cable Assembly 530-2691 includes the PCBs and SCSI Bus Cables.
3. SCSI Bus Cables are soldered to the PCBs.
4. Floppy Cable 530-2346 is detachable.
5. PCB 501-4186 terminates the SCSI Bus.

SCSI Adapter

Netra t 1100
530-2473



SCSI Adapter

Netra t 1120 Netra t 1125

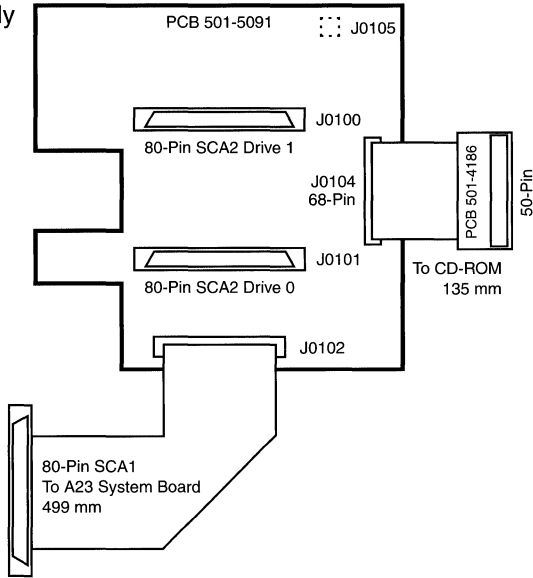
530-2683

530-2684

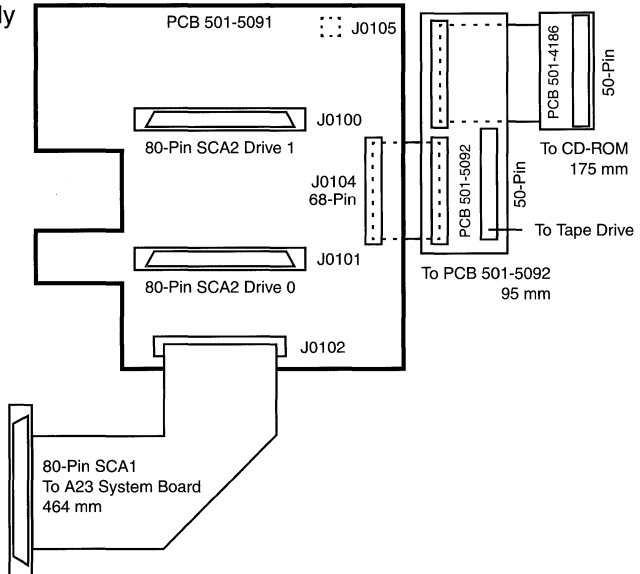
Netra t 1120

Netra t 1120/1125

FRU Assembly
530-2683

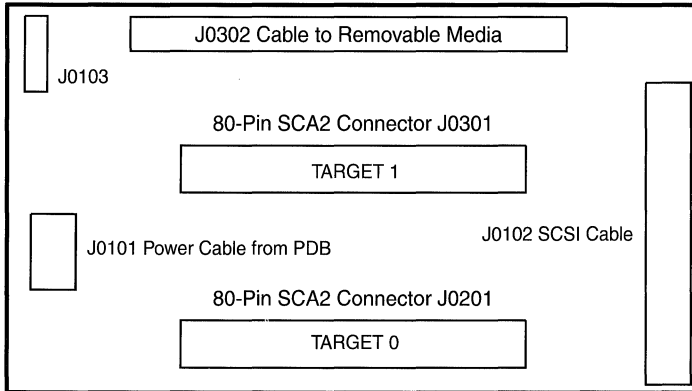


FRU Assembly
530-2684



SCSI Adapter

Enterprise 220R Enterprise 420R
501-5505



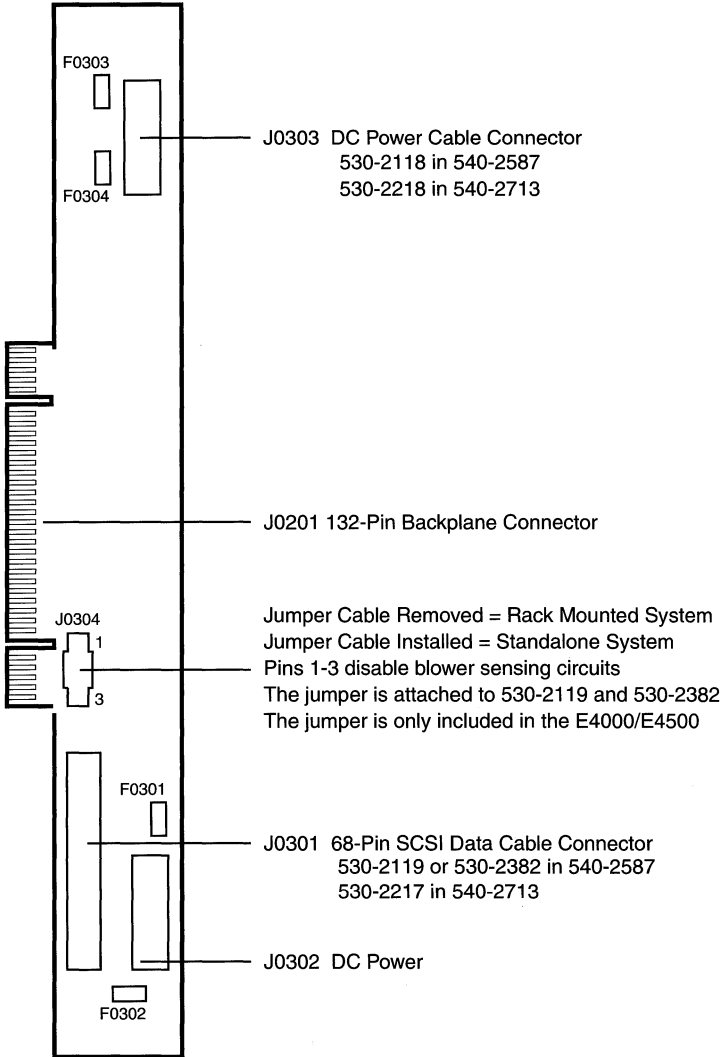
Note: Solaris 2.6 HW: 5/98 requires Patch 105580-13 for disk hot plug.

References

1. *Enterprise 220R Service Manual*, 806-1081.
2. *Enterprise 420R Service Manual*, 806-1080.

SCSI Adapter

| | | | | | |
|----------|-------|--------------------------------------|-------|--|-------|
| E4000 | E5000 | E6000 | E4500 | E5500 | E6500 |
| 501-2600 | | 540-2587 | | 540-2713 | |
| | | SCSI Tray Assembly E4000 E4500 | | SCSI Tray Assembly E5000 and E6000 E5500 and E6500 | |



SCSI Adapter

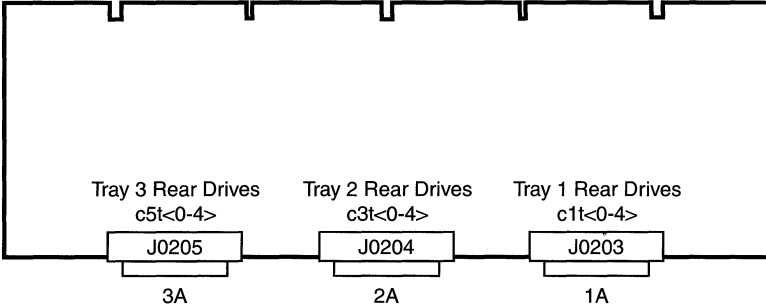
MediaCenter 1000E SPARCstorage Array

595-3563
FRU Assembly

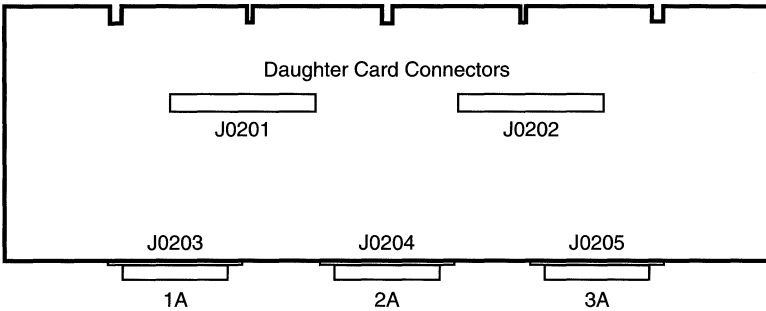
501-2980
Interconnect Card

501-2070
Daughter Card

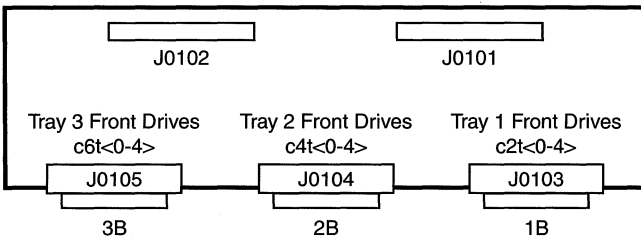
501-2980 Solder Side



501-2980 Top Side



501-2070 Top Side

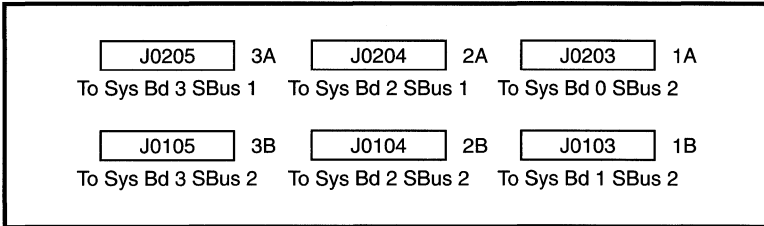


595-3563

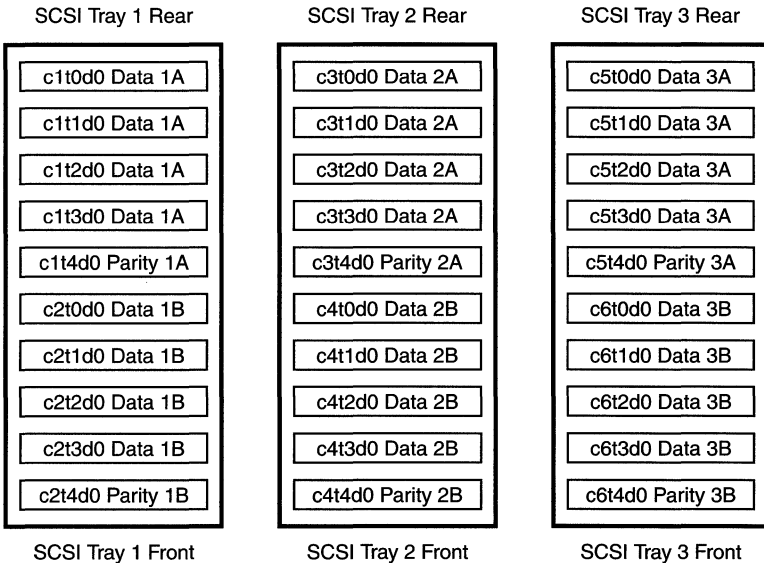
501-2980

501-2070

Assembly 595-3563 Backpanel



SPARCstorage Array SCSI Disk Trays



Notes

1. Sun MediaCenter software is required.
2. Sun MediaCenter software is an integrated extension to Solaris 2.4, incorporating modified device drivers, file system management tools, and networked media management tools.
3. Solstice Backup and Solstice DiskSuite are not compatible with the Media File System because the Media File System uses RAID 4 data striping and parity.

References

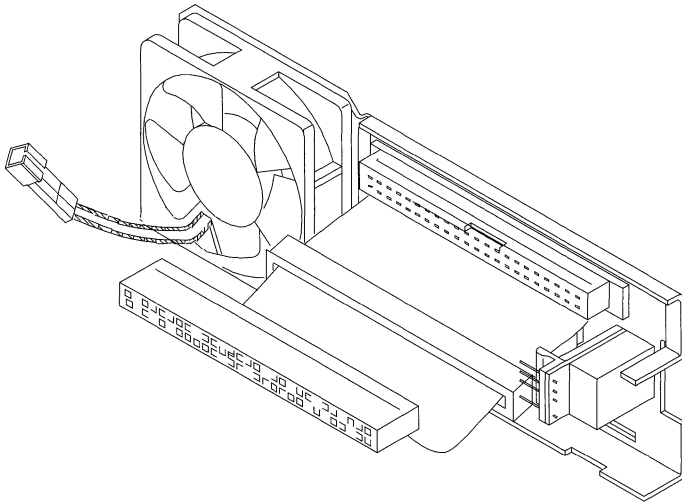
1. *Sun MediaCenter Server Software Manual*, 802-3804-10
2. *Sun MediaCenter Server Hardware Manual*, 802-4680-10.
3. *Sun MediaCenter 1000 Installation and Service Manual*, 802-4865-10.

SCSI Adapter

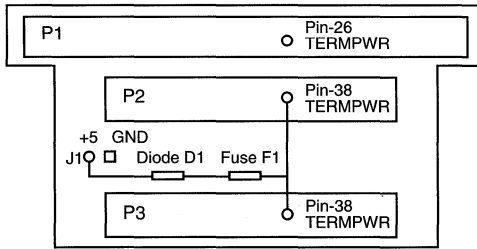
Desktop Storage Pack

540-1776
w Switch 150-1338

540-1978
w Switch 150-1557
w Switch 150-2049



SCSI I/O PCB FAB 270-1468



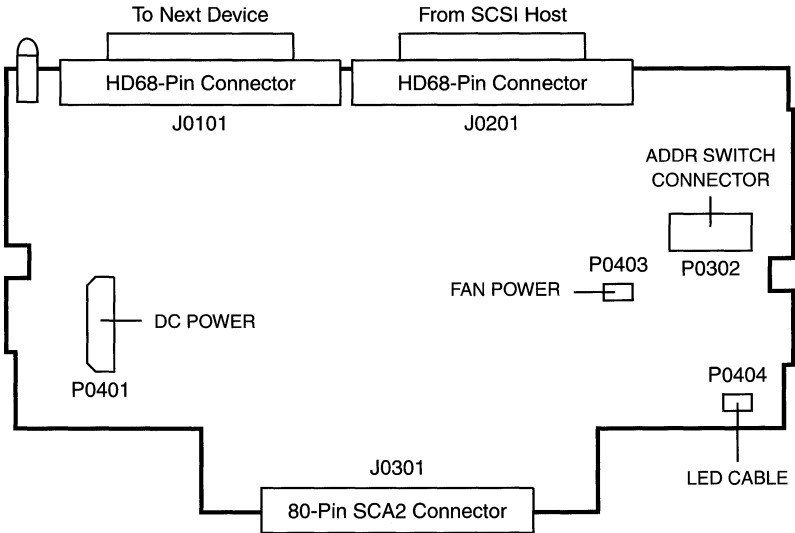
Notes

1. The 2A Fuse, 150-1174-01, protects the power supply. The peripheral inside the Desktop Storage Pack is not affected if the fuse blows.
2. TERMPWR, Pin-38, from the external SCSI bus is not connected to the peripheral inside the Desktop Storage Pack.
3. TERMPWR, Pin-26, from the peripheral inside the Desktop Storage Pack is not connected to the external SCSI bus.
4. TERMPWR from the power supply is not connected to the peripheral inside the Desktop Storage Pack.
5. TERMPWR from the power supply is connected to Pin-38 on the external SCSI bus.

SCSI Adapter

SPARCstorage UniPack StorEdge UniPack

501-2790
80-Pin Disk Options
Fast/Wide SCSI



Notes

1. The SCSI bus length on the SCSI Adapter is \approx 170 mm.
2. The SCSI Adapter is included with Power Supply Assembly 540-2694.

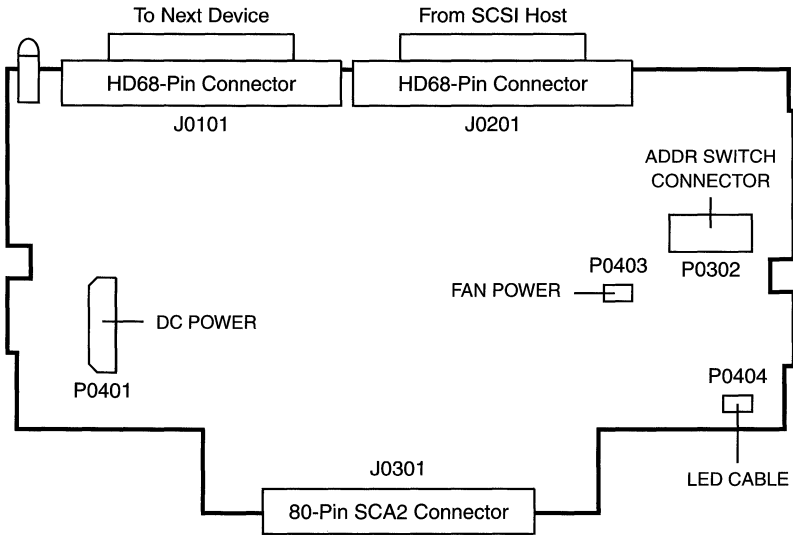
Termination Notes

3. The Desktop Storage Pack requires external termination.
4. The SPARCstorage Unipack does not require external termination.
5. The Upper LED indicates termination of SCSI Data Bits D15 - D8.
6. The Lower LED indicates termination of SCSI Data Bits D7 - D0.

Reference

SPARCstorage UniPack Hardware Setup Instructions, 802-3227-10.

SCSI Adapter
StorEdge UniPack
501-4823
 80-Pin Disk Options
 Ultra/Wide SCSI



Notes

1. The SCSI bus length on the SCSI Adapter is \approx 170 mm.
2. The SCSI Adapter is included with Power Supply Assembly 540-3732.

Termination Notes

3. The Desktop Storage Pack requires external termination.
4. The StorEdge Unipack does not require external termination.
5. The Upper LED indicates termination of SCSI Data Bits D15 - D8.
6. The Lower LED indicates termination of SCSI Data Bits D7 - D0.

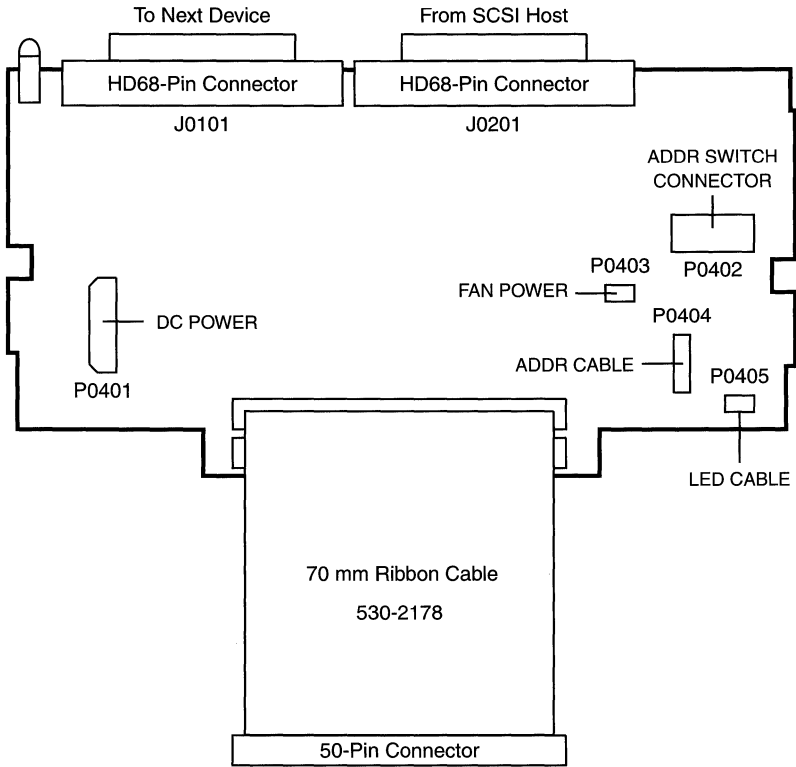
Reference

SPARCstorage UniPack Hardware Setup Instructions, 802-3227-10.

SCSI Adapter

SPARCstorage UniPack StorEdge UniPack

501-2791
CD-ROM Options
Narrow SCSI Tape Options



Notes

- 1. The SCSI bus length on the SCSI Adapter is \approx 170 mm.
- 2. The ribbon cable is soldered to the printed circuit board.
- 3. The SCSI Adapter is included with Power Supply Assembly 540-2674.

Termination Notes

- 4. The Desktop Storage Pack requires external termination.
- 5. The SPARCstorage Unipack does not require external termination.
- 6. The Upper LED indicates termination of SCSI Data Bits D15 - D8.
- 7. The Lower LED indicates termination of SCSI Data Bits D7 - D0.

Reference

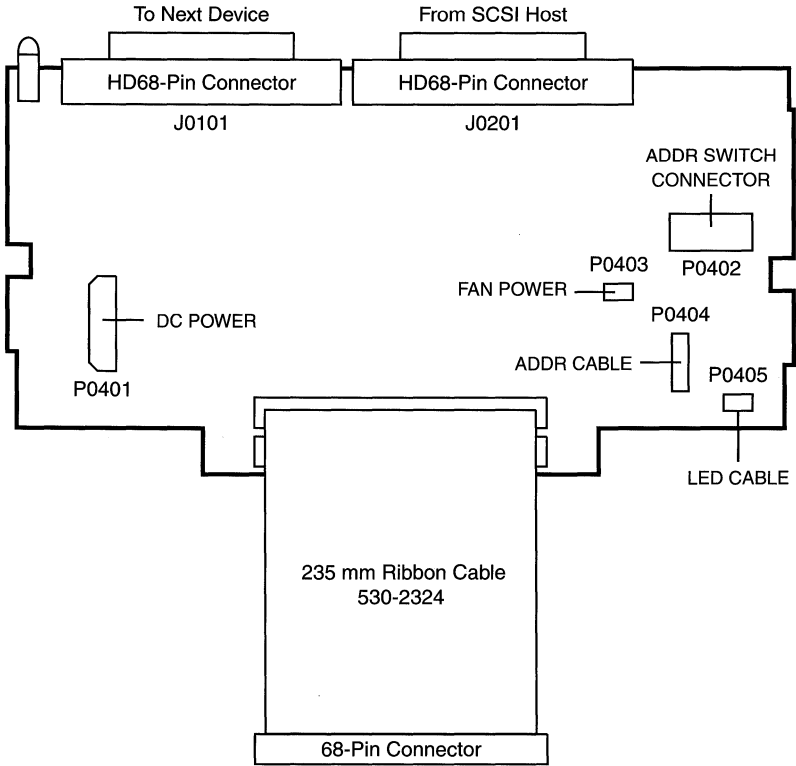
SPARCstorage UniPack Hardware Setup Instructions, 802-3227-10.

SCSI Adapter

SPARCstorage UniPack StorEdge UniPack

501-3108

Wide SCSI Tape Options



Notes

1. The SCSI bus length on the SCSI Adapter is \approx 170 mm.
2. The ribbon cable is soldered to the printed circuit board.
3. The SCSI Adapter is included with Power Supply Assembly 540-3004.

Termination Notes

4. The Desktop Storage Pack requires external termination.
5. The SPARCstorage Unipack does not require external termination.
6. The Upper LED indicates termination of SCSI Data Bits D15 - D8.
7. The Lower LED indicates termination of SCSI Data Bits D7 - D0.

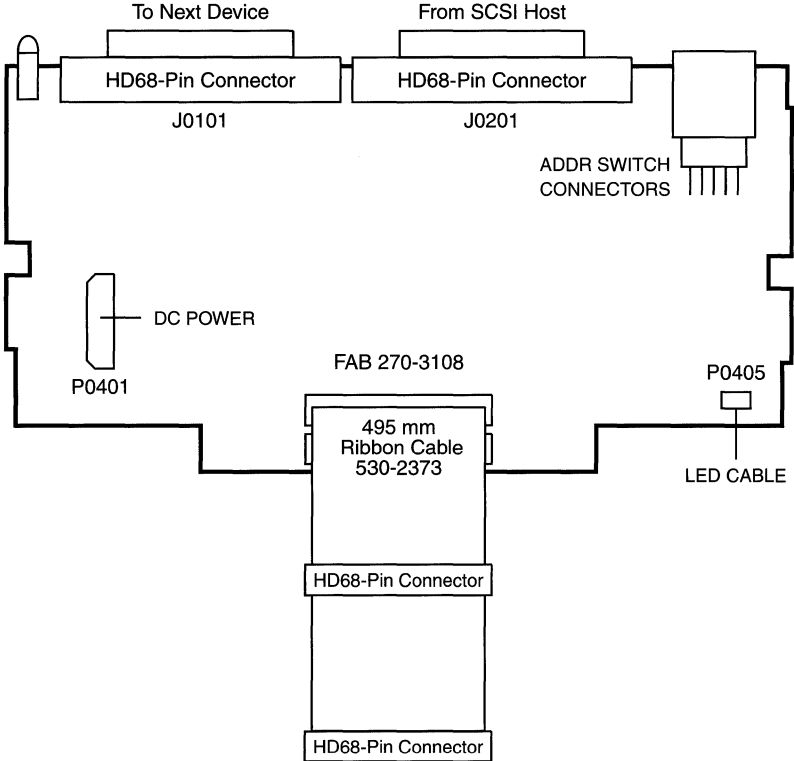
Reference

SPARCstorage UniPack Hardware Setup Instructions, 802-3227-10.

SCSI Adapter

SPARCstorage FlexiPack StorEdge FlexiPack

501-4327
Wide SCSI



Notes

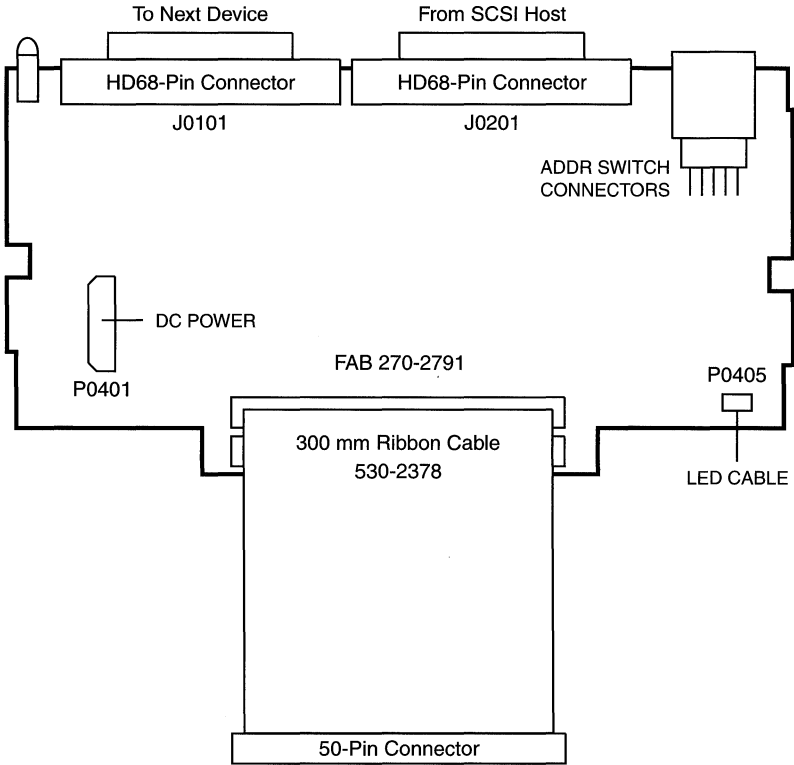
1. The SCSI bus length on the SCSI Adapter is \approx 170 mm.
2. The ribbon cable is soldered to the printed circuit board.
3. Adapter 501-4327 supports two Wide SCSI devices.
4. Narrow 50-Pin devices require HD68-Pin to 50-Pin Adapter 370-2819.
5. The SPARCstorage FlexiPack does not require external termination.
6. The Upper LED indicates termination of SCSI Data Bits D15 - D8.
7. The Lower LED indicates termination of SCSI Data Bits D7 - D0.

Reference: *SPARCstorage FlexiPack Installation Manual*, 802-7737.

SCSI Adapter

SPARCstorage FlexiPack StorEdge FlexiPack

501-4356
Narrow SCSI



Notes

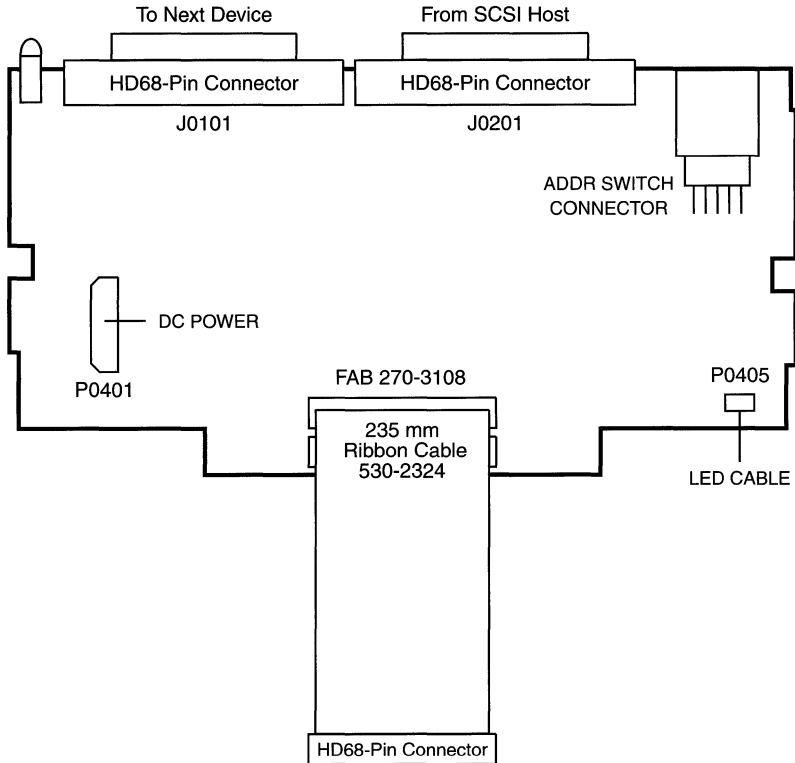
1. The SCSI bus length on the SCSI Adapter is \approx 170 mm.
2. The ribbon cable is soldered to the printed circuit board.
3. Adapter 501-4356 supports one Narrow SCSI device.
4. The SPARCstorage FlexiPack does not require external termination.
5. The Upper LED indicates termination of SCSI Data Bits D15 - D8.
6. The Lower LED indicates termination of SCSI Data Bits D7 - D0.

Reference: *SPARCstorage FlexiPack Installation Manual*, 802-7737.

SCSI Adapter

SPARCstorage FlexiPack StorEdge FlexiPack

501-4357
Wide SCSI



Notes

1. The SCSI bus length on the SCSI Adapter is ≈ 170 mm.
2. The ribbon cable is soldered to the printed circuit board.
3. Adapter 501-4357 supports one Wide SCSI device.
4. The SPARCstorage FlexiPack does not require external termination.
5. The Upper LED indicates termination of SCSI Data Bits D15 - D8.
6. The Lower LED indicates termination of SCSI Data Bits D7 - D0.

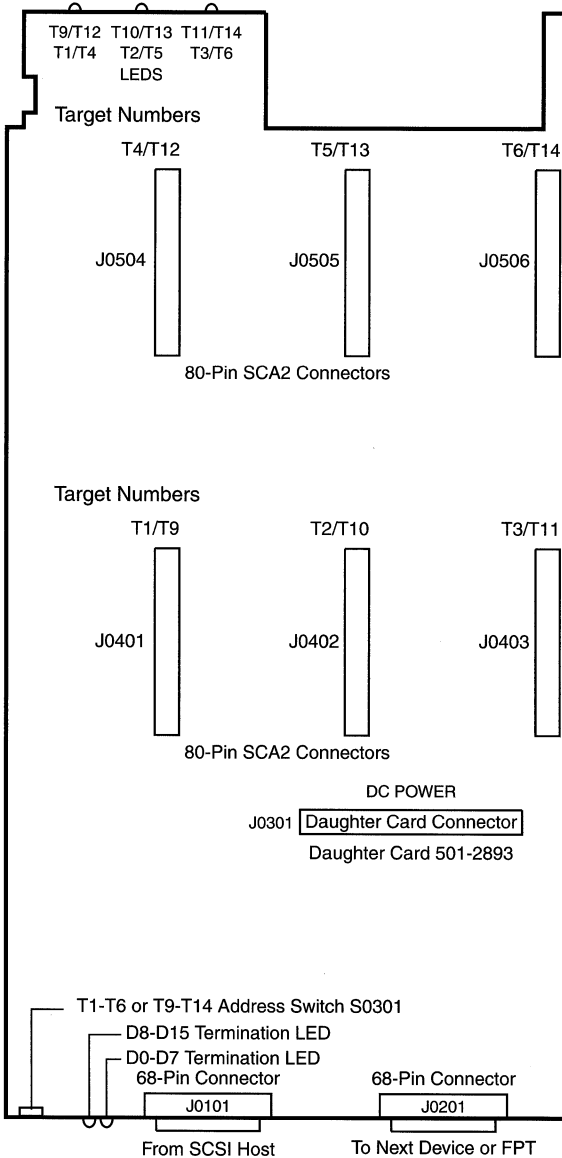
Reference: *SPARCstorage FlexiPack Installation Manual*, 802-7737.

6-Slot SCSI Disk Backplane

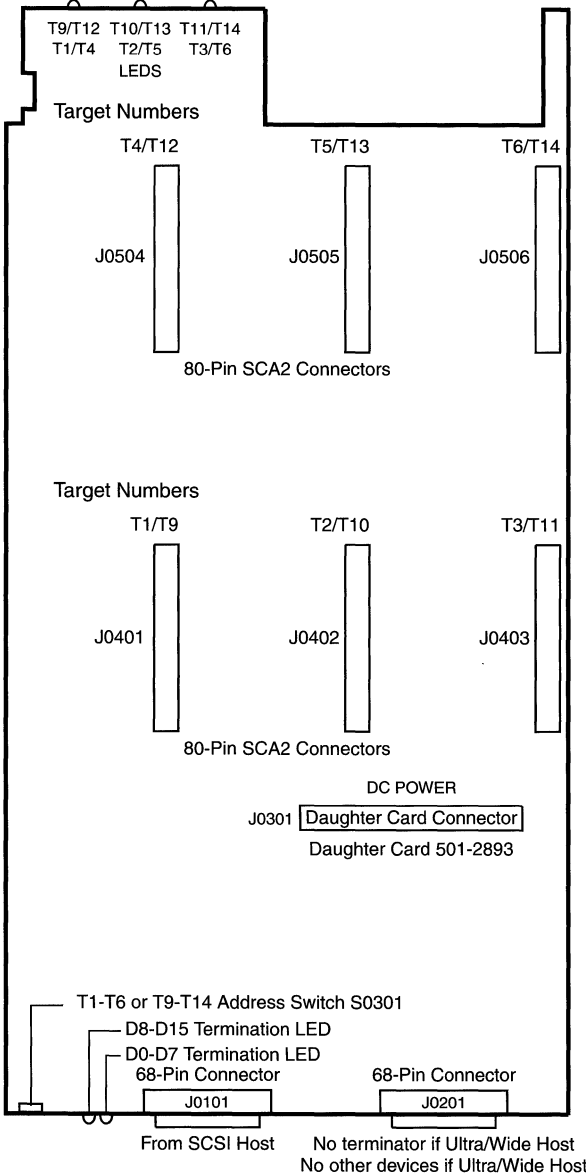
SPARCstorage MultiPack

501-2871

Fast/Wide SCSI



6-Slot SCSI Disk Backplane
 SPARCstorage MultiPack 2 StorEdge MultiPack
 501-4747
 Ultra/Wide SCSI

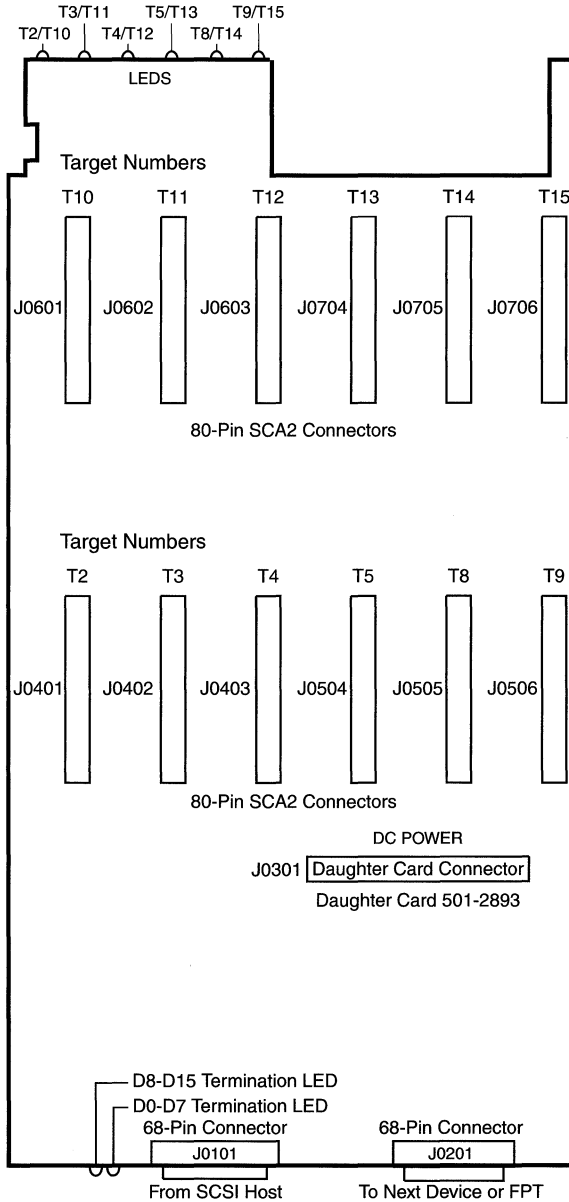


12-Slot SCSI Disk Backplane

SPARCstorage MultiPack

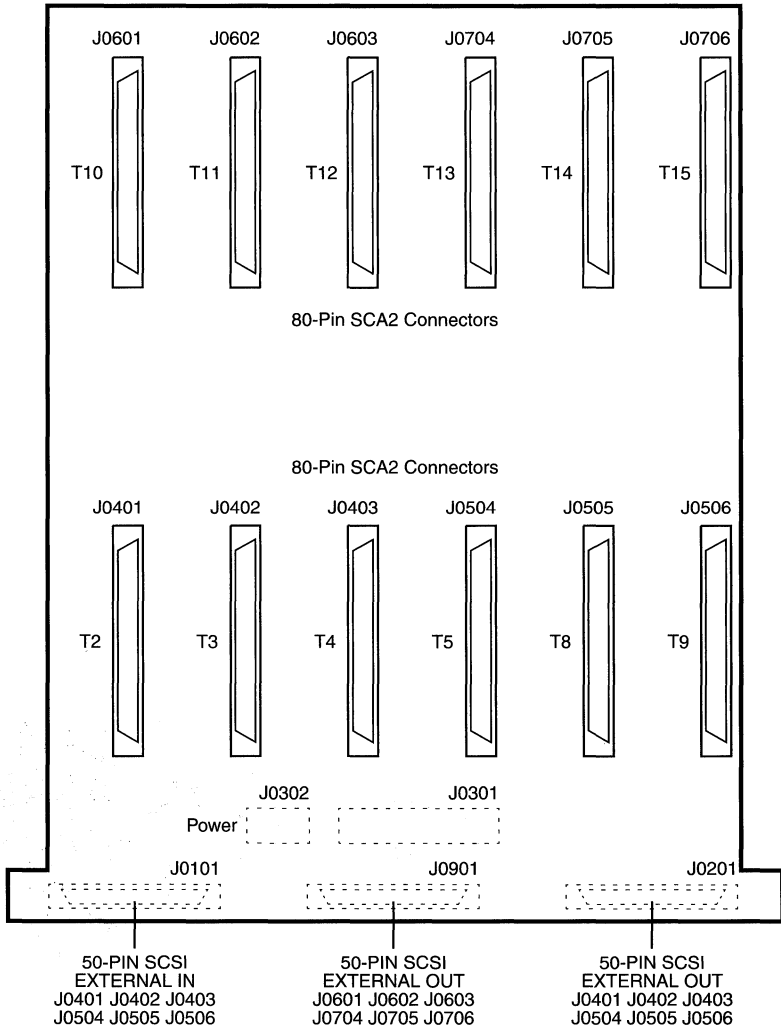
501-2899

Fast/Wide SCSI



12-Slot SCSI Disk Backplane

Netra *i* 150 Netra *nfs* 150 Enterprise 150
501-3081

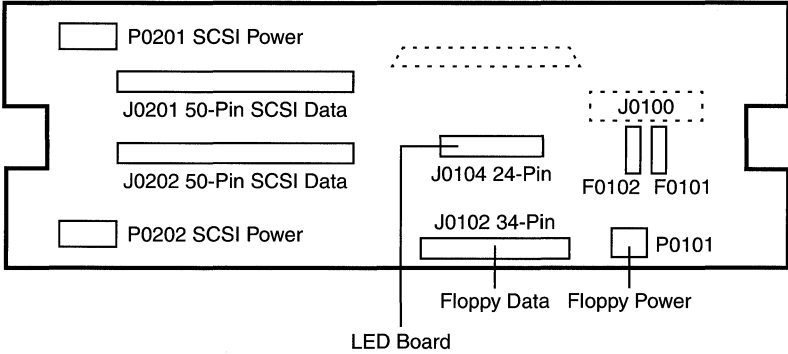


Removable Media Backplane

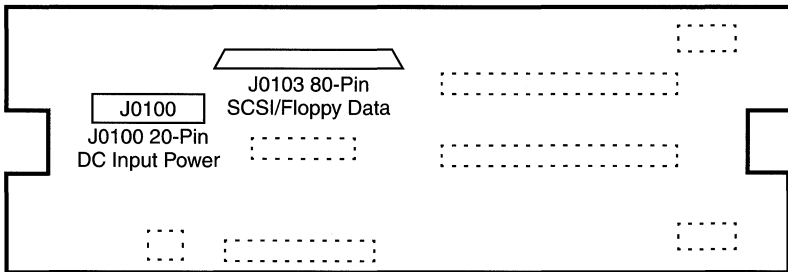
Ultra 450 Ultra Enterprise 450

501-3128

Front View



Rear View



Notes

1. The RMA Backplane is controlled by /pci@1f,4000/scsi@2.
2. The external A20/A25 SCSI bus is controlled by /pci@1f,4000/scsi@2.

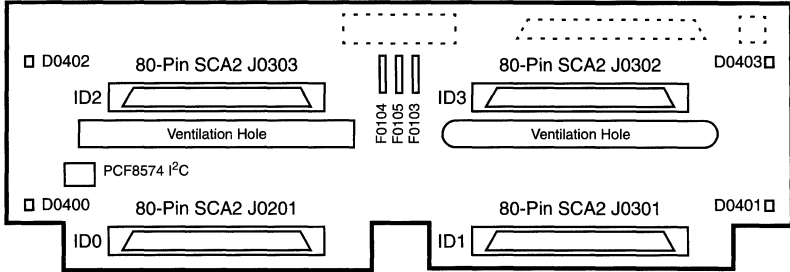
References

1. *Ultra Enterprise 450 Owner's Guide*, 805-0429-10.
2. *Ultra 450 Owner's Guide*, 805-0430-10.

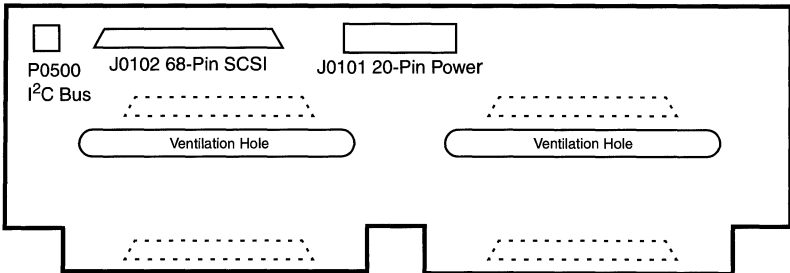
4-Slot SCSI Disk Backplane

Ultra 450 Ultra Enterprise 450
501-4148

Front View



Rear View



Notes

1. The 4-Slot Backplane is controlled by /pci@1f,4000/scsi@3.
2. Set OBP **disk-led-assoc 0** to access the 4-Slot Backplane.
3. Hot plugging \leq 501-4148-04 causes other disks on the bus to go off-line.
4. Hot plugging operates correctly in 501-4148-05.

References

1. *Ultra Enterprise 450 Owner's Guide*, 805-0429-10.
2. *Ultra 450 Owner's Guide*, 805-0430-10.

8-Slot SCSI Disk Backplane

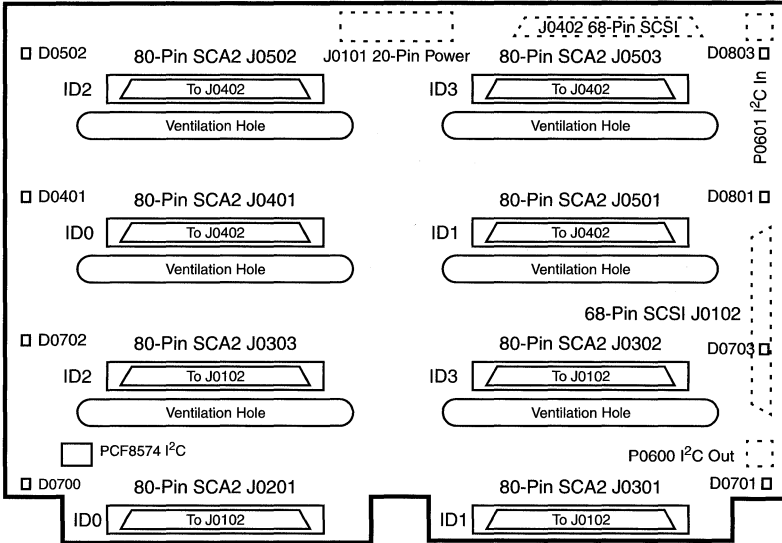
Ultra 450 Ultra Enterprise 450

Options 6600 6601 6602

501-4189
X6600A

501-5274
X6601A

501-5274
X6602A



Notes

1. The 8-Slot Backplane is split into two SCSI buses.
2. Options 6600 and 6601 include a dual single-ended SCSI Controller, internal SCSI Cable, DC Power Cable, and I²C Cable.
3. Option 6602 includes an SRC/P, internal SCSI cable, DC Power Cable, and I²C Cable.
4. Hot plugging 501-4189 causes other disks on the bus to go off-line.
5. Hot plugging 501-5274-02 operates correctly.
6. Set the **disk-led-assoc** OBP parameter after installing a disk backplane.

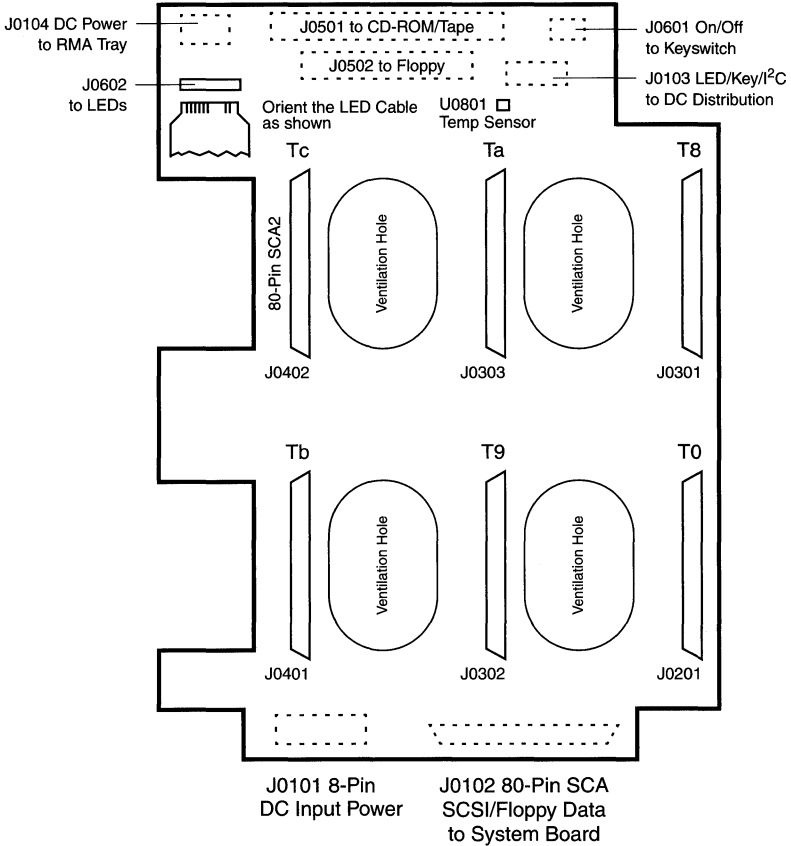
References

1. *Ultra Enterprise 450 Owner's Guide*, 805-0429-10.
2. *Ultra 450 Owner's Guide*, 805-0430-10.

6-Slot SCSI Disk Backplane

Enterprise 250

501-4682



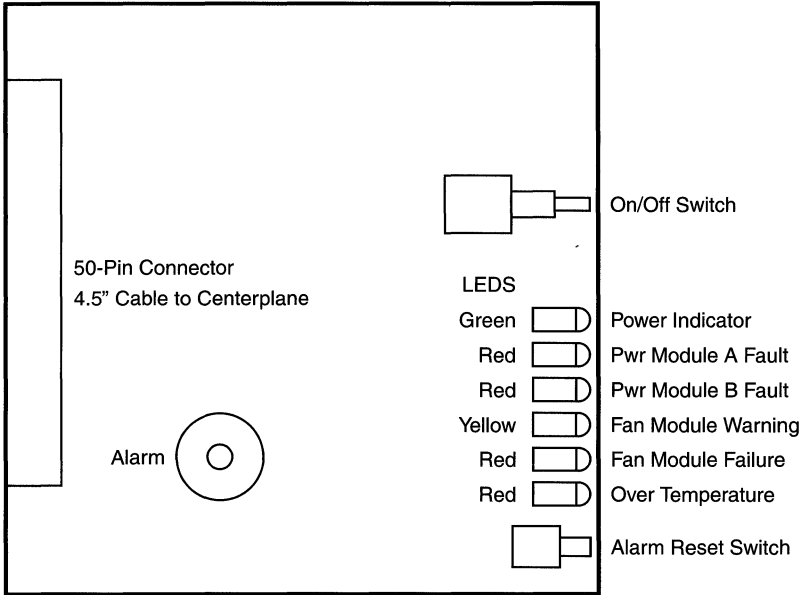
Notes

1. Backplane 501-4682-04 with FAB 270-4682-04 is shown.
2. Backplane 501-4682-03 was built with FAB 270-4682-03.
3. Power connector J0104 is on the right side of FAB 270-4682-03.
4. Keyswitch connector J0601 is on the left side of FAB 270-4682-03.

References

1. *Enterprise 250 Owner's Guide*, 805-5160.
2. *Enterprise 250 ShowMe How*, 724-2794.

Operator Panel
SPARCstorage RSM
370-2198
 FRU Assembly



Note

FRU 370-2198 includes the Chassis, Operator Panel, Operator Panel Cable, and Centerplane.

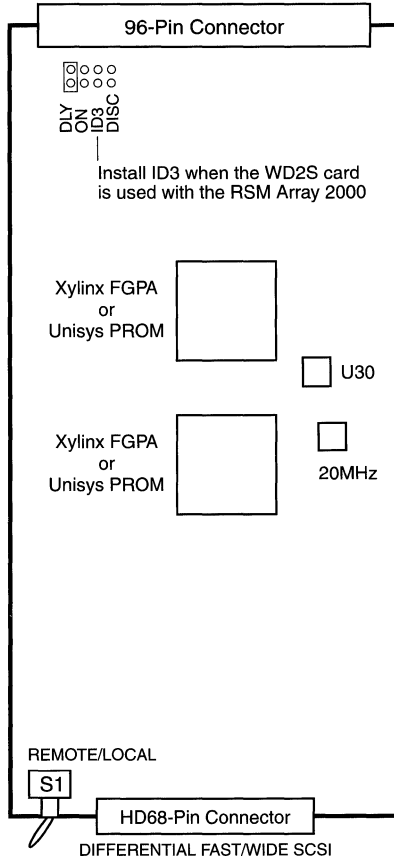
Reference

SPARCstorage RSM Installation, Operations, and Service, 802-5062.

WD2S SCSI Adapter SPARCstorage RSM

370-2196
Programmable FPGA
w U30 Installed

370-3375
Masked PROM
w/o U30 Installed



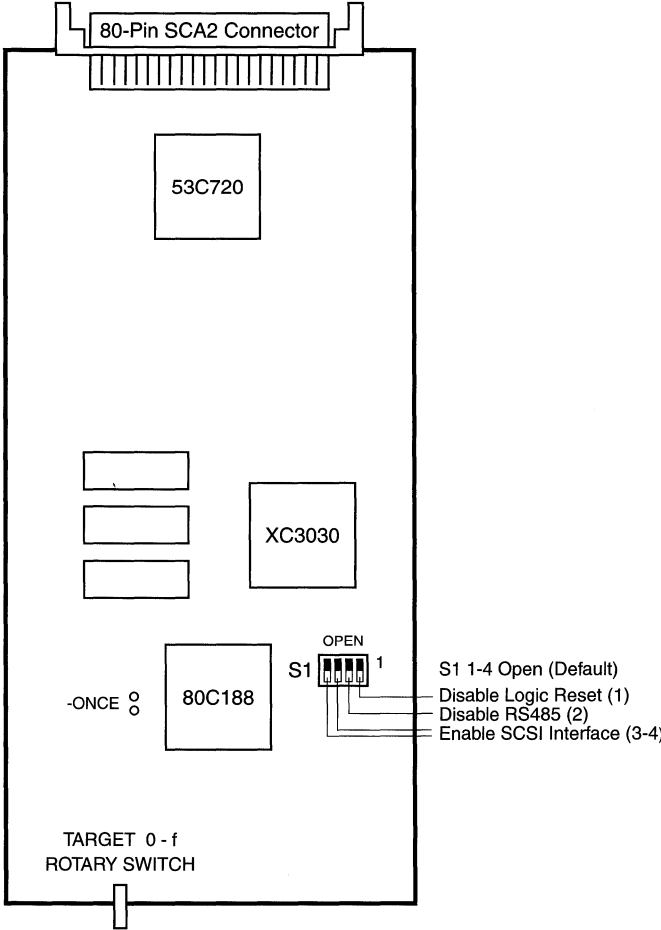
Notes

1. Do NOT connect the WD2S to single-ended host adapters.
2. The WD2S does not support Ultra SCSI transfer rates.
3. Single-ended SCSI disk drives are installed in the SPARCstorage RSM.
4. The WD2S converts single-ended wide SCSI to differential wide SCSI.
5. Daisy chain operation is not supported by the 370-2196 WD2S card.
6. SCSI addresses are 0 to 7 when ID3 is removed.
7. SCSI addresses are 8 to f when ID3 is installed.

Reference

SPARCstorage RSM Installation, Operations, and Service, 802-5062.

Environmental Sensor
SPARCstorage RSM
Option 6510
370-2195



Notes

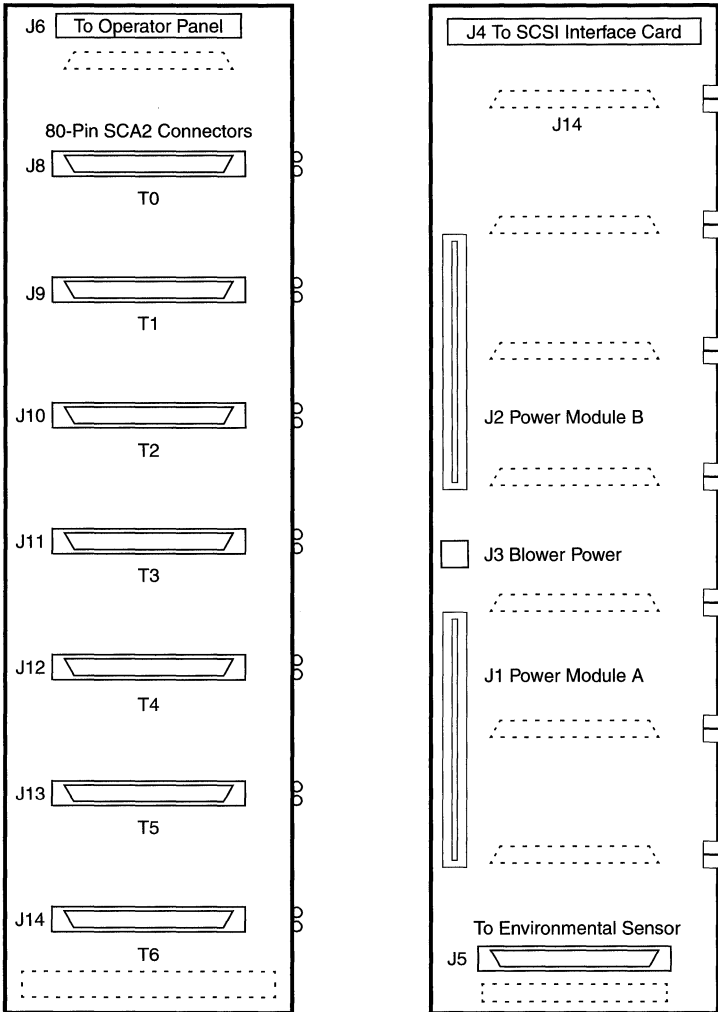
1. Set the first board to target 0xf on the Rotary Switch.
2. Set the second board to target 0xe when two trays are daisy chained.
3. The maximum number of disk drives is thirteen when two trays and two Environmental Boards are daisy chained.

Reference: SPARCstorage RSM SEN Card Installation, 805-0213-10.

7-Slot SCSI Disk Backplane

SPARCstorage RSM

370-2198
FRU Assembly



Note

FRU 370-2198 includes the Chassis, Operator Panel, Operator Panel Cable, and Centerplane. Individual parts are not available.

Reference

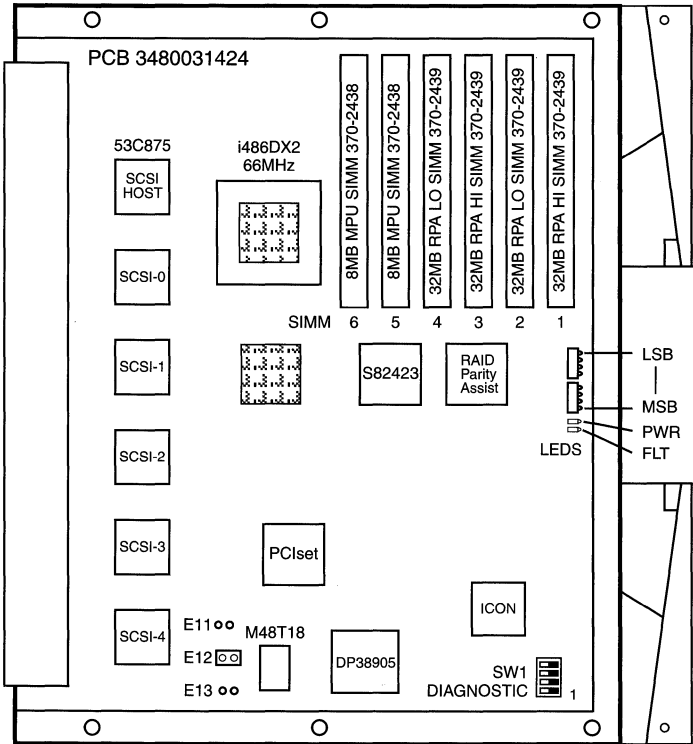
SPARCstorage RSM Installation, Operations, and Service, 802-5062.

Array Controller

RSM Array 2000 StorEdge A3000

370-2435
w/o Memory

540-3600
w 16MB MPU
w 64MB RPA
FRU



Alternating Pattern LED Codes

On = ● Off = ○

- | | | |
|-----------------|-----------------|--------------------------|
| ● ○ ○ ○ ○ ○ ○ ○ | ○ ○ ○ ○ ○ ○ ○ ○ | Active - No fault |
| ○ ● ● ○ ● ● ● ○ | ● ● ● ○ ● ● ● ○ | Passive - No fault |
| ● ● ● ● ● ● ● ● | ● ● ● ● ● ● ● ● | Controller held in reset |
| ● ● ● ● ○ ○ ● ● | ● ● ● ● ○ ○ ● ● | Controller in wrong slot |
| ○ ○ ● ● ○ ● ● ○ | ○ ○ ● ● ○ ● ● ○ | MPU SIMM fault |
| ○ ○ ● ● ○ ● ● ● | ○ ○ ● ● ○ ● ● ● | RPA SIMM fault |

370-2435

540-3600

Notes

1. The Phase I minimum operating system is Solaris 2.4.
2. The Phase II minimum operating system is Solaris 2.5.1.
3. Phase II software requires Firmware \geq 02.04.04.01.
4. The M48T18 NVRAM uses an M4T28 SNAPHAT battery.

RSM Array 2000 Notes

1. The RSM Array 2000 is a controller and chassis.
2. The RSM Array 2000 is also the name of a cabinet mounted RSM Array 2000 controller and chassis with SSA 214/219 RSM disk trays.
3. An RSM Array 2000 nameplate is on the RSM Array 2000 chassis in an RSM Array 2000 cabinet with SSA 214/219 RSM disk trays.
4. The RSM Array 2000 was renamed StorEdge A3000 in January 1998.
5. Use Array Controller 540-3600 with the RSM Array 2000.

StorEdge A3000 Notes

1. The StorEdge A3000 is a controller and chassis.
2. The StorEdge A3000 is also the name of a cabinet mounted A3000 controller and chassis with SSA 214/219 RSM disk trays.
3. An RSM Array 2000 nameplate is on the StorEdge A3000 chassis in a StorEdge A3000 cabinet with SSA 214/219 RSM disk trays.
4. Use Array Controller 540-3600 with the StorEdge A3000.

StorEdge A3500 Notes

1. The StorEdge A3500 is a controller and chassis.
2. The StorEdge A3500 is also the name of a rack mounted StorEdge A3500 controller and chassis with StorEdge D1000 disk trays.
3. Before December 1999, a StorEdge A3000 nameplate was on the StorEdge A3500 chassis in a StorEdge A3500 cabinet with StorEdge D1000s. After November 1999, a StorEdge A3500 nameplate is used.
4. Use Array Controller 540-3083 with the StorEdge A3500.

Memory Notes

1. The Main Processor Unit (MPU) SIMMs serve as processor memory.
2. The RAID Parity Assist (RPA) SIMMs serve as cache memory.
3. Use 8MB SIMM 370-2438 and 32MB SIMM 370-2439.
4. The 370-2438 and 370-2439 are not labeled with a Sun Part Number.
5. Memory failures are reported as a pair of two SIMMs.
6. Install 32MB SIMMs in SIMM-2 and SIMM-4 for RPA Low Bank.
7. Install 32MB SIMMs in SIMM-1 and SIMM-3 for RPA High Bank.
8. Install 8MB SIMMs in SIMM-5 and SIMM-6 for MPU DRAM.
9. The 540-3600 Array Controller FRU was released October 1997.

References

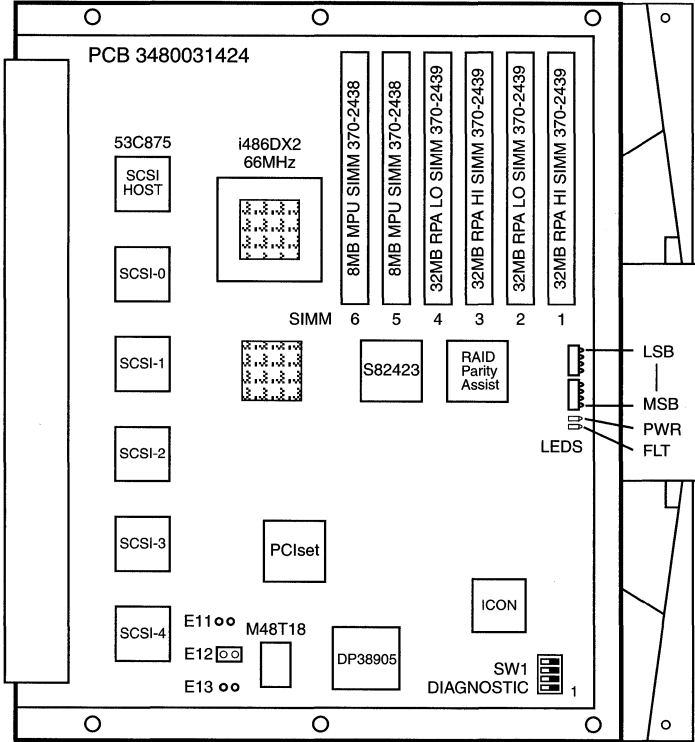
1. *RSM Array 2000 System Manual*, 802-7603.
2. *RSM Array 2000 Controller Module Installation Guide*, 802-7602.
3. *RAID Manager Controller Replacement Guide*, 805-7854.

Array Controller

StorEdge A3500

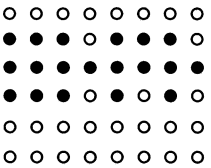
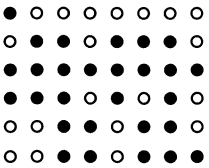
370-3656
w/o Memory

540-3083
w 16MB MPU
w 64MB RPA
FRU



Alternating Pattern LED Codes

On = ● Off = ○



- Active - No fault
- Passive - No fault
- Controller held in reset
- Controller in wrong slot
- MPU SIMM fault
- RPA SIMM fault

370-3656

540-3083

Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 8/97.
2. The M48T18 NVRAM uses an M4T28 SNAPHAT battery.

RSM Array 2000 Notes

1. The RSM Array 2000 is a controller and chassis.
2. The RSM Array 2000 is also the name of a cabinet mounted RSM Array 2000 controller and chassis with SSA 214/219 RSM disk trays.
3. An RSM Array 2000 nameplate is on the RSM Array 2000 chassis in an RSM Array 2000 cabinet with SSA 214/219 RSM disk trays.
4. The RSM Array 2000 was renamed StorEdge A3000 in January 1998.
5. Use Array Controller 540-3600 with the RSM Array 2000.

StorEdge A3000 Notes

1. The StorEdge A3000 is a controller and chassis.
2. The StorEdge A3000 is also the name of a cabinet mounted A3000 controller and chassis with SSA 214/219 RSM disk trays.
3. An RSM Array 2000 nameplate is on the StorEdge A3000 chassis in a StorEdge A3000 cabinet with SSA 214/219 RSM disk trays.
4. Use Array Controller 540-3600 with the StorEdge A3000.

StorEdge A3500 Notes

1. The StorEdge A3500 is a controller and chassis.
2. The StorEdge A3500 is also the name of a rack mounted StorEdge A3500 controller and chassis with StorEdge D1000 disk trays.
3. A StorEdge A3000 nameplate is on the StorEdge A3500 chassis in a StorEdge A3500 cabinet with StorEdge D1000 disk trays if the unit was built before December 1999. Units built after December 1999 have a A3500 nameplate on the A3500 chassis.
4. Use Array Controller 540-3083 with the StorEdge A3500.

Memory Notes

1. The Main Processor Unit (MPU) SIMMs serve as processor memory.
2. The RAID Parity Assist (RPA) SIMMs serve as cache memory.
3. Use 8MB SIMM 370-2438 and 32MB SIMM 370-2439.
4. The 370-2438 and 370-2439 are not labeled with a Sun Part Number.
5. Memory failures are reported as a pair of two SIMMs.
6. Install 32MB SIMMs in SIMM-2 and SIMM-4 for RPA Low Bank.
7. Install 32MB SIMMs in SIMM-1 and SIMM-3 for RPA High Bank.
8. Install 8MB SIMMs in SIMM-5 and SIMM-6 for MPU DRAM.

References

1. *A1000/D1000 Installation, Operation, and Service*, 805-2624.
2. *A3000 Controller Module Replacement Guide*, 805-4980.
3. *RAID Manager Controller Replacement Guide*, 805-7854.

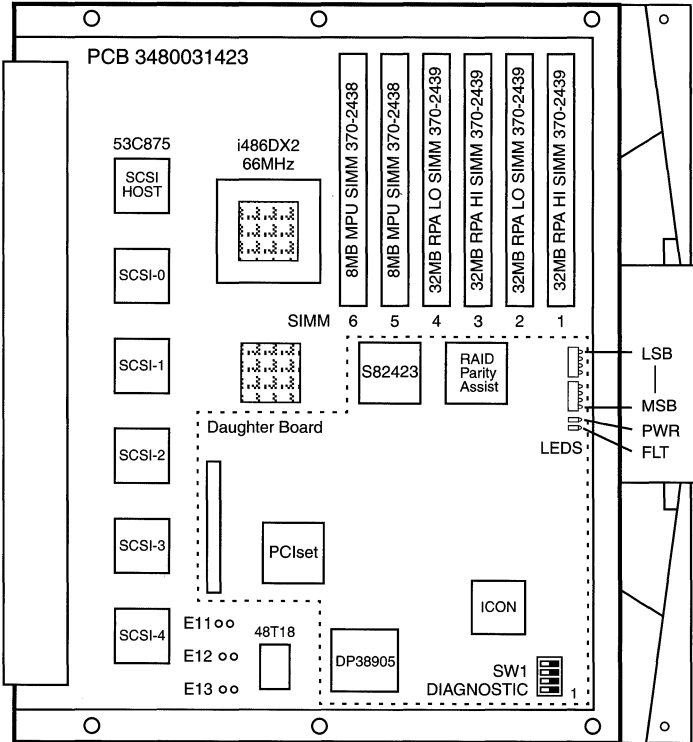
Array Controller StorEdge A3500FC Option 6538

370-3930
w/o Memory
Used in 540-4026
Option 6538

540-4026
w 16MB MPU
w 64MB RPA
D1000 FRU

370-3931
w/o Memory
Used in 540-4027
No Option Number

540-4027
w 16MB MPU
w 64MB RPA
SSA 214/219 FRU



Alternating Pattern LED Codes

On = ● Off = ○

● ○ ○ ○ ○ ○ ○ ○
 ○ ● ● ○ ● ● ● ○
 ● ● ● ● ● ● ● ●
 ● ● ● ○ ○ ● ○ ○
 ○ ○ ● ● ○ ● ● ○
 ○ ○ ● ● ○ ● ● ●

○ ○ ○ ○ ○ ○ ○ ○
 ● ● ● ○ ● ● ● ○
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 ● ● ● ○ ● ○ ● ○
 ○ ○ ○ ○ ○ ○ ○ ○
 ○ ○ ○ ○ ○ ○ ○ ○

- Active - No fault
- Passive - No fault
- Controller held in reset
- Controller in wrong slot
- MPU SIMM fault
- RPA SIMM fault

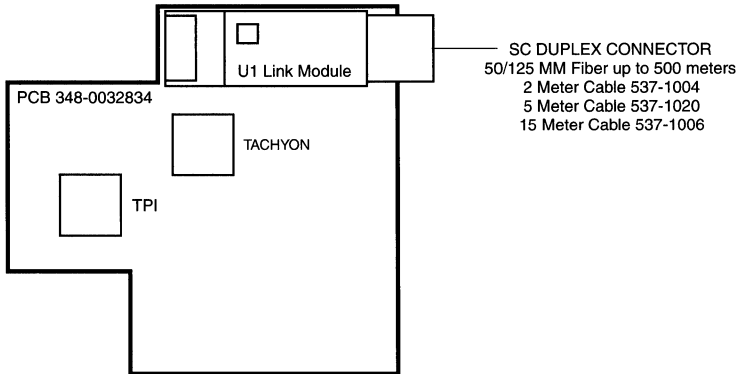
370-3930

540-4026

370-3931

540-4027

Daughter Board No Sun Part Number



Notes

1. The minimum operating system is Solaris 2.6.
2. The M48T18 NVRAM uses an M4T28 SNAPHAT battery.

SSA 214/219 RSM Notes

1. Use Controller 540-4027 with the SSA 214/219 RSM disk tray.
2. Controller 540-4027 is not available in a chassis option.
3. Controller 540-4027 is available as Upgrade UG-A3K-A3500FC.

StorEdge D1000 Notes

1. Use Controller 540-4026 with the StorEdge D1000 disk tray.
2. Controller 540-4026 is available in Chassis Option 6538.
3. Controller 540-4026 is available in Upgrade UG-A3500-A3500FC.

Memory Notes

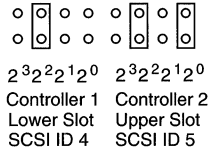
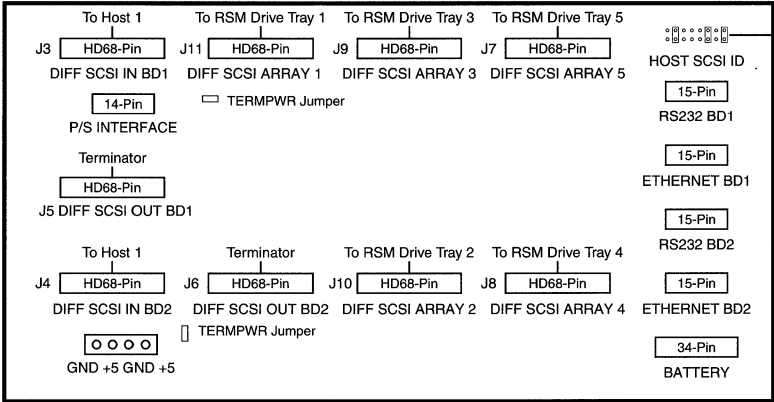
1. The Main Processor Unit (MPU) SIMMs serve as processor memory.
2. The RAID Parity Assist (RPA) SIMMs serve as cache memory.
3. Use 8MB SIMM 370-2438 and 32MB SIMM 370-2439.
4. The 370-2438 and 370-2439 are not labeled with a Sun Part Number.
5. Memory failures are reported as a pair of two SIMMs.
6. Install 32MB SIMMs in SIMM-2 and SIMM-4 for RPA Low Bank.
7. Install 32MB SIMMs in SIMM-1 and SIMM-3 for RPA High Bank.
8. Install 8MB SIMMs in SIMM-5 and SIMM-6 for MPU DRAM.

References

Chassis Backpanel

RSM Array 2000 StorEdge A3000
 StorEdge A3500 StorEdge A3500FC
 370-2431

Chassis Backpanel



Notes

1. Set Controller 1 to Host-Side SCSI ID 4.
2. Install Controller 1 in the lower slot of the chassis.
3. Set Controller 2 to Host-Side SCSI ID 5.
4. Install Controller 2 in the upper slot of the chassis.

RSM Array 2000 Notes

1. The Phase I minimum operating system is Solaris 2.4.
2. The Phase II minimum operating system is Solaris 2.5.1.

SSA 214/219 RSM Drive Tray Notes

1. Count Drive Trays from the bottom (Tray 1) to the top (Tray 5) of the Expansion Cabinet.
2. Set the Drive Tray to hi-order addressing (8 - f) by installing a jumper at location ID3 on the WD2S card.

References

1. RSM Array 2000 System Manual, 802-7603.
2. RSM Array 2000 Controller Module Installation Guide, 802-7602.

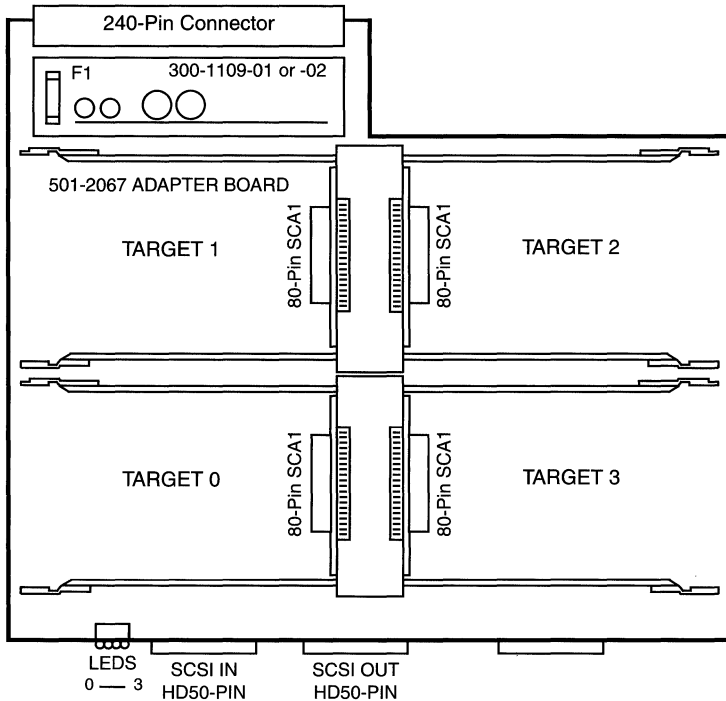
2.1-Gbyte Disk Card

SS1000 disktower 1000

Option 597

501-2066
w/o Disks

501-2244
4 535MB Disks
Disk FRU 540-2403



Notes

1. The minimum operating system is Solaris 2.2.
2. Drive Address selection is preset to Target 0, 1, 2, and 3.
3. An FSBE/S card is required if only one system board is installed.
4. Do NOT daisy chain System Board 0 to the SCSI Expansion Board, if disk drives are installed on the SS1000 internal SCSI Bus.
5. Do NOT daisy chain SCSI Expansion Boards.
6. The 42W DC-DC Converter 300-1109 is not field replaceable.
7. Use Single-Ended SCSI Terminator 150-1785.

Reference: *2.1-Gbyte Disk Card Installation Manual*, 801-2196-11.

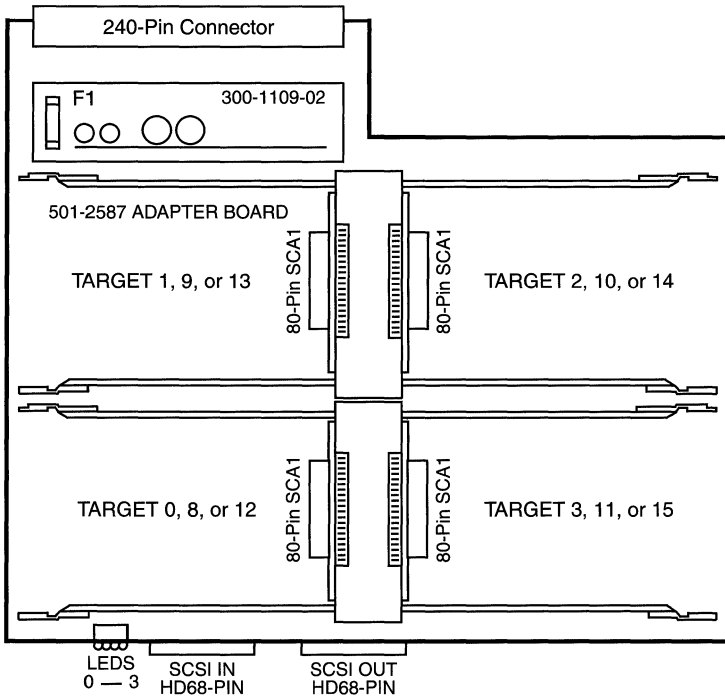
4.2-Gbyte Disk Card

SS1000 disktower 1000

Options 772 773

501-2588
w/o Disks

501-2589
4 1.05GB Disks
Disk FRU 540-2568



Notes

1. The minimum operating system is Solaris 2.2.
2. Backplane Slot 0 sets drive addresses to Targets 0, 1, 2, and 3.
3. Backplane Slot 1 sets drive addresses to Targets 8, 9, 10, and 11.
4. Backplane Slot 2 sets drive addresses to Targets 0, 1, 2, and 3.
5. Backplane Slot 3 sets drive addresses to Targets 12, 13, 14, and 15.
6. An SWIS/S card is required if only one system board is installed.
7. The 42W DC-DC Converter 300-1109 is not field replaceable.
8. Use Single-Ended Wide-SCSI Terminator 150-2267.

Reference: *Disk Card Installation Manual*, 801-7671-10.

8.4-Gbyte Disk Card

SS1000 disktower 1000

Option 775

501-2588

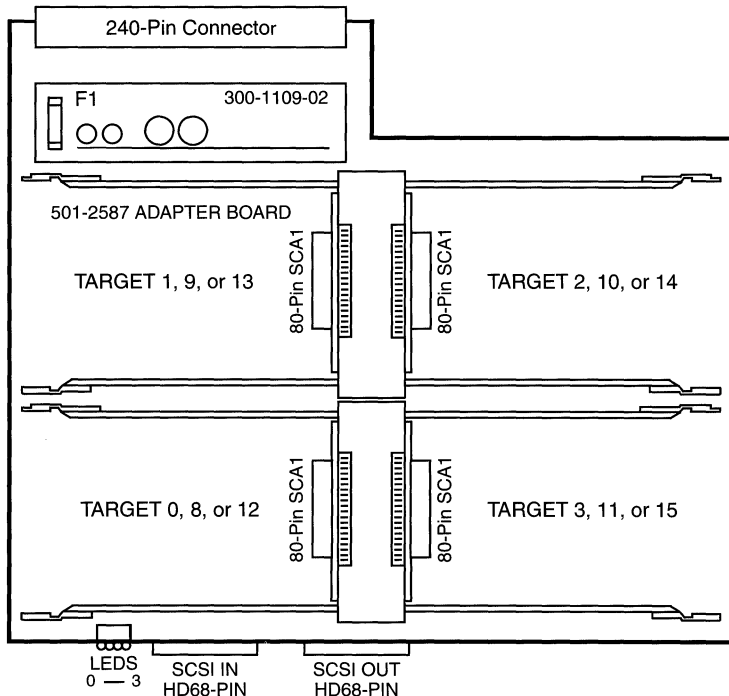
w/o Disks

501-2980

4 2.1GB Disks

7200 RPM

Disk FRU 540-2706



Notes

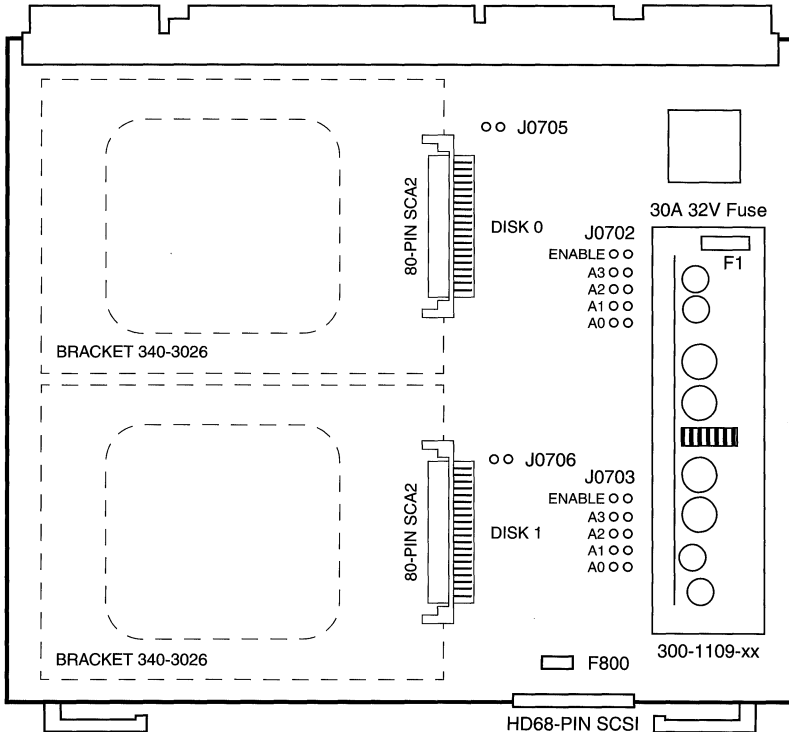
1. Backplane Slot 0 sets drive addresses to Targets 0, 1, 2, and 3.
2. Backplane Slot 1 sets drive addresses to Targets 8, 9, 10, and 11.
3. Backplane Slot 2 sets drive addresses to Targets 0, 1, 2, and 3.
4. Backplane Slot 3 sets drive addresses to Targets 12, 13, 14, and 15.
5. An SWIS/S card is required if only one system board is installed.
6. The 42W DC-DC Converter 300-1109 is not field replaceable.
7. Use Single-Ended Wide-SCSI Terminator 150-2267.

Reference: *Disk Card Installation Manual*, 802-3533-10.

Disk Board

E4000 E5000 E6000 E4500 E5500 E6500
Options 5161 5162 5163 5164

| | | | |
|--|---|---|---|
| 501-4168 2 2.1GB Disks 7200 RPM 0GB FRU 501-3113 Disk FRU 540-2730 Disk FRU 540-2936 | 501-5137 2 4.2GB Disks 7200 RPM 0GB FRU 501-3113 Disk FRU 540-2938 | 501-5584 2 9.1GB Disks 7200 RPM 0GB FRU 501-3113 Disk FRU 540-3704 | 501-5761 2 18.2GB Disks 10000 RPM 0GB FRU 501-3113 Disk FRU 540-4177 |
|--|---|---|---|



E4000/E5000/E4500/E5500 Notes

1. Up to four Disk Boards are supported.
2. Install the Disk Board in any slot.
3. The 4.2GB Disk Drive requires Disk Board ≥501-3113-03.
4. Disk Drives may fail to power up on Disk Board ≤501-3113-02.

E6000 and E6500 Notes

1. Up to two Disk Boards are supported.
2. Install the Disk Board in Slot 14 and Slot 15 only.
3. The 4.2GB Disk Drive requires Disk Board ≥501-3113-03.
4. Disk Drives may fail to power up on Disk Board ≤501-3113-02.
5. Install the Disk Board in Slot 15 if only one board is installed.

501-4168

501-5137

501-5584

501-5761

Default Drive Address Settings

The default drive address settings are assigned by the centerplane when a jumper is not installed on J0702 and J0703 Pins 1-2.

| SLOT | DISK 0 ADDRESS | DISK 1 ADDRESS | SLOT | DISK 0 ADDRESS | DISK 1 ADDRESS |
|------|----------------|----------------|------|----------------|----------------|
| 0 | 4 | 5 | 8 | 10 | 11 |
| 1 | 6 | 7 | 9 | 0 | 1 |
| 2 | 0 | 1 | 10 | 12 | 13 |
| 3 | 10 | 11 | 11 | 2 | 3 |
| 4 | 2 | 3 | 12 | 14 | 15 |
| 5 | 12 | 13 | 13 | 8 | 9 |
| 6 | 8 | 9 | 14 | 0 | 1 |
| 7 | 14 | 15 | 15 | 10 | 11 |

Jumper Settings

Jumpers J0702 and J0703 override the default drive address settings assigned by the centerplane.

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|-------|-------------|----------------------------------|
| J0702 | 1-2 | Out | Disk 0 default address selection |
| J0702 | 1-2 | In | Disk 0 manual address selection |
| J0702 | A0-A3 | As required | Disk 0 address select |
| J0703 | 1-2 | Out | Disk 1 default address selection |
| J0703 | 1-2 | In | Disk 1 manual address selection |
| J0703 | A0-A3 | As required | Disk 1 address select |
| J0705 | 1-2 | As required | Disk 0 delay spin |
| J0706 | 1-2 | As required | Disk 1 delay spin |

Notes

1. Disk Board FRU 501-5113 does not include disk drives.
2. 10000 RPM disk drives require Disk Board ≥501-5113-05.
3. The normal LED pattern is On-Off-On prior to Solaris 2.6 HW 5/98.
4. The normal LED pattern is Off-On-Off in Solaris ≥2.6 HW 5/98.

References

1. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845-11.
2. *Enterprise 4500/5500/6500 System Reference Manual*, 805-2632-10.

Raid Controller

StorEdge A1000

375-0007
 8MB MPU Memory
 16MB RPA Memory
 w Battery

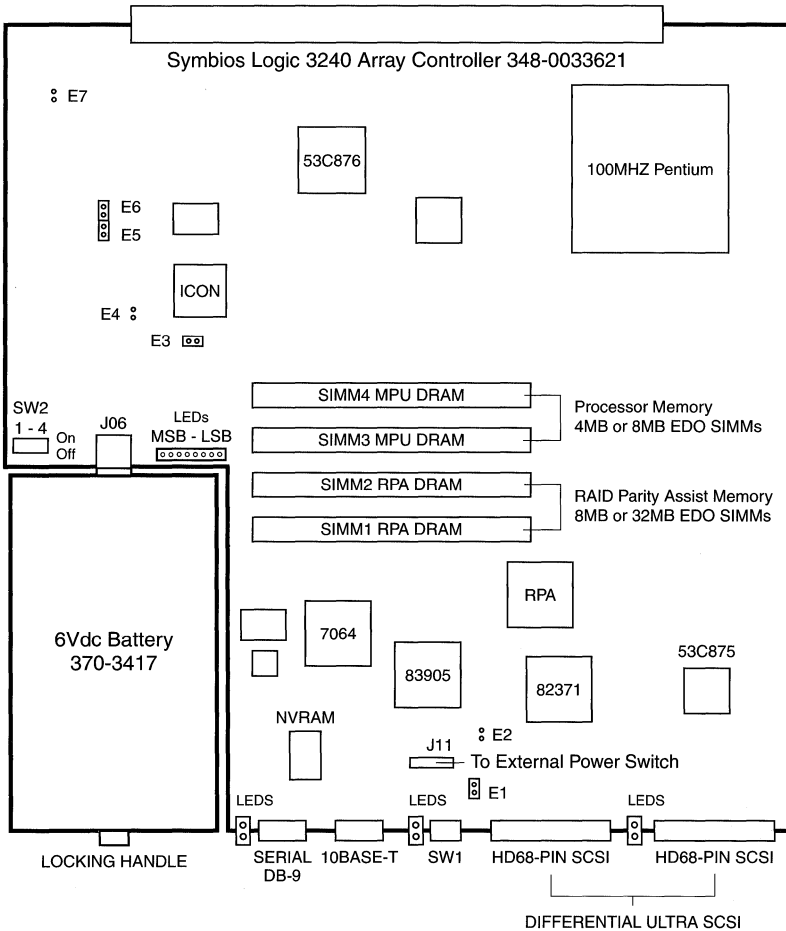
375-0015
 16MB MPU Memory
 64MB RPA Memory
 FRU w/o Battery

375-0016
 8MB MPU Memory
 16MB RPA Memory
 FRU w/o Battery

375-0134
 8MB MPU Memory
 16MB RPA Memory
 w Battery

375-0135
 8MB MPU Memory
 16MB RPA Memory
 FRU w/o Battery

375-0136
 16MB MPU Memory
 64MB RPA Memory
 FRU w/o Battery



375-0007 375-0015 375-0016
 375-0134 375-0135 375-0136

Switch and Jumper Settings

| LOCATION | PINS | SETTING | DESCRIPTION |
|----------|------|-------------|-------------|
| E1 | 1-2 | In | Unknown |
| E2 | 1-2 | Out | Unknown |
| E3 | 1-2 | In | Unknown |
| E4 | 1-2 | Out | Unknown |
| E5 | 1-2 | In | Unknown |
| E6 | 1-2 | In | Unknown |
| E7 | 1-2 | Out | Unknown |
| SW1 | 0-f | As required | SCSI ID |
| SW2 | 1-4 | Off | Diag |

Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 8/97.
2. The M48T59 NVRAM uses an M4T28 SNAPHAT battery.

Memory Notes

1. The RAID Controller uses Extended Data Out SIMMs.
2. The 32MB RPA SIMM is Sun Part Number 370-2439-01.
3. The 4MB MPU SIMM has no Sun part number.
4. The 8MB MPU or RPA SIMM has no Sun part number.
5. Install 8MB or 32MB RPA SIMMs in slots SIMM-1 and SIMM-2.
6. Install 4MB or 8MB MPU SIMMs in slots SIMM-3 and SIMM-4.

Firmware Notes

1. Firmware on 375-0007, 375-0015, and 375-0016 is compatible with RAID Manager 6.0, 6.1, and 6.1.1. This controller firmware is not compatible with RAID Manager 6.22.
2. Firmware on 375-0134, 375-0135, and 375-0136 is compatible with RAID Manager 6.22. This controller firmware is not compatible with RAID Manager 6.0, 6.1, and 6.1.1.

Reference

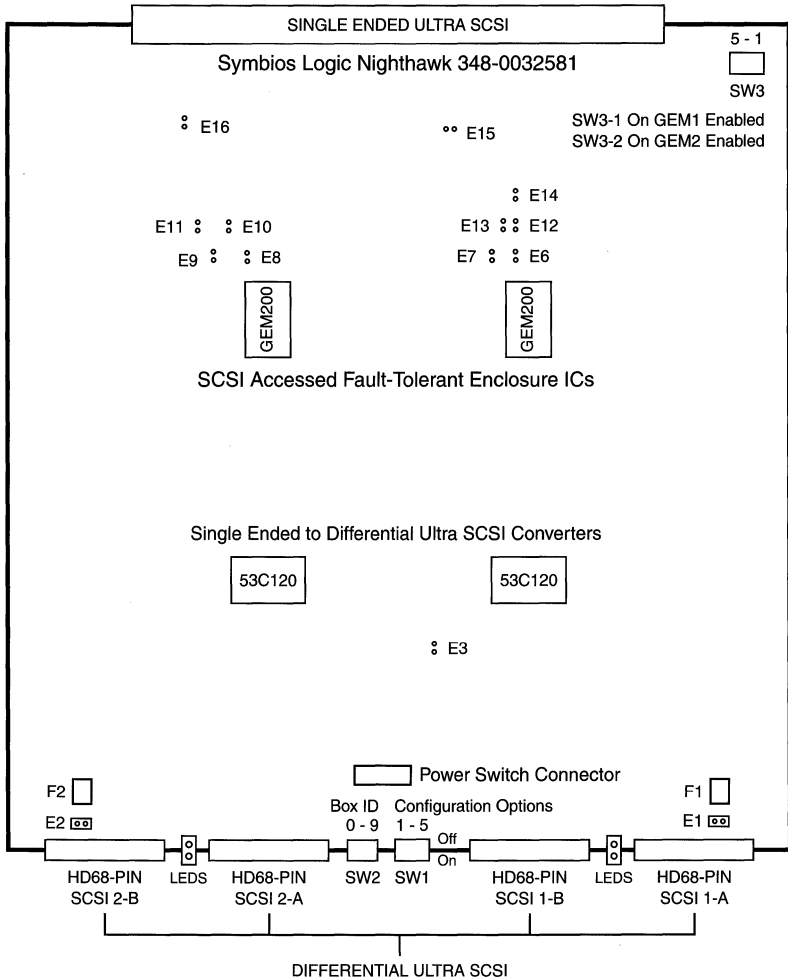
A1000 Installation, Operation, and Service Manual, 805-2624-10.

Differential SCSI Controller

StorEdge D1000

375-0008

Symbios Nighthawk



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 8/97.
2. There are no pins at E3, E6, E7, E8, E9, E10, E11, E12, E13, or E14.

375-0008
SW1 Switch Settings

| SWITCH | DIP | SETTING | DESCRIPTION |
|--------|-----|---------|---|
| SW1 | 1 | Up * | Array 1 drive addresses 8-11 (default) |
| SW1 | 1 | Down | Array 1 drive addresses 0-3 |
| SW1 | 2 | Up | Array 2 drive addresses 8-11 |
| SW1 | 2 | Down | Array 2 drive addresses 0-3 (default) |
| SW1 | 3 | Up | Wait for start unit command |
| SW1 | 3 | Down | Use SW1-4 setting (default) |
| SW1 | 4 | Up | Delayed start 12 sec x drive id (default) |
| SW1 | 4 | Down | Start at power-on |
| SW1 | 5 | Up/Down | Reserved for future use |

* Up = On, Down = Off

SW2 Rotary Switch Settings

Rotary Switch SW2 sets the Module ID of the StorEdge D1000.

StorEdge A3500
1x5 ID Settings
72" Exp Cabinet

| |
|-----------|
| |
| |
| |
| A3000 |
| D1000 ID5 |
| D1000 ID4 |
| D1000 ID3 |
| D1000 ID2 |
| D1000 ID1 |

StorEdge A3500
2x7 ID Settings
72" Exp Cabinet

| |
|-----------|
| D1000 ID5 |
| D1000 ID4 |
| D1000 ID5 |
| D1000 ID4 |
| D1000 ID3 |
| A3000 B |
| A3000 A |
| D1000 ID2 |
| D1000 ID1 |

StorEdge A3500 3x15 Configuration
2x7 ID Settings
72" Exp Cabinet

| |
|-----------|
| D1000 ID5 |
| D1000 ID4 |
| D1000 ID3 |
| D1000 ID2 |
| D1000 ID1 |
| A3000 B |
| A3000 A |
| D1000 ID1 |
| D1000 ID2 |

1x8 ID Settings
72" Exp Cabinet

| |
|-----------|
| D1000 ID5 |
| D1000 ID4 |
| D1000 ID3 |
| D1000 ID2 |
| D1000 ID1 |
| A3000 C |
| D1000 ID5 |
| D1000 ID4 |
| D1000 ID3 |

Notes

1. The board is installed solder side up in the StorEdge D1000.
2. SW1 switch setting Up is toward the solder side of the board.
3. SW1 switch setting Down is toward the component side of the board.

References

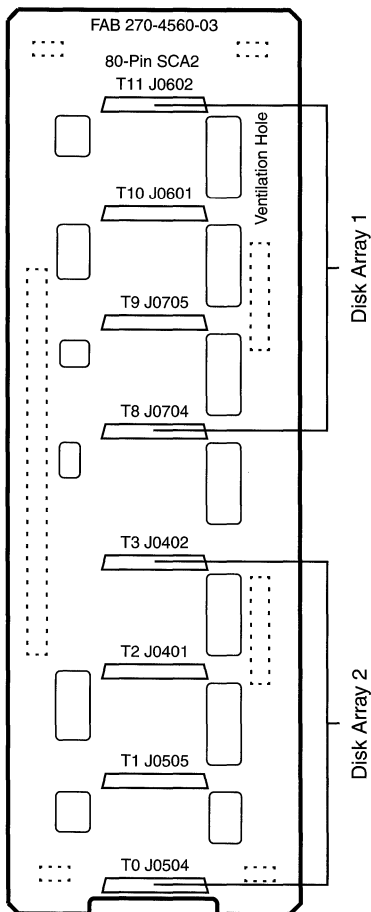
1. *A1000 and D1000 Installation, Operation, and Service*, 805-2624-10.
2. *A3500 Hardware39 Configuration Guide*, 805-4981-10.

8-Slot SCSI Disk Backplane

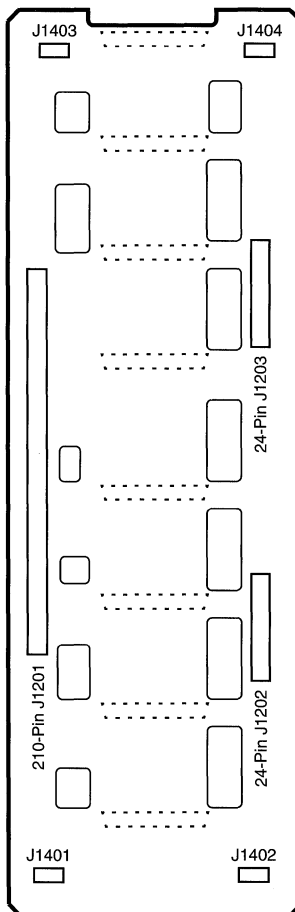
StorEdge A1000 StorEdge D1000

501-4560

Front View



Rear View



StorEdge D1000 Controller Address Settings

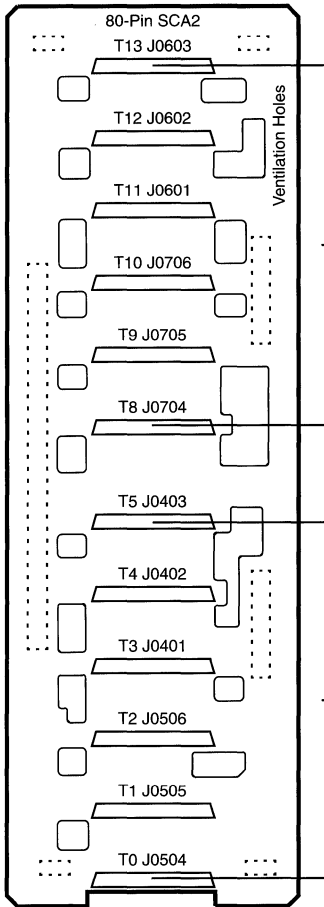
| SWITCH | DIP | SETTING | DESCRIPTION |
|--------|-----|---------|--|
| SW1 | 1 | Up | Array 1 drive addresses 8-11 (default) |
| SW1 | 1 | Down | Array 1 drive addresses 0-3 |
| SW1 | 2 | Up | Array 2 drive addresses 8-11 |
| SW1 | 2 | Down | Array 2 drive addresses 0-3 (default) |

12-Slot SCSI Disk Backplane

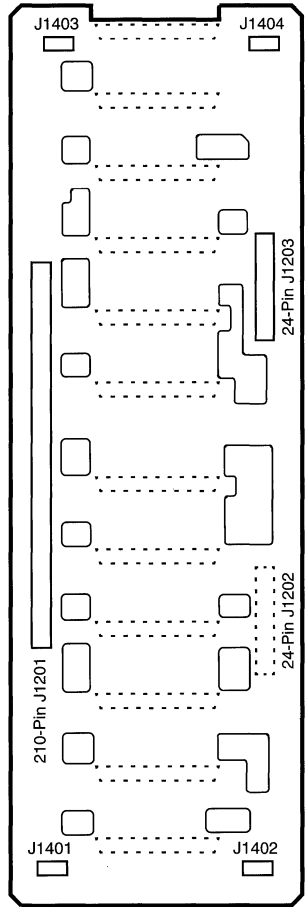
StorEdge A1000 StorEdge D1000

501-4440

Front View



Rear View



StorEdge D1000 Controller Address Settings

| SWITCH | DIP | SETTING | DESCRIPTION |
|--------|-----|---------|--|
| SW1 | 1 | Up | Array 1 drive addresses 8-13 (default) |
| SW1 | 1 | Down | Array 1 drive addresses 0-5 |
| SW1 | 2 | Up | Array 2 drive addresses 8-13 |
| SW1 | 2 | Down | Array 2 drive addresses 0-5 (default) |

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CONFIGURATIONS

DISK

Disk

Single Ended Standard Connector SCSI Disk Drives

| | | |
|--------------------|-------------|----|
| Quantum 105S | 104MB | 5 |
| Quantum 210S | 207MB | 6 |
| Maxtor LXT-213SY | 207MB | 7 |
| Conner CP30200 | 207MB | 8 |
| CDC 94171-327/344 | 327MB | 9 |
| Seagate ST1480N | 424MB | 10 |
| Micropolis 1588-15 | 669MB | 11 |
| Maxtor XT-8760S | 669MB | 12 |
| Seagate ST41600N | 1.3GB | 14 |

Single Ended Standard Connector Fast SCSI Disk Drives

| | | |
|--------------------|--------------|----|
| Seagate ST3610N | 535MB | 15 |
| Conner CP30540 | 535MB | 16 |
| Seagate ST5660N | 535MB | 18 |
| Seagate ST11200N | 1.05GB | 19 |
| Seagate ST31200N | 1.05GB | 20 |
| Conner CFP1080S | 1.05GB | 21 |
| Seagate ST12400N | 2.1GB | 22 |
| Conner CFP2105S | 2.1GB | 23 |
| Seagate ST32430N | 2.1GB | 24 |
| Seagate ST32550N | 2.1GB | 25 |
| IBM DFHS-32160-S2F | 2.1GB | 26 |
| Seagate ST15230N | 4.2GB | 27 |

Single Ended Single Connector Fast SCSI Disk Drives

| | | |
|-------------------------|--------------|----|
| Mounting Hardware | | 28 |
| Seagate ST3500NC | 535MB | 30 |
| Conner CP30548 | 535MB | 31 |
| Seagate ST5660NC | 535MB | 32 |
| Seagate ST31200WC | 1.05GB | 33 |
| Conner CFP1060E | 1.05GB | 34 |
| Conner CFP1080E | 1.05GB | 35 |
| IBM DPES-31080-S1S | 1.05GB | 36 |
| Quantum 1080S | 1.05GB | 37 |

Disk - Continued

Single Ended Single Connector Fast SCSI Disk Drives

| | | |
|--------------------|-------------|----|
| Conner CFP2105E | 2.1GB | 38 |
| Seagate ST32430WC | 2.1GB | 39 |
| Seagate ST32550WC | 2.1GB | 40 |
| IBM DFHS-32160-S2S | 2.1GB | 41 |
| Seagate ST15230WC | 4.2GB | 42 |

Single Ended Single Connector Ultra SCSI Disk Drives

| | | |
|--------------------|--------------|----|
| Seagate ST32155WC | 2.1GB | 44 |
| IBM DORS-32160 | 2.1GB | 45 |
| IBM DCAS-32160 | 2.1GB | 46 |
| Fujitsu M2952 | 2.1GB | 47 |
| Seagate ST32171WC | 2.1GB | 48 |
| Quantum VK22J05 | 2.1GB | 49 |
| Fujitsu M2954 | 4.2GB | 50 |
| Seagate ST34371WC | 4.2GB | 51 |
| Quantum VK45J05 | 4.2GB | 52 |
| Fujitsu MAB3045SC | 4.2GB | 53 |
| IBM DDRS-34560 | 4.2GB | 54 |
| Seagate ST34501WC | 4.2GB | 55 |
| Seagate ST34502LC | 4.2GB | 56 |
| Fujitsu M2949 | 9.1GB | 57 |
| Seagate ST19171WC | 9.1GB | 58 |
| Fujitsu MAB3091SC | 9.1GB | 59 |
| IBM DDRS-39130 | 9.1GB | 60 |
| Seagate ST39173WC | 9.1GB | 61 |
| Fujitsu MAE3091LC | 9.1GB | 62 |
| IBM DNES-309170 | 9.1GB | 63 |
| Seagate ST39102LC | 9.1GB | 64 |
| Fujitsu MAG3091LC | 9.1GB | 65 |
| Seagate ST39103LC | 9.1GB | 66 |
| Seagate ST39204LC | 9.1GB | 67 |
| Fujitsu MAA3182SC | 18.2GB | 68 |
| Seagate ST118273LC | 18.2GB | 69 |

Disk - Continued

Single Ended Single Connector Ultra SCSI Disk Drives

| | | |
|--------------------|--------------|----|
| IBM DGHS-18Y | 18.2GB | 70 |
| Fujitsu MAG3182LC | 18.2GB | 71 |
| Seagate ST318203LC | 18.2GB | 72 |
| Seagate ST318404LC | 18.2GB | 73 |
| Fujitsu MAJ3182M | 18.2GB | 74 |
| Fujitsu MAF3364LC | 36.4GB | 75 |
| Seagate ST136403LC | 36.4GB | 76 |
| Fujitsu MAJ3364M | 36.4GB | 77 |
| Seagate ST336704LC | 36.4GB | 78 |

Differential SCSI Disk Drives

| | | |
|--------------------|-------------|----|
| Seagate ST42400ND | 2.1GB | 79 |
| Seagate ST43401ND | 2.9GB | 80 |
| Seagate ST43402ND | 2.9GB | 82 |
| Seagate ST410800WD | 9.0GB | 83 |

ATA/IDE/EIDE Disk Drive

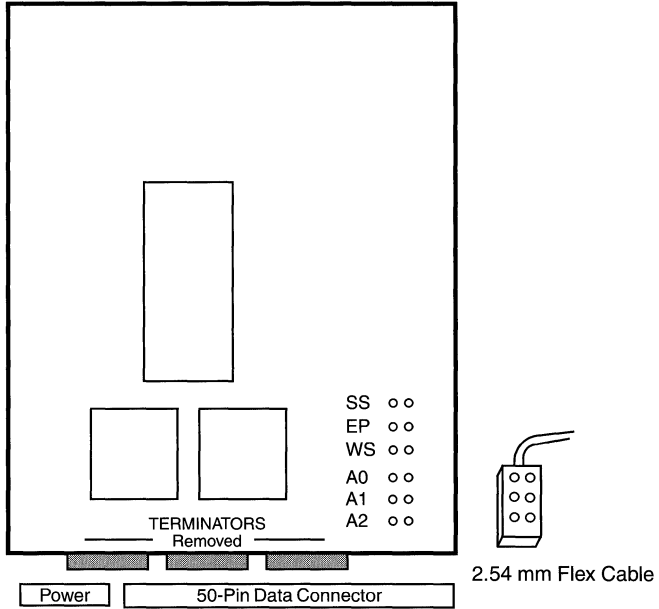
| | | |
|-------------------|--------------|----|
| Seagate ST34342A | 4.3GB | 85 |
| Seagate ST34321A | 4.3GB | 86 |
| Seagate ST34312A | 4.3GB | 87 |
| Seagate ST38420A | 8.4GB | 88 |
| Seagate ST38410A | 8.4GB | 89 |
| Seagate ST39140A | 9.1GB | 90 |
| IBM DJNA-370910 | 9.1GB | 91 |
| Seagate ST39120A | 9.1GB | 92 |
| Seagate ST39111A | 9.1GB | 93 |
| Seagate ST315320A | 15.3GB | 94 |

Disk - Continued

FC-AL Disk Drives

| | | |
|--------------------|--------------|-----|
| Seagate ST19171FC | 9.1GB | 95 |
| Seagate ST39102FC | 9.1GB | 97 |
| Seagate ST39103FC | 9.1GB | 98 |
| Seagate ST118273FC | 18.2GB | 99 |
| Seagate ST118202FC | 18.2GB | 100 |
| Seagate ST318203FC | 18.2GB | 101 |
| Seagate ST318304FC | 18.2GB | 102 |
| Seagate ST136403FC | 36.4GB | 103 |
| Seagate ST336704FC | 36.4GB | 104 |
| Seagate ST173404FC | 73.4GB | 105 |

Quantum 105S 104MB
 3 1/2" 3600 RPM Single Ended SCSI
 Sun-4/60/65
 Option 550
 370-1200
 1 5/8" Height



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into A0 A1 A2.

| JUMPER | SETTING | DESCRIPTION | USAGE |
|----------|---------|--------------|----------|
| SS | Out | Spindle sync | Not used |
| EP | Out | Parity | Not used |
| WS | Out | Wait spin | Not used |
| A0,A1,A2 | Out | Drive ID | Target 0 |
| A0 | In | Drive ID | Target 1 |
| A1 | In | Drive ID | Target 2 |
| A0,A1 | In | Drive ID | Target 3 |

Power: 0.7 Amps @ +5Vdc
 0.5 Amps @ +12Vdc
 9.5 Watts

Reference: *Sun-3/80 Internal Disk Drive Installation Manual*, 813-1064.

Quantum 210S 207MB

3 1/2" 3600 RPM Single Ended SCSI

Sun-4/40/50/75 SS10

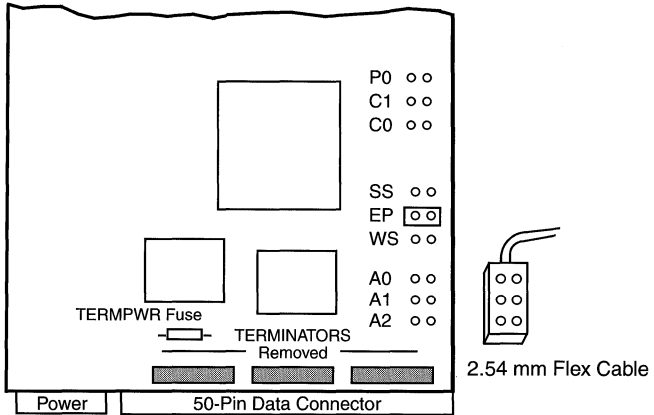
Options 552 553

370-1327

370-1376

1 5/8" Height

1 5/8" Height



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into A0 A1 A2.

| JUMPER | SETTING | DESCRIPTION | USAGE |
|----------|---------|--------------|---------------|
| SS | Out | Spindle sync | Not used |
| EP | In | Parity | Enable parity |
| WS | Out | Wait spin | Not used |
| A0,A1,A2 | Out | Drive ID | Target 0 |
| A0 | In | Drive ID | Target 1 |
| A1 | In | Drive ID | Target 2 |
| A0,A1 | In | Drive ID | Target 3 |

Power: 0.7 Amps @ +5Vdc
 0.7 Amps @ +12Vdc
 11.9 Watts

Notes

1. Remove the TERMPWR fuse when installing the drive in an SS10.
2. The Sun-4/60 or Sun-4/65 chassis does not provide adequate cooling for the 207MB Disk Drive.

References

1. SPARCstation IPC Installation Guide, 800-5037-10.
2. SPARCstation IPC Installation Guide, 800-5565-10.
3. Installing SPARCstation 2 Internal Disk Drives, 800-5661-10.

Maxtor LXT-213SY 207MB

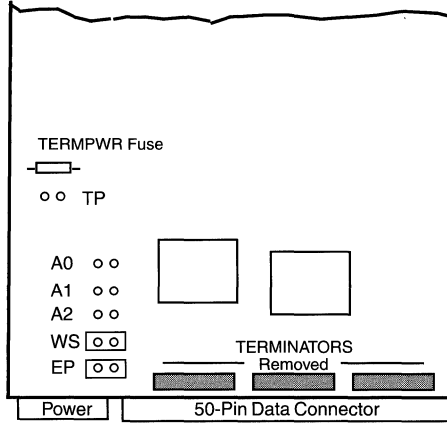
3 1/2" 3600 RPM Single Ended SCSI

Sun-4/40/50/75 SS10

Option 553

370-1327

1 5/8" Height



| JUMPER | SETTING | DESCRIPTION | USAGE |
|----------|---------|-------------|-----------------|
| A0,A1,A2 | Out | Drive ID | Target 0 |
| A0 | In | Drive ID | Target 1 |
| A1 | In | Drive ID | Target 2 |
| A0,A1 | In | Drive ID | Target 3 |
| WS | In | Wait spin | Spin with power |
| EP | In | Parity | Enable parity |
| TP | Out | TERMPWR | Disable TP |

Power: 0.6 Amps @ +5Vdc
 0.6 Amps @ +12Vdc
 10.2 Watts

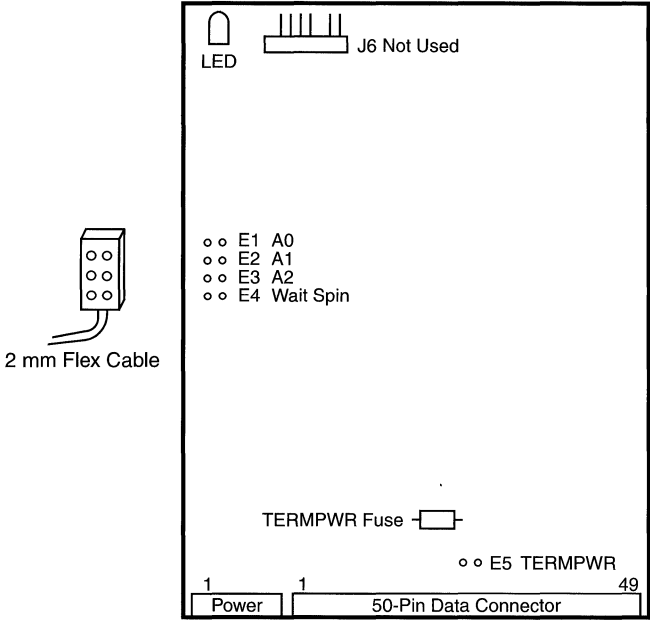
Notes

1. The Sun-4/60/65 chassis does not provide adequate cooling for the 207MB Disk Drive.
2. This drive is not supported inside the Desktop Storage Pack due to the orientation of the address jumpers.
3. The SS10 requires minimum Firmware 4.22, 370-1327-04 Rev 52.

References

1. SPARCstation IPC Installation Guide, 800-5037-10.
2. SPARCstation IPC Installation Guide, 800-5565-10.
3. Installing SPARCstation 2 Internal Disk Drives, 800-5661-10.

Conner CP30200 207MB
 3 1/2" 3600 RPM Single Ended SCSI
 Sun-4/15/30/40/50 SS10
 Option 552
 370-1417
 1" Height



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into E1 E2 E3.

Power: 0.410 Amps @ +5Vdc
 0.215 Amps @ +12Vdc
 4.63 Watts

Notes

1. Use 2 mm shunts on Jumpers E1, E2, E3, E4, and E5.
2. The 370-1417 Disk Drive requires 35W Power Supply 300-1090-02 or 300-1105-xx, Flex Cable 530-1894, and Mounting Bracket 340-1966-04 when installed in the Desktop Storage Pack.
3. The Conner CP30200 is not supported in the Sun-4/75. The drive does not provide adequate loading of the DC power supply.

References

1. *Desktop Storage Pack Service Manual*, 800-4895-10.
2. *Installing Drives in a SPARCstation 2*, 800-6398-10.

CDC 94171-327/344 327MB

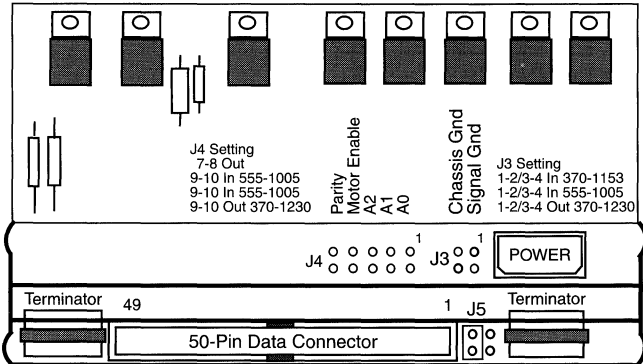
5 1/4" 3600 RPM Single Ended SCSI

Options 526 527 530 539

555-1005
w Bracket
w/o Bezel
77777107

370-1153
w/o Bracket
w/o Bezel
77777107
3 1/4" Height

370-1230
w/o Bracket
w Bezel
77777126
3 1/4" Height



In the External Storage Module, orient the Address Switch Cable as shown and plug it into J4.



2.54 mm Pins

Notes

1. Remove the terminators from the underside of the drive.
2. Terminate the SS630MP SCSI-Out PCB with terminator 120-1608-01.

Format Utility Notes

1. The 94171-327 has fewer cylinders than the 94171-344.
2. Solaris 2.x includes an entry for the 94171-327 in *format.dat*. Remove the comment symbol "#" to use the entry.
3. The SunOS 4.x **format** utility fails if the 94171-327 is used with the standard *format.dat* entry on any system other than a Sun386i.
4. Use the following *format.dat* entry for the 94171-327 on SunOS 4.x.

```
disk_type = "CDC Wren IV 94171-327" \
: ctlr = SCSI : fmt_time = 4 : cache = 0x11: trks_zone = 9 \
: asect = 3 : ncy1 = 1520 : acyl = 2 : pcy1 = 1549 : nhead = 9 \
: nsect = 46 : rpm = 3600 : bpt = 20833
```

References

1. *327MB Embedded SCSI Configuration Procedures*, 814-1015-01.
2. *5 1/4-Inch Disk Drive Installation Manual*, 813-1055-10.
3. *Sun 327 Mbyte SCSI Disk Configuration Manual*, 813-2048-03.

Seagate ST1480N 424MB

3 1/2" 4400 RPM Single Ended SCSI

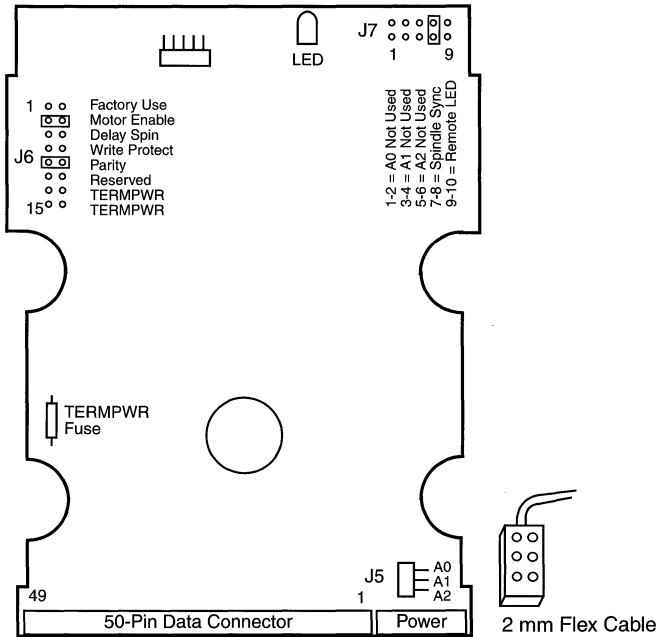
Sun-4/15/30/50/75 SS10

Option 540

370-1392
3 1/4" Height FRU

540-2165
SS10 Assembly

595-2965
X540A Assembly



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into J5.

Power: 0.8 Amps @ +5Vdc
 0.9 Amps @ +12Vdc
 14.8 Watts Operating Maximum

References

1. Desktop Storage Pack Service Manual, 800-4895-10.
2. Installing Drives in a SPARCstation 2, 800-6398-10.

Micropolis 1588-15 669MB

5 1/4" 3600 RPM Single Ended SCSI

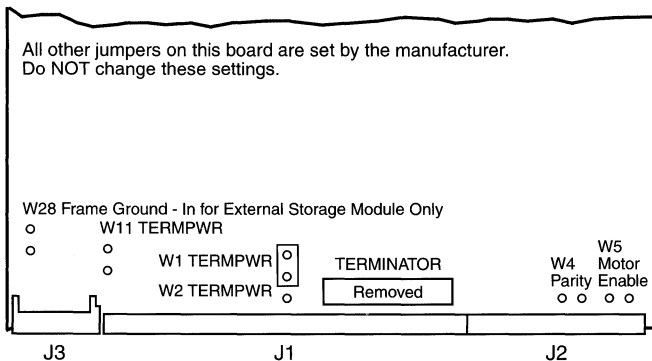
Options 561 563 565 566

370-1319
FS0013-03-5
Black Bezel
Green LED
3 1/4" Height

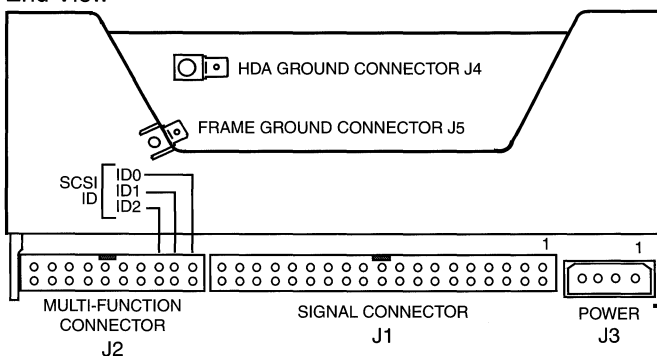
370-1326
FS0019-01-6
w/o Bezel
w/o LED
3 1/4" Height

555-1151
FS0019-01-6
w/o Bezel
w/o LED
w Bracket

Bottom View



End View



In the External Storage Module, orient Pin-1 of the Address Select Switch Cable with ID2 of J2.

References

1. 5-1/4" SCSI Disk Drive Installation and Configuration for Sun Office Pedestals, 813-2048-11.
2. Revised Removal/Replacement Procedures for Sun ESM and EEM Storage Units, 814-3044-01.

Maxtor XT-8760S 669MB

5 1/4" 3600 RPM Single Ended SCSI

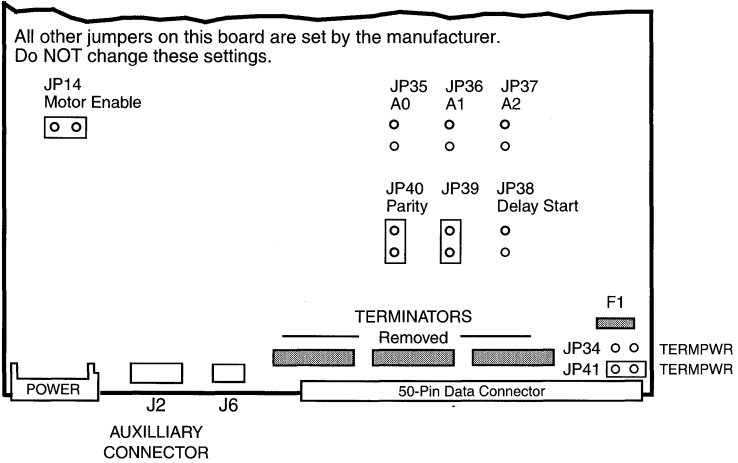
Options 561 563 565 566

370-1319
 1098618-B
 Black Bezel
 Green LED
 3 1/4" Height

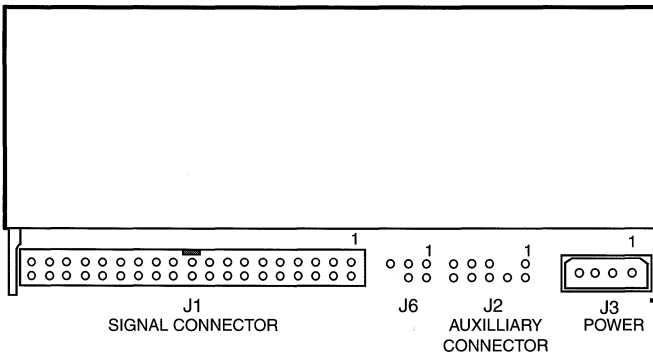
370-1326
 1098778-B
 w/o Bezel
 w/o LED
 3 1/4" Height

555-1151
 FS0019-01-6
 w/o Bezel
 w/o LED
 w Bracket

Bottom View



End View



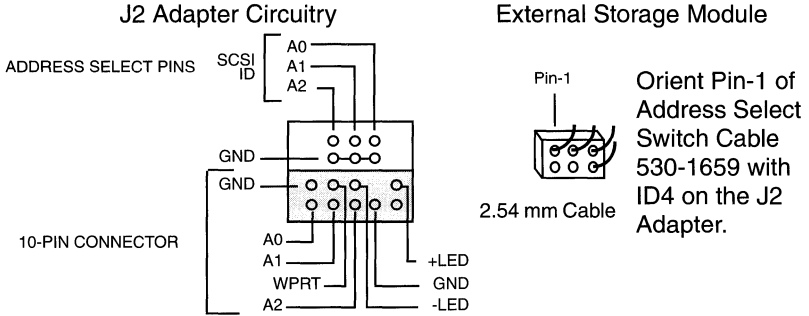
370-1319

370-1326

555-1151

Address Description

The address is set on the J2 Adapter installed in the J2 Auxiliary connector, the Address Select switch on the External Storage Module, or on Jumpers JP35, JP36, and JP37. Set the address at only one location.



Notes

1. Drive address selection cannot be set on Auxiliary Connector J2 unless the adapter is installed.
2. The J2 Adapter must be installed in order for the ID Select Switch on the External Storage Module to function.
3. The Maxtor drive does not fit into the lower drive position of External Storage Modules manufactured prior to October 1990. Remove the vertical stop block with 10-Inch End Cutter 250-1074-01.

References

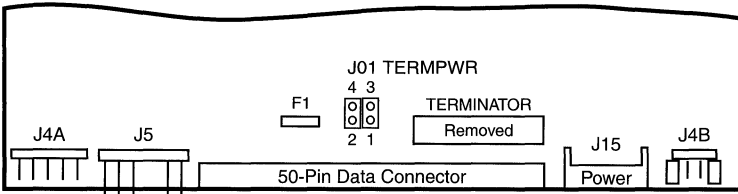
1. *5-1/4" SCSI Disk Drive Installation and Configuration for Sun Office Pedestals*, 813-2048-11.
2. *Revised Removal/Replacement Procedures for Sun ESM and EEM Storage Units*, 814-3044-01.

Seagate ST41600N 1.3GB
 5 1/4" 5400 RPM Single Ended SCSI
 SS630MP SS670MP

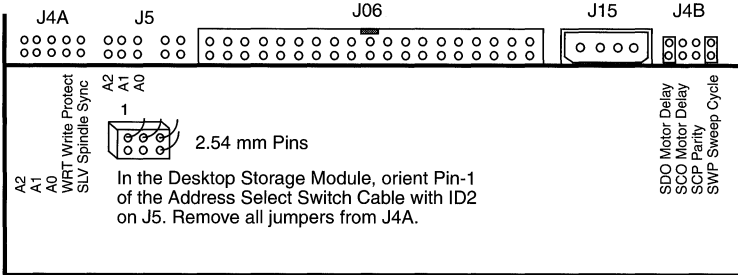
Option 571

370-1377
 3 1/4" Height
 976002-012
 Elite-1

Top View



End View



Notes

1. The minimum operating system is SunOS 4.1.1.
2. SunOS 4.1.1 Sun-4c requires the *1.3GB Disk Drive Enhancement* (esp.o, sd.o, and format.dat).
3. SunOS 4.1.1 Rev B Sun-4c requires the *1.3GB Disk Drive Enhancement* (esp.o and sd.o).
4. SunOS 4.1.1 Sun-4 requires the *1.3GB Disk Drive Enhancement* (format.dat).
5. The 1.3GB Disk Drive is not supported inside Sun 12-Slot Office Pedestals that use SCSI Interface PCBs 501-1493 and 501-1496.
6. The 1.3GB Disk Drive is not supported inside SCSI Peripheral Trays that use SCSI Interface PCB 501-1496.

References

1. *Desktop Storage Module Service Manual*, 800-6219-10.
2. *Desktop Storage Module Service Manual*, 800-7236-10.
3. *Sun SCSI Expansion Pedestal Service Manual*, 800-6402-11.
4. *Sun SCSI Expansion Pedestal Service Manual*, 800-7285-10.
5. *12-Slot Office Pedestal with Single Peripheral Tray*, 800-6497-10.

Seagate ST3610N 535MB

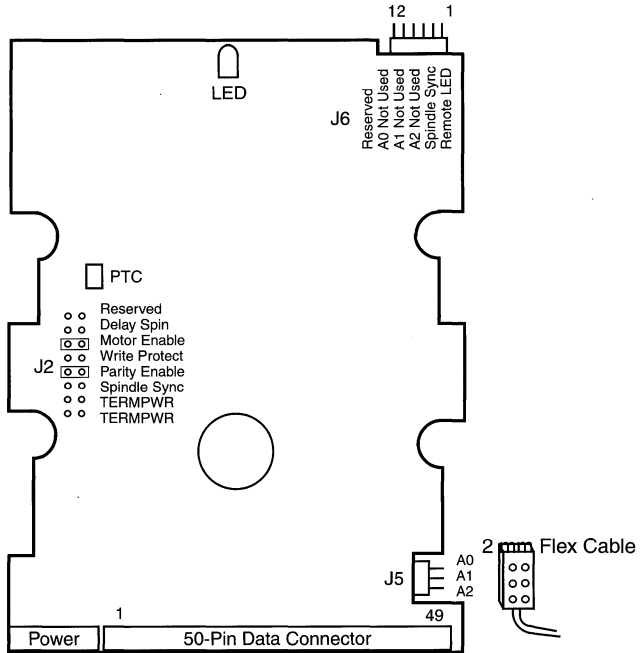
3 1/2" 5400 RPM Single Ended Fast SCSI

SS1000

Options 580 581 582

370-1424

1 5/8" Height
952002-030



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into J5.

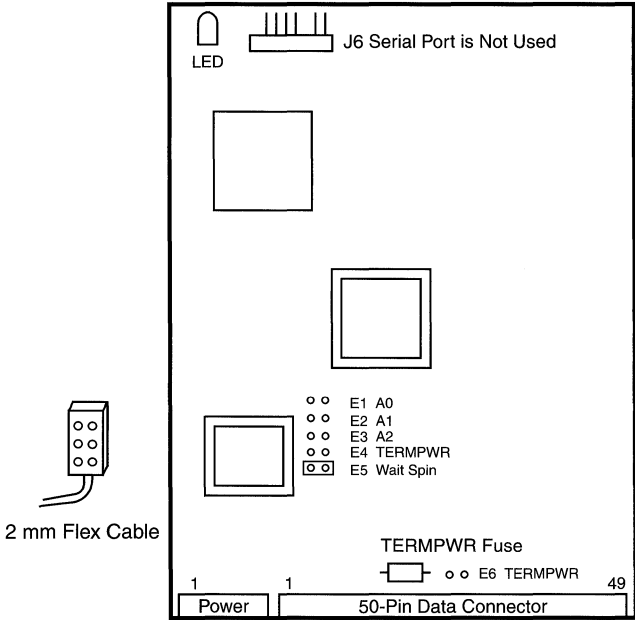
Power: 0.8 Amps @ +5Vdc
1.6 Amps @ +12Vdc
23.2 Watts Peak

Notes

1. The minimum operating system is SunOS 4.1.1 Rev B.
2. The 535MB drive supports Tagged Queuing with Solaris 2.x.
3. The Target ID is the Boolean OR of J5 and J6. Do NOT install shunts in both locations.
4. The Seagate drive is not supported in the 4/15/30/50/75 or SS10.

Reference: *535 Mbyte Disk Drive Installation Manual*, 801-5402-10.

Conner CP30540 535MB
 3 1/2" 5400 RPM Single Ended Fast SCSI
 SS1000
 Options 580 581 582
 370-1424
 1" Height



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into E1.

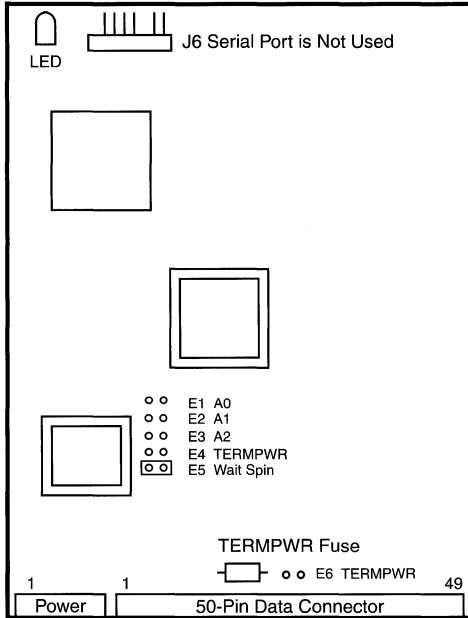
Power: 0.6 Amps @ +5Vdc
 0.3 Amps @ +12Vdc
 6.6 Watts

Notes

1. The minimum operating system is SunOS 4.1.1 Rev B.
2. The 535MB drive supports Tagged Queuing with Solaris 2.x.
3. Use 2 mm shunts on Jumpers E1 through E6.

Reference: *535 Mbyte Disk Drive Installation Manual*, 801-5402-10.

Conner CP30540 535MB
 3 1/2" 5400 RPM Single Ended Fast SCSI
 Sun-4/15/30/50/75 SS10
 Option 581
 370-1684
 1" Height



Power: 0.6 Amps @ +5Vdc
 0.3 Amps @ +12Vdc
 6.6 Watts

Notes

1. The minimum operating system is SunOS 4.1.1 Rev B.
2. The 535MB drive supports Tagged Queuing with Solaris 2.x.
3. Use 2 mm shunts on Jumpers E1 through E6.
4. Part number 370-1684 is only a Conner drive.
5. Part number 370-1424 is either a Seagate or Conner drive.
6. The Seagate drive is not qualified for use in the 4/15/30/50/75.

Reference: *535 Mbyte Disk Drive Installation Manual*, 801-5402-10.

Seagate ST5660N 535MB

3 1/2" 5400 RPM Single Ended Fast SCSI

Sun-4/15/30/50/75 SS10

Options 580 581

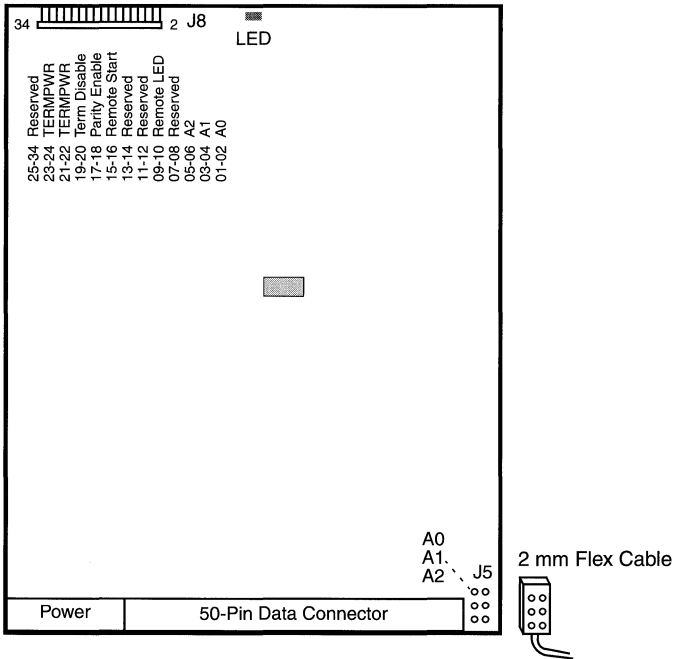
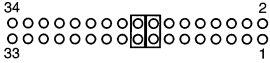
370-1843

3/4" Height

9A2002-030/031/032

Decathlon 545

J8 Exploded View



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into J5.

Notes

1. The minimum operating system is SunOS 4.1.1 Rev B.
2. The 535MB drive supports Tagged Queuing with Solaris 2.x.
3. This drive was not qualified for use in the SS1000.

Reference: *535 Mbyte Disk Drive Installation Manual*, 801-5402-10.

Seagate ST11200N 1.05GB

3 1/2" 5400 RPM Single Ended Fast SCSI

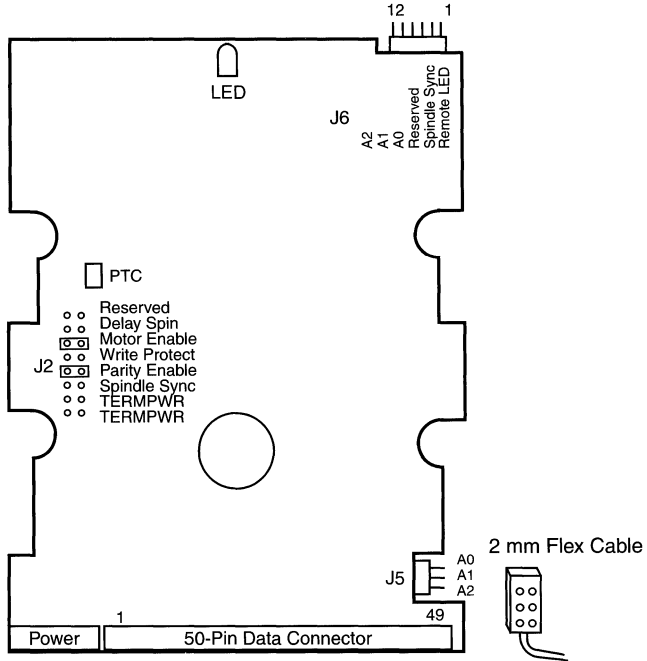
Sun-4/15/30/75 SS10

Options 545 546 547

370-1546
1 5/8" Height
947001-033

540-2420
SS10

595-2996
X546A



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into J5.

Power: 0.8 Amps @ +5Vdc
1.0 Amps @ +12Vdc
11.0 Watts Typical

Notes

1. The minimum operating system is SunOS 4.1.1 Rev B.
2. The 1.05GB drive supports Tagged Queuing with Solaris 2.x.
3. SunOS 4.1.1 Rev B Sun-4c requires the *1.3GB Disk Drive Enhancement* (esp.o and sd.o).
4. The Target ID is the Boolean OR of J5 and J6. Do NOT install in both locations.

Reference: *1.05 Gbyte Disk Drive Installation Manual*, 801-2349-10.

Seagate ST31200N 1.05GB

3 1/2" 5400 RPM Single Ended Fast SCSI

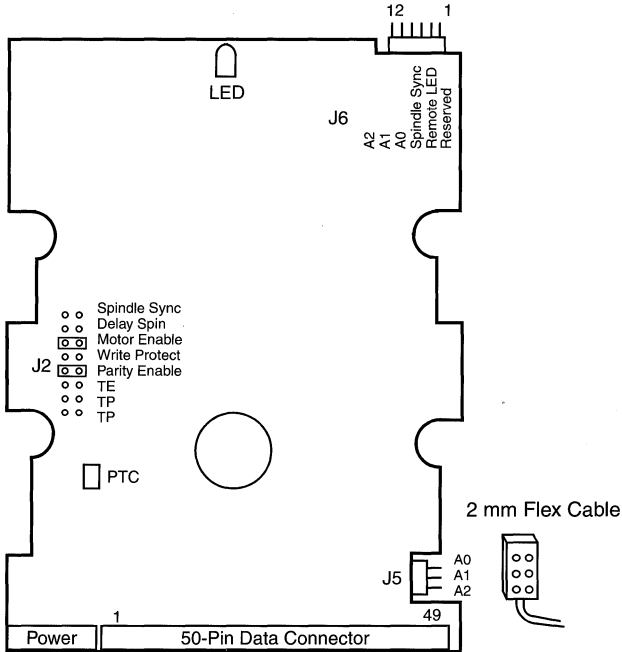
Sun-4/15/30/75 SS10 SS1000

Options 545 546 771 773

370-1710

1" Height

950001-035



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into J5.

Power: 0.73 Amps @ +5Vdc
0.40 Amps @ +12Vdc
8.45 Watts Typical

Notes

1. The minimum operating system is SunOS 4.1.1 Rev B.
2. The 1.05GB drive supports Tagged Queuing with Solaris 2.X.
3. SunOS 4.1.1 Rev B Sun-4c requires the *1.3GB Disk Drive Enhancement* (esp.o and sd.o).
4. The Target ID is the Boolean OR of J5 and J6. Do NOT install shunts in both locations.

Reference: *1.05 Gbyte Disk Drive Installation Manual*, 801-6131-10.

Conner CFP1080S 1.05GB

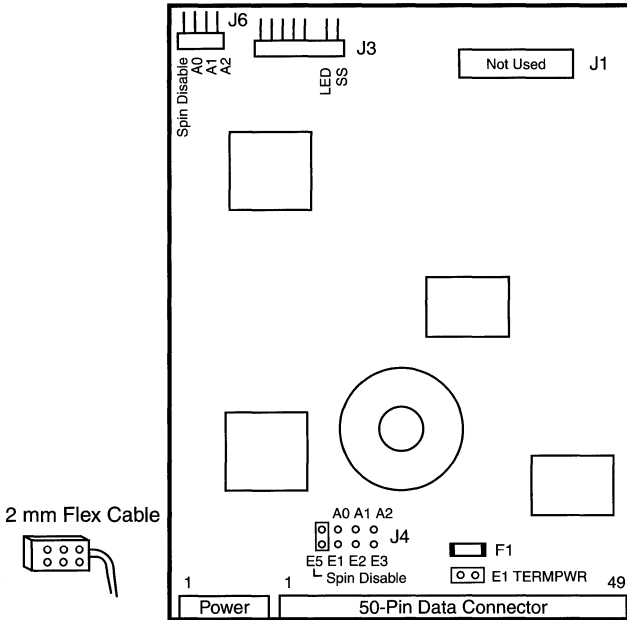
3 1/2" 5400 RPM Single Ended Fast SCSI

Sun-4/15/30/75 SS10 SS1000

Options 545 546 771 773

370-1963

1" Height
Antigua



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into J4.

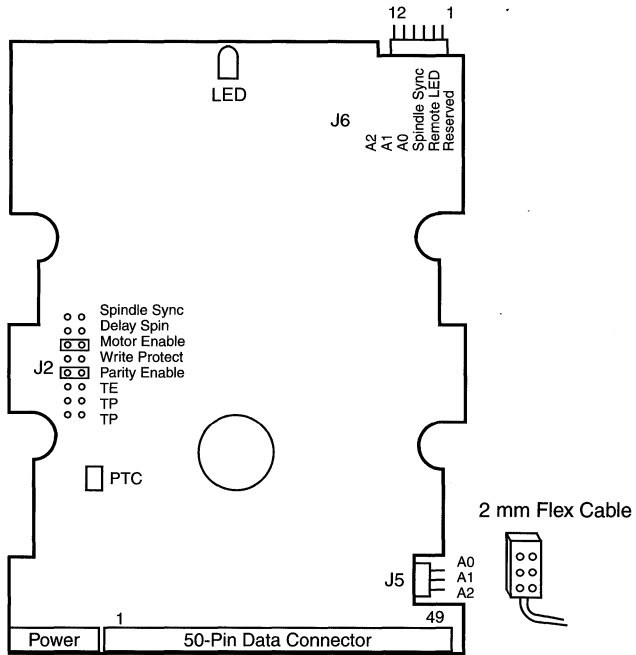
Notes

1. The minimum operating system is SunOS 4.1.1 Rev B.
2. The 1.05GB drive supports Tagged Queuing with Solaris 2.X.
3. SunOS 4.1.1 Rev B Sun-4c requires the *1.3GB Disk Drive Enhancement* (esp.o and sd.o).
4. The Target ID is the Boolean OR of J4 and J6. Do NOT install shunts in both locations.

References

1. *1.05 Gbyte Disk Drive Installation Manual*, 801-6131-10.
2. *1.05 Gbyte Disk Drive Installation Manual*, 802-2704-10.

Seagate ST12400N 2.1GB
 3 1/2" 5400 RPM Single Ended Fast SCSI
 Sun-4/75 SS10
 Options 567 568 569 570
 370-1709
 1 5/8" Height
 949001-033



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into J5.

Power: 0.72 Amps @ +5Vdc
 0.60 Amps @ +12Vdc
 10.8 Watts Typical

Notes

1. The minimum operating system is Solaris 1.1.
2. The 2.1GB drive supports Tagged Queuing with Solaris 2.x.
3. The Target ID is the Boolean OR of J5 and J6. Do NOT install shunts in both locations.

References

1. *2.1 Gbyte Disk Drive Installation Manual*, 801-6118-10.
2. *Multi-Disk Pack Installation and Service Guide*, 801-6119-10.
3. *2.1Gbyte Disk Drive Installation Manual*, 802-2703-10.

Conner CFP2105S 2.1GB

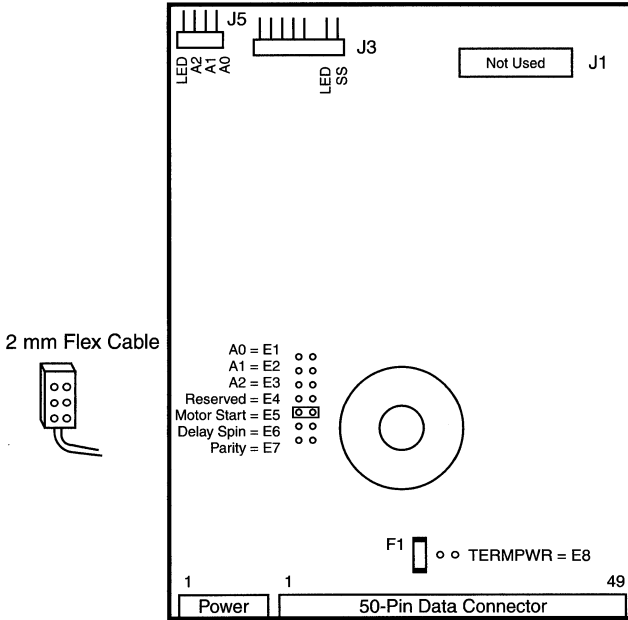
3 1/2" 5400 RPM Single Ended Fast SCSI

Sun-4/75 SS10

Options 567 568 569 570

370-1929

1" Height
Cayman



In the Desktop Storage Pack, orient the Flex Cable as shown and plug it into E1-E3.

Note: The minimum operating system is Solaris 1.1.

Reference: *2.1Gbyte Disk Drive Installation Manual*, 802-2703-10

Seagate ST32430N 2.1GB

3 1/2" 5400 RPM Single Ended Fast SCSI

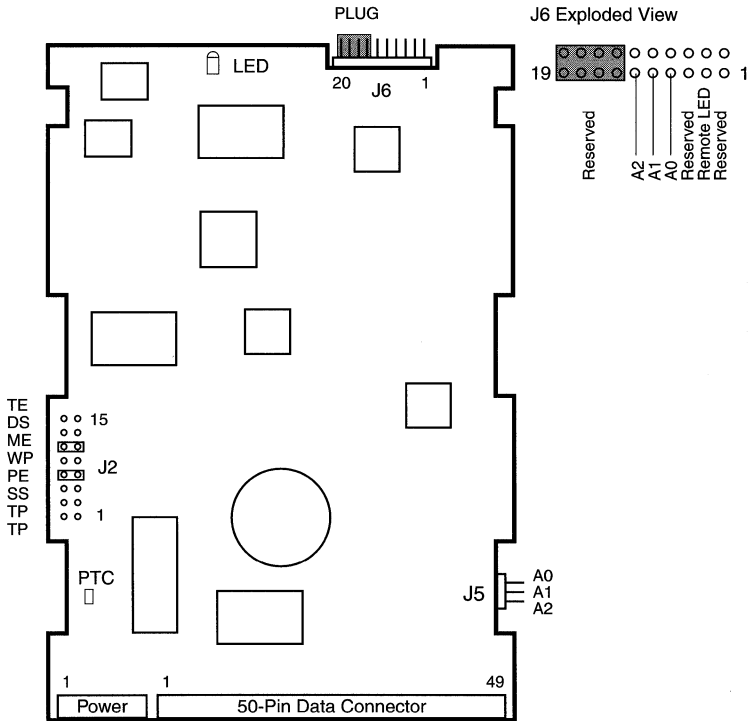
Sun-4/75 SS10

Options 567 568 569 570

370-2070

1" Height

Hawk-2LP



Notes

1. The minimum operating system is Solaris 1.1.
2. Using the smaller J2 jumpers on J5 or J6 will distort the jumper.

Seagate ST32550N 2.1GB

3 1/2" 7200 RPM Single Ended Fast SCSI

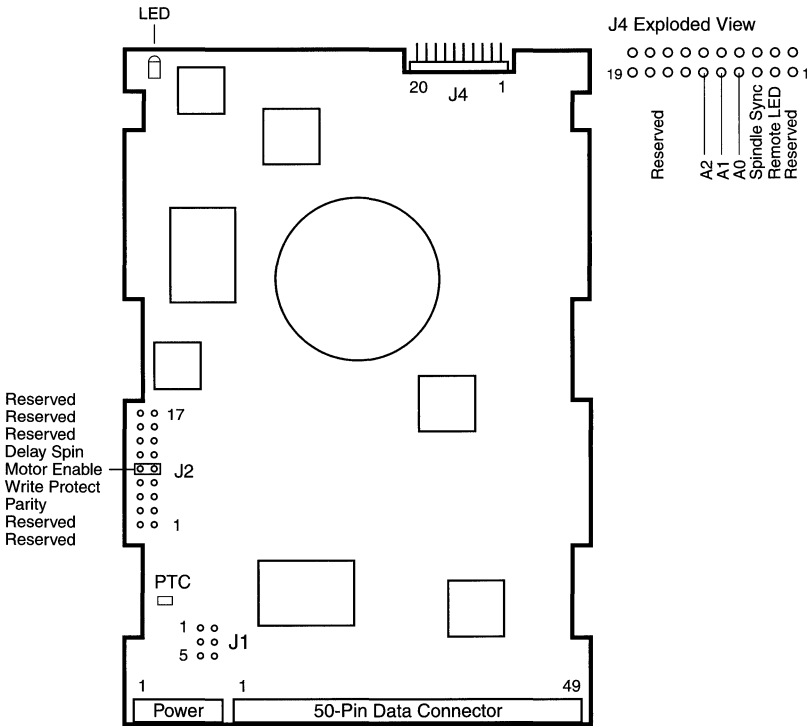
SS1000

Options 735 737 738 739 774

370-2067

1" Height

Barracuda-2LP



Power: 1.06 Amps @ +5Vdc
 0.57 Amps @ +12Vdc
 12.14 Watts

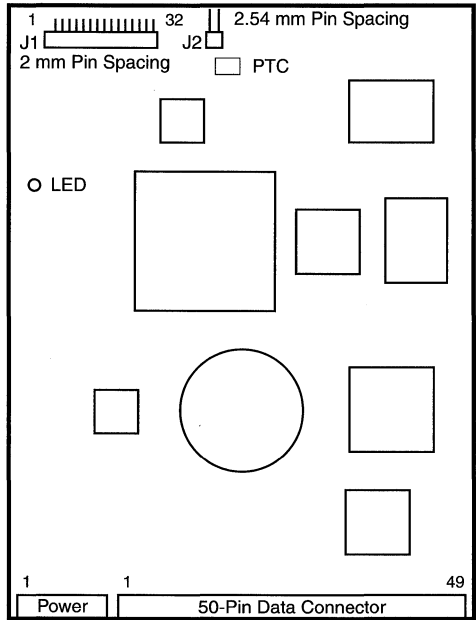
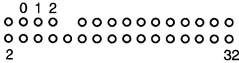
Notes

1. The minimum operating system is Solaris 1.1.
2. Field Change Order A0069 is recommended.
3. Patch 103451-04 includes drive Firmware 0420.

Reference: 2.1Gbyte Disk Drive Installation Manual, 802-3527-10

IBM DFHS-32160-S2F 2.1GB
3 1/2" 7200 RPM Single Ended Fast SCSI
SS1000
Options 735 737 738 739 774
370-1957
1" Height
Starfire

J1 Exploded View



Power: 1.1 Amps @ +5Vdc
 0.75 Amps @ +12Vdc
 14.5 Watts

Notes

1. The minimum operating system is Solaris 1.1.
2. This drive was not shipped.

Reference: *2.1Gbyte Disk Drive Installation Manual*, 802-3527-11.

Seagate ST15230N 4.2GB

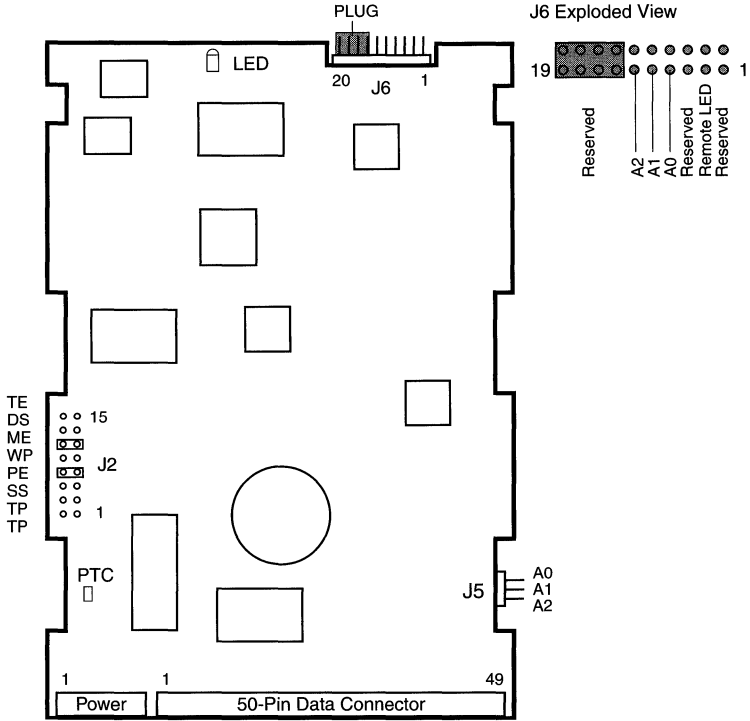
3 1/2" 5400 RPM Single Ended Fast SCSI

Options 5211 5212 5210

370-2153

1 5/8" Height

Hawk-4



Power: 0.8 Amps @ +5Vdc
 0.62 Amps @ +12Vdc
 11.5 Watts

Notes

1. The minimum operating system is Solaris 2.3.
2. Solaris 1.x does not support the 4.2GB Disk Drive.
3. Using the smaller J2 jumpers on J5 or J6 will distort the jumper.

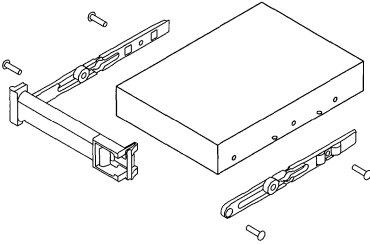
Reference: *4.2Gbyte Disk Drive Installation Manual*, 802-4223-10.

Mounting Hardware

Single Connector Assembly (SCA) Disk Drives

Jiffy Bracket

Left 330-1951 and Right 330-1952
Screw and Bracket Kit 540-2767

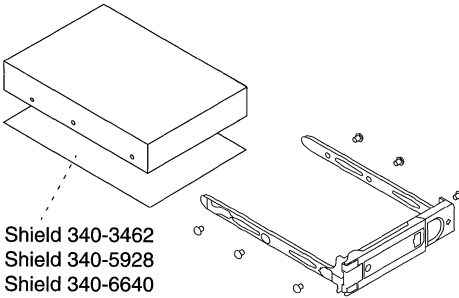


Systems

Ultra 1 Model 140/170
Ultra 1 Model 140E/170E/200E
Ultra 2
Ultra Enterprise 150
Netra *nfs* 150 and Netra *i* 150
SPARCstorage MultiPack

Spud Bracket

1.0" 540-3024 Bracket Kit 560-2442
1.6" 540-3025 1.6" 540-3925



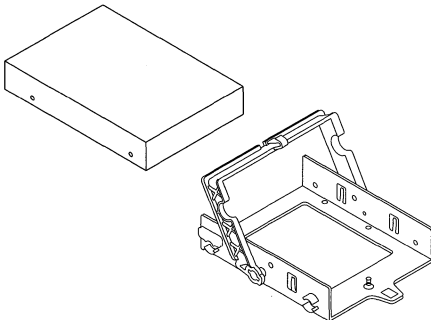
Shield 340-3462
Shield 340-5928
Shield 340-6640

Systems

Ultra 1 Ultra 2
Ultra 30 Ultra 60 Ultra 80
E250 E450 E220R E420R
Sun Blade 1000
E150 *nfs* 150 *i* 150
MultiPack E3000 E3500
A1000 D1000 A3500
A5000 A5100 A5200 A7000
Netra ct 400 Netra ct 800
st D130 st A1000 st D1000

Aurora Bracket

540-2570



Systems

SPARCstation 4
SPARCstation 5
SPARCstation 20

Mounting Hardware

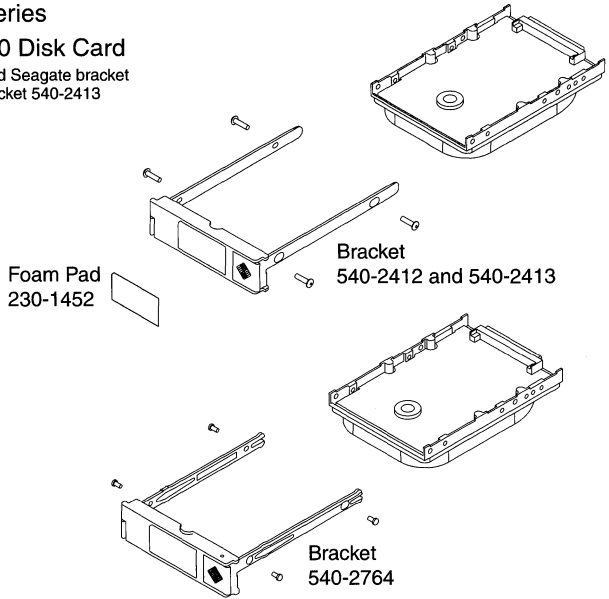
Single Connector Assembly (SCA) Disk Drives

SSA Bracket 540-2764*

SSA Model 100 Series

SPARCserver 1000 Disk Card

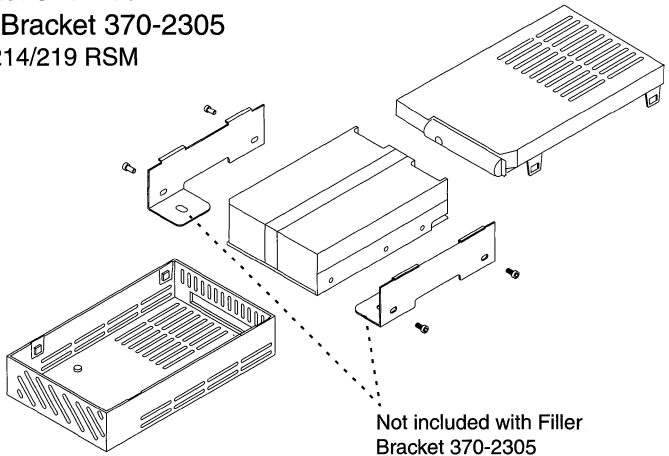
* Bracket 540-2764 replaced Seagate bracket 540-2412 and Conner bracket 540-2413



RSM Bracket 370-2304

RSM Filler Bracket 370-2305

SSA Model 214/219 RSM



Seagate ST3500NC 535MB

3 1/2" 5400 RPM Single Ended Fast SCSI

Options 589 597

370-1550

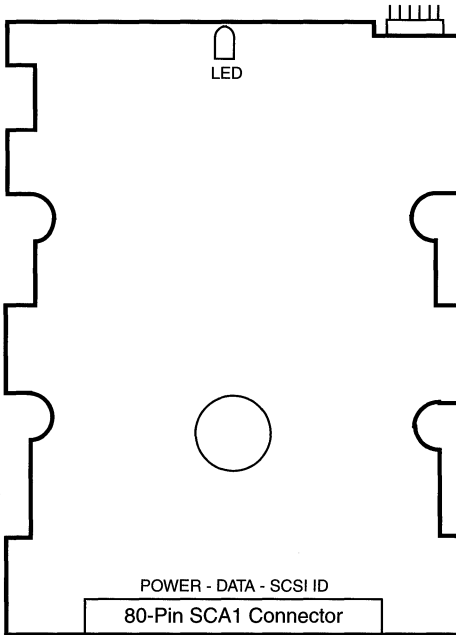
540-2403

1" Height

SSA FRU

ST3600

2.1GB Disk Card FRU
w Bkt 540-2413



Notes

1. The 535MB drive supports Tagged Queuing with Solaris 2.x.
2. The addresses are preset to 0, 1, 2, and 3 on Disk Card 501-2066.
3. Do NOT daisy chain System Board 0 to the disk card if disk drives are installed on the internal SS1000 SCSI Bus.
4. The disk card mounting brackets are not interchangeable between the Seagate and Conner disk drives.

References

1. *2.1-Gbyte Disk Card Installation Manual*, 801-2196-11.
2. *535 MByte Disk Drive Installation Manual*, 801-5402-11.
3. *535 MByte Disk Drive Installation Manual*, 801-6559-11.

Conner CP30548 535MB

3 1/2" 5400 RPM Single Ended Fast SCSI

SS4 SS5 SS20 A11 A12 A14

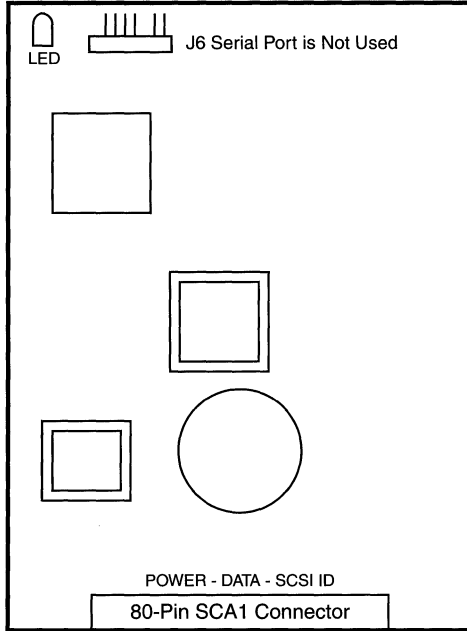
Options 589 597

370-1425
1" Height

540-2403
2.1GB Disk Card FRU
w Bkt 540-2412

540-2443
SS5/SS20 FRU
w Bkt 540-2570

540-2631
SS5/SS20 FRU
w Bkt 540-2570



Notes

1. The 535MB drive supports Tagged Queuing with Solaris 2.x.
2. The addresses are preset to 0, 1, 2, and 3 on Disk Card 501-2066.
3. The addresses are preset to 3 and 1 in the SS5 and SS20.
4. The addresses are preset to 0 and 1 in the A11, A12, and A14.
5. Do NOT daisy chain System Board 0 to the disk card if disk drives are installed on the internal SS1000 SCSI Bus.
6. The disk card mounting brackets are not interchangeable between the Seagate and Conner disk drives.
7. System upgrades to A11, A12, and A14 may use this drive.

References

1. *2.1-Gbyte Disk Card Installation Manual*, 801-2196-11.
2. *535 Mbyte Disk Drive Installation Manual*, 801-6559-11

Seagate ST5660NC 535MB

3 1/2" 4500 RPM Single Ended Fast SCSI

SS4 SS5 SS20 A11 A12 A14

Options 589 597

370-1844

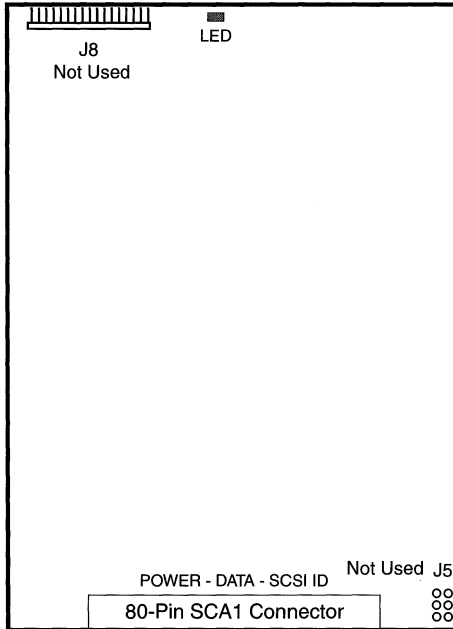
3/4" Height
Decathlon 545

540-2403

2.1GB Disk Card FRU
w Bkt 540-2413

540-2443

SS5/SS20 FRU
w Bkt 540-2570



Notes

1. The 535MB drive supports Tagged Queuing with Solaris 2.x.
2. The addresses are preset to 0, 1, 2, and 3 on Disk Card 501-2066.
3. The addresses are preset to 3 and 1 in the SS5 and SS20.
4. The addresses are preset to 0 and 1 in the A11, A12, and A14.
5. Do NOT daisy chain System Board 0 to the disk card if disk drives are installed on the internal SS1000 SCSI Bus.
6. The disk card mounting brackets are not interchangeable between the Seagate and Conner disk drives.
7. System upgrades to A11, A12, and A14 may use this drive.

References

1. *2.1-Gbyte Disk Card Installation Manual*, 801-2196-11.
2. *535 MByte Disk Drive Installation Manual*, 801-5402-11.
3. *535 MByte Disk Drive Installation Manual*, 801-6559-11.

Seagate ST31200WC 1.05GB

3 1/2" 5400 RPM Single Ended Fast/Wide SCSI

SS4 SS5 SS20 SSA-101 A11 A12 A14

Options 649 651 652 653 654 655 772 773

370-1753

1" Height

540-2560

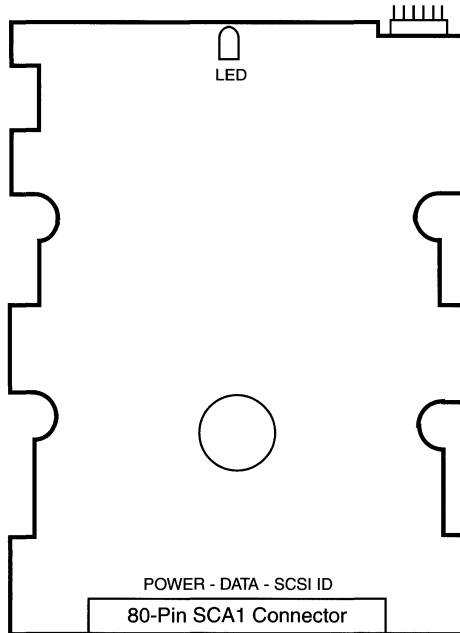
SS5/SS20 FRU
w Bkt 540-2570

540-2568

SSA FRU
4.2GB Disk Card FRU
w Bkt 540-2413 or 540-2764

540-2733

SS4 FRU
w Bkt 540-2570



Notes

1. The 1.05GB drive supports Tagged Queuing with Solaris 2.x.
2. Addresses are preset to 3 and 1 in the SS5 and SS20.
3. Addresses are preset to 0 through 4 in the SPARCstorage Array.
4. System upgrades to A11, A12, and A14 may use this drive.

References

1. *1.05Gbyte Disk Drive Installation Manual*, 801-2207-10.
2. *1.05Gbyte Disk Drive Installation Manual*, 802-2702-10.

Conner CFP1060E 1.05GB

3 1/2" 5400 RPM Single Ended Fast/Wide SCSI

SS4 SS5 SS20 SSA-101 A11 A12 A14

Options 649 651 652 653 654 655 772 773

370-1822

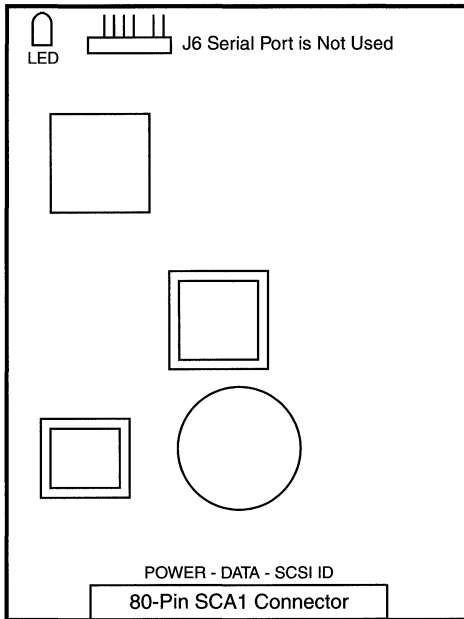
1" Height
Barbados

540-2560

SS5/SS20 FRU
w Bkt 540-2570

540-2568

SSA FRU
4.2GB Disk Card FRU
w Bkt 540-2412 or 540-2764



Power: 0.7 Amps @ +5Vdc
0.4 Amps @ +12Vdc
8.3 Watts

Notes

1. The 1.05GB drive supports Tagged Queuing with Solaris 2.x.
2. Addresses are preset to 3 and 1 in the SS4, SS5, and SS20.
3. Addresses are preset to 0 through 4 in the SPARCstorage Array.
4. This drive was disqualified for use in the SS4.
5. System upgrades to A11, A12, and A14 may use this drive.

References

1. *1.05Gbyte Disk Drive Installation Manual*, 801-2207-10.
2. *1.05Gbyte Disk Drive Installation Manual*, 802-2702-10.

Conner CFP1080E 1.05GB

3 1/2" 5400 RPM Single Ended Fast/Wide SCSI

SS4 SS5 SS20 SSA-101 A11 A12 A14

Options 649 651 652 653 654 655 772 773 5101

5102 5103

370-1964
1" Height
Antigua

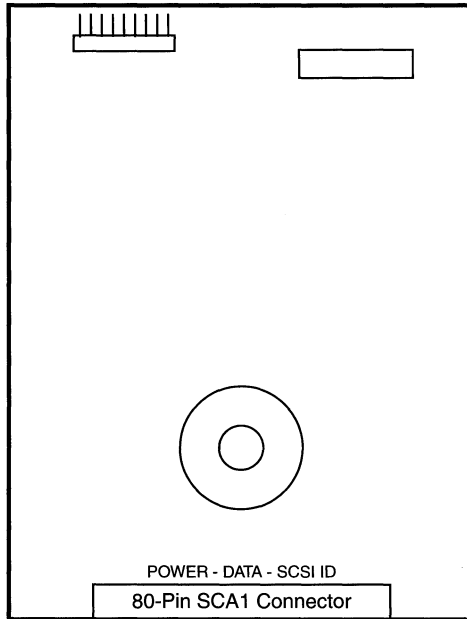
540-2560
SS5/SS20 FRU
w Bkt 540-2570

540-2568
SSA FRU
4.2GB Disk Card FRU
w Bkt 540-2412 or 540-2764

540-2733
SS4 FRU
w Bkt 540-2570

540-2729
A12 FRU
w R Bkt 330-1951
w L Bkt 330-1952

540-2875
SS4 FRU
w Bkt 540-2570



Notes

1. The 1.05GB drive supports Tagged Queuing with Solaris 2.x.
2. Addresses are preset to 3 and 1 in the SS5 and SS20.
3. Addresses are preset to 0 through 4 in the SPARCstorage Array.
4. System upgrades to A11 and A14 may use this drive.

References

1. *1.05Gbyte Disk Drive Installation Manual*, 801-2207-10.
2. *1.05Gbyte Disk Drive Installation Manual*, 802-2702-10.

IBM DPES-31080-S1S 1.05GB

3 1/2" 5400 RPM Single Ended Fast SCSI

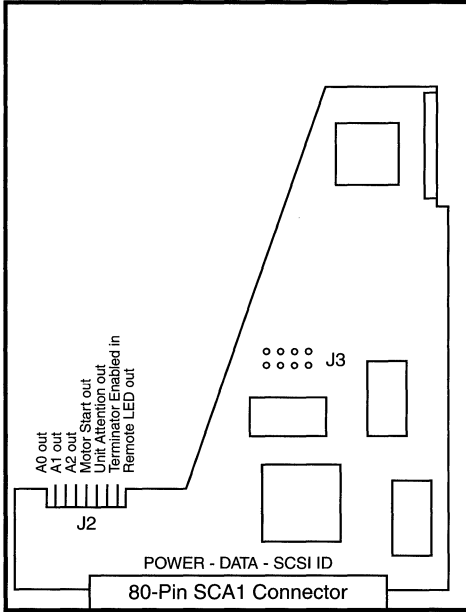
SS5 SS20 A11 A12 A14

Options 649 5104

370-2072
1" Height
Deskstar

540-2560
SS5/SS20 FRU
w Bkt 540-2570

540-2765
A11 FRU
w R Bkt 330-1951
w L Bkt 330-1952



Power: 0.4 Amps @ +5Vdc
0.28 Amps @ +12Vdc
5.56 Watts

Notes

1. The 1.05GB drive supports Tagged Queuing with Solaris 2.x.
2. Addresses are preset to 3 and 1 in the SS5 and SS20.
3. Addresses are preset to 0 and 1 in the A11, A12, and A14.
4. This drive does not support wide SCSI transfers.
5. This drive is not used in the SPARCstation 4.
6. This drive is not used in the SPARCstorage UniPack.
7. This drive is not used in the SPARC Storage Array Model 100.
8. System upgrades to A12 and A14 may use this drive.

Reference: 1.05Gbyte Disk Drive Installation Manual, 802-2702-10.

Quantum 1080S 1.05GB

3 1/2" 5400 RPM Single Ended Fast SCSI

SS4 SS5 SS20 A11 A12 A14

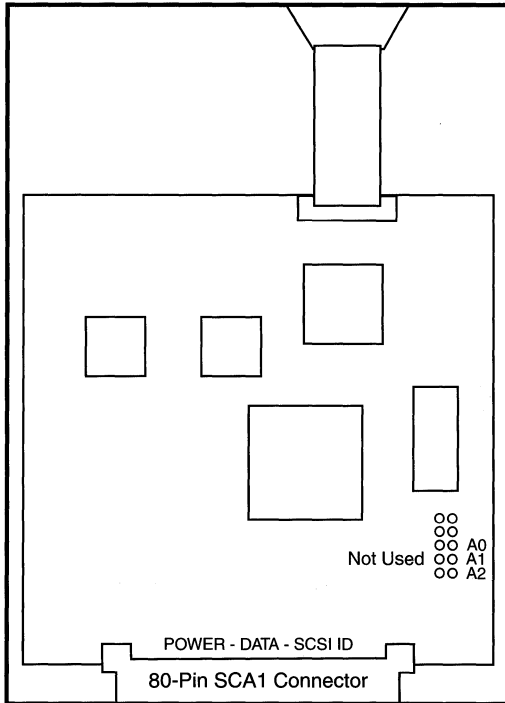
Option 5104

370-2168
1" Height
Fireball

540-2560
SS5/SS20 FRU
w Bkt 540-2570

540-2765
A11 FRU
w R Bkt 330-1951
w L Bkt 330-1952

540-2875
SS4 FRU
w Bkt 540-2570



Notes

1. The 1.05GB drive supports Tagged Queuing with Solaris 2.x.
2. Addresses are preset to 3 and 1 in the SS5 and SS20.
3. Addresses are preset to 0 and 1 in the A11, A12, and A14.
4. This drive does not support wide SCSI transfers.
5. The SS4 requires Standoff 240-2308.
6. Standoff 240-2308 is only on SS4 Model 110 CPU 501-3134.
7. This drive is not used in the SPARCstorage UniPack.
8. This drive is not used in the SPARC Storage Array Model 100.
9. System upgrades to A12 and A14 may use this drive.

Reference: *1.05Gbyte Disk Drive Installation Manual*, 802-2702-10.

Conner CFP2105E 2.1GB

3 1/2" 5400 RPM Single Ended Fast/Wide SCSI

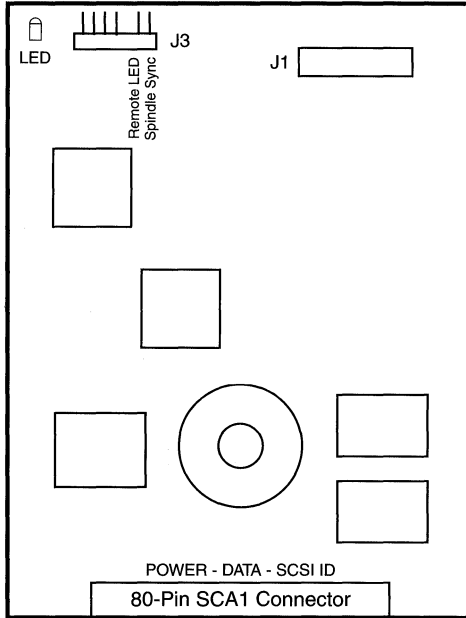
SS5 SS20 A11 A12 A14

Option 659

370-1930
1" Height
Cayman

540-2699
SS5/SS20 FRU
w Bkt 540-2570

540-2770
SS4 FRU
w Bkt 540-2570



Note:

1. The minimum operating system is Solaris 1.1.
2. SPARCstation 4 2.1GB configurations were removed from the Price List in October 1995 because the drive failed qualification testing.
3. System upgrades to A11, A12, and A14 may use this drive.

Reference: *2.1Gbyte Disk Drive Installation Manual*, 802-2702-10.

Seagate ST32430WC 2.1GB

3 1/2" 5400 RPM Single Ended Fast/Wide SCSI

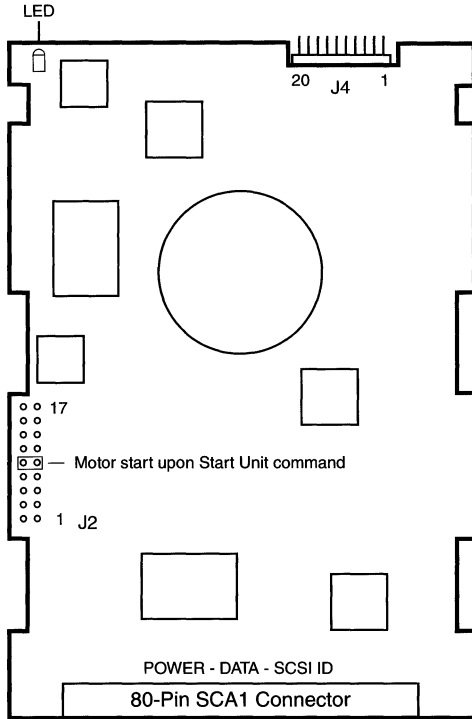
SS5 SS20 A11 A12 A14

Options 659 5175

370-2071
1" Height
Hawk-2LP

540-2699
SS5/SS20 FRU
w Bkt 540-2570

540-2782
A11/A12/A14 FRU
w R Bkt 330-1951
w L Bkt 330-1952



Notes

1. The minimum operating system is Solaris 1.1.
2. SPARCstation 4 2.1GB configurations were removed from the Price List in October 1995 because the drive failed qualification testing.

Reference: *2.1Gbyte Disk Drive Installation Manual*, 802-2702-10.

Seagate ST32550WC 2.1GB

3 1/2" 7200 RPM Single Ended Fast/Wide SCSI

A12 A14 A20 A25 E150 E3000

Options 765 766 768 769 770 775 790 791 792

5151 5152 5153 5161 5511 5512 5513

6590 6591 6592

370-2040

540-2706

540-2730

1" Height

SSA FRU

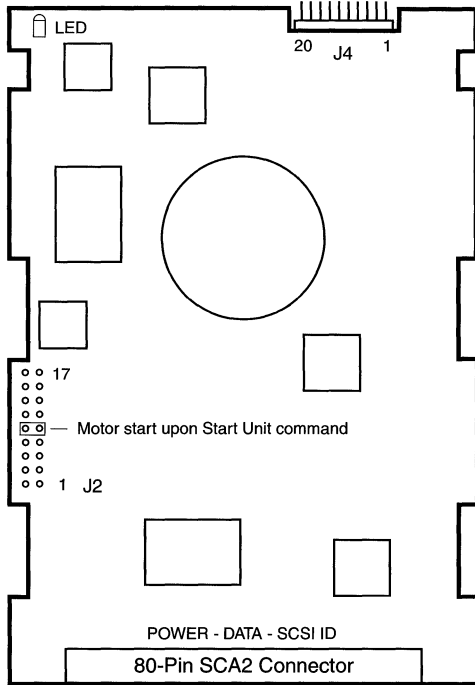
Axx/E150/E3000 FRU

Barracuda-2LP

8.4GB Disk Card FRU

w R Bkt 330-1951

w Bkt 540-2413 or 540-2764 w L Bkt 330-1952



Power: 1.06 Amps @ +5Vdc
 0.57 Amps @ +12Vdc
 12.14 Watts

Notes

1. The minimum operating system is Solaris 1.1.
2. Field Change Order A0069 is recommended.

IBM DFHS-32160-S2S 2.1GB

3 1/2" 7200 RPM Single Ended Fast/Wide SCSI

A12 A14 A20 A25 E150 E3000

Options 765 766 768 769 770 775 790 791 792

5151 5152 5153 5161 5511 5512 5513

370-1956

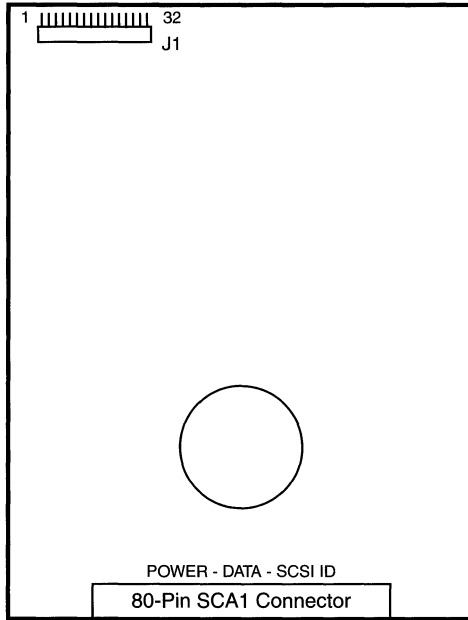
1" Height
Starfire

540-2706

SSA FRU
8.4GB Disk Card FRU
w Bkt 540-2413 or 540-2764

540-2730

Axx/E150/E3000 FRU
w R Bkt 330-1951
w L Bkt 330-1952



Power: 0.96 Amps @ +5Vdc
0.36 Amps @ +12Vdc
9.1 Watts Reading/Writing

Notes

1. The minimum operating system is Solaris 1.1.
2. This drive was disqualified. Approximately 200 were shipped.

Reference: *2.1 Gbyte 7200 RPM Disk Drive Specifications*, 802-4058-10.

Seagate ST15230WC 4.2GB

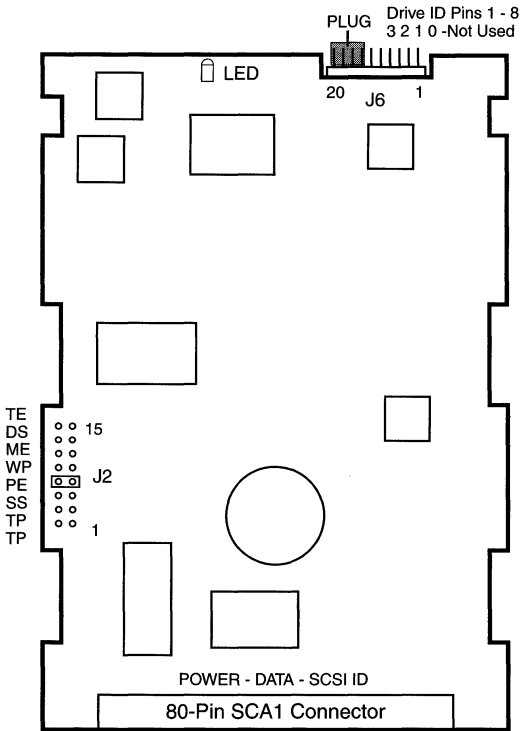
3 1/2" 5400 RPM Single Ended Fast/Wide SCSI

Options 5203 5204

370-2152

1 5/8" Height

Hawk-4



Power: 0.85 Amps @ +5Vdc
 0.62 Amps @ +12Vdc
 11.7 Watts

Notes

1. The minimum operating system is Solaris 1.1.2 or 2.3.
2. The Solaris 1.1.2 maximum partition size is 2.1GB, 1940 cylinders, or 4190400 blocks.
3. Solaris 1.1.2 requires editing format.dat and building a new kernel.
4. Using the smaller diameter J2 jumpers on J6 will distort the jumper.
5. Do NOT install jumpers on J6 Pins 13 -20.

Reference: 4.2 Gbyte Disk Drive Product Note, 802-4495-10.

Seagate ST15230WC 4.2GB

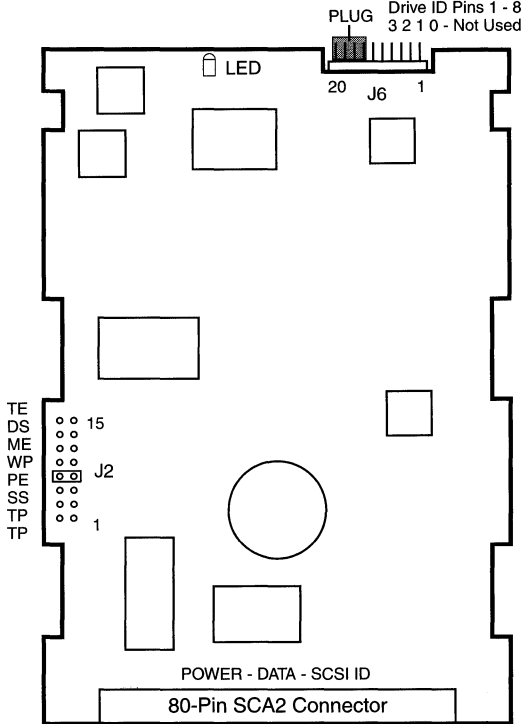
3 1/2" 5400 RPM Single Ended Fast/Wide SCSI

Options 5203 5204 5225 5501 5502 5503 6503 6504
6506 6530 6531

370-2286
1 5/8" Height
Hawk-4

540-2784
RSM FRU
w Bkt 370-2304

540-2815
MultiPack FRU
w R Bkt 330-1951
w L Bkt 330-1952



Power: 0.85 Amps @ +5Vdc
0.62 Amps @ +12Vdc
11.7 Watts

Notes

1. The minimum operating system is Solaris 1.1.2 or 2.3.
2. The Solaris 1.1.2 maximum partition size is 2.1GB, 1940 cylinders, or 4190400 blocks.
3. Solaris 1.1.2 requires editing format.dat and building a new kernel.
4. Using the smaller diameter J2 jumpers on J6 will distort the jumper.
5. Do NOT install jumpers on J6 Pins 13 -20.

Reference: 4.2 Gbyte 5400 rpm Disk Drive Specifications, 802-5302-10.

Seagate ST32155WC 2.1GB

3 1/2" 5400 RPM Single Ended Ultra/Wide SCSI

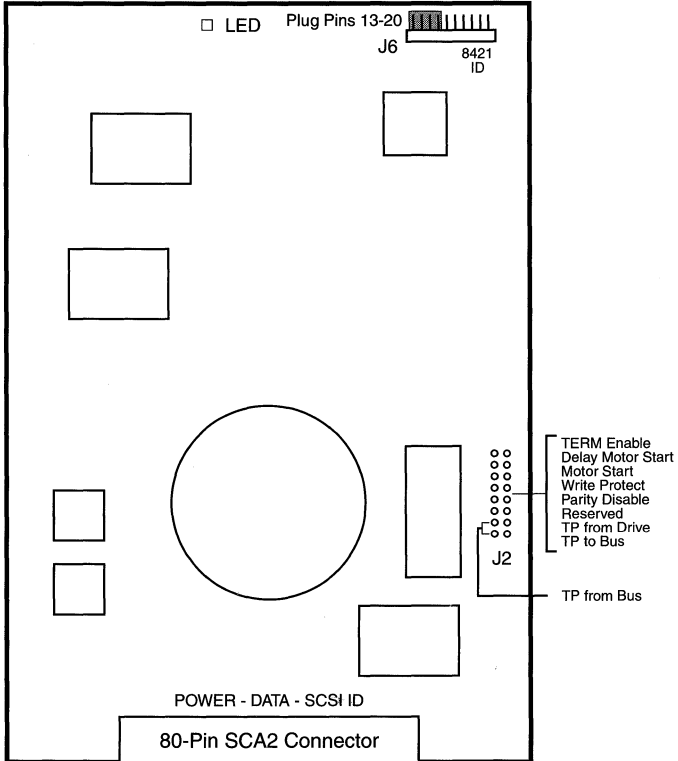
SS5 SS20 A11 A12 A14

Options 659 5175

370-2314
1" Height
Hawk-2XL

540-2699
SS5/SS20 FRU
w Bkt 540-2570

540-2782
A11/A12/A14 FRU
w R Bkt 330-1951
w L Bkt 330-1952



Note: The Ultra SCSI capability of this drive is not qualified by Sun.

Reference: 2.1 Gbyte 7200 rpm Disk Drive Specifications, 802-7743-10.

IBM DORS-32160 2.1GB

3 1/2" 5400 RPM Single Ended Ultra/Wide SCSI

SS5 SS20 A11 A12 A14

Options 659 5175

370-2315

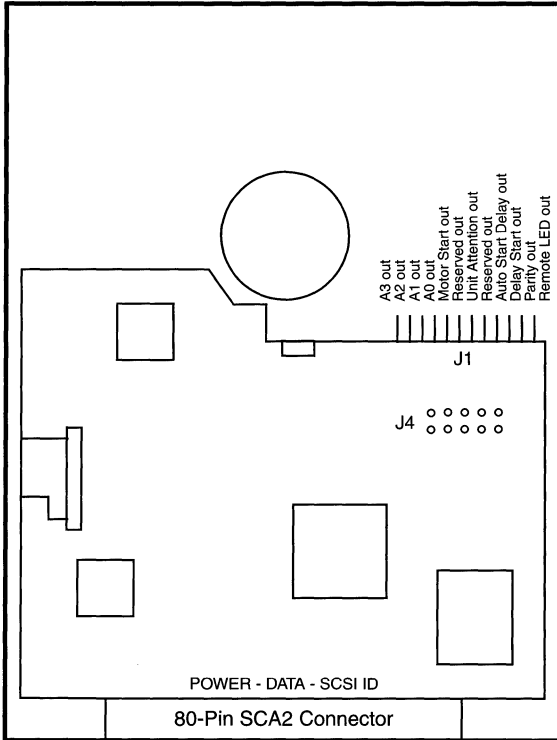
1" Height
Ultrastar ES

540-2699

SS5/SS20 FRU
w Bkt 540-2570

540-2782

A11/A12/A14 FRU
w R Bkt 330-1951
w L Bkt 330-1952



Note: The Ultra SCSI capability of this drive is not qualified by Sun.

Reference: 2.1 Gbyte 7200 rpm Disk Drive Specifications, 802-7743-10.

IBM DCAS-32160 2.1GB

3 1/2" 5400 RPM Single Ended Ultra/Wide SCSI

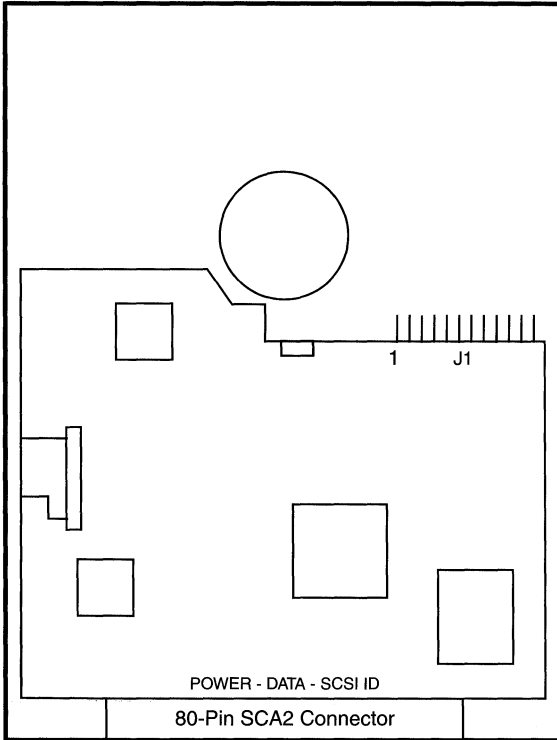
SS5 SS20 A11 A12 A14

Options 659 5175

370-2842
1" Height
Ultrastar 2ES

540-2699
SS5/SS20 FRU
w Bkt 540-2570

540-3171
Spud Bracket FRU
w 1" Bkt 540-3024



Note: The Ultra SCSI capability of this drive is not qualified by Sun.

Reference: *2.1 Gbyte 7200 rpm Disk Drive Specifications*, 802-7743-10.

Fujitsu M2952 2.1GB

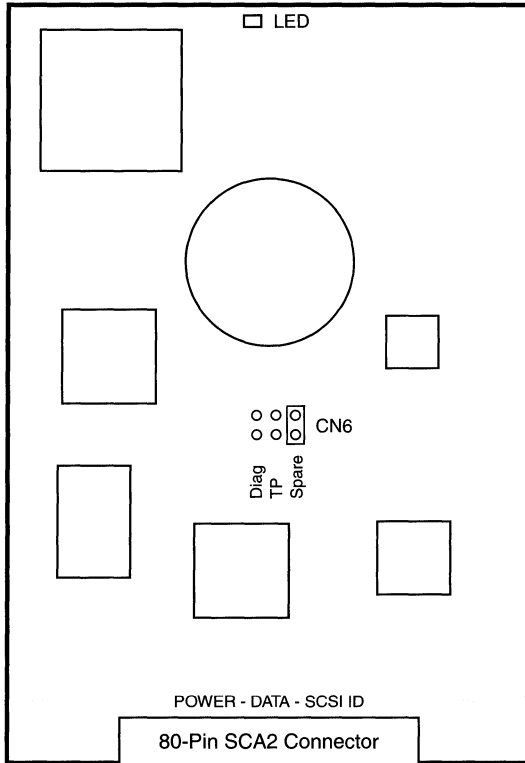
3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

Options 5151 5152

370-2366

1" Height

Allegro 3



Notes

1. The Ultra SCSI capability of this drive is not qualified by Sun.
2. The M2952 operating current exceeds the capability of the SSA 100.

Reference: *2.1 Gbyte 7200 rpm Disk Drive Specifications*, 802-7743-10.

Seagate ST32171WC 2.1GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A12 A14 A16 A20 A23 A25 E150 E3000

Options 765 766 768 769 770 790 791 792

5151 5152 5153 5161 5511 5512 5513

6520 6590 6591 6592

370-2365

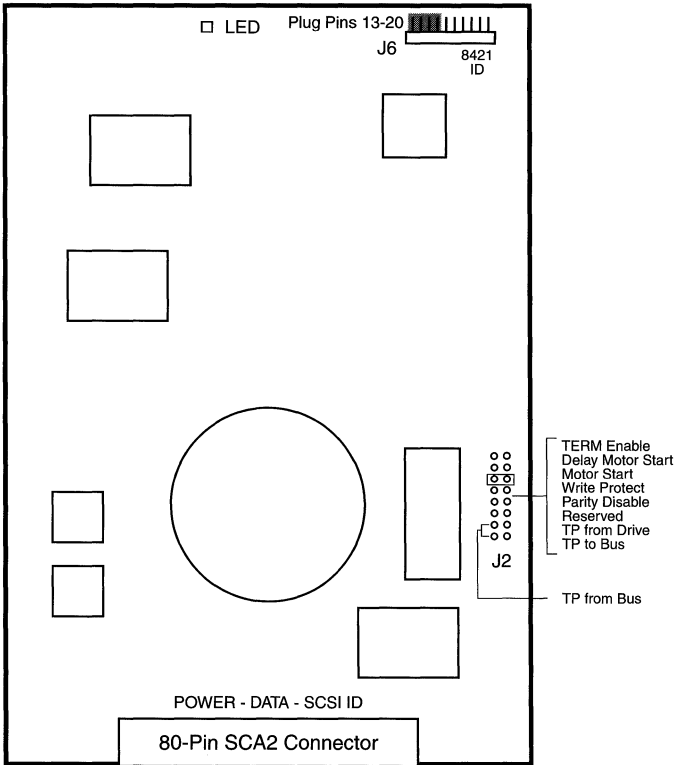
1" Height
Barracuda 2LP

540-2706

SSA FRU
w Bkt 540-2764

540-2936

Spud Bracket FRU
w 1" Bkt 540-3024



Reference: 2.1 Gbyte 7200 rpm Disk Drive Specifications, 802-7743-10.

Quantum VK22J05 2.1GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A12 A14 A16 A20 A23 A25 E150 E3000

Options 765 766 768 769 770 790 791 792

5151 5152 5153 5161 5511 5512 5513

6520 6590 6591 6592

370-2808

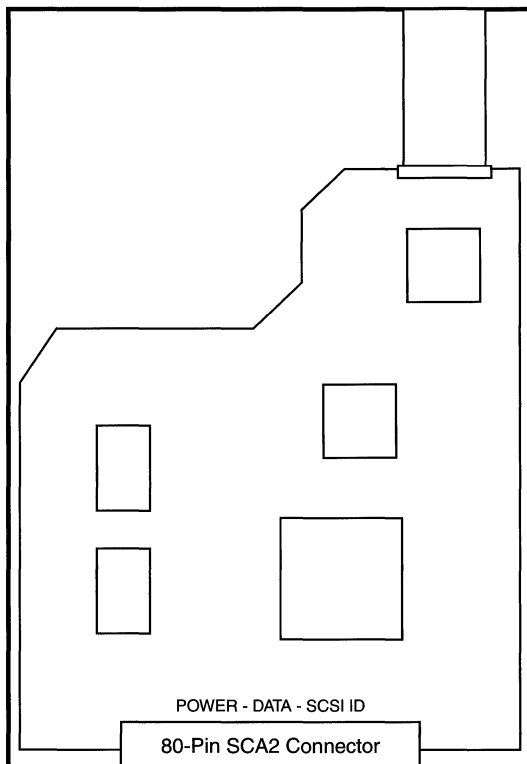
1" Height
Viking

540-2706

SSA FRU
w Bkt 540-2764

540-2936

Spud Bracket FRU
w 1" Bracket 540-3024



Reference: 2.1 Gbyte 7200 rpm Disk Drive Specifications, 802-7743-10.

Fujitsu M2954 4.2GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

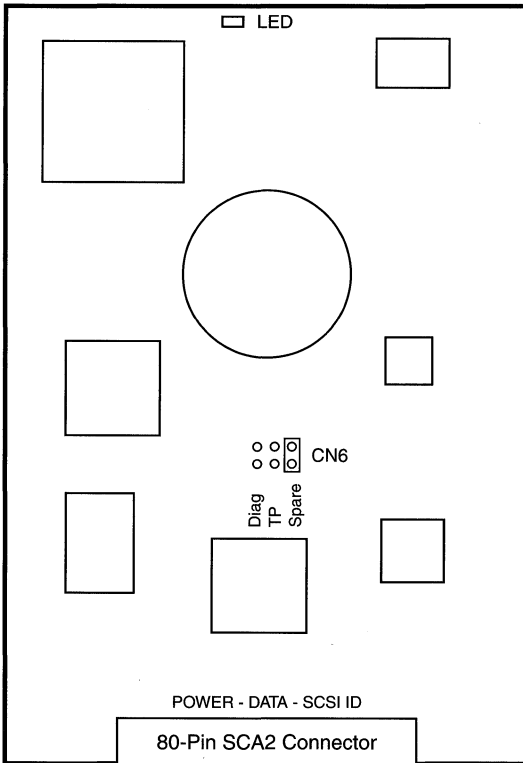
Options 5209 5213 6507 6508 6509 6532 6533

370-2368

1" Height
Allegro 3

540-2939

RSM FRU
w Bkt 370-2304



Note: The operating current exceeds the capability of the SSA 100.

Reference: *4.2 Gbyte 7200 rpm Disk Drive Specifications*, 802-7744-11.

Seagate ST34371WC 4.2GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A12 A14 A16 A20 A23 A25 A26 E150

Netra t 1100 E3000

Options 5162 5206 5207 5209 5213 5214

5514 5515 5516 6507 6508 6509

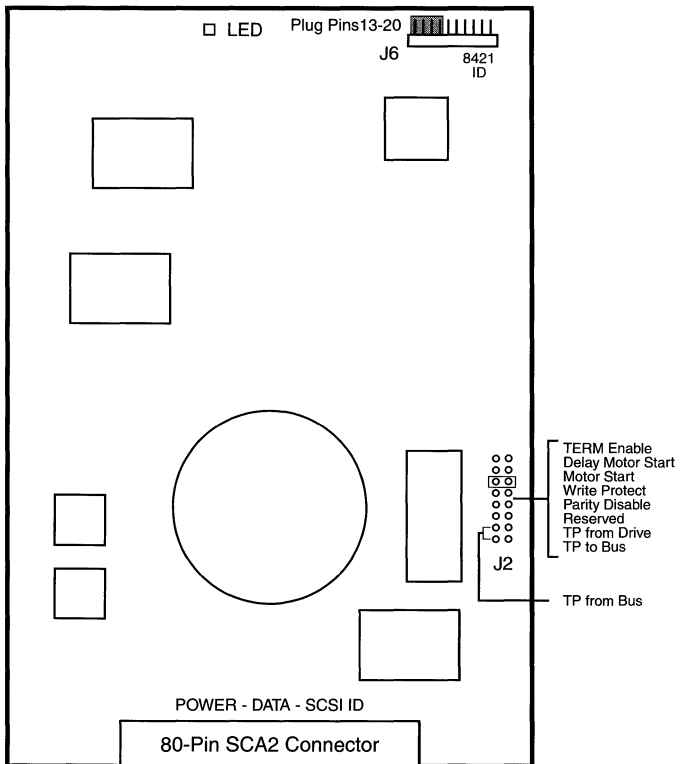
6517 6518 6519 6532 6533

370-2367
1" Height
Barracuda 4LP

540-2937
SSA FRU
w Bkt 540-2764

540-2938
Spud Bracket FRU
w 1" Bkt 540-3024

540-2939
RSM FRU
w Bkt 370-2304



Reference: 4.2 Gbyte 7200 rpm Disk Drive Specifications, 802-7744-11.

Quantum VK45J05 4.2GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A12 A14 A16 A20 A23 A25 A26 E150

Netra t 1100 E3000

Options 5162 5206 5207 5209 5213 5214

5514 5515 5516 6517 6518 6519

370-2809

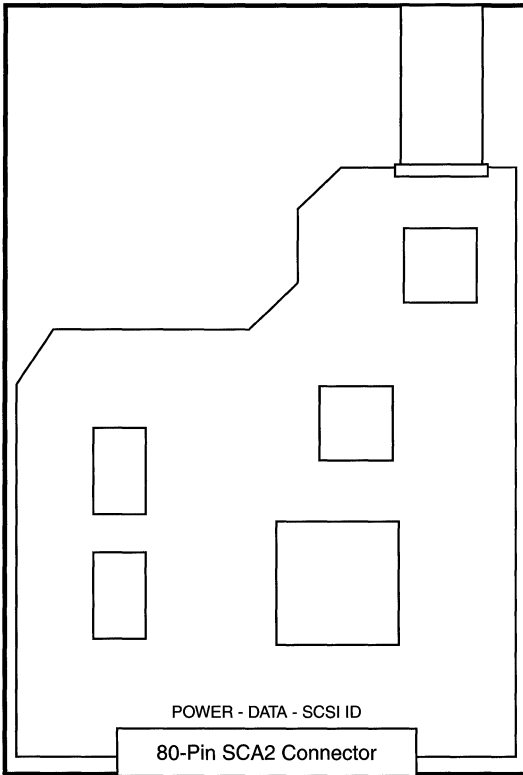
1" Height
Viking

540-2937

SSA FRU
w Bkt 540-2764

540-2938

Spud Bracket FRU
w 1" Bkt 540-3024



Reference: 4.2 Gbyte 7200 rpm Disk Drive Specifications, 802-7744-11.

Fujitsu MAB3045SC 4.2GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A12 A14 A16 A20 A23 A25 A26 E150

Netra t 1100 E3000 StorEdge MultiPack StorEdge UniPack

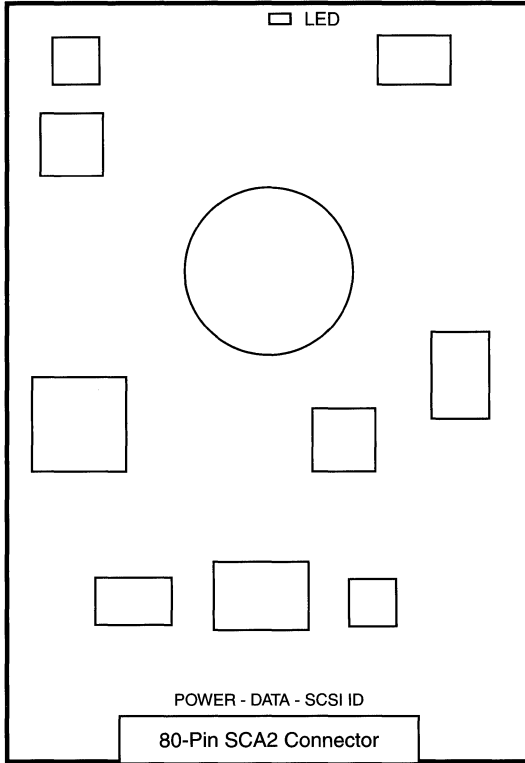
Options 5162 5214 5514 5515 5516

370-3412

1" Height
Allegro4L

540-2938

Spud Bracket FRU
w 1" Bkt 540-3024



Reference: 4.2 Gbyte 7200 rpm Disk Drive Specifications, 802-7744-11.

IBM DDRS-34560 4.2GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

SS5 SS20 A12 A14 A16 A20 A23 A25 E150

Netra t 1100 E3000 StorEdge MultiPack StorEdge UniPack

Options 5162 5206 5207 5214 5514

5515 5516 5911 6517 6518 6519

370-3403

1" Height
Draco 4

540-2937

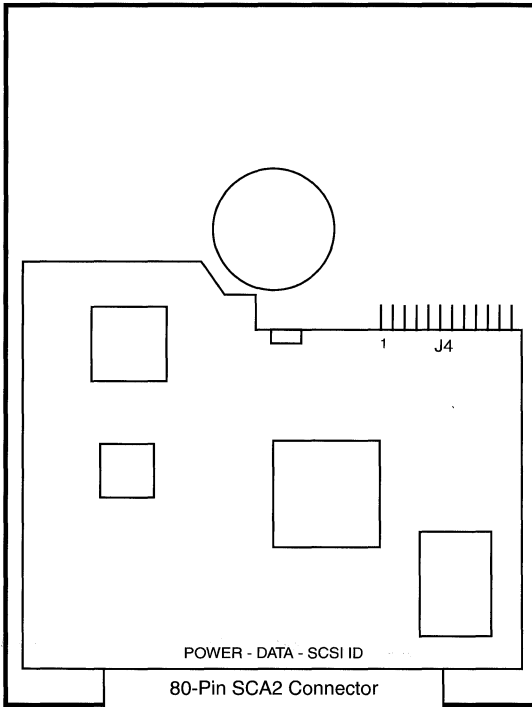
SSA FRU
w Bkt 540-2764

540-2938

Spud Bracket FRU
w 1" Bkt 540-3024

540-3988

SS5/SS20 FRU
w Bkt 540-2570



Notes

1. Support for 4.2GB Disks in the SS5 was announced in September 1998.
2. Qualification of 4.2GB Disks in the SS20 was completed in Nov. 1998.
3. The 4.2GB Disk was not qualified in Ultra 1 Models 140 or 170 (A11).
4. Solaris 1.x supports a maximum disk drive size of 2.1GB.
5. Label the 4.2GB Disk Drive as Sun2.1G to use the drive on Solaris 1.x.
6. A root partition >2GB is not supported by Sun-4c, 4m, or 4d systems.

References

1. *4.2 Gbyte 7200 rpm Disk Drive Specifications*, 802-7744-11
2. *Disk Drive Product Notes for Solaris 1.x*, 805-7623-10.
3. BugID 4035259 filed against root partition >2GB.

Seagate ST34501WC 4.2GB

3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI

StorEdge A1000 StorEdge D1000

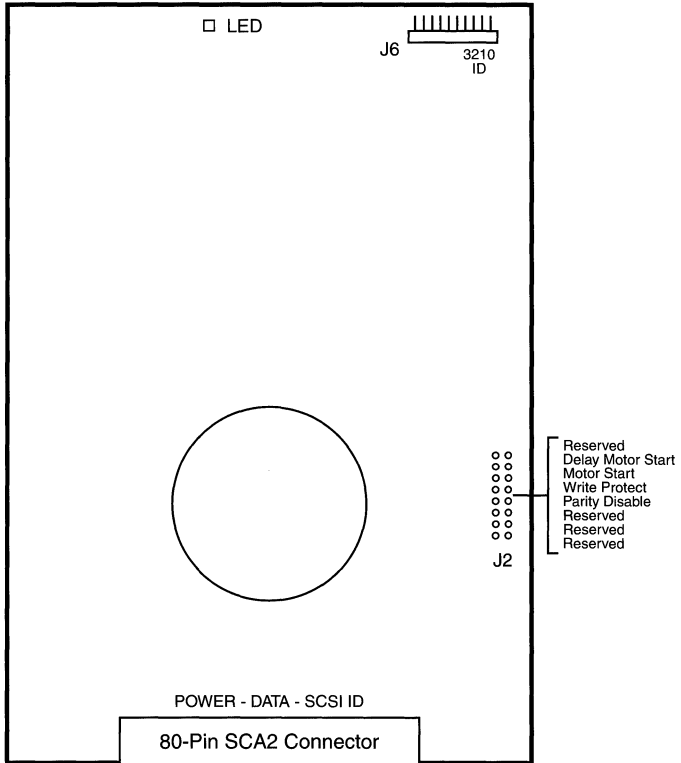
Option 5228

370-3338

1" Height
Cheetah 4LP

540-3594

12-Slot A/D1000 FRU
w 1" Bkt 540-3024
w Plate 340-4288



Reference: 4.2 Gbyte 10000 rpm Disk Drive Specifications, 805-3619-10.

Seagate ST34502LC 4.2GB

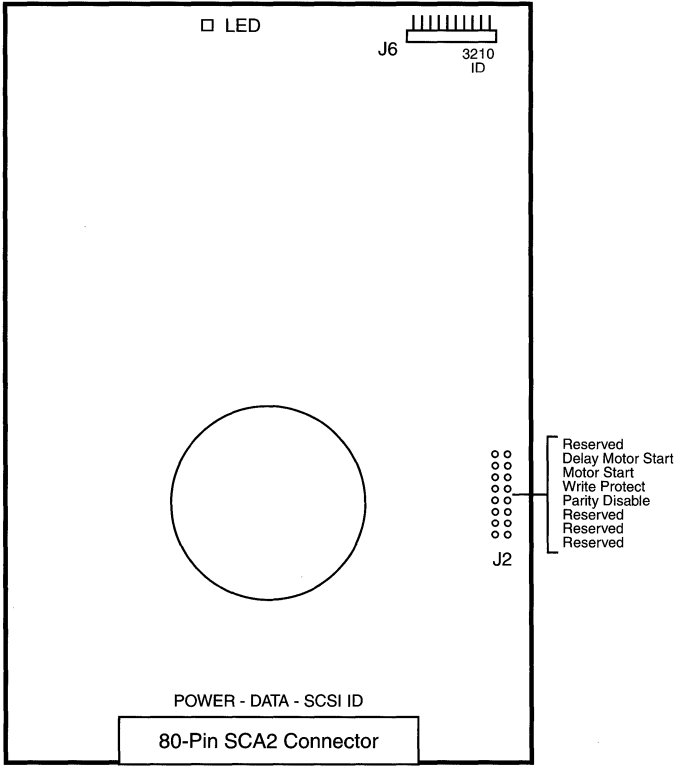
3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI

StorEdge A1000 StorEdge D1000

Option 5228

390-0003
1" Height
Cheetah 9LD

540-3594
12-Slot A/D1000 FRU
w 1" Bkt 540-3024
w Plate 340-4288



Reference: 4.2 Gbyte 10000 rpm Disk Drive Specifications, 805-3619-10.

Fujitsu M2949 9.1GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

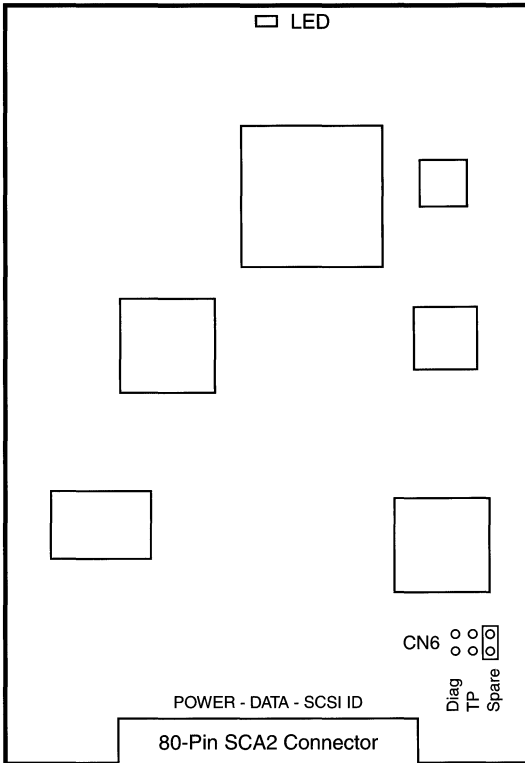
Options 5253 5254 6514 6515 6516 6534 6535

370-2370

1 5/8" Height
Allegro 3

540-2942

RSM FRU
w Bkt 370-2304



Reference: 9 Gbyte 7200 rpm Disk Drive Specifications, 802-7745-10.

Seagate ST19171WC 9.1GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A16 A23 A26 Netra t1100 E3000

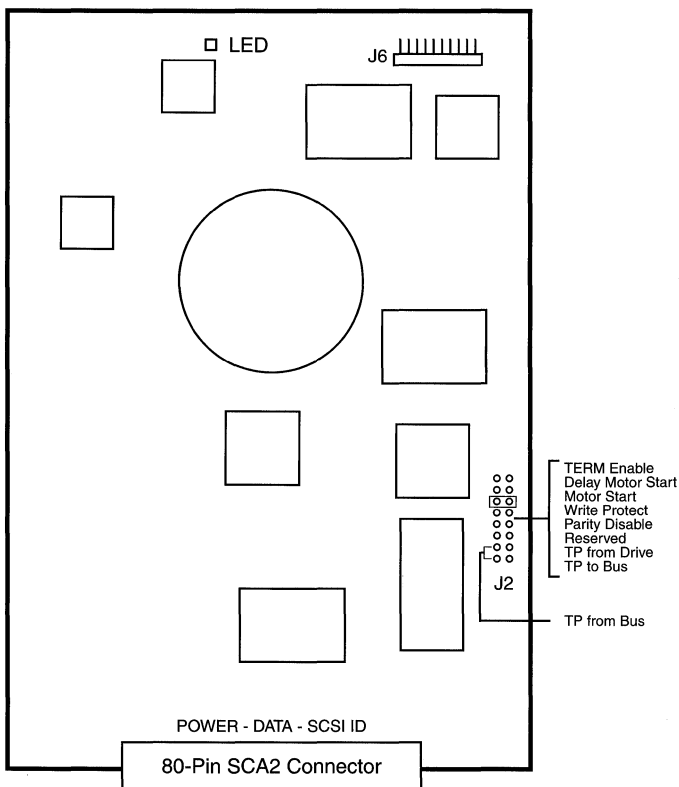
Options 5251 5253 5254 5504 5505 5506 5506 6514

6515 6516 6534 6535 6995 6596

370-2369
1 5/8" Height
Barracuda 9

540-2942
RSM FRU
w Bkt 370-2304

540-2951
Spud Bkt FRU
w 1.6" Bkt 540-3025



Notes

1. Install four 230-1545 dampers per drive location, to reduce the soft error rate of the ST19171WC in the SSA Model 219 RSM Tray.
2. Damper Kit 565-1421 includes 35 dampers.

Reference: *9 Gbyte 7200 rpm Disk Drive Specifications*, 802-7745-10.

Fujitsu MAB3091SC 9.1GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A14 A16 A20 A23 A25 A26

Netra t 1120 Netra t 1125 Netra ft 1800 Netra t1 E3000

StorEdge A1000 StorEdge D1000 StorEdge A7000

StorEdge MultiPack StorEdge UniPack

Options 5163 5229 5230 6288 6956

370-3413

1" Height Allegro 4L

540-2942

RSM FRU
w Bkt 370-2304

540-3704

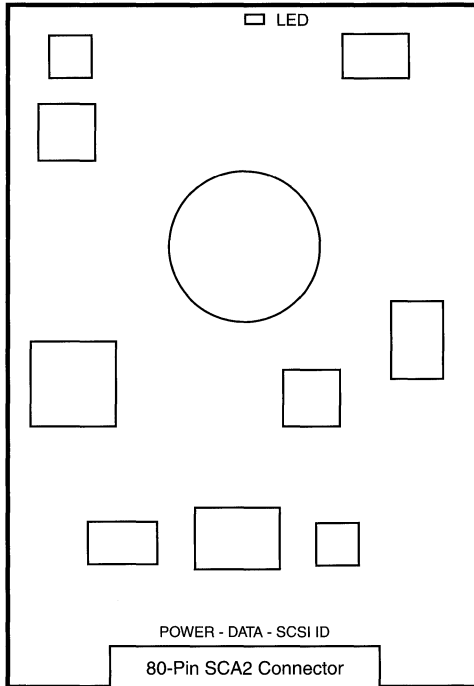
Spud Bracket FRU
w 1" Bkt 540-3024

540-3720

12-Slot A/D1000 FRU
A7000 FRU
w 1" Bkt 540-3024
w Plate 340-4288

540-4004

Netra ft 1800 FRU



Notes

1. The 9.1GB Drive is not compatible with A7000 Option 9652.
2. The 9.1GB Drive is not compatible with A7000 Disk Array 540-3666.
3. The 9.1GB Drive requires A7000 Disk Array Chassis Option 9656.
4. The 9.1GB Drive requires A7000 Disk Array Chassis 540-3841.

Reference: *9 Gbyte Disk Drive Specification*, 805-3935-10.

IBM DDRS-39130 9.1GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A14 A16 A20 A23 A25 A26

Netra t 1120 Netra t 1125 Netra ft 1800 Netra t1 E3000

StorEdge A1000 StorEdge D1000 StorEdge A7000

StorEdge MultiPack StorEdge UniPack

Options 5163 5229 5230 6288 6956

370-3404

1" Height
Draco 9

540-3704

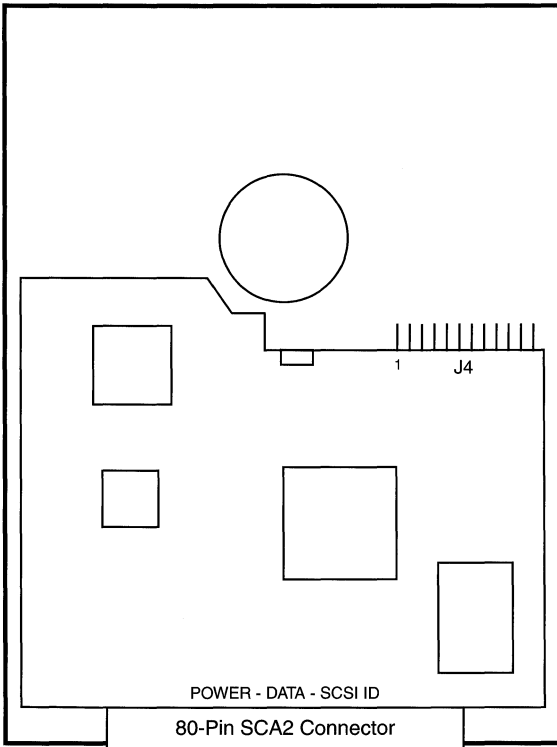
Spud Bracket FRU
w 1" Bkt 540-3024

540-3720

12-Slot A/D1000 FRU
A7000 FRU
w 1" Bkt 540-3024
w Plate 340-4288

540-4004

Netra ft 1800 FRU



Notes

1. The 9.1GB Drive is not compatible with A7000 Option 9652.
2. The 9.1GB Drive is not compatible with A7000 Disk Array 540-3666.
3. The 9.1GB Drive requires A7000 Disk Array Chassis Option 9656.
4. The 9.1GB Drive requires A7000 Disk Array Chassis 540-3841.

Reference: *9 Gbyte Disk Drive Specification*, 805-3935-10.

Seagate ST39173WC 9.1GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A14 A16 A20 A23 A25 A26

Netra t 1120 Netra t 1125 Netra ft 1800 Netra t1 E3000

StorEdge A1000 StorEdge D1000 StorEdge A7000

StorEdge MultiPack StorEdge UniPack

Options 5163 5229 5230 6288 6956

370-3595

1" Height
Barracuda 9LP

540-3704

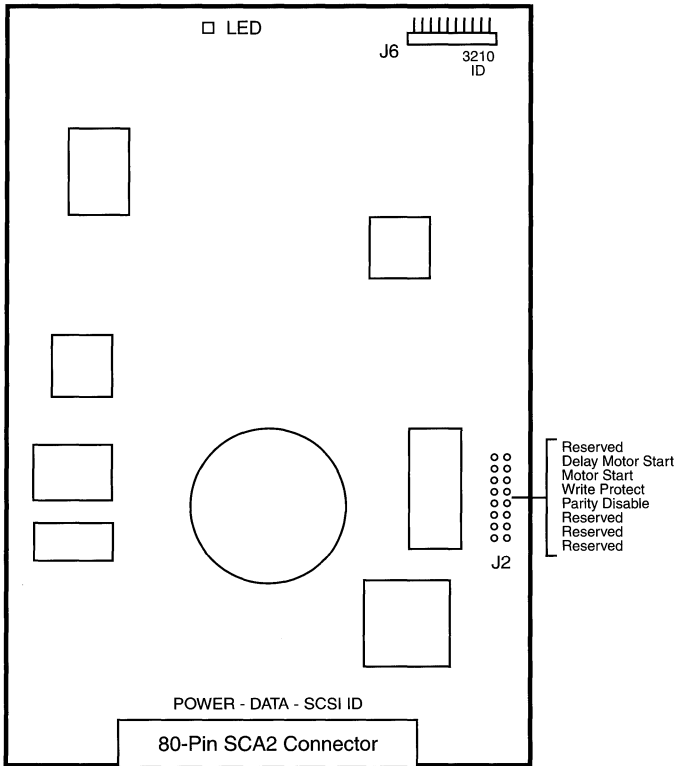
Spud Bracket FRU
w 1" Bkt 540-3024

540-3720

12-Slot A/D1000 FRU
A7000 FRU
w 1" Bkt 540-3024
w Plate 340-4288

540-4004

Netra ft 1800 FRU



Notes

1. The 9.1GB Drive is not compatible with A7000 Option 9652.
2. The 9.1GB Drive is not compatible with A7000 Disk Array 540-3666.
3. The 9.1GB Drive requires A7000 Disk Array Chassis Option 9656.
4. The 9.1GB Drive requires A7000 Disk Array Chassis 540-3841.

Reference: 9 Gbyte 7200 rpm Disk Drive Specifications, 805-3935-10.

Fujitsu MAE3091LC 9.1GB

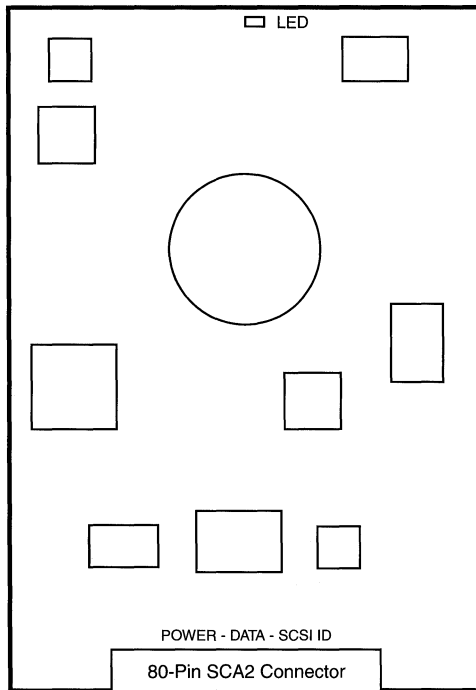
3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI
A14 A16 A20 A23 A25 A26

Netra t 1120 Netra t 1125 Netra t1 E3000
StorEdge A1000 StorEdge D1000 StorEdge A7000
StorEdge MultiPack StorEdge UniPack
Options 5163 5229 5230 6288

390-0004
1" Height
Allegro 5

540-3704
Spud Bracket FRU
w 1" Bkt 540-3024

540-3720
12-Slot A/D1000 FRU
A7000 FRU
w 1" Bkt 540-3024
w Plate 340-4288



Notes

1. The 9.1GB Drive is not compatible with A7000 Option 9652.
2. The 9.1GB Drive is not compatible with A7000 Disk Array 540-3666.
3. The 9.1GB Drive requires A7000 Disk Array Chassis Option 9656.
4. The 9.1GB Drive requires A7000 Disk Array Chassis 540-3841.

Reference: *9 Gbyte Disk Drive Specification*, 805-3935-10.

IBM DNES-309170 9.1GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

A14 A16 A20 A23 A25 A26

Netra t1120 Netra t1125 Netra t1 E3000

StorEdge MultiPack StorEdge UniPack

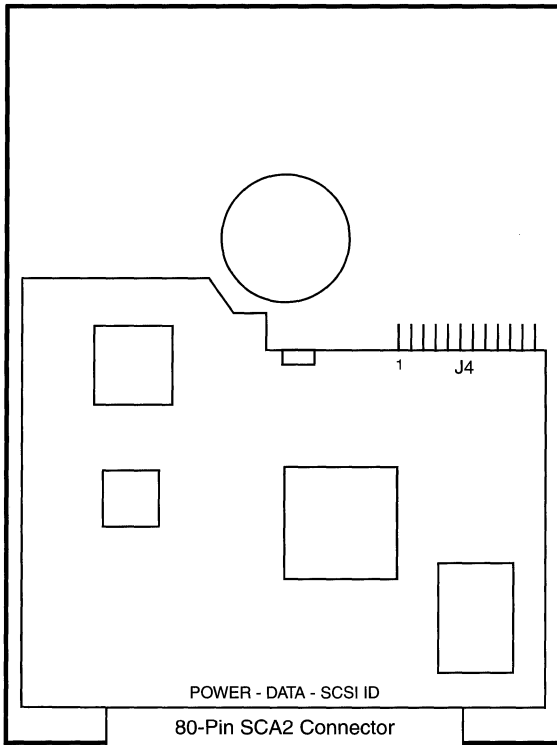
Options 5163 5229 5230 6288

390-0007

1" Height
Neptune

540-3704

Spud Bracket FRU
w 1" Bkt 540-3024



Note: The StorEdge UniPack requires \geq 390-0007-05.

Reference: *9 Gbyte Disk Drive Specification*, 805-3935-10.

Seagate ST39102LC 9.1GB

3 1/2" 10000 RPM Single-Ended Ultra/Wide SCSI

A16 A20 A23 A25 A26 Netra t1

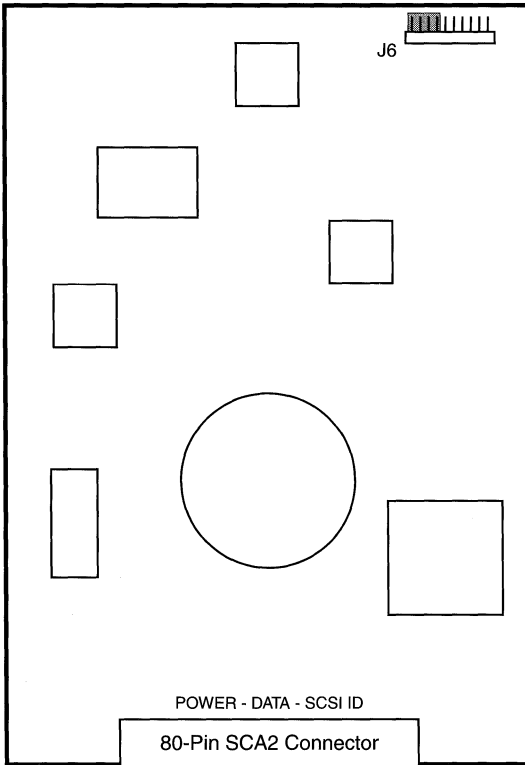
StorEdge MultiPack StorEdge A1000 StorEdge D1000

Options 5234 5235

370-3649
1" Height
Cheetah 9LP

540-3881
Spud Bracket FRU
w 1" Bkt 540-3024

540-3966
12-Slot A/D1000 FRU
w 1" Bkt 540-3024
w Plate 340-4288



Reference: *9 Gbyte 10000 rpm Disk Drive Specifications*, 805-5637-10.

Fujitsu MAG3091LC 9.1GB

3 1/2" 10000 RPM Single-Ended Ultra/Wide SCSI

A16 A20 A23 A25 A26 Netra t1

StorEdge MultiPack StorEdge UniPack

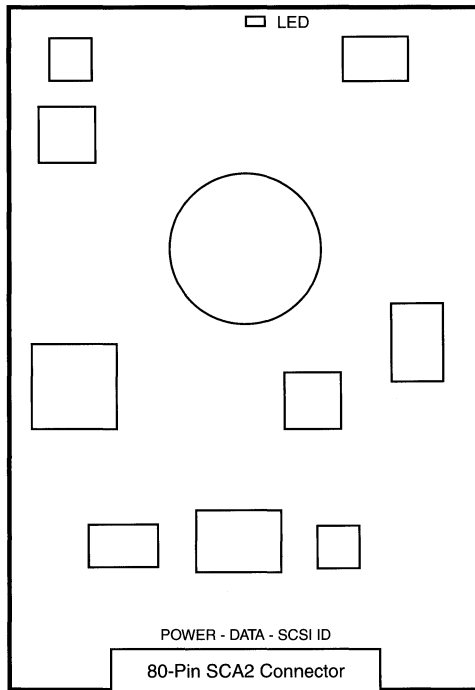
StorEdge A1000 StorEdge D1000

Options 5234 5235

390-0005
1" Height
Allegro 5

540-3881
Spud Bracket FRU
w 1" Bkt 540-3024

540-3966
12-Slot A/D1000 FRU
w 1" Bkt 540-3024
w Plate 340-4288



Note: The StorEdge UniPack requires ≥390-0005-05.

Reference: *9 Gbyte 10000 rpm Disk Drive Specifications*, 805-5637-10.

Seagate ST39103LC 9.1GB

3 1/2" 10000 RPM Single-Ended Ultra/Wide SCSI

A16 A20 A23 A25 A26 Netra t1

StorEdge MultiPack StorEdge UniPack

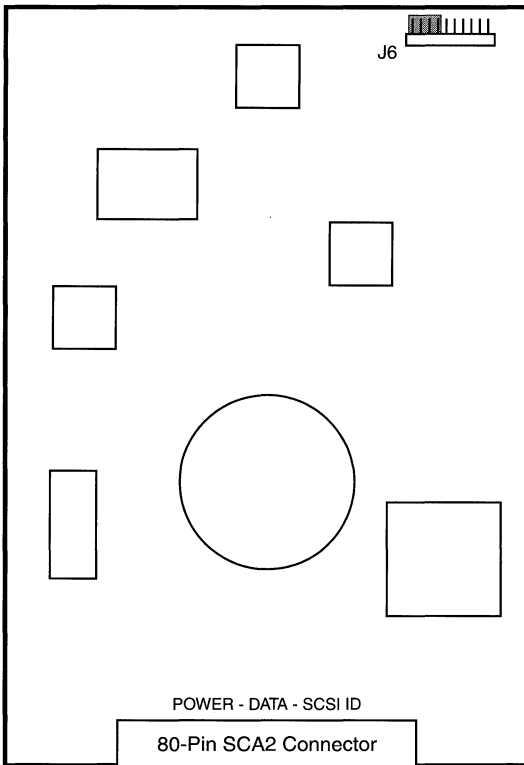
StorEdge A1000 StorEdge D1000

Options 5234 5235

390-0009
1" Height
Cheetah 18LP

540-3881
Spud Bracket FRU
w 1" Bkt 540-3024

540-3966
12-Slot A/D1000 FRU
w 1" Bkt 540-3024
w Plate 340-4288



Reference: *9 Gbyte 10000 rpm Disk Drive Specifications*, 805-5637-10.

Seagate ST39204LC 9.1GB

3 1/2" 10000 RPM Single-Ended Ultra/Wide SCSI

A16 A20 A23 A25 A26 Netra t1

StorEdge MultiPack StorEdge UniPack

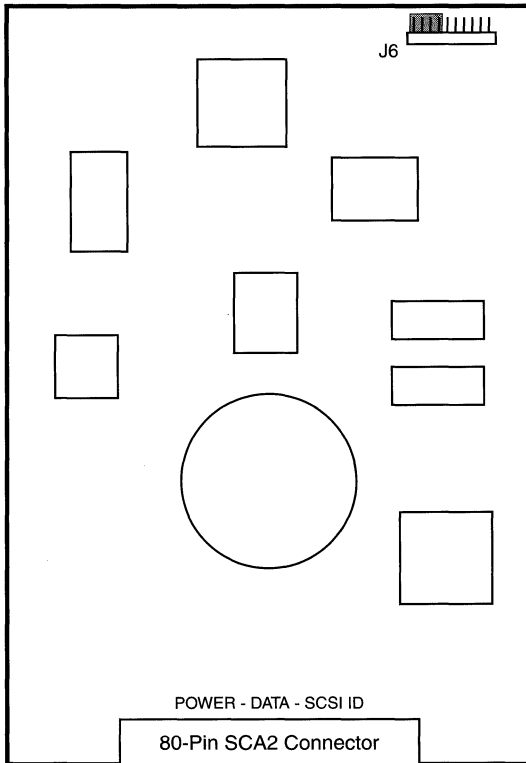
StorEdge A1000 StorEdge D1000

Options 5234 5235

390-0037
1" Height
Cheetah 18XL

540-3881
Spud Bracket FRU
w 1" Bkt 540-3024

540-3966
12-Slot A/D1000 FRU
w 1" Bkt 540-3024
w Plate 340-4288



Reference: *9 Gbyte 10000 rpm Disk Drive Specifications*, 805-5637-10.

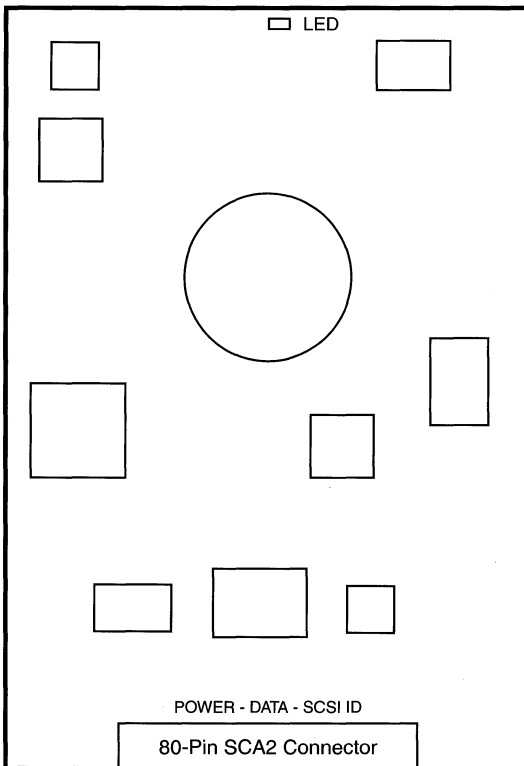
Fujitsu MAA3182SC 18.2GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI
 A23 A26 A27 Netra t 1120 Netra t 1125 E3000
 StorEdge A1000 StorEdge D1000 StorEdge A7000
 StorEdge MultiPack StorEdge UniPack
 Options 5232 5233

370-3414
 1 5/8" Height
 Allegro 4

540-3719
 Spud Bracket FRU
 w 1.6" Bkt 540-3025

540-3721
 8-Slot A/D1000 FRU
 A7000 FRU
 w 1.6" Bkt 540-3025
 w Plate 340-4288



Notes

1. The 18GB Drive is not compatible with A7000 Option 9652.
2. The 18GB Drive is not compatible with A7000 Disk Array 540-3666.
3. The 18GB Drive requires A7000 Disk Array Chassis Option 9656.
4. The 18GB Drive requires A7000 Disk Array Chassis 540-3841.

Reference: *18 Gbyte 7200 rpm Disk Drive Specifications*, 805-3936-10.

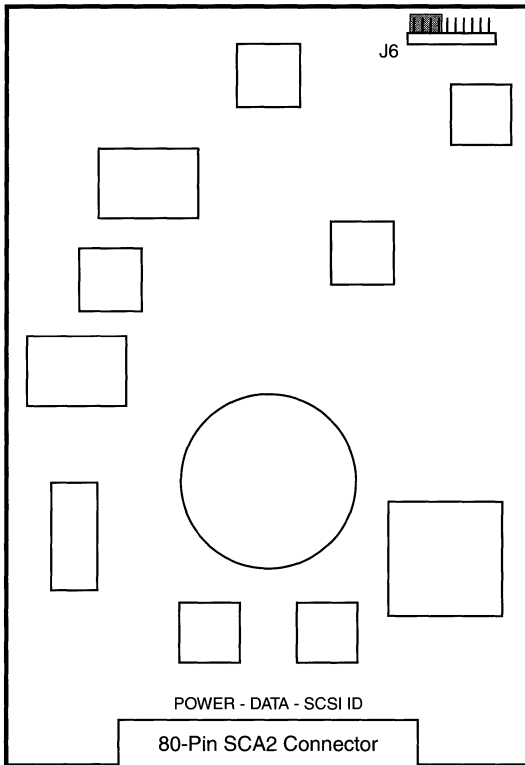
Seagate ST118273LC 18.2GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI

370-3596

1 5/8" Height

Barracuda 18



Notes

1. The 370-3956 was released in February 1999.
2. The 370-3956 is not used in any assembly.

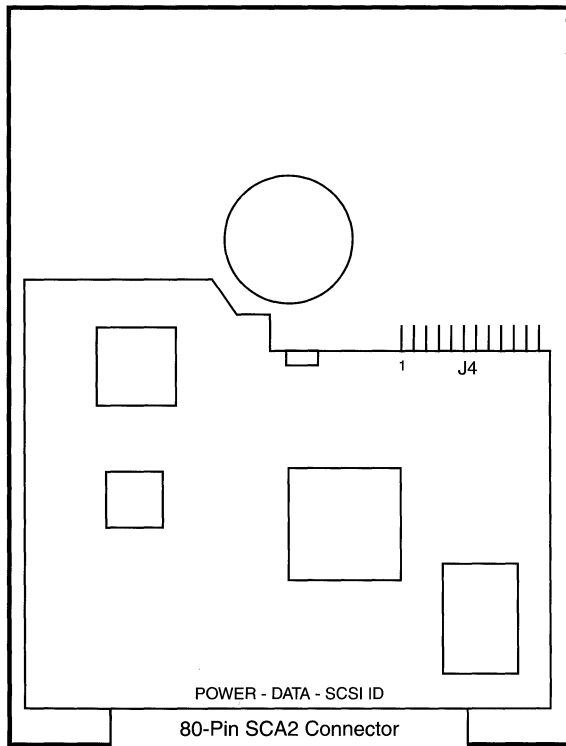
Reference: *18 Gbyte 7200 rpm Disk Drive Specifications*, 805-3936-10.

IBM DGHS-18Y 18.2GB

3 1/2" 7200 RPM Single Ended Ultra/Wide SCSI
StorEdge A1000 StorEdge D1000 StorEdge A7000
Option 5233

370-3716
1 5/8" Height
Marlin

540-3721
8-Slot A/D1000 FRU
A7000 FRU
w 1.6" Bkt 540-3925
w Plate 340-4288



Notes

1. The 18GB Drive is not compatible with A7000 Option 9652.
2. The 18GB Drive is not compatible with A7000 Disk Array 540-3666.
3. The 18GB Drive requires A7000 Disk Array Chassis Option 9656.
4. The 18GB Drive requires A7000 Disk Array Chassis 540-3841.

Reference: *18 Gbyte 7200 rpm Disk Drive Specifications*, 805-3936-10.

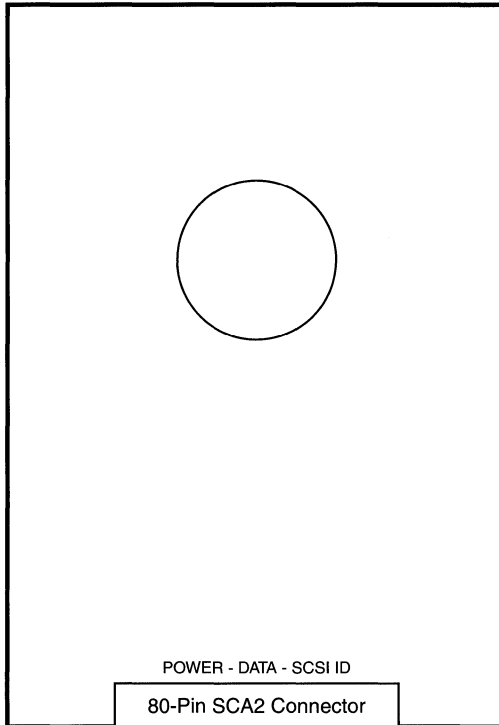
Fujitsu MAG3182LC 18.2GB

3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI
 A20 A23 A25 A26 A27 E3000 Netra t 1400/1405
 StorEdge A1000 StorEdge D1000 StorEdge MultiPack
 Options 5164 5237 5238

390-0006
 1" Height
 Allegro 5

540-4177
 Spud Bracket FRU
 w 1" Bkt 540-3024

540-4178
 12-Slot A/D1000 FRU
 w 1" Bkt 540-3024
 w Plate 340-4288



Note: This drive is not NEBS Level 3 qualified in the Netra st D130.

References

1. 18 Gbyte 10000 rpm Disk Drive Specifications, 806-1057.
2. StorEdge MultiPack Product Note, 806-1102.

Seagate ST318203LC 18.2GB

3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI

A20 A23 A25 A26 A27 E3000

Netra ft 1800 Netra t 1400/1405

StorEdge A1000/D1000 StorEdge MultiPack StorEdge UniPack

Netra st A1000 Netra st D1000 Netra st D130

Options 5164 5237 5238 5239 6957

390-0002

1" Height
Cheetah 18

540-4077

Netra ft 1800 FRU
w Bkt 540-4884
w Plate 340-4288

540-4177

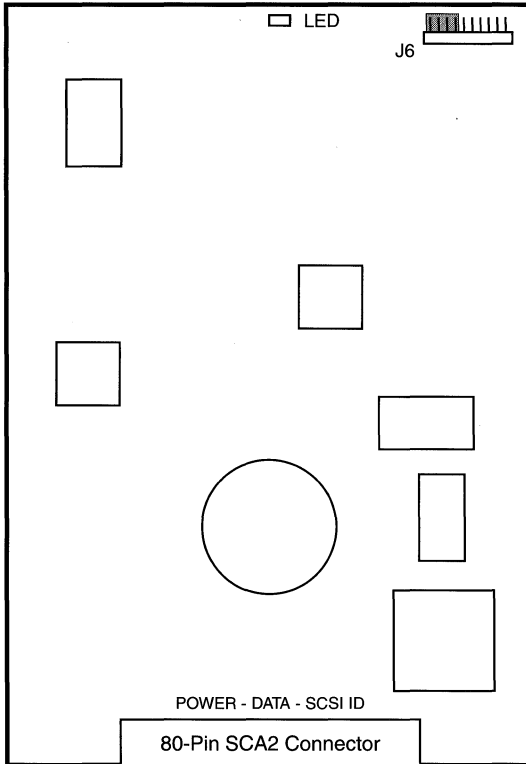
Spud Bracket FRU
w 1" Bkt 540-3024

540-4178

12-Slot A/D1000 FRU
w 1" Bkt 540-3024
w Plate 340-4288

540-4401

Netra st D130 FRU
w 1" Bkt 540-3024
w Plate 340-4288



References

1. 18 Gbyte 10000 rpm Disk Drive Specifications, 806-1057.
2. StorEdge MultiPack Product Note, 806-1102.

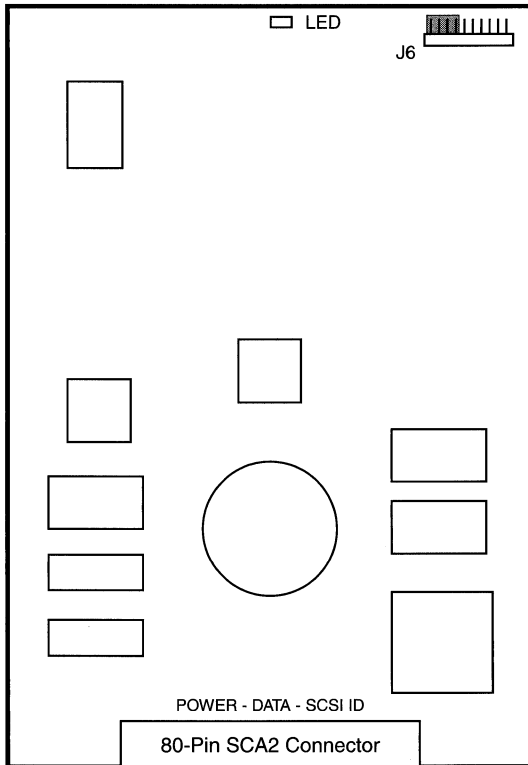
Seagate ST318404LC 18.2GB

3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI
 A20 A23 A25 A26 A27 E3000 Netra t 1400/1405
 StorEdge A1000 StorEdge D1000
 StorEdge UniPack StorEdge MultiPack
 Options 5164 5237 5238

390-0038
 1" Height
 Cheetah 18XL

540-4177
 Spud Bracket FRU
 w 1" Bkt 540-3024

540-4178
 12-Slot A/D1000 FRU
 w 1" Bkt 540-3024
 w Plate 340-4288



References

1. 18 Gbyte 10000 rpm Disk Drive Specifications, 806-1057.
2. StorEdge MultiPack Product Note, 806-1102.

Fujitsu MAJ3182M 18.2GB

3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI
 A20 A23 A25 A26 A27 E3000 Netra t 1400/1405
 Netra ct 400/800 StorEdge A1000/D1000 Netra st D130
 StorEdge UniPack StorEdge MultiPack

Options 5164 5237 5238

390-0043
 1" Height
 Allegro 6LE

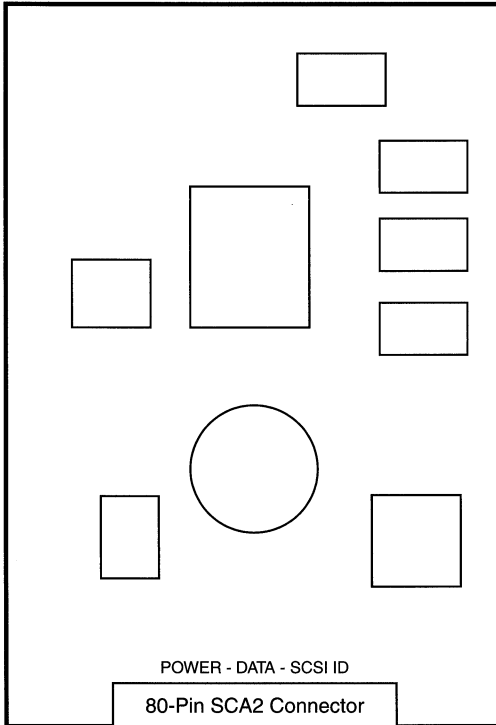
390-0060
 1" Height
 Allegro 6LE
 UniPack Drive

540-4177
 Spud Bracket FRU
 w Drive 390-0043
 w 1" Bkt 540-3024

540-4178
 12-Slot A/D1000 FRU
 w Drive 390-0043
 w 1" Bkt 540-3024
 w Plate 340-4288

540-4401
 Netra st D130 FRU
 w Drive 390-0043
 w 1" Bkt 540-3024
 w Plate 340-4288

540-4620
 ct 400/800 FRU
 w Drive 390-0043
 w 1" Bkt 540-3024
 w Plate 340-4288



Notes

1. Drives 390-0043 and 390-0060 are the same Fujitsu model number.
2. Drives 390-0043 and 390-0060 respond to an Inquiry command with different values.

Reference: *18 Gbyte Disk Drive Specifications*, 806-1057 and 806-6395.

Fujitsu MAF3364LC 36.4GB

3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI

StorEdge A1000 StorEdge D1000

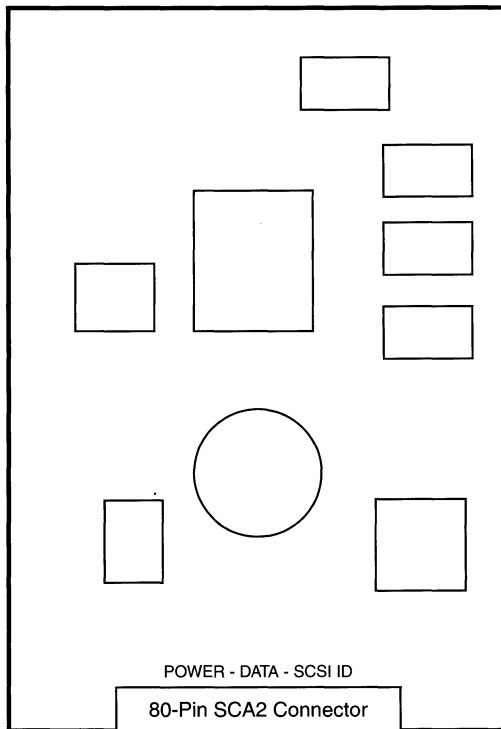
Options 5239 5240

390-0014

1 5/8" Height
Allegro 5

540-4263

8-Slot A/D1000 FRU
w 1.6" Bkt 540-3025
w Plate 340-4288



Reference: 36 Gbyte 10000 rpm Disk Drive Specifications, 806-1492.

Seagate ST136403LC 36.4GB

3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI

StorEdge A1000 StorEdge D1000

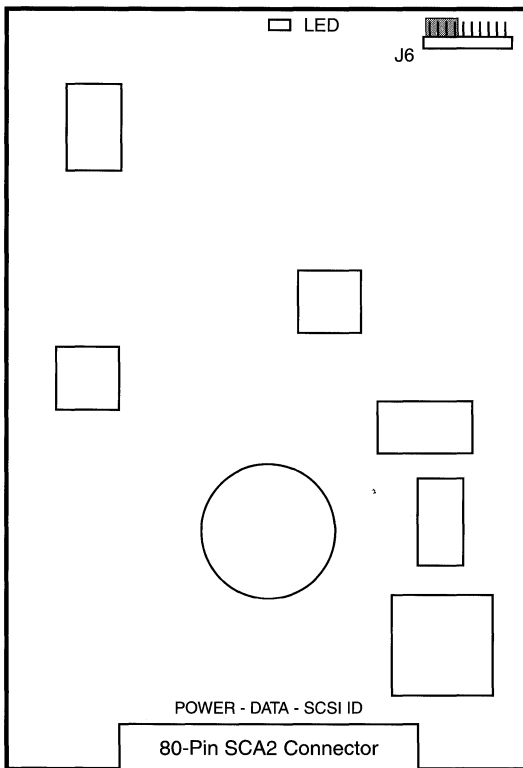
Options 5239 5240

390-0020

1 5/8" Height
Cheetah 36

540-4263

8-Slot A/D1000 FRU
w 1.6" Bkt 540-3025
w Plate 340-4288



Reference: 36 Gbyte 10000 rpm Disk Drive Specifications, 806-1492.

Fujitsu MAJ3364M 36.4GB

3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI

A23 A25 A26 A27 A33 A34

StorEdge A1000 StorEdge D1000 Netra st D130

StorEdge UniPack StorEdge MultiPack

Options 5242 5243 5244

390-0051

1" Height
Allegro 6

390-0059

1" Height
Allegro 6

540-4520

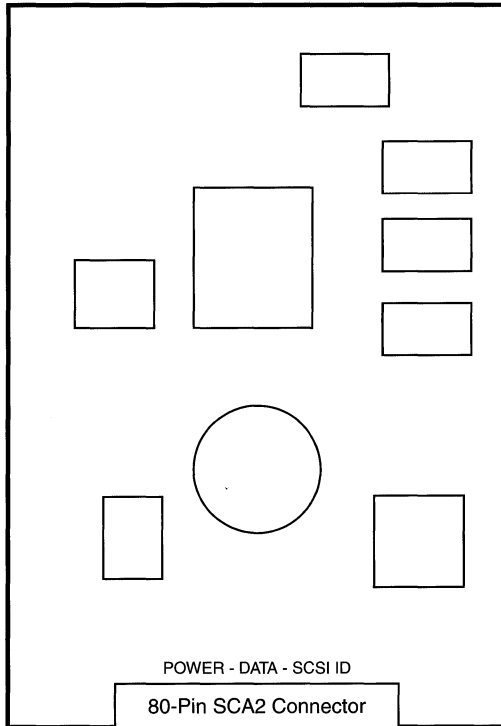
12-Slot A/D1000 FRU
w 1" Bkt 540-3024
w Plate 340-4288

540-4521

w Drive 390-0051
w 1" Bkt 540-3024

540-4689

Netra st D130 FRU
w 1" Bkt 540-3024
w Plate 340-4288



Notes

- 1. Drives 390-0051 and 390-0059 are the same Fujitsu model number.
- 2. Drives 390-0051 and 390-0059 respond to a SCSI Inquiry command with different values.

Reference: 36 Gbyte 10000 rpm Disk Drive Specifications, 806-1492.

Seagate ST336704LC 36.4GB

3 1/2" 10000 RPM Single Ended Ultra/Wide SCSI

A23 A25 A26 A27 A33 A34

StorEdge A1000 StorEdge D1000 Netra st D130

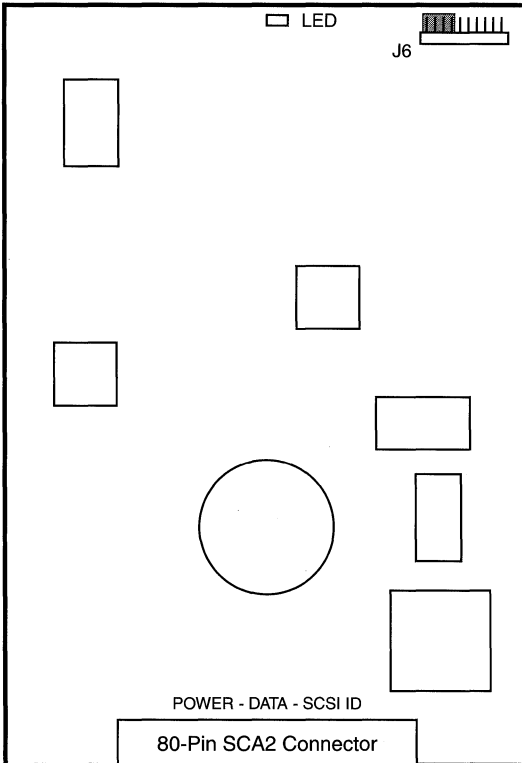
Options 5239 5240 5244

390-0050
1" Height

540-4520
12-Slot A/D1000 FRU
w 1" Bkt 540-3024
w Plate 340-4288

540-4521
w 1" Bkt 540-3024

540-4689
Netra st D130 FRU
w 1" Bkt 540-3024
w Plate 340-4288

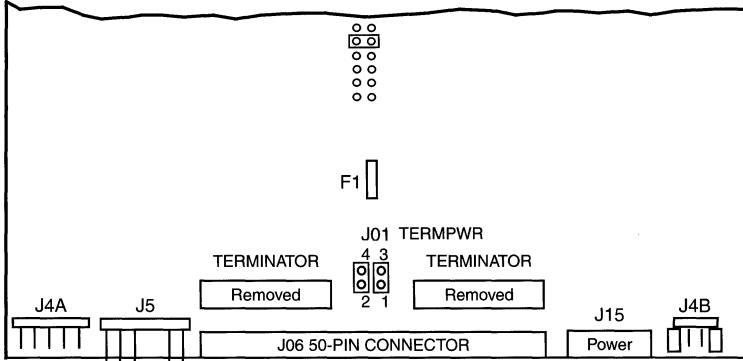


Reference: 36 Gbyte 10000 rpm Disk Drive Specifications, 806-1492.

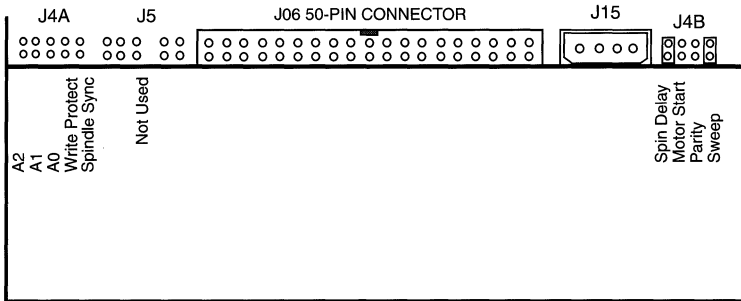
Seagate ST42400ND 2.1GB
5 1/4" 5400 RPM Differential Fast SCSI
Options 573 574 575 576

370-1412
 3 1/4" Height
 990002-002
 Elite 2

Top View



End View



Notes

1. The minimum operating system is SunOS 4.1.3.
2. Jumpers J01, J4A, and J4B use 2 mm shunts.
3. The J5 spindle synchronization connector is not used.
4. The DWIS/S requires 2.1GB drive Firmware 0420 (370-1412-03) for optimum performance. If the firmware is less than 0420, disable fast/wide transfers by adding "set scsi_options=0xf8" to /etc/system.

References

1. *SCSI Expansion Pedestal Service Manual*, 800-7286-11.
2. *Differential SCSI Disk Tray Service Manual*, 800-7341-10.
3. *2.1Gbyte Disk Drive Installation Manual*, 800-7007-11.

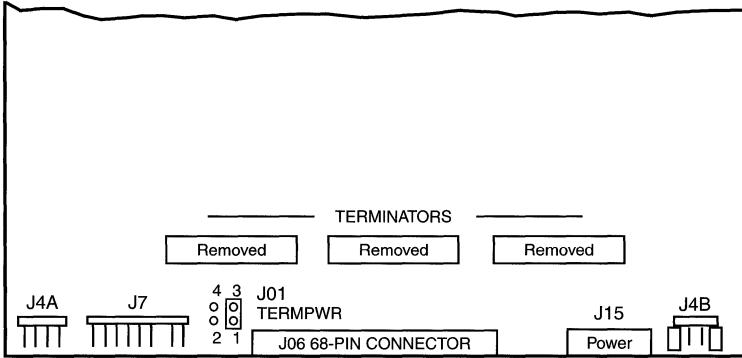
Seagate ST43401ND 2.9GB

5 1/4" 5400 RPM Differential Fast/Wide SCSI

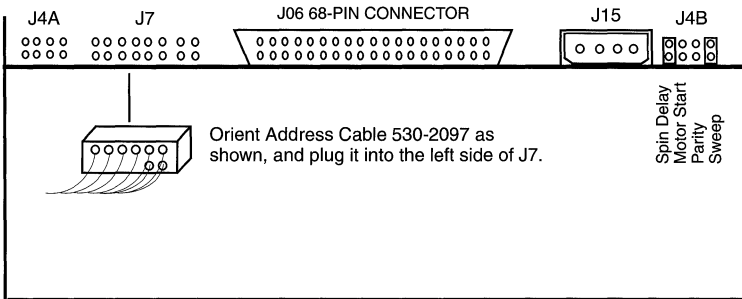
Options 583 584 585 586

370-1695
 3 1/4" Height
 992004-005/6
 Elite 3

Top View



End View



Notes

1. The minimum operating system is Solaris 2.3.
2. Solaris 2.3 requires Patch 101378-xx.
3. The firmware on 370-1695-02 is level 0407.

References

1. *Differential SCSI Disk Tray Service Manual*, 800-7341-11.
2. *2.9GByte Disk Drive Installation Manual*, 801-2066-10.
3. *Product Note*, 801-6582-12.

Seagate ST43401ND 2.9GB

5 1/4" 5400 RPM Differential Fast/Wide SCSI

CS6400 Peripheral Cabinet

370-2766

420-6113-001

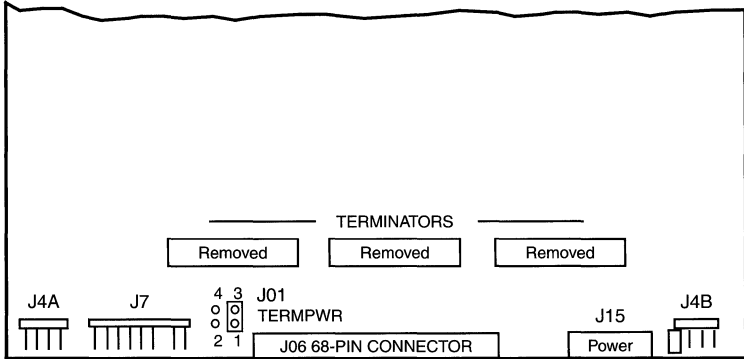
3 1/4" Height

BSD Part Number

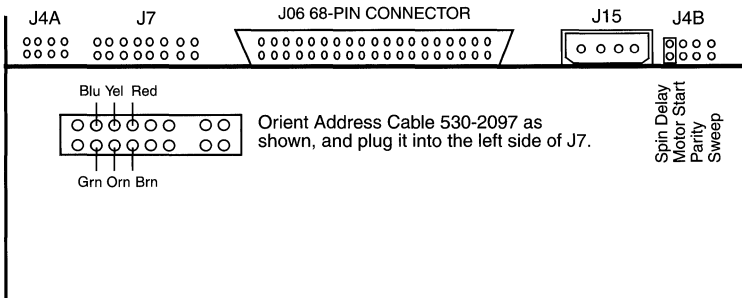
992004-001

Elite 3

Top View



End View



Power: 2.85 Amps @ +5Vdc
 1.85 Amps @ +12Vdc
 36.45 Watts

Note: The firmware on 370-2766-01 is level 0105.

Seagate ST43402ND 2.9GB

5 1/4" 5400 RPM Differential Fast/Wide SCSI

CS6400 Peripheral Cabinet

370-2765

420-6063-001

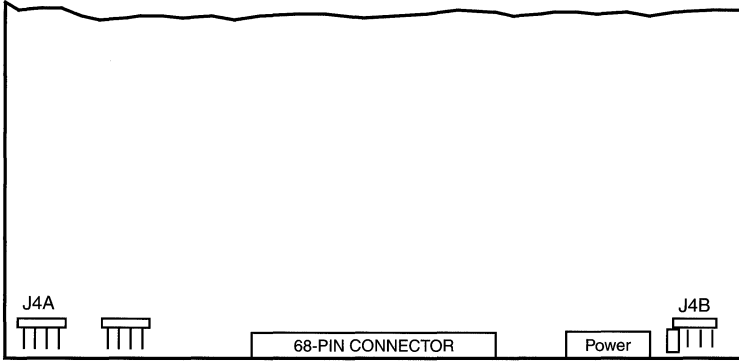
3 1/4" Height

BSD Part Number

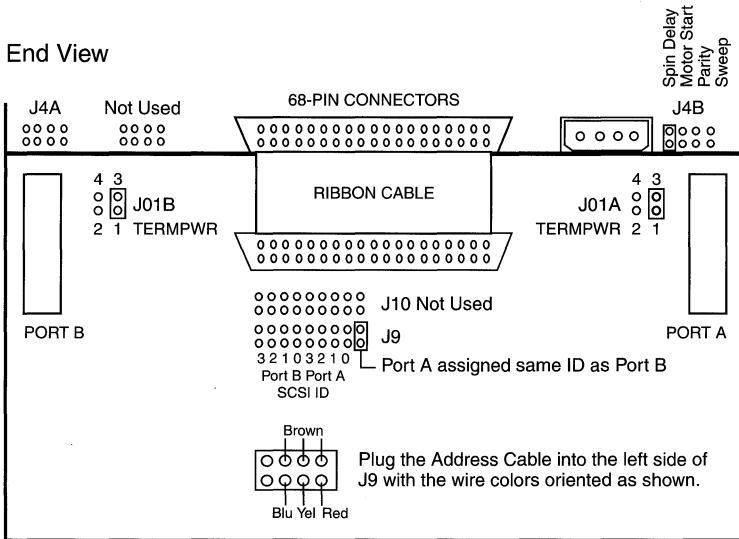
992006-002

Elite 3

Top View



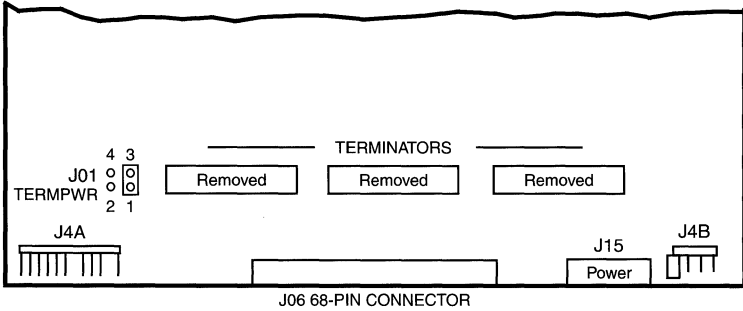
End View



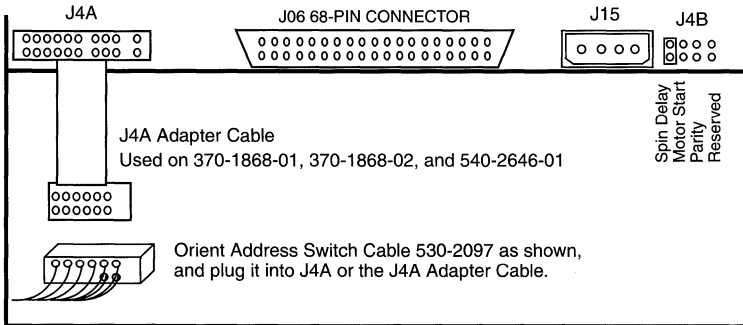
Note: The firmware on 370-2765-01 is level 0111.

Seagate ST410800WD 9.0GB
 5 1/4" 5400 RPM Differential Fast/Wide SCSI
 Options 783 784 785 786
 370-1868 540-2646
 3 1/4" Height 9.0GB Disk Drive FRU
 9A7004-021 w Bkt 340-2612
 Elite 9

Top View



End View



Notes

1. The minimum operating system is Solaris 2.3.
2. Solaris 2.3 requires Patch 101378-xx.
3. The firmware on 370-1868-03 and 540-2646-02 is level 0407.
4. The maximum operating altitude is 6000 feet.
5. The adapter is required on 370-1868-01 and 370-1868-02.
6. The adapter is not used on 370-1868-03 or 540-2646-02.

References

1. *Differential SCSI Disk Tray Service Manual*, 800-7341-11.
2. *Product Note*, 801-6582-12.

Seagate ST410800WD 9.0GB

5 1/4" 5400 RPM Differential Fast/Wide SCSI

CS6400 Peripheral Cabinet

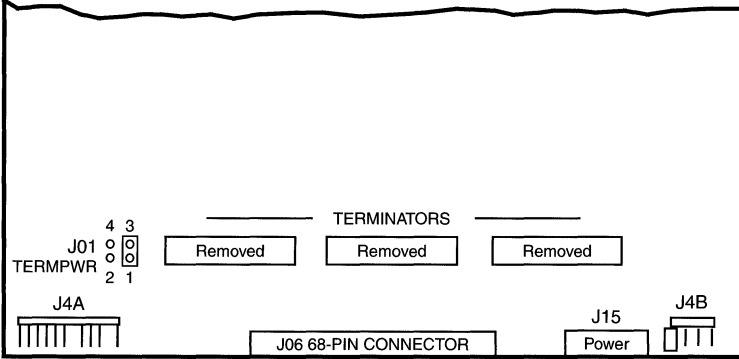
370-2770
9A7004-001
Elite 9

420-6117-001
BSD Part Number

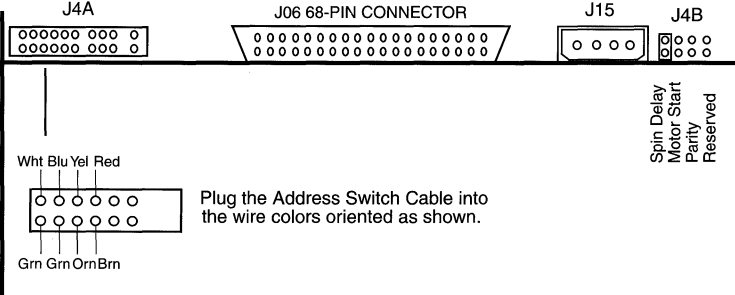
370-2771
9A7004-025
Elite 9

420-6117-002
BSD Part Number

Top View



End View



Note: The firmware on 370-2771-01 is level 0002.

Seagate ST34342A 4.3GB

3 1/2" 4500 RPM Ultra ATA-3

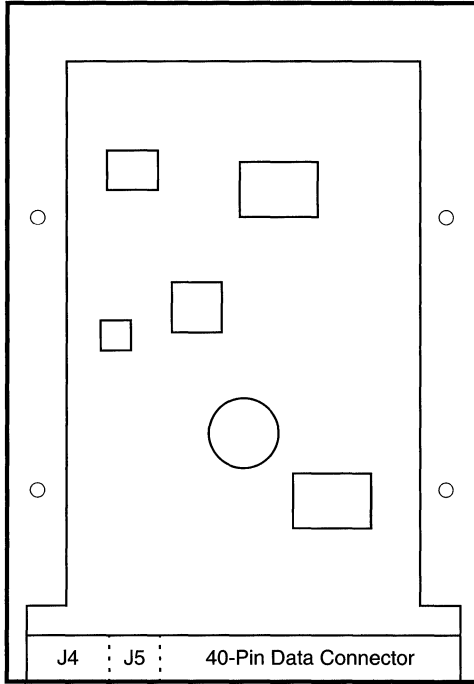
A21 A22

Option 5227

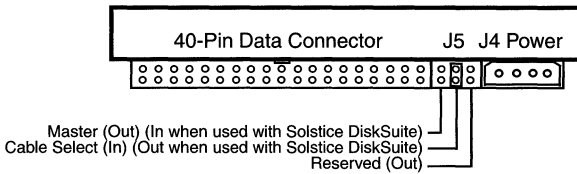
370-3176

Medalist 4342

Bottom View



End View



References

1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

Seagate ST34321A 4.3GB

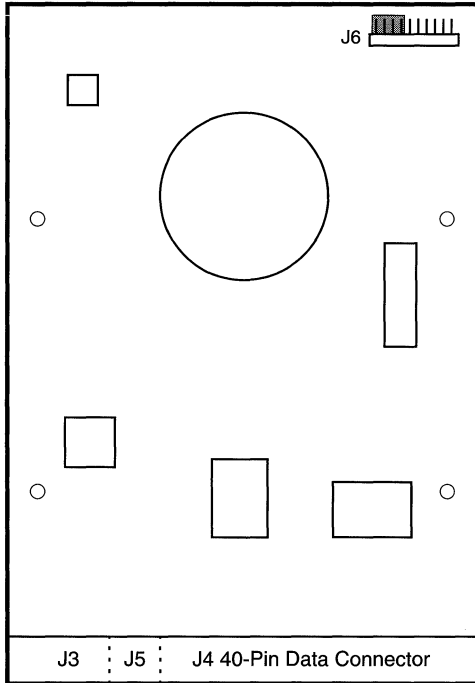
3 1/2" 5400 RPM Ultra ATA-3

A21

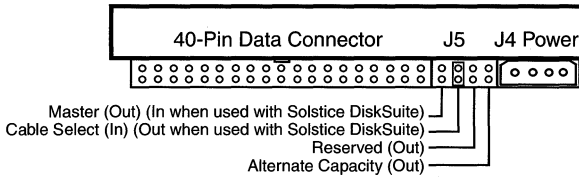
370-3692

Medalist 4321

Bottom View



End View



Notes

1. The 4GB 5400RPM drive was not sold as a standalone option.
2. The 4GB 5400RPM drive was not sold in the Ultra 10.

References

1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *Ultra 5/10 CD-ROM and Hard Drive Installation Guides*, 805-3085.

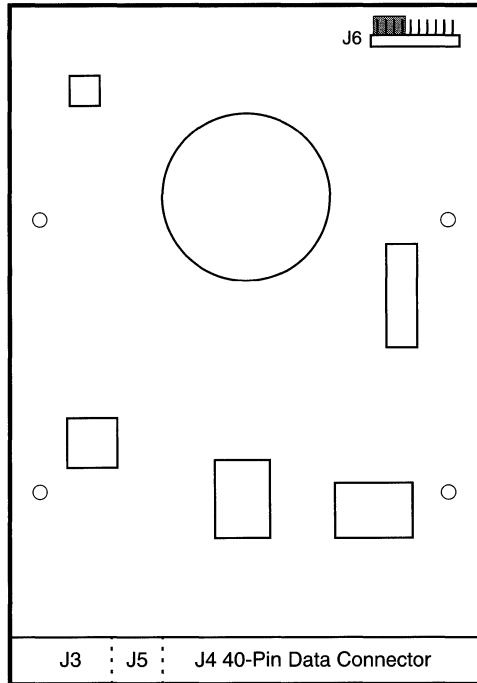
Seagate ST34312A 4.3GB

3 1/2" 5400 RPM Ultra ATA/66

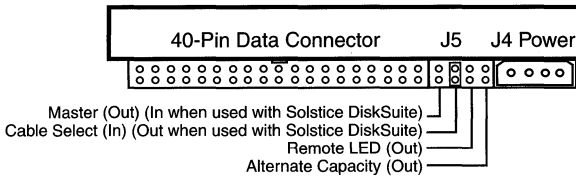
A21

370-3692
Medalist 4312

Bottom View



End View



Notes

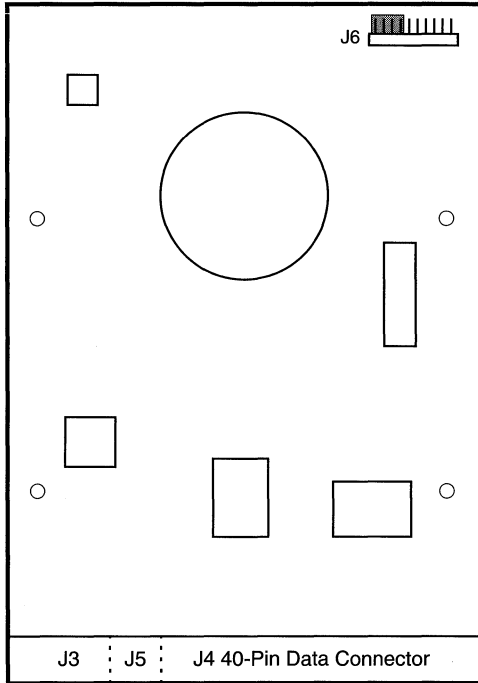
1. The 4GB 5400RPM drive was not sold as a standalone option.
2. The 4GB 5400RPM drive was not sold in the Ultra 10.

References

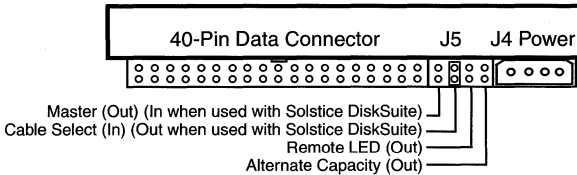
1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

Seagate ST38420A 8.4GB
 3 1/2" 5400 RPM Ultra ATA-4
 A21
 370-3863
 Medalist 8420

Bottom View



End View



Notes

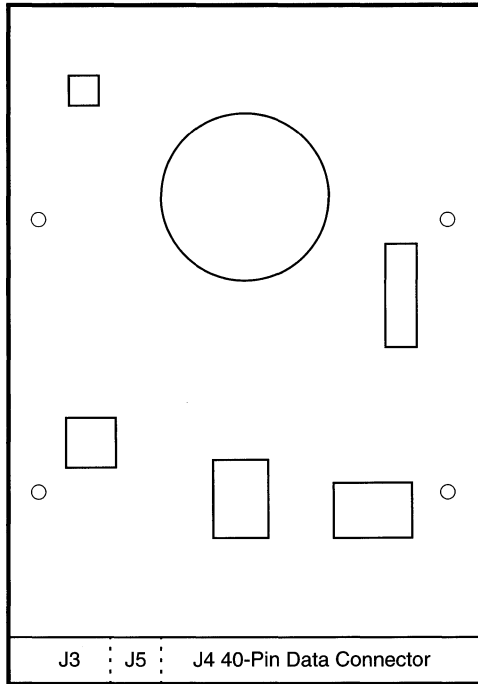
1. The 8.4GB Disk Drive shipped in the 360MHz Ultra 5.
2. The 8.4GB Disk Drive was not shipped in the Ultra 10.
3. The 8.4GB Disk Drive was not sold as a standalone option.

References

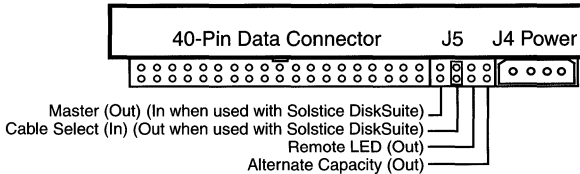
1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

Seagate ST38410A 8.4GB
 3 1/2" 5400 RPM Ultra ATA/66
 A21
 370-3863
 U8 8410

Bottom View



End View



Notes

1. The 8.4GB Disk Drive shipped in the 360MHz Ultra 5.
2. The 8.4GB Disk Drive was not shipped in the Ultra 10.
3. The 8.4GB Disk Drive was not sold as a standalone option.

References

1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

Seagate ST39140A 9.1GB

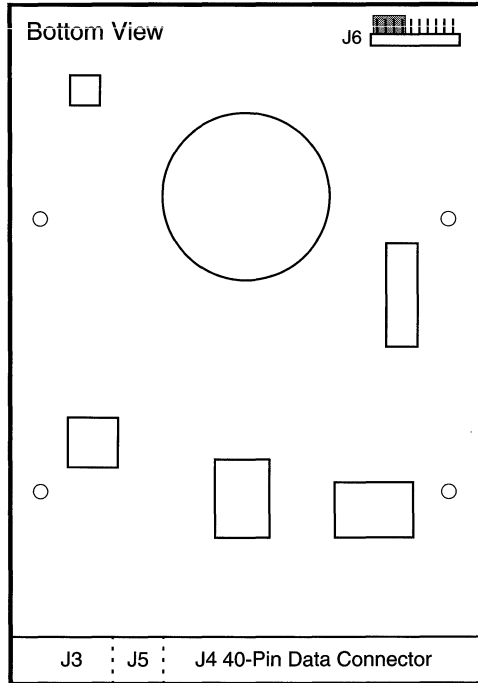
3 1/2" 7200 RPM Ultra ATA-4

A21 A22

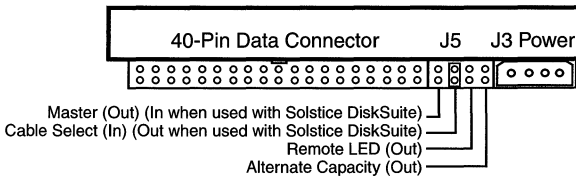
Options 5226 5236

370-3693

Medalist Pro 9140



End View



Notes

1. Either a Floppy or a front Disk Drive can be installed in the Ultra 5.
2. The Ultra 5 front Disk Mounting Bracket replaces the Floppy Bracket.
3. The Ultra 5 front Disk Mounting Bracket has no Sun part number.
4. The Ultra 5 front Disk Mounting Bracket is included with Option 5236.
5. The Ultra 10 primary/rear drive requires Mounting Bracket 370-3721.

References

1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

IBM DJNA-370910 9.1GB

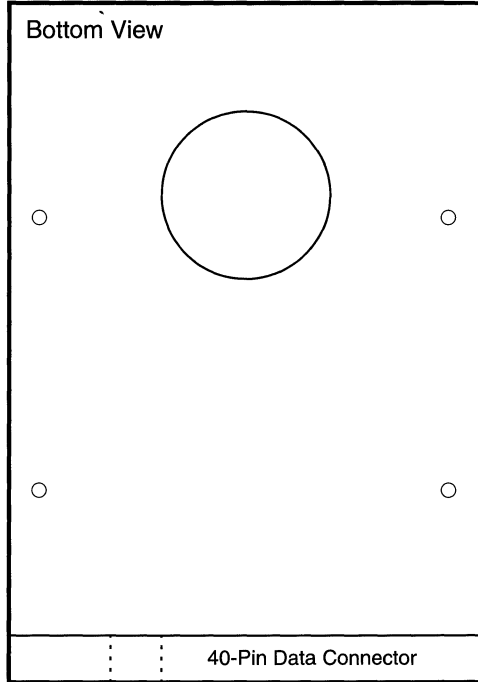
3 1/2" 7200 RPM Ultra ATA/66

A21 A22

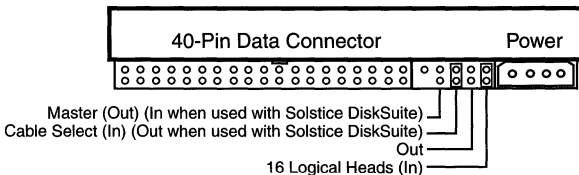
Options 5226 5236

370-3693

Deskstar 22GXP



End View



Notes

1. Either a Floppy or a front Disk Drive can be installed in the Ultra 5.
2. The Ultra 5 front Disk Mounting Bracket replaces the Floppy Bracket.
3. The Ultra 5 front Disk Mounting Bracket has no Sun part number.
4. The Ultra 5 front Disk Mounting Bracket is included with Option 5236.
5. The Ultra 10 primary/rear drive requires Mounting Bracket 370-3721.

References

1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

Seagate ST39120A 9.1GB

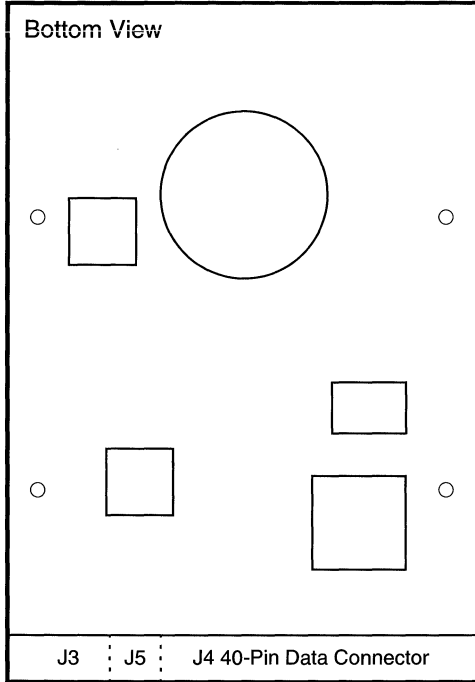
3 1/2" 7200 RPM Ultra ATA/66

A21 A22

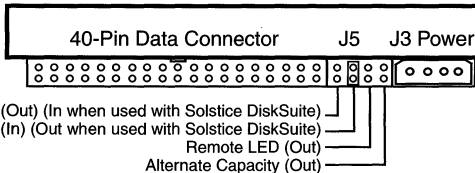
Options 5226 5236

370-3693

Barracuda ATA



End View



Notes

1. Either a Floppy or a front Disk Drive can be installed in the Ultra 5.
2. The Ultra 5 front Disk Mounting Bracket replaces the Floppy Bracket.
3. The Ultra 5 front Disk Mounting Bracket has no Sun part number.
4. The Ultra 5 front Disk Mounting Bracket is included with Option 5236.
5. The Ultra 10 primary/rear drive requires Mounting Bracket 370-3721.

References

1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

Seagate ST39111A 9.1GB

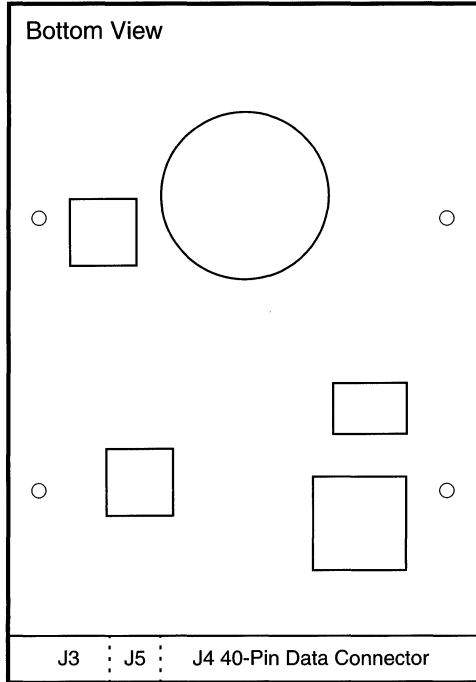
3 1/2" 7200 RPM Ultra ATA/66

A21 A22

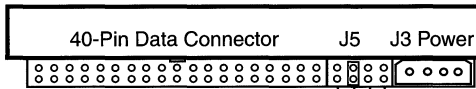
Options 5226 5236

370-3693

Barracuda ATA II



End View



- Master (Out) (In when used with Solstice DiskSuite)
- Cable Select (In) (Out when used with Solstice DiskSuite)
- Remote LED (Out)
- Alternate Capacity (Out)

Notes

1. Either a Floppy or a front Disk Drive can be installed in the Ultra 5.
2. The Ultra 5 front Disk Mounting Bracket replaces the Floppy Bracket.
3. The Ultra 5 front Disk Mounting Bracket has no Sun part number.
4. The Ultra 5 front Disk Mounting Bracket is included with Option 5236.
5. The Ultra 10 primary/rear drive requires Mounting Bracket 370-3721.

References

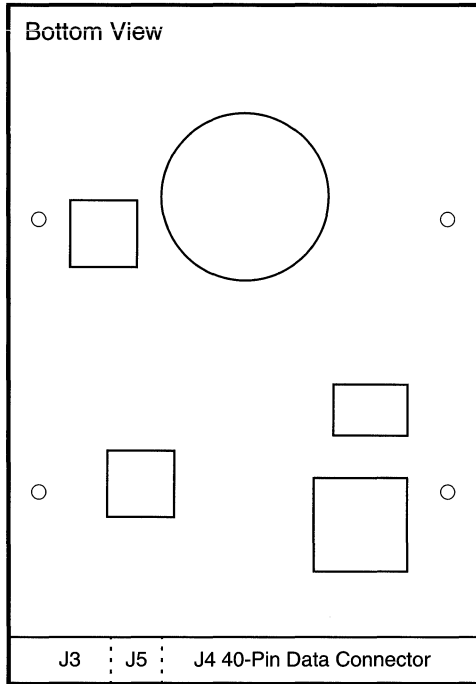
1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

Seagate ST315320A 15.3GB

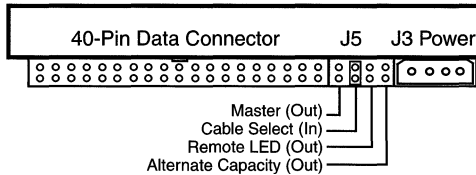
3 1/2" 7200 RPM Ultra ATA/66

A36

370-4154
Barracuda ATA II



End View



Seagate ST19171FC 9.1GB

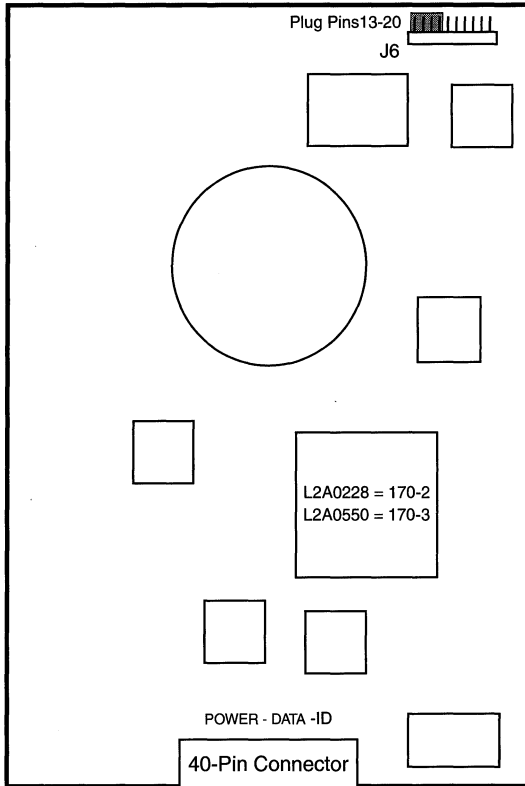
3 1/2" 7200 RPM FC-AL

StorEdge A5000

Option 6708

370-2875
1 5/8" Height
Barracuda 9FC

540-3249
Spud Bracket FRU
w 1.6" Bkt 540-3025
w Shield 340-3462



Notes

1. The 370-2875 was manufactured with an Aurora 170-2 or 170-3 ASIC.
2. The E3500 cannot boot from CD-ROM if there is one drive on the fibre channel loop and that drive has an Aurora 170-2 ASIC.
3. The 370-2875 and 540-3249 are not supported in the E3500.

Reference: *9 Gbyte 7200 rpm Disk Drive Specifications*, 805-1679-10.

Seagate ST19171FC 9.1GB

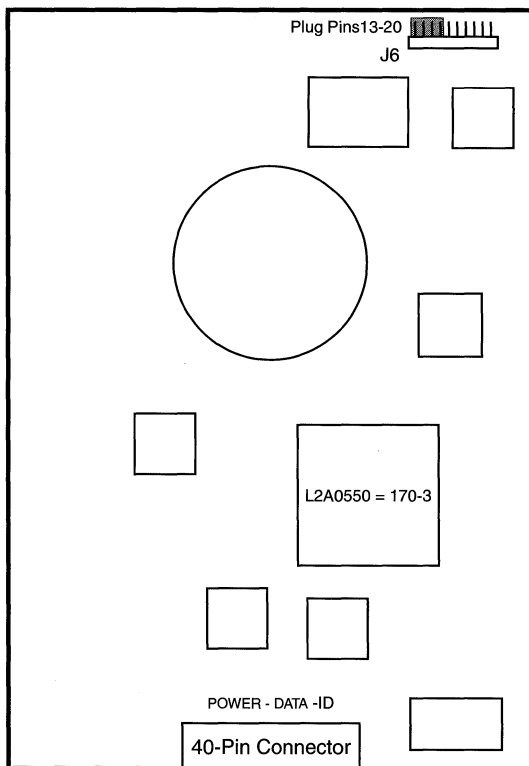
3 1/2" 7200 RPM FC-AL

E3500 StorEdge A5000

Option 6709

370-3602
1 5/8" Height
Barracuda 9FC

540-3852
Spud Bracket FRU
w 1.6" Bkt 540-3025
w Shield 340-3462



Note: The 370-3602 is manufactured with an Aurora 170-3 ASIC.

Reference: *9 Gbyte 7200 rpm Disk Drive Specifications*, 805-1679-10.

Seagate ST39102FC 9.1GB

3 1/2" 10000 RPM FC-AL

E3500 StorEdge A5200

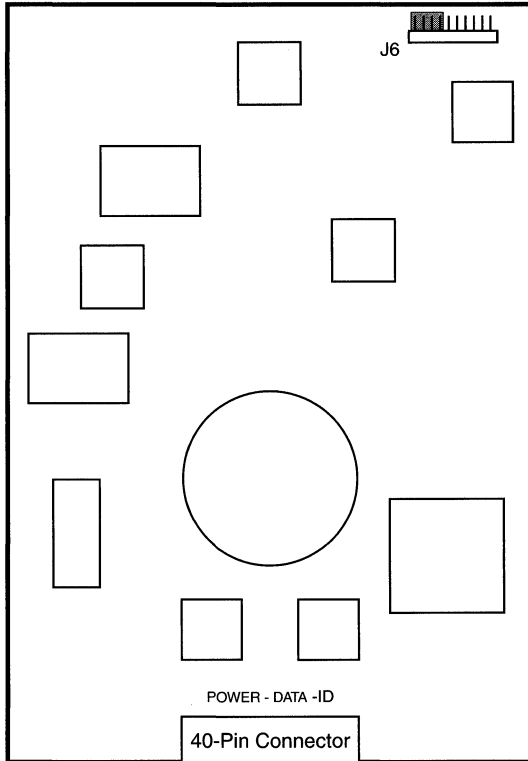
Option 6710

370-3647

1" Height
Cheetah 9LP

540-3869

Spud Bracket FRU
w 1" Bkt 540-3024
w Plate 340-4288



Reference: *9 Gbyte 10000 rpm Disk Drive Specifications*, 805-5638-10.

Seagate ST39103FC 9.1GB

3 1/2" 10000 RPM FC-AL

E3500 StorEdge A5200 StorEdge T3

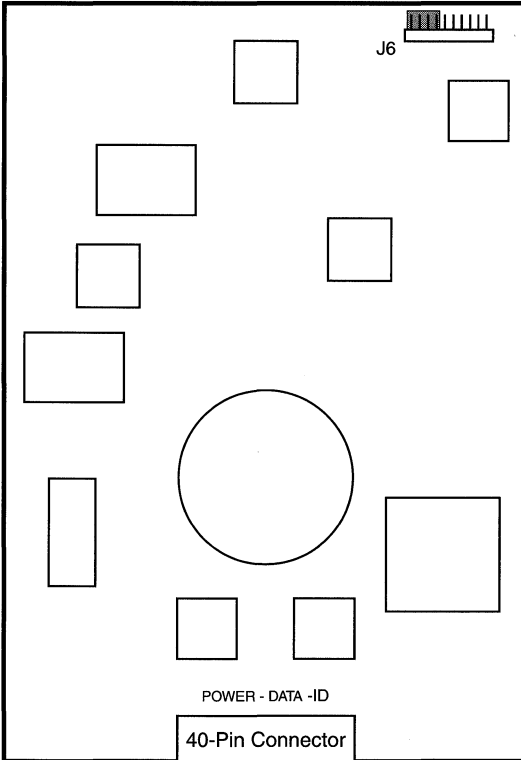
Option 6710

390-0016
1" Height
Cheetah 9LP
Assy 540-3869

390-0026
1" Height
Cheetah 9LP
Assy 540-4366

540-3869
Spud Bracket FRU
w 1" Bkt 540-3024
w Plate 340-4288

540-4366
T3 FRU
w Bkt 540-4303



Notes

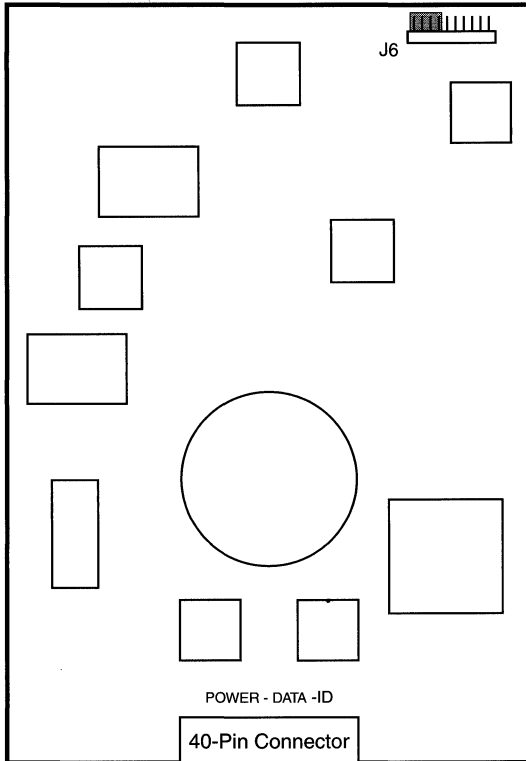
1. Drives 390-0016 and 390-0026 are the same Seagate model number.
2. Drives 390-0016 and 390-0026 are not interchangeable because they have different firmware.

Reference: *9 Gbyte 10000 rpm Disk Drive Specifications*, 805-5638-10.

Seagate ST118273FC 18.2GB
3 1/2" 7200 RPM FC-AL
E3500 StorEdge A5000 StorEdge A5100
Option 6711

370-3678
1 5/8" Height
Barracuda 18

540-3923
Spud Bracket FRU
w 1.6" Bkt 540-3025
w Plate 340-4288



Notes

1. The E3500 requires 2.5.1 Patches 103346-19, 104708-16, and 105310-08.
2. The E3500 requires 2.6 Patches 103346-19, 105356-08, and 105375-10.
3. The E3500 on Solaris 7 is not supported as of 6/15/99.
4. A5000 Interface Board Firmware 1.08 fixes BugID 4190846.

Reference: *18 Gbyte 7200 rpm Disk Drive Specifications*, 805-6524-10.

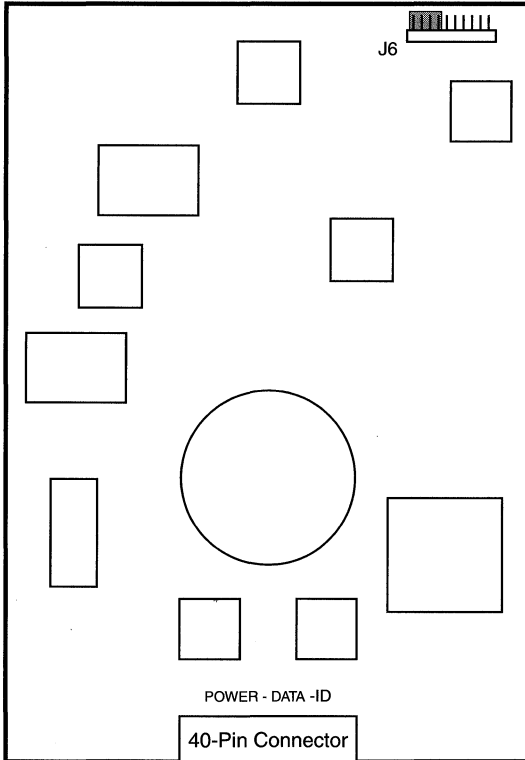
Seagate ST118202FC 18.2GB

3 1/2" 10000 RPM FC-AL

StorEdge T3

390-0017
1 5/8" Height
Cheetah 18

540-4287
T3 FRU
w Enclosure 540-4303
Early Production



Reference: *18 Gbyte 10000 rpm Disk Drive Specifications*, 806-1493-10.

Seagate ST318203FC 18.2GB

3 1/2" 10000 RPM FC-AL

A28 E3500 StorEdge A5200 StorEdge T3

Options 6716 6720 6782

390-0011

1" Height
Cheetah 18LP
Assy 540-4191
Assy 540-4673

390-0022

1" Height
Cheetah 18LP
Assy 540-4440

540-4191

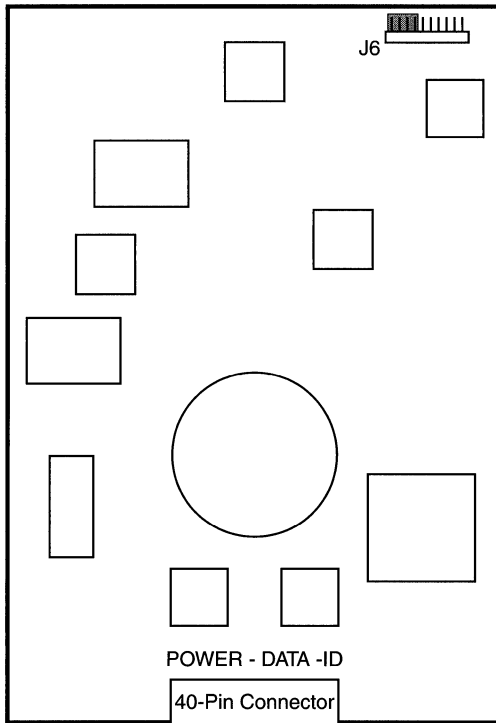
Spud Bracket FRU
w 1" Bkt 540-3024
w Plate 340-5928
or Plate 340-6640

540-4440

T3 FRU
w Bkt 540-4303

540-4673

Spud Bracket FRU
w 1" Bkt 540-3024
w Plate 340-6640



Notes

1. Drives 390-0011 and 390-0022 are the same Seagate model number.
2. Drives 390-0011 and 390-0022 are not interchangeable because they have different firmware and different mode sense data.
3. Plate 340-5928 is not compatible with the Sun Blade 1000 (A28).

Reference: *18 Gbyte 10000 rpm Disk Drive Specifications*, 806-1493-10.

Seagate ST318304FC 18.2GB

3 1/2" 10000 RPM FC-AL

A28 E3500 StorEdge A5200 StorEdge T3

Options 6720 6782

390-0034

1" Height
Cheetah 36LP
Assy 540-4191
Assy 540-4673

390-0053

1" Height
Cheetah 36LP
Assy 540-4440

540-4191

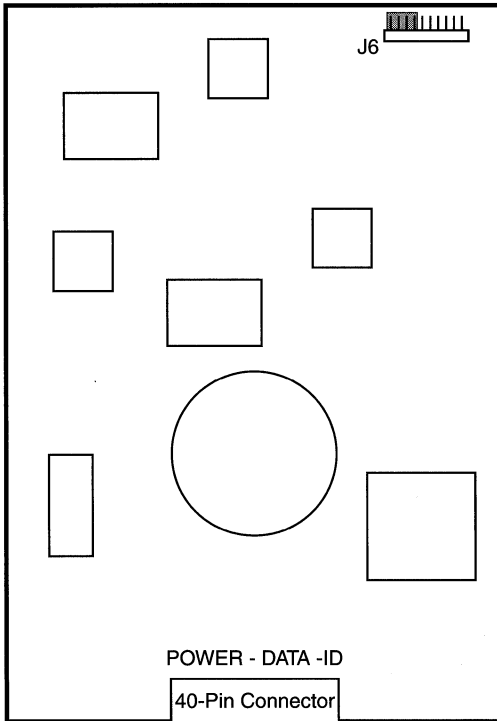
Spud Bracket FRU
w 1" Bkt 540-3024
w Plate 340-5928
or Plate 340-6640

540-4440

T3 FRU
w Bkt 540-4303

540-4673

Spud Bracket FRU
w 1" Bkt 540-3024
w Plate 340-6640



Notes

1. Drives 390-0034 and 390-0053 are the same Seagate model number.
2. Drives 390-0034 and 390-0053 are not interchangeable because they have different firmware and different mode sense data.
3. Plate 340-5928 is not compatible with the Sun Blade 1000 (A28).

Reference: *18 Gbyte 10000 rpm Disk Drive Specifications*, 806-1493-10.

Seagate ST136403FC 36.4GB

3 1/2" 10000 RPM FC-AL

StorEdge A5100

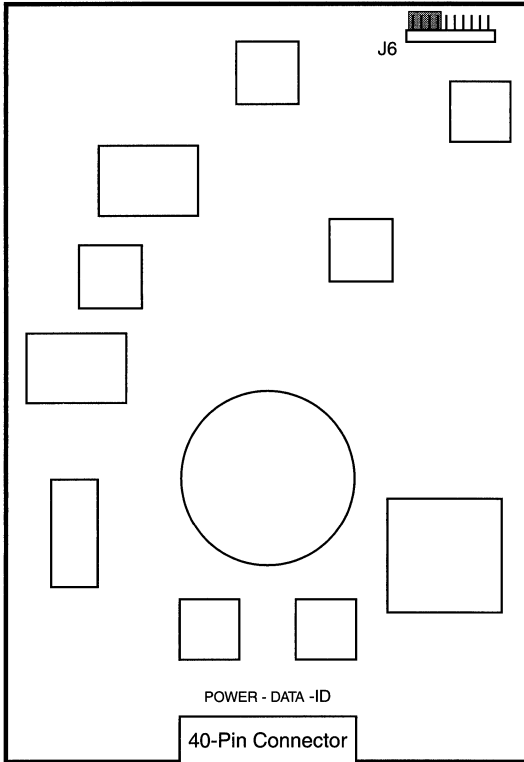
Options 6714 6722

390-0012
1 5/8" Height
Cheetah 36
Assy 540-4192

390-0023
1 5/8" Height
Cheetah 36
Assy 540-4367

540-4192
Spud Bracket FRU
w 1.6" Bkt 540-3025
w Plate 340-5928

540-4367
T3 FRU
w Bkt 540-4303



Notes

1. Drives 390-0012 and 390-0023 are the same Seagate model number.
2. Drives 390-0012 and 390-0023 are not interchangeable because they have different firmware.

Reference: *36 Gbyte 10000 rpm Disk Drive Specifications*, 806-1491-10.

Seagate ST336704FC 36.4GB

3 1/2" 10000 RPM FC-AL

A28 StorEdge A5200 StorEdge T3

Option 6724

390-0035

1" Height
Cheetah 36LP
Assy 540-4525

390-0056

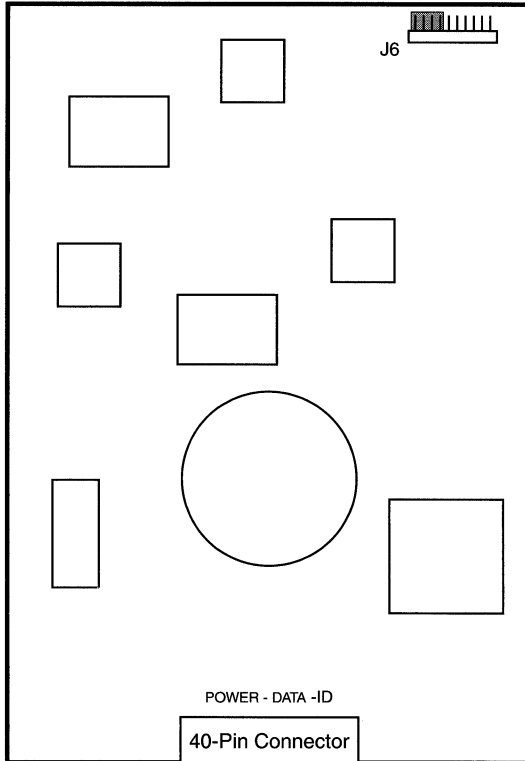
1" Height
Cheetah 36LP
Assy 540-4367

540-4525

Spud Bracket FRU
w 1" Bkt 540-3024
w Plate 340-6640

540-4367

T3 FRU
w Bkt 540-4303



Notes

1. Drives 390-0035 and 390-0056 are the same Seagate model number.
2. Drives 390-0035 and 390-0056 are not interchangeable because they have different firmware and different mode sense data.

Reference: *36 Gbyte 10000 rpm Disk Drive Specifications*, 806-1491-10.

Seagate ST173404FC 73.4GB

3 1/2" 10000 RPM FC-AL

StorEdge T3

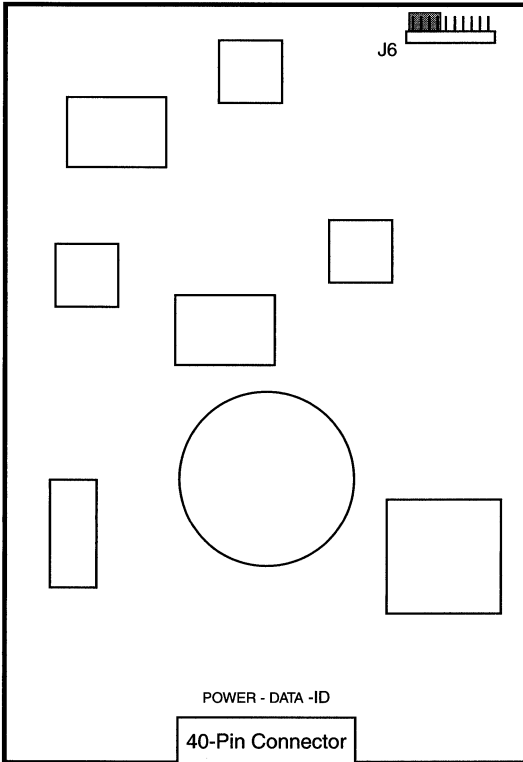
Option 6717

390-0036

1 5/8" Height
Cheetah 73

540-4519

T3 FRU
w Enclosure 540-4303



Reference: 73 Gbyte 10000 rpm Disk Drive Specifications, 806-4800-10.

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CONFIGURATIONS
REMOVEABLE MEDIA

Removable Media

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| Floppy Disk Drives | |
| Dual Density Floppy | 3 |
| Triple Density Floppy | 4 |
| SCSI CD-ROM Drives | |
| SunCD | 9 |
| SunCD Plus | 10 |
| SunCD 2Plus | 11 |
| SunCD 4 | 12 |
| SunCD 12 StorEdge CD12 | 14 |
| SunCD 32 StorEdge CD32 | 15 |
| 10X DVD-ROM | 16 |
| ATAPI/IDE CD-ROM Drive | |
| 24X CD-ROM | 17 |
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| 5GB DDS-1 | 20 |
| 4-8GB DDS-2 | 22 |
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| 16-32GB DDS-2 | 32 |
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Removable Media - Continued

8 mm Tape Drives

| | |
|---------------|----|
| 2.3GB | 42 |
| 5.0GB | 44 |
| 10GB | 46 |
| 7-14GB | 48 |
| 20-40GB | 52 |

1/2" DLT Tape Drives

| | |
|------------------------|----|
| 20-40GB DLT 4000 | 54 |
| 20-40GB DLT 4000 | 55 |
| 20-40GB DLT 4700 | 55 |
| 35-70GB DLT 7000 | 56 |

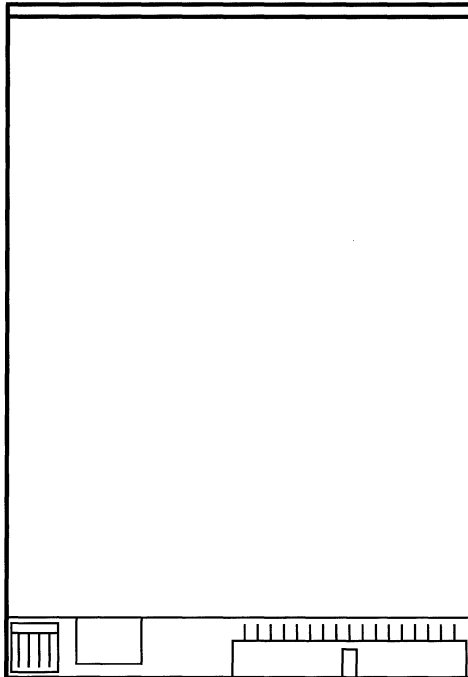
1/2" DLT Tape Libraries

| | |
|--|----|
| ETL 4/1000 20-40GB DLT 4000 | 57 |
| ETL 4/1800/StorEdge L1800 35-70GB DLT 7000 | 58 |
| ETL 7/3500/StorEdge L3500 35-70GB DLT 7000 | 58 |
| StorEdge L280 35-70GB DLT 7000 | 59 |
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| StorEdge L11000 35-70GB DLT 7000 | 61 |
| StorEdge L20/40/60 35-70GB DLT 7000 | 62 |
| StorEdge L9 40-80GB DLT 8000 | 63 |

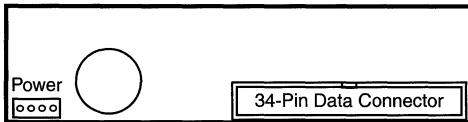
Dual-Density Floppy

A21 A22
370-3159
NEC FD1231
w/o Bezel

Top View



Rear View



Notes

- 1. Use 3 mm diameter mounting screws.
- 2. This drive supports 744KB and 1.44MB formatted capacities.
- 3. This drive supports 1MB and 2MB unformatted capacities.

Triple Density Floppy

Sun-4/15/30/40/50/60/65/75

SS4 SS5 SS10 SS20

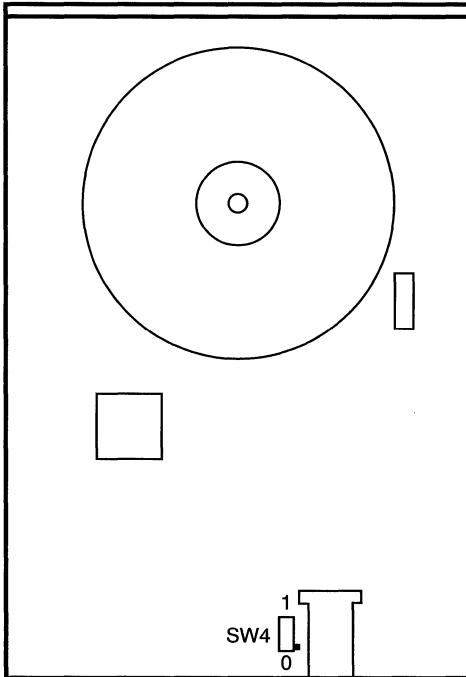
Options 554 556 560

370-1420
Sony MPF420-6-D10
Sun-4/60/65/75
SS10
4 mm Black Bezel

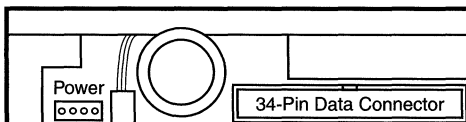
370-1419
Sony MPF420-6-A10
Sun-4/15/30/40/50
SS4 SS5 SS20
8 mm Black Bezel

540-2509
Sony MPF420-6-A10
SS4 SS5 SS20
FRU Assembly

Bottom View



Rear View



Notes

1. Use #6-32 mounting screws.
2. Set the drive to Unit 0 on switch SW4.
3. This drive supports 1MB, 1.6MB, and 2MB unformatted capacities.

Reference: *Floppy Installation Manual*, 801-6197-10.

Triple Density Floppy

Sun-4/15/30/40/50/60/65/75

SS4 SS5 SS10 SS20

A11 A12 A14

Options 554 556 560 6001 6003

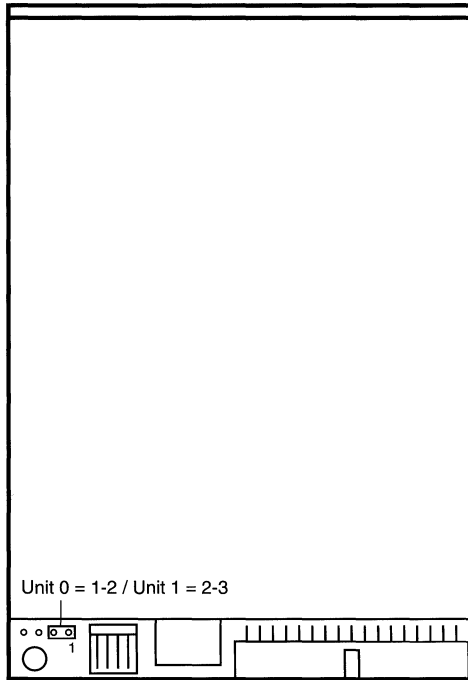
370-2151-01

Sony MPF520-7-D10
Black Bezel

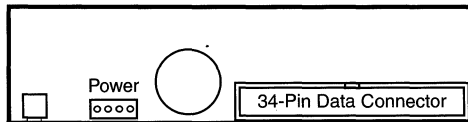
370-2252

Sony MPF520-7-D10
Light Grey Bezel

Top View



Rear View



Notes

1. Use 3 mm diameter mounting screws.
2. The default drive address is Unit 0.
3. This drive supports 1MB, 1.6MB, and 2MB unformatted capacities.
4. SPARCstation 20 and Ultra 2 multi-processor systems require DC Power Filter Cable 530-2316.

Triple Density Floppy

SS4 SS5 SS20

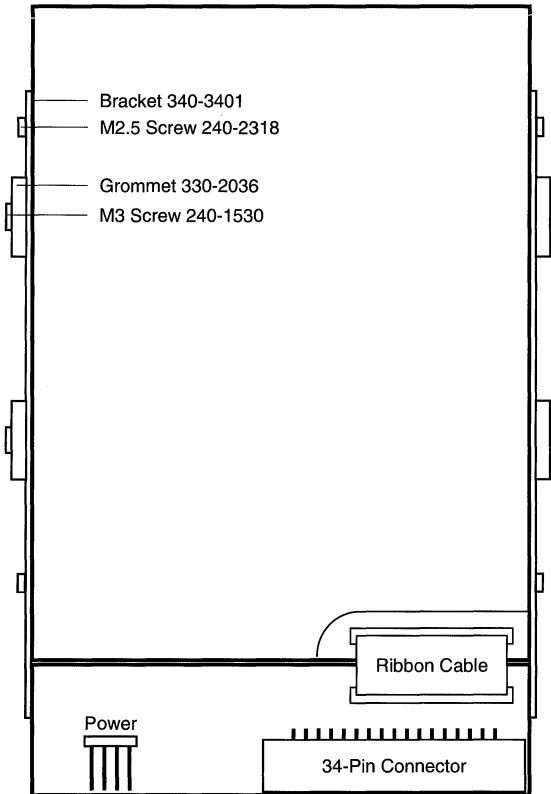
Option 6002

370-2302

540-2854

Sony MPF720-4

FRU Assembly



Notes

1. This drive supports 1MB, 1.6MB, and 2MB unformatted capacities.
2. This drive is not compatible with Chassis 340-2915.
3. This drive is compatible with Chassis 340-3397.
4. Chassis 340-3397 was phased into production in July 1996.
5. Chassis 340-2915 was phased out of production in Nov/Dec 1996.

Triple Density Floppy

A16 A20 A23 A25 A26 A27

Options 6004 6005

370-2729

Sony MPF920E
Light Grey Bezel

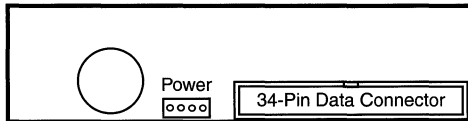
370-2730

Sony MPF920E
Medium Grey Bezel

Top View



Rear View



Notes

1. Use 3 mm diameter mounting screws.
2. The default drive address is Unit 0.
3. This drive does not support auto ejection.
4. This drive supports 1MB, 1.6MB, and 2MB unformatted capacities.

Triple Density Floppy

A11 A12 A14 E150

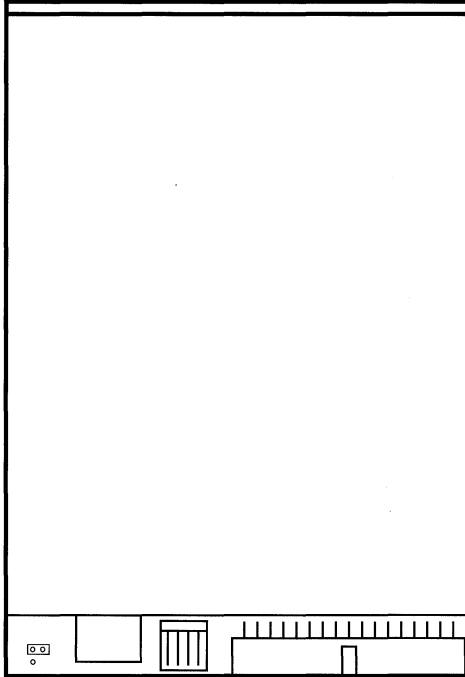
Options 6001 6003

370-3212

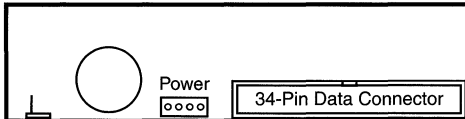
Sony MPF920E

Black Bezel

Top View



Rear View



Notes

- 1. Use 3 mm diameter mounting screws.
- 2. The default drive address is Unit 0.
- 3. This drive supports 1MB, 1.6MB, and 2MB unformatted capacities.

SunCD

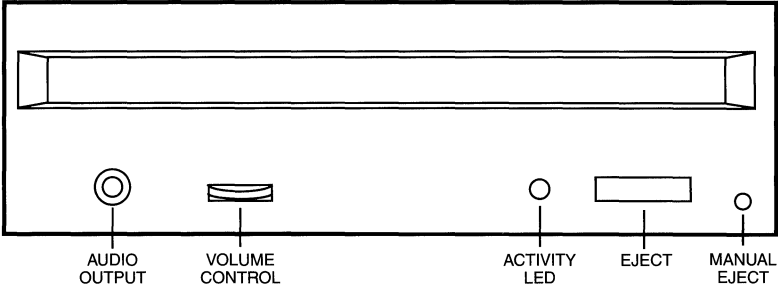
Sun-4/330/370/390/470/490
SS600MP SS1000 SC2000

Options 558 559

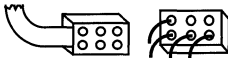
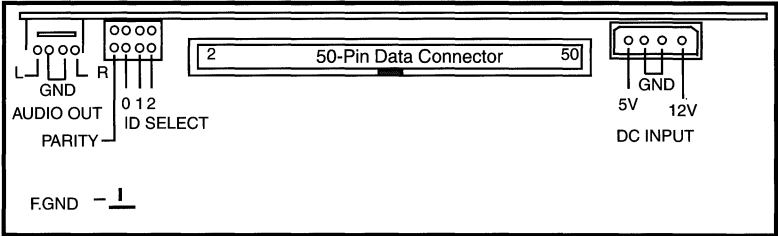
370-1312
Sony CDU-8012
Light Grey Bezel

370-1347
Sony CDU-8012
Black Bezel

Front View



Rear View



SunCD Plus Pack, Multi-Tape Backup Tray, and SC2000 Remote Address Cable Orientation

| JUMPER | SETTING | DESCRIPTION |
|--------|---------|---------------|
| 1, 2 | In | SCSI ID 6 |
| Parity | In | Enable parity |

Power: 0.5 Amps @ +5Vdc
0.5 Amps @ +12Vdc
8.5 Watts

Notes

1. The Sun CD-ROM requires 1.0 SunCD for SunOS 4.0.3c.
2. Use 370-1347-03 when mounted on-end in the SS630MP.

SunCD Plus

SS1000 SC2000

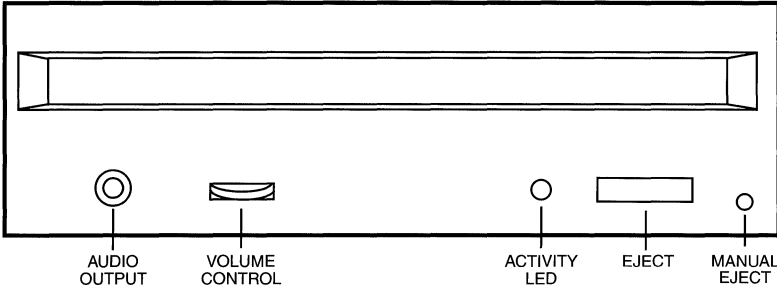
Options 557 557-KDK

370-1573
 Sony CDU-561
 Option 557-KDK

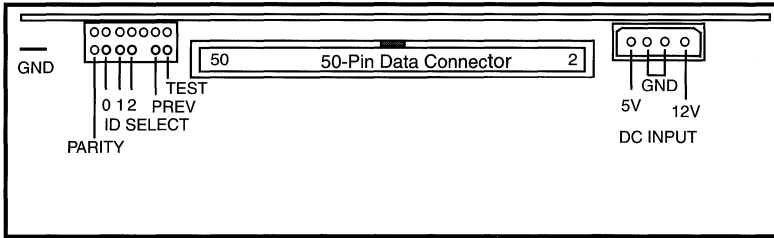
370-1584
 Sony CDU-561
 Light Grey Bezel

370-1615
 Sony CDU-561
 Black Bezel

Front View



Rear View



SunCD Plus Pack, Multi-Tape Backup Tray, and SC2000 Remote Address Cable Orientation

| JUMPER | SETTING | DESCRIPTION |
|---------------|---------|----------------------|
| Parity | In | Enable parity |
| 0, 1, 2 | Out | ID Select 20, 21, 22 |
| Prevent/Allow | In | Enable eject button |
| Test Mode | Out | |

Power: 0.5 Amps @ +5Vdc
 0.5 Amps @ +12Vdc
 8.5 Watts

References

1. SunCD Plus Desktop Pack Installation Manual, 801-4537-10.
2. SunCD Plus User's Guide, 801-5332-10.

SunCD 2Plus

SS4 SS5 SS20 SS1000 SC2000

Options 578 579 661

370-1679

Toshiba XM-4101B
1" Purple Bezel

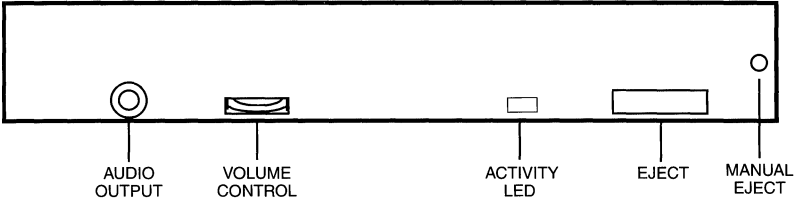
370-1682

Toshiba XM-4101B
1.6" Light Grey Bezel

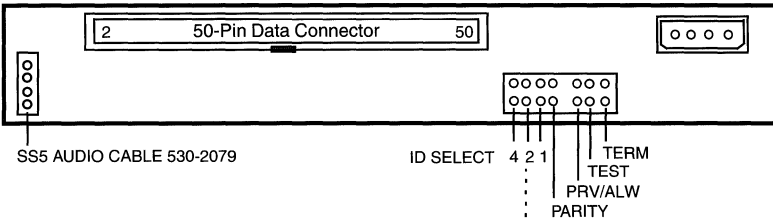
540-2500

Toshiba XM-4101B
SS4/SS5/SS20 FRU
370-1679 w Bracket

Front View



Rear View



SunCD Plus Pack, Multi-Tape Backup Tray, and SC2000 Address Cable Orientation



| JUMPER | SETTING | DESCRIPTION |
|---------------|------------|--|
| 4 2 1 | 4 and 2 In | ID Select 2 ² 2 ¹ 2 ⁰ |
| Parity | Out | Enable parity |
| Prevent/Allow | Out | Enable eject button |
| Test | Out | Disabled |
| TERMPWR | In | Enable TERMPWR |

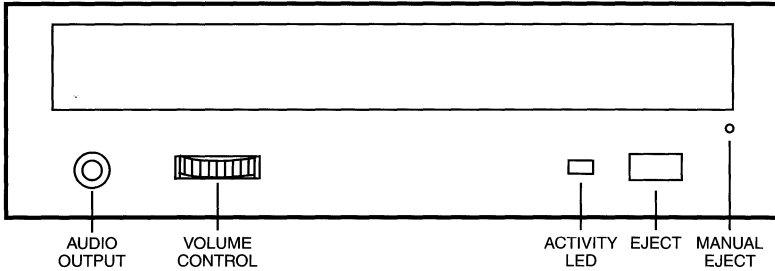
Notes

1. The default setting is Target 6.
2. The ID Select silkscreen is backwards on early production units.
3. The last order date for this drive was September 30, 1996.
4. This drive is not compatible with SS4, SS5, or SS20 chassis 340-3397.

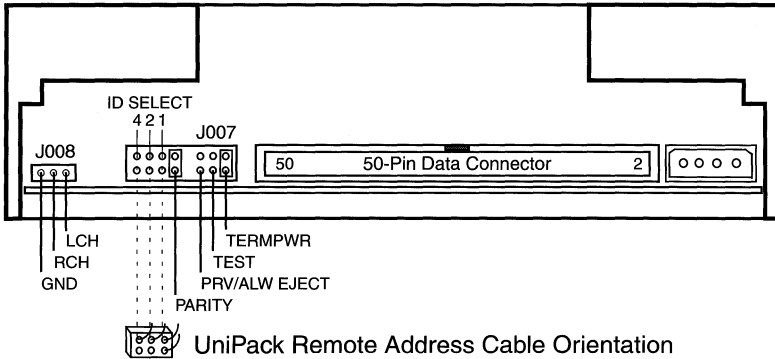
Reference: *SlimCD User's Guide*, 801-5963-10.

SunCD 4
 Options 6151 6152
 370-2082
 Toshiba XM-5301B
 1 5/8" Height
 Light Grey Bezel
 SPARCstorage UniPack

Front View



Rear View



Notes

1. The minimum operating system is Solaris 1.1.1 or Solaris 2.3.
2. The drive is not supported in the SC2000.
3. The SPARCstorage UniPack requires Ferrite 150-1480.
4. The drive does not function on its left side with the Eject button up.

References

1. *SPARCstorage UniPack User's Guide*, 802-3228-10.
2. *Specification Sheet*, 802-4064-10.

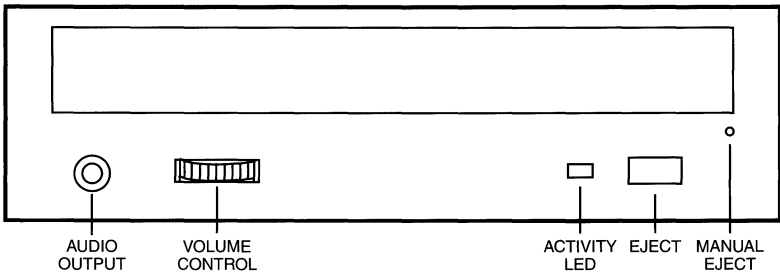
SunCD 4

SS4 SS5 SS20 SS1000 SC2000
 A11 A12 A14 E3000 E4000 E5000 E6000
 Options 6151 6152 6153 6154 6155 6156

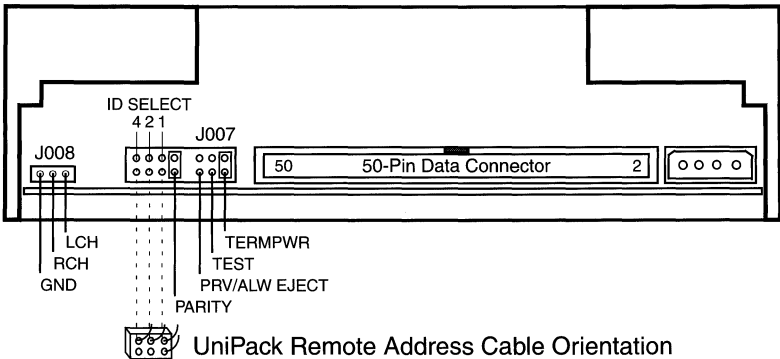
| | |
|---|--|
| 370-2101 Toshiba XM-5401B 1 5/8" Height Black Bezel | 370-2102 Toshiba XM-5401B 1 5/8" Height Light Grey Bezel |
|---|--|

| | | |
|--|---|---|
| 370-2103 Toshiba XM-5401B 1 5/8" Height SS1000 Bezel | 370-2203 Toshiba XM-5401B 1 5/8" Height Medium Grey Bezel | 540-2852 Toshiba XM-5401B SS4 SS5 SS20 FRU Assembly |
|--|---|---|

Front View



Rear View



Notes

1. The minimum operating system is Solaris 1.1.1 or Solaris 2.3.
2. The SS1000 uses a custom sized bezel.
3. Use Bezel Kit 555-1334 to change bezel types.
4. This drive is not compatible with SS4, SS5, or SS20 chassis 340-2915.

Reference: *SPARCstorage UniPack User's Guide*, 802-3228-10.

SunCD 12 StorEdge CD12

SS5 A11 A12 A14 A20 A23 A25

Netra t 1100 Netra t 1120 Netra t 1125

E150 E3000 E4000 E5000 E6000

Options 6157 6158 6159 6160 6161 6162 6163 6165

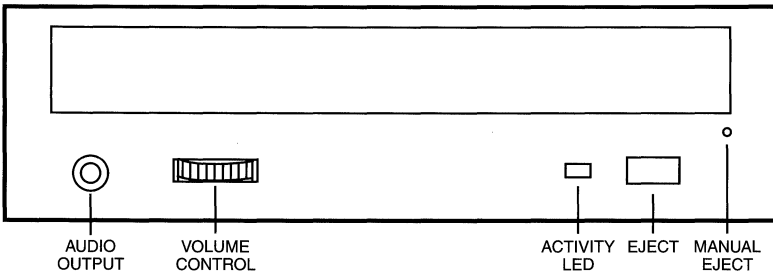
370-2816

Toshiba XM-5701B
1 5/8" Height
Light Grey Bezel

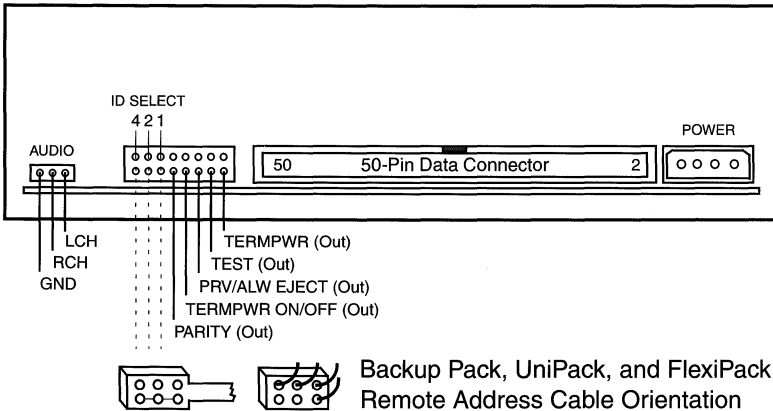
370-2817

Toshiba XM-5701B
1 5/8" Height
Medium Grey Bezel

Front View



Rear View



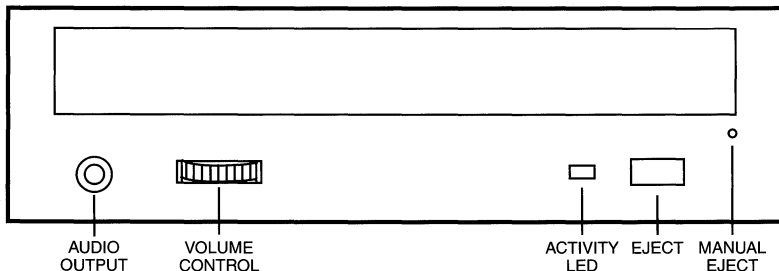
Note: The minimum operating system is Solaris 1.1.2 or Solaris 2.4.

Reference: *SunCD 12 Installation and User's Guide*, 805-0940-10

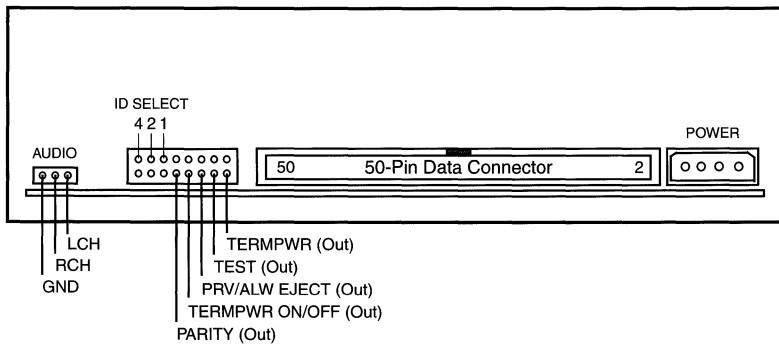
SunCD 32 StorEdge CD 32

| | | | | | | | | | |
|-----|-------------------|-------|----------------------|-------|-------------------|-------------------|-----|-----|-----|
| SS5 | A11 | A12 | A14 | A16 | A20 | A23 | A25 | A26 | A27 |
| | Netra ft 1800 | | Netra t 1100 | | Netra t 1120/1125 | | | | |
| | Netra t 1400/1405 | | | | Netra ct 400/800 | | | | |
| | E220R | E420R | E3x00 | E4x00 | E5x00 | E6x00 | | | |
| | Options 6166 | 6167 | 6911 | 6929 | 6930 | Netra S220 | | | |
| | 370-3415 | | 370-3416 | | | 540-4016 | | | |
| | Toshiba XM-6201B | | Toshiba XM-6201B | | | Netra ft 1880 FRU | | | |
| | 1 5/8" Height | | 1 5/8" Height | | | RMM Tray With | | | |
| | Light Grey Bezel | | Medium Grey Bezel | | | CD-ROM + DDS-3 | | | |
| | 540-4017 | | 540-4399 | | | 540-4539 | | | |
| | Netra ft 1800 FRU | | Netra ct 400/800 FRU | | | Netra S220 FRU | | | |
| | RMM Tray w CD-ROM | | RMM Tray w CD-ROM | | | RMM Tray w CD-ROM | | | |

Front View



Rear View



Notes

1. SunCD 32 is not qualified in the UniPack or FlexiPack.
2. SunCD 32, Option 6166, for the FlexiPack was price listed in error.

Reference

1. *SunCD 32 Installation and User's Guide*, 805-4237.
2. *StorEdge CD 32 Installation and User's Guide*, 805-4237-10

StorEdge 10X DVD-CDROM

A25 A26 A28 A36 Netra ct 800

E3500 E4500 E5500 E6500

Options 5883 6168 Netra S220

390-0025

Toshiba SD-M1401
1 5/8" Height
Medium Grey Bezel

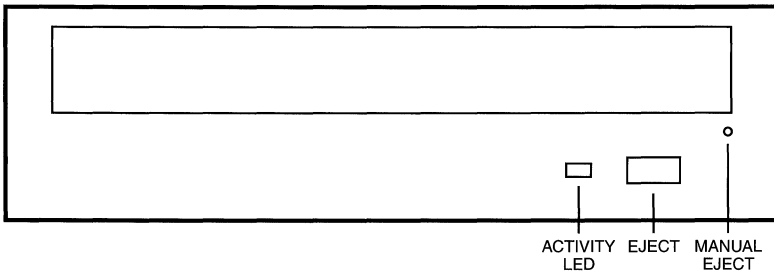
540-4683

Netra S220 FRU

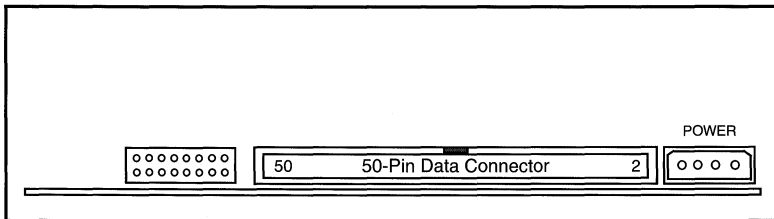
540-4684

Netra ct 800 FRU

Front View



Rear View



Notes

1. The minimum CD-ROM mode operating system is Solaris 2.5.1.
2. The minimum DVD-ROM mode operating system is Solaris 8.

Reference: *Installation and User's Guide*, 806-5518

24X CD-ROM

A21 A22

Option 6170

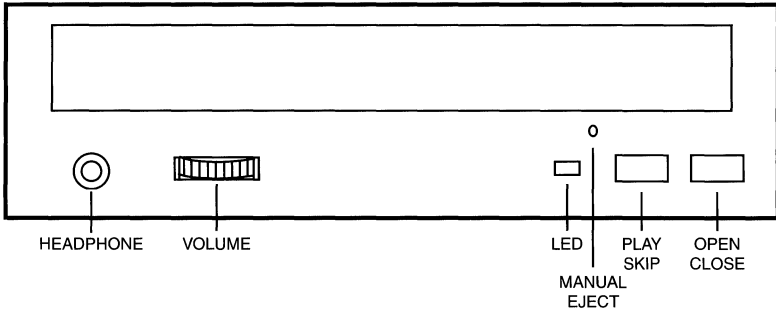
370-3319

Goldstar CRD-8240B

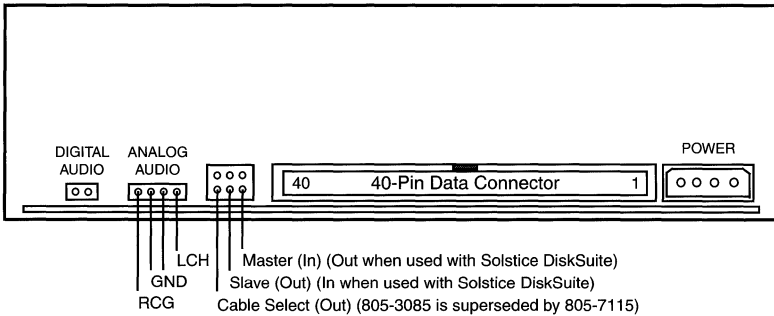
ATAPI/IDE Interface

1 5/8" Height

Front View



Rear View



The **boot cdrom** command will not work with the default device alias when the drive is set to slave. Change the OBP device alias to boot from CD-ROM.

CD-ROM Connected to the Primary Channel
nvalias cdrom /pci@1f,0/pci@1,1/ide@3/cdrom@1,0:f

CD-ROM Connected to the Secondary Channel
nvalias cdrom /pci@1f,0/pci@1,1/ide@3/cdrom@3,0:f

References

1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

32X CD-ROM

A21 A22

Option 6171

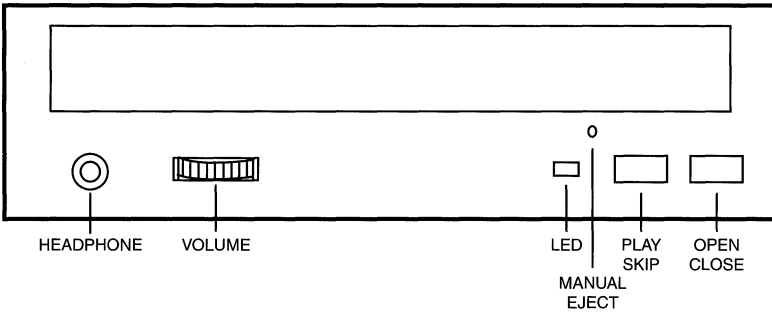
370-3694

370-3694

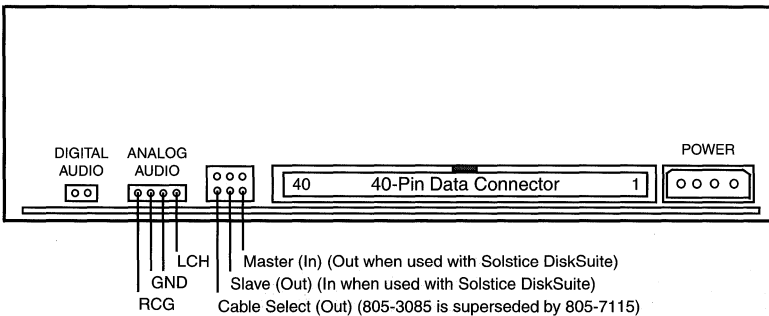
Goldstar CRD-8322B
ATAPI/IDE Interface
1 5/8" Height

Goldstar CRD-8324B
ATAPI/IDE Interface
1 5/8" Height

Front View



Rear View



The **boot cdrom** command will not work with the default device alias when the drive is set to slave. Change the OBP device alias to boot from CD-ROM.

CD-ROM Connected to the Primary Channel

nvalias cdrom /pci@1f,0/pci@1,1/ide@3/cdrom@1,0:f

CD-ROM Connected to the Secondary Channel

nvalias cdrom /pci@1f,0/pci@1,1/ide@3/cdrom@3,0:f

References

1. *Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *CD-ROM and Hard Drive Installation Guides*, 805-3085 and 805-7115.

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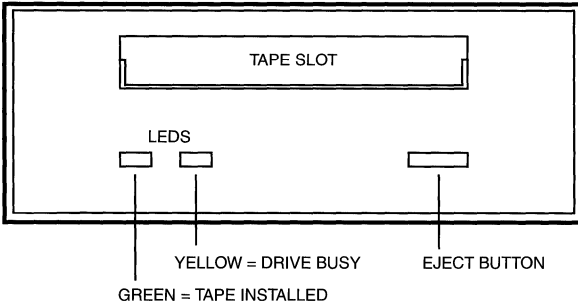
5GB 4 mm DDS-1 Tape Drive SS1000

Options 821 822 823 6251 6252

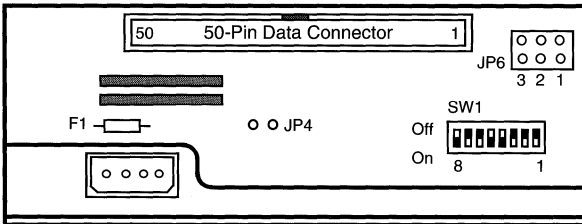
370-1571
Archive 4324RP
Light Grey Bezel
Backup Pack

370-2088
Archive 4324RP
Light Grey Bezel
UniPack

Front View



Rear View



Address Select Switch Cable

Pin-1



In the Desktop Backup Pack, orient the Flex Cable as shown, and plug it into JP6.



In the SPARCstorage UniPack, orient the Address Cable as shown, and plug it into JP6.

Power: 0.63 Amps @ +5Vdc
0.38 Amps @ +12Vdc
7.7 Watts

370-1571 370-2088
Jumper and Switch Settings

Jumper JP4

| PINS | SETTING | DESCRIPTION |
|------|---------|------------------------|
| 1-2 | Out | Disable TERMPWR to bus |
| 1-2 | In | Enable TERMPWR to bus |

Jumper JP6

| SCSI ID | 3 | 2 | 1 |
|---------|-----|-----|-----|
| 0 | Out | Out | Out |
| 1 | Out | Out | In |
| 2 | Out | In | Out |
| 3 | Out | In | In |
| 4 | In | Out | Out |
| 5 | In | Out | In |
| 6 | In | In | Out |

Switch SW1

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|-----------------------------------|
| 1 | Off | Enable SCSI ID 0 = 2 ⁰ |
| 2 | Off | Enable SCSI ID 1 = 2 ¹ |
| 3 | Off | Enable SCSI ID 2 = 2 ² |
| 4 | On | Enable SCSI-2 mode |
| 5 | On | Enable parity |
| 6 | Off | Enable data compression |
| 7 | Off | Reserved for factory use |
| 8 | On | Enable power-on self test |

Notes

1. The minimum operating system is Solaris 1.1.1 or Solaris 2.1.
2. Solaris 2.1 writes in high-density mode only.
3. Solaris 2.1 reads in low-density or high-density mode.
4. Solaris 2.2 reads and writes in low-density or high-density mode.
5. The Blank Tape part number is 370-1612-01.
6. The Cleaning Kit part number is 370-1613-01.
7. Firmware Update Tape 4.CDA-24 is part number 370-3006-01.
8. Firmware Update Tape 4.CDB-24 is part number 370-3269-01.

Reference

5Gbyte 4mm Backup Tape Drive Server Installation Manual, 801-4623.

4-8GB 4 mm DDS-2 Tape Drive

SS1000 A11 A12 A14 E150

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 6253 6254 6255 6256 6259 6260

370-2176

Conner CTD8000
Light Grey Bezel

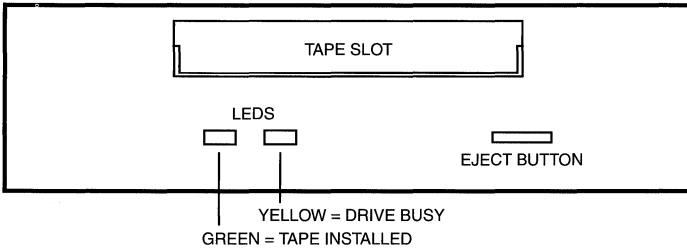
370-2177

Conner CTD8000
Medium Grey Bezel

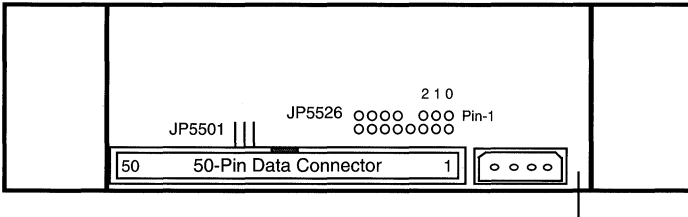
370-2178

Conner CTD8000
SS1000 Bezel

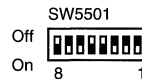
Front View



Rear View



SW5501 is located on the bottom of the drive.



Address Select Switch Cable



In the SPARCstorage UniPack, orient the Address Cable as shown and plug it into JP5526.

Notes

1. The minimum operating system is Solaris 1.1.1 or Solaris 2.3.
2. The Blank DDS-2 120 Meter Tape part number is 370-2181-01.
3. The Cleaning Kit part number is 370-1613-01.
4. The Bezel Kit part number is 555-1339.

Reference: *DDS-2 Tape Drive Specification*, 802-5324-10.

370-2176 370-2177 370-2178
Jumper and Switch Settings

JP5501

| PIN | SETTING | DESCRIPTION |
|-----|---------|-------------|
| 1-2 | Out | Not used |
| 2-3 | Out | Not used |

JP5526

| PIN | SETTING | DESCRIPTION |
|-------|-------------|-----------------------------------|
| 1-2 | As required | Enable SCSI ID 0 = 2 ⁰ |
| 3-4 | As required | Enable SCSI ID 1 = 2 ¹ |
| 5-6 | As required | Enable SCSI ID 2 = 2 ² |
| 8-10 | Out | Self test |
| 11-12 | Out | Active termination |
| 13-14 | Out | Reserved |
| 15-16 | Out | TERMPWR |

SW5501

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|-----------------------------------|
| 1 | Off | Enable SCSI ID 0 = 2 ⁰ |
| 2 | Off | Enable SCSI ID 1 = 2 ¹ |
| 3 | Off | Enable SCSI ID 2 = 2 ² |
| 4 | On | Enable SCSI-2 mode |
| 5 | On | Enable parity |
| 6 | Off | Enable data compression |
| 7 | Off | Reserved for factory use |
| 8 | On | Enable self test |

4-8GB 4 mm DDS-2 Tape Drive

Options 6261 6262 6263 6264 6265

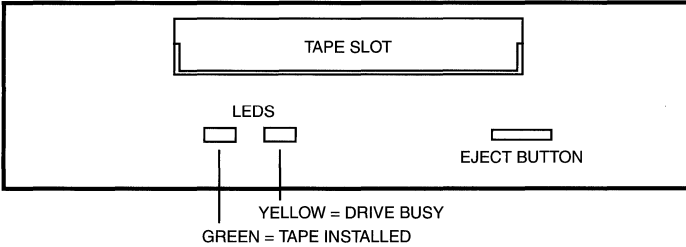
TAP4MM-010A TAP4MM-020A

370-2375

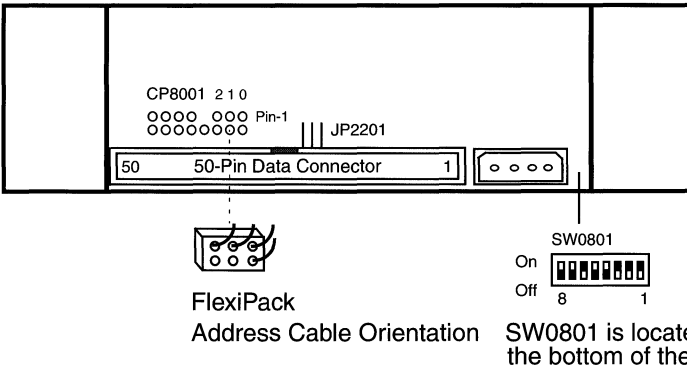
Seagate STD18000N

Light Grey Bezel

Front View



Rear View



Notes

1. The minimum operating system is Solaris 1.1.1 or Solaris 2.3.
2. The Blank DDS-2 120 Meter Tape part number is 370-2181-01.
3. The Cleaning Kit part number is 370-1613-01.

Reference: *DDS-2 Tape Drive Specification*, 802-7790-10.

370-2375
Jumper and Switch Settings

JP2201

| PIN | SETTING | DESCRIPTION |
|-----|---------|-------------|
| 1-2 | Out | Not used |
| 2-3 | Out | Not used |

CP8001

| PIN | SETTING | DESCRIPTION |
|-------|-------------|-----------------------------------|
| 1-2 | As required | Enable SCSI ID 0 = 2 ⁰ |
| 3-4 | As required | Enable SCSI ID 1 = 2 ¹ |
| 5-6 | As required | Enable SCSI ID 2 = 2 ² |
| 7-8 | N/A | Reserved |
| 9-10 | Out | Reserved |
| 11-12 | Out | Active termination disabled |
| 13-14 | Out | Reserved |
| 15-16 | Out | TERMPWR disabled |

SW0801

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|-----------------------------------|
| 1 | Off | Enable SCSI ID 0 = 2 ⁰ |
| 2 | Off | Enable SCSI ID 1 = 2 ¹ |
| 3 | Off | Enable SCSI ID 2 = 2 ² |
| 4 | On | Allow non-MRS tapes |
| 5 | On | Enable parity |
| 6 | Off | Enable data compression |
| 7 | On | Enable datmon upon power on |
| 8 | On | Enable self test |

12-24GB 4 mm DDS-3 Tape Drive

A11 A12 A14 A20 A25 A26 A27

E150 E220R E420R Netra ft 1800

Netra t 1120/1125 Netra t 1400/1405 Netra ct 400/800

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 6280 6281 6282 6283 6284 6286 6912 6930

TAP4MM-011A TAP4MM-021A

370-2376

HP C1537-00626
Medium Grey Bezel

370-2377

HP C1537-00625
Light Grey Bezel

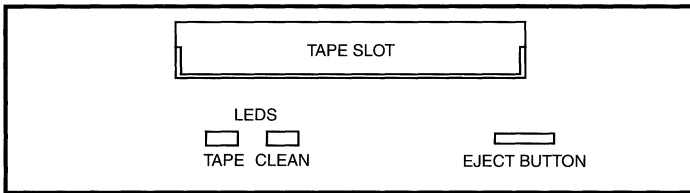
540-4016

Netra ft 1800 FRU
RMM Tray with
CD-ROM + DDS-3

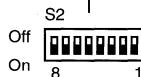
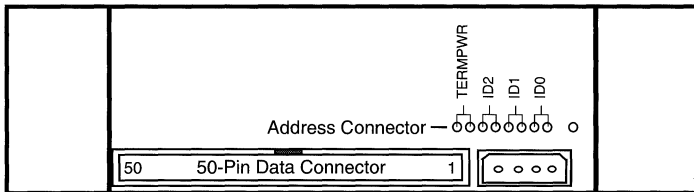
540-4409

ct 400/800 FRU
RMM Tray with
370-2376

Front View



Rear View



S2 is located on the bottom of the drive.

Notes

1. The minimum operating system is Solaris 1.1.2 or Solaris 2.4.
2. Switch S2 is disabled by the Sun firmware.
3. An adapter cable is attached to the Address Connector.
4. The adapter cable is provided by the drive manufacturer.
5. The Blank Data Tape part number is 370-2378-01.
6. The Cleaning Kit part number is 370-1613-01.
7. Firmware Update Tape L706 is part number 370-3376-01.

Reference: *DDS-3 Tape Drive Installation and User's Guide*, 802-7791-12.

20-40GB 4 mm DDS-4 Tape Drive

A14 A23 A27 E250 E450 E220R E420R

E3500 E4500 E5500 E6500

Options 6295 TAP4MM-012A

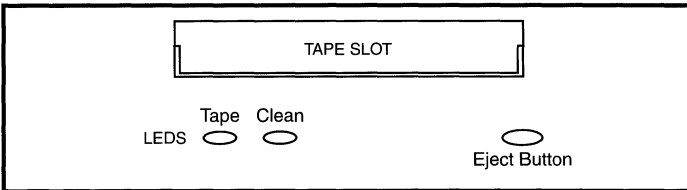
390-0027

HP C5683-00625
Wide SCSI Enabled
Medium Grey Bezel
StorEdge Unipack

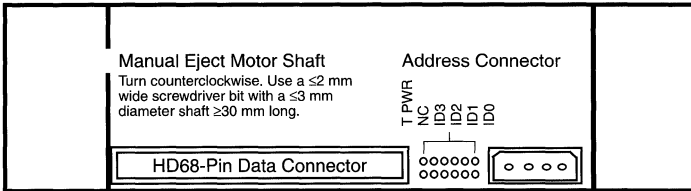
390-0028

HP C5683-00625
Wide SCSI Disabled
Medium Grey Beze

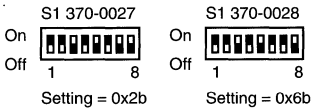
Front View



Rear View



S1 is on the bottom of the drive



Notes

1. The minimum operating system is Solaris 2.5.1 with Patch 103857.
2. The Narrow SCSI 68-50 Pin Adapter Cable is part number 540-4484.
3. Use the Address Cable or 2 mm shunts on the Address Connector.
4. Solaris only supports S1 switch settings 0x2b and 0x6b.
5. The Blank Data Tape part number is 370-4083-01.
6. The Cleaning Kit part number is 370-1613-01.

Reference: *DDS-4 Tape Drive Installation and User's Guide*, 806-3313-10.

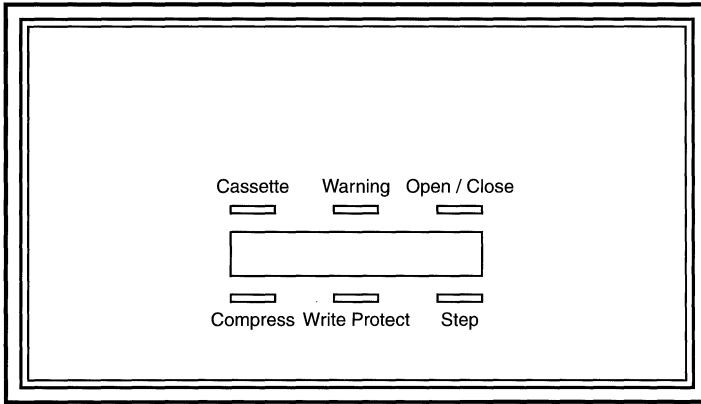
20GB 4 mm DDS-1 Autoloader

SC2000

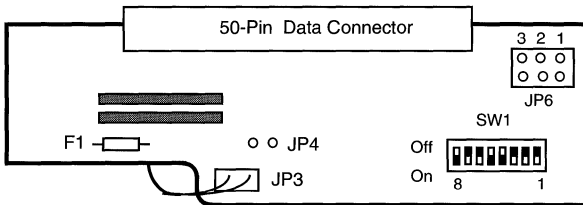
Options 825 826 827

| | |
|------------------|----------------|
| 370-1616 | 370-1617 |
| Archive 4584NP | Archive 4584NP |
| Light Grey Bezel | Black Bezel |

Operator Panel



LMJB0153 PCB



Address Select Switch Cable



In the Multi-Tape Backup Tray and SC2000, orient the Address Select Switch Cable as shown, and plug it into JP6.

Note

Remove the mylar sheet from the bottom of the drive before installation.

Reference: *Product Note 801-6234-12.*

370-1616 370-1617
Jumper and Switch Settings

JP4

| PINS | SETTING | DESCRIPTION |
|------|---------|------------------------|
| 1-2 | Out | Disable TERMPWR to bus |
| 1-2 | In | Enable TERMPWR to bus |

JP6

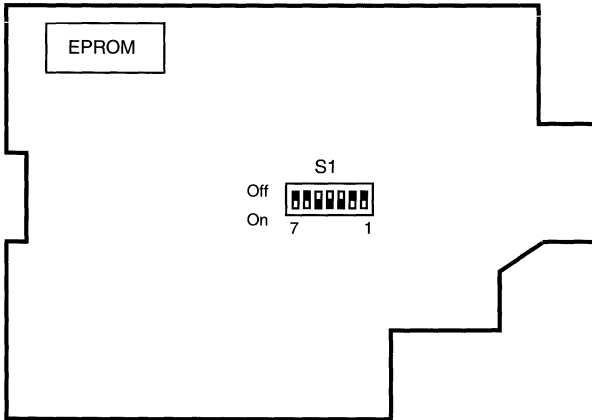
| SCSI ID | 3 | 2 | 1 |
|---------|-----|-----|-----|
| 0 | Out | Out | Out |
| 1 | Out | Out | In |
| 2 | Out | In | Out |
| 3 | Out | In | In |
| 4 | In | Out | Out |
| 5 | In | Out | In |
| 6 | In | In | Out |

SW1

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|-----------------------------------|
| 1 | Off | Enable SCSI ID 0 = 2 ⁰ |
| 2 | Off | Enable SCSI ID 1 = 2 ¹ |
| 3 | Off | Enable SCSI ID 2 = 2 ² |
| 4 | On | Enable SCSI-2 mode |
| 5 | On | Enable parity |
| 6 | Off | Enable data compression |
| 7 | Off | Reserved for factory use |
| 8 | On | Enable power-on self test |

20GB 4 mm DDS-1 Autoloader
 370-1616 370-1617
 Switch Settings

LMJB0178 PCB



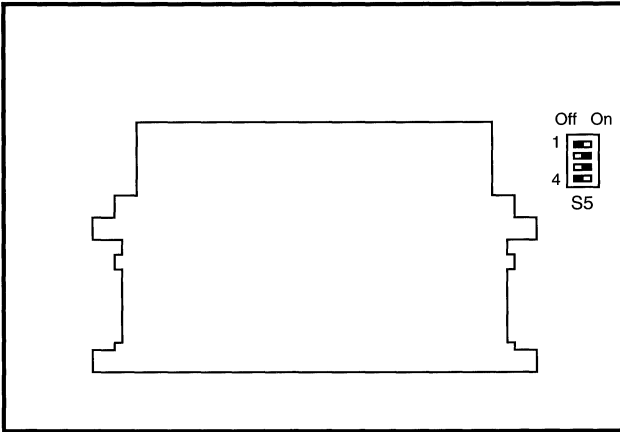
S1

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|-----------------------------------|
| 1 | Off* | English language display |
| 2 | Off* | English language display |
| 1 | Off | French language display |
| 2 | On | French language display |
| 1 | On | Spanish language display |
| 2 | On | Spanish language display |
| 1 | On | German language display |
| 2 | Off | German language display |
| 3 | Off | Stop after last tape |
| 3 | On* | Restart at Tape 1 after last tape |
| 4 | On* | High intensity display |
| 4 | Off | Low intensity display |
| 5 | On* | Enable power-on self test |
| 6 | Off | Not used |
| 7 | Off | Not used |

* Default settings

20GB 4 mm DDS-1 Autoloader
 370-1616 370-1617
 Switch Settings

Auto-Loader



S5

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|---------------------------------------|
| 1 | Off* | Horizontal character display |
| 1 | On | Vertical character display |
| 2 | Off | Do NOT load tape on power up |
| 2 | On* | Load tape on power up |
| 3 | Off | Stop after last tape |
| 3 | On* | Restart at first tape after last tape |
| 4 | Off | Not used |

* Default settings

Notes

1. The minimum operating system is Solaris 2.2.
2. Solaris 2.2 reads and writes in low-density or high-density mode.
3. The 4-Tape Magazine part number is 370-1683-01.
4. The Blank 90 Meter Tape part number is 370-1612-01
5. The Cleaning Kit part number is 370-1613-01.
6. Firmware Update Tape 4.CDA-424 is part number 370-2867-01.
7. Firmware Update Tape 4.CDB-424 is part number 370-3270-01.

References

1. *20 Gbyte 4mm Tape Auto-Loader Installation Manual*, 801-4976-12.
2. *20 Gbyte 4mm Tape Auto-Loader User's Guide*, 801-4977-13.

16-32GB 4 mm DDS-2 Autoloader

SC2000

Options 6271 6272 6273 6274 6275 6276

370-2179

Conner 71300105
Light Grey Bezel

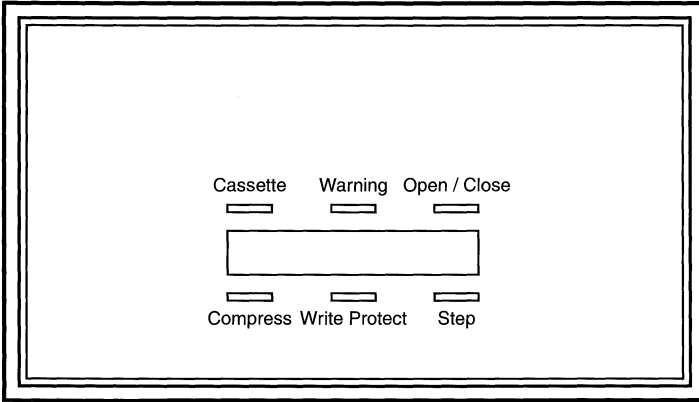
370-2180

Conner 71300106
Medium Grey Bezel

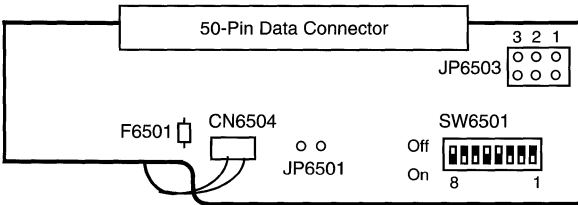
370-2201

Conner 71300107
Black Bezel

Operator Panel



LMJB0259 PCB



Address Select Switch Cable



In the Multi-Tape Backup Tray and SC2000, orient the Address Select Switch Cable as shown, and plug it into JP6503.

Note

Remove the mylar sheet from the bottom of the drive before installation.

370-2179

370-2180
Jumper Settings

370-2201

JP6501

| PINS | SETTING | DESCRIPTION |
|------|---------|------------------------|
| 1-2 | Out | Disable TERMPWR to bus |
| 1-2 | In | Enable TERMPWR to bus |

JP6503

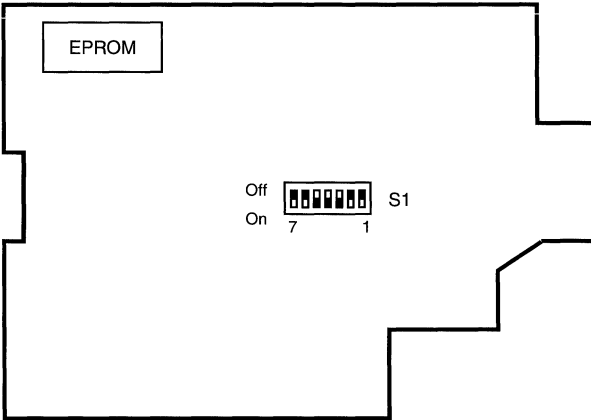
| SCSI ID | 3 | 2 | 1 |
|---------|-----|-----|-----|
| 0 | Out | Out | Out |
| 1 | Out | Out | In |
| 2 | Out | In | Out |
| 3 | Out | In | In |
| 4 | In | Out | Out |
| 5 | In | Out | In |
| 6 | In | In | Out |

SW6501

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|-----------------------------------|
| 1 | Off | Enable SCSI ID 0 = 2 ⁰ |
| 2 | Off | Enable SCSI ID 1 = 2 ¹ |
| 3 | Off | Enable SCSI ID 2 = 2 ² |
| 4 | On | Enable SCSI-2 mode |
| 5 | On | Enable parity |
| 6 | Off | Enable data compression |
| 7 | Off | Reserved for factory use |
| 8 | On | Enable power-on self test |

16-32GB 4 mm DDS-2 Autoloader
 370-2179 370-2180 370-2201
 Jumper Settings

LMJB0178 PCB



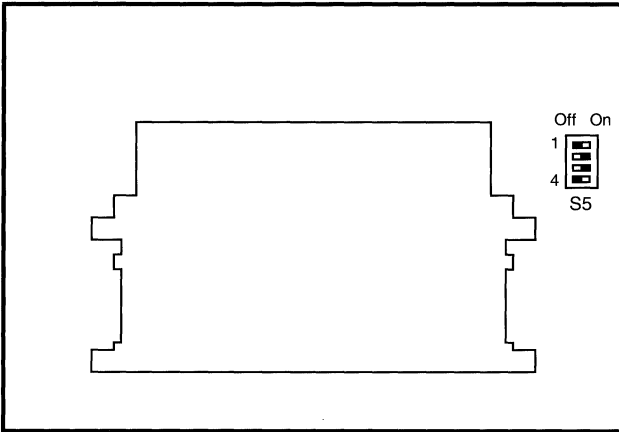
S1

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|-----------------------------------|
| 1 | Off* | English language display |
| 2 | Off* | English language display |
| 1 | Off | French language display |
| 2 | On | French language display |
| 1 | On | Spanish language display |
| 2 | On | Spanish language display |
| 1 | On | German language display |
| 2 | Off | German language display |
| 3 | Off | Stop after last tape |
| 3 | On* | Restart at Tape 1 after last tape |
| 4 | On | High intensity display |
| 4 | Off | Low intensity display |
| 5 | On* | Enable power on self test |
| 6 | Off | Not used |
| 7 | Off | Not used |

* Default settings

16-32GB 4 mm DDS-2 Autoloader
 370-2179 370-2180 370-2201
 Jumper Settings

Auto-Loader



S5

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|------------------------------|
| 1 | Off* | Horizontal character display |
| 1 | On | Vertical character display |
| 2 | Off | Do NOT load tape on power up |
| 2 | On* | Load tape on power up |
| 3 | Off | Reserved |
| 4 | Off | Reserved |

* Default settings

Notes

1. The minimum operating system is Solaris 1.1.1 or Solaris 2.3.
2. Fan Assembly 540-2607 is required when the drive is installed in the SC2000 SCSI Tray.
3. The 4-Tape Magazine part number is 370-1683-01.
4. The Blank DDS-2 120 Meter Tape part number is 370-2181-01.
5. The Cleaning Kit part number is 370-1613-01.

References

1. *DDS-2 Tape Drive Specification*, 802-5324-10
2. *DDS-2 Autoloader Installation Manual*, 802-5324-10

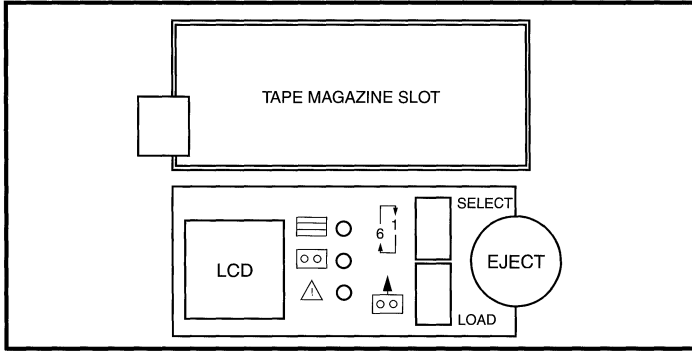
72-144GB 4 mm DDS-3 Autoloader

Options 6292 6293 TAP4MM-031A

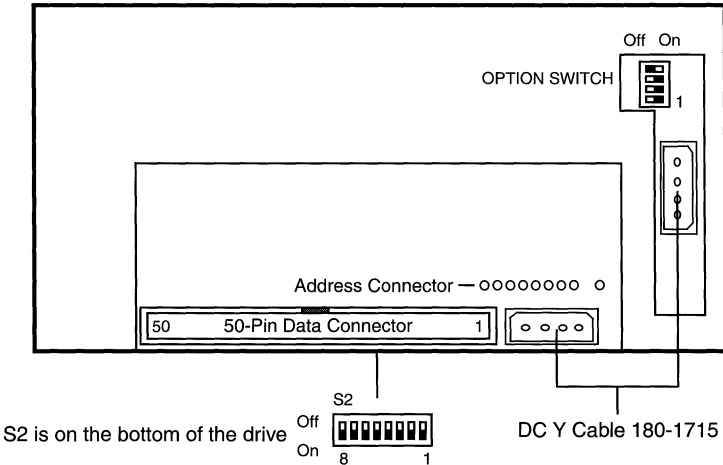
370-2379
HP C1557-00626
Medium Grey Bezel

370-2380
HP C1557
Light Grey Bezel

Front View



Rear View



370-2379 370-2380
Option Switch

Settings

| VALUE | 1 | 2 | 3 | 4 |
|-------|-----|-----|-----|-----|
| 0x1h | On | Off | Off | Off |
| 0x2h* | Off | On | Off | Off |
| 0x6h | Off | On | On | Off |
| 0x7h† | On | On | On | Off |

* Circular mode. Requires firmware U709.

† Default setting

Options

| OPTION | 0x1h | 0x6h | 0x7h* |
|----------------------|----------|----------|----------|
| Auto-Stack | Enabled | Disabled | Disabled |
| Auto-Eject | Enabled | Disabled | Disabled |
| Allow Resequencing | Disabled | Enabled | Enabled |
| LUN 1 Magazine Ready | Disabled | Enabled | Enabled |
| LUN 0 Drive Inquiry | Disabled | Enabled | Disabled |

* The default setting is 0x7h

Notes

1. The minimum operating system is Solaris 1.1.2 or Solaris 2.4.
2. Switch S2 is disabled by the Sun firmware.
3. The Option Switch is read at power on.
4. An adapter cable is attached to the Address Connector.
5. The adapter cable is provided by the drive manufacturer.
6. The Blank Data Tape part number is 370-2378-01.
7. The Magazine part number is 370-2381-01.
8. The Cleaning Kit part number is 370-1613-01.
9. Firmware Update Tape U709 is part number 370-3377-01.

Reference: *DDS-3 Autoloader Installation and User's Guide*, 802-7791-12.

150MB 1/4" Tape Drive

Sun-4/330/370/390/470/490

SS630MP SS670MP SS690MP SC2000

Options 539 565 660

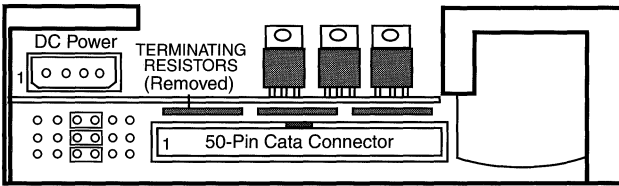
370-1205
Archive 2150S
Half-Height
Black Bezel

370-1206
Archive 2150S
Full-Height
Black Bezel

370-1218
Archive 2150S
Half-Height
Custom Bezel

370-1246
Archive 2150S
Full-Height
Light Grey Bezel

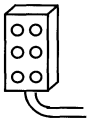
Rear View



RXD ○ ○ TXD CF2 ○ ○ ID2
 DIAG ○ ○ CF1 ○ ○ ID1
 PARITY ○ ○ CF0 ○ ○ ID0

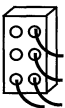
| JUMPER | SETTING | DESCRIPTION |
|-------------|-------------|--------------------------------|
| RXD/TXD | Out | Serial Port |
| DIAG | Out | Normal/Diag |
| Parity | Out | Parity (in for 370-1246) |
| CF2 CF1 CF0 | In | Disconnect Transfer Size = 32K |
| ID2 ID1 ID0 | As required | SCSI ID |

Flex Cable



In the Desktop Tape Pack, plug the Flex Cable into the SCSI ID jumper block.

Address Select Switch Cable



In the External Storage Module, plug the Address Select Switch Cable into the SCSI ID jumper block.

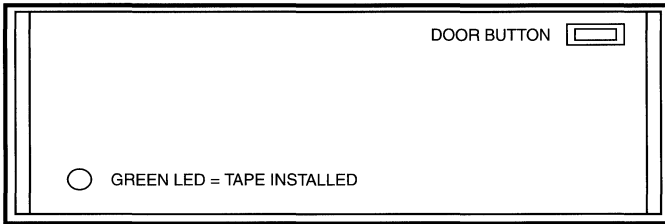
Note: The Cartridge Tape part number is 370-1203-01.

Reference: *50MB 1/4-Inch Tape Drive Configuration Manual*, 813-2076.

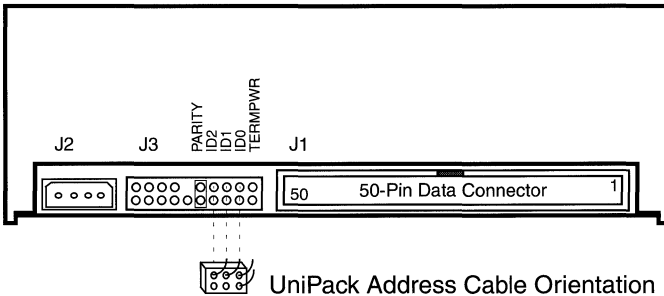
2.5GB 1/4" Tape Drive

| | | | | | |
|---------------------------------|--------------------------------------|-------|---------------------------------------|-------|-------|
| SC2000 | A14 | E3000 | E4000 | E5000 | E6000 |
| Options | 6101 | 6102 | 6103 | 6104 | 6105 |
| 370-2017 | 370-2018 | | 370-2202 | | |
| Tandberg TDC4220 Black Bezel | Tandberg TDC4220 Light Grey Bezel | | Tandberg TDC4200 Medium Grey Bezel | | |

Front View



Rear View



Notes

1. The minimum operating system is Solaris 1.1.1 or Solaris 2.3.
2. The Cartridge Tape part number is 370-2019-01.
3. The 2.5GB Data Tape part number is 370-2039-01.
4. The 2.5GB Tape Drive requires M3 mounting screws.
5. The drive can read, but not write, QIC-24.
6. The drive can read and write QIC-2GB, QIC-1000, QIC-525, QIC-150, and QIC-120.

References

1. *SPARCstorage UniPack User's Guide*, 802-3228-10.
2. *2.5Gbyte 1/4 Inch Tape Drive Specifications*, 802-3615-10.

4-8GB 1/4" SLR Tape Drive

A16 A20 A25 A26 A27

Options 6106 6107 6108 6109 6110 6111

TAPSLR-010A TAPSLR-020A

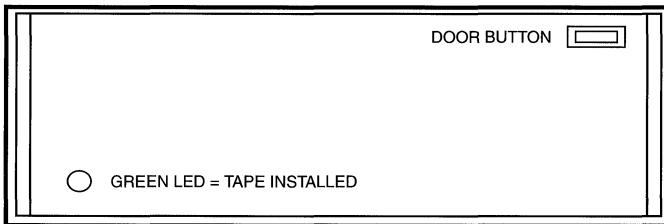
370-3279

Tandberg SLR5
Light Grey Bezel

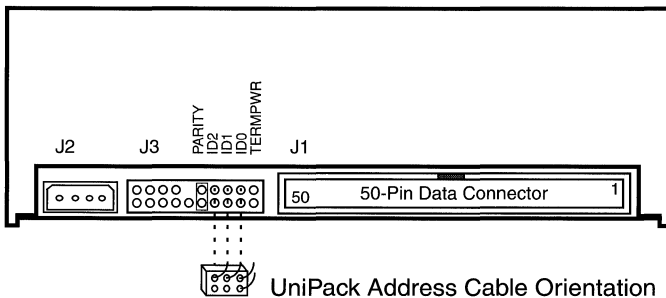
370-3280

Tandberg SLR5
Medium Grey Bezel

Front View



Rear View



Notes

1. The minimum operating system is Solaris 1.1.2 or Solaris 2.4.
2. The Cartridge Tape part number is 370-3282-01.
3. The Cleaning Tape part number is 370-3281-01.
4. The drive can read and write QIC-4GB, QIC-2GB, QIC-1000, QIC-525, QIC-150, and QIC-120.

References

1. *4.0 GByte 1/4" Tape Drive Specifications*, 805-2449-12.
2. *SPARCstorage UniPack User's Guide*, 802-3228-10.

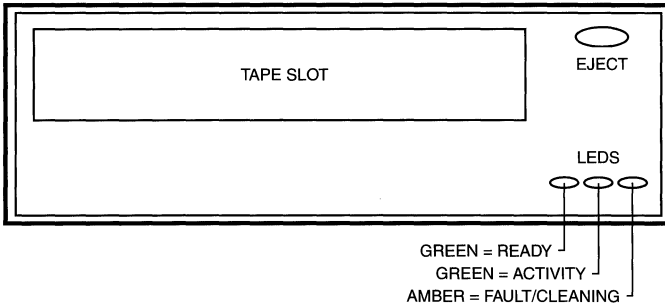
25-50GB 1/4" MLR Tape Drive

Options 6120 6122 TAPMLR-310A TAPMLR-320A

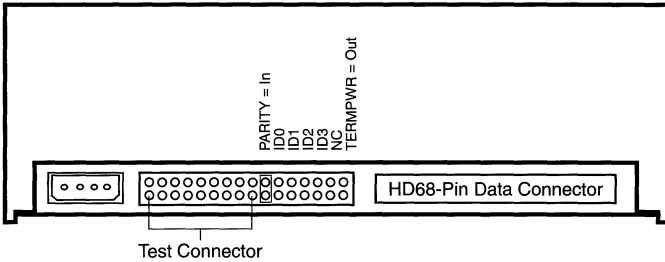
370-3371
Tandberg MLR3
Light Grey Bezel
Single-Ended Wide

370-3372
Tandberg MLR3
Medium Grey Bezel
Single-Ended Wide

Front View



Rear View



Notes

1. The minimum operating system is Solaris 2.5.
2. The MLR3 Cartridge Tape part number is 370-3373-01.
3. The Cleaning Kit part number is 370-3513-01.
4. The 68-50 Pin Adapter Cable is part number 370-3548-01.
5. The drive can read and write QIC-16GB and QIC-25GB.
6. The drive can read QIC-4GB, QIC-2GB, QIC-1000, QIC-525, QIC-150, and QIC-120.

Reference: *25GB MLR3 Tape Drive*, 805-3752-10.

2.3GB 8 mm Tape Drive

Sun-4/370/390/470/490

SS670MP SS690MP

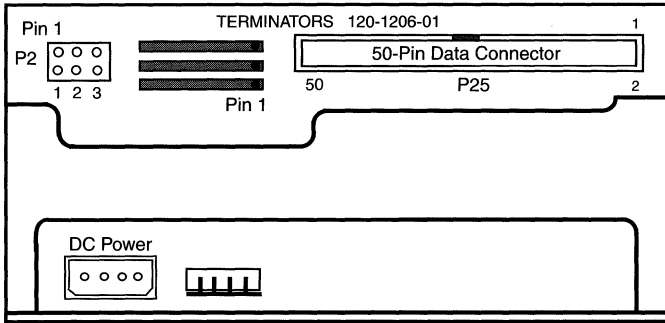
Options 566 802 804

370-1297 370-1405

Exabyte EXB-8200
Black Bezel

Exabyte EXB-8200
Light Grey Bezel

Rear View



Jumper P2

| SCSI ID | (MSB) 1 | 2 | (LSB) 3 |
|---------|---------|-----|---------|
| 4 | In | Out | Out |
| 5 | In | Out | In |
| 3 | Out | In | In |
| 2 | Out | In | Out |
| 1 | Out | Out | In |
| 0 | Out | Out | Out |

Address Select Switch Cable



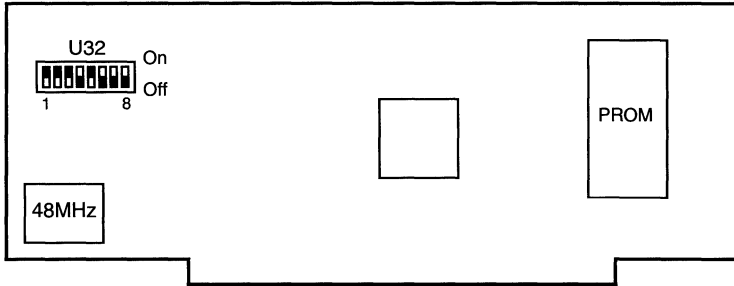
In the Desktop Storage Module and External Storage Module, orient the Address Select Switch Cable as shown and plug it into P2.

Power: 4.0 Amps @ +5Vdc
1.2 Amps @ +12Vdc
34.4 Watts

370-1297

370-1405

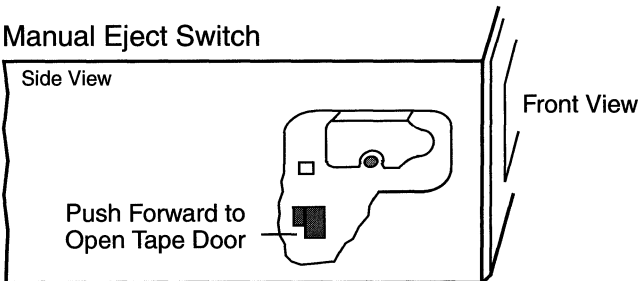
MX Card



Dip Switch U32

| SWITCH | SETTING | DESCRIPTION |
|--------|---------|------------------------------------|
| 1 | On | Bypass memory test |
| 2 | On | Enable parity checking |
| 3 | On | Even byte disconnect |
| 4 | Off | Report busy status |
| 5 | On | Variable block mode on power up |
| 6 | Off | No disconnect during data transfer |
| 7 | Off | Not used |
| 8 | Off | P6 cartridge type |

Manual Eject Switch



Notes

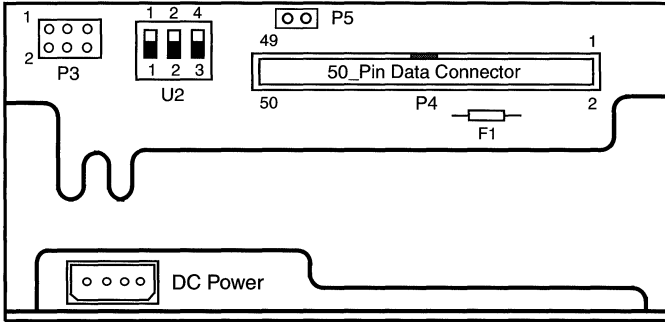
1. The 112 Meter Tape part number is 370-1298-01.
2. The Cleaning Kit part number is 370-2344-01.
3. ECO WO_01575 enabled Parity checking on the MX card. Parity checking is disabled on drives shipped prior to December 1991.

Reference

Sun 2.3-Gbyte 8mm Tape Drive Configuration Procedures for 56-Inch Data Center Cabinets, 813-2081.

5.0GB 8 mm Tape Drive
SS670MP SS690MP SC2000
Options 811 812 814 816
370-1415 370-1416
Exabyte EXB-8500 Exabyte EXB-8500
Black Bezel Light Grey Bezel

Rear View

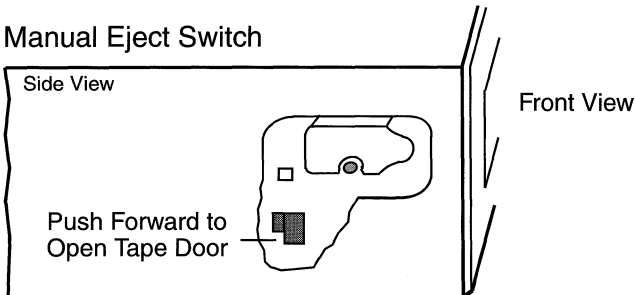


Address Select Switch Cable



In the Multi-Tape Backup Tray, Desktop Storage Module, and SC2000, orient the Address Select Switch Cable as shown and plug it into P3.

Manual Eject Switch



Power: 2.0 Amps @ +5Vdc
0.7 Amps @ +12Vdc
18.4 Watts

370-1415 370-1416

Jumper Settings

Jumper P3

| SCSI ID | 1-2 | 3-4 | 5-6 |
|---------|-----|-----|-----|
| 4 | In | Out | Out |
| 5 | In | Out | In |
| 3 | Out | In | In |
| 2 | Out | In | Out |
| 1 | Out | Out | In |
| 0 | Out | Out | Out |

Switch U2

| SCSI ID | 1 | 2 | 3 |
|---------|-----|-----|-----|
| 4 | Off | Off | On |
| 5 | On | Off | On |
| 3 | On | On | Off |
| 2 | Off | On | Off |
| 1 | On | Off | Off |
| 0 | Off | Off | Off |

Notes

1. The minimum operating system is SunOS 4.1.2.
2. Use 54000 as the **d**(*bpi*), argument to the **dump** command in the high-density 8500 compatibility mode.
3. Use 13000 as the **s**(*size*), argument to the **dump** command in the high-density 8500 compatibility mode.
4. Use 6000 as the **s**(*size*), argument to the **dump** command in the low-density 8200 compatibility mode.
5. The 112 Meter Tape part number is 370-1298-01.
6. The Cleaning Kit part number is 370-2344-01.

References

1. *5.0 Gbyte 8mm Tape Drive Installation Manual*, 800-7008.
2. *Product Note 5.0 Gbyte 8mm Tape Drive*, 800-7303.

10GB 8 mm Tape Drive

SS1000 SC2000

Options 831 833 834 836

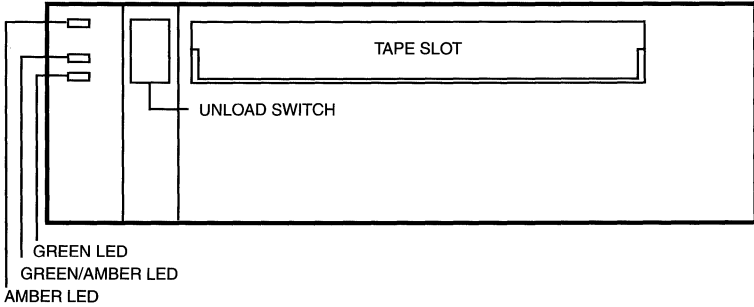
370-1808

370-1809

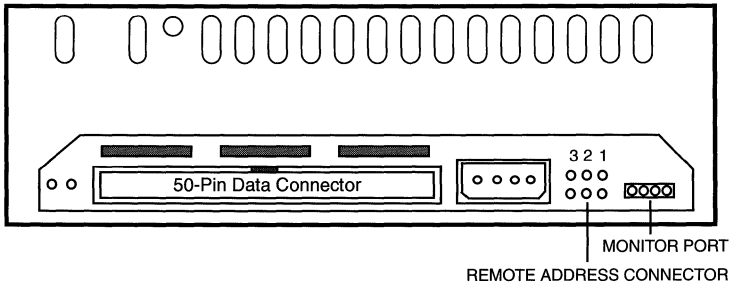
Exabyte EXB-8505
Light Grey Bezel

Exabyte EXB-8505
Black Bezel

Front View



Rear View



Address Select Switch Cables

Pin-1



In the Desktop Backup Pack, orient the Flex Cable as shown and plug it into the remote address connector.



In the Multi-Tape Backup Tray and SC2000, orient the Address Select Switch Cable as shown and plug it into the remote address connector.

Power: 1.6 Amps @ +5Vdc
0.6 Amps @ +12Vdc
15.2 Watts

370-1808 370-1809
Jumper Settings and LED Codes

Remote Address Connector

| SCSI ID | 3 | 2 | 1 | SCSI ID | 3 | 2 | 1 |
|----------|-----|-----|-----|----------|----|-----|-----|
| Target 0 | Out | Out | Out | Target 4 | In | Out | Out |
| Target 1 | Out | Out | In | Target 5 | In | Out | In |
| Target 2 | Out | In | Out | Target 6 | In | In | Out |
| Target 3 | Out | In | In | | | | |

LED Codes

| LEDs | POST PART 1 | POST PART 2 | POST FAILED | READY NO TAPE | READY TAPE IN | NORMAL MOTION |
|---------|-------------|-------------|-------------|---------------|---------------|---------------|
| Top | On | On | Fast | Off | Off | Off |
| Middle* | On | Random | Random | Random | Random | Random |
| Bottom | On | Off † | Off | Off | On | Slow |

| LEDs | Hi-SPEED MOTION | SCSI RESET | ERROR | CLEANING NEEDED | CLEANING TAPE IN |
|---------|-----------------|------------|--------|-----------------|------------------|
| Top | Off | On | Slow | Fast | Off |
| Middle* | Random | Random | Random | Random | Random |
| Bottom | Fast | On | Off | Fast | Slow |

* Green - tape is in uncompressed format.

* Amber - tape is in compressed format.

* OFF - drive is not connected to the SCSI Bus.

† Flashing slow and then fast if a tape is loaded.

Slow LED = 1 flash per second (0.96Hz)

Fast LED = 4 flashes per second (3.76Hz)

Random LED = flash rate varies with SCSI Bus activity

Notes

1. The minimum operating system is Solaris 1.1.1.
2. Cleaning is required after every 30 hours of tape motion.
3. The Cleaning Kit part number is 370-2344-01.
4. The 112 Meter Tape part number is 370-1298-01.
5. Firmware 07T0 Update Tape is part number 370-3235-01.

Reference: *10Gbyte 8mm Tape Drive Installation Manual*, 801-7651-10.

7-14GB 8 mm Tape Drive

SS1000 SC2000 A11 A12 A14

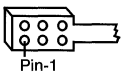
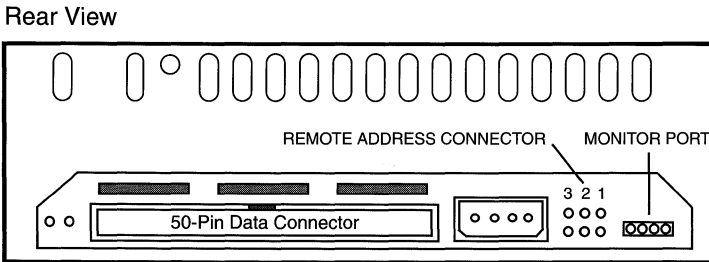
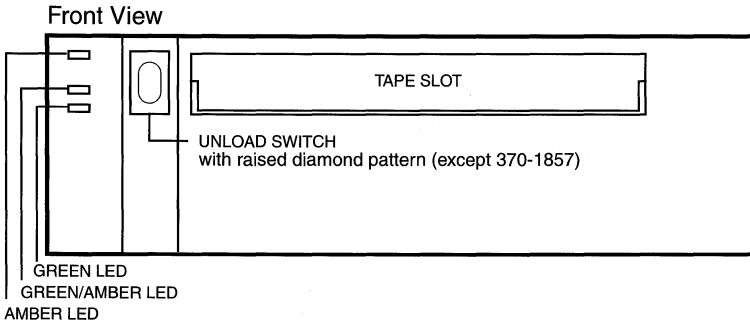
E3000 E4000 E5000 E6000 E5500 E6500

Options 841 843 844 845 846 6201 6202 6203 6204

6205 6206 6207

| | | |
|---|---|---|
| 370-1856 Exabyte EXB-8505XL Rectangular LED Black Bezel | 370-1857 Exabyte EXB-8505XL Round LED Backup Pack Bezel | 370-1881 Exabyte EXB-8505XL Rectangular LED EXB-210 Bezel |
|---|---|---|

| | |
|--|---|
| 370-1922 Exabyte EXB-8505XL Rectangular LED Light Grey Bezel | 370-2200 Exabyte EXB-8505XL Rectangular LED Medium Grey Bezel |
|--|---|



In the Desktop Backup Pack, orient the Flex Cable as shown and plug it into the Remote Address Connector.



In the Multi-Tape Backup Tray, SC2000, and SPARCstorage UniPack, orient the Address Select Switch Cable as shown and plug it into the Remote Address Connector.

Power: 1.6 Amps @ +5Vdc
0.6 Amps @ +12Vdc
15.2 Watts

370-1856 370-1857 370-1881
 370-1922 370-2200
 Jumper Settings and LED Codes

Remote Address Connector

| SCSI ID | 3 | 2 | 1 | SCSI ID | 3 | 2 | 1 |
|----------|-----|-----|-----|----------|----|-----|-----|
| Target 0 | Out | Out | Out | Target 4 | In | Out | Out |
| Target 1 | Out | Out | In | Target 5 | In | Out | In |
| Target 2 | Out | In | Out | Target 6 | In | In | Out |
| Target 3 | Out | In | In | | | | |

LED Codes

| LEDS | POST PART 1 | POST PART 2 | POST FAILED | READY NO TAPE | READY TAPE IN | NORMAL MOTION |
|---------|-------------|-------------|-------------|---------------|---------------|---------------|
| Top | On | On | Fast | Off | Off | Off |
| Middle* | On | Random | Random | Random | Random | Random |
| Bottom | On | Off † | Off | Off | On | Slow |

| LEDS | Hi-SPEED MOTION | SCSI RESET | ERROR | CLEANING NEEDED | CLEANING TAPE IN |
|---------|-----------------|------------|--------|-----------------|------------------|
| Top | Off | On | Slow | Fast | Off |
| Middle* | Random | Random | Random | Random | Random |
| Bottom | Fast | On | Off | Fast | Slow |

* Green - tape is in uncompressed format.

* Amber - tape is in compressed format.

* OFF - drive is not connected to the SCSI Bus.

† Flashing slow and fast if a tape is loaded.

Slow LED = 1 flash per second (0.96Hz)

Fast LED = 4 flashes per second (3.76Hz)

Random LED = flash rate varies with SCSI Bus activity

Notes

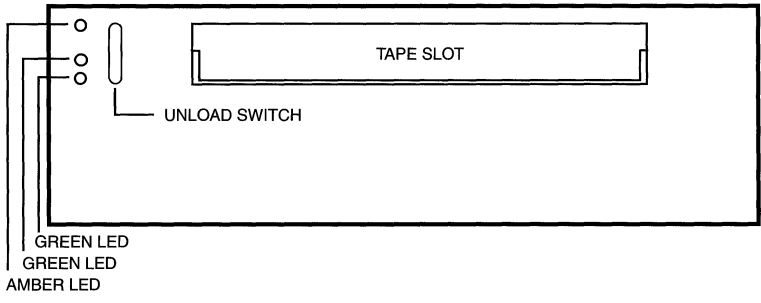
1. The minimum operating system is Solaris 1.1.1.
2. Cleaning is required after every 30 hours of tape motion.
3. The Cleaning Kit part number is 370-2344-01.
4. The 112 Meter Tape part number is 370-1298-01.
5. The 160 Meter XL Tape part number is 370-1858-01.
6. Firmware 07T0 Update Tape is part number 370-3235-01.
7. The E3000 and E4000 Option 6213 replaced 6206 in March 1997.
8. The E3500 and E4500 were introduced in April 1998.
9. Option 6206 is not price listed for the E3500 and E4500.

Reference: *14Gbyte 8mm Tape Drive Installation Manual*, 802-1849-10.

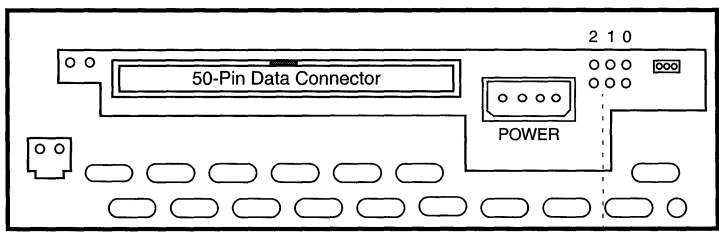
7-14GB 8 mm Tape Drive

| | | | | | | |
|--|---|-------------------------------------|-------------|-------|-------|------|
| A11 | A12 | A14 | A20 | A25 | A26 | A27 |
| E220R | E420R | E3000 | E4000 | E3500 | E4500 | |
| Options 6208 | 6209 | 6210 | 6211 | 6212 | 6213 | 6227 |
| 6228 | 6229 | TAP8MM-010A | TAP8MM-020A | | | |
| 370-2881 | 370-2882 | 370-3128 | | | | |
| Exabyte EXB-8705DX Light Grey Bezel | Exabyte EXB-8705DX Medium Grey Bezel | Exabyte EXB-8705DX EXB-210 Bezel | | | | |

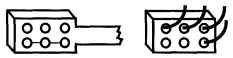
Front View



Rear View



Backup Pack, UniPack, and FlexiPack
Remote Address Cable Orientation



370-2881 370-2882 370-3128
Jumper Settings and LED Codes

Remote Address Connector

| SCSI ID | 2 | 1 | 0 | SCSI ID | 2 | 1 | 0 |
|----------|-----|-----|-----|----------|----|-----|-----|
| Target 0 | Out | Out | Out | Target 4 | In | Out | Out |
| Target 1 | Out | Out | In | Target 5 | In | Out | In |
| Target 2 | Out | In | Out | Target 6 | In | In | Out |
| Target 3 | Out | In | In | | | | |

LED Codes

| LEDS | POST PART 1 | POST PART 2 | POST FAILED | READY NO TAPE | READY TAPE IN | NORMAL MOTION |
|---------|-------------|-------------|-------------|---------------|---------------|---------------|
| Top | On | On | Fast | Off | Off | Off |
| Middle* | On | Random | Random | Random | Random | Random |
| Bottom | On | Off † | Off | Off | On | Slow |

| LEDS | HI-SPEED MOTION | SCSI RESET | ERROR | CLEANING NEEDED | CLEANING TAPE IN |
|---------|-----------------|------------|--------|-----------------|------------------|
| Top | Off | On | Slow | Fast | Off |
| Middle* | Random | Random | Random | Random | Random |
| Bottom | Fast | On | Off | Fast | Slow |

* OFF - drive is not connected to the SCSI Bus.

† Flashing slow and fast if a tape is loaded.

Slow LED = 1 flash per second (0.96Hz)

Fast LED = 4 flashes per second (3.76Hz)

Random LED = flash rate varies with SCSI Bus activity

Notes

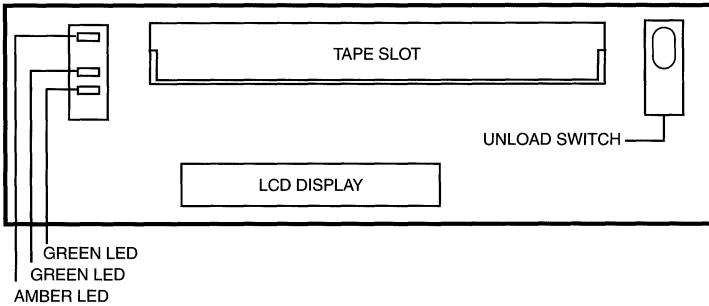
1. The minimum operating system is Solaris 1.1.1 or Solaris 2.3.
2. Cleaning is required after every 30 hours of tape motion.
3. The Cleaning Kit part number is 370-2344-01.
4. The 112 Meter Tape part number is 370-1298-01.
5. The 160 Meter XL Tape part number is 370-1858-01.
6. Firmware 8HC-0098 Update Tape is part number 370-3639-01.

Reference: *14Gbyte 8mm Tape Drive Installation Manual*, 802-1849-10.

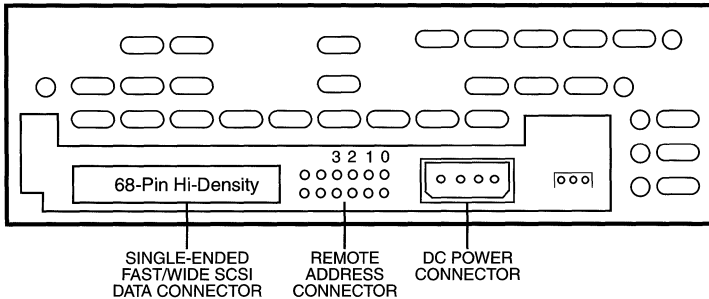
20-40GB 8 mm Tape Drive

| | | | | | |
|------------------|-------------------|-----------------|-------|-------|-------|
| E3000 | E4000 | E3500 | E4500 | E5500 | E6500 |
| Options | 6225 | 6226 | 6230 | 6231 | 6232 |
| | 6233 | 6234 | 6235 | 6237 | 6238 |
| TAP8MM-011A | TAP8MM-021A | TAP8MM-400G | | | |
| LIB8MM1-400G | TAP8MMB-400G | TAP8MMC-400G | | | |
| 370-2183 | 370-2184 | 370-2401 | | | |
| EXB-8900 | EXB-8900 | EXB-8900 | | | |
| Single-Ended | Single-Ended | Differential | | | |
| Light Grey Bezel | Medium Grey Bezel | EXB-220 Bezel | | | |
| w LCD Display | w/o LCD Display | w/o LCD Display | | | |

Front View



Rear View



Power: 1.6 Amps @ +5Vdc
 0.6 Amps @ +12Vdc
 15.2 Watts

370-2183

370-2184

370-2401

Jumper Settings

Remote Address Connector

| LOCATION | SETTING | DESCRIPTION |
|----------|-------------|-----------------------------|
| 0 | As required | SCSI ID 0 (2 ⁰) |
| 1 | As required | SCSI ID 1 (2 ¹) |
| 2 | As required | SCSI ID 2 (2 ²) |
| 3 | As required | SCSI ID 3(2 ³) |

Drive Configuration Guidelines

| SCSI HOST ADAPTER | COMPRESSION | OTHER DEVICES ON THE BUS | MAX # OF DRIVES PER HOST ADAPTER |
|-------------------|-------------|--------------------------|----------------------------------|
| Fast/Wide | Not enabled | No | 6 |
| Fast/Wide | Not enabled | Yes | 4 |
| Narrow | Not enabled | No | 3 |
| Narrow | Not enabled | Yes | 2 |
| Narrow | Enabled | Yes or No | 1 |
| Fast/Wide | Enabled | Yes or No | 1 |

Library Configuration Guidelines

| COMPRESSION | MAX # OF LIBRARIES PER HOST ADAPTER |
|-------------|-------------------------------------|
| Not Enabled | 3 |
| Enabled | 2 |

Notes

1. The minimum operating system is Solaris 2.5.
2. The 170 Meter AME Tape part number is 370-2395-01.
3. The Cleaning Kit part number is 370-2396-01.
4. Firmware 37F Update Tape is part number 370-3367-01.
5. Firmware 37F is not compatible with EXB-8900 370-xxxx-02 Rev 52.
6. The E3000 requires internal SCSI Cable 530-2381.
7. The E4000 requires internal SCSI Cable 530-2382.
8. The E5000 does not provide adequate cooling for the EXB-8900.
9. The E6000 does not provide adequate cooling for the EXB-8900.

References

1. *20-40 Gbyte 8mm Tape Drive Installation and User's Guide*, 802-7712.
2. *20-40 Gbyte 8mm Tape Drive Installation Guide*, 805-0416.

20-40GB 1/2-Inch DLT Tape Drive

Options 6053 6054 6055 6056

6057 6058 6059 TAPDLT-020A

370-2187

Quantum DLT4000
Single-Ended SCSI
Medium Grey Bezel

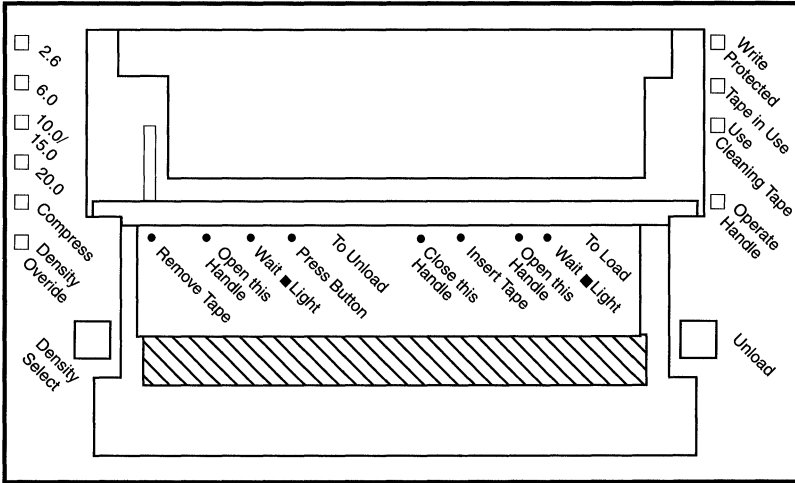
370-2255

Quantum DLT4000
Single-Ended SCSI
Black Bezel

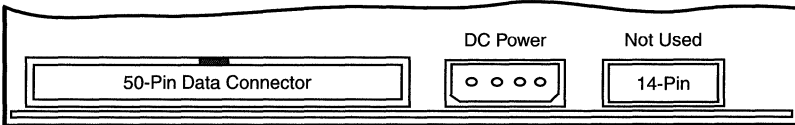
370-2848

Quantum DLT4000
Single-Ended SCSI
Light Grey Bezel

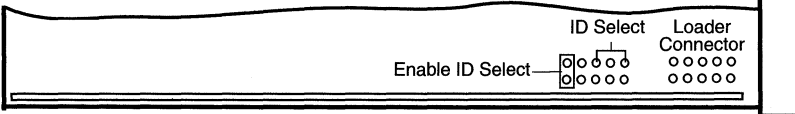
Front View



Rear View



Left Side View



Notes

1. The minimum operating system is Solaris 2.4.
2. The DLT4700 Autoloader requires drive 370-2264.
3. The Address Select Switch Cable for 370-2255 is 370-2333.
4. The Address Select Switch Cable for 370-2848 is 530-2372.

References

1. *DLT4000 Tape Drive Installation and User's Guide*, 802-5054-11.
2. *DLT4000 Tape Drive Installation and User's Guide*, 802-6378-12.
3. *DLT4700 Auto-Loader Installation and User's Guide*, 802-5688-11.

20-40GB 1/2-Inch DLT Tape Drive

Options 6051 6052 6071

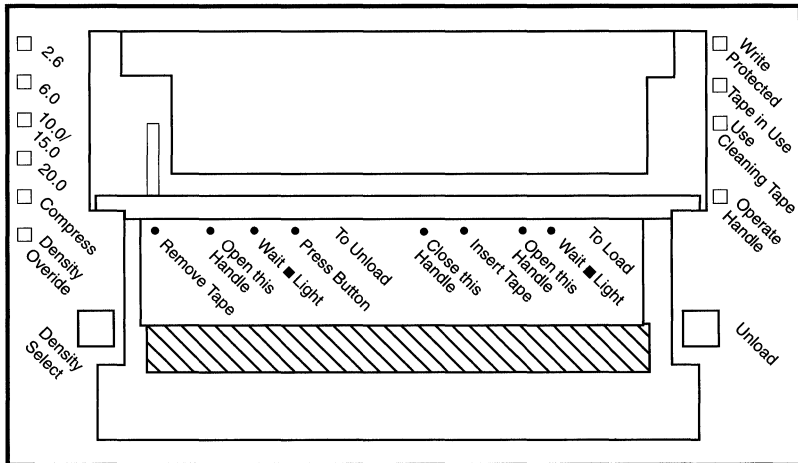
540-2780

540-2781

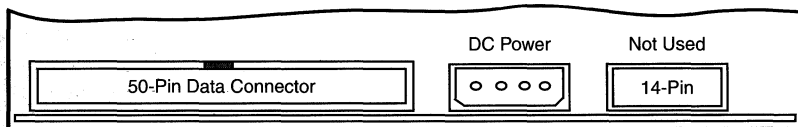
Quantum DLT4000
Single-Ended SCSI
Desktop Assy/FRU
w Drive 370-2848

Quantum DLT4700
Single-Ended SCSI
Library Assy/FRU
w Drive 370-2264

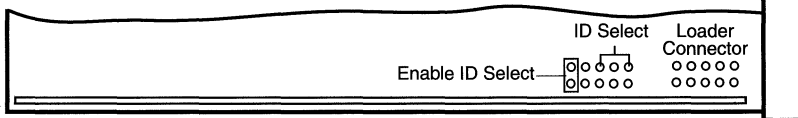
Front View



Rear View



Left Side View



Notes

1. The minimum operating system is Solaris 2.4.
2. The DLT4700 requires drive 370-2264.
3. The Address Select Switch Cable for 370-2848 is 530-2372

References

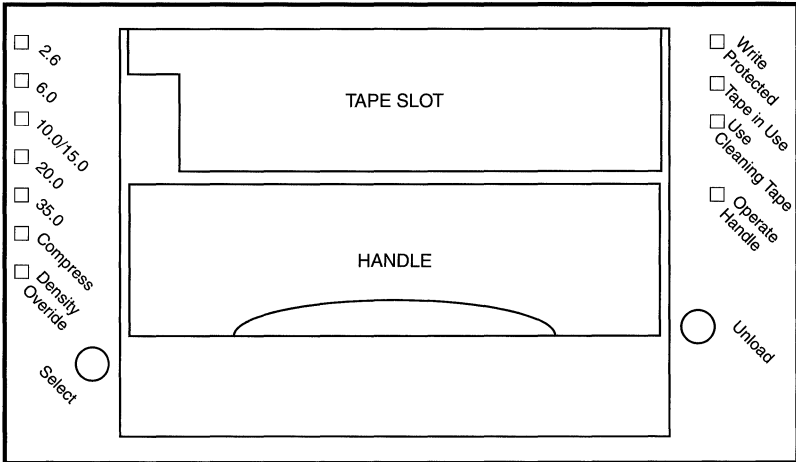
1. *DLT4000 Tape Drive Installation and User's Guide*, 802-5054-11.
2. *DLT4000 Tape Drive Installation and User's Guide*, 802-6378-12.
3. *DLT4700 Auto-Loader Installation and User's Guide*, 802-5688-11.

35-70GB 1/2-Inch DLT Tape Drive

Options 6060 6061 6062 TAPDLT-021A

| | | | |
|---|---|--|--|
| <p>370-2329 Quantum DLT7000 Single-Ended SCSI Medium Grey Bezel 4MB Internal Cache</p> | <p>370-3331 Quantum DLT7000 Single-Ended SCSI Medium Grey Bezel 8MB Internal Cache</p> | <p>370-2847 Quantum DLT7000 Single-Ended SCSI Light Grey Bezel 4MB Internal Cache</p> | <p>370-3330 Quantum DLT7000 Single-Ended SCSI Light Grey Bezel 8MB Internal Cache</p> |
|---|---|--|--|

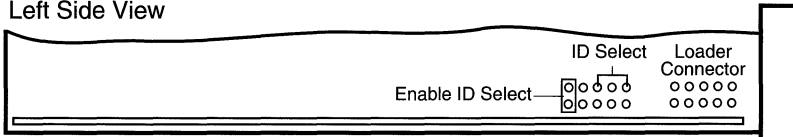
Front View



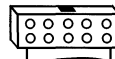
Rear View



Left Side View



FlexiPack Remote Address Cable Orientation



Notes

1. The minimum operating system is Solaris 2.5.
2. The SPARCstorage FlexiPack Address Switch Cable is 530-2372.

20-40GB 1/2-Inch DLT Tape Drive

ETL 4/1000

Option 6072

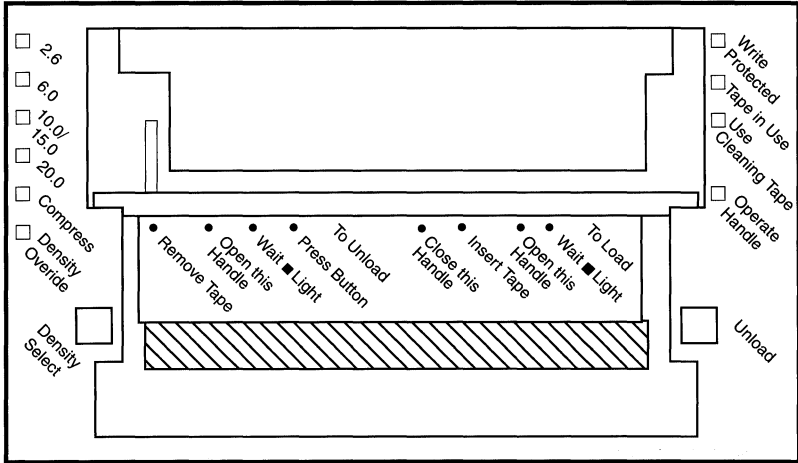
370-2865

Quantum DLT4000

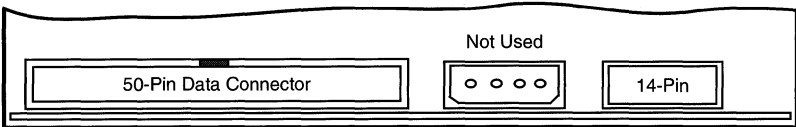
Differential SCSI

ETL 4/1000 FRU

Front View



Rear View



Left Side View



Notes

1. The minimum operating system is Solaris 2.5.
2. The ETL 4/1000 requires a Differential SCSI Controller.
3. The ETL 4/1000 requires a Differential SCSI DLT4000.

References

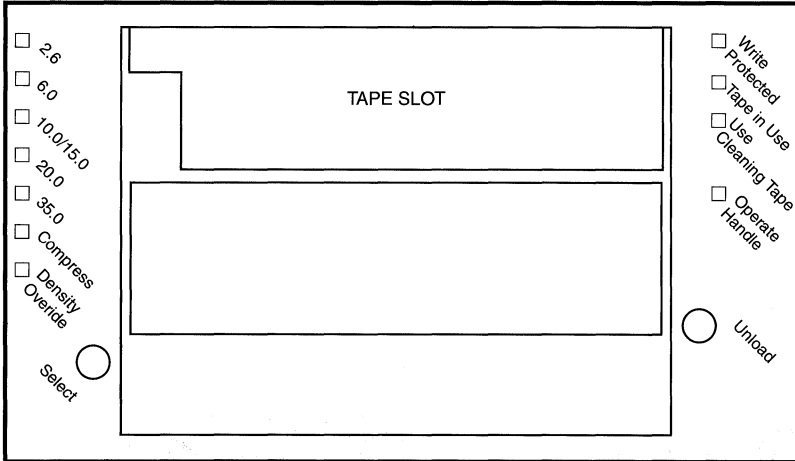
1. *ETL Service CD-ROM*, 704-5683-01.
2. *ETL 4/1000 Service Manual*, 875-1809.
3. *ETL 4/1000 Planning and Installation Guide*, 875-1808.

35-70GB 1/2-Inch DLT Tape Drive

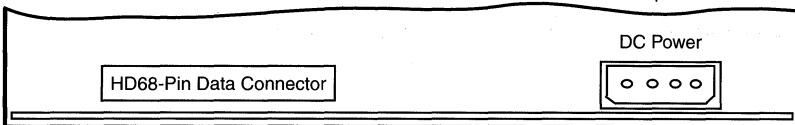
ETL 4/1800 StorEdge L1800 ETL 7/3500 StorEdge L3500
 Options 6063 6073 6074 6075 6076 6079 6080

| | |
|---------------------|---------------------|
| 370-3272 | 370-3332 |
| Quantum DLT7000 | Quantum DLT7000 |
| Differential SCSI | Differential SCSI |
| 4/1800 & 7/3500 FRU | 4/1800 & 7/3500 FRU |
| 4MB Internal Cache | 8MB Internal Cache |

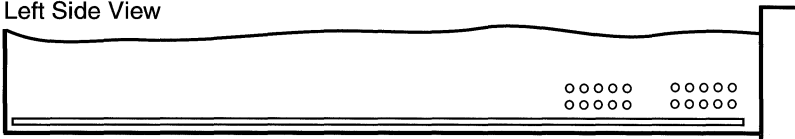
Front View



Rear View



Left Side View



Notes

1. The minimum operating system is Solaris 2.5.
2. The ETL 4/1800 and 7/3500 requires a Differential SCSI Controller.
3. The ETL 4/1800 and 7/3500 requires a Differential SCSI DLT7000.

References

1. *ETL 4/1000 and 4/1800 Service CD-ROM*, 704-5683-02.
2. *ETL 4/1000 and 4/1800 Service Manual*, 875-1809.
3. *ETL 4/1000, 4/1800 and 7/3500 Service CD-ROM*, 704-5683-03.
4. *ETL 7/3500 Service Manual*, 805-1038.

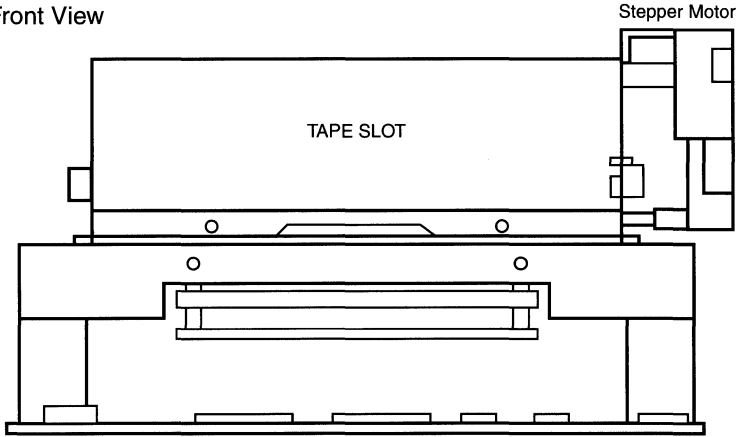
35-70GB 1/2-Inch DLT Tape Drive

StorEdge L280

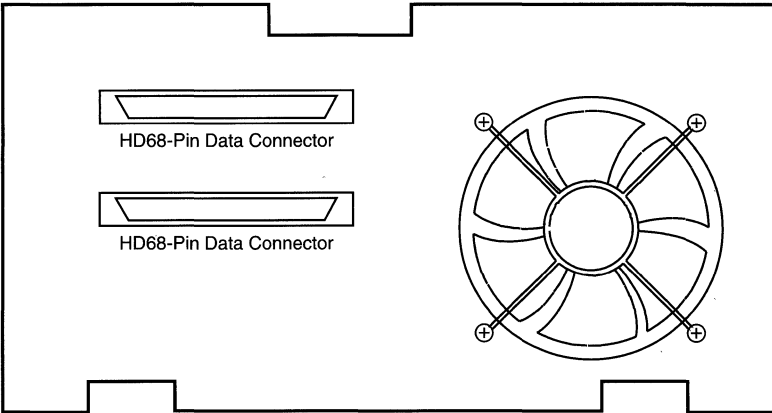
370-3423

Quantum DLT7000
Differential SCSI

Front View



Rear View



Notes

1. The minimum operating system is Solaris 2.5.
2. The 370-3423 includes address and data cables, fan, mounting bracket, stepper motor, and stepper motor circuit board.
3. To remove the tape drive, slide the drive 2.5" (65 mm) out of the chassis. Disconnect the DC Power, Fan Power, Stepper Motor, and SCSI Address cables, and remove the drive from the chassis.

Reference: *StorEdge L280 User's Guide*, 805-3957.

35-70GB 1/2-Inch DLT Tape Drive

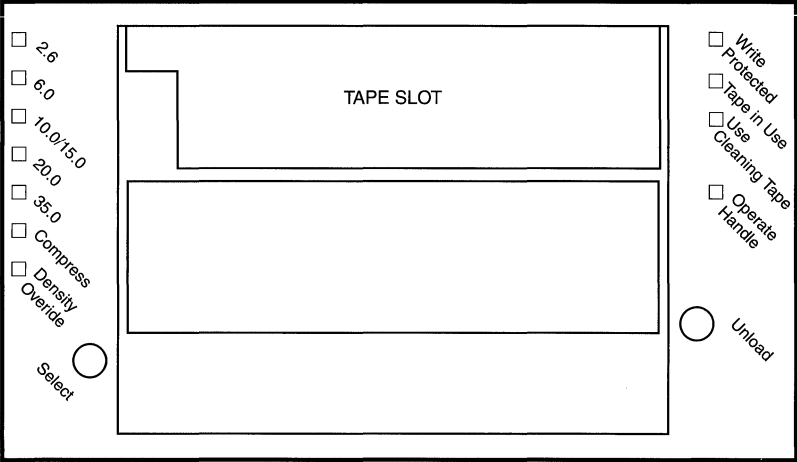
StorEdge L1000

370-3516

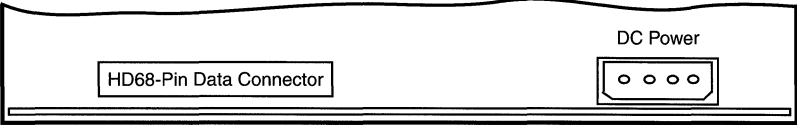
Quantum DLT7000

Differential SCSI

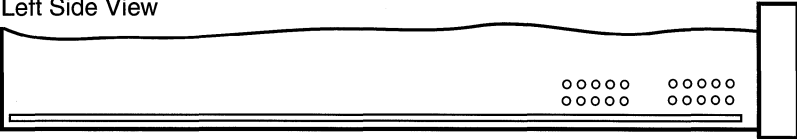
Front View



Rear View



Left Side View



Notes

1. The minimum operating system is Solaris 2.5.
2. The StorEdge L1000 requires a Differential SCSI Controller.
3. The StorEdge L1000 requires a Differential SCSI DLT7000.
4. The DLT 7000 includes an Address Cable, Fan, Interface Board, Magnetic Interlock, Mounting Bracket, and Stepper Motor.

References

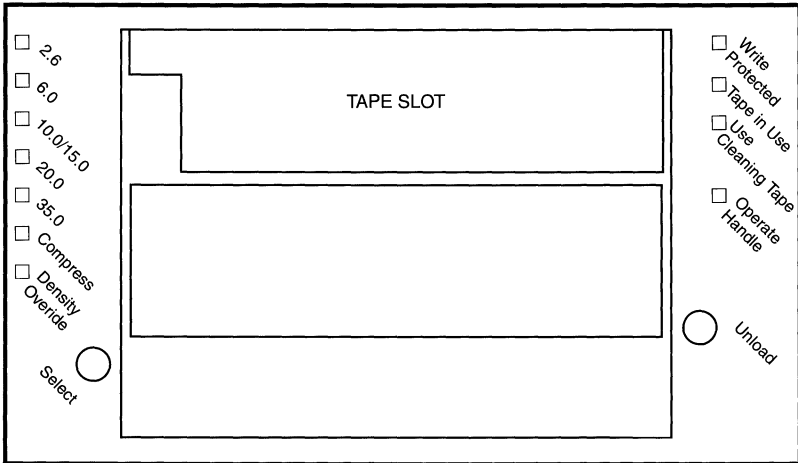
1. *StorEdge L1000 Service CD-ROM*, 704-5684.
2. *StorEdge L1000 User's Guide Manual*, 805-4823.

35-70GB 1/2-Inch DLT Tape Drive

StorEdge L11000

370-3723
Quantum DLT7000
Differential SCSI

Front View



Notes

1. The minimum operating system is Solaris 2.5.
2. The StorEdge L11000 requires a Differential SCSI Controller.
3. The StorEdge L11000 requires a Differential SCSI DLT7000.
4. Part number 370-3723 includes a DLT7000, Interface Board, and Stepper Motor mounted in a Drive Carrier.
5. Install drives in consecutive order from position 0 to position 15.
6. Set the Drive Sideboard Switch to the address on the left/right door.

References

1. *StorEdge L11000 User CD-ROM*, 704-6526.
2. *StorEdge L11000 User's Guide*, 805-7275.
3. *StorEdge L11000 User's Guide Addendum*, 6311627-01.
4. *StorEdge L11000 Service CD-ROM*, 704-6527.
5. *StorEdge L11000 Service Manual*, 704-7276.

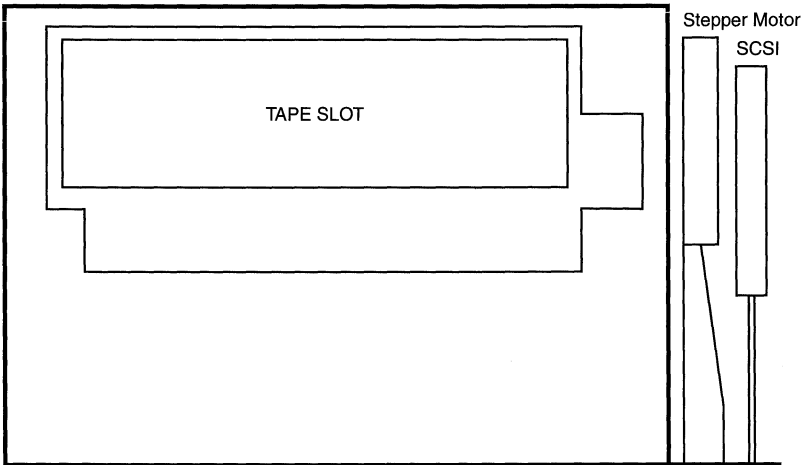
35-70GB 1/2-Inch DLT Tape Drive

StorEdge L20 StorEdge L40 StorEdge L60

380-0346
FRU Assembly
HP C7202-80007

390-0032
Quantum DLT7000
HV Differential SCSI

Front View



Notes

1. The minimum operating system is Solaris 2.6.
2. The StorEdge L20/40/60 requires a Differential SCSI Controller.
3. The StorEdge L20/40/60 requires a Differential SCSI DLT7000.
4. Part number 380-0346 includes a DLT7000, Interface Board, and Stepper Motor mounted in a Drive Carrier.

References

1. *StorEdge L20 User CD-ROM*, HP C7200-90025.
2. *StorEdge L20 User's Guide*, HP C7200-90009.
3. *StorEdge L20 User's Guide Addendum*, HP C7200-90014.
4. *StorEdge L20 FRU Replacement*, HP C7200-90005.
5. *StorEdge L20 Service Manual*, HP C7200-90031.

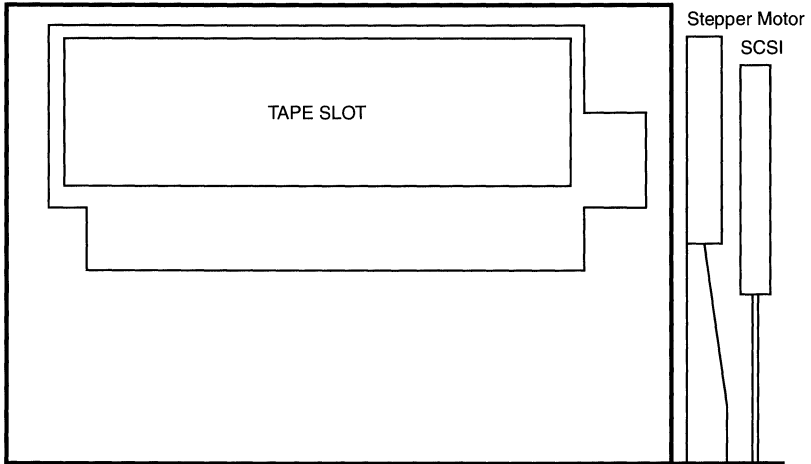
40-80GB 1/2-Inch DLT Tape Drive

StorEdge L9

380-0383

FRU Assembly
HP C7202-80008
HV Differential SCSI

Front View



Notes

1. The minimum operating system is Solaris 2.6.
2. The StorEdge L9 requires a Differential SCSI Controller.
3. The StorEdge L9 requires a Differential SCSI DLT8000.
4. Part number 380-0383 includes a DLT8000, Interface Board, and Stepper Motor mounted in a Drive Carrier.

References

1. *StorEdge L9 FRU Replacement*, HP C7145-90020.
2. *StorEdge L9 Service Manual*, HP C7145-90050.

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CONFIGURATIONS

ETHERNET

Ethernet

SBus

| | |
|--|---|
| Ethernet Controller | 2 |
| Quad Ethernet Controller SQEC/S | 3 |
| SunFastEthernet 1.0 | 4 |
| SunFastEthernet 2.0/2.1 | 5 |
| Sun Quad FastEthernet 1.0 SQFE/S | 6 |
| Sun Quad FastEthernet 2/0 SQFE/S | 7 |
| GigabitEthernet 1.0 GBE/S | 8 |
| GigabitEthernet 2.0 GBE/S | 9 |

PCI

| | |
|-----------------------------------|----|
| SunFastEthernet FE/P | 10 |
| Sun Quad FastEthernet QFE/P | 11 |
| GigabitEthernet 1.0 GBE/P | 12 |
| GigabitEthernet 2.0 GBE/P | 13 |
| GigabitEthernet FC-AL/P | 14 |

cPCI

| | |
|--|----|
| Rear Access Quad FastEthernet | 15 |
| Rear Access Quad FastEthernet Transition Board | 16 |
| Front Access Quad FastEthernet | 17 |

Miscellaneous

| | |
|---|----|
| MII to AUI Converter | 18 |
| SunSwitch Gigabit Ethernet Switch | 19 |
| TP4 Hub | 20 |
| SuperStack II Entry Hub | 21 |

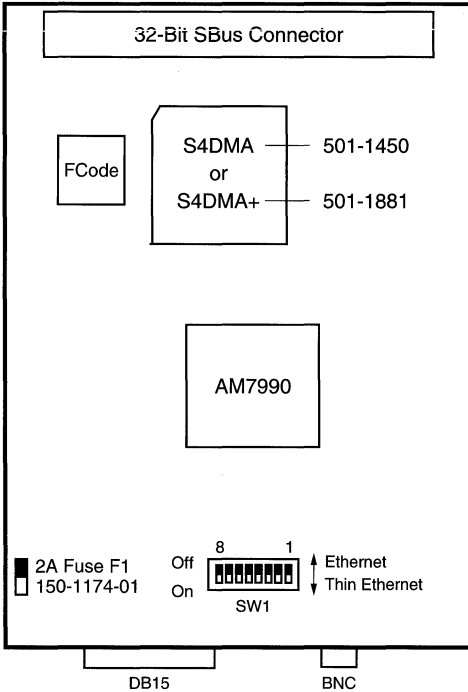
Ethernet Controller

Sun-4/15/30/40/50/60/65/75 SS4 SS5

Options 450 453

501-1450
X450A
40/50/60/65/75

501-1881
X450A and X453A
15/30/40/50/60/65/75
SS4 SS5



501-1450 Switch Settings

| SW1 | SETTING | DESCRIPTION |
|-----|---------|---------------|
| 1-8 | Off | Ethernet |
| 1-8 | On | Thin Ethernet |

501-1881 Switch Settings

| SW1 | SETTING | DESCRIPTION |
|-----|---------|---------------|
| 1-6 | Off | Ethernet |
| 1-6 | On | Thin Ethernet |
| 7-8 | On | +12Vdc on |
| 7-8 | Off | +12Vdc off |

Power: 1.0 Amps @ +5Vdc
5.0 Watts not including MAU +12Vdc power requirements

Notes

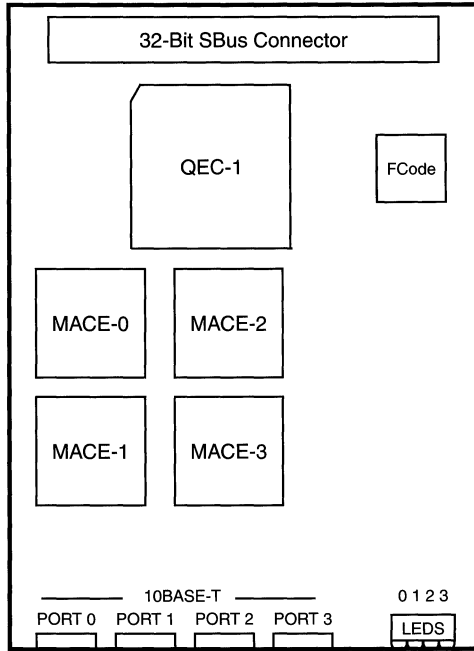
1. The Sun-4/75 supports one internal 207MB or 424MB disk drive if the Ethernet MAU draws current from the +12Vdc output to Pin-13.
2. Do NOT install this card in Slot-3 of the Sun-4/60 or Sun-4/65.
3. The 501-1881 replaced 501-1450 in September 1991.
4. Option X453A replaced X450A in September 1992.
5. Option X450A included 501-1450 or 501-1881.
6. Option X453A included 501-1881.

References

1. *Installing the SBus Ethernet Card*, 800-5161-10
2. *Installing the SBus Ethernet Card*, 800-6682-10.

Quad Ethernet Controller SQEC/S

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20
 SS600 SS1000 SC2000 A11 A12 A14 E150
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 E10000
 Option 1058
 501-2062



Power: 2.0 Amps @ +5Vdc
 10.0 Watts

Notes

1. The minimum operating system is SunOS 4.1.3 or Solaris 2.3.
2. The minimum OS for an SS4 with SQEC is Solaris 2.4 Hardware: 11/94.
3. The minimum OS for an SS5 with SQEC is Solaris 2.3 Hardware: 5/94.
4. The minimum OS for an SS20 with SQEC is Solaris 2.3.
5. The final OS for the BEC device and the be driver is Solaris 2.6.
6. SunOS 4.1.3 requires Quad Ethernet Controller 1.1 software.
7. SQEC device drivers are bundled in Solaris 2.3.
8. SunOS 4.x device drivers support Sun-4m architecture only.
9. Open Boot PROM 2.x is required.
10. The Link Integrity Test is enabled/disabled through the OBP.

Reference: *SBus Quad Ethernet Controller (SQEC) Manual*, 800-7123-11.

SunFastEthernet 1.0

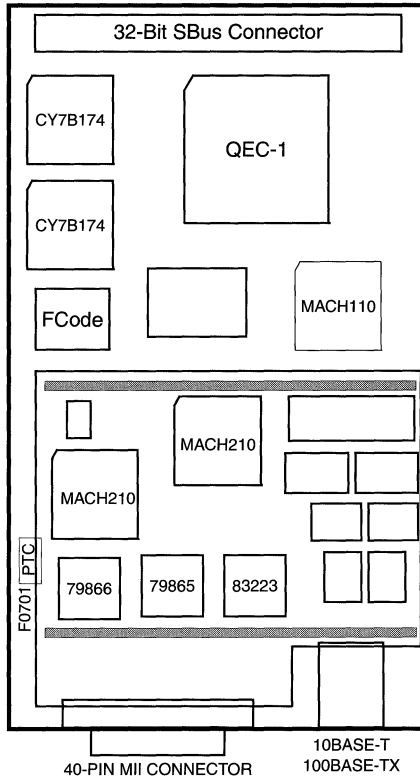
Sun-4/15/30 SS5 SS10 SS20 SS600
 SS1000 SC2000

Option 1056

501-2450
 SBus Card

501-2646
 Transceiver Card

501-2655
 FRU Assembly



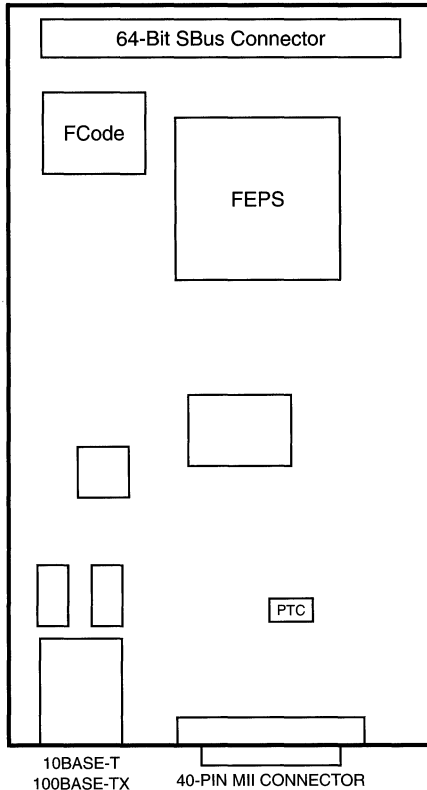
Notes

1. The minimum OS is SunOS 4.1.3 or Solaris 2.3 Hardware 5/94.
2. SunOS 4.1.3 requires SunFastEthernet 1.1 software.
3. Solaris 2.3 Hardware: 5/94 requires Patch 101820-01.
4. Solaris 2.4 Hardware: 11/94 requires Patch 102001-01.
5. SunOS 4.x device drivers support Sun-4m architecture only.
6. The final software release is Solaris 2.6.
7. SS1000 and SC2000 require Solaris 2.4 Patch ≥102001-08 if the SM81 is installed.

Reference: *SunFastEthernet Adapter User's Guide*, 801-6109-10.

SunFastEthernet 2.0/2.1

Sun-4/15/30 SS5 SS10 SS20 SS600
 SS1000 SC2000 A11 A12 A14 E150
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 E10000
 Option 1059
 501-2919

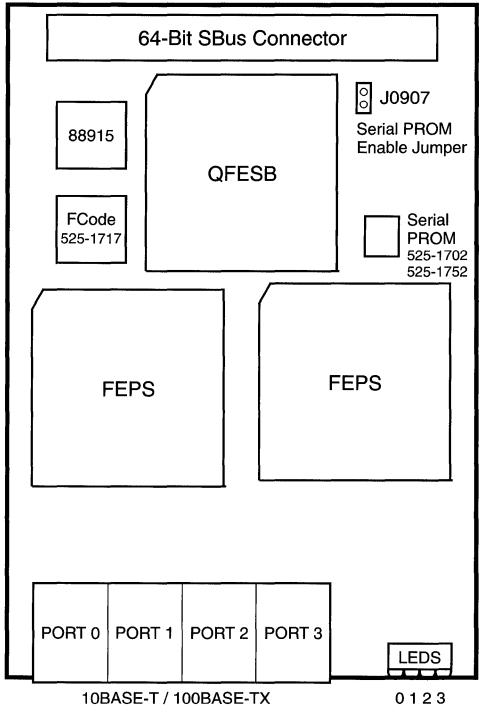


Notes

1. The minimum OS for SunFastEthernet 2.0 is Solaris 1.1.2 or Solaris 2.4.
2. The minimum OS for SunFastEthernet 2.1 is Solaris 1.1.1 or Solaris 2.3.
3. The SUNWhmd and SUNWhmdu packages are bundled in Solaris 2.5.
4. The SS1000 and SC2000 require OBP 2.26 due to BugID 1228182.
5. Install SunFastEthernet in Slot 0 and DWIS/S in Slot 1 on E10000 SBus I/O board 501-4349.

Reference: *SunFastEthernet Adapter User's Guide*, 802-6022-10.

Sun Quad FastEthernet 1.0 SQFE/S
 SS5 SS10 SS20 SS600 SS1000 SC2000
 A11 A12 A14 E3x00 E4x00 E5x00 E6x00
 Option 1042
 501-4302



Notes

1. The minimum OS is Solaris 2.4 and Quad FastEthernet 1.0.
2. QFE/S 1.0 uses the SUNWhmed device driver.
3. QFE/S is not compatible with Sun Trunking 1.0.
4. The SS1000 and SC2000 require OBP 2.26.
5. One CPU per port is recommended for maximum throughput.
6. Two CPUs per QFE/S are recommended for ≥ 200 MHz systems.
7. SQFE $\leq 501-4302-03$ fails the Fcode checksum test and will not configure during boot if the E3000-E6000 is set to Diagnostic mode. Set Keyswitch diagnostics Off, OBP **diag-switch?** false, and OBP **diag-level** min.
8. Set the NVRAM variable **local-mac-address?** to true to enable the MAC addresses of the network interfaces on the Quad FastEthernet board.

Reference: *Sun Quad FastEthernet Installation Guide*, 805-0732-10.

Sun Quad FastEthernet 2.0 SQFE/S

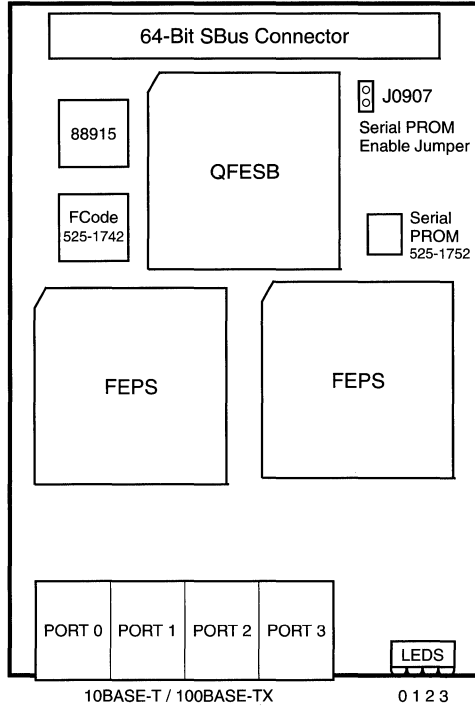
SS5 SS10 SS20 SS600 SS1000 SC2000

A11 A12 A14 E3x00 E4x00 E5x00 E6x00 E10000

Option 1049

501-4837

501-5443



Operating System Notes

1. The minimum OS is Solaris 2.4 and Quad FastEthernet 2.0.
2. Solaris 2.6 requires QFE 2.1 software.
3. Do NOT use QFE 2.1 software with Solaris 2.6 Hardware: 5/98.
4. QFE 2.2 software is bundled in 2.6 HW: 5/98 and SunTrunking 1.0.1.
5. QFE/S 2.0 uses the SUNWqfed drivers and supports Sun Trunking.
6. The output of **pkginfo -x** does not match the QFE release number. Conversion tables are included in *Release Notes* 805-3893-10.

Notes

1. The SS1000 and SC2000 require OBP 2.26.
2. The E10000 is not compatible with 501-4837-01. Use ≥501-4837-02.
3. One CPU per port is recommended for maximum throughput.
4. Two CPUs per QFE/S are recommended for ≥200MHz systems.
5. Set the NVRAM variable **local-mac-address?** to true to enable the MAC addresses of the network interfaces on the Quad FastEthernet board.

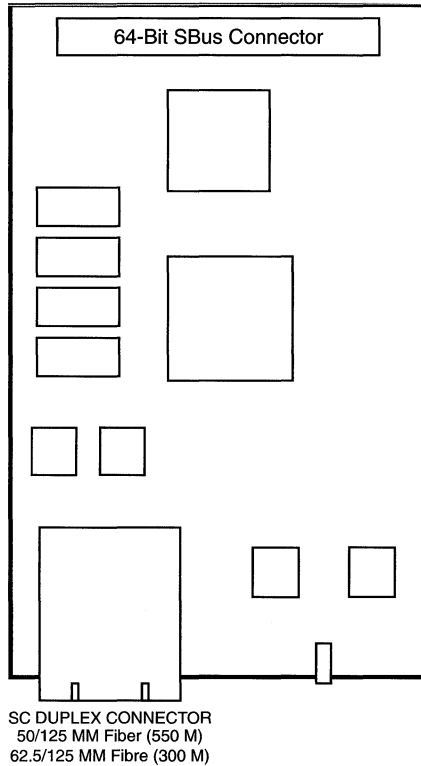
Reference: *Sun Quad FastEthernet Installation Guide*, 805-3114-10.

GigabitEthernet 1.0 GBE/S

A14 E3000 E4000 E5000 E6000
 E3500 E4500 E5500 E6500 E10000

Option 1045

375-0003
 Alteon AceNIC



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. The final operating system is Solaris 2.6.
3. Install GBE/S in Slot 0 on E10000 SBus I/O board 501-4349.
4. The minimum software for the E10000 is Gigabit Ethernet 1.1.

Reference: *Sun GigabitEthernet SBus Adapter 1.0 User's Guide*, 805-1136.

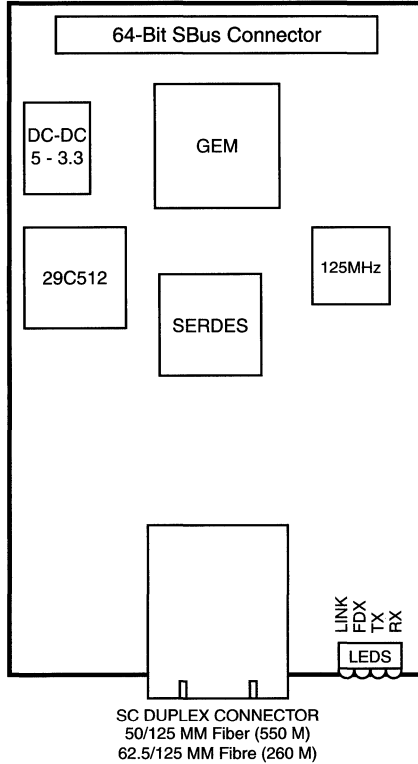
GigabitEthernet 2.0 GBE/S

A14 E3000 E4000 E5000 E6000
E3500 E4500 E5500 E6500 E10000

Option 1140

501-4375

Multi-Mode Fiber



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 11/97.
2. There are no slot restrictions for the E10000 SBus I/O board.

References

1. *Sun GigabitEthernet/S Product Note*, 805-5937.
2. *Sun GigabitEthernet/S Installation and User's Guide*, 805-2784.

SunFastEthernet FE/P

A16 A20 A21 A22 A23 A25 A26 A27

Netra t 1100/1120/1125 Netra t 1400/1405 Netra ft 1800

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 1033 6934

501-4359

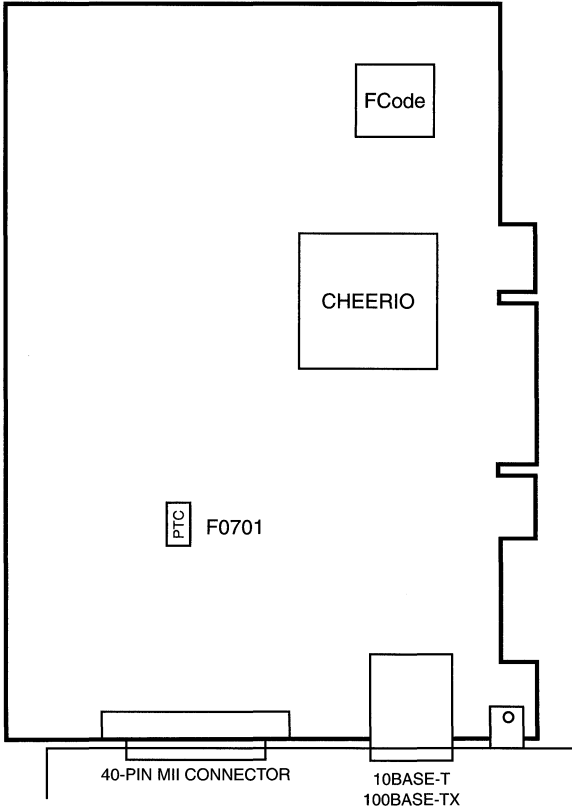
3.3/5V 32Bit 33MHz

501-5019

3.3/5V 32Bit 33MHz

540-3981

Netra ft 1800 FRU
w 501-4359 or 501-5019



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. Auto-negotiation is used to select operating mode and speed.
3. The address of the on-board MII transceiver is 1.
4. Set the external MII transceiver to an address other than 1 to avoid an address conflict with the on-board transceiver. Refer to BugID 4062714.

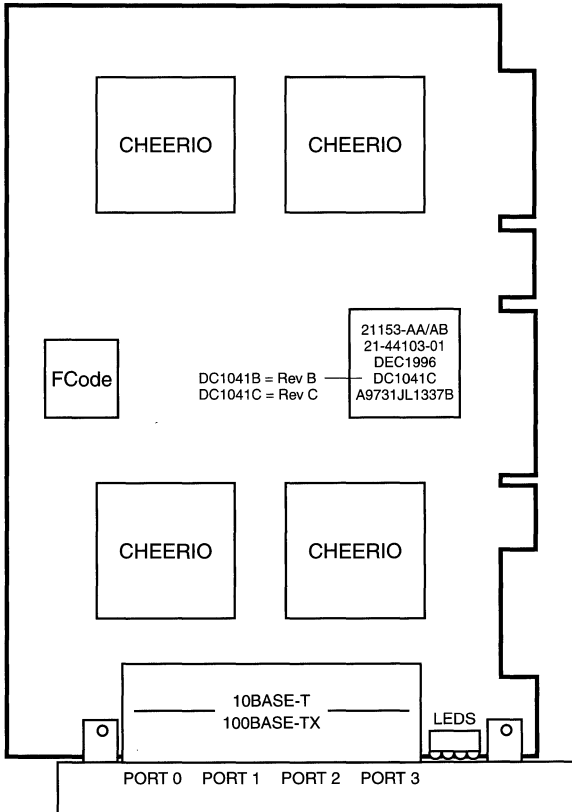
References

1. *SunFastEthernet PCI Installation and User's Guide*, 805-1759.
2. *SunFastEthernet PCI Adapter Product Note*, 805-2715-10.

Sun Quad FastEthernet QFE/P

A16 A20 A21 A22 A23 A25 A26 A27 Netra t1 100/105
 Netra t 1100/1120/1125 Netra t 1400/1405 Netra ft 1800
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 Options 1034 6943

501-4366 501-5406 540-4094
 3.3/5V 64Bit 33MHz 3.3/5V 64Bit 33MHz Netra ft 1800 FRU



Notes

1. The minimum OS is Solaris 2.5.1 HW: 4/97 and Quad FastEthernet 2.0.
2. Solaris 2.6 requires QuadFastEthernet 2.1.
3. Quad FastEthernet hardware uses the SUNWqfed device driver.
4. The Ultra 30 requires DC21153 Revision C. See BugID 4094903.
5. One CPU per port is recommended for maximum throughput.
6. Two CPUs per QFE/P are recommended for ≥ 200 MHz systems.
7. Auto-negotiation is used to select operating mode and speed.

Reference

Sun Quad FastEthernet PCI Installation and User's Guide, 805-1797-10.

GigabitEthernet 1.0 GBE/P

A16 A20 A21 A22 A23 A25 A26 A27

Netra t 1100 Netra t 1120 Netra t 1125

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

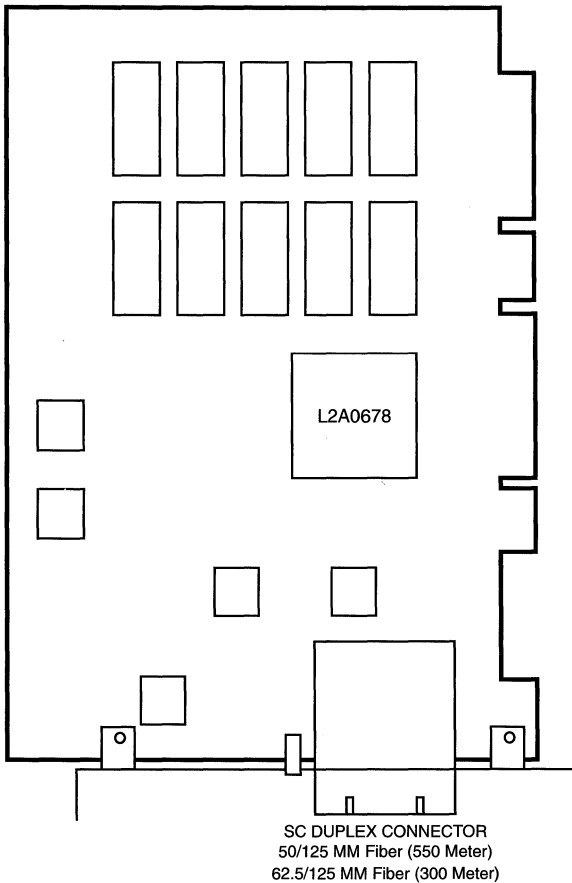
E10000

Option 1044

375-0002

Alteon AceNIC

3.3/5V 64Bit 33MHz



Notes

- 1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
- 2. The final operating system is Solaris 2.6.
- 3. The minimum E10000 operating system is Solaris 2.6.

Reference: *Sun GigabitEthernet PCI Adapter 1.0 User's Guide*, 805-1135.

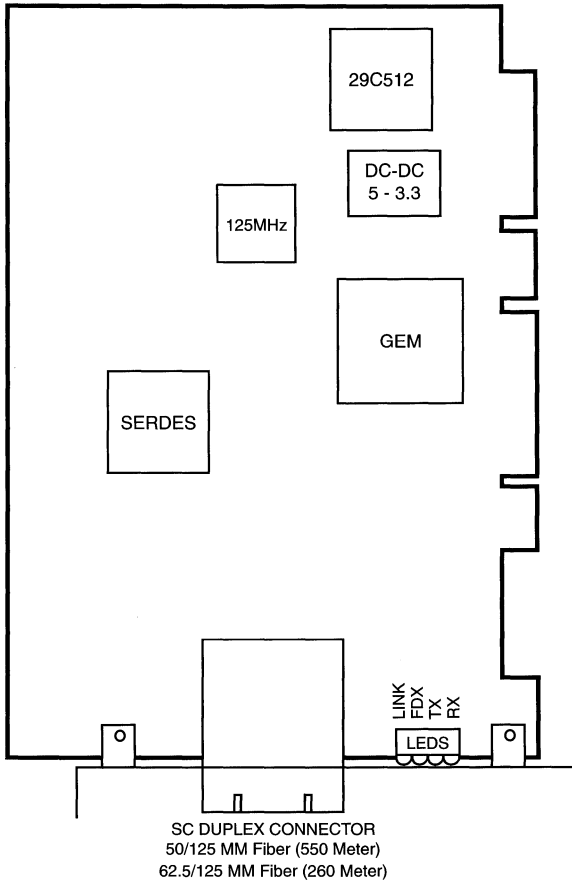
GigabitEthernet 2.0 GBE/P

A16 A20 A21 A22 A23 A25 A26 A27 Netra t1 100/105
 Netra t 1100 Netra t 1120/1125 Netra t 1400/1405
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 E10000

Option 1141

501-4373
 Multi-Mode Fiber
 3.3/5V 64Bit 33/66MHz

501-5470
 Special for Apple

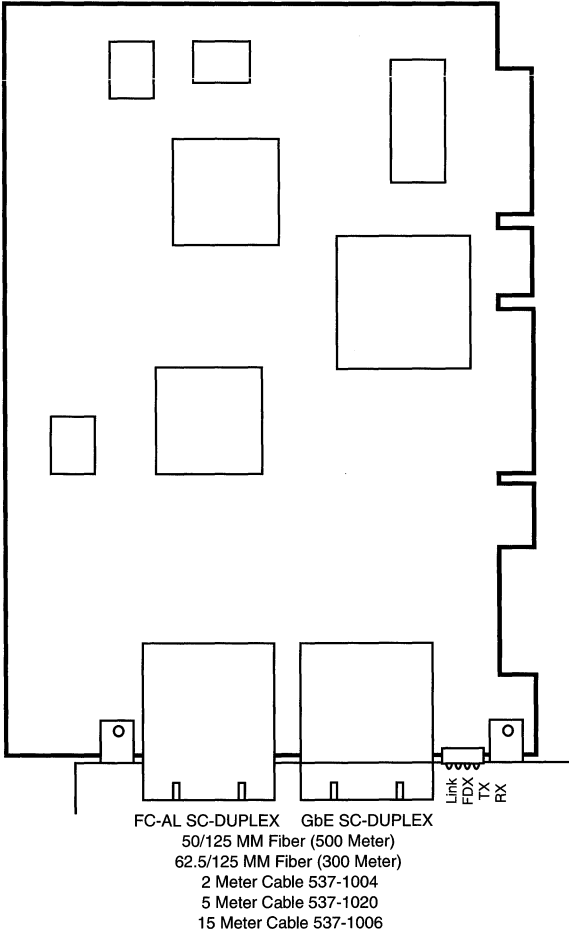


Note: The minimum operating system is Solaris 2.5.1 Hardware: 11/97.

References

1. Sun GigabitEthernet/P Product Note, 805-5938.
2. Sun GigabitEthernet/P Installation and User's Guide, 805-2785.

GigabitEthernet FC-AL/P
 A16 A22 A23 A25 A26 A27
 Option 2069
 501-5426
 3.3/5V 32/64Bit 33/66MHz



Notes

1. The minimum operating system is Solaris 7 HW: 11/99.
2. The minimum OBP is 3.11.

References

1. *GigabitEthernet FC-AL/P Installation Manual*, 806-2385.
2. *GigabitEthernet FC-AL/P Product Note*, 806-2386.

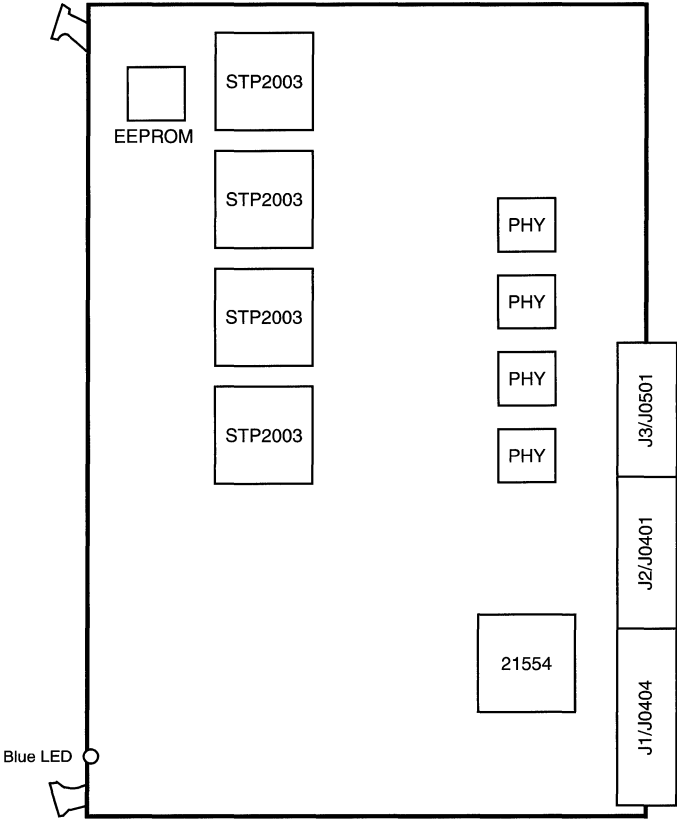
Rear Access Quad FastEthernet

Netra ct 400 Netra ct 800

Option 1334

501-5417

3.3/5V 64Bit 33MHz cPCI



Notes

- 1. The minimum operating system is Solaris 8 HW: 6/00.
- 2. Option 1334 includes front QFE 501-5417 and rear QFE 501-5427.
- 3. QFE 501-5427 is required in the same slot in the rear of the chassis.

References

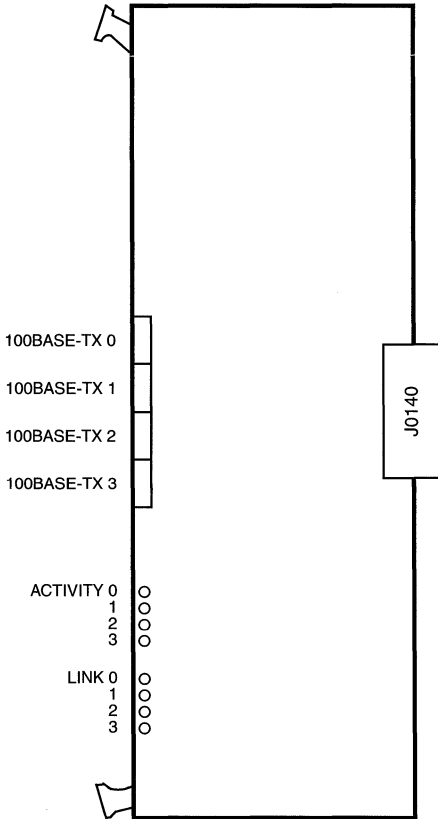
- 1. *QuadFastEthernet Installation and User's Guide*, 806-2991.
- 2. *QuadFastEthernet Release Notes*, 806-2992.

Rear Access Quad FastEthernet Transition Board

Netra ct 400 Netra ct 800

Option 1334

501-5427



Notes

1. The minimum operating system is Solaris 8 HW: 6/00.
2. Option 1334 includes front QFE 501-5417 and rear QFE 501-5427.
3. QFE 501-5417 is required in the same slot in the front of the chassis.

References

1. *QuadFastEthernet Installation and User's Guide*, 806-2991.
2. *QuadFastEthernet Release Notes*, 806-2992.

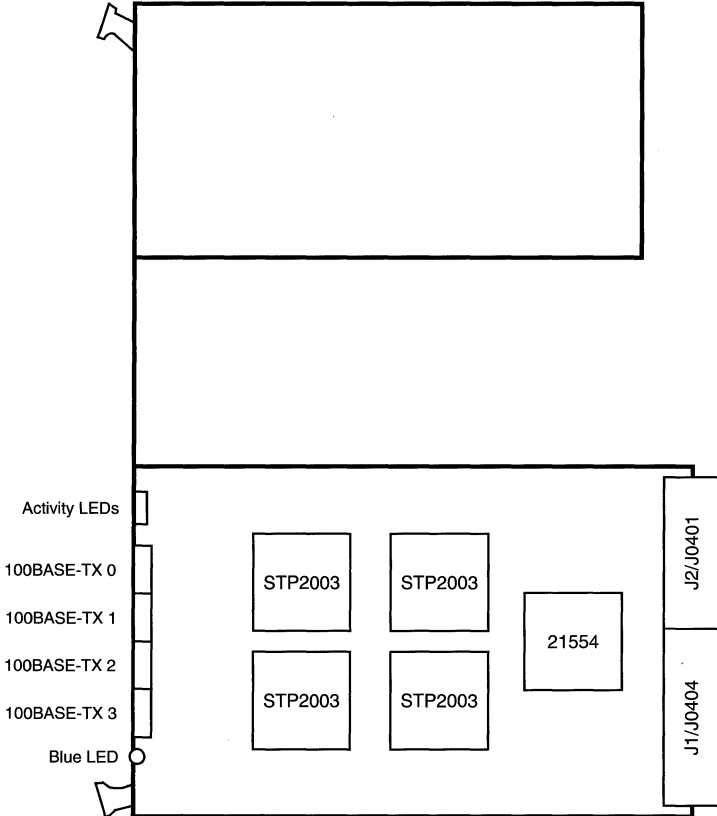
Front Access Quad FastEthernet

Netra ct 400 Netra ct 800

Option 1337

501-5737

3.3/5V 64Bit 33MHz cPCI



Notes

1. The minimum operating system is Solaris 8 HW: 6/00.
2. The 6U assembly 501-5737 includes untested 3U QFE 500-5502.
3. Do Not use Rear Access QFE Transition Board with Front Access QFE.

References

1. *QuadFastEthernet Installation and User's Guide*, 806-2991.
2. *QuadFastEthernet Release Notes*, 806-2992.

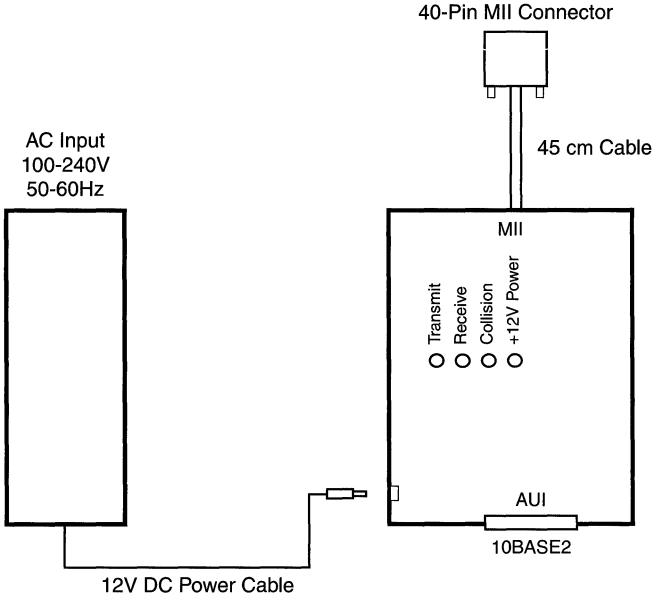
MII to AUI Converter

Options 467 2817 3817

595-3780

595-4364

Japan



Reference: *MII-AUI Converter*, 802-5358-10.

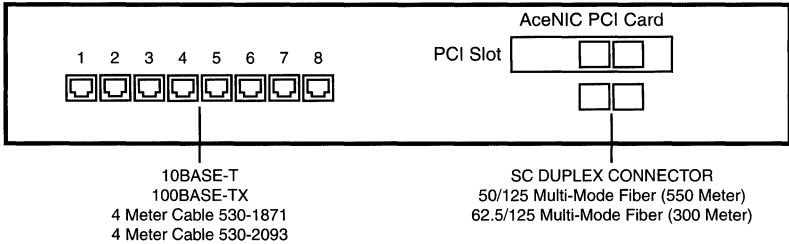
SunSwitch Gigabit Ethernet Switch

Option 1046

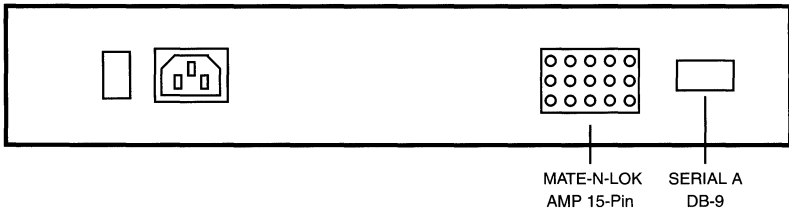
380-0001

Alteon AceSwitch 110

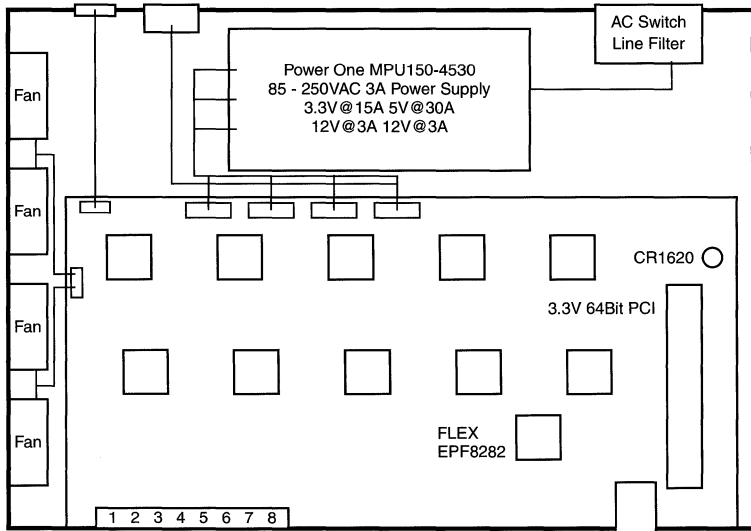
Front View



Rear View



Top View with Cover Removed



Reference: *SunSwitch Installation Guide*, 805-1137-10.

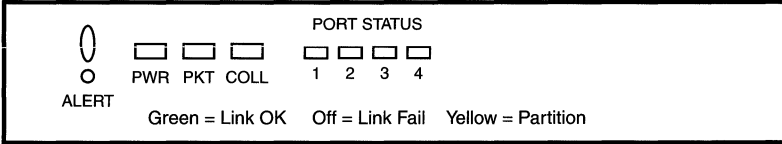
TP4 Hub

Option 2720

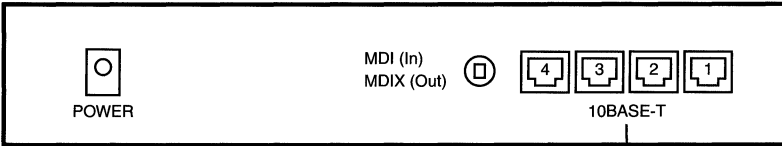
370-3325
3Com 3C16704

540-3584
FRU Assembly

Front View



Rear View



UTP Category 5 Wire
4 Meter Cable 530-1871
4 Meter Cable 530-2093

Notes

1. The MDI/MDIX Switch affects the operation of Port 4.
2. Set Switch 4 to MDIX (Out) when connecting to a workstation.
3. Set Switch 4 to MDI (In) when connecting to an OfficeConnect Hub.
4. FRU 540-3584 includes the following AC-DC power adapters:

| PRIMARY COUNTRY | PLUG TYPE | AC INPUT | DC OUTPUT |
|-----------------|-----------|-----------|-----------|
| Australia | AS3112 | 240V 0.2A | 14V 0.8A |
| Europe | CEE 7/16 | 230V 0.2A | 14V 0.8A |
| Japan | JIS 8303 | 100V 0.2A | 13V 0.8A |
| South Africa | BS546 | 220V 0.2A | 14V 0.8A |
| United Kingdom | BS1363 | 240V 0.2A | 14V 0.8A |
| United States | NEMA 1-15 | 120V 0.2A | 13V 0.8A |

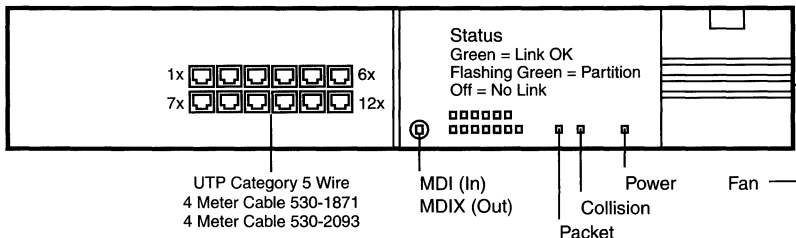
Reference: *OfficeConnect Hub TP4 User Guide*, DUA1670-3AAA01.

SuperStack II Entry Hub

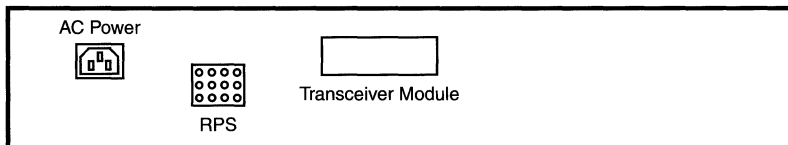
Options 2721 2722

370-3795
 3Com 3C16440
 10BASE-T Ethernet

Front View



Rear View



Notes

1. Option 2721 includes Control Board 501-4839 and AC Cord 530-2197.
2. Option 2722 includes Control Board 501-5494 and AC Cord 530-2197.
3. The MDI/MDIX Switch affects the operation of Port 12.
4. Set the switch to MDIX (Out) when connecting to a workstation.
5. Set the switch to MDI (In) when connecting to a 10BASE-T repeater.
6. The Redundant Power System (RPS) option is available from 3Com.

Reference: *SuperStack II Entry Hub User Guide*, DUA1644-0AAA01.

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CONFIGURATIONS

COMMUNICATION

Communication

SBus

| | |
|---|----|
| SunISDN-BRI/SBI | 3 |
| Serial Parallel Controller SPC/S | 4 |
| Token Ring Interface TRI/S | 5 |
| High Speed Serial Interface HSI/S | 6 |
| FDDI/S SAS 1.0/2.0 | 7 |
| FDDI/S SAS 3.0 | 8 |
| FDDI/S DAS 3.0 | 9 |
| FDDI/S SAS 4.0 | 10 |
| FDDI/S DAS 4.0 | 11 |
| FDDI/S SAS 5.0/6.0 | 12 |
| FDDI/S DAS 5.0/6.0 | 13 |
| SunATM-155/MFiber 1.0 | 14 |
| SunATM-155/UTP 1.0 | 15 |
| SunATM-155/MFiber 2.0/2.1/4.0 | 16 |
| SunATM-155/UTP 2.0/2.1/4.0 | 17 |
| SunATM-622/MFiber 2.1/4.0 | 18 |
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| SCI Adapter | 20 |
| SCI Switch | 21 |

PCI

| | |
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| High Speed Serial Interface HSI/P | 22 |
| Serial Asynchronous Interface SAI/P | 24 |
| Token Ring Interface TRI/P | 26 |
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| FDDI/P DAS 1.0/2.0 | 29 |
| SunATM-155/MFiber 3.0/4.0 | 30 |
| SunATM-155/UTP 3.0/4.0 | 31 |
| SunATM-622/MFiber 3.0/4.0 | 32 |
| HIPPI/P 1.0/1.1 | 33 |
| SCI Adapter SCI/P | 34 |

Communication - Continued

cPCI

| | |
|---|----|
| Rear Access ATM 155MMF | 35 |
| Rear Access ATM 155MMF Transition Board | 36 |

Miscellaneous

| | |
|--------------------------------------|----|
| Network Terminal Server | 37 |
| Serial Asynchronous Connectors | 39 |
| Terminal Concentrator | 40 |
| Remote System Control | 41 |

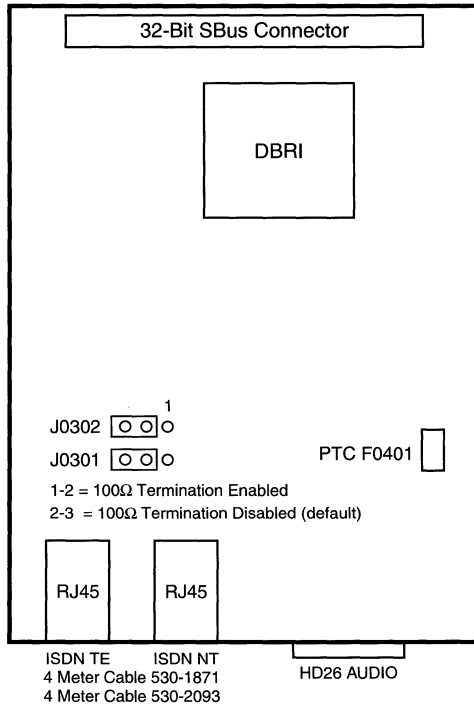
SunISDN-BRI/SBI

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10
 SS20 SS600 SS1000 SC2000 A11 A12 A14
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 E10000
 Option 1012

501-1849

501-2603

BABT ETSI-1 AV-1



Notes

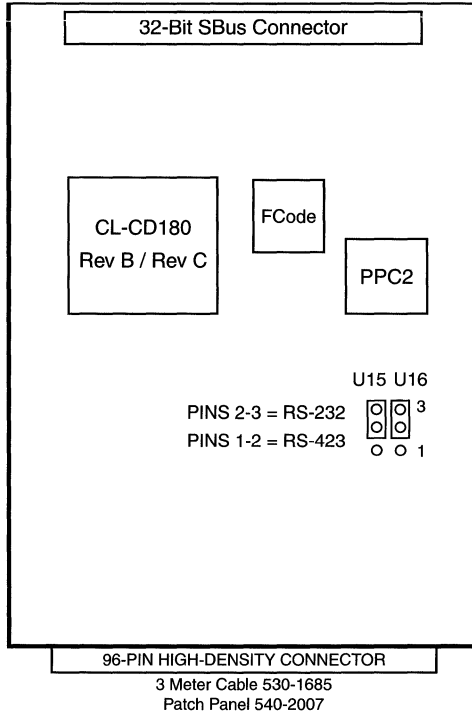
1. The minimum operating system is Solaris 2.1.
2. The final software release for the SunISDN-BRI/SBI was Solaris 2.5.1.
3. SunISDN-BRI/SBI is not compatible with Slot-3 of the Sun-4/60/65.

Reference

SunISDN-BRI/SBI Hardware Configuration Guide, 800-6863-05.

Serial Parallel Controller SPC/S

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20
 SS600 SS1000 SC2000 A11 A12 A14
 E3x00 E4x00 E5x00 E6x00 E10000
 Options 1008 1146
 501-1931



Notes

1. The minimum operating system is SunOS 4.0.3c.
2. The 501-1931 is not compatible with SPC/S driver SPC 1.0.
3. The 501-1931 is compatible with SPC/S drivers SPC 1.1, 1.2, and 2.x.
4. SPC/S driver SPC 2.0 is compatible with Solaris 2.1 and 2.2.
5. SPC/S driver SPC 2.0 is not compatible with Solaris ≥ 2.3 .
6. The SPC/S driver is included in Solaris ≥ 2.3 .
7. Option 1146 includes SPC 3.0 for Solaris 7 64-Bit operating system.
8. The CL-CD180 Rev B is not compatible with Sun4d systems.
9. The CL-CD180 Rev B was not tested with Sun4u systems.

References

1. *Serial Parallel Controller Installation Guide*, 800-5246-10.
2. *Serial Parallel Controller Installation Guide*, 800-6573-12.
3. *Serial Parallel Controller Installation Guide*, 805-6945-10.
4. *Serial Parallel Controller Product Note*, 805-6946-10.

Token Ring Interface TRI/S

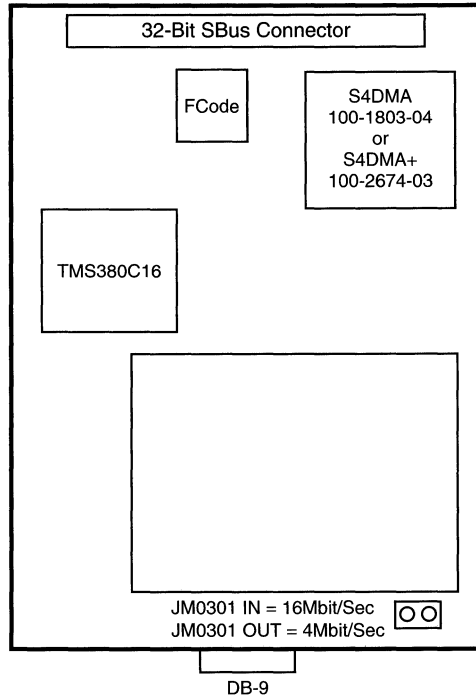
Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20
SS600 SS1000 SC2000 A11 A12 A14 E150

E3x00 E4x00 E5x00 E6x00 E10000

Options 1004 1014 1144 2144

501-1932

4/16MBit



Notes

1. The minimum operating system is SunOS 4.1.
2. Option 1144 includes TRI 4.0 for Solaris 7 64-Bit operating system.
3. The TRI/S is not compatible with Slot-3 of the Sun-4/60/65.
4. The SS1000 and SC2000 require TRI/S ≥501-1932-03.
5. The TRI/S <501-1932-03 was not tested with Sun4u systems.
6. Install only one TRI/S per SS1000 or SC2000 System board.
7. Install only one TRI/S per SBus channel on the E3x00-E6x00 I/O board.
8. Do NOT use onboard Ethernet, SCSI, SOC, or SOC+ when TRI/S is installed in the same SBus channel on the E3x00-E6x00 I/O board.
9. Install only one TRI/S on the E10000 SBus I/O board and do NOT install any board in the second slot.

References

1. *TRI/S Installation Guide*, 801-3890-10.
2. *TRI/S 4.0 Installation Guide*, 805-6906-10.

High Speed Serial Interface HSI/S

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10

SS20 SS600 SS1000 SC2000 A11 A12 A14

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

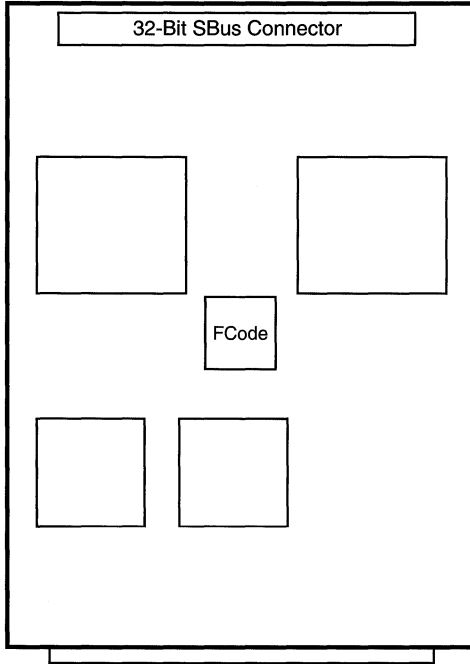
E10000

Options 1009 1019 1145

501-1725

501-2005

Cray Special



96-PIN HIGH-DENSITY CONNECTOR
3 Meter Cable 530-1685
Patch Panel 540-2191

Notes

1. The minimum operating system is SunOS 4.1.
2. Option 1145 includes HSI 3.0 for Solaris 7 64-Bit operating system.
3. The SS10 Model 20 and Model 30 require HSI/S \geq 501-1725-04.
4. Sun-4m, Sun-4u, and Sun-4d systems require HSI/S \geq 501-1725-05.
5. The transmit driver is always enabled on 501-1725.
6. The transmit driver is enabled by RTS on 501-2005.
7. The E3x00-6x00 require I/O board FW \geq 1.8.1 to fix BugID 4024654.

References

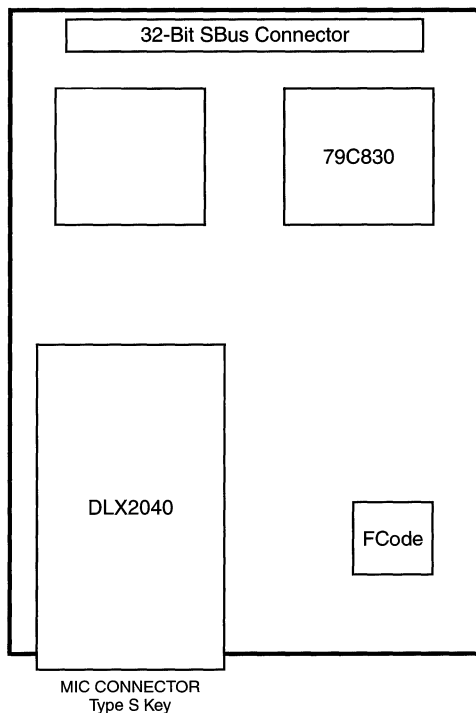
1. *HSI/S 1.0 Installation and Administration Guide*, 800-5332-10.
2. *HSI/S 2.0 Installation and Administration Guide*, 801-3931-10.
3. *HSI/S 3.0 Installation and Administration Guide*, 805-6941-10.

FDDI/S SAS 1.0/2.0

Sun-4/15/30/40/50/60/65/75 SS10 SS600 SS1000 SC2000

Options 1003 1005

501-1732



Power: 1.0 Amps @ +5Vdc
5.0 Watts

Notes

1. The minimum operating system is SunOS 4.1.1.
2. The FDDI/S is not supported in Solaris ≥ 2.5 .
3. This card is not compatible with Slot-3 of the Sun-4/60/65.
4. The last unbundled release for the FDDI/S is FDDI 2.0.
5. The FDDI/S is not compatible with FDDI 3.0, 4.0, or 5.0.
6. The FDDI/S is not compatible with the SS4 or SS5.

Reference: *SunNet 1.0 FDDI/S Technical Reference Manual*, 800-4849.

FDDI/S SAS 3.0

Sun-4/15/30/40/50/60/65/75 SS4 SS5 SS10 SS20

SS600 SS1000 SC2000

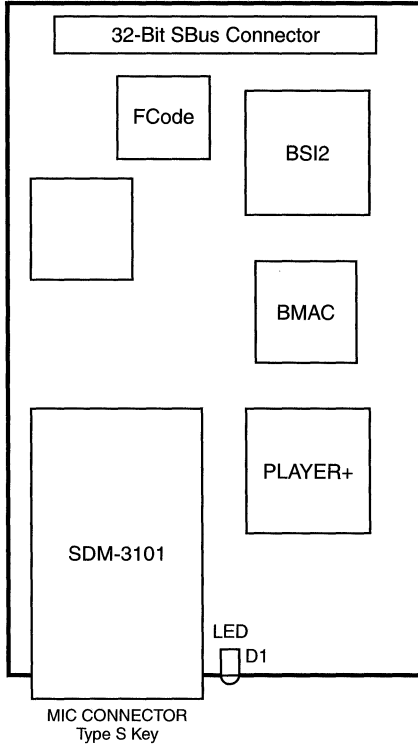
Option 1015

370-2838
CS6400 FRU
NPI 610-0241

501-2687
Sun Part Number
NPI610-0241

595-3444
Sun FRU Assembly

605-1494
Sun HW/SW Assy



Notes

1. The FDDI/S operates on Solaris 1.x or Solaris 2.x.
2. The FDDI/S is compatible with FDDI 3.0, 4.0, and 5.0.
3. The FDDI/S is not compatible with FDDI 1.0 or FDDI 2.0.

Reference: *SunLink FDDI/S 3.0 User's Guide*, 801-7424-10.

FDDI/S DAS 3.0

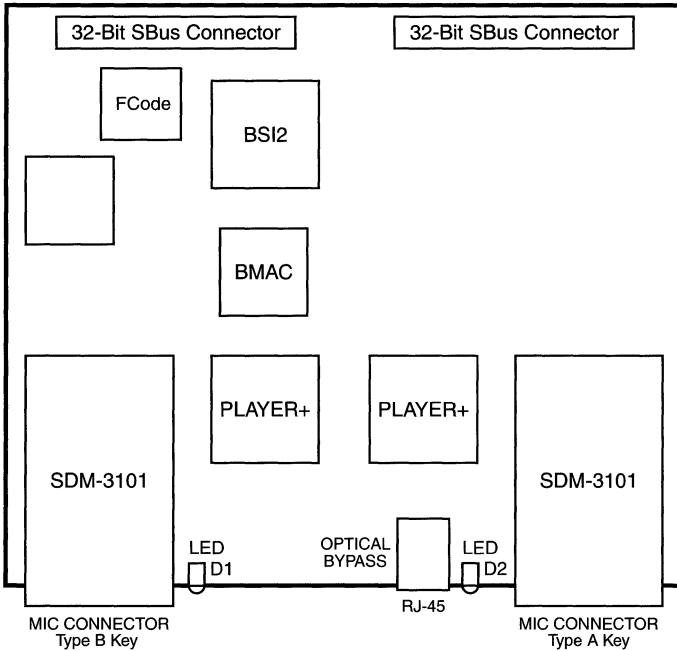
Sun-4/15/30/40/50/60/65/75 SS5 SS10 SS20 SS600
 SS1000 SC2000
 Option 1016

370-2839
 CS6400 FRU
 NPI

501-2689
 Sun Part Number
 NPI

595-3446
 Sun FRU Assembly

605-1495
 Sun HW/SW Assy



| | |
|-----------|---|
| LEDs Off | Driver not loaded |
| Red LED | Driver loaded Interfaces not configured (<i>ifconfig</i> down) |
| Amber LED | Interfaces configured (<i>ifconfig</i> up) Not connected to active FDDI network |
| Green LED | Connected to active FDDI network |

Notes

1. The FDDI/S operates on Solaris 1.x or Solaris 2.x.
2. The FDDI/S is compatible with FDDI 3.0, 4.0, and 5.0.
3. The FDDI/S is not compatible with FDDI 1.0 or FDDI 2.0.

Reference: *SunLink FDDI/S 3.0 User's Guide*, 801-7424-10.

FDDI/S SAS 4.0

Sun-4/15/30 SS2 SS4 SS5 SS20 SS600

SS1000 SC2000 A11 A12 A14 E150

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

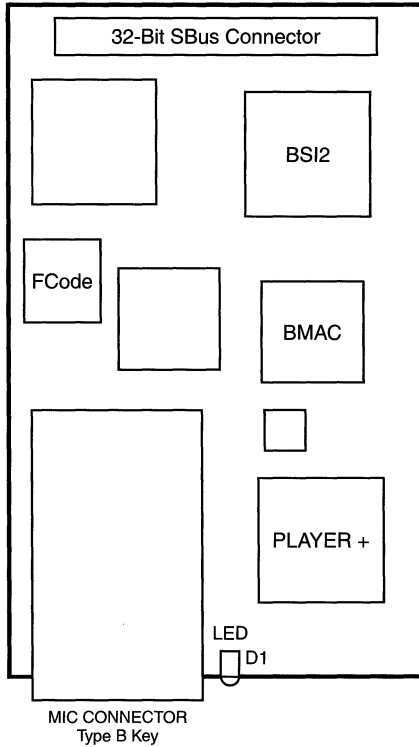
Option 1023

370-2238
NPI 105-0162

605-1559
HW/SW Assy

370-2715
NPI 105-0162

605-1564
HW/SW Assy



Notes

- 1. The minimum operating system is Solaris 1.1.1 or Solaris 2.3.
- 2. The FDDI/S is compatible with FDDI 4.0 and 5.0.
- 3. The FDDI/S is not compatible with FDDI 1.0, 2.0, or 3.0.

Reference: *FDDI 4.0 User's Guide*, 802-5144-10.

FDDI/S DAS 4.0

Sun-4/15/30 SS2 SS5 SS20 SS600

SS1000 SC2000 A14

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

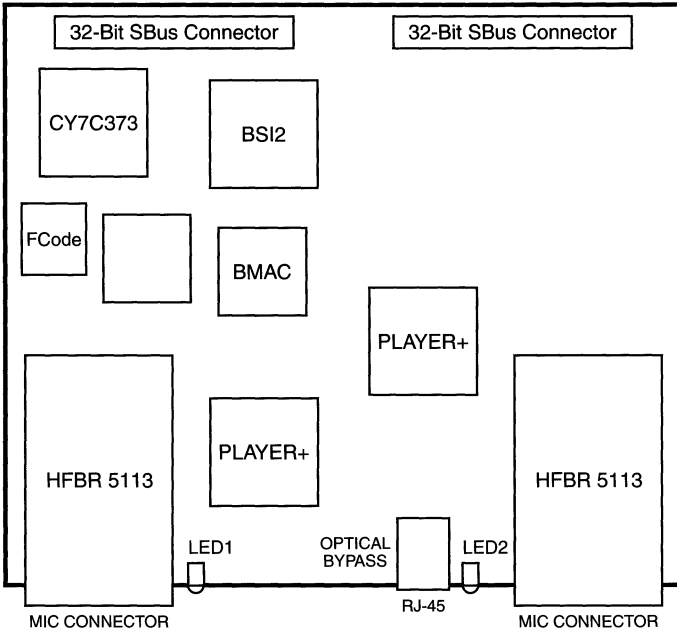
Option 1024

370-2239
NPI 105-0163

605-1560
HW/SW Assy

370-2716
NPI 105-0163

605-1565
HW/SW Assy



| | |
|-----------|---|
| LEDs Off | Driver not loaded |
| Red LED | Driver loaded Interfaces not configured (<i>ifconfig</i> down) |
| Amber LED | Interfaces configured (<i>ifconfig</i> up) Not connected to active FDDI network |
| Green LED | Connected to active FDDI network |

Notes

1. The minimum operating system is Solaris 1.1.1 or Solaris 2.3.
2. The FDDI/S is compatible with FDDI 4.0 and 5.0.
3. The FDDI/S is not compatible with FDDI 1.0, 2.0, or 3.0.

Reference: *FDDI 4.0 User's Guide*, 802-5144-10.

FDDI/S SAS 5.0/6.0

Sun-4/15/30 SS5 SS10 SS20 SS600

SS1000 SC2000 A11 A12 A14

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

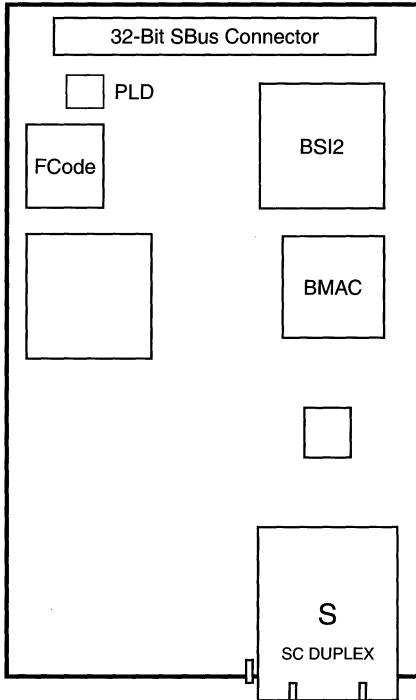
E10000

Options 1025 1142

370-2339
w/o Backpanel Holes
NPI 105-0167

370-3142
w Backpanel Holes
NPI 105-0167

370-4045
=370-3142-02
BugID 4156113



Notes

1. The minimum FDDI 5.0 OS is Solaris 1.1.1 or Solaris 2.3.
2. The FDDI/S is not compatible with FDDI 1.0, 2.0, 3.0 or 4.0.
3. Option 1142 includes FDDI 6.0 for Solaris 7 64-Bit operating system.
4. PLD Rev 1.0 is not compatible with the A11, A12, and A14.
5. The 3 Meter cable has a duplex MIC connector (male) on one end and a duplex SC connector (male) on the other end.
6. Cable assembly 537-1009 includes type A, AM, B, BM, and S keys and a duplex MIC to MIC (female to female) coupler.
7. Ship Kit 560-2366 includes an Upper SBus Backpanel and screws.

References

1. *FDDI/S 5.0 User's Guide*, 802-6674-10.
2. *FDDI/S 6.0 User's Guide*, 805-5447-10.

FDDI/S DAS 5.0/6.0

Sun-4/15/30 SS5 SS10 SS20 SS600

SS1000 SC2000 A11 A12 A14

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

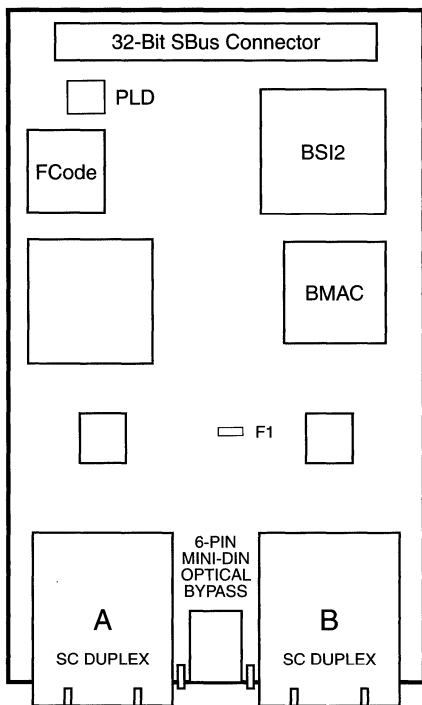
E10000

Options 1026 1143

370-2340
w/o Backpanel Holes
NPI 105-0167

370-3143
w Backpanel Holes
NPI 105-0167

370-4046
=370-3143-02
BugID 4156113



Notes

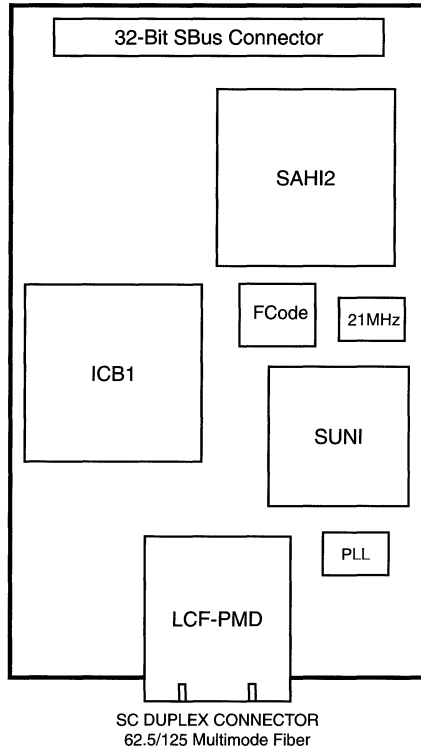
1. The minimum FDDI 5.0 OS is Solaris 1.1.1 or Solaris 2.3.
2. The FDDI/S is not compatible with FDDI 1.0, 2.0, 3.0 or 4.0.
3. Option 1143 includes HSI 3.0 for Solaris 7 64-Bit operating system.
4. PLD Rev 1.0 is not compatible with the A11, A12, and A14.
5. The 3 Meter cable has a duplex MIC connector (male) on one end and a duplex SC connector (male) on the other end.
6. Cable assembly 537-1009 includes type A, AM, B, BM, and S keys and a duplex MIC to MIC (female to female) coupler.
7. Ship Kit 560-2366 includes an Upper SBus Backpanel and screws.

References

1. *FDDI/S 5.0 User's Guide*, 802-6674-10.
2. *FDDI/S 6.0 User's Guide*, 805-5447-10.

SunATM-155/MFiber 1.0

Sun-4/15/30/50/75 SS4 SS5 SS10 SS20 SS600
SS1000 SC2000
Option 1050
501-2523



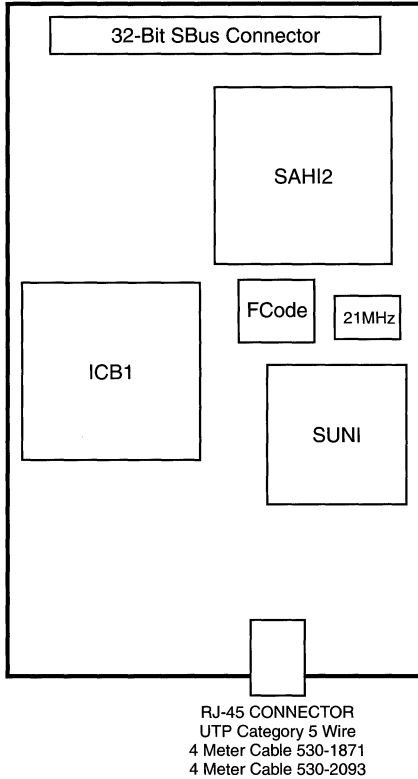
Notes

- 1. The minimum operating system is Solaris 2.4.
- 2. The final operating system is Solaris 2.5.

Reference: *SunATM-155 SBus Card Manual*, 801-6572-11.

SunATM-155/UTP 1.0

Sun-4/15/30/50/75 SS4 SS5 SS10 SS20 SS600
SS1000 SC2000
Option 1051
501-2665



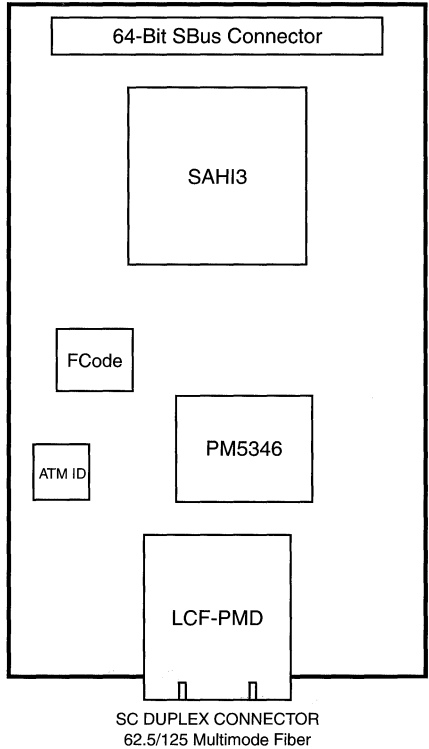
Notes

- 1. The minimum operating system is Solaris 2.4.
- 2. The final operating system is Solaris 2.5.

Reference: *SunATM-155 SBus Card Manual*, 801-6572-11.

SunATM-155/MFiber 2.0/2.1/4.0

Sun-4/15/30/50/75 SS4 SS5 SS10 SS20
 SS600 SS1000 SC2000 A11 A12 A14 E150
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 E10000
 Options 1060 1147
 501-2794



Notes

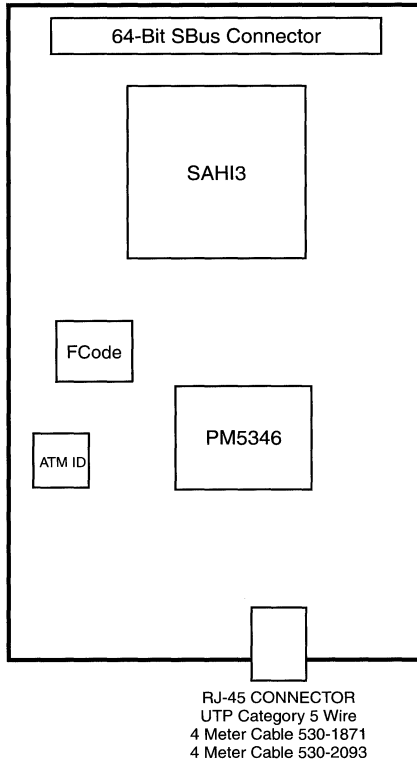
1. The minimum operating system is Solaris 2.4.
2. Option 1147 includes ATM 4.0 for Solaris 7 64-Bit operating system.
3. SunATM-155 ≥501-2794-07 requires ≥SunATM 2.1.
4. SunATM-155 ≤501-2794-07 FCode identifies the board as ba.
5. SunATM-155 ≥501-2794-08 FCode identifies the board as SUNW,ba.

References

1. *SunATM-155 SBus Card Manual*, 802-4439-10.
2. *SunATM 4.0 Installation and User's Guide*, 805-6552-10.

SunATM-155/UTP 2.0/2.1/4.0

Sun-4/15/30/50/75 SS4 SS5 SS10 SS20
SS600 SS1000 SC2000 A11 A12 A14 E150
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
E10000
Options 1061 1148
501-2795



Notes

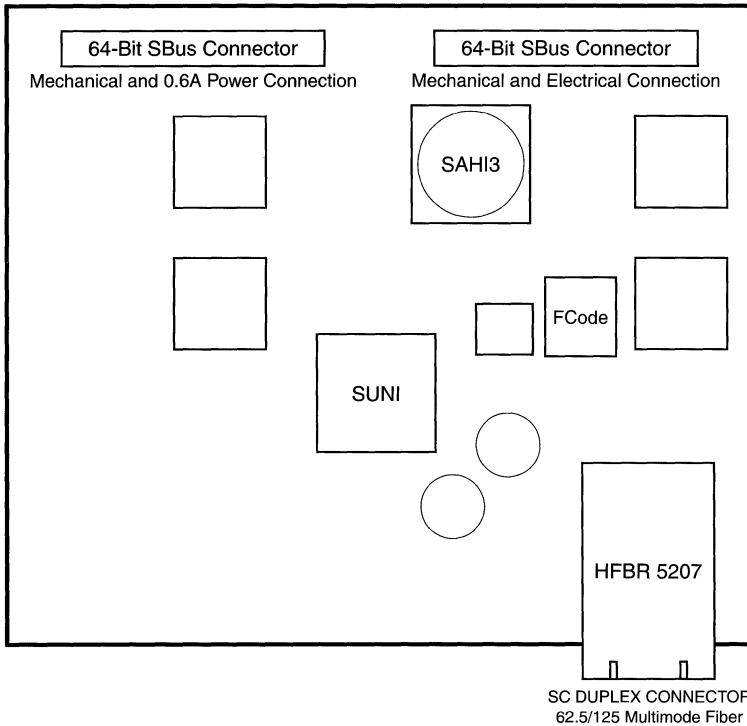
1. The minimum operating system is Solaris 2.4.
2. Option 1148 includes ATM 4.0 for Solaris 7 64-Bit operating system.
3. SunATM-155 \geq 501-2795-05 requires \geq SunATM 2.1.
4. SunATM-155 \leq 501-2795-05 FCode identifies the board as ba.
5. SunATM-155 \geq 501-2795-06 FCode identifies the board as SUNW,ba.

References

1. *SunATM-155 SBus Card Manual*, 802-4439-10.
2. *SunATM 4.0 Installation and User's Guide*, 805-6552-10.

SunATM-622/MFiber 2.1/4.0

SS20 SS1000 SC2000 A11 A12 A14
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 E10000
 Options 1064 1149
 501-2864



Notes

1. The minimum operating system is Solaris 2.4.
2. Option 1149 includes ATM 4.0 for Solaris 7 64-Bit operating system.

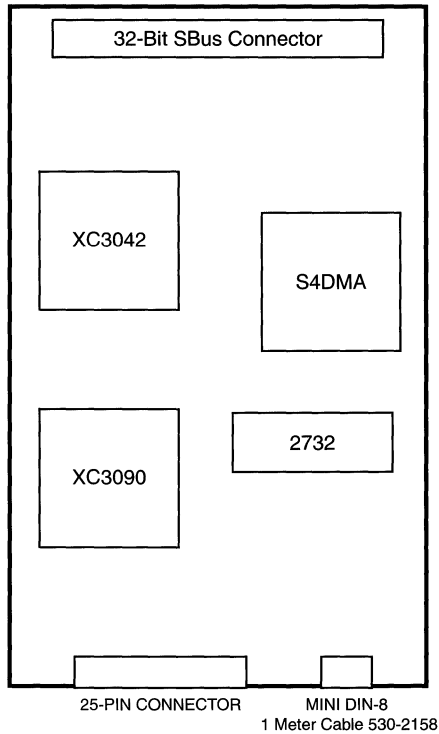
References

1. *SunATM 2.1 Installation and User's Guide*, 802-6504-10.
2. *SunATM 4.0 Installation and User's Guide*, 805-6552-10.

Jtag Scan Control Card JSCC

CS6400

501-1760

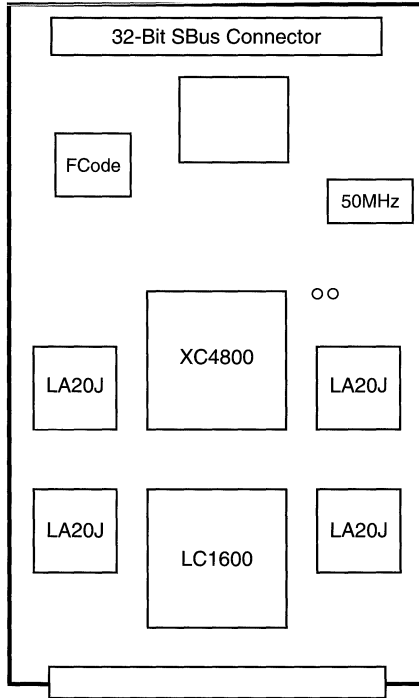


SCI Adapter

E3000 E4000 E5000 E6000
E3500 E4500 E5500 E6500 E10000

Option 1257

370-2345 370-2868
 Programmable FPGA



80-PIN HI-DENSITY CONNECTOR
2 Meter Cable 530-2360
5 Meter Cable 530-2361
10 Meter Cable 530-2362

Notes

1. The minimum operating system is Solaris 2.5.1.
2. SCI Adapter 370-2868 requires SUNWsci Version 1.1.
3. FCode corruption occurs if 370-2868 is used with SUNWsci Version 1.0.
4. SUNWsci Version 1.1 is at <http://sunsolve.sun.com/sunsolve/PDB>.
5. PDB 1.2 CD-ROM 704-5449-10 includes SUNWsci Version 1.0.
6. PDB 1.2 CD-ROM 704-5449-11 includes SUNWsci Version 1.1.
7. SCI Adapter 370-2345 works with SUNWsci Version 1.0 or 1.1.
8. SCI Adapter 501-2345 is not compatible with PDB 2.0.
9. Install the SCI and UDWIS/S on separate E10000 SBus channels.

Reference: *Product Note*, 805-0722-10.

SCI Switch

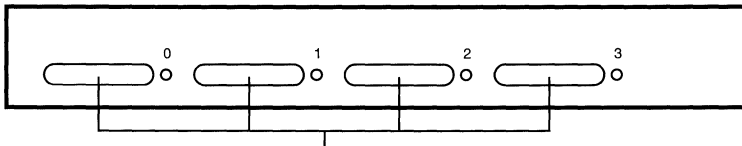
Enterprise HPC

Option 3876

370-3146

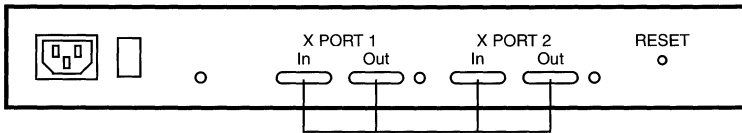
Dolphin D505 4-Way Modular SCI Switch

Front View



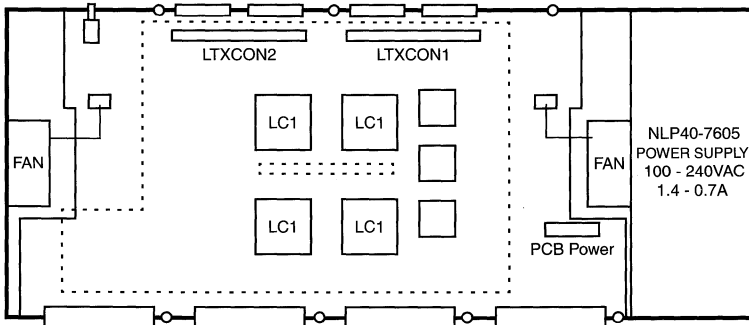
80-PIN HI-DENSITY CONNECTORS
2 Meter Cable 530-2360 or 530-2576
5 Meter Cable 530-3261 or 530-2577
10 Meter Cable 530-2362 or 530-2578

Rear View



50-PIN ULTRA-HI-DENSITY CONNECTORS
1 Meter Cable 530-2469
3 Meter Cable 530-2470

Top View with Cover Removed and 9059 Daughter Board Installed



High Speed Serial Interface HSI/P

A16 A20 A21 A22 A23 A25 A26 A27

Netra t 1100/1120/1125 Netra t 1400/1405 Netra ft 1800

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 1040 1155 6931

370-2728

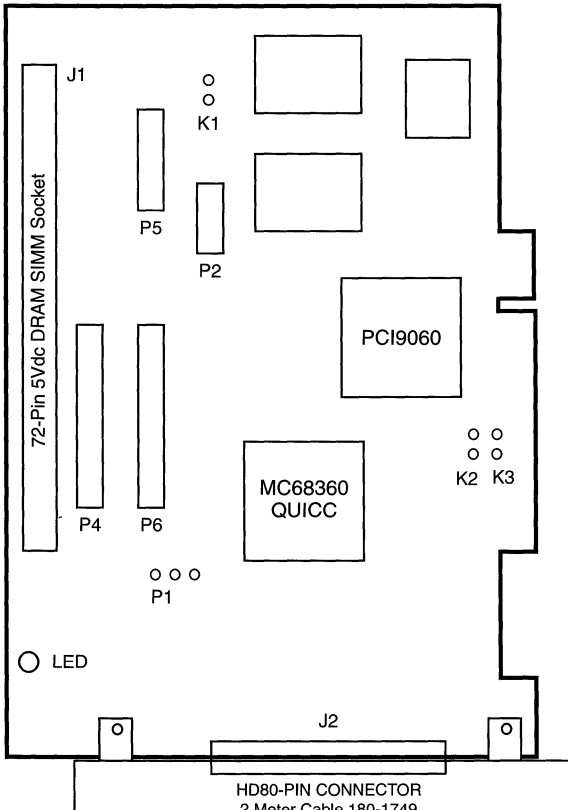
540-3982

Performance Technologies Netra ft 1800 FRU

PT-PCI334

w370-2728

5V 32Bit 33MHz



HD80-PIN CONNECTOR
 2 Meter Cable 180-1749
 2 Meter Cable 530-2492
 2 Meter Cable 530-2726
 2 Meter Cable 370-4068

370-2728

Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|---------------------------|
| K1 | 1-2 | Out | Burn-In disabled |
| K2 | 1-2 | In | Max Power = 25W |
| K3 | 1-2 | Out | Max DRAM 32MB |
| K2 | 1-2 | Out | Max Power = 15W (default) |
| K3 | 1-2 | In | Max DRAM 8MB (default) |
| K2 | 1-2 | In | Max Power = 7.5W |
| K3 | 1-2 | In | Max DRAM 2MB |
| K2 | 1-2 | Out | Max Power = 0W |
| K3 | 1-2 | Out | Max DRAM 0MB |

Connectors

| LOCATION | PINS | DESCRIPTION |
|----------|------|----------------------------------|
| J1 | 72 | SIMM socket |
| J2 | 80 | RS-449 (422) port |
| P1 | 3 | Debug port |
| P2 | 10 | Background Debug Mode (BDM) port |
| P3 | 1 | Clock test |
| P4 | 34 | Data bus test (not stuffed) |
| P5 | 18 | Control test (not stuffed) |
| P6 | 34 | Address bus test (not stuffed) |

Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. The HSI/P 1.0 software is on CD-ROM 704-5748-10.
3. Option 1155 includes HSI/P 2.0 for Solaris 7 64-Bit operating system.
4. The HSI/P supports 1MB through 32MB, 72-Pin, 5 Volt SIMMs.
5. A 4MB SIMM is installed as a standard configuration.
6. The 4MB SIMM does not have a Sun part number.
7. The BDM port is defined in the QUICC User's Manual, Section 9.9.
8. Cables 530-2492 and 530-2726 provide four DB37 connectors.

Reference: *HSI/P User's Guide*, 805-1075-10.

Serial Asynchronous Interface SAI/P

A16 A20 A21 A22 A23 A25 A26 A27

Netra t 1100/1120/1125 Netra t 1400/1405 Netra ft 1800

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

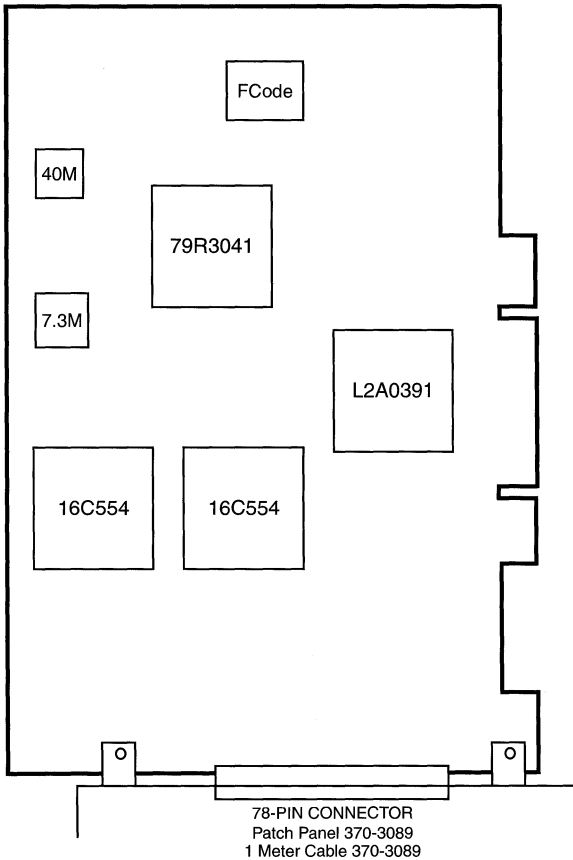
Options 1041 1156 6933

370-2810

Digi International PCI/8
3.3/5V 32Bit 33MHz

540-3983

Netra ft 1800 FRU
w 370-2810



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. Option 1156 includes SAI/P 2.0 for Solaris 7 64-Bit operating system.
3. The Cable and Patch Panel are one assembly.

Reference: *SAI/P User's Guide*, 805-1076-10.

Serial Asynchronous Interface SAI/P

A16 A20 A21 A22 A23 A25 A26 A27

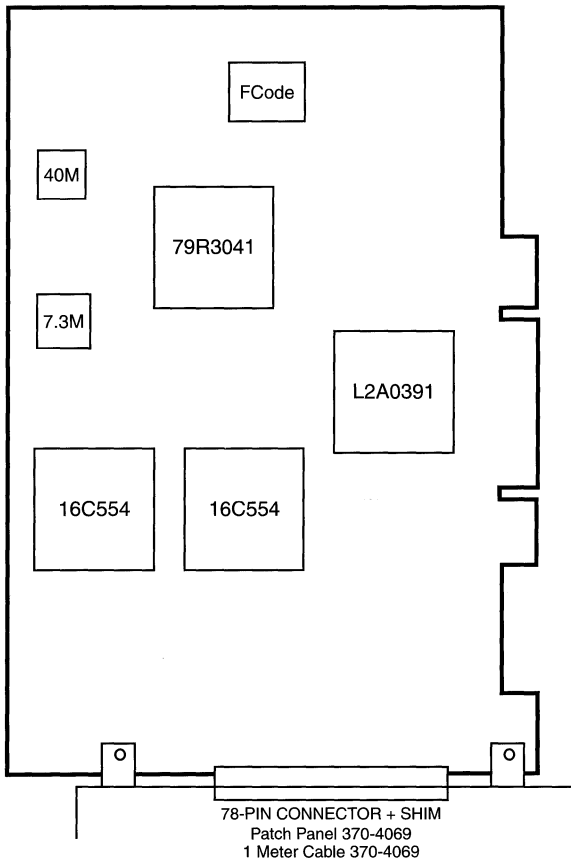
Netra t 1100 Netra t 1120/1125 Netra t 1400/1405

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2156

375-0100

Digi International PCI/8
3.3/5V 32Bit 33MHz



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. Option 2156 includes SAI/P 3.0 for Solaris 8.
3. The Cable and Patch Panel are one assembly.

Reference: *SAI/P User's Guide*, 805-1076-10.

Token Ring Interface TRI/P

A16 A20 A21 A22 A23 A25 A26 A27

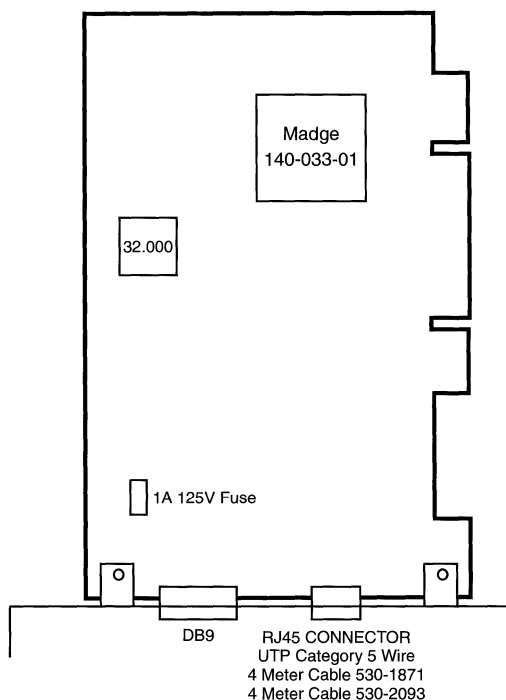
Netra t 1100 Netra t 1120 Netra t 1125

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 1039 1154

375-0001

Madge Presto PCI
4/16 MBit/Sec
3.3/5V 32Bit 33MHz



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. Option 1154 includes TRI/P 4.0 for Solaris 7 64-Bit operating system.
3. Do Not install the TRI/P in Ultra 80 PCI Slot 4 (pci@1f,4000/*@5,*).

References

1. *TRI/P Installation Guide*, 805-1077-10.
2. *TRI/P 4.0 Installation Guide*, 805-6905-10.
3. *TRI/P 5.0 Installation Guide*, 806-4204-10.
4. *Ultra 80 Product Note*, 806-1457-13.
5. *Enterprise 420R Product Note*, 806-1082-11.

Token Ring Interface TRI/P

A16 A20 A21 A22 A23 A25 A26 A27

Netra t 1100 Netra t 1120 Netra t 1125

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

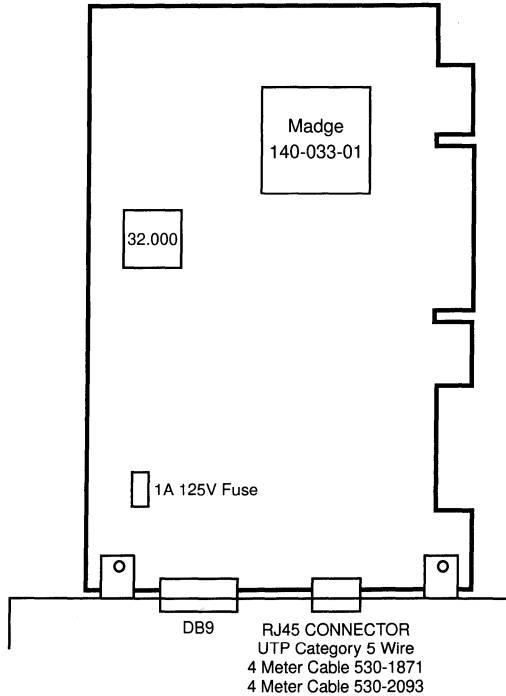
Option 2154

375-0073

Madge Presto PCI

4/16 MBit/Sec

3.3/5V 32Bit 33MHz



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. Option 2154 includes TRI/P 5.0 for Solaris 8.
3. Do Not install the TRI/P in Ultra 80 PCI Slot 4 (pci@1f,4000/*@5,*).

References

1. *TRI/P 5.0 Installation Guide*, 806-4204-10.
2. *Ultra 80 Product Note*, 806-1457-13.
3. *Enterprise 420R Product Note*, 806-1082-11.

FDDI/P SAS 1.0/2.0

A16 A20 A21 A22 A23 A25 A26 A27

Netra t1100 Netra t1120 Netra t1125

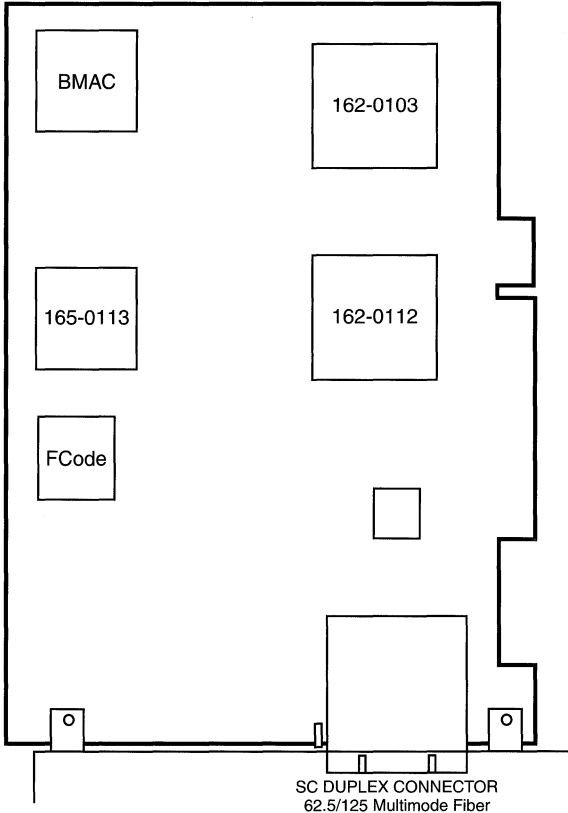
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 1035 1152

370-2811

Network Peripherals 105-0174

5V 32Bit 33MHz



Notes

1. The minimum FDDI/P 1.0 OS is Solaris 2.5.1 Hardware: 4/97.
2. Option 1152 includes FDDI 2.0 for Solaris 7 64-Bit operating system.
3. The 3 Meter cable has a duplex MIC connector (male) on one end and a duplex SC connector (male) on the other end.
4. Cable assembly 537-1009 includes type A, AM, B, BM, and S keys and a duplex MIC to MIC (female to female) coupler.

References

1. *FDDI/P 1.0 Adapter User's Guide*, 805-0809.
2. *FDDI/P 2.0 User's Guide*, 805-5449-10.

FDDI/P DAS 1.0/2.0

A16 A20 A21 A22 A23 A25 A26 A27

Netra t1100 Netra t1120 Netra t1125

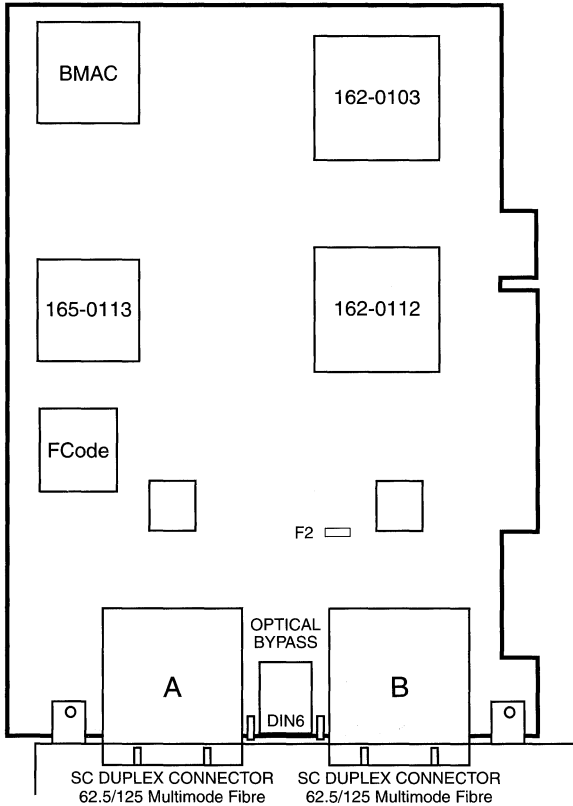
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 1036 1153

370-2812

Network Peripherals 105-0174

5V 32Bit 33MHz



Notes

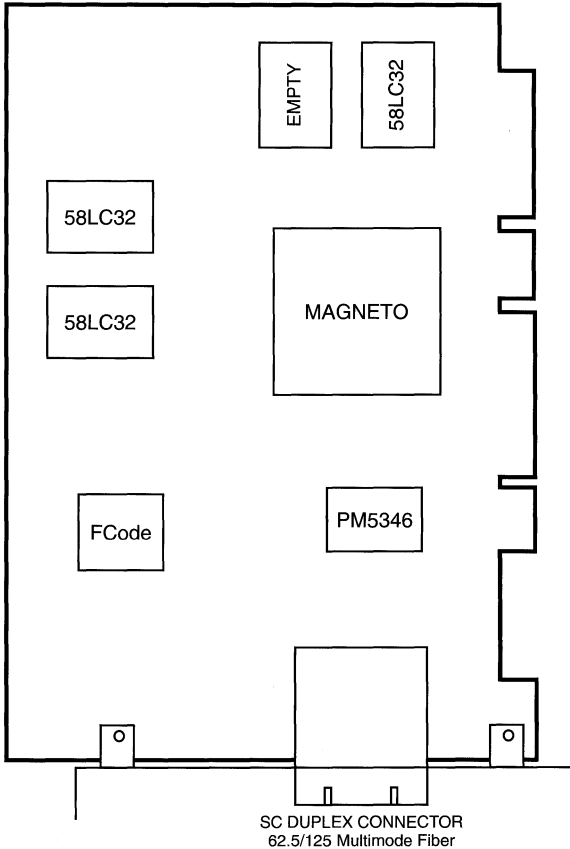
1. The minimum FDDI/P 1.0 OS is Solaris 2.5.1 Hardware: 4/97.
2. Option 1153 includes FDDI 2.0 for Solaris 7 64-Bit operating system.
3. The 3 Meter cable has a duplex MIC connector (male) on one end and a duplex SC connector (male) on the other end.
4. Cable assembly 537-1009 includes type A, AM, B, BM, and S keys and a duplex MIC to MIC (female to female) coupler.

References

1. *FDDI/P 1.0 Adapter User's Guide*, 805-0809.
2. *FDDI/P 2.0 User's Guide*, 805-5449-10.

SunATM-155/MFiber 3.0/4.0

A16 A20 A21 A23 A25 A26 A27 Netra t1 100/105
 Netra t 1100/1120/1125 Netra t 1400/1405 Netra ft 1800
 E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500
 Options 1066 1157 6932
 501-3028 540-3984
 3.3/5V 64Bit 33MHz Netra ft 1800 FRU
 w 501-3028



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. The SunATM 3.0 software is on CD-ROM 704-6006-10.
3. The SunATM 3.0 software Update 1 is on CD-ROM 704-6006-11.
4. Option 1157 includes ATM 4.0 for Solaris 7 64-Bit operating system.

References

1. *ATM 3.0 Installation and User's Guide*, 805-0331-11.
2. *ATM 4.0 Installation and User's Guide*, 805-6552-10.

SunATM-155/UTP 3.0/4.0

A16 A20 A21 A22 A23 A25 A26 A27 Netra t1 100/105

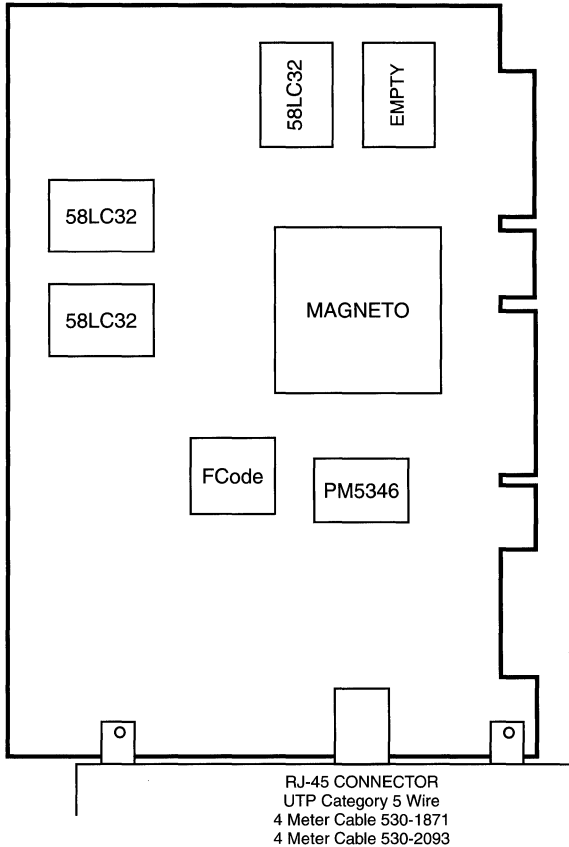
Netra t1100 Netra t1120 Netra t1125

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 1067 1158

501-3027

3.3/5V 64Bit 33MHz



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. The SunATM 3.0 software is on CD-ROM 704-6006-10.
3. The SunATM 3.0 software Update 1 is on CD-ROM 704-6006-11.
4. Option 1158 includes ATM 4.0 for Solaris 7 64-Bit operating system.

References

1. *ATM 3.0 Installation and User's Guide*, 805-0331-11.
2. *ATM 4.0 Installation and User's Guide*, 805-6552-10.

SunATM-622/MFiber 3.0/4.0

A16 A20 A21 A22 A23 A25 A26 A27

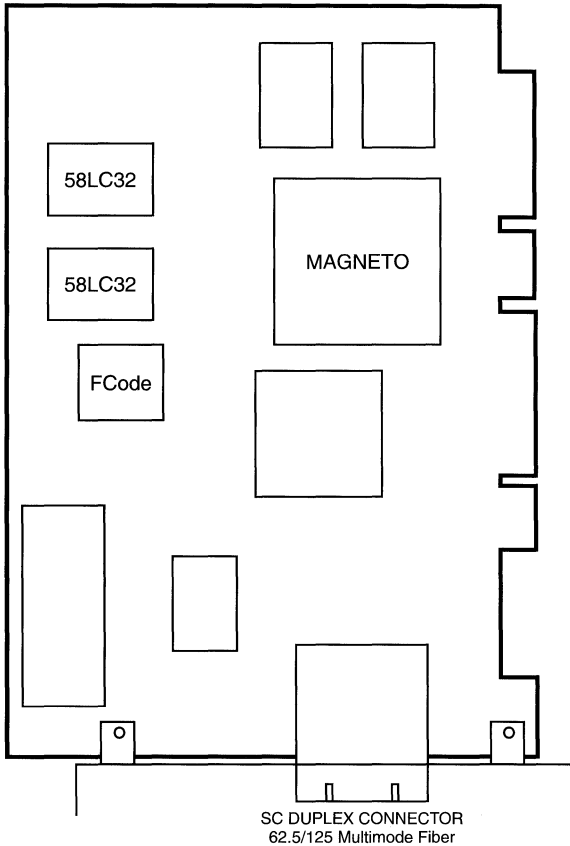
Netra t 1100 Netra t 1120 Netra t 1125

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Options 1068 1159

501-3029

3.3/5V 32/64Bit 33/66MHz



Notes

1. The minimum operating system is Solaris 2.5.1 Hardware: 4/97.
2. The SunATM 3.0 software Update 1 is on CD-ROM 704-6006-11
3. Option 1159 includes ATM 4.0 for Solaris 7 64-Bit operating system.

References

1. *ATM 3.0 Installation and User's Guide*, 805-0331-11.
2. *ATM 4.0 Installation and User's Guide*, 805-6552-10.

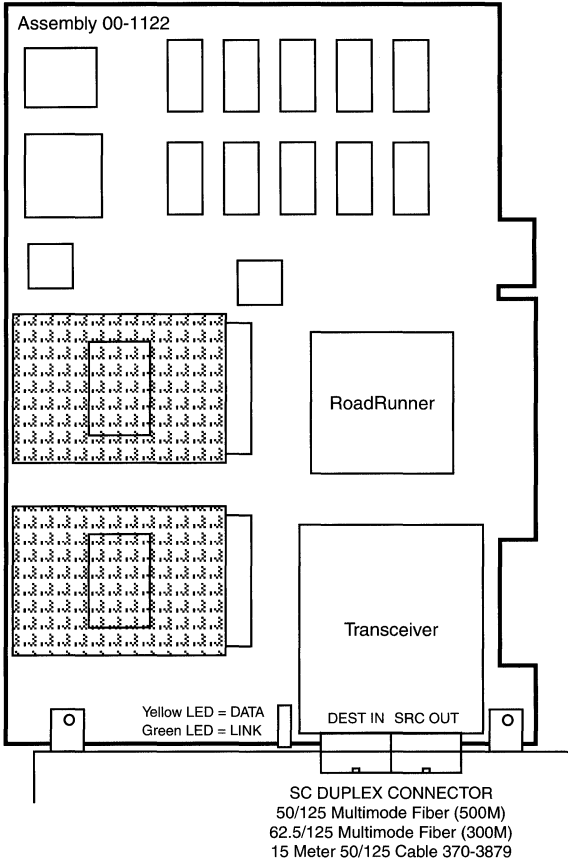
HIPPI/P 1.0/1.1

E3000 E4000 E5000 E6000
E3500 E4500 E5500 E6500 E10000

Options 1070 1071

370-3878

Essential Communications, Inc.
HIPPI-800 Serial HIPPI 850nm
5V 32Bit 33MHz



Notes

1. The minimum operating system is Solaris 2.6.
2. Cable 370-3879 is included with Options 1070 and 1071.
3. HIPPI is the abbreviation for High-Performance Parallel Interface.

Reference: *HIPPI/P Installation and User's Guide*, 805-7133.

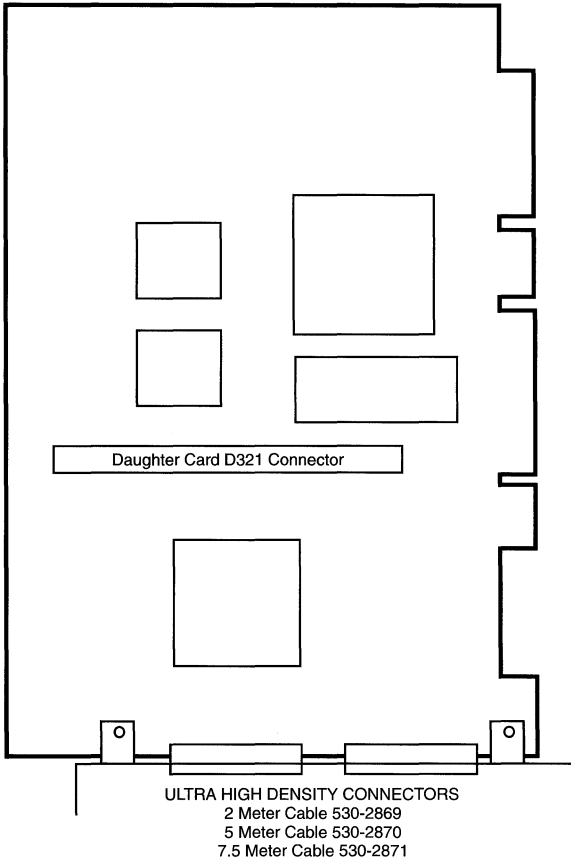
SCI Adapter SCI/P

E220R E420R E250 E450 E3000 E4000 E5000 E6000
E3500 E4500 E5500 E6500 E10000

Option 1074

370-3868

Dolphin PCI-64 Model D320
3.3/5V 32/64Bit 33MHz



Notes

- 1. The minimum operating system is Solaris 8.
- 2. Solaris 8 device drivers are in Sun Cluster 2.2.
- 3. SCI is the abbreviation for Scalable Coherent Interface.

Reference: *SCI Installation Guide*, 806-1725.

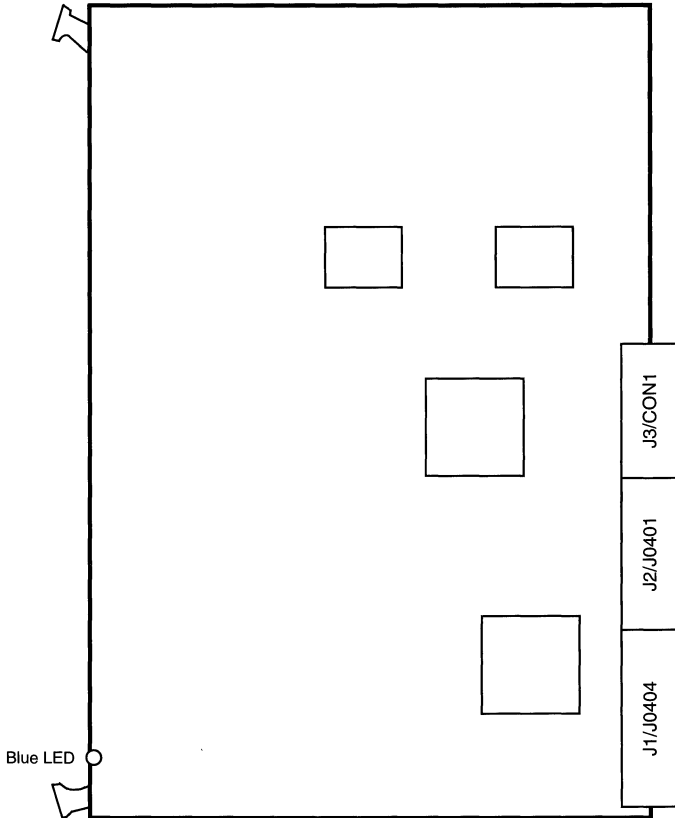
Rear Access ATM 155MMF

Netra ct 400 Netra ct 800

Option 1366

501-5482

3.3/5V 64Bit 33MHz cPCI



Notes

- 1. The minimum operating system is Solaris 8 HW: 6/00.
- 2. Option 1366 includes front ATM 501-5482 and rear ATM 501-5518.
- 3. ATM 501-5518 is required in the same slot in the rear of the chassis.

References

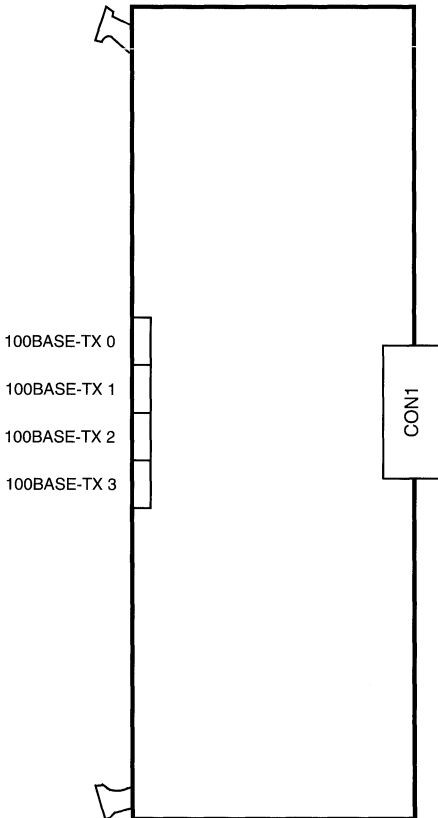
- 1. *AMT 155MMF Installation and User's Guide*, 806-2995.
- 2. *AMT 155MMF Release Notes*, 806-2996.

Rear Access ATM 155MMF Transition Board

Netra ct 400 Netra ct 800

Option 1366

501-5518



Notes

1. The minimum operating system is Solaris 8 HW: 6/00.
2. Option 1366 includes front ATM 501-5482 and rear ATM 501-5518.
3. ATM 501-5482 is required in the same slot in the front of the chassis.

References

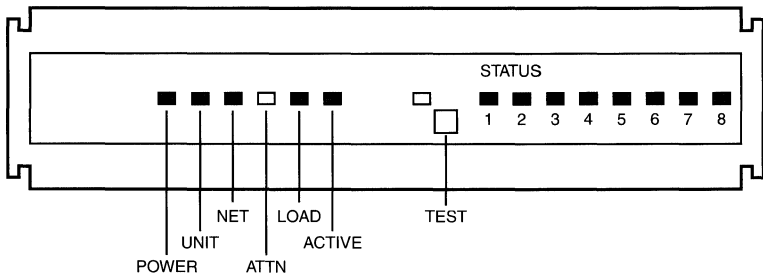
1. *ATM 155MMF Installation and User's Guide*, 806-2995.
2. *ATM 155MMF Release Notes*, 806-2996.

Network Terminal Server

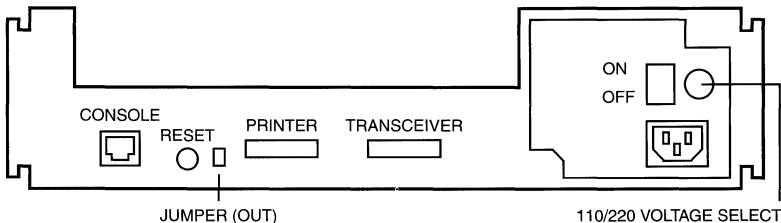
Option 2064

370-1574

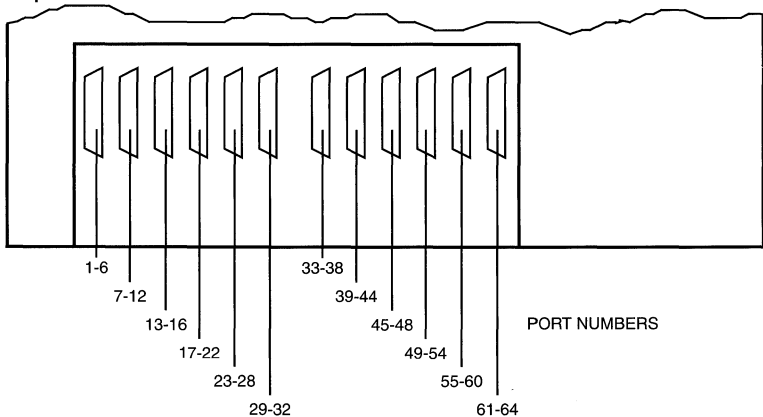
Front View



Rear View



Top View



Notes

1. Use Console Cable 370-1607-01.
2. Network Terminal Software 1.0 is equivalent to Xylogics Release 7.0.
3. Sun discontinued the NTS hardware and software in May 1997.

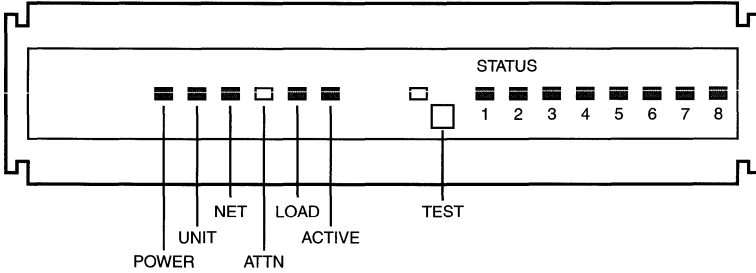
Reference: *Hardware Installation Guide*, 801-3990-11.

Network Terminal Server

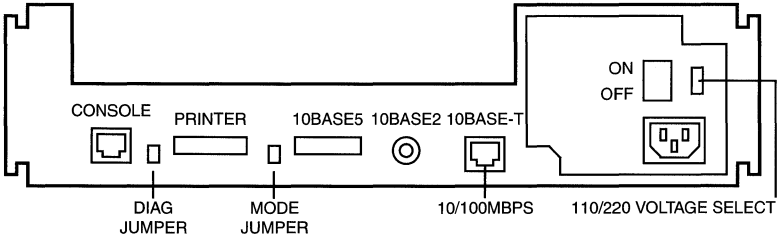
Options 2064 2065

370-2310

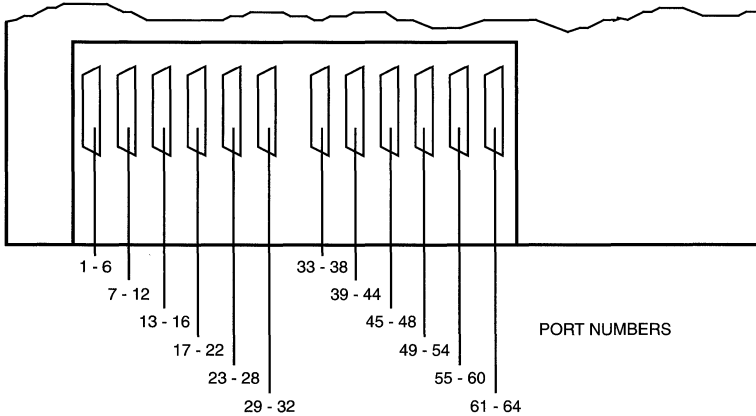
Front View



Rear View



Top View



Notes

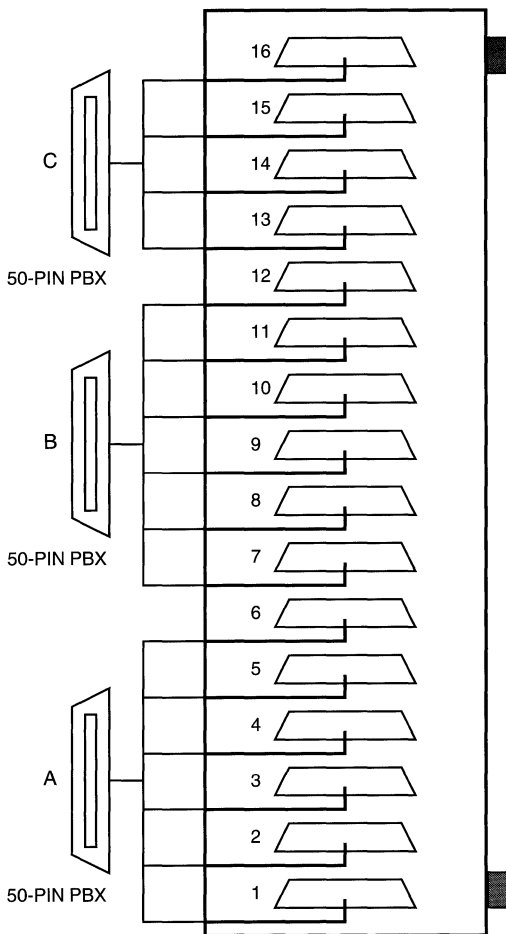
1. Use Console Cable 370-1607-01.
2. Network Terminal Software 1.0 is equivalent to Xylogics Release 7.0.
3. The 10BASE2 and 10BASE-T ports are not supported by NTS 1.0.
4. Sun discontinued the NTS hardware and software in May 1997.

Reference: *Hardware Installation Guide*, 801-3990-11.

Serial Asynchronous Connectors

Option 974

370-1575



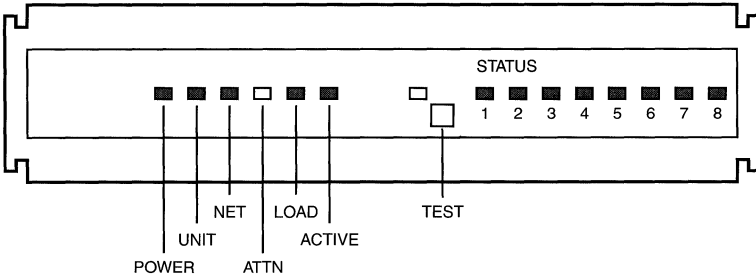
Notes

1. Use Bracket 370-1582-01 to mount Option 964 in a 19-inch Rack.
2. Sun discontinued the NTS hardware and software in May 1997.

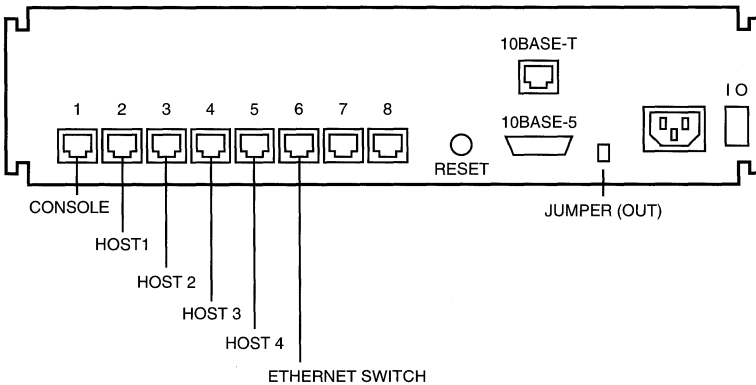
Reference: *Hardware Installation Guide*, 801-3990-11.

Terminal Concentrator
 Xylogics Micro Annex
 SPARCcluster 1 SPARCcluster PDB
 Options 1310 1311 1312
 370-1434

Front View



Rear View



Notes

1. The SPARCcluster 1 minimum operating system is Solaris 2.2.
2. The console workstation minimum operating system is Solaris 2.2.
3. The Ethernet Address is 00:80:2d:xx:xx:xx.
4. The 10BASE-T Ethernet port is on the 370-1434-02.
5. The "break fix" (removal of a +300-400mv transient on the RS232 driver during power up) is installed in 370-1434-02.
6. Option X1310A is the Terminal Concentrator and Serial Cable 530-2151.
7. Option X1311A is mounting hardware for the Terminal Concentrator.
8. Option X1312A is the Terminal Concentrator and Serial Cable 530-2152.

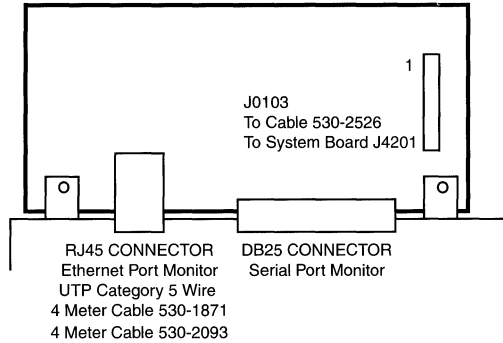
References

1. *SPARCcluster 1 System Installation Manual*, 801-3964-10.
2. *SPARCcluster 1 System Service Manual*, 801-5015-10.

Remote System Control RSC

Enterprise 250

501-4818



Notes

1. The minimum operating system is Solaris 2.6 Hardware: 5/98.
2. The RSC Flash Prom is on the E250 System Board at U4401.
3. Cable 530-2526 is included with 501-4818 and F501-4818.

Power Distribution Board Notes

1. If the RSC issues a power-off when the system is Off, the system will be latched Off. This is fixed on PDB 501-4683-05 Rev 51.
2. The RSC may not be able to read the keyswitch position when DC power is Off. This is fixed on PDB 501-4683-05 Rev 53.

References

1. *Enterprise 250 Owner's Guide*, 805-5160.
2. *Enterprise 250 ShowMe How*, 724-2794.
3. *Remote System Control Installation Guide*, 805-5680.
4. *Remote System Control User's Guide*, 805-3722.

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CONFIGURATIONS

MISCELLANEOUS

Miscellaneous

| | |
|---------------------------------------|----|
| SunPC Accelerator SX | 2 |
| SunPC Accelerator DX | 3 |
| SunPC Accelerator DX2 | 4 |
| SunPC 133-MHz 5X86 | 5 |
| SunPCi | 6 |
| SBus Expansion Adapter | 10 |
| SBus Expansion Controller SES/C | 11 |
| PCMCIA Adapter | 12 |
| Audio Module | 13 |
| Alarm Module | 15 |
| System Controller | 16 |
| Fan Controller | 18 |
| Ultra 5 PCI Riser Board | 19 |
| Ultra 10 PCI Riser Board | 20 |
| Sun Blade 100 PCI Riser Board | 21 |
| Smart Card Reader | 22 |
| Netra ct 400 Netra ct 800 | |
| System Control Board | 23 |
| Front CPU Transition Board | 24 |
| Rear CPU Transition Board | 26 |
| Alarm Board | 27 |
| Rear Alarm Transition Board | 29 |

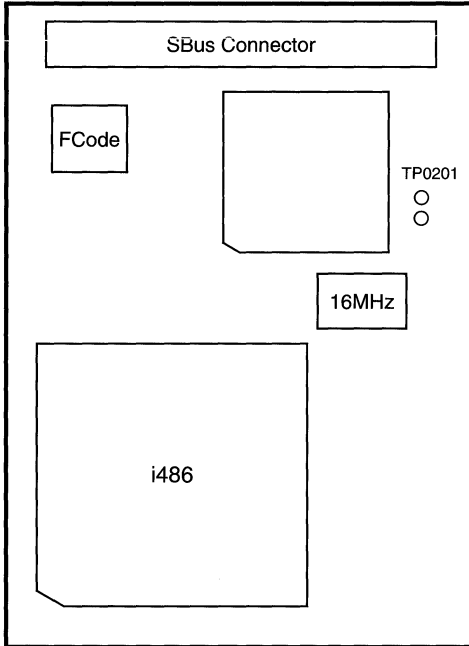
SunPC Accelerator SX

Sun-4/15/30/40/50/60/65/75 SS5 SS10 SS20

Options 1120 1122 1124 1126

501-1980

16MHz



Notes

1. The minimum operating system is SunOS 4.1.1.
2. SunOS 4.x requires SunPC 3.x.
3. Solaris 2.1, 2.2, and 2.3 require SunPC 4.0.
4. The SS10 on SunOS 4.1.3 requires SunPC 3.1 and Patch 100726-10.
5. Do NOT install this card in SBus Slot 3 of the Sun-4/60 or Sun-4/65.

Reference: *SunPC Accelerator Guide*, 814-5047.

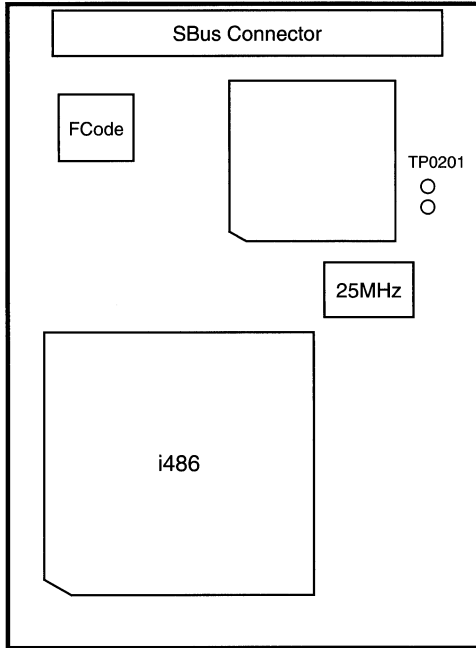
SunPC Accelerator DX

Sun-4/15/30/40/50/60/65/75 SS5 SS10 SS20

Options 1121 1123 1125 1127

501-1981

25MHz



Notes

1. The minimum operating system is SunOS 4.1.1.
2. SunOS 4.x requires SunPC 3.x.
3. Solaris 2.1, 2.2, and 2.3 require SunPC 4.0.
4. The SS10 on SunOS 4.1.3 requires SunPC 3.1 and Patch 100726-10.
5. Do NOT install this card in SBus Slot 3 of the Sun-4/60 or Sun-4/65.

Reference: *SunPC Accelerator Guide*, 814-5047.

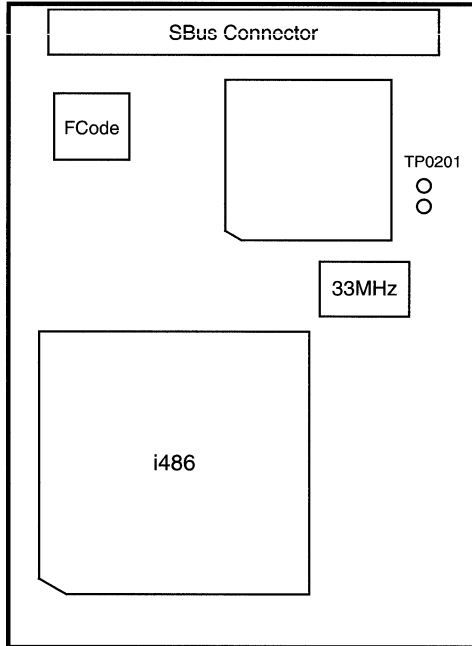
SunPC Accelerator DX2

SS4 SS5 SS20 A11 A12 A14 E150

Option 1128

501-2874

66MHz



Notes

- 1. Solaris 1.1.1 Version B requires SunPC 3.1.
- 2. Solaris 2.3 requires SunPC 4.1.
- 3. A minimum of 32MB memory is required.

Reference: *SunPC Accelerator Guide*, 814-5047.

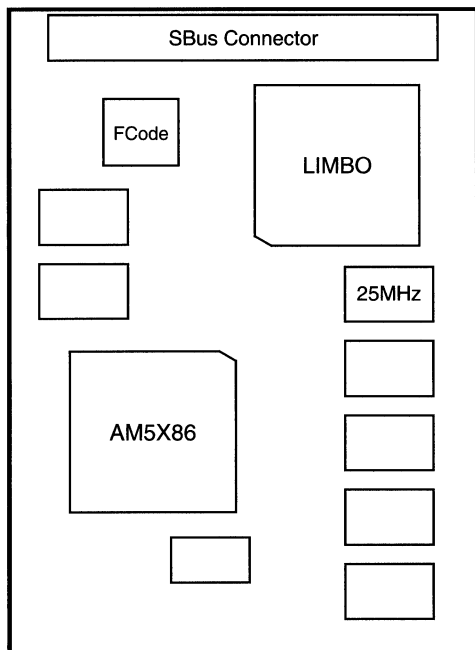
SunPC 133-MHz 5X86

SS4 SS5 SS10 A11 A12 A14

Option 1129

501-4230

133MHz



Notes

- 1. The minimum operating system is Solaris 2.3.
- 2. The minimum application software is SunPC 4.1.
- 3. Only one 5X86 board per system is supported.
- 4. Installation of the 5X86 in the SS4 and SS10 is documented in the *SunPC Coprocessor Guide*.
- 5. The Price List documents the sale of the 5X86 for use in the SS5, A11, A12, and A14.

Reference: *SunPC Coprocessor Guide*, 802-7624-10.

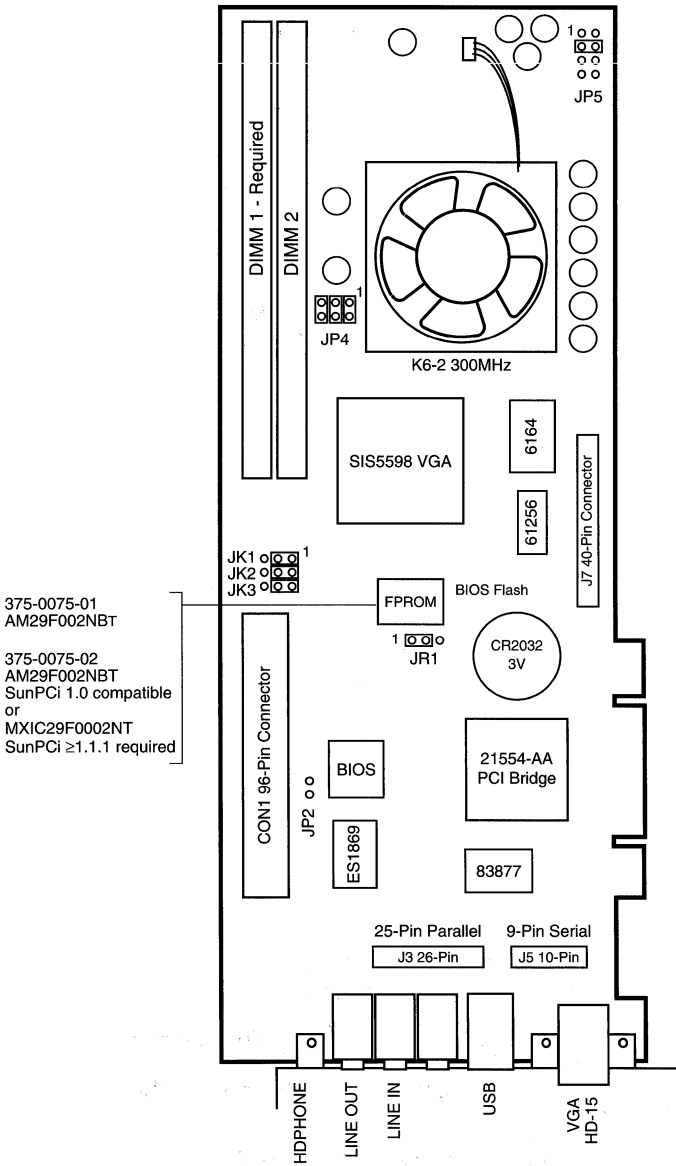
SunPCi

A16 A20 A21 A22 A23 A27

Option 1131A-64.1

375-0075

5V 64Bit 33MHz



375-0075-01
AM29F002NBT

375-0075-02
AM29F002NBT
SunPCi 1.0 compatible
or
MXIC29F0002NT
SunPCi ≥1.1.1 required

375-0075 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|----------------------------------|
| JK1 | 1-2 | In | 66.8MHz CPU/33.4MHz PCI clock |
| JK2 | 1-2 | In | 66.8MHz CPU/33.4MHz PCI clock |
| JK3 | 1-2 | In | 66.8MHz CPU/33.4MHz PCI clock |
| JP2 | 1-2 | Out | Normal mode (default) |
| JP2 | 1-2 | In | Manufacturing mode |
| JP4 | 1-2 | In | AMD K6/K6+ 4.5x clock multiplier |
| JP4 | 3-4 | In | AMD K6/K6+ 4.5x clock multiplier |
| JP4 | 5-6 | In | AMD K6/K6+ 4.5x clock multiplier |
| JP5 | 1-2 | Out | 2.2V CPU core voltage |
| JP5 | 3-4 | In | 2.2V CPU core voltage |
| JP5 | 5-6 | Out | 2.2V CPU core voltage |
| JP5 | 7-8 | Out | 2.2V CPU core voltage |
| JR1 | 1-2 | In | Normal (default) |
| JR1 | 2-3 | In | Flash recovery (not implemented) |

Notes

1. The minimum operating system is Solaris 2.5.1.
2. DOS, Windows 3.x, Windows 95, and Windows NT are supported.
3. BIOS on 375-0075-02 may not be compatible with SunPCi 1.0 or 1.1. Upgrade to 1.1.1 if the message "Unknown flash device" is displayed.
4. Use 64MB DIMM 370-3800, Option 7041.
5. Use 128MB DIMM 370-3801, Option 7035.
6. RS-232 signal levels are used. RS-423 is not available.
7. The Parallel/Serial Port Backpanel does not have a part number.
8. The Parallel/Serial Port Backpanel requires an adjacent PCI slot on the component side of the SunPCi.

PCI Slot Notes

1. SunPCi does not fit into Ultra 5, Slot 1 or Slot 2.
2. SunPCi does not fit into Ultra 10, Slot 1.
3. SunPCi does not fit into Ultra 30 or Ultra 60, Slot 4.
4. In the Ultra 30 and Ultra 60, the SunPCi fan housing can touch the solder side of a long PCI board installed in the second slot below a SunPCi. Install the card and side cover with the system in the service position.
5. SunPCi does not fit into Ultra 80, Slot 1 or Slot 4.
6. SunPCi does not fit into Ultra 450, Slot 1.

References

1. *SunPCi Installation Guide*, 805-6055.
2. *SunPCi User's Guide*, 805-6058.
3. *SunPCi DIMM Installation Guide*, 805-7205.
4. *Important Notice*, 806-2198-10.

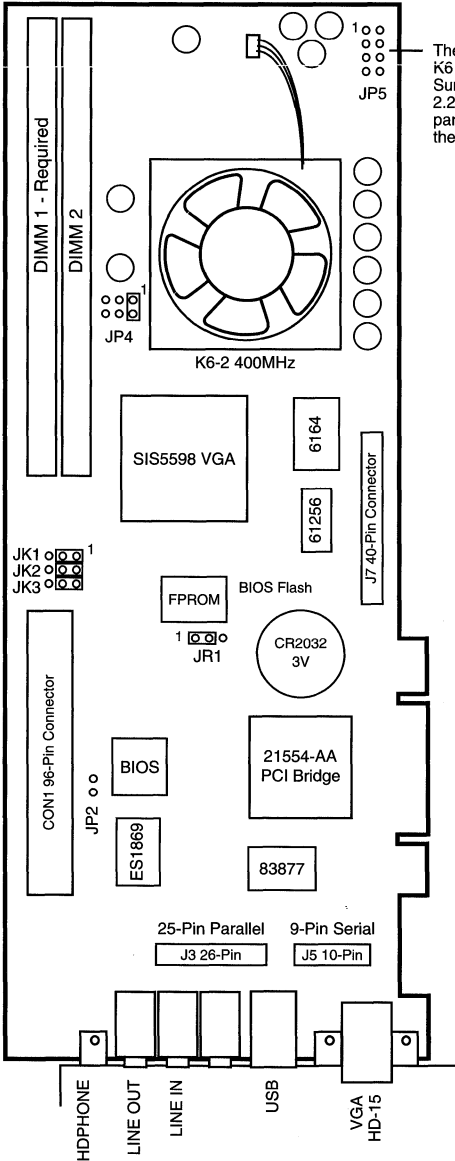
SunPCI

A16 A20 A21 A22 A23 A27

Option 1131A-64.2

375-0095

5V 64Bit 33MH



The setting depends on the K6 CPU voltage requirement. SunPCI boards with 2.0V and 2.2V K6 CPUs have the same part number. Do Not change the JP5 jumper setting.

375-0095 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|----------------------------------|
| JK1 | 1-3 | In | 66.8MHz CPU/33.4MHz PCI clock |
| JK2 | 1-3 | In | 66.8MHz CPU/33.4MHz PCI clock |
| JK3 | 1-3 | In | 66.8MHz CPU/33.4MHz PCI clock |
| JP2 | 1-2 | Out | Normal mode (default) |
| JP2 | 1-2 | In | Manufacturing mode |
| JP4 | 1-2 | In | AMD K6/K6+ clock multiplier |
| JP4 | 3-4 | Out | AMD K6/K6+ clock multiplier |
| JP4 | 5-6 | Out | AMD K6/K6+ clock multiplier |
| JP5 | 1-2 | Out | 2.2V CPU core voltage * |
| JP5 | 3-4 | In | 2.2V CPU core voltage * |
| JP5 | 5-8 | Out | 2.2V CPU core voltage * |
| JP5 | 1-8 | Out | 2.0V CPU core voltage * |
| JR1 | 1-2 | In | Normal (default) |
| JR1 | 2-3 | In | Flash recovery (not implemented) |

* Do Not change the JP5 jumper setting.

Notes

1. The minimum operating system is Solaris 2.5.1.
2. DOS, Windows 3.x, Windows 95, and Windows NT are supported.
3. Use 64MB DIMM 370-3800, Option 7041.
4. Use 128MB DIMM 370-3801, Option 7035.
5. RS-232 signal levels are used. RS-423 is not available.
6. The Parallel/Serial Port Backpanel does not have a part number.
7. The Parallel/Serial Port Backpanel requires an adjacent PCI slot on the component side of the SunPCi.

PCI Slot Notes

1. SunPCi does not fit into Ultra 5, Slot 1 or Slot 2.
2. SunPCi does not fit into Ultra 10, Slot 1.
3. SunPCi does not fit into Ultra 30 or Ultra 60, Slot 4.
4. In the Ultra 30 and Ultra 60, the SunPCi fan housing can touch the solder side of a long PCI board installed in the second slot below a SunPCi. Install the card and side cover with the system in the service position.
5. SunPCi does not fit into Ultra 80, Slot 1 or Slot 4.
6. SunPCi does not fit into Ultra 450, Slot 1.

References

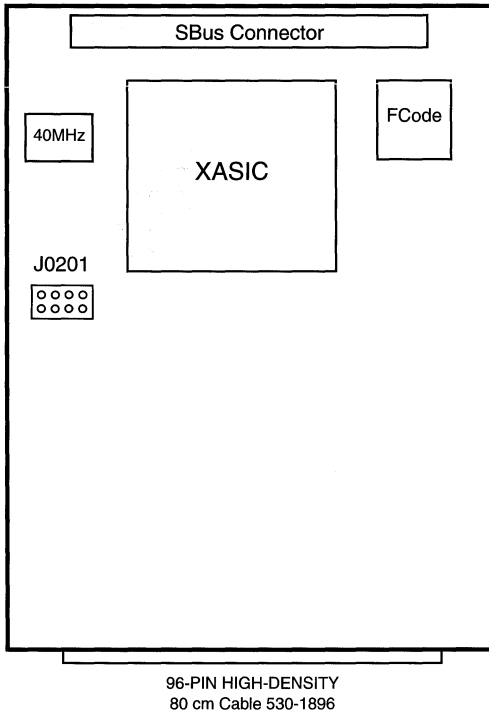
1. *SunPCi Installation Guide*, 805-6055.
2. *SunPCi User's Guide*, 805-6058.
3. *SunPCi DIMM Installation Guide*, 805-7205.
4. *Important Notice*, 806-3164-10.

SBus Expansion Adapter

Sun-4/50/75 SS4 SS5 SS10 SS20 SS600

Options 171 1072

501-1840



Notes

1. SBus Expansion 1.0 is compatible with SunOS 4.1.1 and 4.1.2.
2. SBus Expansion 1.2 is compatible with SunOS 4.1.1, 4.1.2, and 4.1.3.
3. SBus Expansion is not supported in SunOS 4.1.3_U1 Version B.
4. SBus Expansion is not supported in SunOS 4.1.4.
5. SBus Expansion device drivers are included in Solaris 2.2.
6. The final software release is Solaris 2.5.1.
7. SS10 Boot PROM 2.7 extends the dictionary space to 1MB.
8. SS600MP Boot PROM 2.8 extends the dictionary space to 1MB.

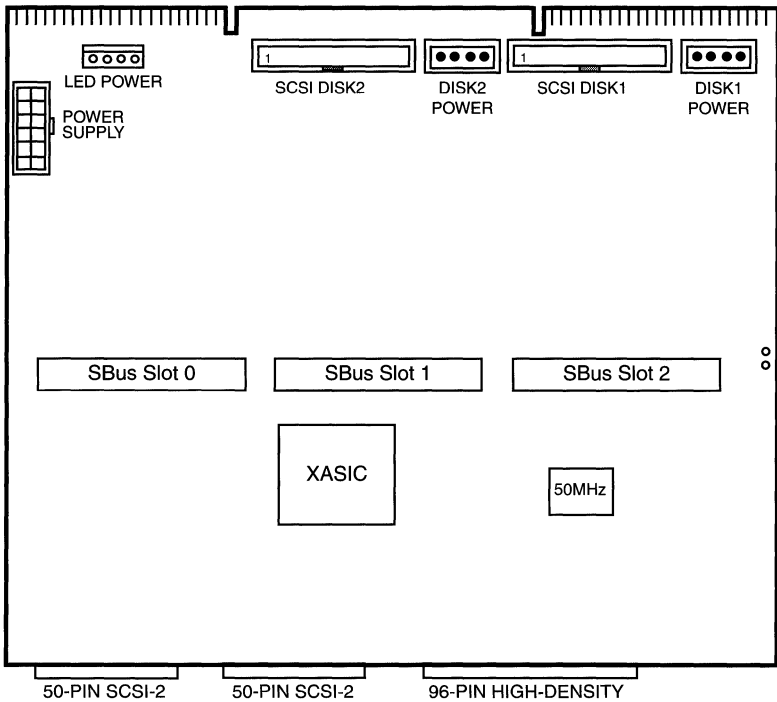
References

1. *SBus Expansion Subsystem Installation and Troubleshooting Guide*, 800-5965-10.
2. *SBus Expansion Subsystem Board Installation Manual*, 800-7178-11.

SBus Expansion Controller SES/C

Option 1072

501-1841



These SBus cards are not compatible with the SES/C:

| DESCRIPTION | PART NUMBER |
|------------------------|-----------------------|
| CG3 | 501-1909 |
| Videopix | 501-1706 |
| GT Graphics Option | 501-1693 |
| Prestoserve | 370-1401 |
| Ethernet Option 453 | 501-1881 |
| FDDI/S | 501-1732 |
| TRI/S | ≥501-1932-02 |
| NP20 Printer Card | 501-2275 |
| SCSI Host Adapters | 501-1759 and 501-1850 |
| SBE/S | 501-1869 |
| DSBE/S | 501-1902 |
| SBus Expansion Adapter | 501-1840 |
| SunPC Accelerators | 501-1980 and 501-1981 |

Reference

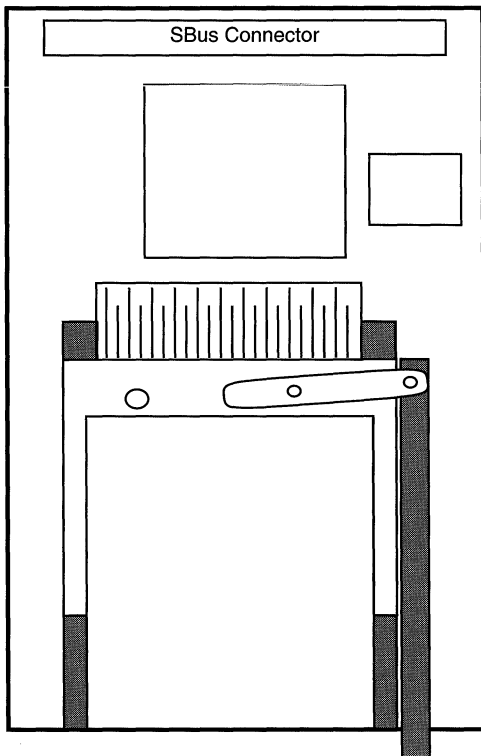
SBus Expansion Subsystem Product Compatibility Note, 801-2209-11.

PCMCIA Adapter

SS4 SS5 SS20 A11 A12 A14

Option 1030

501-2367

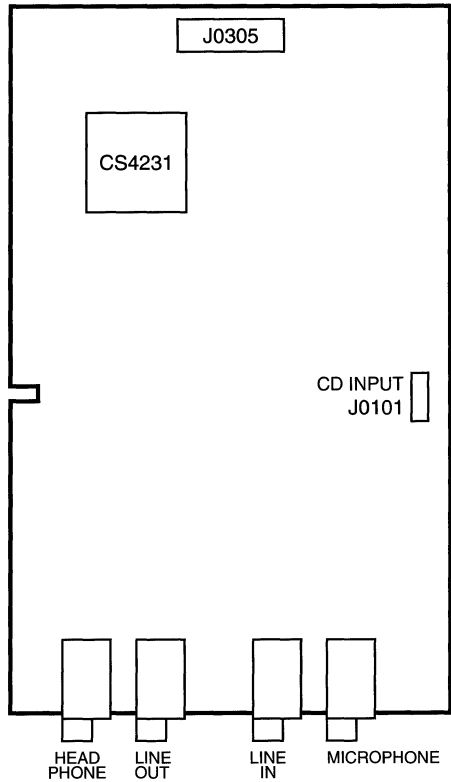


Notes

1. The minimum operating system is Solaris 2.3, Edition 2.
2. Solaris 2.3 requires the SUNWpmdm package.
3. The SUNWpmdm package supports the Sun PCMCIA Modem.
4. Solaris 2.4 Hardware:11/94 requires the SUNWpcm cluster.
5. Solaris 2.4 Hardware: 11/94 includes the SUNWpcser driver for serial and modem cards and the SUNWpcmem driver for memory cards.
6. The A11, A12, and A14 require modified EMI shield 340-3050-03.
The modified EMI shield is installed on 501-2367-05.

Audio Module

SS4 Ultra 450 Ultra Enterprise 450
Option 496
501-2592

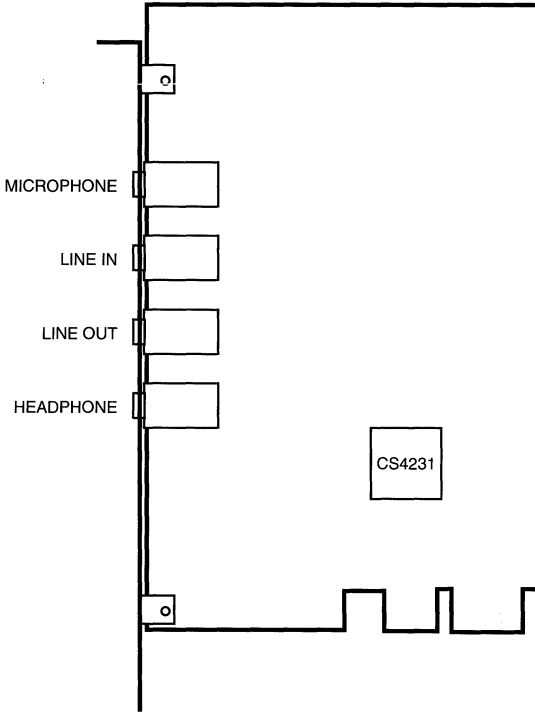


Notes

1. The SS4 minimum operating system is Solaris 1.1.2 or 2.4 HW: 11/94.
2. The A20 minimum operating system is Solaris 2.5 HW: 4/97.
3. The SS4 Option 496 includes internal SS4 Audio Cable 530-2079.

Audio Module

Ultra 30 Ultra 60 Ultra 80
501-4155



Notes

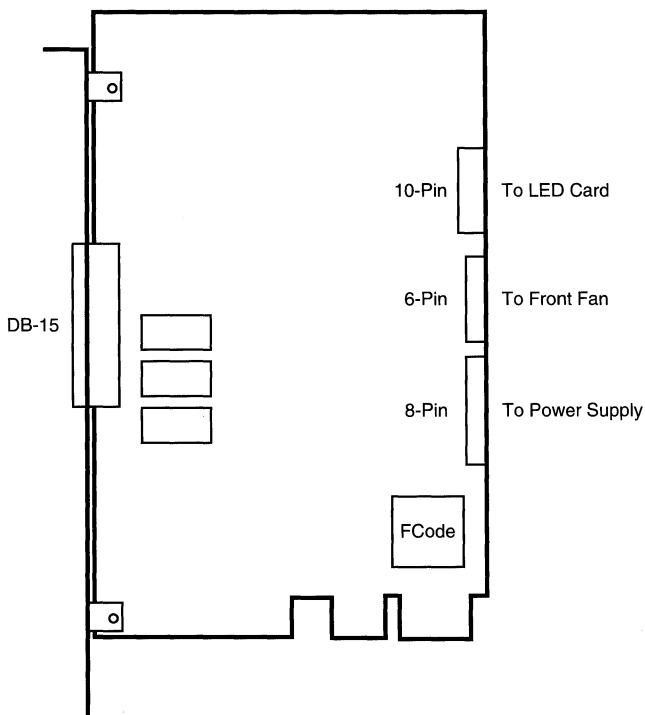
1. The minimum Ultra 30 (A16) OS is 2.5.1 Hardware: 4/97.
2. The minimum Ultra 60 (A23) OS is 2.5.1 HW 11/97 or 2.6 HW: 3/98.

References

1. *Ultra 30 Service Manual*, 802-7719.
2. *Ultra 60 Service Manual*, 805-1709.
3. *Ultra 80 Service Manual*, 805-6618.

Alarm Module

Netra t 1100 Netra t 1120 Netra t 1125
501-4669



Notes

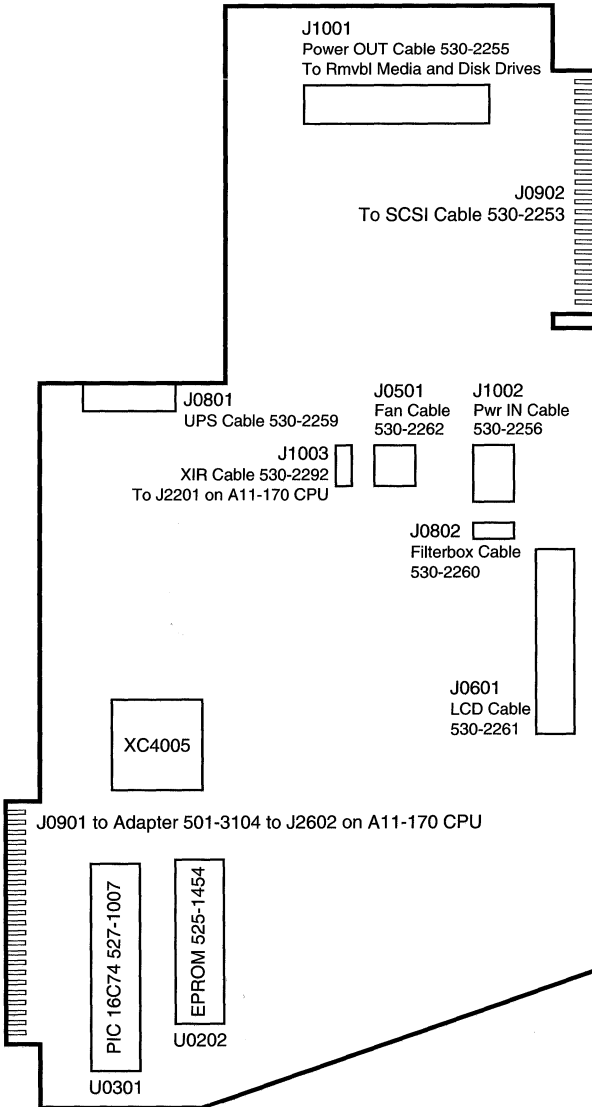
1. The minimum Netra t 1100 OS is 2.5.1 Hardware: 4/97.
2. The minimum Netra t 1120 OS is 2.5.1 HW 11/97 or 2.6 HW: 3/98.
3. The minimum Netra t 1125 OS is 2.5.1 HW 11/97 or 2.6 HW: 3/98.
4. The Alarm Module software is on CD-ROM 704-6024-10.

References

1. *Netra t 1100 Service Manual*, 805-1893-10.
2. *Netra t 1120 Service Manual*, 805-4348-10.
3. *Netra t 1120/1125 Service Manual*, 805-6804-10.

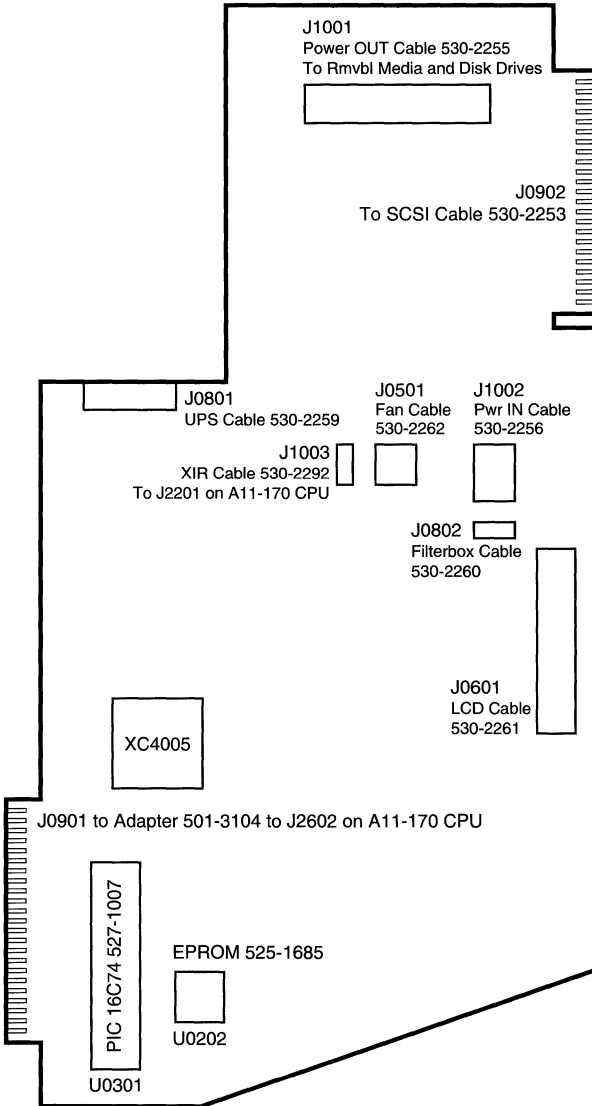
System Controller

Netra *i* 150 Netra *nfs* 150 Ultra Enterprise 150
501-3089



System Controller

Netra *i* 150 Netra *nfs* 150 Ultra Enterprise 150
501-4308



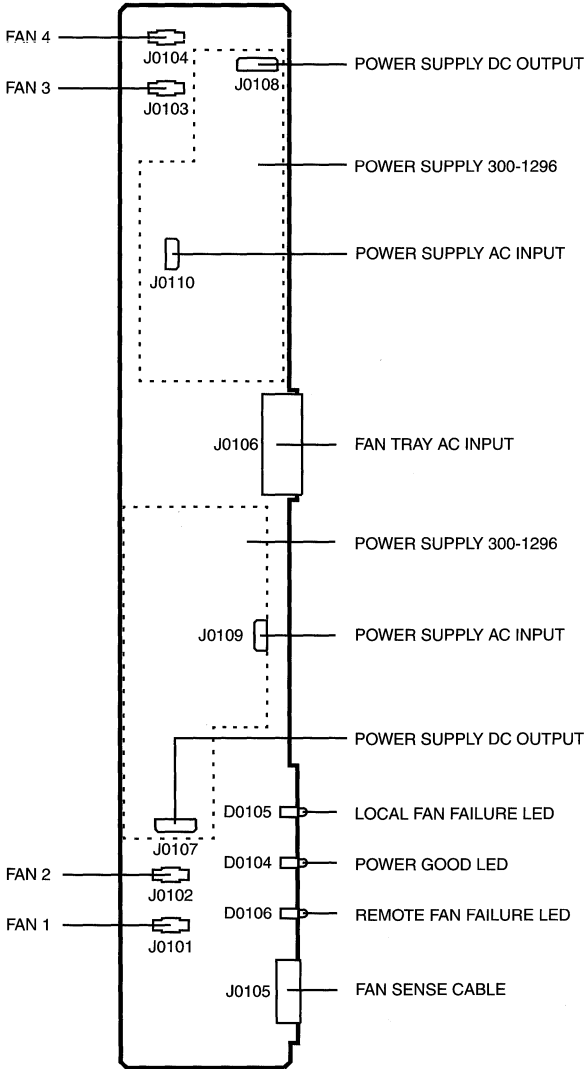
Fan Controller

E5000 E6000 E5500 E6500

Option 956

540-2709
FRU Assembly

501-2900
Fan Controller

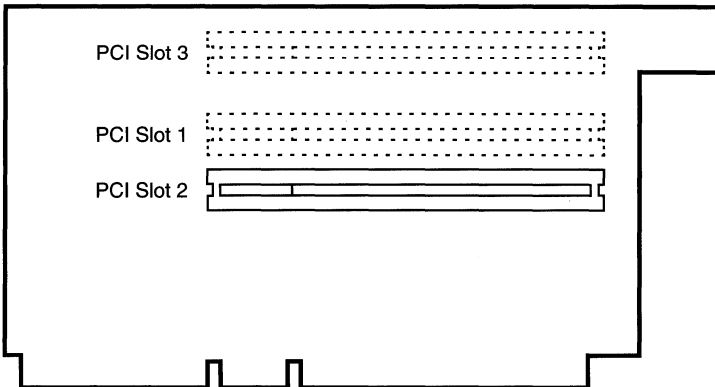
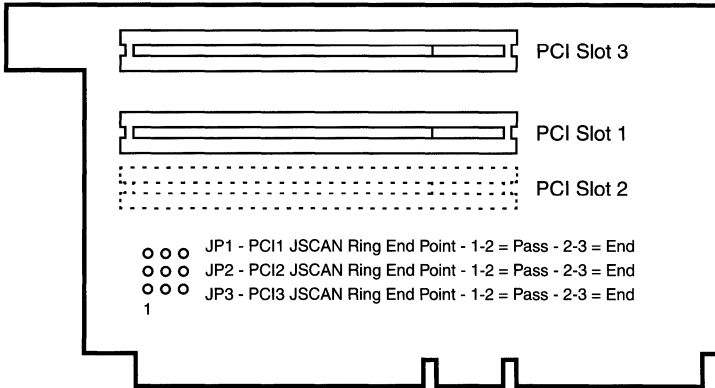


PCI Riser Board

Ultra 5

370-3196

5V 32Bit 33MHz



Notes

1. Some connectors were molded without the right side key.
2. The PCI signaling is 5V, 32Bits, 33MHz.
3. All slots support 32-bit or 64-bit PCI boards.
4. Slots 1 and 3 support long (312 mm) or short (119-167 mm) boards.
5. Slot 2 supports short (119-167 mm) boards only.

References

1. *Sun Ultra 5/10 Service Manuals*, 805-0423, 805-7763, and 805-7764.
2. *Sun Ultra 5/10 Product Note*, 805-3647-10.
3. *Sun Ultra 5 ShowMe How Multimedia Documentation*, 704-5753.

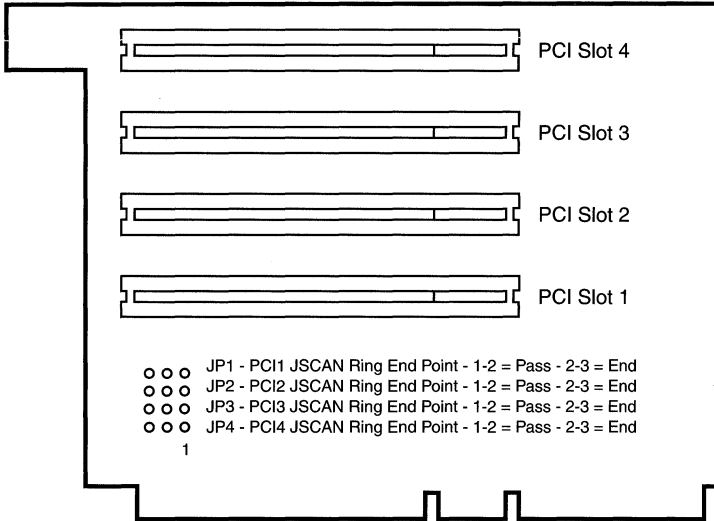
PCI Riser Board

Ultra 10

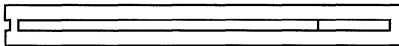
370-3197
5V 32Bit 33MHz
w/o Stiffener
w/o Bracket

370-3982
5V 32Bit 33MHz
w Stiffener
w/o Bracket

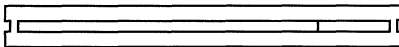
540-4228
5V 32Bit 33MHz
w Stiffener
w Bracket



Connector Without Right Side Key



Connector With Right Side Key



Notes

1. Some connectors were molded without the right side key.
2. The PCI signaling is 5V, 32Bits, 33MHz.
3. All slots support 32-bit or 64-bit PCI boards.
4. All slots support long (312 mm) or short (119-167 mm) boards.
5. Systems built before July 1999 may require spacers under the PCI Riser. Spacers are included in Mounting Kit 540-4228. Refer to FCO A0152.
6. Do Not install spacers under PCI Riser Boards installed in systems built after June 2000 with EZ Label Service Code C Series 3.

References

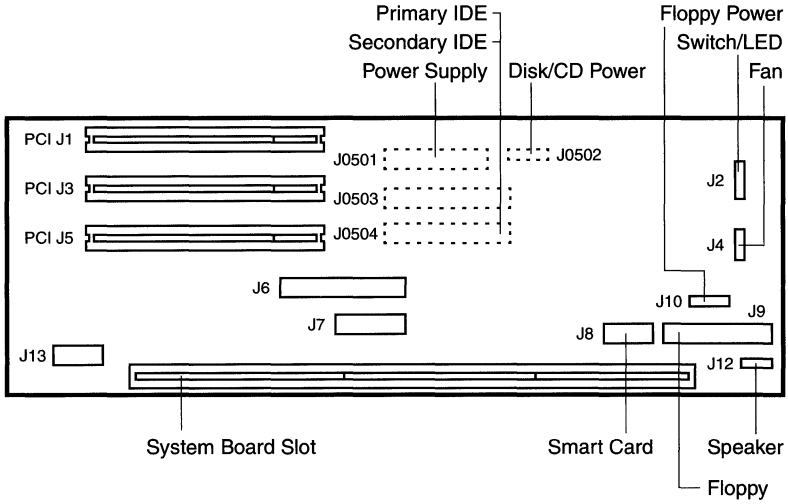
1. *Sun Ultra 5/10 Service Manual*, 805-0423, 805-7763, and 805-7764.
2. *Sun Ultra 5/10 Product Note*, 805-3647-10.
3. *Sun Ultra 10 ShowMe How Multimedia Documentation*, 704-5983.

PCI Riser Board

Sun Blade 100

370-4208

5V 32Bit 33MHz



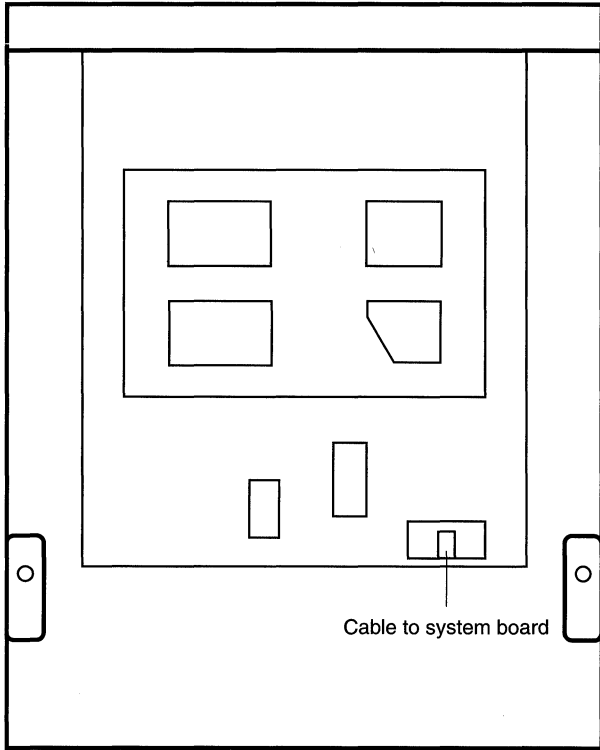
Notes

1. The PCI signaling is 5V, 32Bits, 33MHz.
2. All slots support 32-bit or 64-bit PCI boards.

Reference: *Sun Blade 100 Service Manual*, 806-3416.

Smart Card Reader

Sun Blade 100 Sun Blade 1000
370-3933

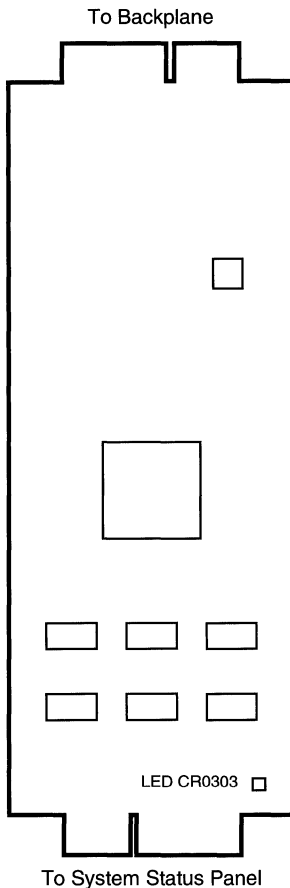


System Control Board

Netra ct 400 Netra ct 800

Option 7168

501-5612



Notes

1. The minimum operating system is Solaris 8 HW: 6/00.
1. The SCB is installed behind the System Status Panel.
2. The component side of the SCB faces the left side of the chassis.

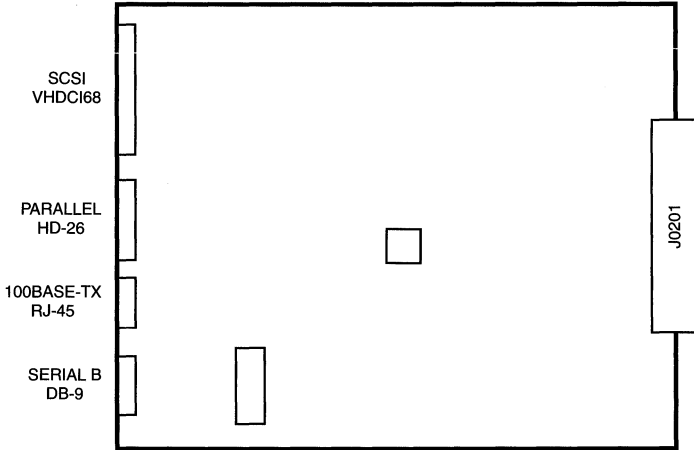
Reference: *Netra ct Server Service Manual*, 806-3296.

Front CPU Transition Board

Netra ct 400

Options 7150 7151 7180

501-5624



Note: The minimum operating system is Solaris 8 HW: 6/00.

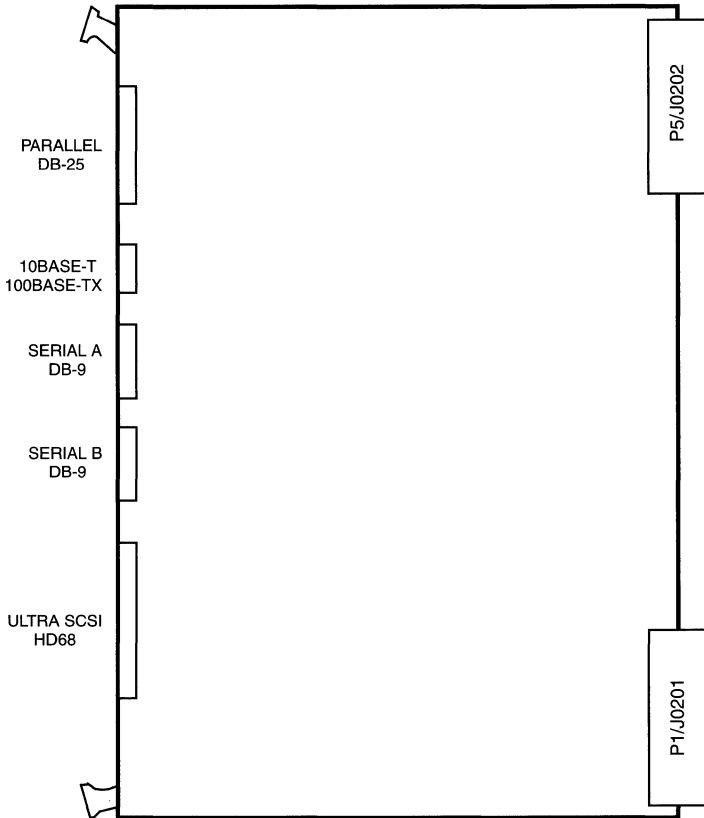
Reference: *Netra ct Server Service Manual*, 806-3296.

Front CPU Transition Board

Netra ct 800

Options 7154 7155

501-5618



Notes

- 1. The minimum operating system is Solaris 8 HW: 6/00.
- 2. Shunt Board 501-5619 is required in the rear of Slot 1 and 2.

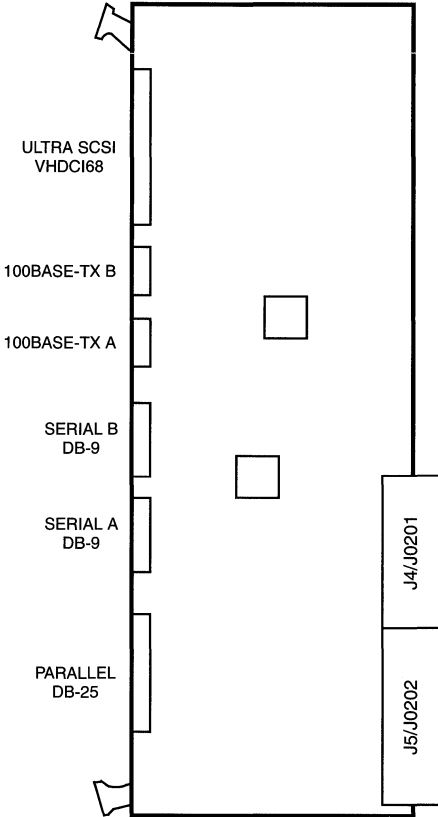
Reference: *Netra ct Server Service Manual*, 806-3296.

Rear CPU Transition Board

Netra ct 400 Netra ct 800

Options 7152 7153 7156 7157 7158 7159

501-5609



Note: The minimum operating system is Solaris 8 HW: 6/00.

Reference: *Netra ct Server Service Manual*, 806-3296.

Alarm Board

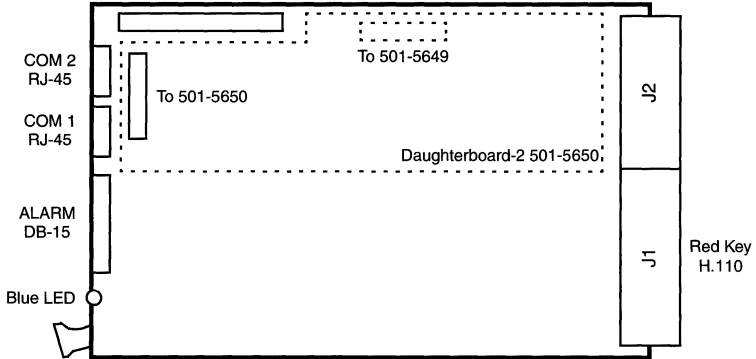
Netra ct 400

Option 7160

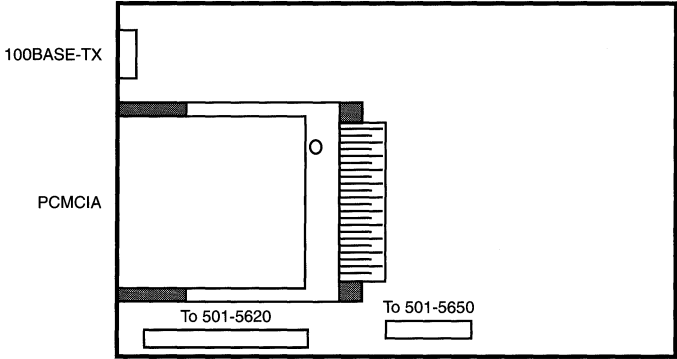
540-4406

FRU Assembly

Motherboard 501-5620 with Daughterboard 501-5650



Daughterboard 501-5649



Notes

1. The minimum operating system is Solaris 8 HW: 6/00.
1. FRU assembly 540-4406 includes 501-5620, 501-5649, and 501-5650.
2. CR1632 Battery 150-2850 is installed on 501-5620.

References

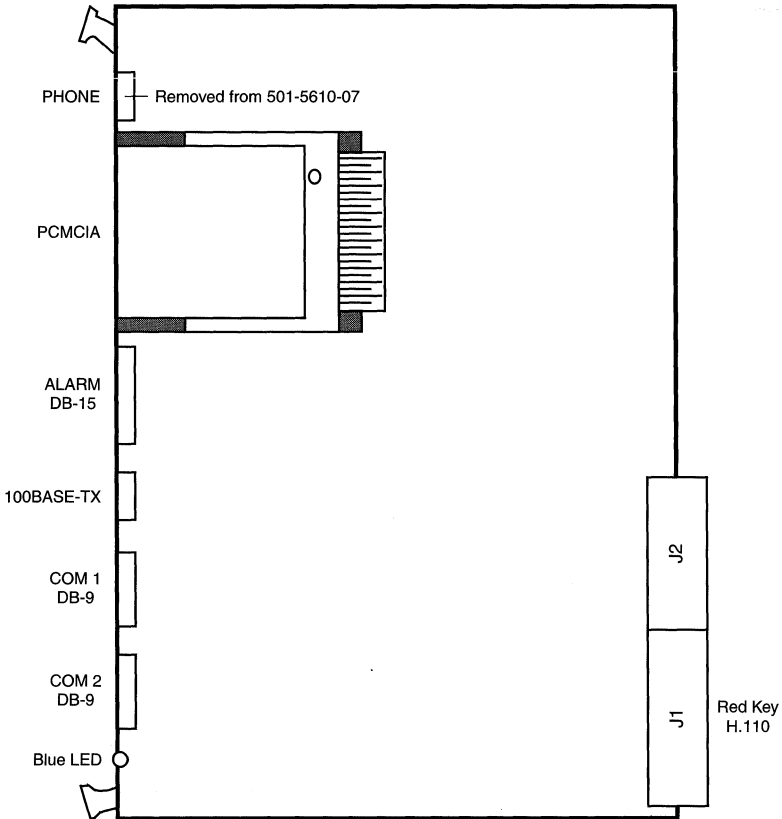
1. *Netra ct Server Service Manual*, 806-3296.
2. *Netra ct Server Alarm Card Installation Manual*, 806-3300.
3. *Remote System Control User's Guide*, 806-3301.

Alarm Board

Netra ct 800

Option 7161

501-5610



Notes

- 1. The minimum operating system is Solaris 8 HW: 6/00.
- 2. CR1632 Battery 150-2850 is installed at BT0401.

References

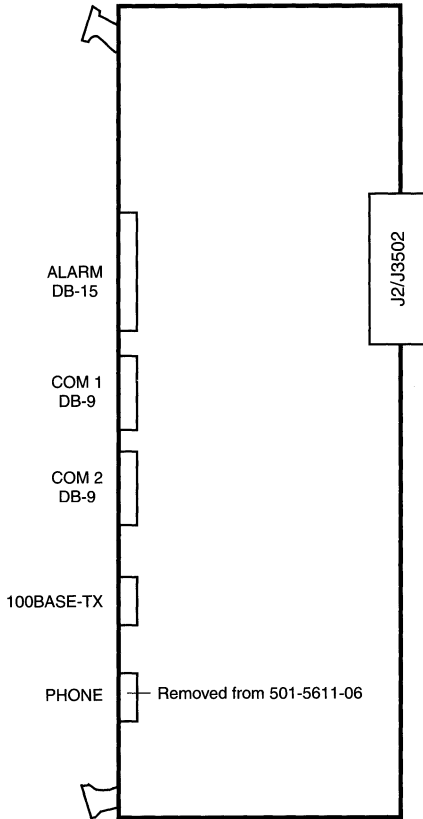
- 1. *Netra ct Server Service Manual*, 806-3296.
- 2. *Netra ct Server Alarm Card Installation Manual*, 806-3300.
- 3. *Remote System Control User's Guide*, 806-3301.

Rear Alarm Transition Board

Netra ct 800

Option 7176

501-5611



Note: The minimum operating system is Solaris 8 HW: 6/00.

References

1. *Netra ct Server Service Manual*, 806-3296.
2. *Netra ct Server Alarm Card Installation Manual*, 806-3300.
3. *Remote System Control User's Guide*, 806-3301.

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CONFIGURATIONS

I/O

I/O

| | |
|---|----|
| E3000/4000/5000/6000 E3500/4500/5500/6500 | |
| I/O Board | 2 |
| I/O Board with SOC+ | 6 |
| I/O Graphics Board | 10 |
| I/O Graphics Board with SOC+ | 14 |
| PCI I/O Board | 16 |
| PCI Riser Boards | 20 |
| E10000 | |
| SBus I/O Board | 22 |
| PCI I/O Board | 24 |
| PCI Riser Boards | 25 |

I/O Board

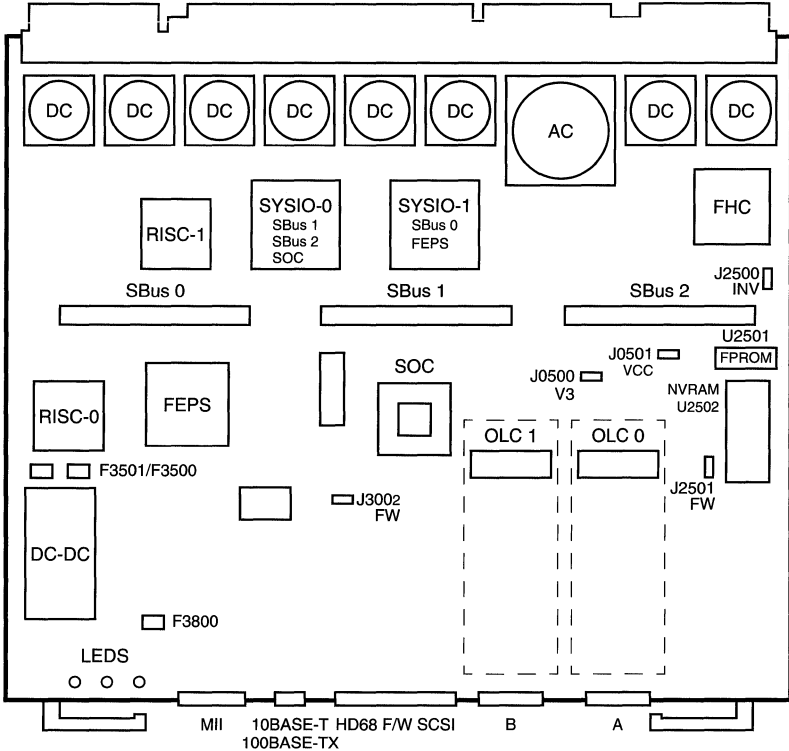
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2610

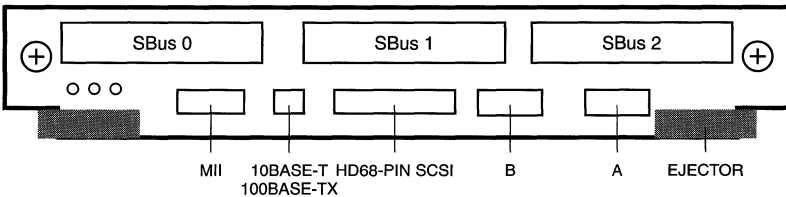
501-2977

I/O Type 1

83MHz Gigaplane



Backpanel and Connectors



501-2977
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION | FAB 270-2977 |
|--------|-------|---------|--------------------------|---------------------|
| J0500 | 1-2 | In | Unknown | -01 -02 -03 |
| J0501 | 1-2 | Out | Unknown | -01 -02 -03 |
| J2500 | 1-2 | Out | Inv Adr 1 | -01 -02 -03 -04 -05 |
| J2501 | 1-2 | In | Unknown | -01 -02 -03 |
| J2503 | 1 2 3 | * | Unknown | -01 |
| J3002 | 1-2 | In | SOC Flash write enabled | -01 |
| J3002 | 1-2 | Out | SOC Flash write disabled | -01 |

*J2503 is not illustrated. The default jumper setting is unknown.

Notes

1. The minimum Ex000 operating system is Solaris 2.5.1.
2. The minimum Ex500 OS is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The Gigaplane runs at the speed of the slowest detected board.
4. The message "status 'fail - Downrev AC'" is displayed when I/O Graphics Board <501-2977-04 is installed. The message indicates that the Address Controller is pre-FCS and lower than revision 4.
5. The following cable types are supported:
50/125 Multimode Fiber up to 2 Kilometers
62.5/125 Multimode Fiber up to 500 meters

Flash PROM Notes

1. Use the FlashPROM Programming Utility to update the FCode.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy** (copies from board 2 to board 11)
3. Use the **update-proms** command to synchronize the latest version of the flash PROM installed in the system to all boards of the same type.

NVRAM Notes

1. The Clock Board and I/O Board NVRAMs are automatically synchronized when the Clock Board NVRAM matches at least one I/O Board NVRAM.
2. Use one of the following OBP commands to synchronize the Clock Board and I/O Board NVRAM:
ok **copy-clock-tod-to-io-boards**
ok **copy-io-board-tod-to-clock-tod**

References

1. *Ultra Enterprise 3000 System Manual*, 802-6051.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.
3. *System Flash PROM Programming Guide*, 802-5579.

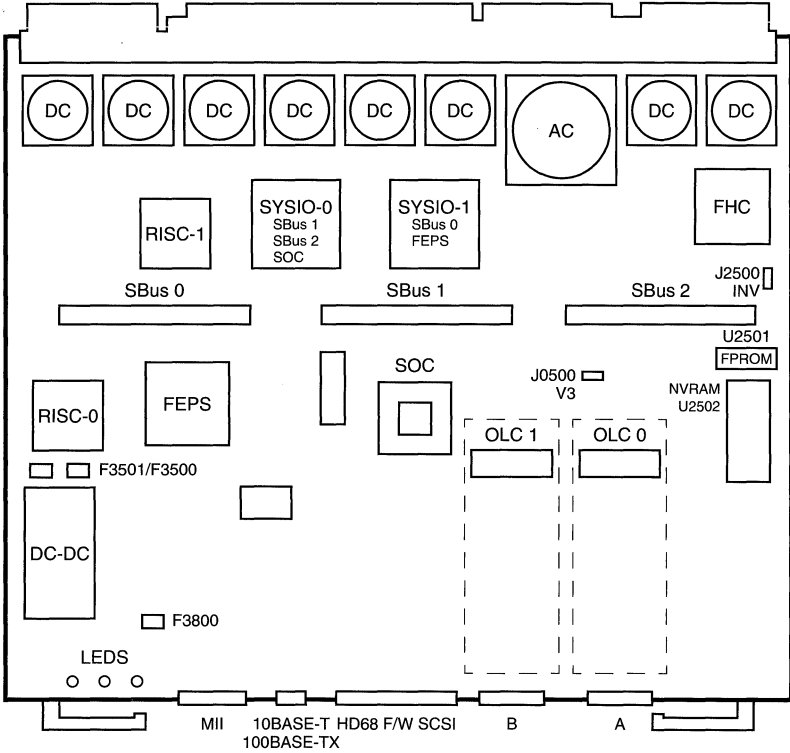
I/O Board

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

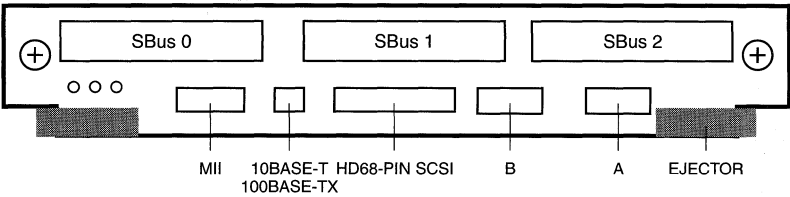
Option 2610

501-4287

I/O Type 1
83MHz Gigaplane



Backpanel and Connectors



501-4287
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION | FAB 270-2977 |
|--------|------|---------|-------------|--------------|
| J2500 | 1-2 | Out | Inv Adr 1 | -06 |

Notes

1. The minimum Ex000 operating system is Solaris 2.5.1.
2. The minimum Ex500 OS is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The Gigaplane runs at the speed of the slowest detected board.
4. The following cable types are supported:
 50/125 Multimode Fiber up to 2 Kilometers
 62.5/125 Multimode Fiber up to 500 meters

Flash PROM Notes

1. Use the FlashPROM Programming Utility to update the FCode.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
 ok **2 b prom-copy** (copies from board 2 to board 11)
3. Use the **update-proms** command to synchronize the latest version of the flash PROM installed in the system to all boards of the same type.

NVRAM Notes

1. The Clock Board and I/O Board NVRAMs are automatically synchronized when the Clock Board NVRAM matches at least one I/O Board NVRAM.
2. Use one of the following OBP commands to synchronize the Clock Board and I/O Board NVRAM:
 ok **copy-clock-tod-to-io-boards**
 ok **copy-io-board-tod-to-clock-tod**

References

1. *Ultra Enterprise 3000 System Manual*, 802-6051.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.
3. *System Flash PROM Programming Guide*, 802-5579.

I/O Board with SOC+

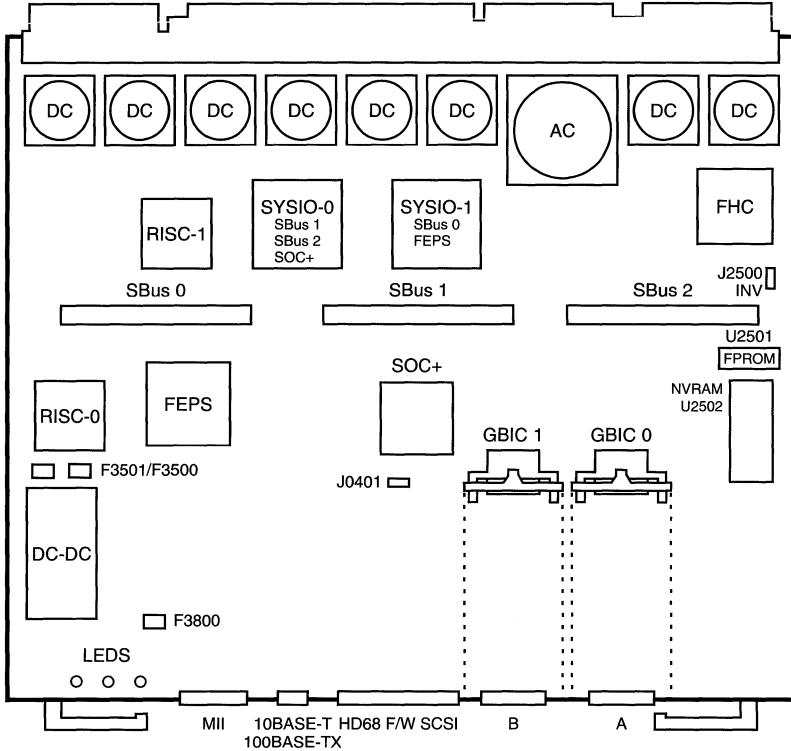
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2611

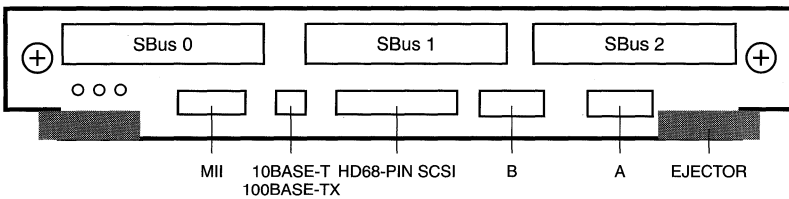
501-4266

I/O Type 4

83MHz Gigaplane



Backpanel and Connectors



501-4266
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|----------------------------|
| J0401 | 1-2 | In | SOC+ Flash write enabled |
| J0401 | 1-2 | Out | SOC+ Flash write protected |
| J2500 | 1-2 | Out | Inv Adr 1 |

Notes

1. The minimum Ex000 operating system is Solaris 2.5.1.
2. The minimum Ex000 OS is 2.5.1 HW: 11/97 if a GBIC is installed.
3. The minimum Ex500 OS is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
4. The Gigaplane runs at the speed of the slowest detected board.
5. The following cable type is supported with GBIC 370-2303:
50/125 Multimode Fiber up to 500 meters

E4500 72" Expansion Cabinet Notes

1. Install the E4500 in the 72" Expansion Cabinet in numerical sequence.
2. SBus Filler Panel 540-4566, Option 1099, is required in SBus Slot 3 of the I/O Board with SOC+ under the following conditions:

| CABINET POSITION | MOUNTING HOLE # | SOC+ I/O BOARD IN SLOT 3 | SOC+ I/O BOARD IN SLOT 7 |
|------------------|-----------------|---|--------------------------|
| 4th E4500 | 84 90 96 | Filler Panel not required | Filler Panel required |
| 1st E4500 | 60 66 72 | Filler Panel required when: 3 or more E4500s are installed 1 E4500 + 4 A5000s are installed | Filler Panel required |
| 2nd E4500 | 36 42 48 | Filler Panel required | Filler Panel required |
| 3rd E4500 | 12 18 24 | Filler Panel required | Filler Panel required |

Flash PROM Notes

1. Use the FlashPROM Programming Utility to update the FCode.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy** (copies from board 2 to board 11)
3. Use the **update-proms** command to synchronize the latest version of the flash PROM installed in the system to all boards of the same type.

NVRAM Notes

1. The Clock Board and I/O Board NVRAMs are automatically synchronized when the Clock Board NVRAM matches at least one I/O Board NVRAM.
2. Use one of the following OBP commands to synchronize the Clock Board and I/O Board NVRAM:
ok **copy-clock-tod-to-io-boards**
ok **copy-io-board-tod-to-clock-tod**

References

1. *Ultra Enterprise 3000 System Manual*, 802-6051.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.
3. *SBus and Graphics I/O Boards Installation*, 805-2704.
4. *System Flash PROM Programming Guide*, 802-5579.
5. *SBus Blank Filler Panel Installation Guide*, 806-5239.

I/O Board with SOC+

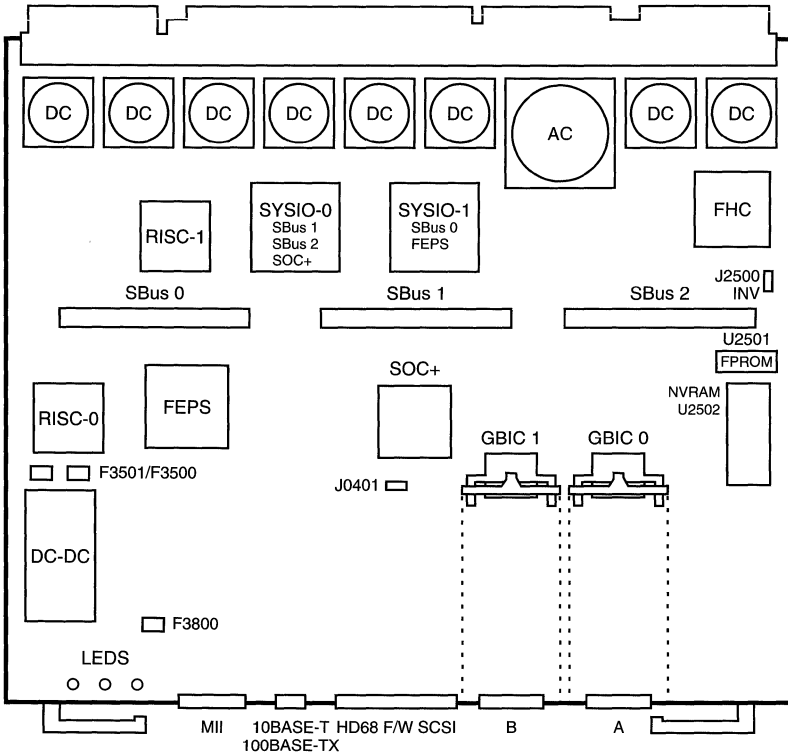
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2612

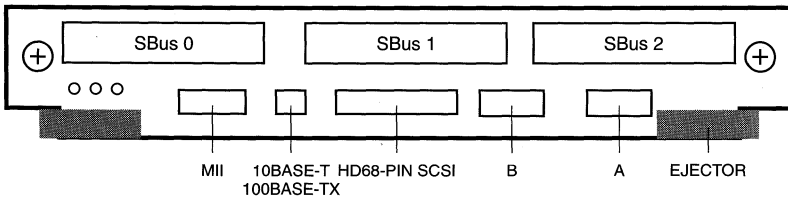
501-4883

I/O Type 4

83/90/100MHz Gigaplane



Backpanel and Connectors



501-4883
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|----------------------------|
| J0401 | 1-2 | In | SOC+ Flash write enabled |
| J0401 | 1-2 | Out | SOC+ Flash write protected |
| J2500 | 1-2 | Out | Inv Adr 1 |

Notes

1. The minimum Ex000 operating system is 2.5.1.
2. The minimum Ex000 OS is 2.5.1 HW: 11/97 if a GBIC is installed.
3. The minimum Ex500 OS is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
4. The Gigaplane runs at the speed of the slowest detected board.
5. The following cable type is supported with GBIC 370-2303:
50/125 Multimode Fiber up to 500 meters

E4500 72" Expansion Cabinet Notes

1. Install the E4500 in the 72" Expansion Cabinet in numerical sequence.
2. SBus Filler Panel 540-4566, Option 1099, is required in SBus Slot 3 of the I/O Board with SOC+ under the following conditions:

| CABINET POSITION | MOUNTING HOLE # | SOC+ I/O BOARD IN SLOT 3 | SOC+ I/O BOARD IN SLOT 7 |
|------------------|-----------------|---|--------------------------|
| 4th E4500 | 84 90 96 | Filler Panel not required | Filler Panel required |
| 1st E4500 | 60 66 72 | Filler Panel required when: 3 or more E4500s are installed 1 E4500 + 4 A5000s are installed | Filler Panel required |
| 2nd E4500 | 36 42 48 | Filler Panel required | Filler Panel required |
| 3rd E4500 | 12 18 24 | Filler Panel required | Filler Panel required |

Flash PROM Notes

1. Use the FlashPROM Programming Utility to update the FCode.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy** (copies from board 2 to board 11)
3. Use the **update-proms** command to synchronize the latest version of the flash PROM installed in the system to all boards of the same type.

NVRAM Notes

1. The Clock Board and I/O Board NVRAMs are automatically synchronized when the Clock Board NVRAM matches at least one I/O Board NVRAM.
2. Use one of the following OBP commands to synchronize the Clock Board and I/O Board NVRAM:
ok **copy-clock-tod-to-io-boards**
ok **copy-io-board-tod-to-clock-tod**

References

1. *Enterprise 3500 System Reference Manual*, 805-2630.
2. *Enterprise 4500/5500/6500 System Reference Manual*, 805-2632.
3. *SBus and Graphics I/O Boards Installation*, 805-2704.
4. *System Flash PROM Programming Guide*, 802-5579.
5. *SBus Blank Filler Panel Installation Guide*, 806-5239.

I/O Graphics Board

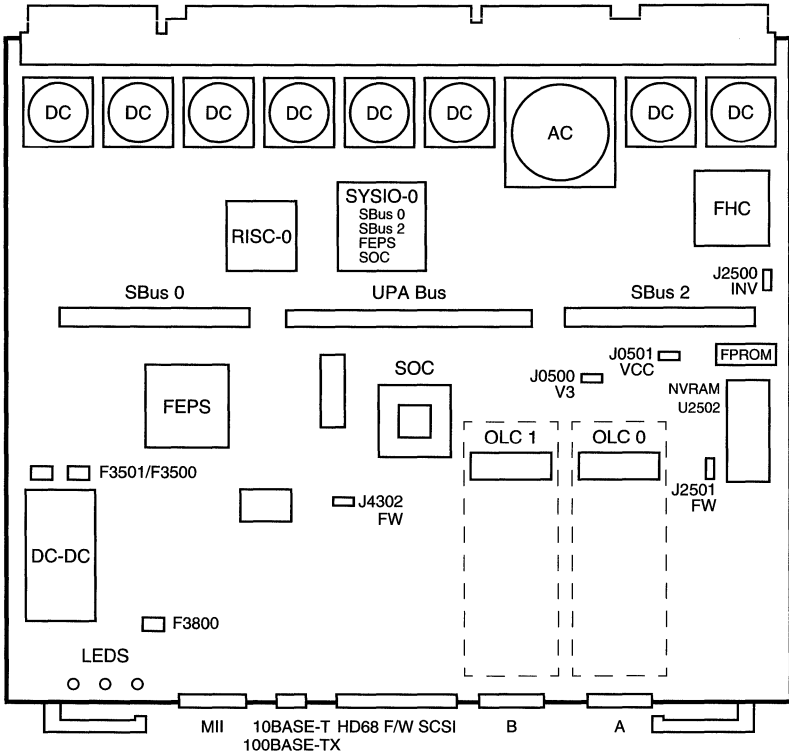
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2620

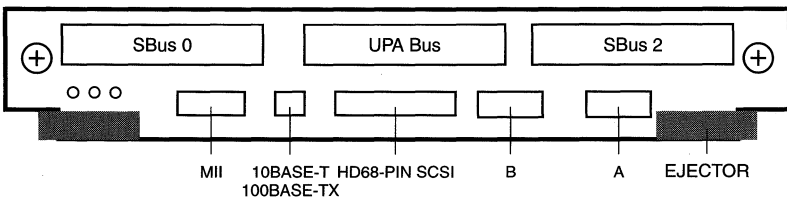
501-2749

I/O Type 2

83MHz Gigaplane



Backpanel and Connectors



501-2749 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION | FAB 270-2749 |
|--------|-------|---------|--------------------------|-----------------|
| J0500 | 1-2 | In | Unknown | -01 -02 -03 -04 |
| J0501 | 1-2 | In | Unknown | -01 -02 -03 -04 |
| J2500 | 1-2 | Out | Inv Adr 1 | -01 -02 -03 |
| J2500 | 1-2 | Out | Inv Adr 1 | -04 -05 -06 |
| J2501 | 1-2 | In | Unknown | -01 -02 -03 -04 |
| J2503 | 1 2 3 | * | Unknown | -01 -02 |
| J4302 | 1-2 | In | SOC Flash write enabled | -01 -02 |
| J4302 | 1-2 | Out | SOC Flash write disabled | -01 -02 |

*J2503 is not illustrated. The default jumper setting is unknown.

Notes

1. The minimum Ex000 operating system is Solaris 2.5.1.
2. The minimum Ex500 OS is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The Gigaplane runs at the speed of the slowest detected board.
4. I/O Graphics Board iPOST 3.4.1 is required to support FFB 501-3129.
5. The message "status 'fail - Downrev AC'" is displayed when I/O Graphics Board <501-2749-05 is installed. The message indicates that the Address Controller is pre-FCS and lower than Revision 4.
6. The following cable types are supported:
50/125 Multimode Fiber up to 2 Kilometers
62.5/125 Multimode Fiber up to 500 meters

Flash PROM Notes

1. Use the FlashPROM Programming Utility to update the FCode.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy** (copies from board 2 to board 11)
3. Use the **update-proms** command to synchronize the latest version of the flash PROM installed in the system to all boards of the same type.

NVRAM Notes

1. The Clock Board and I/O Board NVRAMs are automatically synchronized when the Clock Board NVRAM matches at least one I/O Board NVRAM.
2. Use one of the following OBP commands to synchronize the Clock Board and I/O Board NVRAM:
ok **copy-clock-tod-to-io-boards**
ok **copy-io-board-tod-to-clock-tod**

References

1. *Ultra Enterprise 3000 System Manual*, 802-6051.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.
3. *System Flash PROM Programming Guide*, 802-5579.

I/O Graphics Board

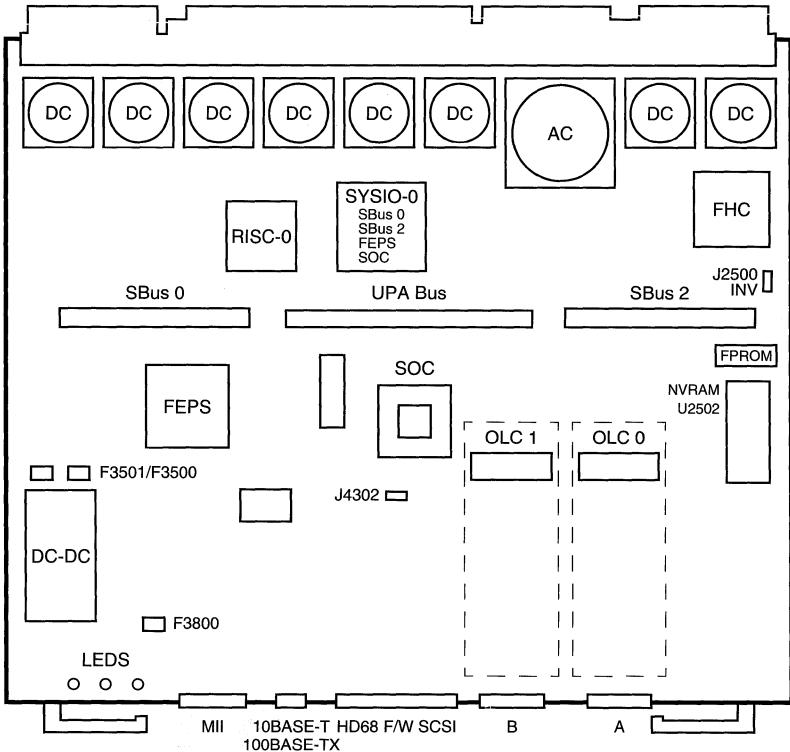
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2620

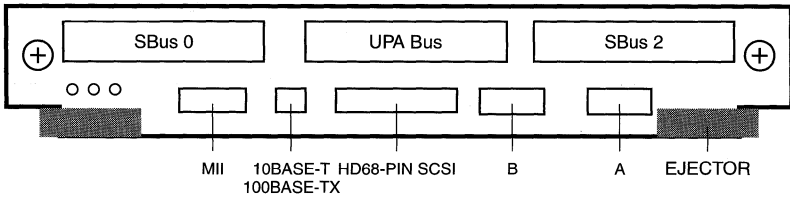
501-4288

I/O Type 2

83MHz Gigaplane



Backpanel and Connectors



501-4288
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|--------------------------|
| J2500 | 1-2 | Out | Inv Adr 1 |
| J4302 | 1-2 | Out | SOC flash write disabled |

Notes

1. The minimum Ex000 operating system is Solaris 2.5.1.
2. The minimum Ex500 OS is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The Gigaplane runs at the speed of the slowest detected board.
4. I/O Graphics Board requires iPOST 3.4.1 to support FFB 501-3129.
5. The following cable types are supported:
50/125 Multimode Fiber up to 2 Kilometers
62.5/125 Multimode Fiber up to 500 meters

Flash PROM Notes

1. Use the FlashPROM Programming Utility to update the FCode.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy** (copies from board 2 to board 11)
3. Use the **update-proms** command to synchronize the latest version of the flash PROM installed in the system to all boards of the same type.

NVRAM Notes

1. The Clock Board and I/O Board NVRAMs are automatically synchronized when the Clock Board NVRAM matches at least one I/O Board NVRAM.
2. Use one of the following OBP commands to synchronize the Clock Board and I/O Board NVRAM:
ok **copy-clock-tod-to-io-boards**
ok **copy-io-board-tod-to-clock-tod**

References

1. *Ultra Enterprise 3000 System Manual*, 802-6051.
2. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.
3. *System Flash PROM Programming Guide*, 802-5579.

I/O Graphics Board with SOC+

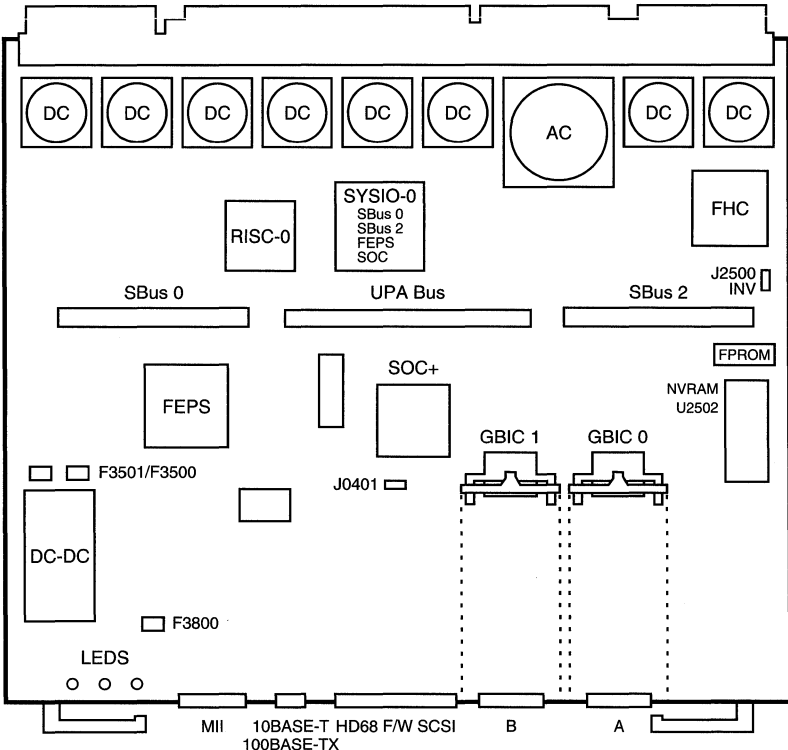
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2622

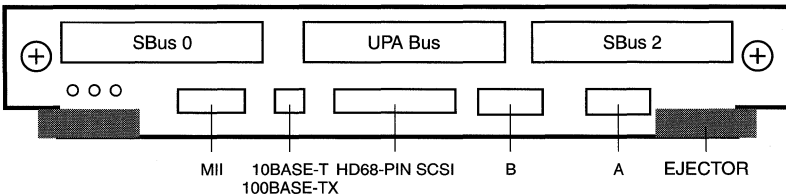
501-4884

I/O Type 5

83/90/100MHz Gigaplane



Backpanel and Connectors



501-4884 Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|---------------------------|
| J2500 | 1-2 | Out | Inv Adr 1 |
| J0401 | 1-2 | Out | SOC+ Flash write disabled |

Notes

1. The minimum Ex000 operating system is 2.5.1.
2. The minimum Ex000 OS is 2.5.1 HW: 11/97 if a GBIC is installed.
3. The minimum Ex500 OS is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
4. The Gigaplane runs at the speed of the slowest detected board.
5. The following cable types are supported:
 - 50/125 Multimode Fiber up to 2 Kilometers
 - 62.5/125 Multimode Fiber up to 500 meters

E4500 72" Expansion Cabinet Notes

1. Install the E4500 in the 72" Expansion Cabinet in numerical sequence.
2. SBus Filler Panel 540-4566, Option 1099, is required in SBus Slot 3 of the I/O Graphics Board with SOC+ under the following conditions:

| CABINET POSITION | MOUNTING HOLE # | SOC+ I/O BOARD IN SLOT 3 | SOC+ I/O BOARD IN SLOT 7 |
|------------------|-----------------|---|--------------------------|
| 4th E4500 | 84 90 96 | Filler Panel not required | Filler Panel required |
| 1st E4500 | 60 66 72 | Filler Panel required when: 3 or more E4500s are installed 1 E4500 + 4 A5000s are installed | Filler Panel required |
| 2nd E4500 | 36 42 48 | Filler Panel required | Filler Panel required |
| 3rd E4500 | 12 18 24 | Filler Panel required | Filler Panel required |

Flash PROM Notes

1. Use the FlashPROM Programming Utility to update the FCode.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy** (copies from board 2 to board 1)
3. Use the **update-proms** command to synchronize the latest version of the flash PROM installed in the system to all boards of the same type.

NVRAM Notes

1. The Clock Board and I/O Board NVRAMs are automatically synchronized when the Clock Board NVRAM matches at least one I/O Board NVRAM.
2. Use one of the following OBP commands to synchronize the Clock Board and I/O Board NVRAM:
ok **copy-clock-tod-to-io-boards**
ok **copy-io-board-tod-to-clock-tod**

References

1. *Enterprise 3500 System Reference Manual*, 805-2630.
2. *Enterprise 4500/5500/6500 System Reference Manual*, 805-2632.
3. *SBus and Graphics I/O Boards Installation*, 805-2704.
4. *System Flash PROM Programming Guide*, 802-5579.
5. *SBus Blank Filler Panel Installation Guide*, 806-5239.

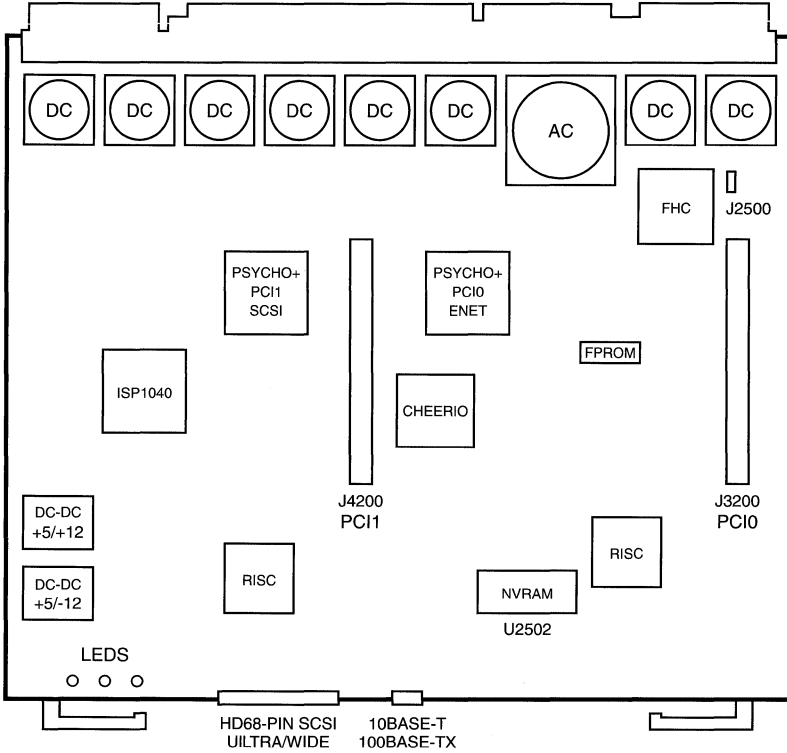
PCI I/O Board

E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

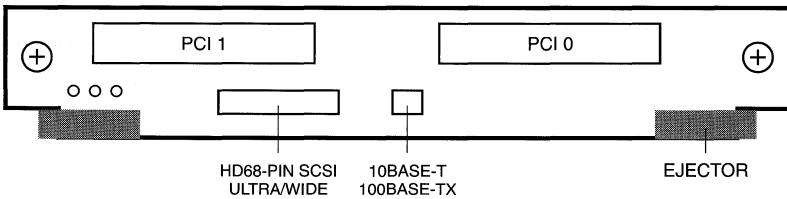
Option 2630

501-3023
I/O Type 3
83MHz Gigaplane

501-4325
I/O Type 3 FRU
w 2 5V Risers



Backpanel and Connectors



501-3023 501-4325
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------|
| J2500 | 1-2 | Out | Inv Adr 1 |

Notes

1. The minimum Ex000 operating system is Solaris 2.5.1.
2. The minimum Ex500 OS is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The Gigaplane runs at the speed of the slowest detected board.
4. The E3000-E6000 CPU/Memory Board requires OBP 3.2 Version 8.
5. Patch 103346-06 includes OBP 3.2 Version 8.
6. Option 2630 includes two 5V Riser Boards and two 3.3V Riser Boards.
7. Up to three PCI I/O Boards are supported in the E3x00.
8. Up to six PCI I/O Boards are supported in the E4x00, E5x00, and E6x00.
9. The following cable types are supported:
 - 50/125 Multimode Fiber up to 2 Kilometers
 - 62.5/125 Multimode Fiber up to 500 meters

FlashPROM Notes

1. Use the FlashPROM Programming Utility to update the FCode.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy** (copies from board 2 to board 11)
3. Use the **update-proms** command to synchronize the latest version of the flash PROM installed in the system to all boards of the same type.

NVRAM Notes

1. The Clock Board and I/O Board NVRAMs are automatically synchronized when the Clock Board NVRAM matches at least one I/O Board NVRAM.
2. Use one of the following OBP commands to synchronize the Clock Board and I/O Board NVRAM:
 - ok **copy-clock-tod-to-io-boards**
 - ok **copy-io-board-tod-to-clock-tod**

ISP1040 Ultra SCSI Controller Notes

1. The ISP 1040 is an Ultra SCSI controller.
2. Ultra SCSI transfer rates are not supported.
3. Disable Ultra SCSI transfers to the onboard SCSI controller.
4. Refer to *PCI I/O Product Note*, 805-3364-10, September 1997.

References

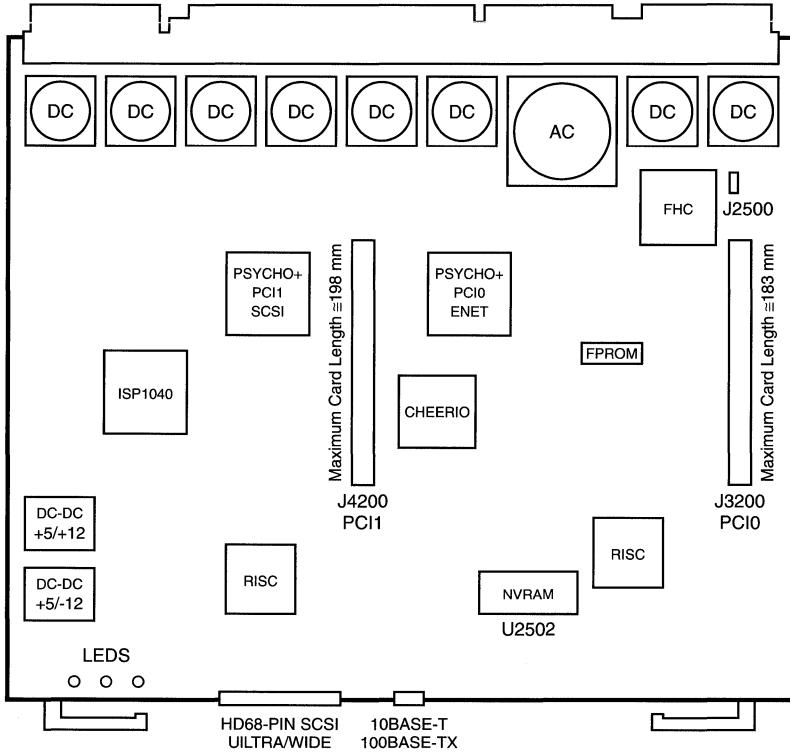
1. *PCI I/O Board Installation*, 805-1372.
2. *Ultra Enterprise 3000 System Manual*, 802-6051.
3. *Ultra Enterprise 4000/5000/6000 System Manual*, 802-3845.
4. *System Flash PROM Programming Guide*, 802-5579.

PCI I/O Board

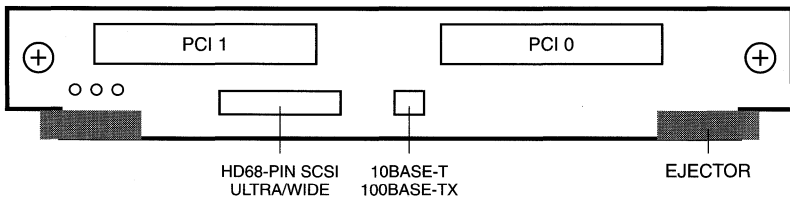
E3000 E4000 E5000 E6000 E3500 E4500 E5500 E6500

Option 2632

| | |
|--|---|
| 501-4881 I/O Type 3 83/90/100MHz Gigaplane | 501-4926 I/O Type 3 FRU w 2 5V Risers |
|--|---|



Backpanel and Connectors



501-4881 501-4926
Jumper Settings

| JUMPER | PINS | SETTING | DESCRIPTION |
|--------|------|---------|-------------|
| J2500 | 1-2 | Out | Inv Adr 1 |

Notes

1. The minimum Ex000 operating system is 2.5.1.
2. The minimum Ex500 OS is 2.5.1 HW: 11/97 or 2.6 HW: 3/98.
3. The Gigaplane runs at the speed of the slowest detected board.
4. Option 2632 includes two 5V Riser Boards and two 3.3V Riser Boards.
5. Up to three PCI I/O Boards are supported in the E3x00.
6. Up to six PCI I/O Boards are supported in the E4x00, E5x00, and E6x00.
7. The following cable types are supported:
 - 50/125 Multimode Fiber up to 2 Kilometers
 - 62.5/125 Multimode Fiber up to 500 meters

FlashPROM Notes

1. Use the FlashPROM Programming Utility to update the FCode.
2. Use the **prom-copy (src dst --)** command to copy a flash PROM.
ok **2 b prom-copy** (copies from board 2 to board 11)
3. Use the **update-proms** command to synchronize the latest version of the flash PROM installed in the system to all boards of the same type.

NVRAM Notes

1. The Clock Board and I/O Board NVRAMs are automatically synchronized when the Clock Board NVRAM matches at least one I/O Board NVRAM.
2. Use one of the following OBP commands to synchronize the Clock Board and I/O Board NVRAM:
 - ok **copy-clock-tod-to-io-boards**
 - ok **copy-io-board-tod-to-clock-tod**

ISP1040 Ultra SCSI Controller Notes

1. The ISP 1040 is an Ultra SCSI controller.
2. Ultra SCSI transfer rates are not supported.
3. Disable Ultra SCSI transfers to the onboard SCSI controller.
4. Refer to *PCI I/O Product Note 805-3364-10* of September 1997.

References

1. *PCI I/O Board Installation*, 805-1372.
1. *Enterprise 3500 System Reference Manual*, 805-2630.
2. *Enterprise 4500/5500/6500 System Reference Manual*, 805-2632.
3. *System Flash PROM Programming Guide*, 802-5579.

PCI Riser Boards

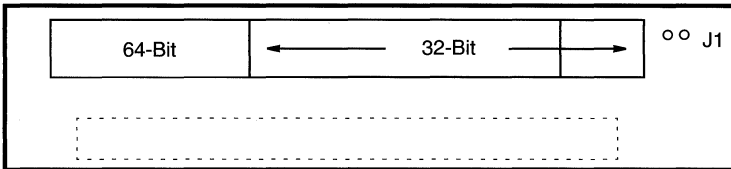
E3000 E4000 E5000 E6000

E3500 E4500 E5500 E6500

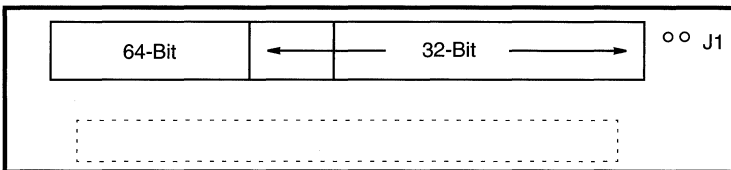
Options 2630 2632

501-4128 501-4169
 3.3V Riser Board 5V Riser Board

501-4128 3.3V 33/66MHz 32/64-Bit Riser



501-4169 5V 33MHz 32/64-Bit Riser



| JUMPER | SETTING | DESCRIPTION |
|--------|---------|---------------|
| J1 | In | JTAG enabled |
| J1 | Out | JTAG disabled |

Notes

1. If JTAG is enabled and the PCI card does not support JTAG, the I/O Board will not be initialized or recognized during POST or boot.
2. The E3000-E6000 CPU/Memory Board requires OBP 3.2 Version 8.
3. Patch 103346-06 includes OBP 3.2 Version 8.
4. Options 2630 and 2632 include two 5V and two 3.3V Riser Boards.
5. Up to three PCI I/O Boards are supported in the E3000.
6. Up to six PCI I/O Boards are supported in the E4000, E5000, and E6000.

References

1. PCI I/O Board Installation, 805-1372-10.
2. BugIDs 4090962 and 4362243.

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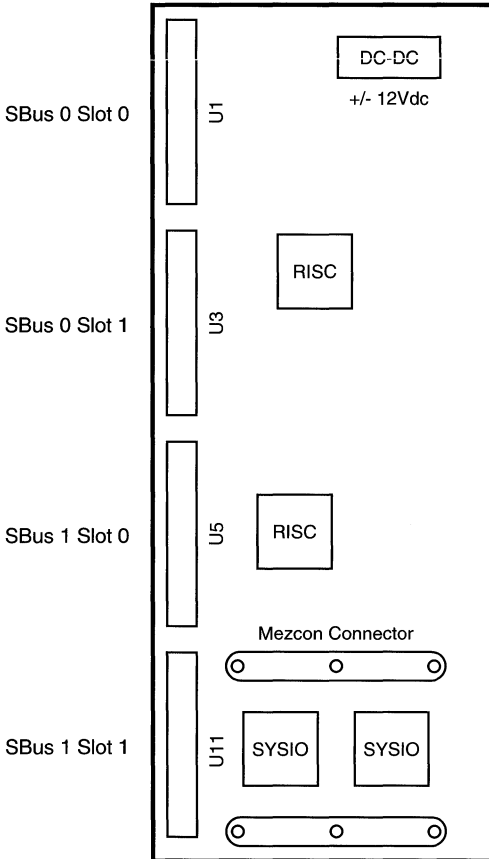
SBus I/O Board

E10000

Option 2730

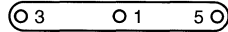
501-4349

501-4478

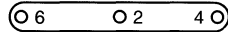


Mezcon Connector Screw tightening sequence used before July 1998.

References
805-0311-10 March 1997
805-2917-10, 11, 12, 13

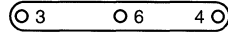


Tighten to 6 in/lb in the sequence shown

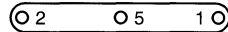


Mezcon Connector Screw tightening sequence used after June 1998.

Reference
805-2917-14 July 1998



Tighten to 6 in/lb in the sequence shown



501-4349

501-4478

Notes

1. Install only one TRI/S. Do NOT install any board in the second slot.
2. Install SCI and UDWIS/S on separate SBus channels.

SBus I/O Board 501-4349 Notes

1. Install FC100/S in Slot 0 and DWIS/S in Slot 1.
2. Install GBE/S 1.x in Slot 0. There are no slot restrictions for GBE/S 2.0.
3. Install SunFastEthernet 2.x in Slot 0 and DWIS/S in Slot 1.
4. Install SunSwift in Slot 0 and DWIS/S in Slot 1.
5. SSP software controls whether the system will boot when SBus boards are installed in Slot 1 of SBus I/O board 501-4349. Problems may occur if SBus slot restrictions are not followed.

| 501-4349 Slot 1 | SSP 3.0 ≤104853-04 | SSP 3.0 ≥104853-05 | SSP 3.1 ≤105684-06 | SSP 3.1 ≥105684-07 | SSP 3.1.1 | SSP 3.2 |
|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------|-----------|
| SunSwift | will not boot | will boot | will not boot | will boot | will boot | will boot |
| FastEthernet | will not boot | will boot | will not boot | will boot | will boot | will boot |
| GBE/S 1.x | will not boot | will boot | will not boot | will boot | will boot | will boot |
| FC100/S | will boot | will boot | will boot | will boot | will boot | will boot |

SBus I/O Board 501-4478 Notes

1. SSP software controls whether the system will boot when SBus boards are installed in Slot 1 of SBus I/O board 501-4478.
2. There are no slot restrictions for FC100/S, GBE/S, SunFastEthernet, or SunSwift when SBus I/O board 501-4478 is used with new versions of SSP software.*

| 501-4478 Slot 1 | SSP 3.0 ≤104853-04 | SSP 3.0* ≥104853-05 | SSP 3.1 ≤105684-06 | SSP 3.1* ≥105684-07 | SSP 3.1.1* | SSP 3.2* |
|--------------------|-----------------------|------------------------|-----------------------|------------------------|------------|-----------|
| SunSwift | will not boot | will boot | will not boot | will boot | will boot | will boot |
| FastEthernet | will not boot | will boot | will not boot | will boot | will boot | will boot |
| GBE/S 1.x | will not boot | will boot | will not boot | will boot | will boot | will boot |
| FC100/S | will boot | will boot | will boot | will boot | will boot | will boot |

References

1. *Ultra Enterprise 10000 System Service Manual*, 805-2917.
2. BugIDs 4046986, 4049704, 4091053, and 4157729.

PCI I/O Board

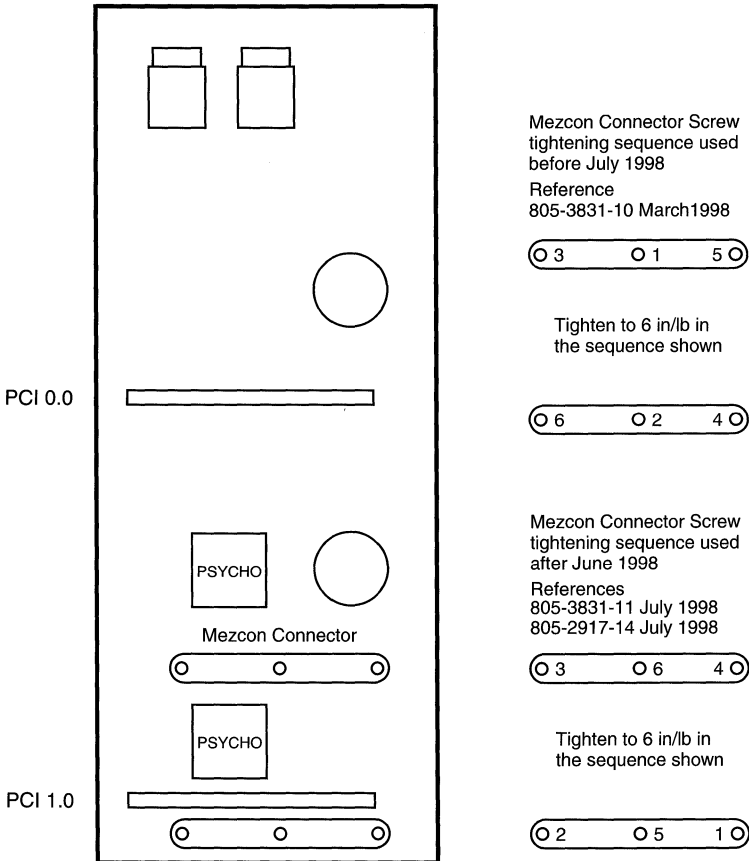
E10000

Option 2731

500-4779
Untested PCI I/O
w/o 5V Riser

501-4830
PCI I/O Assembly
PCI I/O 500-4779
2 5V Riser 501-4778

F501-4830
PCI I/O FRU
Assembly 501-4830
3.3V Riser Kit 565-1474



Notes

1. The minimum operating system is Solaris 2.6 Hardware: 5/98.
2. There is no part number for a tested PCI I/O board without Riser boards.

References

1. *Enterprise 10000 PCI Upgrade Instructions*, 805-3831-11.
2. *Enterprise 10000 System Service Manual*, 805-2917-14.

PCI Riser Boards

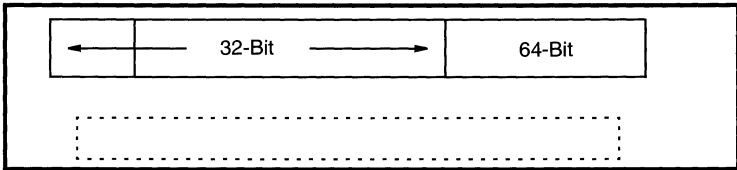
E10000

Option 2731

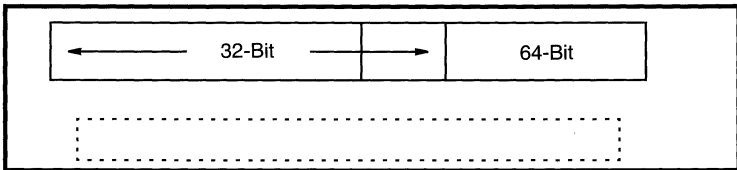
501-4777
3.3V Riser Board

501-4778
5V Riser Board

501-4777 3.3V 33/66MHz 32/64-Bit Riser



501-4778 5V 33MHz 32/64-Bit Riser



Notes

- 1. Riser Kit 565-1474 includes two 501-4777 3.3V Riser Boards.
- 2. Mounting Kit 565-1482 includes:

| PART # | DESCRIPTION |
|----------|-----------------------|
| 240-2391 | PCI Filler Panel (x2) |
| 240-2853 | M3 x 5 Screw (x6) |
| 340-4311 | Mounting Bracket (x2) |
| 340-4419 | Personality Plate |
| 540-3562 | Front Cover |

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CONFIGURATIONS

BACKPLANE

Backplane

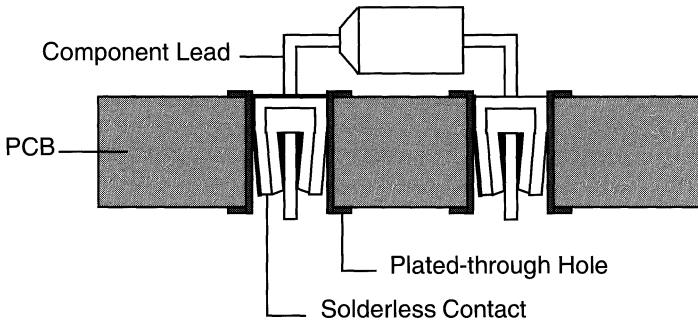
| | |
|--|----|
| Pressfit Backplane Information | 3 |
| Sun-4d Architecture | |
| SS1000/SS1000E 4-Slot Centerplane | 4 |
| SC2000/SC2000E 10-Slot Centerplane | 5 |
| Sun-4u Architecture | |
| E3000 4-Slot Centerplane | 6 |
| E3500 5-Slot Centerplane | 8 |
| E4000/E5000 8-Slot Centerplane | 10 |
| E4500/E5500 8-Slot Centerplane | 12 |
| E6000 16-Slot Centerplane | 14 |
| E6500 16-Slot Centerplane | 16 |
| Sun-4u1 Architecture | |
| E10000 16-Slot Centerplane | 18 |
| E10000 Centerplane Support Board | 20 |
| Netra ct 400 and Netra ct 800 | |
| Netra ct 400 5-Slot cPCI Centerplane | 21 |
| Netra ct 800 8-Slot cPCI Centerplane | 22 |

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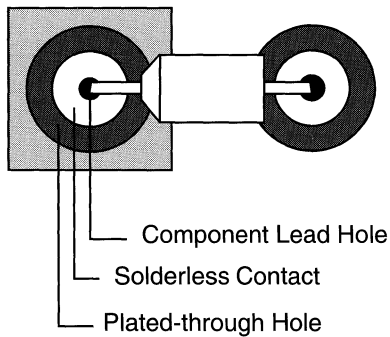
Pressfit Backplane Information

Pressfit Backplane production began in June 1987. Solderless contacts are machine pressed into plated-through holes on printed circuit boards. Component leads installed into the solderless contacts are held in place by a tapered entry, multi-finger contact design.

Cross Sectional View

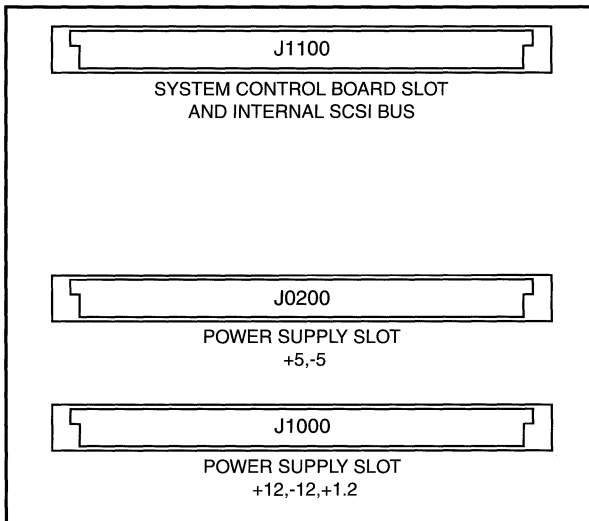
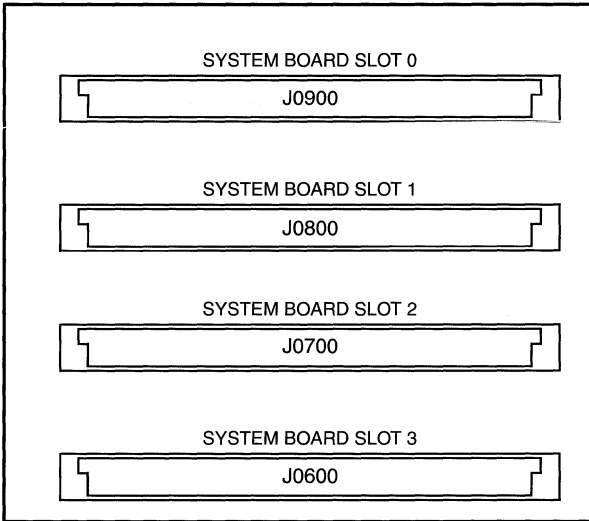


Overhead View of Solderless Contact



4-Slot Backplane

SS1000 SS1000E
501-2021



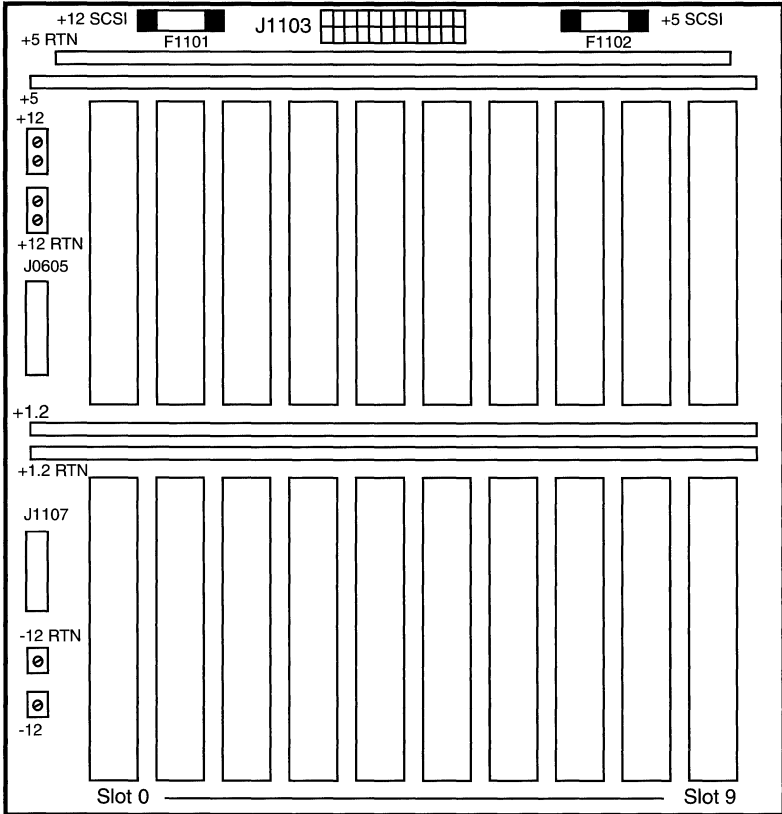
Notes

1. Guide Pins were added to the Backplane in March 1994.
2. Kit 560-2011-01 contains 10 #2-56 screws, 230-1401-01, and 10 Guide Pins, 240-2168-01.

10-Slot Backplane

SC2000 SC2000E

501-1670



Power Connection Side

Notes

1. Use 15A Fuse 140-1019-01 or 140-1035-01.
2. J0605 is connected to Keyswitch Cable 530-1725.
3. J1103 is connected to SCSI Power Cable 530-1752.
4. J1107 is connected to Power Supply Sense Cable 530-1728.
5. Guide Pins were added to the Backplane in December 1993.
6. Kit 560-2011-01 contains 10 #2-56 screws (230-1401-01) and 10 Guide Pins (240-2168-01).

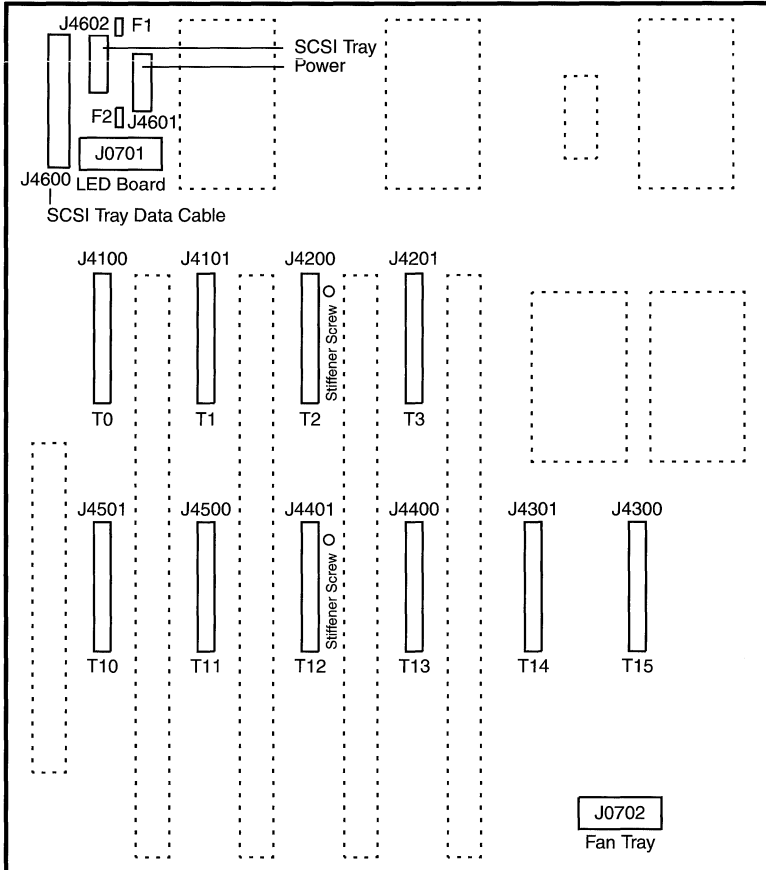
4-Slot Centerplane

E3000

501-2939

83/100MHz Gigaplane

Front View

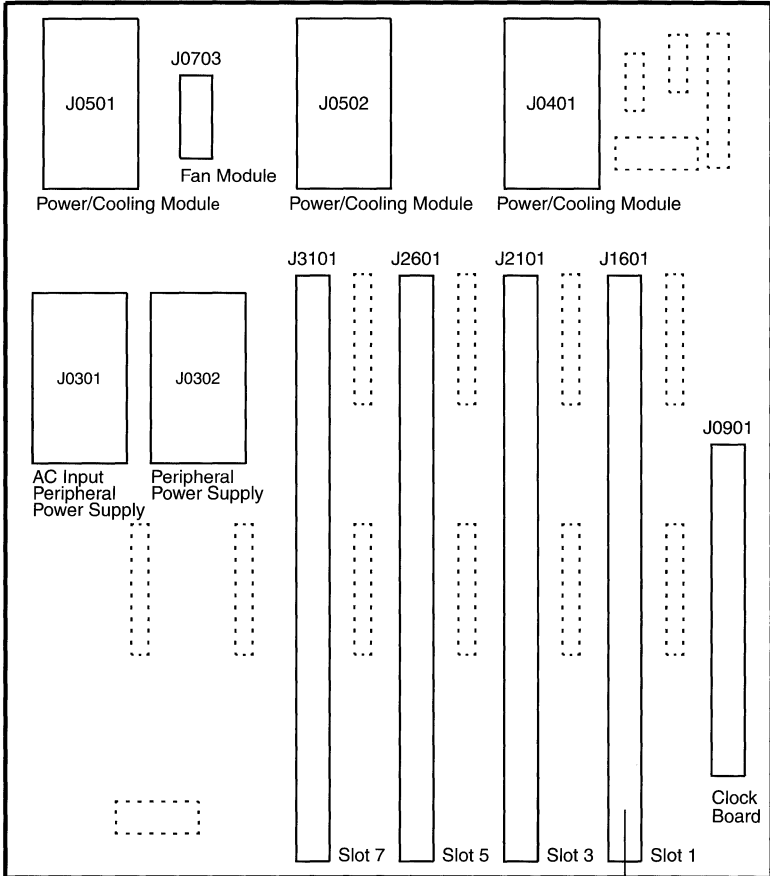


Notes

1. Three screws are used to fasten a vertical stiffener to the backplane.
2. Some disk drives may bottom out against the two stiffener screws next to Slots T2 and T12 if pan-head screw 240-1268 is installed.
3. Replace pan-head screw 240-1268 with button-head screw 240-2033.
4. Do NOT install washers under the stiffener screws.
5. Backplane 501-2939-05 uses button-head screw 240-2033.
6. Screw 240-1268 was replaced with screw 240-2033 in November 1997.

501-2939

Rear View



A terminated I/O Board is required in Slot 1 to access the internal SCSI Bus

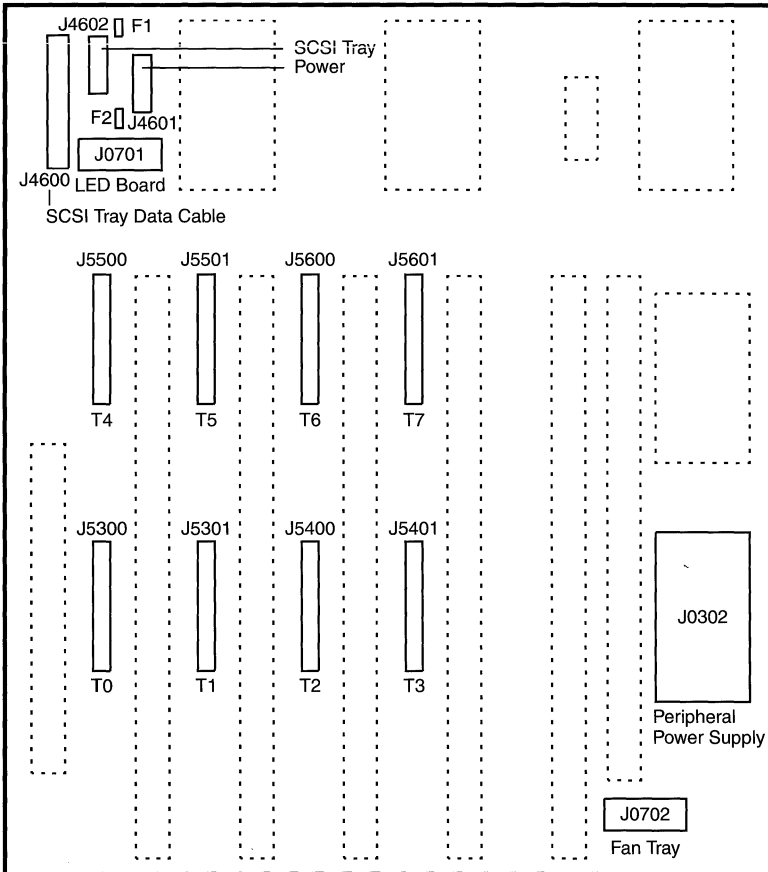
5-Slot Centerplane

E3500

501-4799

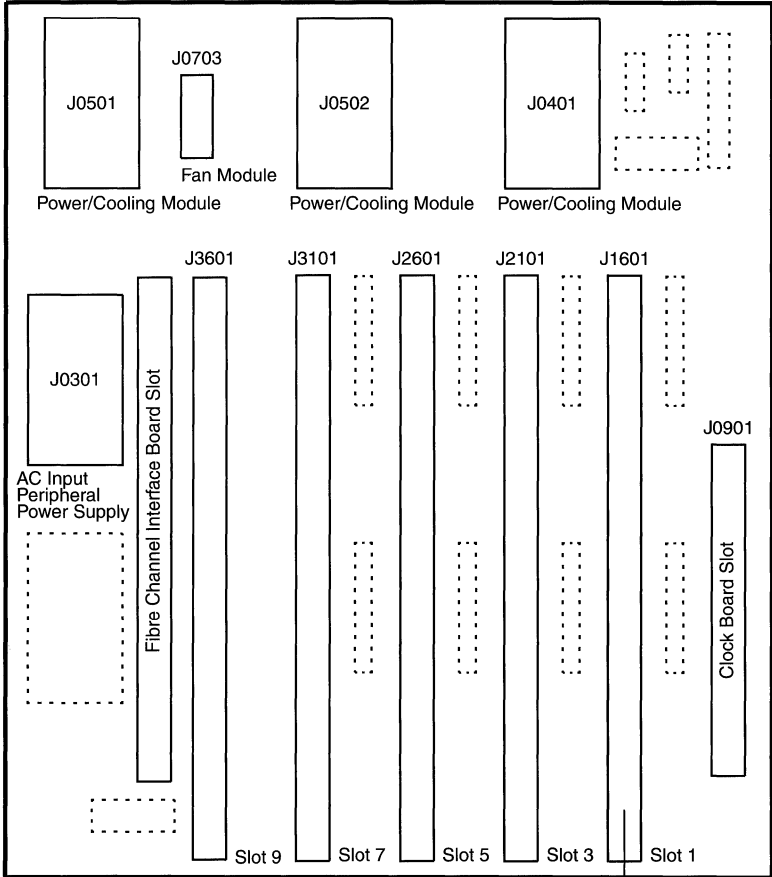
83/100MHz Gigaplane

Front View



501-4799

Rear View



A terminated I/O Board is required in Slot 1 to access the internal SCSI Bus

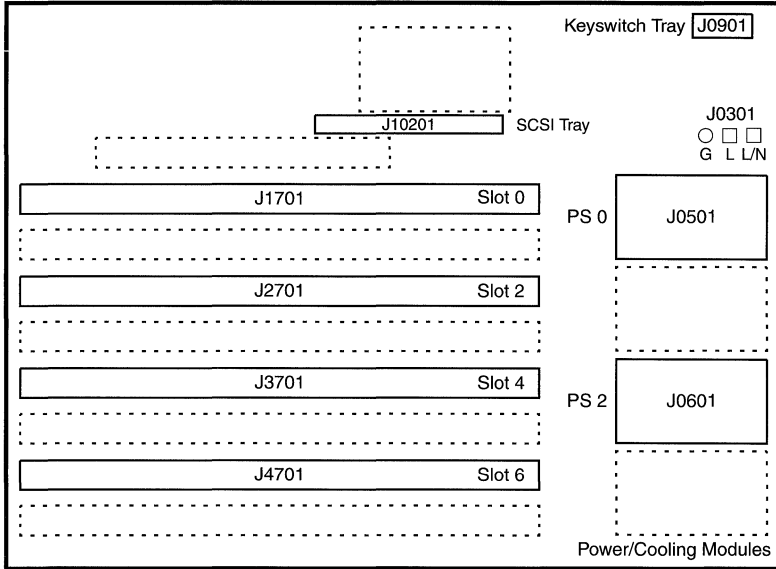
8-Slot Centerplane

E4000 E5000

501-2978

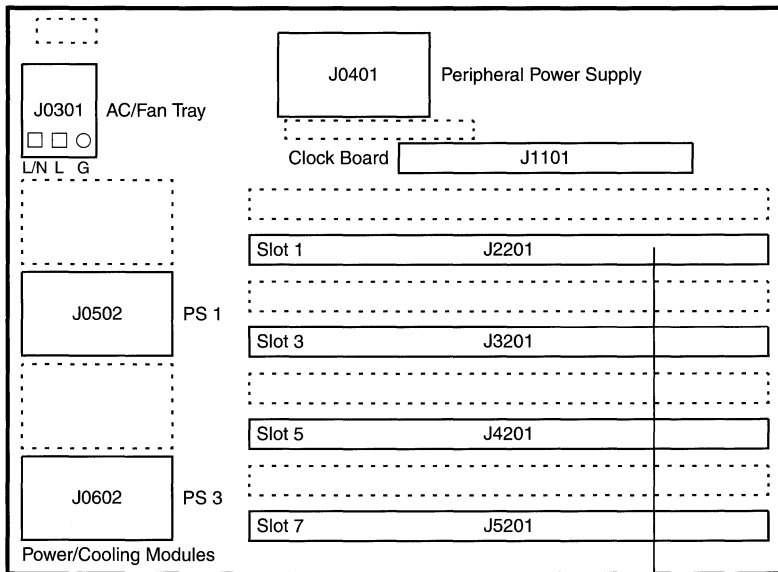
83MHz Gigaplane

Front View



501-2978

Rear View



A terminated I/O Board is required in Slot 1 to access the internal SCSI Bus

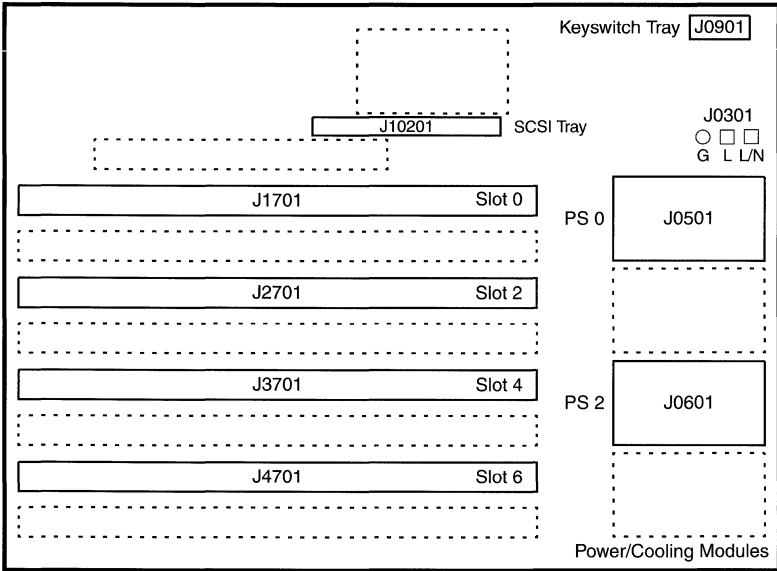
8-Slot Centerplane

E4500 E5500

501-4944

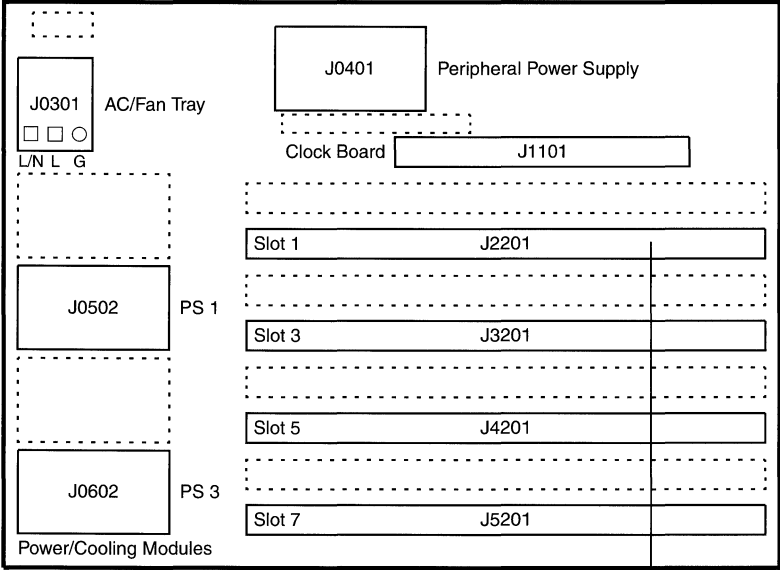
83/100MHz Gigaplane

Front View



501-4944

Rear View



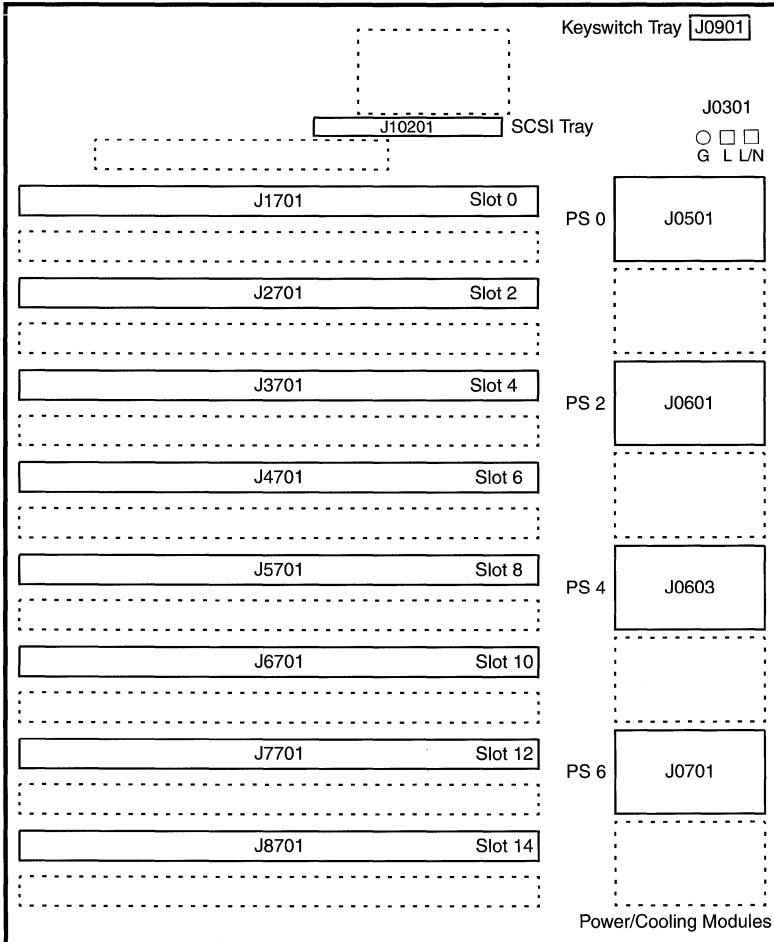
A terminated I/O Board is required in Slot 1 to access the internal SCSI Bus

16-Slot Centerplane E6000

501-2699
83MHz Gigaplane
Pre-FCS

501-3050
83MHz Gigaplane

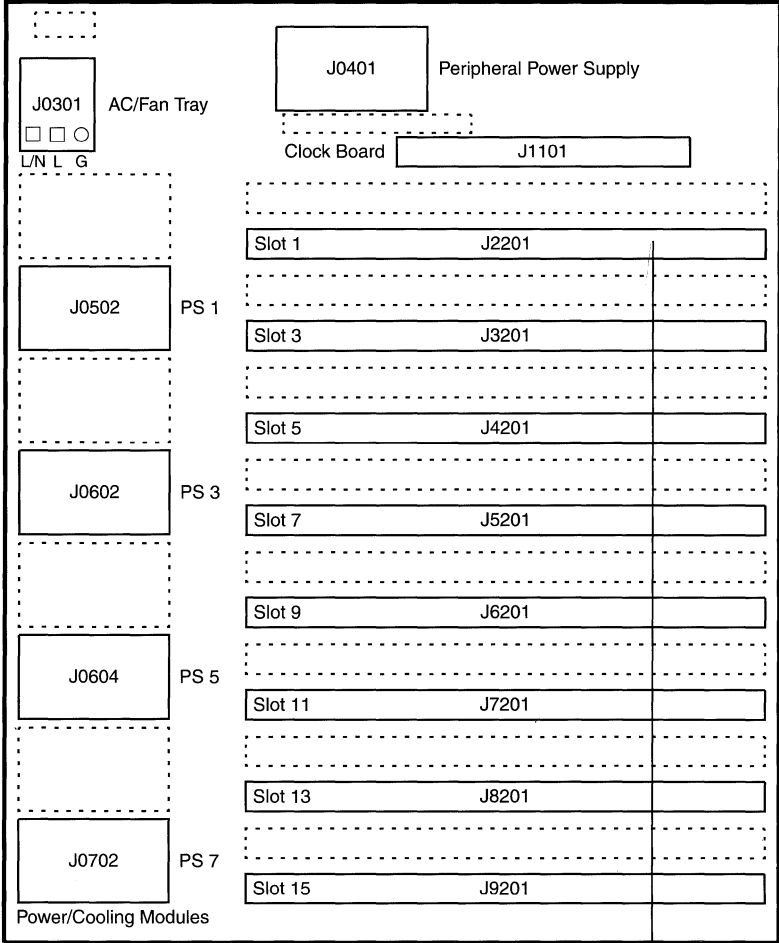
Front View



501-2699

501-3050

Rear View



A terminated I/O Board is required in Slot 1 to access the internal SCSI Bus

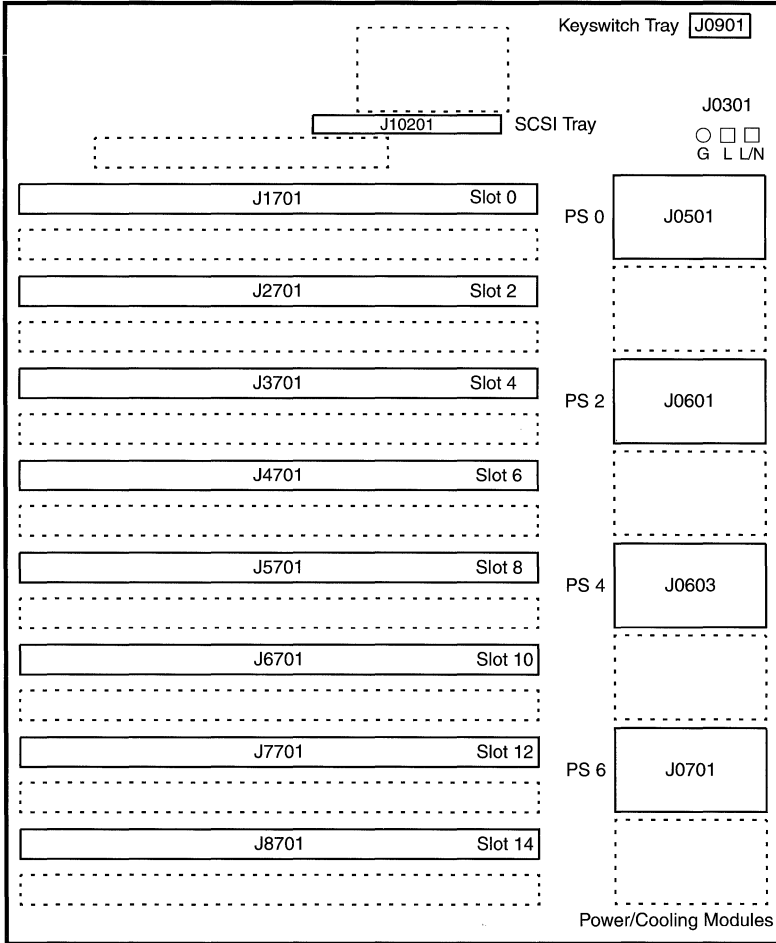
16-Slot Centerplane

E6500

501-5010

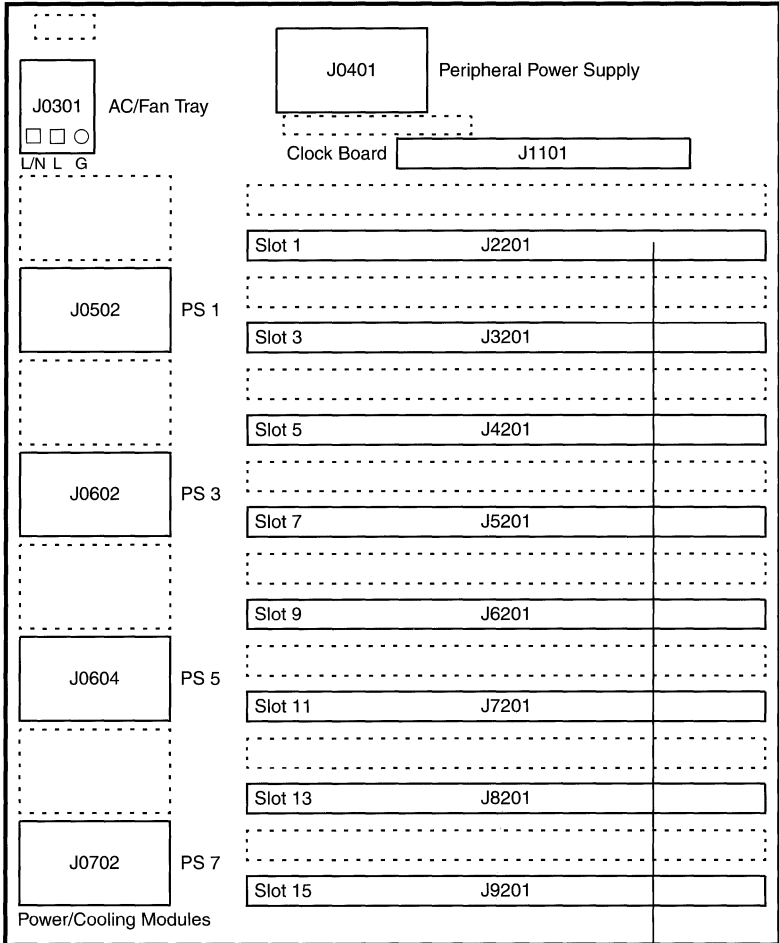
83/90MHz Gigaplane

Front View



501-5010

Rear View



A terminated I/O Board is required in Slot 1 to access the internal SCSI Bus

16-Slot Centerplane

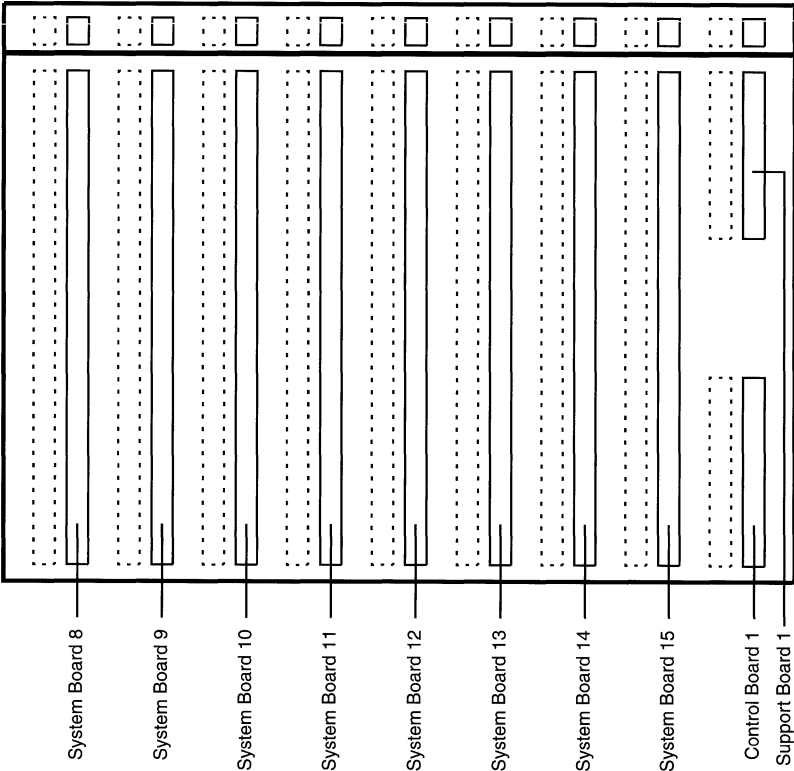
E10000

500-4844
Logic Centerplane
Untested

500-4845
Power Centerplane
Untested

501-4348
500-4844 + 500-4845
Assembly/FRU

Front View



Notes

1. Thermal calibration is required if the Centerplane is replaced.
2. Patch 106465-04 (SSP 3.1), 108080-02 (SSP 3.1.1), 109678-01 (SSP 3.2) or 109634-01 (SSP 3.3) is required when ST Micro EEPROM M93S56-W is installed on the centerplane.
3. Centerplanes with the M93S56-W began shipping in June 2000.

References

1. *E10000 System Component Replacement Guide*, 805-0311.
2. *E10000 System Service Manual*, 805-2917.
3. *E10000 Centerplane Installation*, 806-5977.

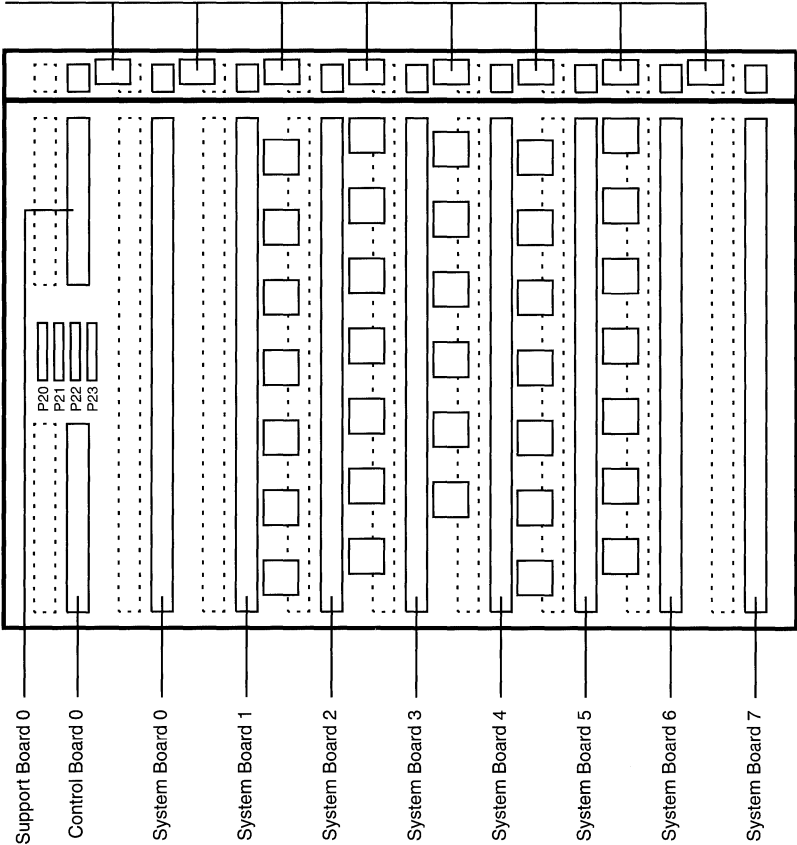
500-4844

500-4845

501-4348

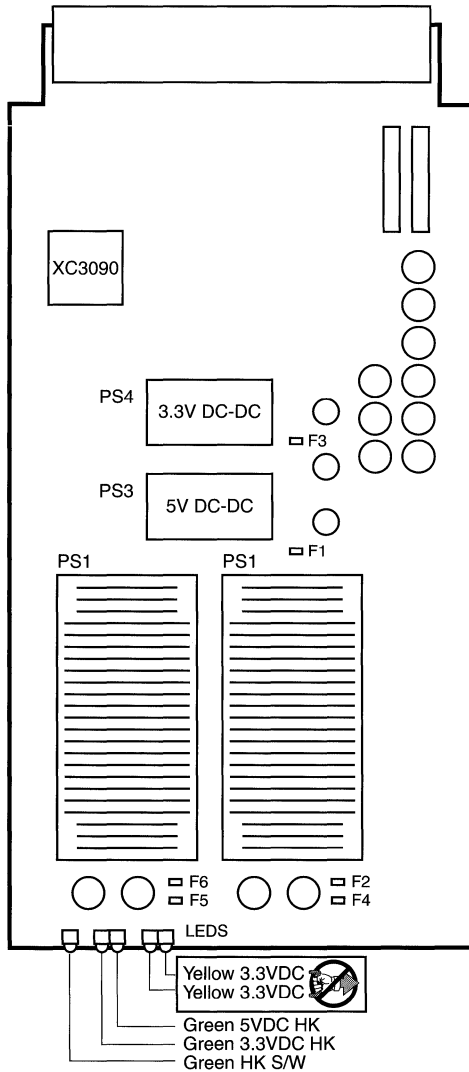
Rear View

Wire Harness 530-2396



Centerplane Support Board

E10000
501-4346



Note
Do NOT remove the Centerplane Support Board if the Yellow LEDs are ON.

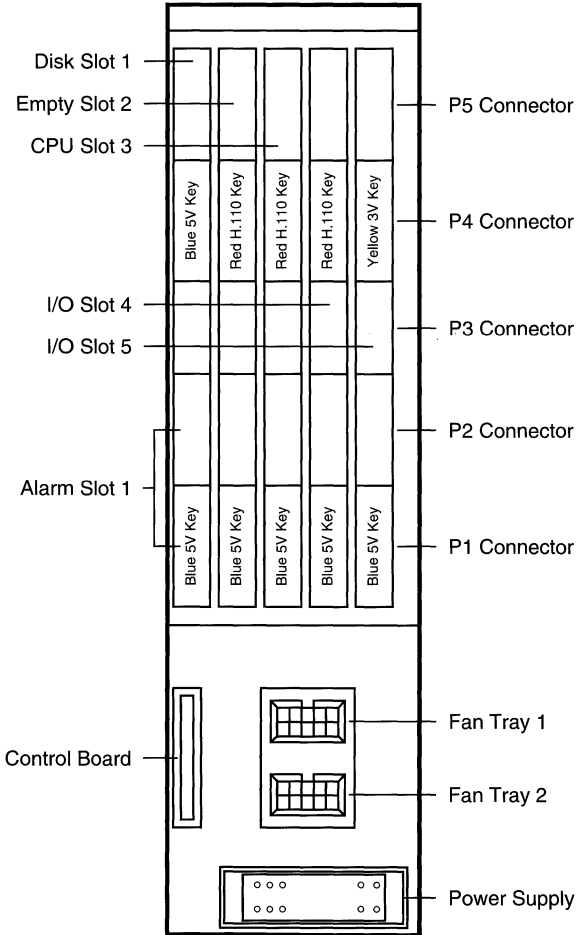
- References**
1. *E10000 System Component Replacement Guide*, 805-0311.
 2. *E10000 System Service Manual*, 805-2917.

5-Slot cPCI Centerplane

Netra ct 400

501-5621
Backplane

540-4569
Drawer Assembly/FRU



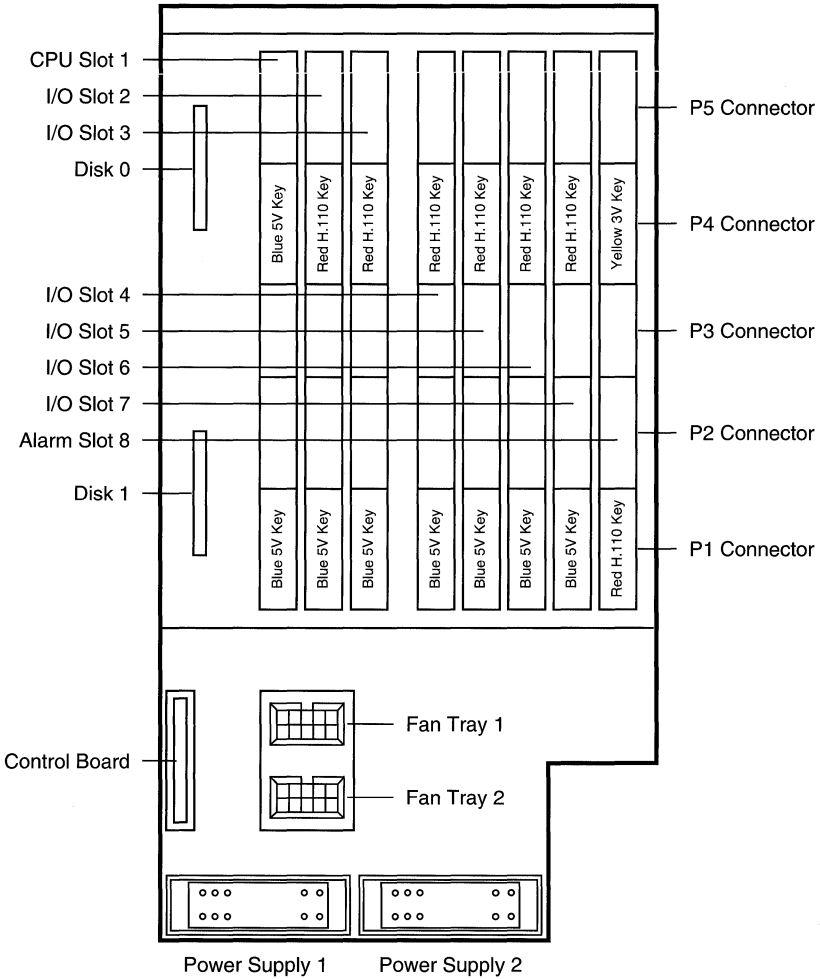
Reference: *Netra ct Server Service Manual*, 806-3296.

8-Slot cPCI Centerplane

Netra ct 800

501-5617
Backplane

540-4568
Drawer Assembly/FRU



Reference: *Netra ct Server Service Manual*, 806-3296.