7 Install Heatsink(s)

For an Intel® Server Chassis, choose the correct heatsink for your chassis:
- Intel® Server Chassis SC5400: 2U passive heatsink
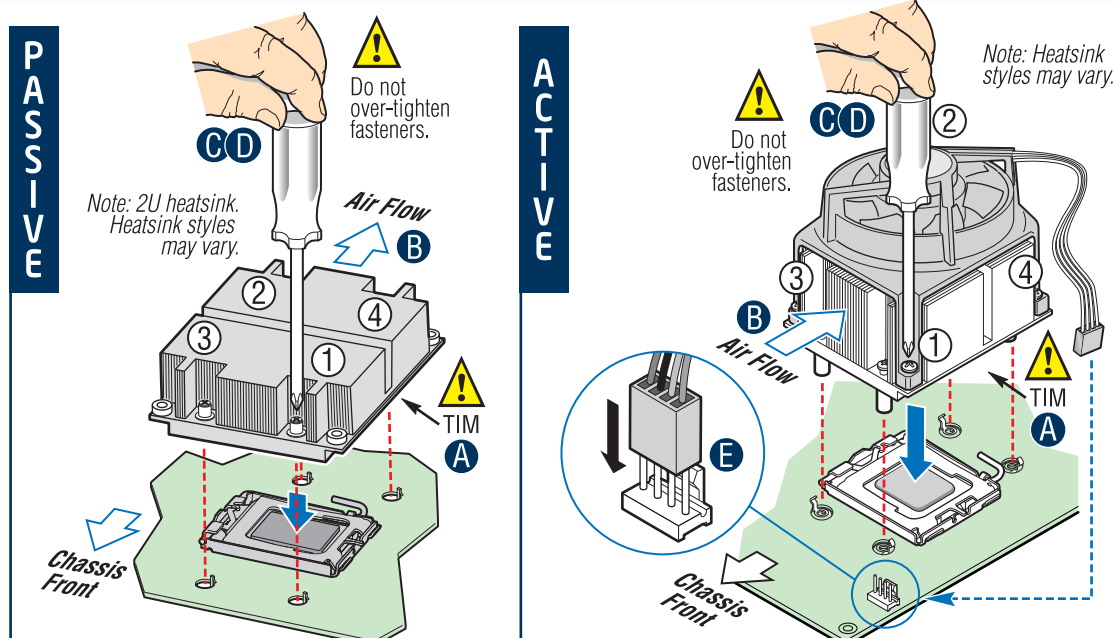- Intel® Entry Server Chassis SC5299-E: Active heatsink

For a non-Intel chassis, see the documentation accompanying your chassis.

⚠ CAUTION: The heatsink has thermal interface material (TIM) on the underside of it. Use caution so that you do not damage the thermal interface material. *Use gloves to avoid sharp edges.*

A If a protective film covers the thermal interface material (TIM) on the underside of the heatsink, remove the protective film.

B Align heatsink fins to the front and back of the chassis for correct airflow. Airflow goes from front-to-back of chassis.

Each heatsink has four captive fasteners and should be tightened as follows:
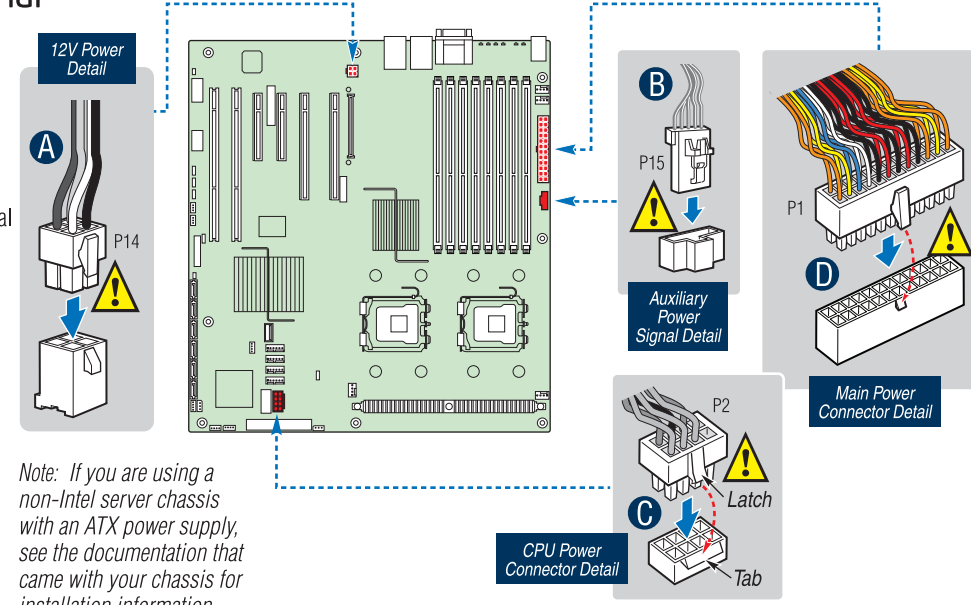
C Using a #2 Phillips* screwdriver, finger-tighten each fastener diagonally, according to the white-circled numbers shown in the figures at the right.

D Securely re-tighten each fastener again in the same order as performed in Step C.

E Attach fan power cable to server board as shown *(active heatsink only)*.

PASSIVE

Do not over-tighten fasteners.
Note: 2U heatsink. Heatsink styles may vary.
Air Flow
Chassis Front
TIM

ACTIVE

Note: Heatsink styles may vary.
Do not over-tighten fasteners.
Air Flow
Chassis Front
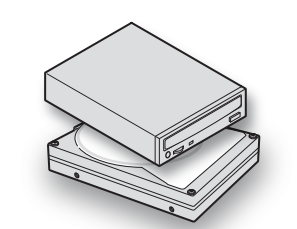TIM

8 Connect Internal Power Cables

A Attach the 12V power connector to the server board.

B Attach the auxiliary power signal connector to the server board.

C Attach the CPU power connector to the server board.

D Attach the main power connector to the server board.

⚠ CAUTION: Note the location of the latch on each power cable connector and align it with the matching tab on each server board socket.
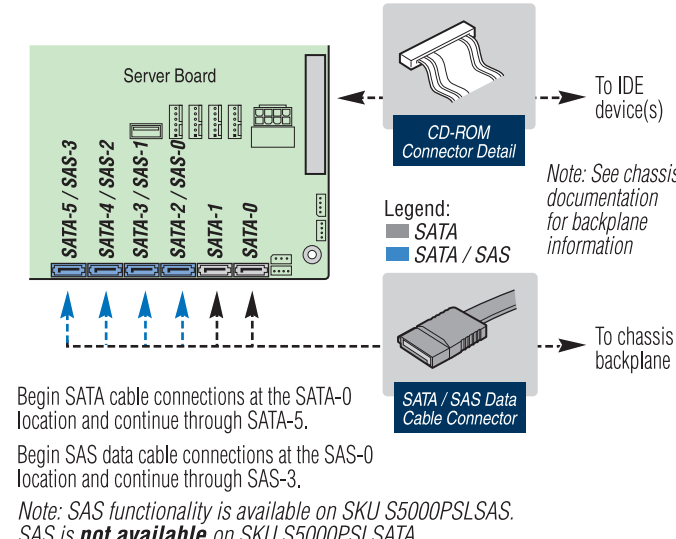
Note: If you are using a non-Intel server chassis with an ATX power supply, see the documentation that came with your chassis for installation information.

12V Power Detail
P15
P14
Auxiliary Power Signal Detail
P1
Main Power Connector Detail
P2
Latch
Tab
CPU Power Connector Detail

9 Install Optical Drive and Hard Drive(s)

See the documentation that came with your server chassis for drive installation instructions.

## 10 Connect Drive Data Cables

Server Board
CD-ROM Connector Detail
To IDE device(s)

Note: See chassis documentation for backplane information

Legend:
■ SATA
■ SATA / SAS

SATA / SAS Data Cable Connector
To chassis backplane

Begin SATA cable connections at the SATA-0 location and continue through SATA-5.

Begin SAS data cable connections at the SAS-0 location and continue through SAS-3.

*Note: SAS functionality is available on SKU S5000PSLSAS. SAS is not available on SKU S5000PSLSATA.*

SATA-5 / SAS-3, SATA-4 / SAS-2, SATA-3 / SAS-1, SATA-2 / SAS-0, SATA-1, SATA-0

11 Connect Intrusion Switch Cable (non-Intel chassis only) and Front Panel

Intrusion Switch Connector
Front Panel Ribbon Cable Connector
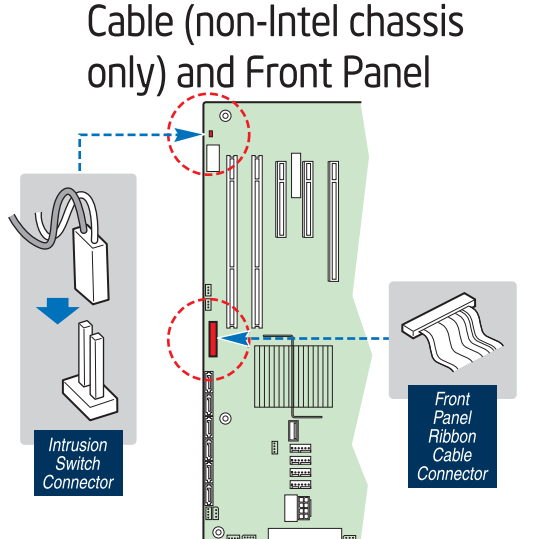
12 Connect Serial B / EMP and USB Cables (optional)

Serial B / EMP
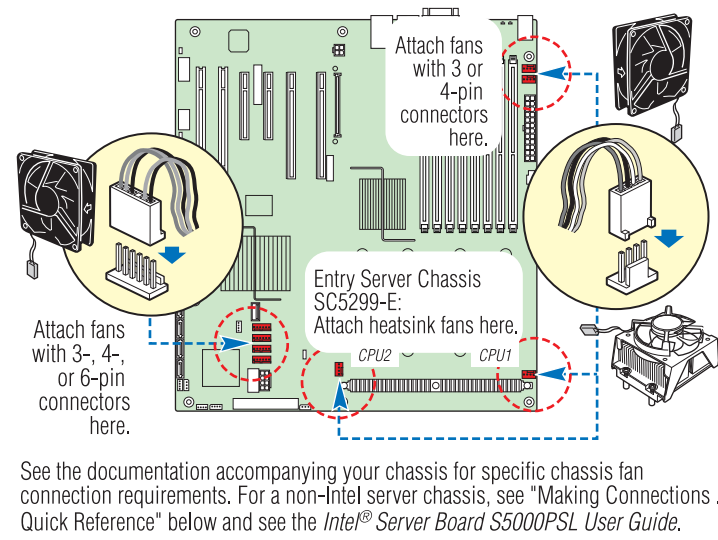Serial / USB Conn. Detail
USB
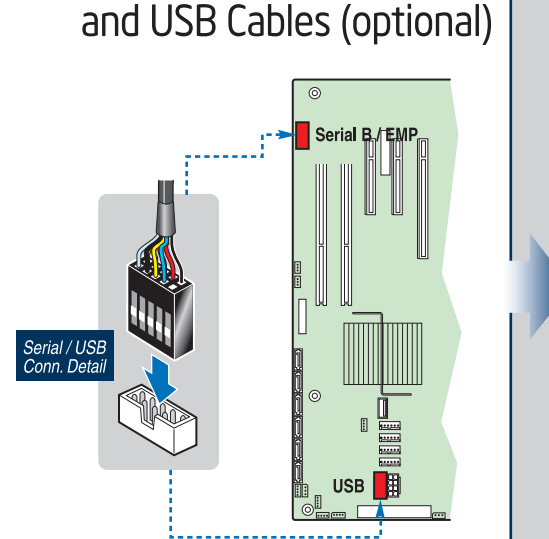
## 13 Install Intel® Remote Management Module and RMM NIC (optional)
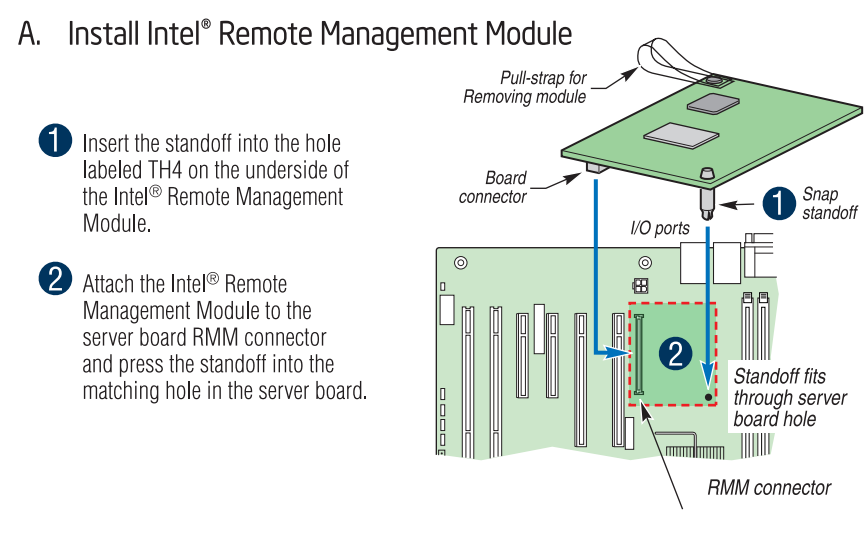
A. Install Intel® Remote Management Module

1 Insert the standoff into the hole labeled TH4 on the underside of the Intel® Remote Management Module.

2 Attach the Intel® Remote Management Module to the server board RMM connector and press the standoff into the matching hole in the server board.

Pull-strap for Removing module
Board connector
I/O ports
Snap standoff
Standoff fits through server board hole
RMM connector

B. Install RMM NIC

1 Attach the module to the add-in card bracket as shown.

Note: The RMM NIC installs in the same manner as an add-in card. See your chassis documentation for add-in card installation procedures.

2 Install the RMM NIC into a chassis add-in card slot near the server board RMM NIC header.

3 Attach the RMM NIC ribbon cable as shown. Make sure each connector end is securely seated.

RMM NIC header
Ribbon Cable
RMM NIC server board header
Server Board

14 Connect Fan Cables

Attach fans with 3 or 4-pin connectors here.
Attach fans with 3-, 4-, or 6-pin connectors here.
Entry Server Chassis SC5299-E: Attach heatsink fans here.
CPU2   CPU1

See the documentation accompanying your chassis for specific chassis fan connection requirements. For a non-Intel server chassis, see "Making Connections ... Quick Reference" below and see the *Intel® Server Board S5000PSL User Guide.*

15 Install RAID Adapter Card
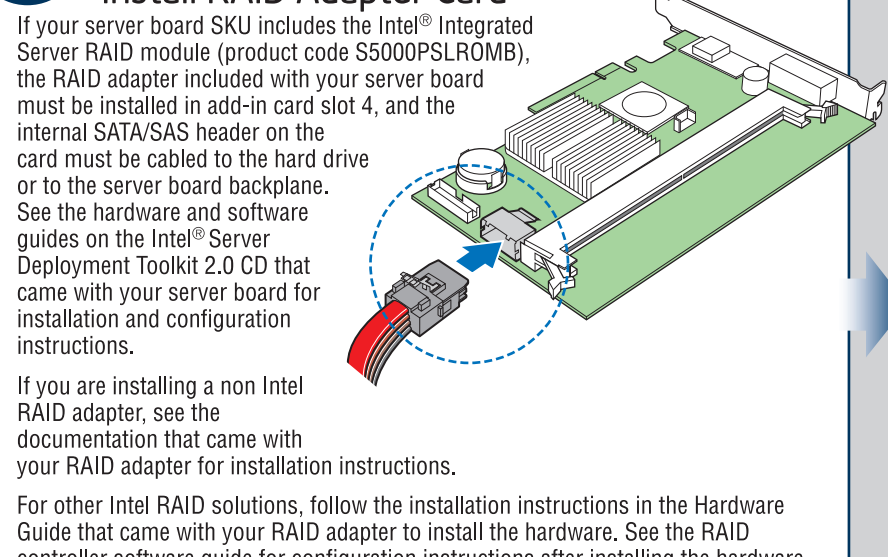
If your server board SKU includes the Intel® Integrated Server RAID module (product code S5000PSLROMB), the RAID adapter included with your server board must be installed in add-in card slot 4, and the internal SATA/SAS header on the card must be cabled to the hard drive or to the server board backplane. See the hardware and software guides on the Intel® Server Deployment Toolkit 2.0 CD that came with your server board for installation and configuration instructions.

If you are installing a non Intel RAID adapter, see the documentation that came with your RAID adapter for installation instructions.

For other Intel RAID solutions, follow the installation instructions in the Hardware Guide that came with your RAID adapter to install the hardware. See the RAID controller software guide for configuration instructions after installing the hardware.

16 Install Add-in Card(s) (optional)

See the documentation that came with your server chassis for add-in card installation instructions.
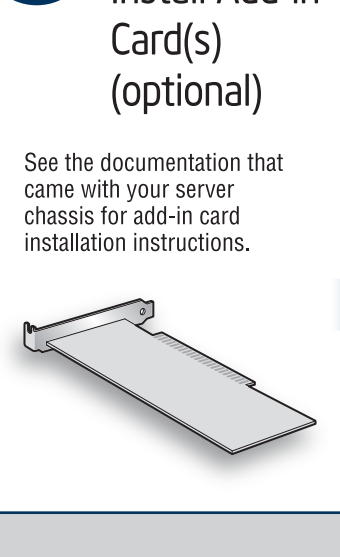
17 Finish Up
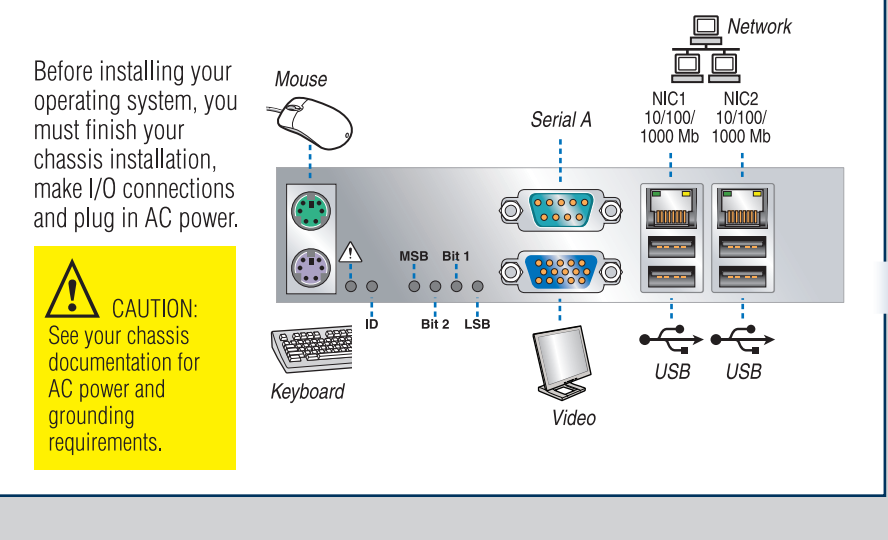
Before installing your operating system, you must finish your chassis installation, make I/O connections and plug in AC power.

⚠ CAUTION: See your chassis documentation for AC power and grounding requirements.

Mouse
Keyboard
MSB   Bit 1
ID   Bit 2   LSB
Serial A
Network
NIC1 10/100/1000 Mb
NIC2 10/100/1000 Mb
USB   USB
Video

Reference

Common Problems and Solutions

For a list of hardware components that have been tested with this system, see: http://support.intel.com/support/motherboards/server/S5000PSL/

The system does not boot or show video at power-on.
- Check that both and the P12V4 and the +12V CPU power connectors are plugged in. Without these connections, the server cannot boot.
- Beep code 4-3-2-1 means you have unrecognized or bad memory. Replace the faulty FBDIMM(s).
- Remember, all DIMMs must be:
  - FBDIMM 533/667-MHz compliant 240-pin DIMMs
  - The same speed.
  - From the same manufacturer.
  - Installed beginning with DIMM A1.
  - Your power supply must provide a minimum of 550 Watts with 3 Amps standby current, which complies with the SSI EPS 12V specification.

The system sometimes works, but is exhibiting erratic behavior.
- This is typically the result of using an under-rated power supply. Make sure you are using at least a 550 Watt power supply.
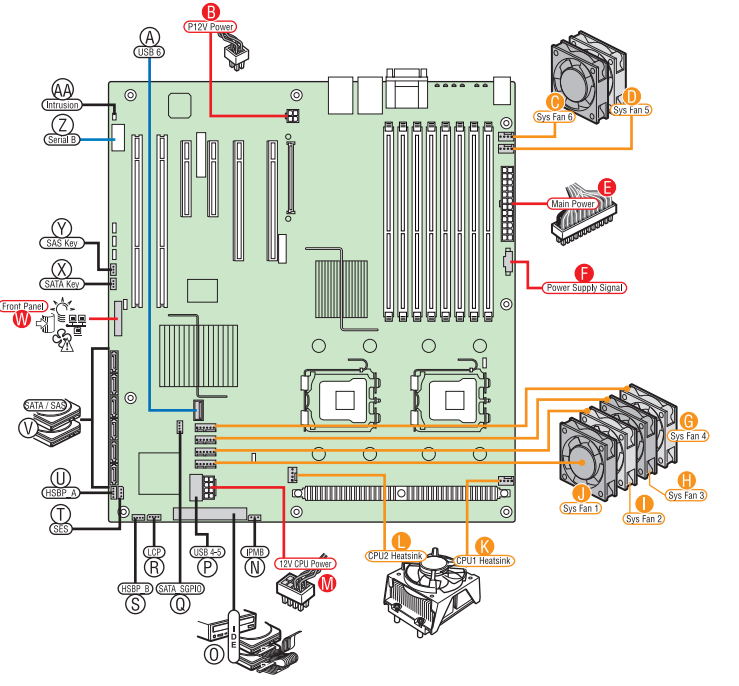
18 Install Software

- BIOS, Drivers, and Operating System Installation

A. Confirm BIOS, BMC, and FRUSDR Versions: Look on the Server/System Management screen in the BIOS Setup Utility to determine the installed BIOS, BMC firmware, and FRUSDR versions. Compare these to the versions at: http://support.intel.com/support/motherboards/server/S5000PSL If new versions are available, update the BIOS, BMC firmware, and FRUSDR on your server. See the User Guide on the Intel® Server Deployment Toolkit 2.0 CD for update instructions.

B. Configure your RAID Controller: Use the instructions provided with the RAID controller.

C. Install your Operating System: Use the instructions provided with the RAID controller and with the operating system.

D. Install Operating System Drivers: With the operating system running, insert the Intel® Server Deployment Toolkit 2.0 CD. If using a Microsoft* Windows* operating system, the installer will autorun and allow you to select the appropriate drivers to install. On other operating systems, browse the CD folders to locate and install the driver files.

E. Install Intel® Remote Management Software: If you installed the Intel® Remote Management Module and the RMM NIC, download and install the Intel Remote Manamgement Software from http://support.intel.com/support/motherboards/server/S5000PSL

F. Install Intel® SMaRT Tool (optional): With the operating system running, insert the Intel® Server Deployment Toolkit 2.0 CD. The Express Installer will autorun. Click Intel® SMaRT Tool at the left side of the screen. Follow the on-screen instructions. For information about Intel® SMaRT Tool, see http://developer.intel.com/design/servers/smarttool/index.htm.

Making Connections to the Server Board ... *Quick Reference*

Required Connections for Selected Chassis

		SC5400	SC5299-E
B.	P12V4 Power Connector	■	■
E.	Main Power Connector	■	■
F.	Power Supply Signal Connector	■	■
M.	+12V CPU Power Connector	■	■
W.	Front Panel Connector	■	■

CPU/System Fan Connections for Selected Chassis

		SC5400 LX	SC5400 BRP, Base	SC5299-E
C.	System Fan 6	No connection	No connection	120 mm fan
D.	System Fan 5	No connection	No connection	No connection
G.	System Fan 4	120 mm fan	No connection	No connection
H.	System Fan 3	120 mm fan	120 mm fan	No connection
I.	System Fan 2	92 mm fan	No connection	No connection
J.	System Fan 1	92 mm fan	92 mm fan	92 mm fan only if hot-swap bay is installed
K.	CPU 1 Heatsink Fan	No connection	No connection	CPU1 fan
L.	CPU 2 Heatsink Fan *only if CPU2 is installed*	No connection	No connection	CPU2 fan

Connectors in the diagram that are shown with white-circled callout letters are optional.

Note: Not all optional or available connections are shown in this diagram. Refer to the Reference section of this Quick Start User's Guide, your Intel® Server Board S5000PSL User Guide, and your server chassis documentation for additional connection information.

Note: SAS connections are available on only on SKU S5000PSLSAS. SAS connections are not available on SKU S5000PSLSATA.

Intel® Server Board S5000PSL Component Layout

A. PCI-X* 64-100 Slot 1
B. PCI-X 64-100/133 Slot 2
C. PCI Express* x4 Slot 3
D. RMM_NIC header
E. PCI Express x4 Slot 4 (ROMB)
F. PCI Express x8 Slot 5
G. PCI Express x8 Slot 6
H. CMOS Battery
I. P12V4
J. RMM Connector
K. Back Panel I/O Ports
L. Diagnostic LEDs
M. ID LED
N. System Status LED
O. System Fan 6
P. System Fan 5
Q. Main Power Connector
R. Auxiliary Signal Conn.
S. DIMM Sockets
T. CPU 1
U. CPU 2
V. CPU Fan 2
W. CPU Fan 1
X. CPU Voltage Regulator
Y. System Fan 4
Z. System Fan 3
AA. IPMB
BB. System Fan 2
CC. System Fan 1
DD. CPU Power
EE. USB 4-5
FF. IDE Connector
GG. SATA_SGPIO (see note)
HH. Intel Local Control Panel Header
II. HSBP_B Header
JJ. SAS_SES2 (see note)
KK. HSBP_A Header
LL. SATA 0
MM. SATA 1
NN. SATA 2 / SAS 0 (see note)
OO. SATA 3 / SAS 1 (see note)
PP. SATA 4 / SAS 2 (see note)
QQ. SATA 5 / SAS 3 (see note)
RR. USB Port 6
SS. Front Panel Header
TT. SATA RAID 5 Key
UU. SAS RAID 5 Key (see note)
VV. Serial B / EMP
WW. Intrusion Header
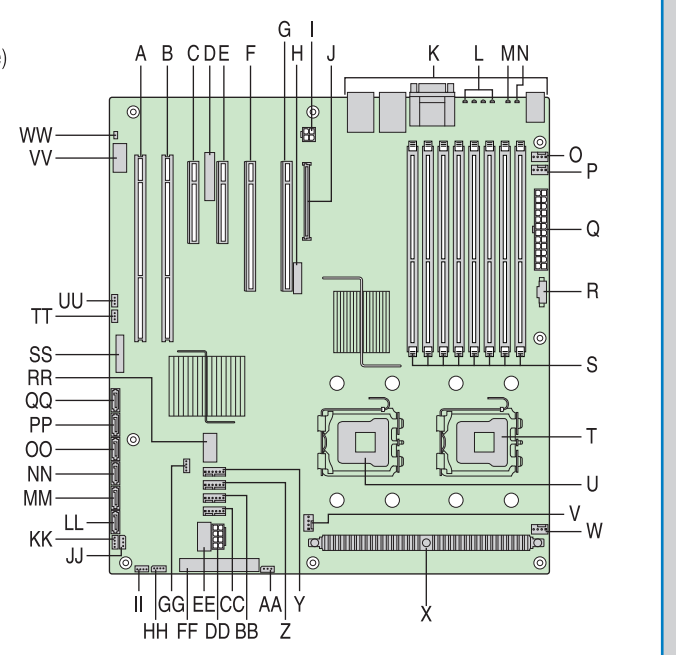
Notes: SAS connections are available on SKU S5000PSLSAS. SAS connections are not available on SKU S5000PSLSATA. SATA_SPGIO (GG) is available on SATA and ROMB SKUs only.

Accessories and Order Codes

Intel® Remote Management Module	AXXRMM
Hard Drive Power Connector Converter Cable	ASLPWRCABLE
Intel® RAID Activation Key (Hardware RAID 0, 1, 5, 10, 50)	AXXRAK18E
Intel® RAID Activation Key (SATA / SAS Software RAID 5)	AXXRAKSW5
SAS Cable for SAS ROMB Card	FXXLPSASCBL
Intel® RAID Smart Battery	AXXRSBBU3
Intel® Server Chassis SC5400 Base	SC5400BASE
Intel® Server Chassis SC5400 BRP	SC5400BRP
Intel® Server Chassis SC5400 LX	SC5400LX
Intel® Entry Server Chassis SC5299-E DP	SC5299DP
Intel® Entry Server Chassis SC5299-E BRP	SC5299BRP
Intel® Entry Server Chassis SC5299-E Base	SC5299BASE

A complete list of accessories and spares can be found at: www.intel.com/go/serverbuilder

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