SUPERSERVER
SYS-741GE-TNRT

USER'S MANUAL

Revision 1.0b

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Manual Revision 1.0b

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Preface

About this Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the server. Installation and maintenance should be performed by experienced technicians only.

Please refer to the SYS-741GE-TNRT server specifications page on our website for updates on supported memory, processors and operating systems (http://www.supermicro.com).

Notes

For your system to work properly, please follow the links below to download all necessary drivers/utilities and the user's manual for your server.

- Supermicro product manuals: http://www.supermicro.com/support/manuals/

- Product drivers and utilities: https://www.supermicro.com/wdl/

- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm

If you have any questions, please contact our support team at:
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This manual may be periodically updated without notice. Please check the Supermicro website for possible updates to the manual revision level.

Secure Data Deletion

A secure data deletion tool designed to fully erase all data from storage devices can be found on our website: https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Lot9_Secure_Data_Deletion_Utility/

Warnings

Special attention should be given to the following symbols used in this manual.

Warning! Indicates important information given to prevent equipment/property damage or personal injury.

Warning! Indicates high voltage may be encountered when performing a procedure.

Contents

Chapter 3 Maintenance and Component Installation

Chapter 7 Troubleshooting and Support

Chapter 1

Introduction

1.1 Overview

This chapter provides a brief outline of the functions and features of the SuperServer SYS-741GE-TNRT. It is based on the X13DEG-QT motherboard and the CSE-749TS-R2K05BP chassis.

The following provides an overview of the specifications and capabilities.

System Overview	
Chassis	CSE-749TS-R2K05BP
Motherboard	X13DEG-QT
Processor Support	5th/4th Gen Intel® Xeon® Scalable processors
Memory	Sixteen DIMM slots, up to 4TB ECC LRDIMM, DDR5 5600 MT/s
Drive Support	Four NVMe/SATA hot-swap 3.5"/2.5" drive bays (NVMe from CPU1) Four NVMe/SATA hot-swap 3.5"/2.5" drive bays (NVMe from CPU2)
Expansion Slots	Six PCIe 5.0 x16 slots (P1 SLOT2/4/10, P2 SLOT5/7/9/11)
I/O Ports	Front: Two USB 3.0 Type A ports One line-out port One microphone port Rear: One COM port One dedicated BMC LAN port Three Type A ports One Type C port Two 10G LAN ports One VGA
System Cooling	Five heavy duty fans
Power	Redundant 2000W Titanium level (96%) Optional Redundant 2600W Titanium level (96%)
Form Factor	Tower Rackmount(4U Rackable)

A Quick Reference Guide can be found on the product page of the Supermicro website.

The following safety models associated with the SYS-741GE-TNRT have been certified as compliant with UL or CSA: 749-R20X13, 749-R26X13, 749-20, 749-26.

1.2 System Features

The following views of the system display the main features. Refer to Appendix B for additional specifications.

Front View
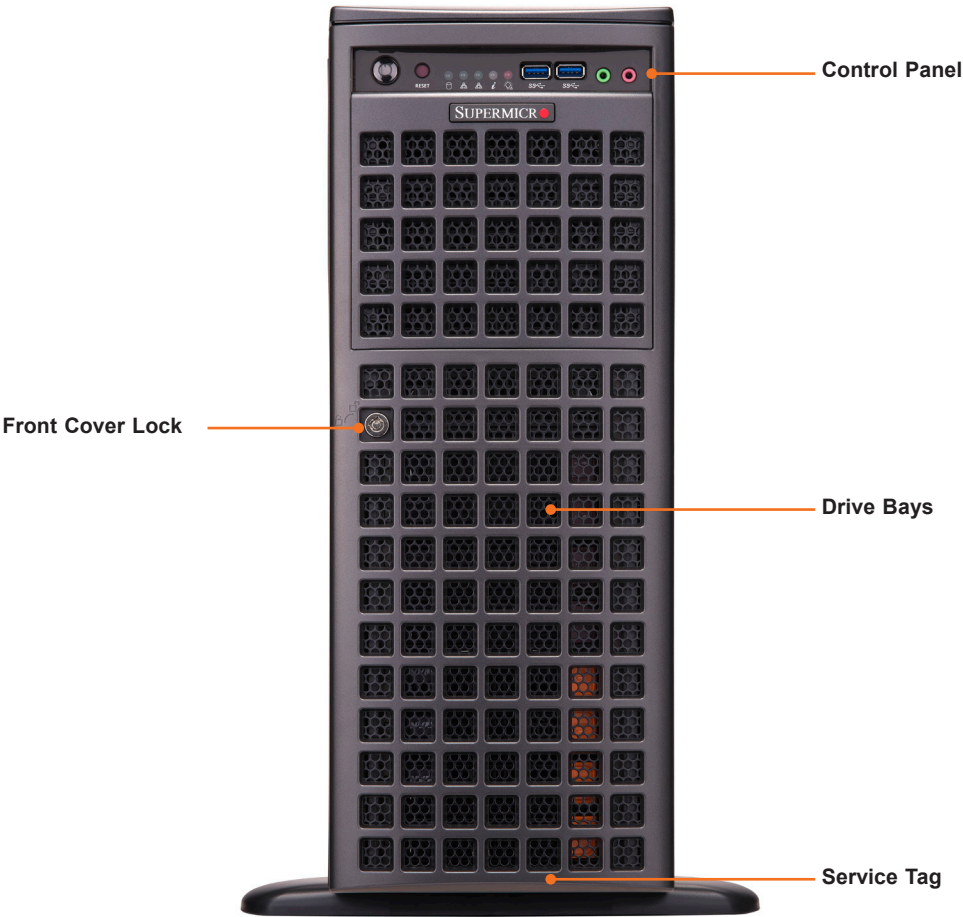
Figure 1-1. Front View

System Features: Front	
Feature	**Description**
Control Panel	Front control panel. See Control Panel section for details.
Front Cover Lock	Protects against unauthorized removal of the hard drives.
Drive Bays	Front drive bays (behind locking cover). See Drive Bays section for details.
Service Tag	Pull-out service tag with BMC password label (behind locking cover).

Control Panel

Figure 1-2. Control Panel

Control Panel Features	
Feature	**Description**
Power Button	The main power switch is used to apply or remove power from the power supply to the server. Turning off system power with this button removes the main power but maintains standby power. To perform many maintenance tasks, you must unplug system before servicing.
Reset Button	The reset button is used to reboot the system.
HDD LED	Indicates hard drive activity. It flashes in a Linux operating system but does not light up or flash in a Windows operating system.
NIC LED	Indicates network activity on LAN when flashing.
Information LED	Alerts operator of several states. See table below for details.
Power Fail	Indicates a power failure to the system's power supply units.
USB 3.0	Two USB 3.0 ports.
Line Out	Line out port
Mic	Mic port

Information LED	
Color, Status	**Description**
Red, continuously	An overheat condition has occurred.
Red, blinking at 1Hz	Fan failure, check for an inoperative fan.
Red, blinking at 0.25Hz	Power failure, check for a non-operational power supply.
Blue, solid	UID has been activated locally to locate the server in a rack environment.
Blue, blinking	UID has been activated using BMC to locate the server in a rack environment.

Drive Bays

Figure 1-3. Storage Drives

Logical Storage Drive Numbers	
Item	**Description**
🔴0 - 🔴7	Eight NVMe/SATA Hybrid drive bays (behind locking bezel)

Note: SAS3 support are available with additional parts; see Optional Parts List.

Drive Carrier Indicators

Each drive carrier has two LED indicators: an activity indicator and a status indicator. For RAID configurations using a controller, the meaning of the status indicator is described in the table below. For OS RAID or non-RAID configurations, some LED indications are not supported, such as hot spare. For VROC configurations, refer to the VROC appendix in this manual.

Drive Carrier LED Indicators			
	Color	**Blinking Pattern**	**Behavior for Device**
Activity LED	Blue	Solid On	Idle NVMe drive installed
	Blue	Blinking	NVMe/SATA I/O activity
	Off	N/A	Idle SATA drive
Status LED	Red	Solid On	Failure of drive with RSTe support
	Red	Blinking at 1 Hz	Rebuild drive with RSTe support
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for drive with RSTe support
	Red	On for five seconds, then off	Power on for drive with RSTe support
	Red	Blinking at 4 Hz	Identify drive with RSTe support

Rear View
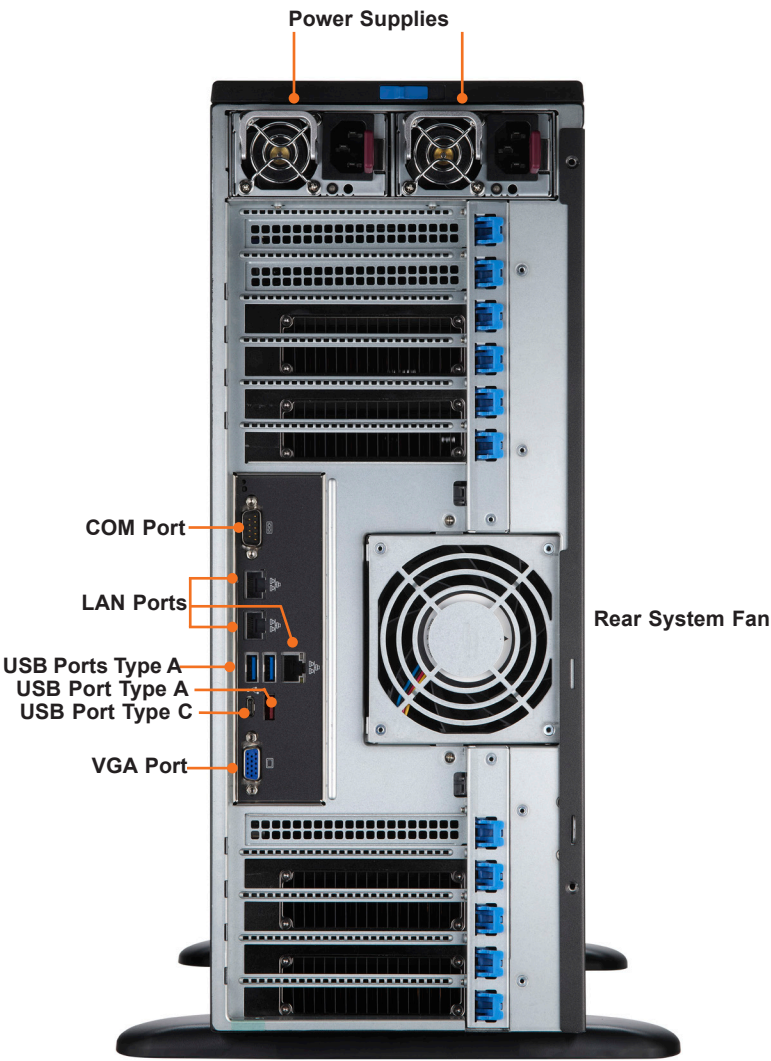
Figure 1-4. System: Rear View

System Features: Rear	
Feature	**Description**
Power Supplies	Two redundant power supply modules, PWS1 on the left, PWS2 on the right
COM	Serial port
BMC	RJ45 dedicated BMC LAN port
USB	Three Type A USB 3.0 ports, one Type C USB 3.0 port USB3.0 Type C support power usage at a maximum current of 0.9 A
LAN	Two LAN ports
VGA	Video port
Rear System Fan	One system fan

LED Indicators

BMC LAN LED		
LED Indicator	**Color**	**Definition**
Link (Left)	Green: Solid	100Mbps
	Amber: Solid	1Gbps
Activity (Right)	Amber: Blinking	Active

Power Supply Indicator

Power Supply Indicator	
LED Color and State	**Power Supply Condition**
Off	No AC Power to Power Supply
Amber, solid	PSU standby with AC/DC Input.
Green, solid	Output On and Okay

Expansion Slots

Expansion Slot Locations	
Item	**Description**
Slot2	PCIe 5.0 x16 slot from CPU1 (GPU priority)
Slot4	PCIe 5.0 x16 slot from CPU1 (GPU priority)
Slot5	PCIe 5.0 x16 slot from CPU2 (Networking)
Slot7	PCIe 5.0 x16 slot from CPU2 (GPU priority)
Slot9	PCIe 5.0 x16 slot from CPU1 (GPU priority)
Slot10	PCIe 5.0 x16 slot from CPU1 (Storage or Networking)
Slot11	PCIe 5.0 x16 slot from CPU2 (Storage or Networking)

Top View

Dual Intel 4th Generation Xeon
Scalable Processors up to 350 W

4x System Fans

PCIe Slots

GPU Cards

16x DIMM
Slots DDR5

PCIe Slot

GPU Cards

2x M.2
NVMe Slots
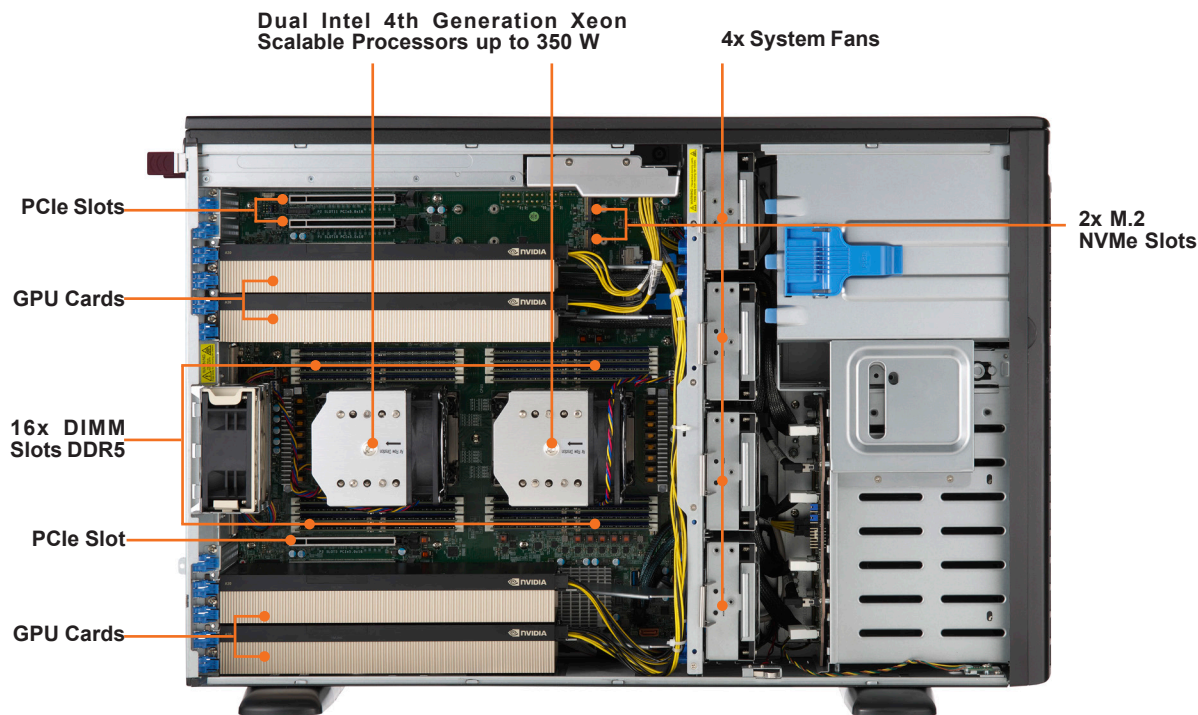
Figure 1-5. System: Top View

System Features: Top	
Feature	**Description**
Power Supply	Dual redundant modules
Processors	Dual Intel® Xeon® Scalable processors
DIMM Slots	Sixteen dual in-line memory module (DIMMs) slots
System Fans	Four fans used to provide cooling for the system
M.2 Slots	Two M.2 slots
GPU Cards	Four double-width full-length GPU cards
PCIe Slot	One PCIe Gen5 slot for networking AOC
PCIe Slot	Two PCIe Gen5 slots for networking and storage AOC

1.3 System Architecture

This section covers the locations of the main system components.

Main Components
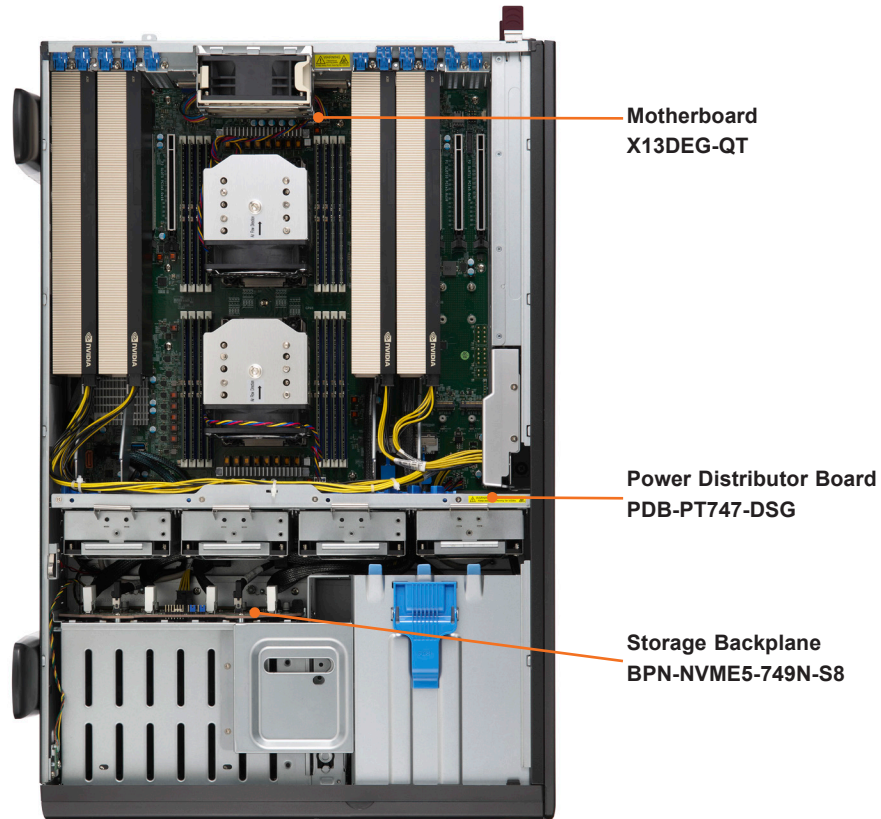
Figure 1-6. Main Component Locations

1.4 Motherboard Layout

Below is a layout of the X13DEG-QT motherboard with jumper, connector and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information and jumper settings, refer to Chapter 4 or the Motherboard Manual.
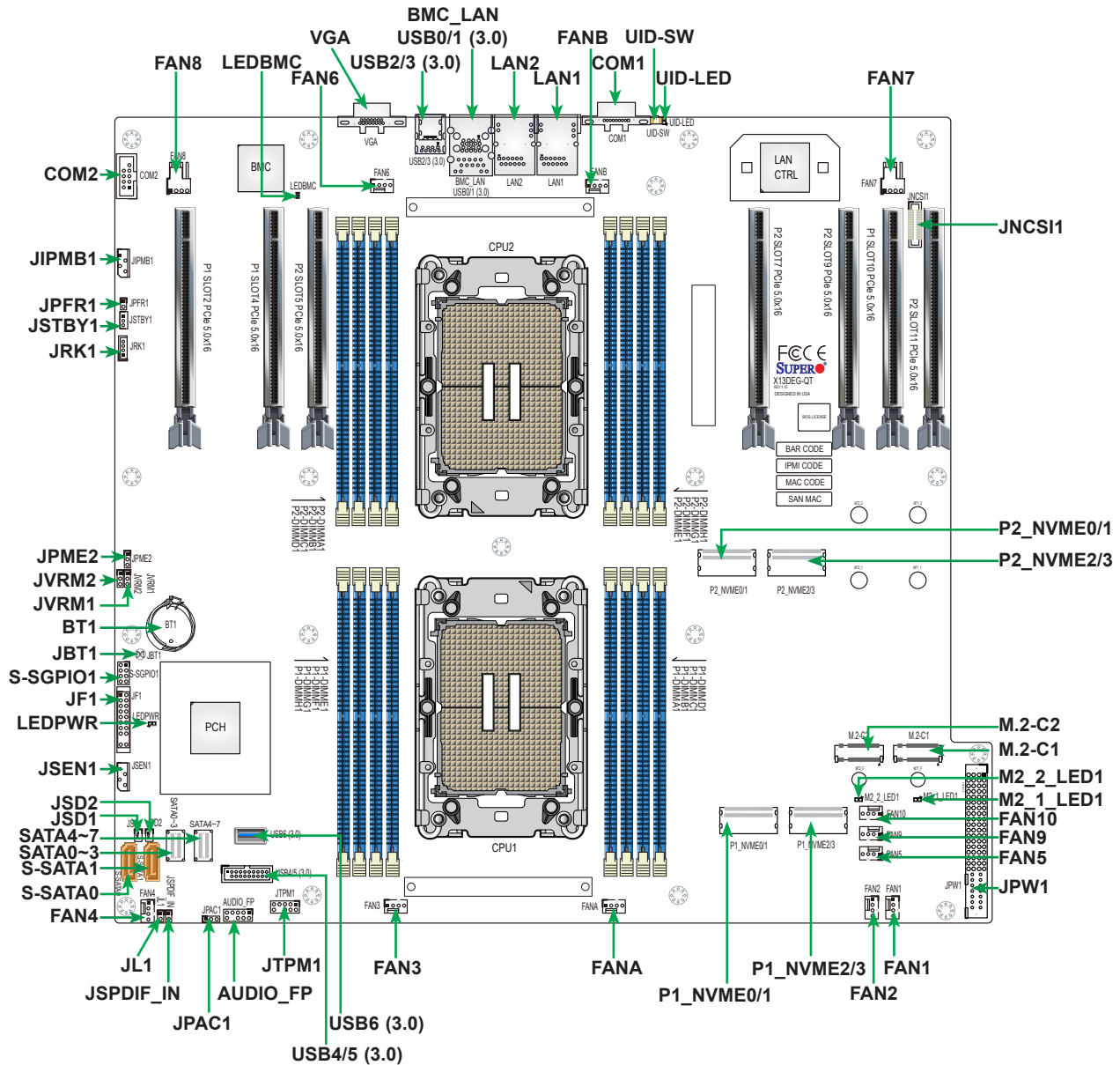
Figure 1-7. Motherboard Layout

Quick Reference Table

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JPAC1	Audio Enable	Pins 1-2 (Enabled)
JPME2	ME Manufacturing Recovery	Pins 1-2 (Normal)
JVRM1	VRM SMB Clock (to BMC or PCH)	Pins 1-2 (BMC, Normal)
JVRM2	VRM SMB Data (to BMC or PCH)	Pins 1-2 (BMC, Normal)

LED	Description	Status
LEDBMC	BMC Heartbeat LED	Blinking Green: BMC Normal (Active) Solid Green: During BMC Reset or during a Cold Reboot
LEDPWR	Power LED	LED On: Onboard Power On
M2_1_LED1, M2_2_LED1	M.2 LEDs	Blinking Green: Device Working
UID-LED	Unit Identifier (UID) LED	Solid Blue: Unit Identified

Connector	Description
AUDIO_FP	Front Panel Audio Header
BMC_LAN	Dedicated BMC LAN Port (RJ45)
BT1	Onboard CMOS Battery
COM1	Rear I/O COM Port
COM2	Front Accessible COM Header
FAN1 - FAN10, FANA, FANB	CPU/System Fan Headers (FANA: CPU1 Fan Header, FANB: CPU2 Fan Header)
JF1	Front Control Panel Header
JIPMB1	4-pin BMC External I C Header
JL1	Chassis Intrusion Header
JNCSI1	Network Controller Sideband Interface (NC-SI) Connector
JPRG1	Connector reserved for manufacturer use for onboard Complex Programmable Logic Device (CPLD) firmware programming
JPW1	Power Distribution Board Slot
JRK1	Intel VROC Key Header
JSD1, JSD2	SATA DOM Power Connectors
JSEN1	Inlet Sensor Header
JSPDIF_IN	Sony/Philips Digital Interface Audio Input Header
JSTBY1	5 V Standby Power Header
JTPM1	Trusted Platform Module/Port 80 Connector
LAN1, LAN2	10 GbE LAN Ports
M.2-C1, M.2-C2	PCIe 5.0 NVMe M.2 Slots (with supports of M-Key 2280 and 22110)

Connector	Description
MT1_1, MT1_2, MT2_1, MT2_2	M.2 Device Mounting Holes
P1_NVME0/1, P1_NVME2/3	PCIe 5.0 x8 MCIO Connectors supported by CPU1 with four NVMe connections
P2_NVME0/1, P2_NVME2/3	PCIe 5.0 x8 MCIO Connectors supported by CPU2 with four NVMe connections
S-SATA0, S-SATA1	Intel PCH Powered S-SATA 3.0 Ports with support of SuperDOM devices *DOM: Disk on Module
S-SGPIO1	Serial General Purpose I/O Connection Header (for S-SATA0/S-SATA1 SuperDOM support)
SATA0~3, SATA4~7	SlimSAS LP Connectors with support of eight Intel PCH SATA 3.0 connections (RAID 0, RAID 1, RAID 5, and RAID 10 supported)
(P1) SLOT2/4/10, (P2) SLOT5/7/9/11	PCIe 5.0 x16 Slots *For Intel SP XCC processors, SLOT11 supports PCIe Gen. 4 link.
UID-SW	Unit Identifier (UID) Switch / BMC Reset Button
USB0 - USB3 (3.0)	Rear I/O USB Ports (USB 3.0)
USB4/5 (3.0)	Front-accessible USB 3.0 Header with support of two USB 3.0 connections
USB6 (3.0)	Internal USB 3.0 Vertical Type A Connector
VGA	Rear I/O VGA Port

System Block Diagram

This is a general block diagram and may not exactly represent the features on your motherboard. See the System Specifications appendix for the actual specifications of your motherboard.

X13DEG-QT
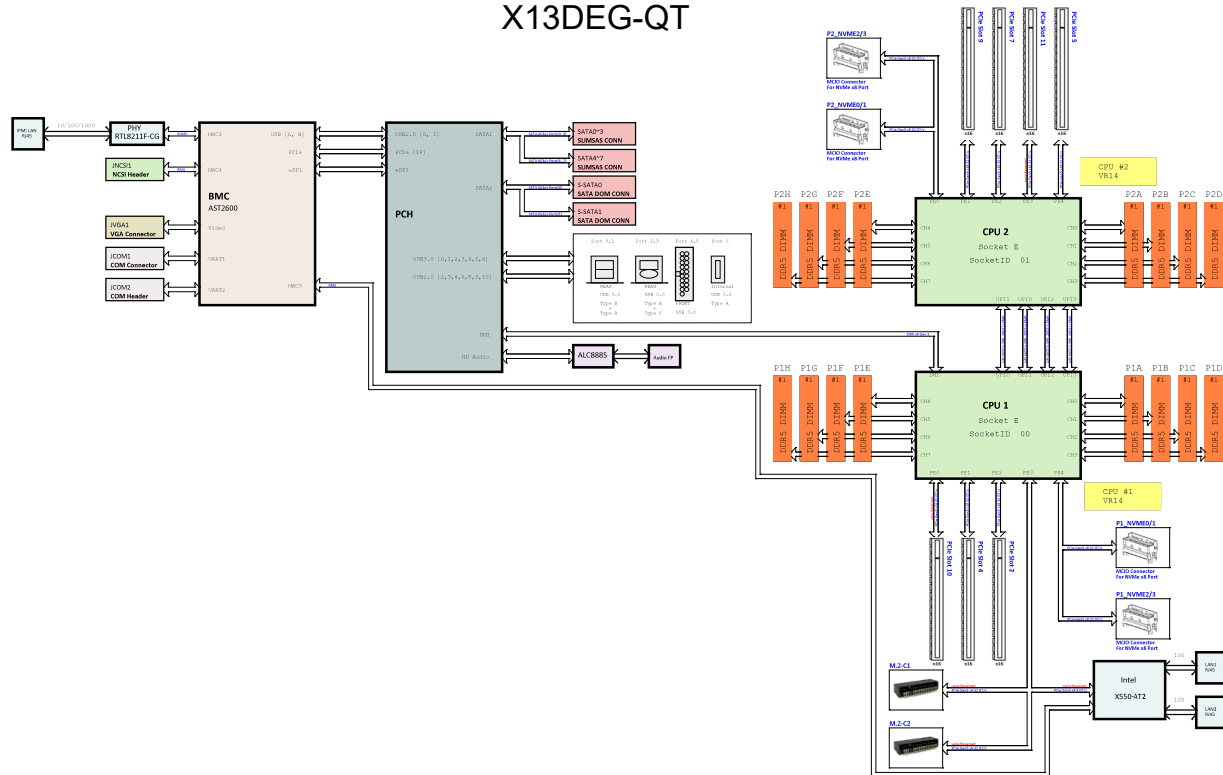
Figure 1-8. System Block Diagram

Chapter 2

Server Installation

2.1 Overview

This chapter provides advice and instructions for mounting your system in a server rack. If your system is not already fully integrated with processors, system memory etc., refer to Chapter 3 for details on installing those specific components.

Caution: Electrostatic Discharge (ESD) can damage electronic components. To prevent such damage to PCBs (printed circuit boards), it is important to use a grounded wrist strap, handle all PCBs by their edges and keep them in anti-static bags when not in use.

2.2 Unpacking the System

Inspect the box in which the system was shipped, and note if it was damaged. If any equipment appears damaged, file a claim with the carrier.

Decide on a suitable location for the rack unit that will hold the server. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. It will also require a grounded AC power outlet nearby. Be sure to read the precautions and considerations noted in Appendix A.

2.3 Preparing for Setup

The box in which the system was shipped should include the rackmount hardware needed to install it into the rack. Please read this section in its entirety before you begin the installation.

Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.

- Leave enough clearance in front of the rack so that you can open the front door completely (approximately 25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.

- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).

- This product is not suitable for use with visual display workplace devices according to §2 of the German Ordinance for Work with Visual Display Units.

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.

- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.

- Always make sure the rack is stable before extending a server or other component from the rack.

- You should extend only one server or component at a time - extending two or more simultaneously may cause the rack to become unstable.

Server Precautions

- Review the electrical and general safety precautions in Appendix A.

- Determine the placement of each component in the rack *before* you install the rails.

- Install the heaviest server components at the bottom of the rack first and then work your way up.

- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.

- Allow any drives and power supply modules to cool before touching them.

- When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

Rack Mounting Considerations

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the room's ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.

- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

- Slide rail mounted equipment is not to be used as a shelf or a work space.

Warning:

The equipment should only be operated by skilled or instructed persons. Instructed person is a term applied to persons who have been instructed and trained by a skilled person, or who is supervised by a skilled person.

Warning: Power cords shall be connected to a socket-outlet with a ground connection.

2.4 Preparing the Chassis for Rack Mounting

The chassis top tower cover and feet must be removed before rack installation.

Removing the Top Tower Cover

1. Locate the blue cover lock at the rear of the cover.

2. Slide the lock to the right and push the cover forward.

3. Lift the top cover off the chassis.
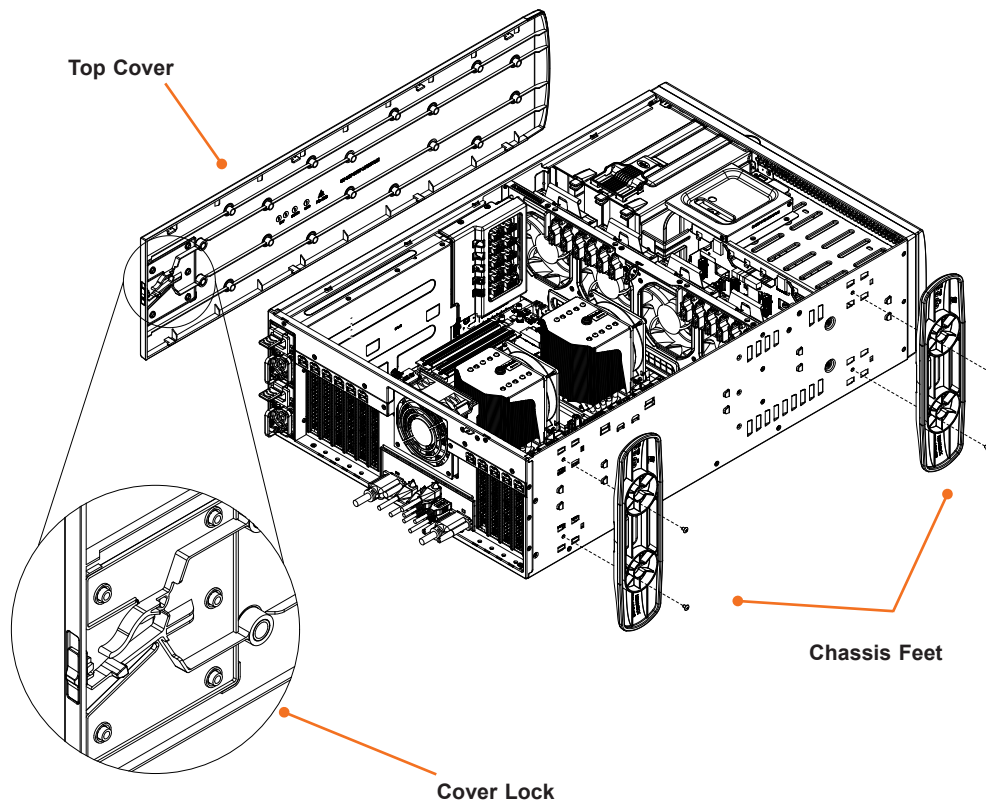
Figure 2-1. Removing the Top Tower Cover and Feet

Removing the Chassis Feet

1. Lay the chassis on its side.

2. Remove the screws holding the chassis feet in place.

3. Each foot has a foot lock tab at the center. Use a flat head screwdriver to gently lift the foot lock upward. Slide the foot toward the rear of the chassis.

2.5 Installing the Rails

This section provides a guideline for installing the rails to the chassis and to the rack with the optional rack mount kit.

Identifying the Sections of the Rack Rails

The chassis package includes two optional rack rail assemblies in the rack mounting kit. Each assembly consists of two sections: An inner fixed chassis rail that secures directly to the server chassis and an outer fixed rack rail that secures directly to the rack itself.
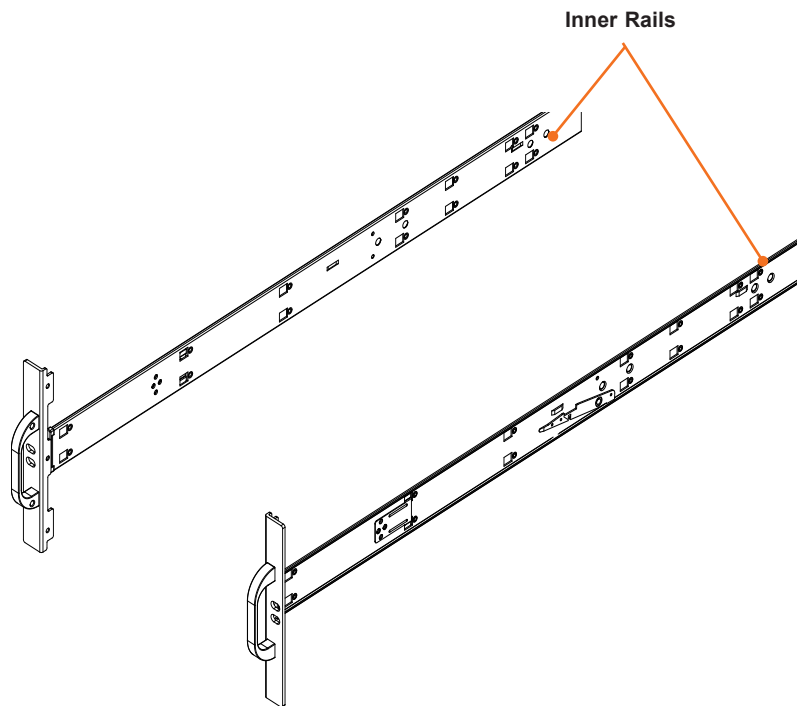
Figure 2-2. Identifying the Inner Rails and Chassis Handles

Installing the Inner Rails to the Chassis

1. Attach the handles to the front of the chassis with three screws each.

2. Identify the left and right inner rails. They are labeled on the rails and in the figure below.

3. Align each rail with the screw holes along the side of the chassis.

4. Screw the rails securely to the side of the chassis.
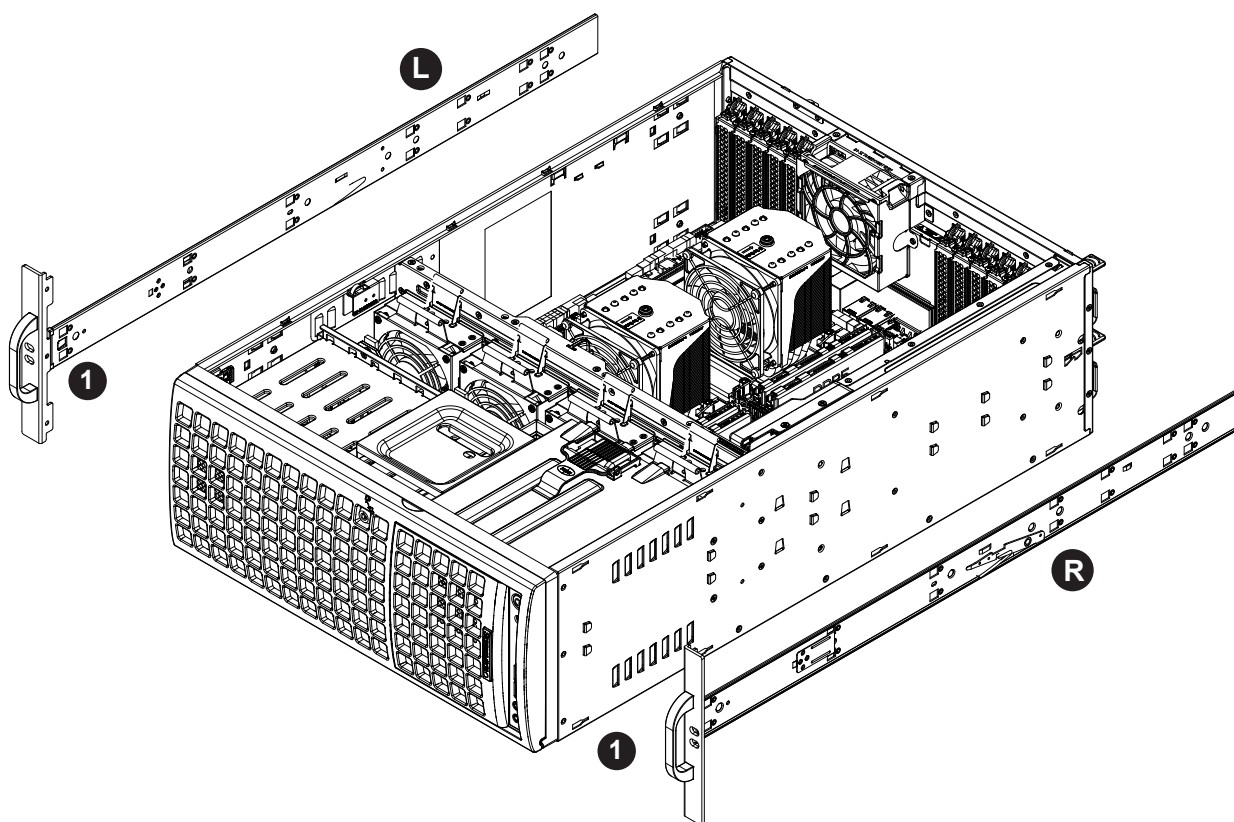
Figure 2-3. Installing the Handles and Inner Rails to the Chassis

Installing the Outer Rails to the Rack

Installing the Outer Rails

1. Attach the rear rail to the middle rail.

2. Adjust both to the proper distance so that the rails fit snugly into the rack.

3. Secure the rear rail with two M5 screws at the rear of the rack.

4. Repeat steps 1-3 for the left outer rail.

Rear Rail

Secure to the Rear of the Rack Rail

Middle Rail

Attach to the Middle Rail

Slide into the Inner Rail
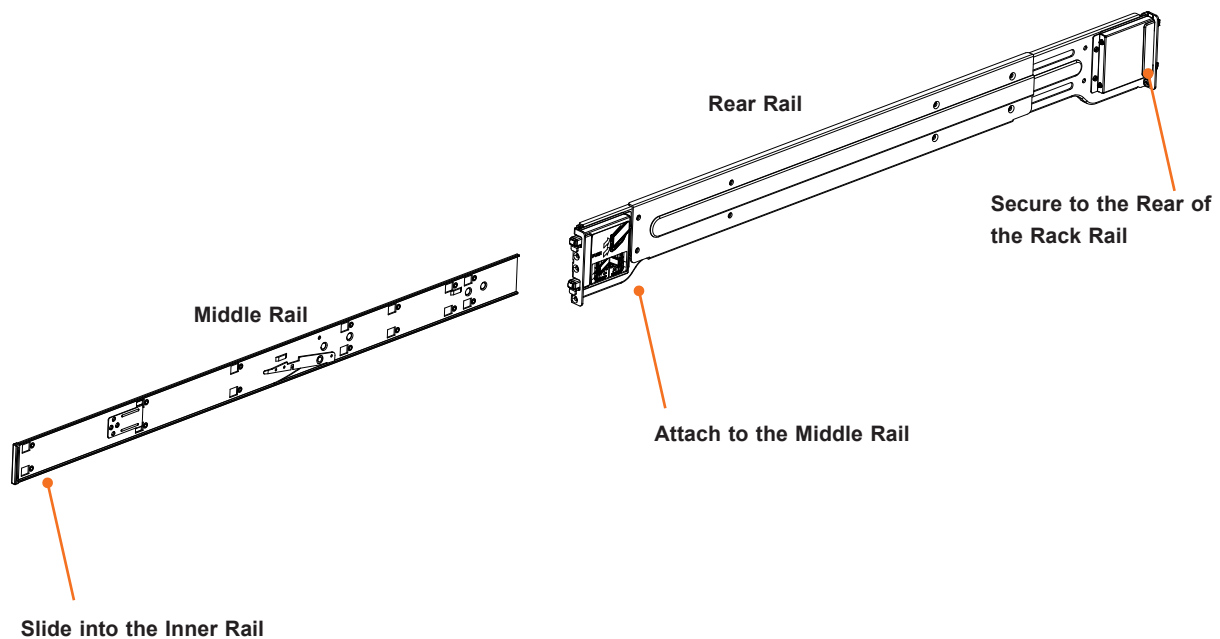
Figure 2-4. Inner and Outer Rack Rail Sections

Warning: Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.

When initially installing the system to a rack, test that the rail locking tabs engage to prevent the system from being overextended. Have a rack lift in place as a precaution in case the test fails.

2.6 Installing the Chassis into the Rack

With rails attached to both the chassis and the rack, install the system into the rack.

1. Confirm that the chassis includes the inner rails and the outer rails.

2. Align the inner chassis rails with the front of the outer rack rails.

3. Slide the inner rails into the outer rails, keeping the pressure even on both sides (you may have to depress the locking tabs when inserting). When the chassis has been pushed completely into the rack, you should hear the locking tabs "click" into the locked position.
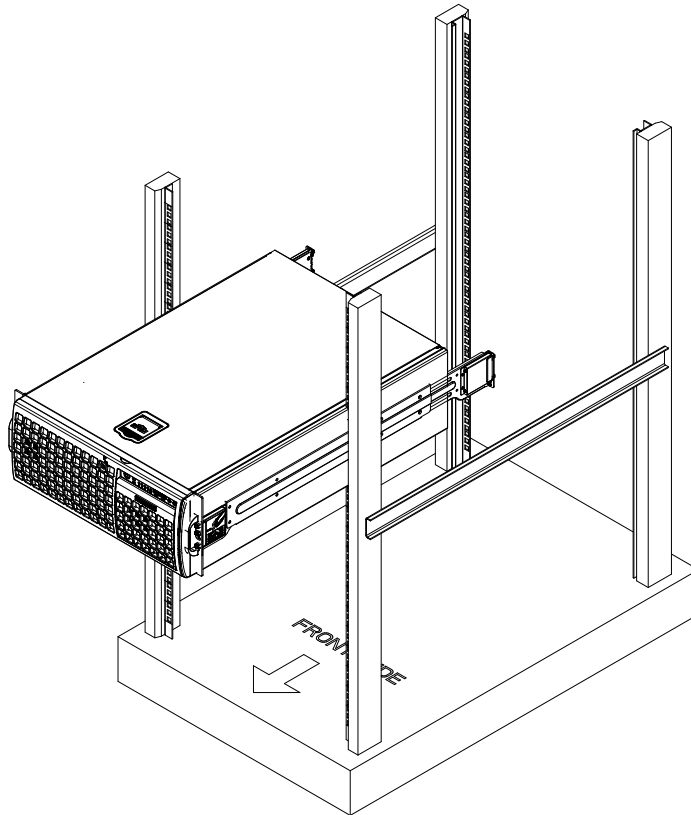
Figure 2-5. Installing the Server into the Rack

Note: The figure is for illustrative purposes only. Always install servers to the bottom of a rack first.

Chapter 3

Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components. To prevent compatibility issues, only use components that match the specifications and/or part numbers given.

Installation or replacement of most components require that power first be removed from the system. Please follow the procedures given in each section.

3.1 Removing Power

Use the following procedure to ensure that power has been removed from the system. This step is necessary when removing or installing non hot-swap components or when replacing a non-redundant power supply.

1. Use the operating system to power down the system.

2. After the system has completely shut-down, disconnect the AC power cord(s) from the power strip or outlet. (If your system has more than one power supply, remove the AC power cords from all power supply modules.)

3. Disconnect the power cord(s) from the power supply module(s).

3.2 Accessing the System

The CSE-749TS-R2K05BP chassis features a removable top cover, which allows easy access to the inside of the chassis.

Removing the Top Cover

1. Press the two release buttons and slide the cover toward the rear.

2. Lift the top cover up.

Check that all ventilation openings on the top cover and the top of the chassis are clear and unobstructed.

Caution: Except for short periods of time, do not operate the server without the cover in place. The chassis cover must be in place to allow for proper airflow and to prevent overheating.
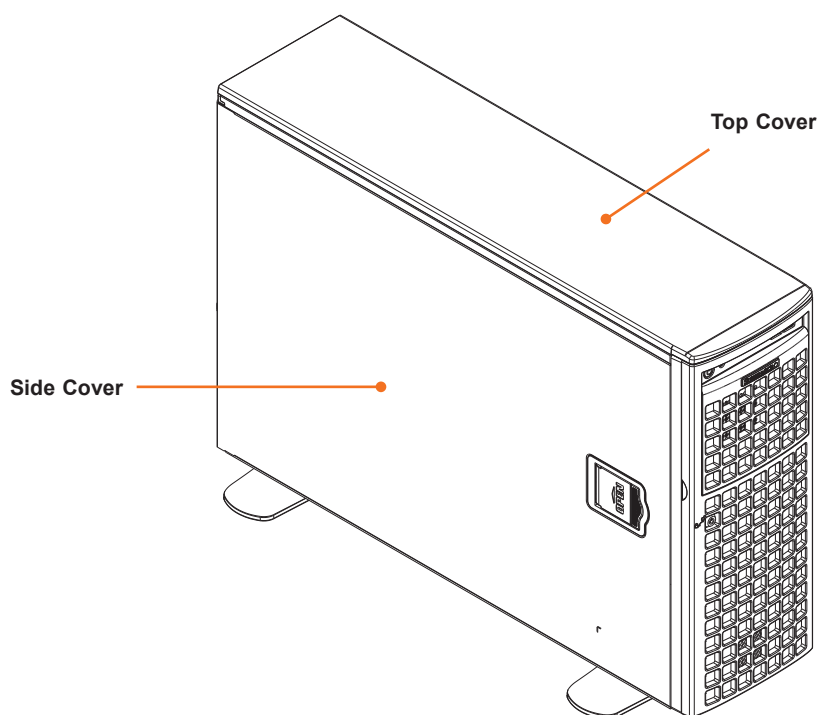
Figure 3-1. Identifying the Chassis Covers

Removing the Side Cover

1. Remove power from the system as described in Section 3.1.

2. Lift the handle at the side of the tower.

3. Lift the cover from the chassis.

Lift Up the Handle

Lift Up the Side Cover
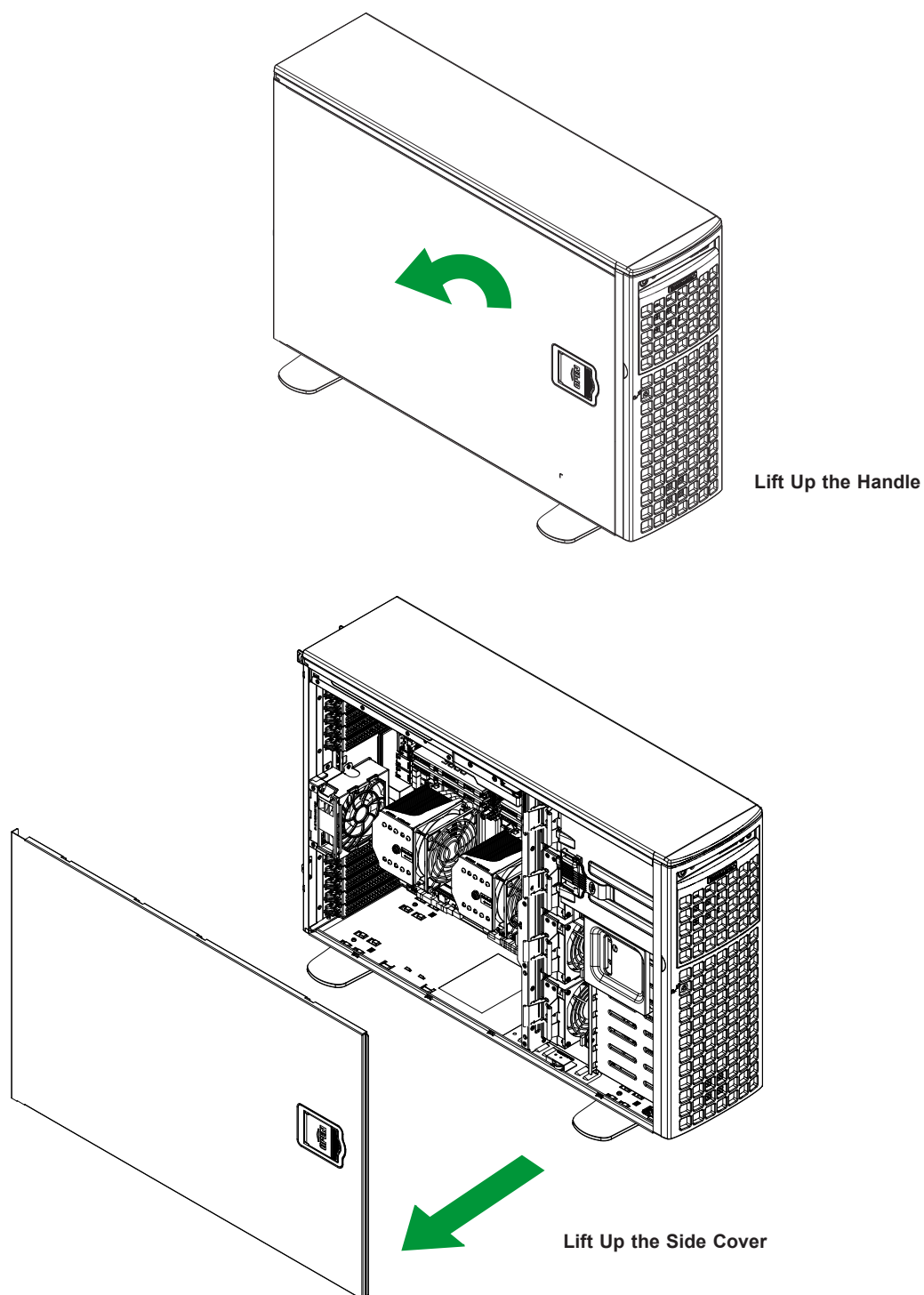
Figure 3-2. Removing the Side Cover

Opening the Front Cover

The front cover houses up to eight hot-swappable hard drives. The cover can be locked to prevent unauthorized access. The key to this lock is shipped with the system.

1. Unlock the front cover using the key shipped with the system.

2. Gently pull the cover open.

Front Cover Lock
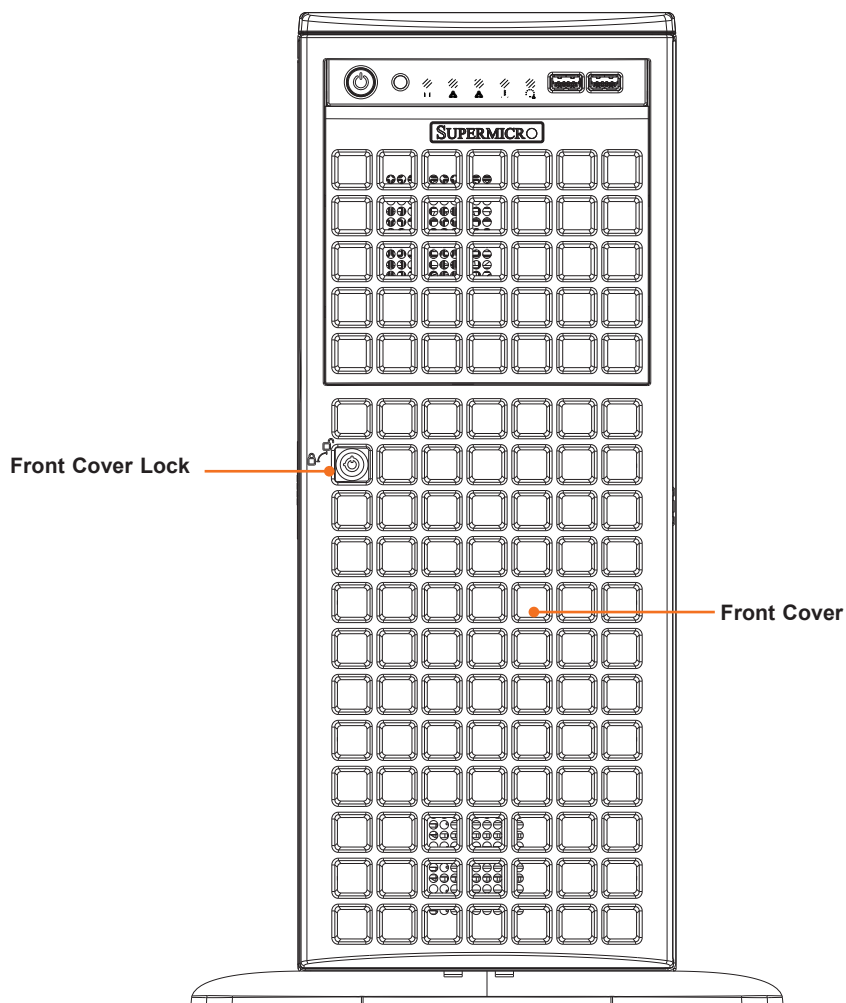
Front Cover

Figure 3-3. Opening the Front Cover

3.3 Processor and Heatsink Installation

The processor (CPU) and processor carrier should be assembled together first to form the processor carrier assembly. This assembly will be then attached to the heatsink to form the processor heatsink module (PHM) before being installed into the CPU socket. Before installation, be sure to perform the following steps:

- Please carefully follow the instructions given on the previous page to avoid ESD-related damages.

- Unplug the AC power cords from all power supplies after shutting down the system.

- Check that the plastic protective cover is on the CPU socket, and none of the socket pins are bent. If they are, contact your retailer.

- When handling the processor, avoid touching or placing direct pressure on the LGA lands (gold contacts). Improper installation or socket misalignment can cause serious damage to the processor or CPU socket, which may require manufacturer repairs.

- Thermal grease is pre-applied on a new heatsink. No additional thermal grease is needed.

- Refer to the Supermicro website for updates on processor and memory support.

- All graphics in this manual are for illustrations only. Your components may look different.

The 4ᵗʰ Gen. Intel Xeon Scalable Processors (Top View)
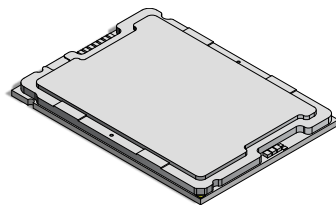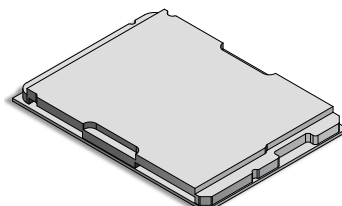
Xeon Scalable Processor (SP) XCC   Xeon Scalable Processor (SP) MCC

The Intel Xeon Max Processor (Top View)
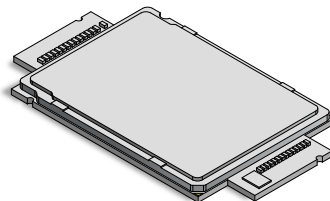
Xeon Max

Figure 3-2. Processor

1. The 5th/4th Gen Intel Xeon Scalable Processors and the Intel Xeon Max Processor

Processor Top View

SP XCC   Heon Max   SP MCC

CPU Key

Pin 1

CPU Key

Pin 1

CPU Key

Pin 1
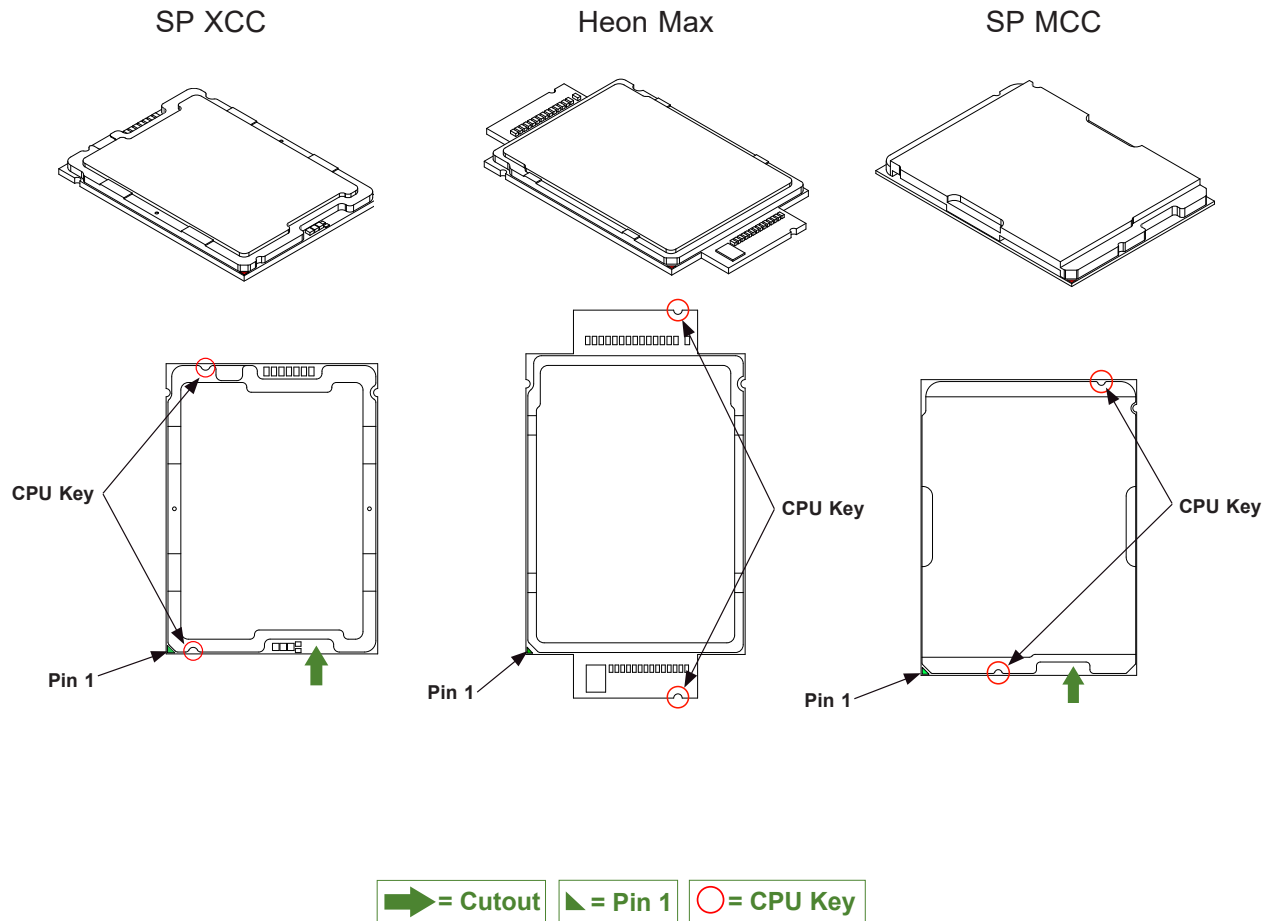
= Cutout   = Pin 1   = CPU Key

2. The Processor Carrier

Carrier E1A   Carrier E1C   Carrier E1B

Pin 1   Pin 1   Pin 1
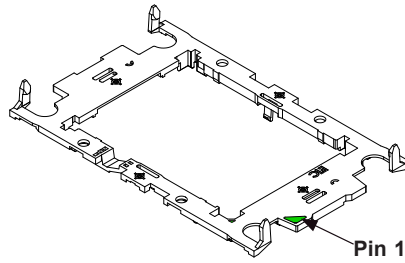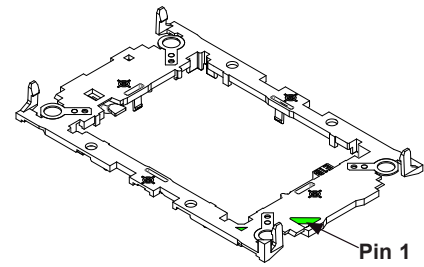
Carrier Top View

Carrier Bottom View
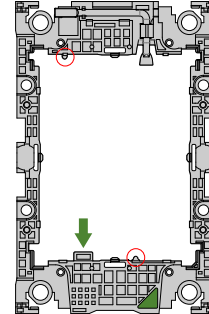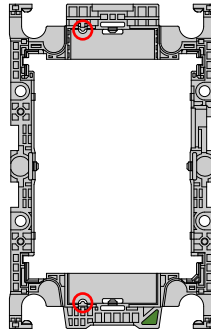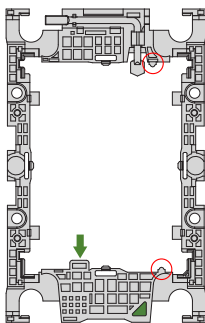
= Cutout   = Pin 1   = CPU Key

3. 4U Heatsink
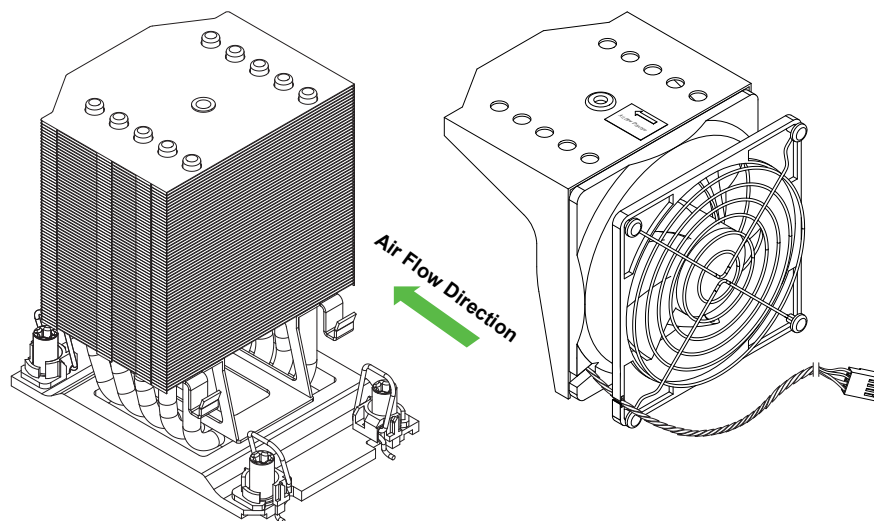
4U Heatsink and Heatsink Fan

Note: Exercise extreme care when handling the heatsink. Pay attention to the edges of heatsink fins, which can be sharp! To avoid damaging the heatsink, please do not apply excessive force on the fins.

Overview of the CPU Socket

The CPU socket is protected by a plastic protective cover.

Plastic Protective Cover
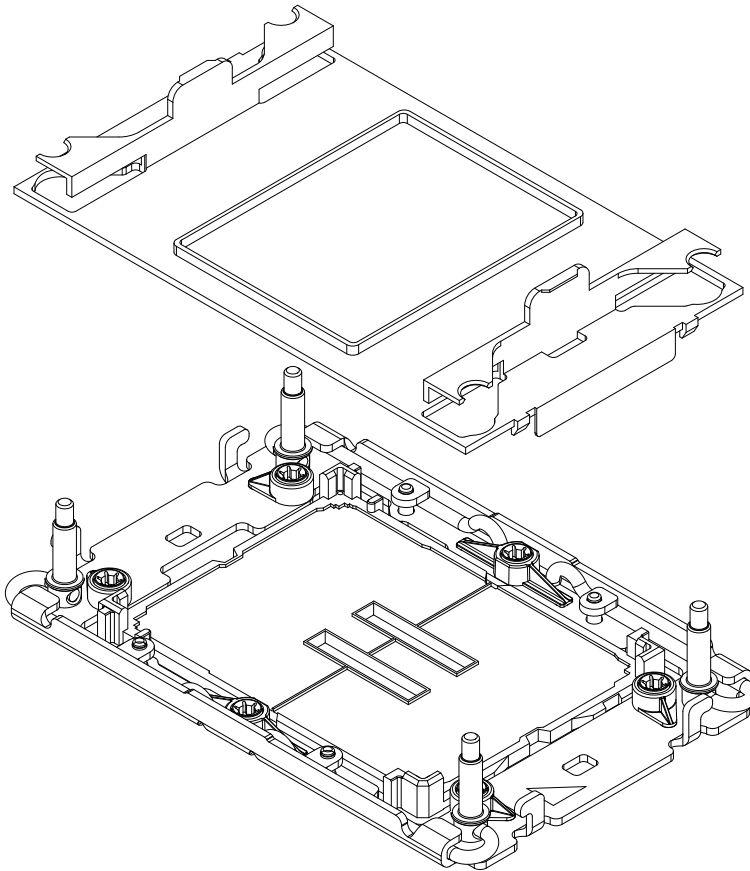
CPU Socket

Overview of the Processor Carrier Assembly

The processor carrier assembly contains a processor and a processor carrier. Carefully follow the instructions given in the installation section to place a processor into the carrier to create a processor carrier assembly.

The processor carrier assembly includes a processor and a processor carrier as shown below.

1. The 5th/4th Gen Intel Xeon Scalable Processor (Component Side)

Processor (2D)

Processor (3D)

SP XCC   Xeon Max   SP MCC

SP XCC   Xeon Max   SP MCC

2. Processor Carrier (Top View)

Processor Carrier (2D)

Processor Carrier (3D)

Carrier E1A   Carrier E1C
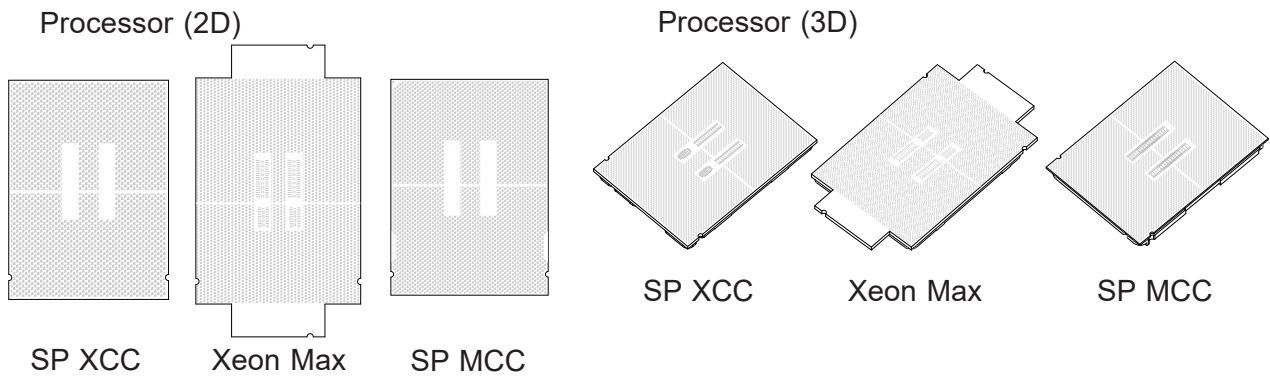
Carrier E1A   Carrier E1C   Carrier E1B
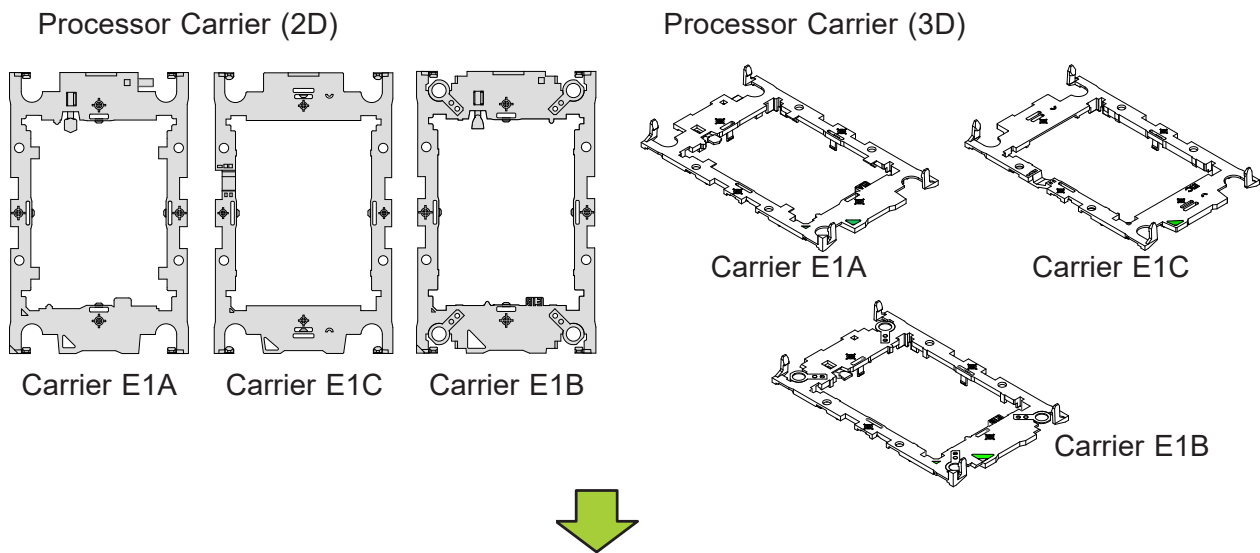
Carrier E1B

3. Processor Carrier Assembly (with processor seated inside the carrier)

Carrier E1A with   Carrier E1C with   Carrier E1B with
SP XCC Installed   Xeon Max Installed   SP MCC Installed
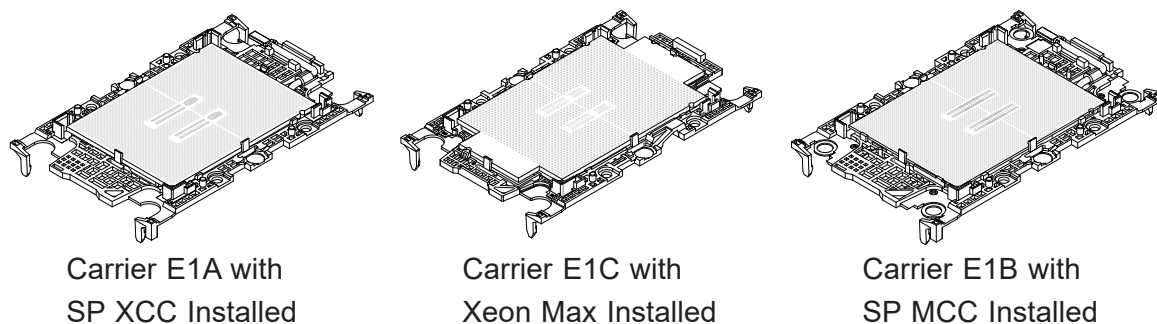
Overview of the Processor Heatsink Module (PHM) with SP XCC and Carrier E1A

The Processor Heatsink Module (PHM) contains a heatsink, a processor carrier, and a 5th/4th Gen Intel Xeon Scalable processor.

1. Heatsink (4U Heatsink)

(Bottom View)
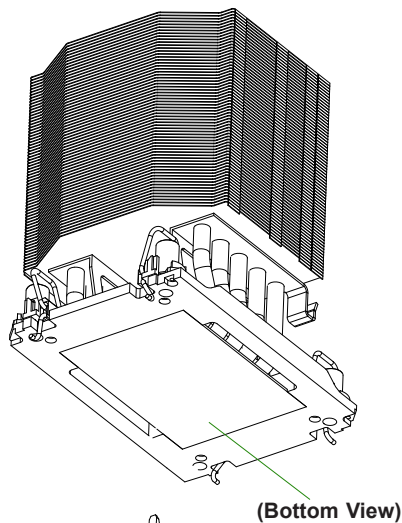
2. Processor Carrier E1A
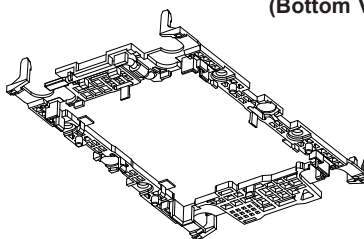
3. The 5th/4th Gen Intel Xeon Scalable Processor (SP XCC)

(Component Side)

4. Processor Heatsink Module (PHM)

(Bottom View)
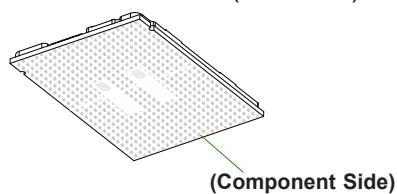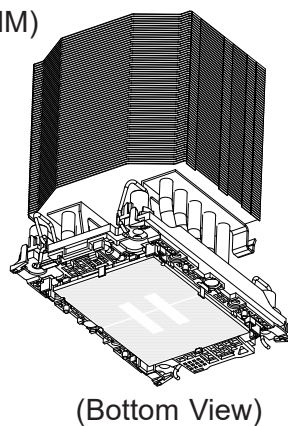
Overview of the Processor Heatsink Module (PHM) with Xeon Max and Carrier E1C

The Processor Heatsink Module (PHM) contains a heatsink, a processor carrier, and an Intel Xeon Max processor.

1. Heatsink (4U Heatsink)

(Bottom View)
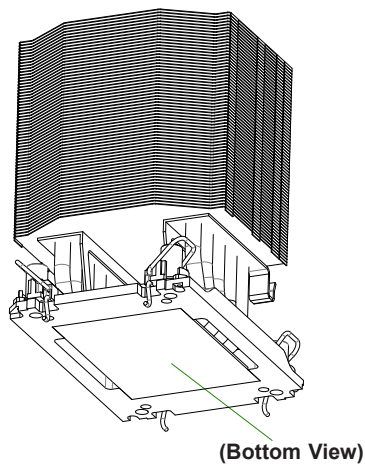
2. Processor Carrier E1C
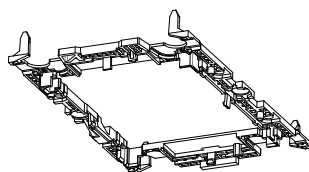
3. The Intel Xeon Max Processor

(Component Side)

4. Processor Heatsink Module (PHM)

(Bottom View)
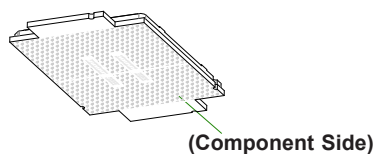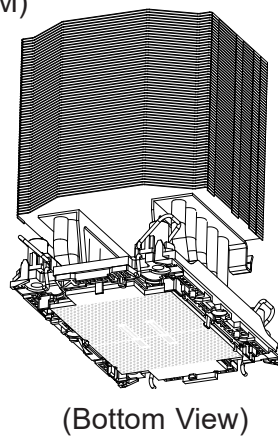
Overview of the Processor Heatsink Module (PHM) with SP MCC and Carrier E1B

The Processor Heatsink Module (PHM) contains a heatsink, a processor carrier, and a 5th/4th Gen Intel Xeon Scalable processor.

1. Heatsink (4U Heatsink)
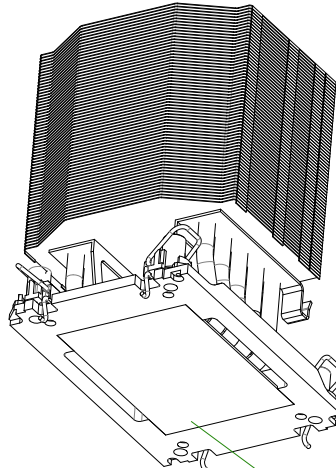
(Bottom View)

2. Processor Carrier E1B
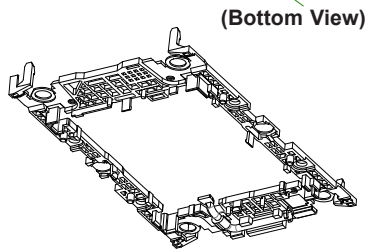
3. The 5th/4th Gen Intel Xeon Scalable Processor (SP MCC)
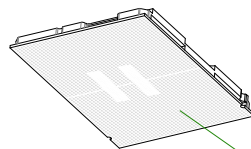
(Component Side)

4. Processor Heatsink Module (PHM)
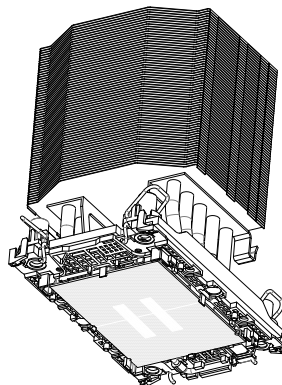
(Bottom View)

Creating the Processor Carrier Assembly

The processor carrier assembly contains a processor and a processor carrier.

To create the processor carrier assembly, please follow the steps below.

Note: Before installation, be sure to follow the instructions given on pages 1 and 2 of this chapter to properly prepare for installation.

1. Hold the processor with the component side (including the gold contacts) facing down. Locate the small, gold triangle at the corner of the processor and the corresponding hollowed triangle on the processor carrier as shown below. Please note that the triangle indicates the location of Pin 1.
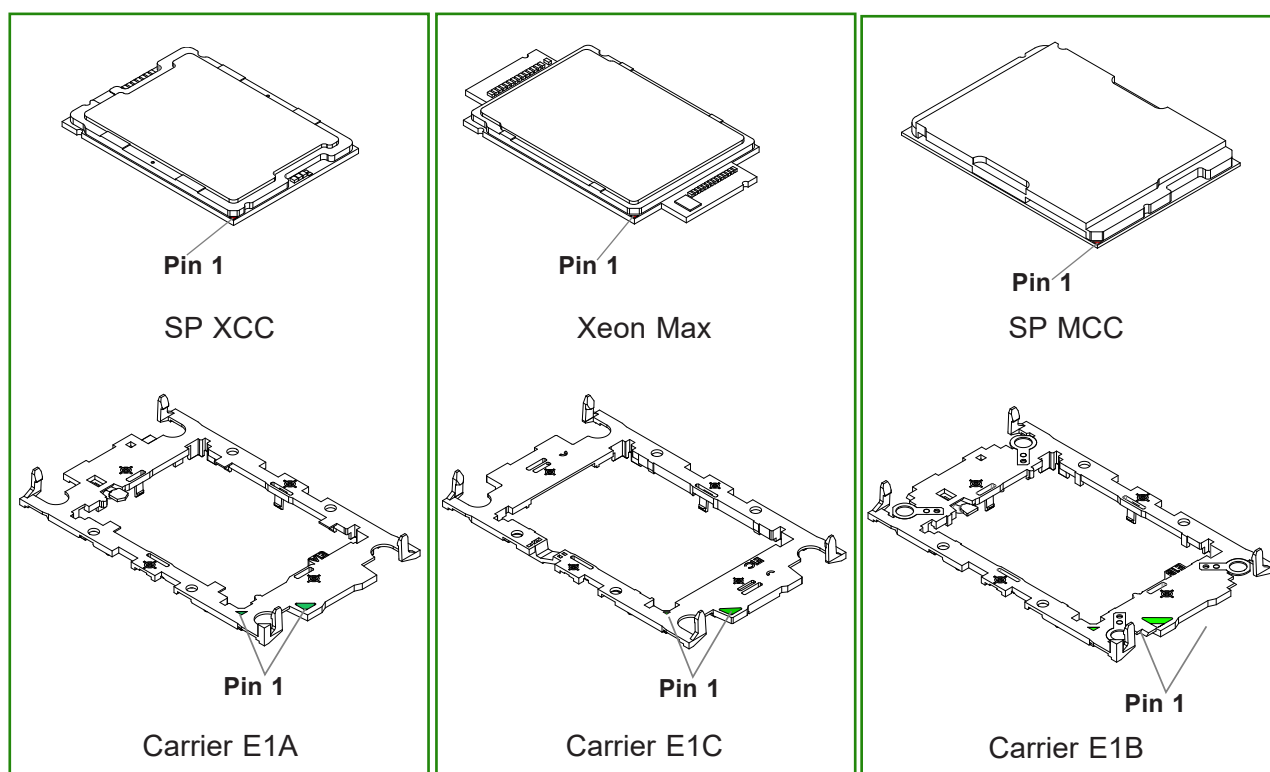
Processor with Matching Carrier

2. First, turn over the processor carrier and locate Pin 1 on the CPU and Pin 1 on the carrier. Then, turn the processor over with component side (including the gold contacts) facing up and locate CPU keys on the processor. Finally, locate the CPU keys and four latches on the carrier as shown below.

SP XCC

Xeon Max

SP MCC
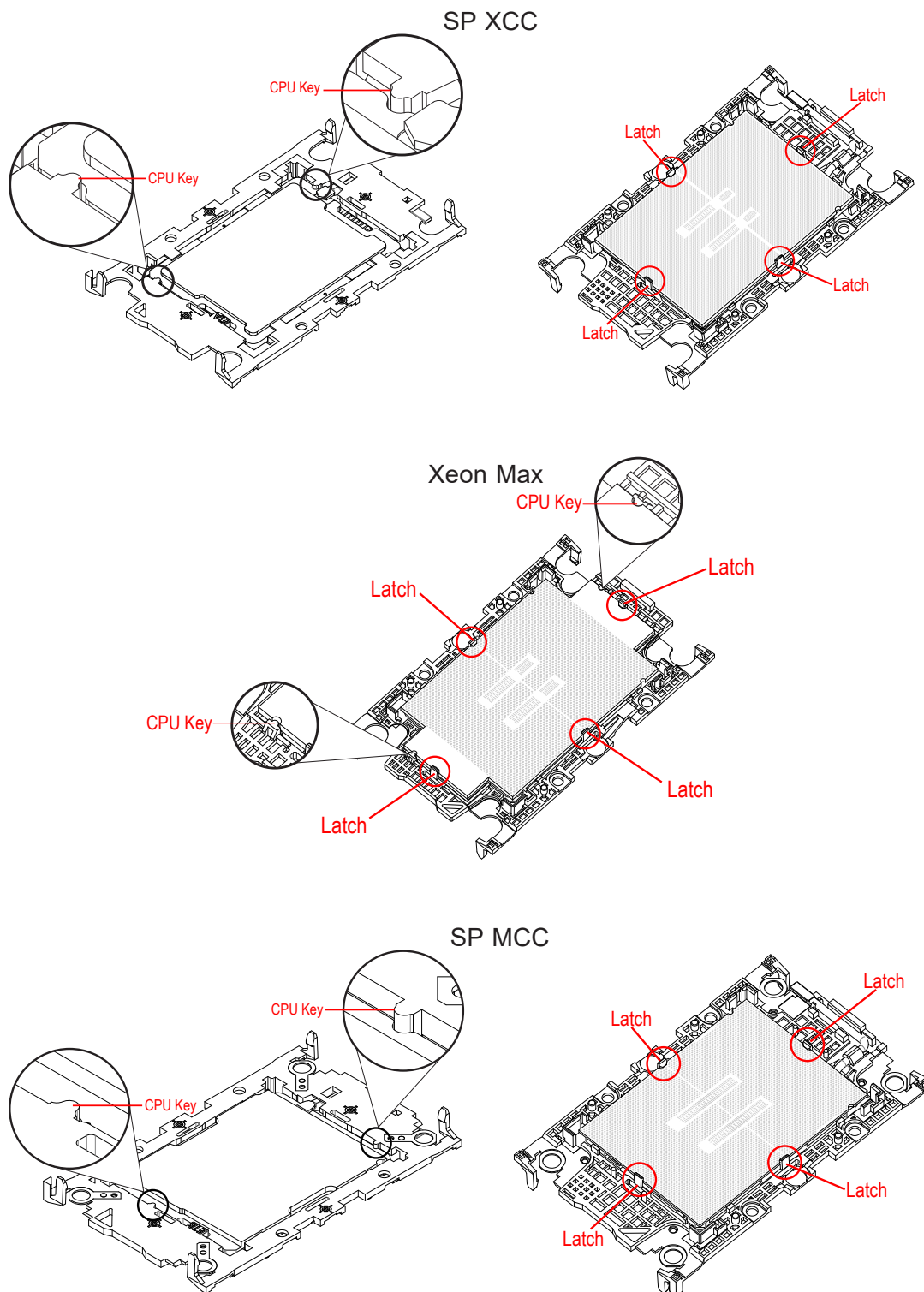
Carrier with the Processor Installed

3. Locate the lever on the CPU socket and press it down as shown below.

Carrier E1A

Carrier E1B
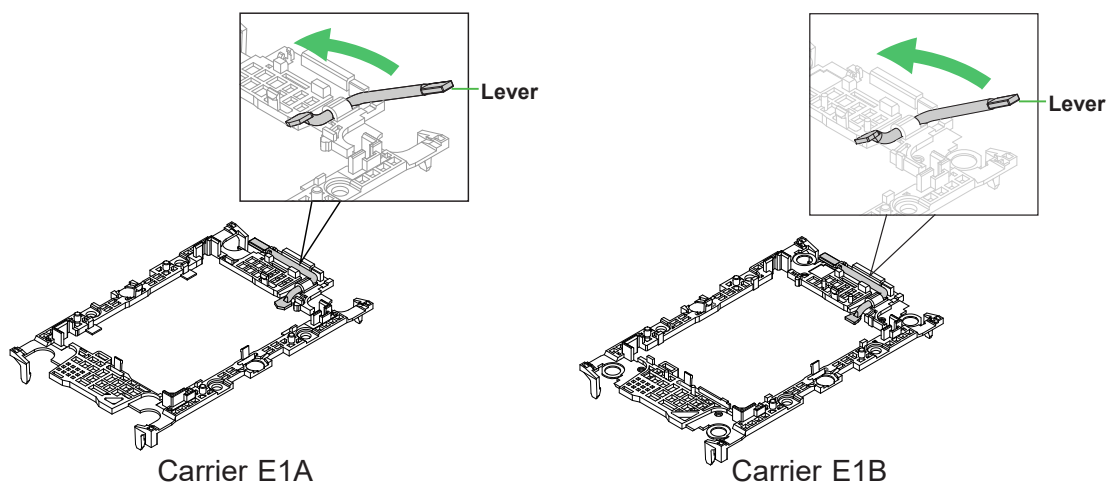
4. Using Pin 1 as a guide, carefully align the CPU keys (marked A and B) on the processor against the CPU keys on the carrier (marked a and b) as shown below.

5. Once they are properly aligned, carefully insert the CPU into the carrier, making sure that the CPU is properly secured by latches (marked 1, 2, 3, 4).
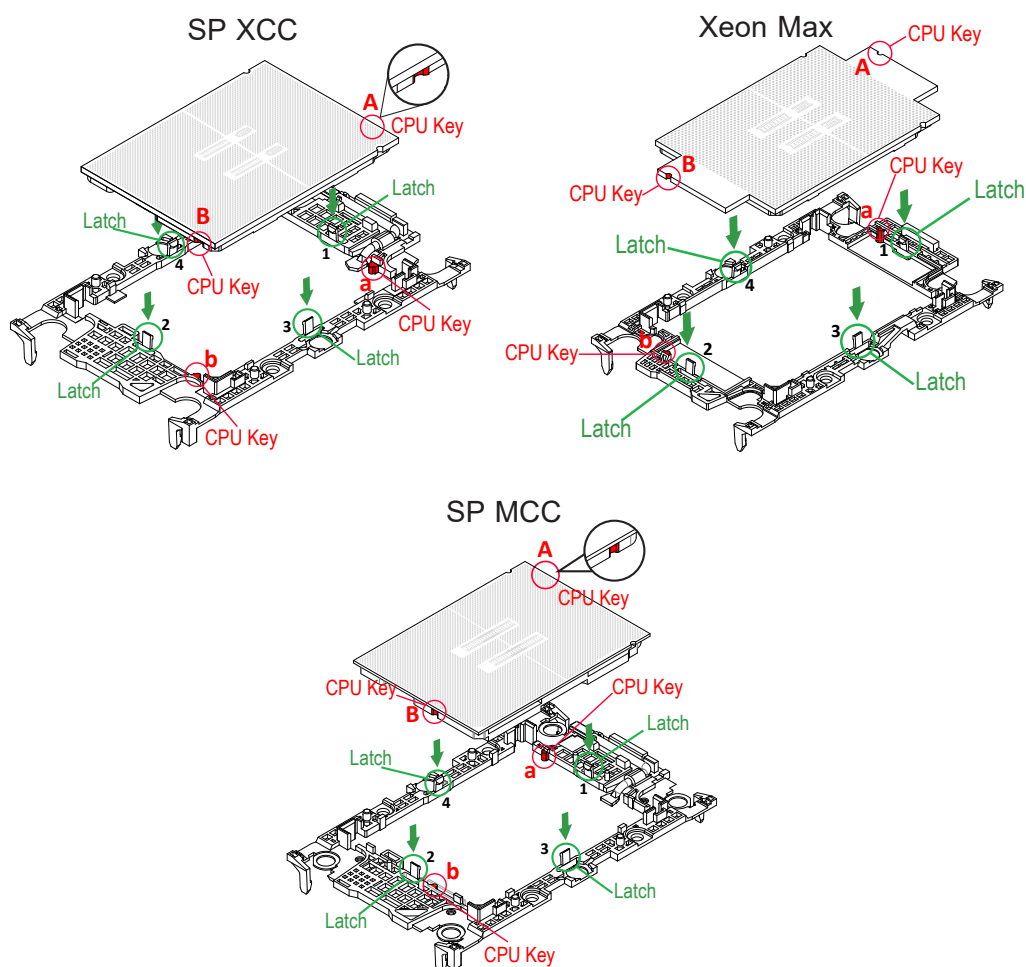
6. After the processor is placed inside the carrier, examine the four sides of the processor, making sure that the processor is properly seated on the carrier.

Processor Carrier Assembly
(Top View)

Processor Carrier Assembly
(Component Side)

SP XCC

Xeon Max

SP MCC
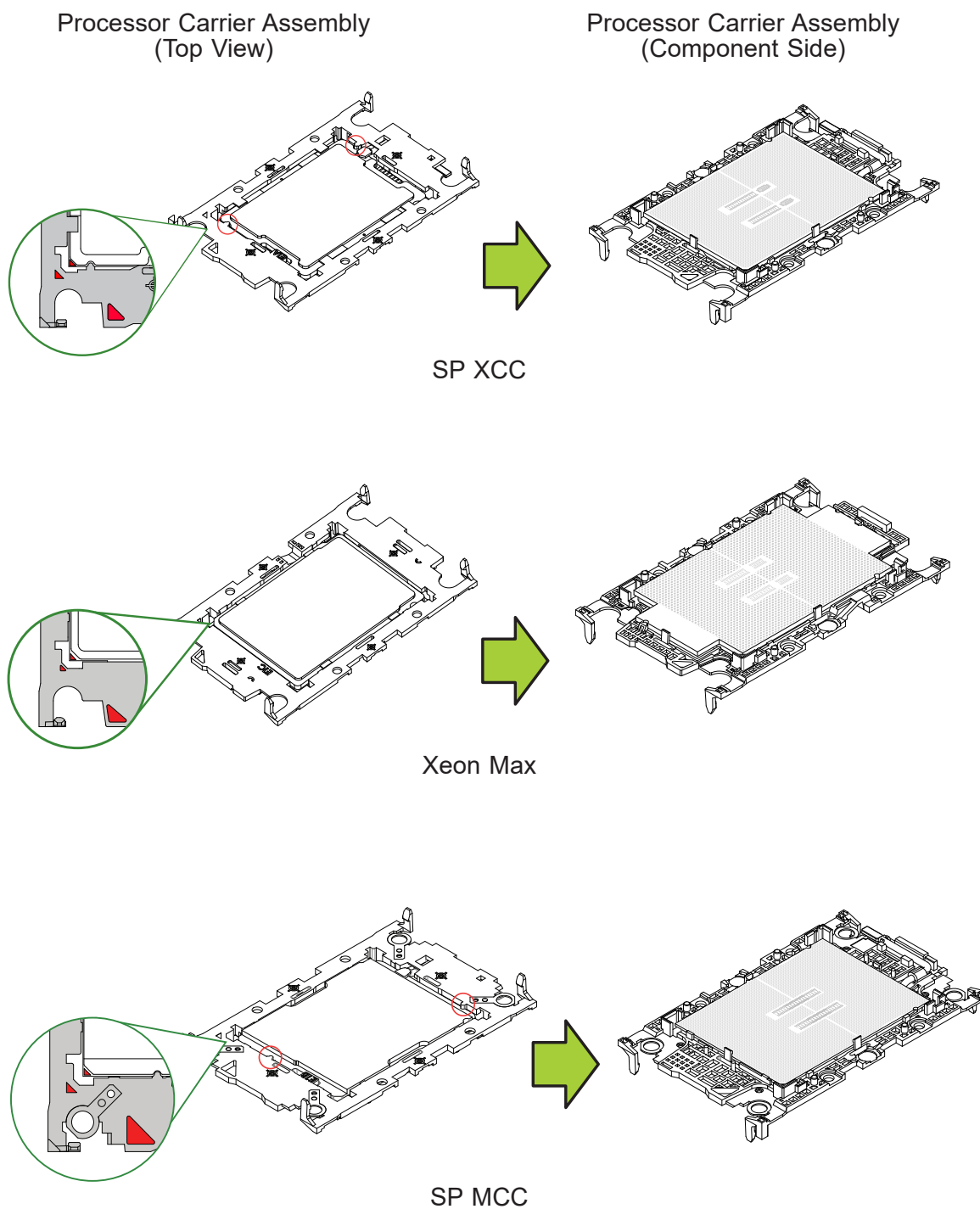
Creating the PHM (4U Heatsink)

After creating the processor carrier assembly, please follow the instructions below to mount the processor carrier assembly into the heatsink to form the PHM.

> **Note:** If this is a new heatsink, the thermal grease has been pre-applied on the underside. Otherwise, apply the proper amount of thermal grease.

1. Turn the heatsink over with the thermal grease, which is on the bottom side of the heatsink, facing up. Pay attention to the two triangle cutouts (marked A and B) located at the diagonal corners of the heatsink as shown below.

2. Hold the processor carrier assembly with component side facing up, and locate the triangle on the CPU and the triangle on the carrier. (Triangle indicates Pin 1.)

3. Using Pin 1 as a guide, turn the processor carrier assembly over with the gold contacts facing up. Locate the triangle cutout (marked A) on the heatsink and the corner (marked a) on the processor carrier assembly.

4. Align the corner (marked a) on the processor carrier assembly against the triangle cutout (marked A) on the heatsink, and align the corners (marked b, c, d) on the processor carrier assembly against the corners (marked B, C, D) on the heatsink.

5. Once they are properly aligned, place the corners (marked a, b, c, d) on the processor carrier assembly into the corners of the heatsink (marked A, B, C, D), making sure that all plastic clips are properly attached to the heatsink.
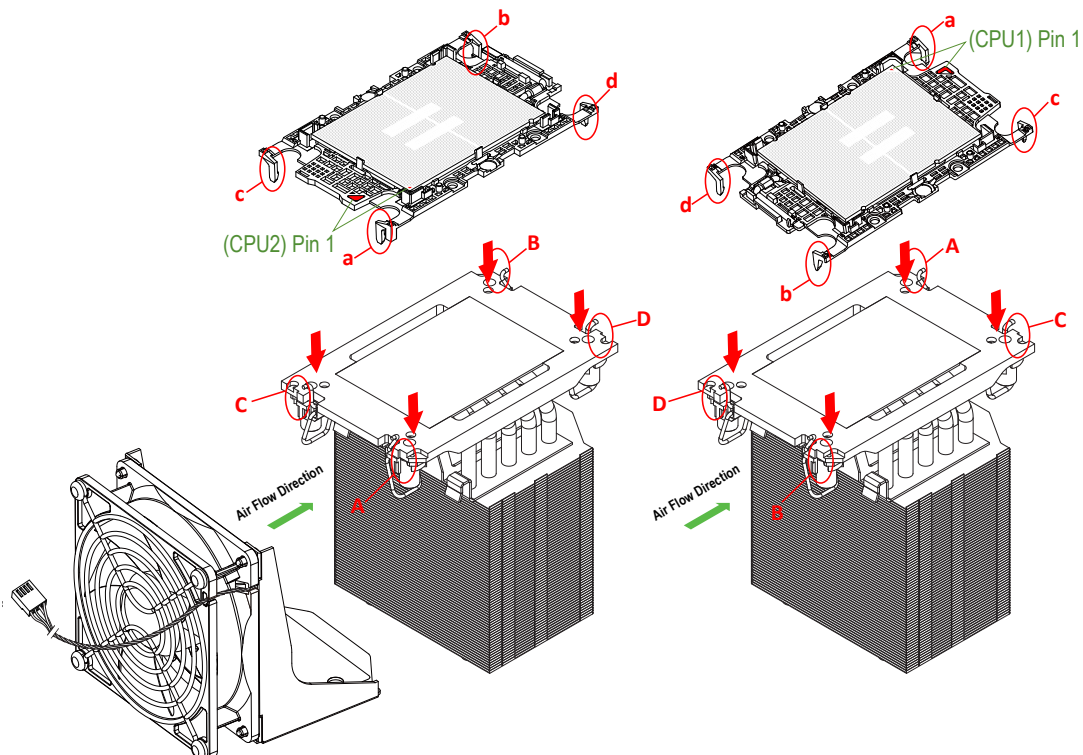
**Processor Carrier Assembly
(Component Side)
(SP XCC, Carrier E1A)**
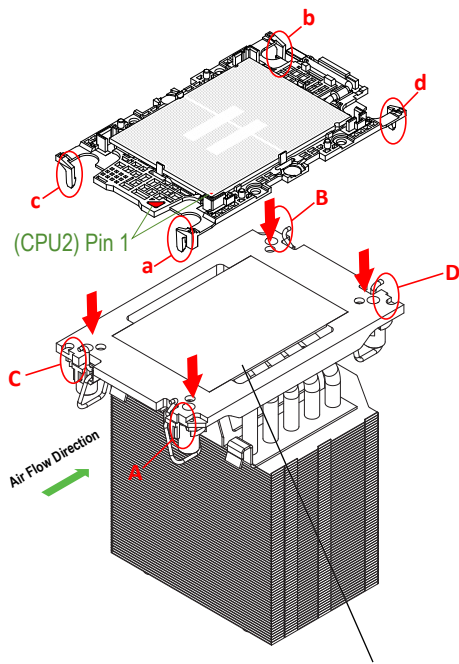
b

d

c

(CPU2) Pin 1

a

B

D

C

A

Air Flow Direction

Heatsink (Bottom Side)

**Processor Carrier Assembly
(Component Side)
(Xeon Max, Carrier E1C)**

b

d

c

(CPU2) Pin 1

a

B

D

C

A

Air Flow Direction

Heatsink (Bottom Side)

**Processor Carrier Assembly
(Component Side)
(SP MCC, Carrier E1B)**

b

d

c

(CPU2) Pin 1

a

B

D

C

A

Air Flow Direction

Heatsink (Bottom Side)

Air Flow Direction
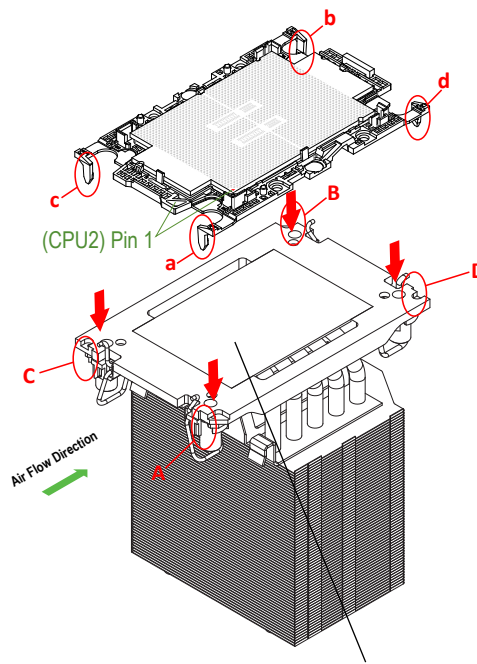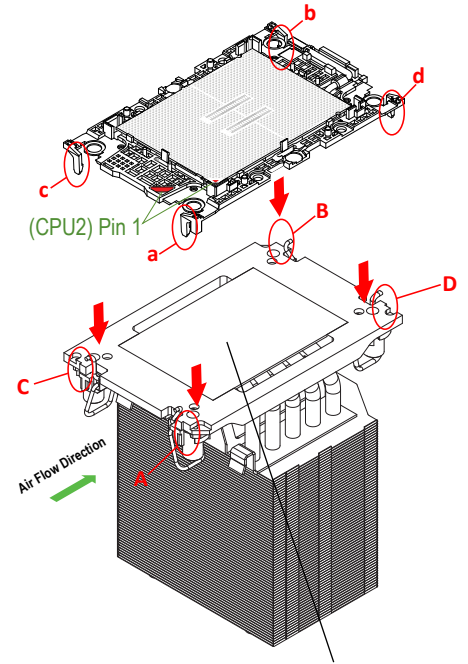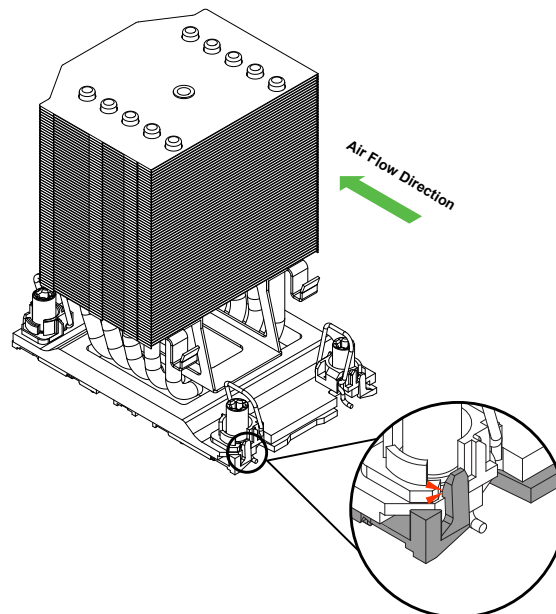
PHM (4U Heatsink)

Preparing the CPU Socket for Installation

This motherboard comes with a plastic protective cover installed on the CPU socket. Remove it from the socket by following the instructions below.

1. Press the tabs inward.
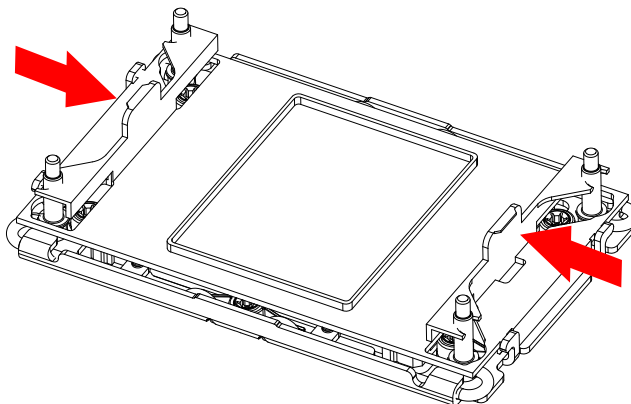
2. Pull up the protective cover from the socket.
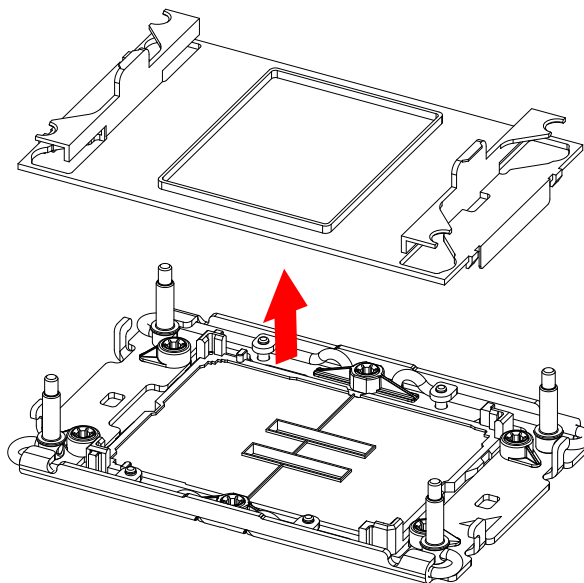
Preparing to Install the PHM into the CPU Socket

After assembling the Processor Heatsink Module (PHM), you are ready to install it into the CPU socket. To ensure the proper installation, please follow the procedures below.

1. Locate four threaded fasteners (marked a, b, c, d) on the CPU socket.

CPU Socket

(a, b, c, d: Threaded Fasteners)

CPU Socket Pin1
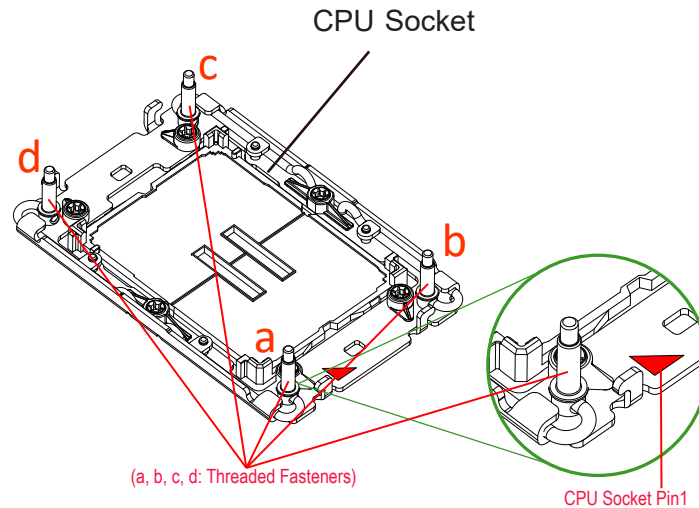
2. Locate four peek nuts (marked A, B, C, D) and four rotating wires (marked 1, 2, 3, 4) on the heatsink as shown below.

4U Heatsink (Top Side)

A, B, C, D: Peek Nut
1, 2, 3, 4: Rotating Wire
a, b, c, d: Threaded Fastener

Air Flow Direction

Rotating Wire 2 **B**
Rotating Wire 4
D
Rotating Wire 3
C
Rotating Wire

Peek Nut
(Unlatched) (Latched)

Rotating Wire 1
Peek Nut
Pin 1 **A**

CPU2 Socket
Pin 1

Pin 1
Rotating Wire 1 **A**
Rotating Wire 3
C
Rotating Wire 4
D

Air Flow Direction

Rotating Wire 2
Peek Nut
Pin 1 **B**

CPU1 Socket

49
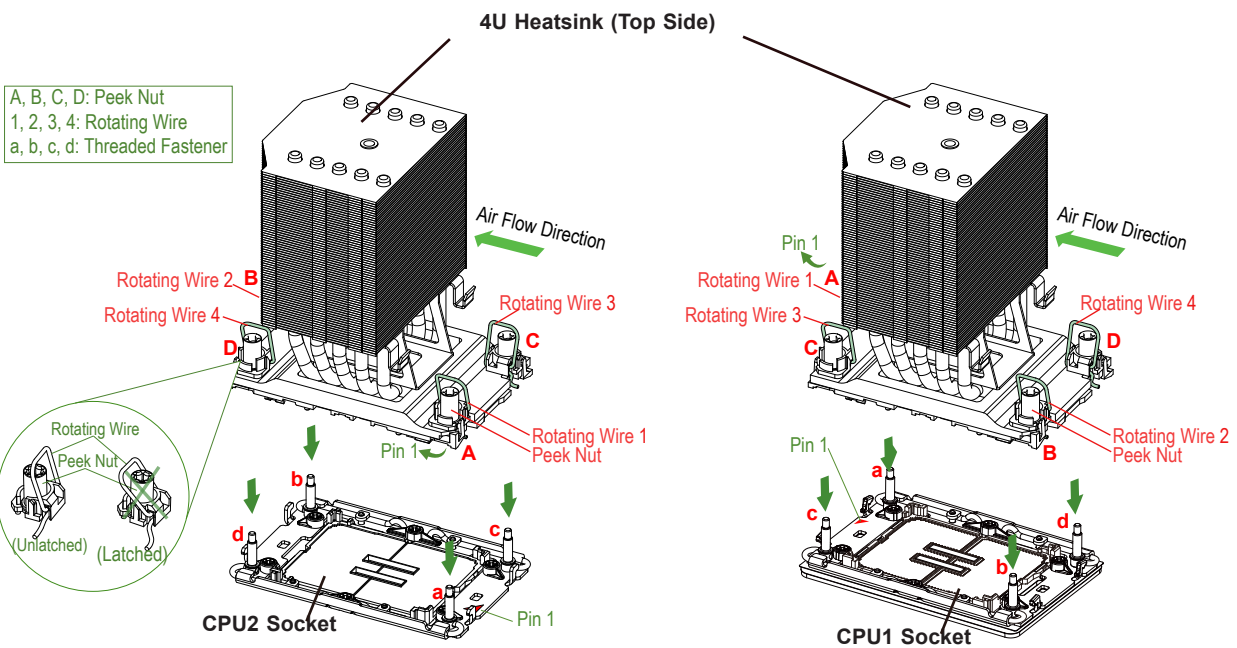
3. Check the rotating wires (marked 1, 2, 3, 4) to make sure that they are at unlatched positions as shown below before installing the PHM into the CPU socket.

Unlatched State
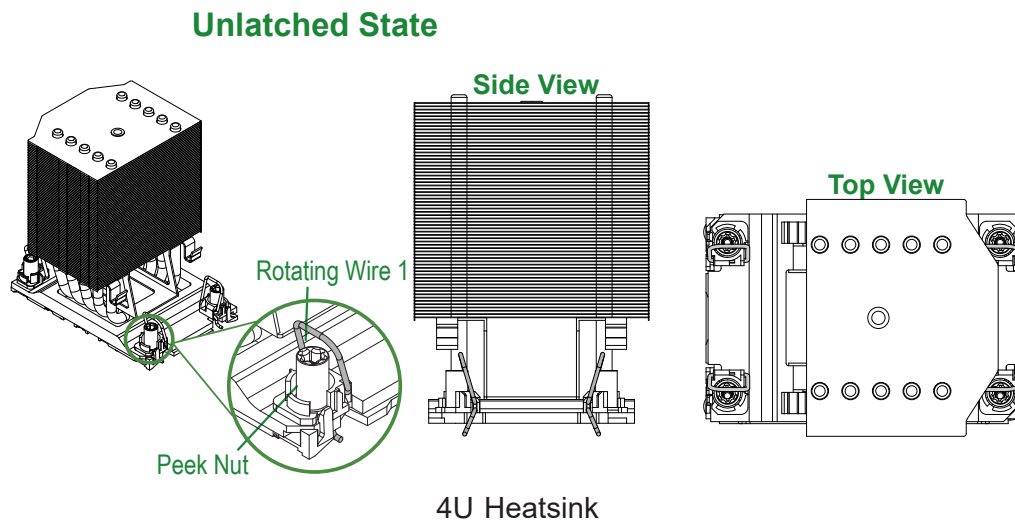
4U Heatsink

Installing the PHM into the CPU Socket

1. Align peek nut (marked A) on the heatsink against threaded fastener (marked a) on the CPU socket. Then align peek nuts (marked B, C, D) on the heatsink against threaded fasteners (marked b, c, d) on the CPU socket, making sure that all peek nuts on the heatsink are properly aligned with the correspondent threaded fasteners on the CPU socket.

2. Once they are aligned, gently place the heatsink on top of the CPU socket, making sure that each peek nut is properly attached to its corresponding threaded fastener.
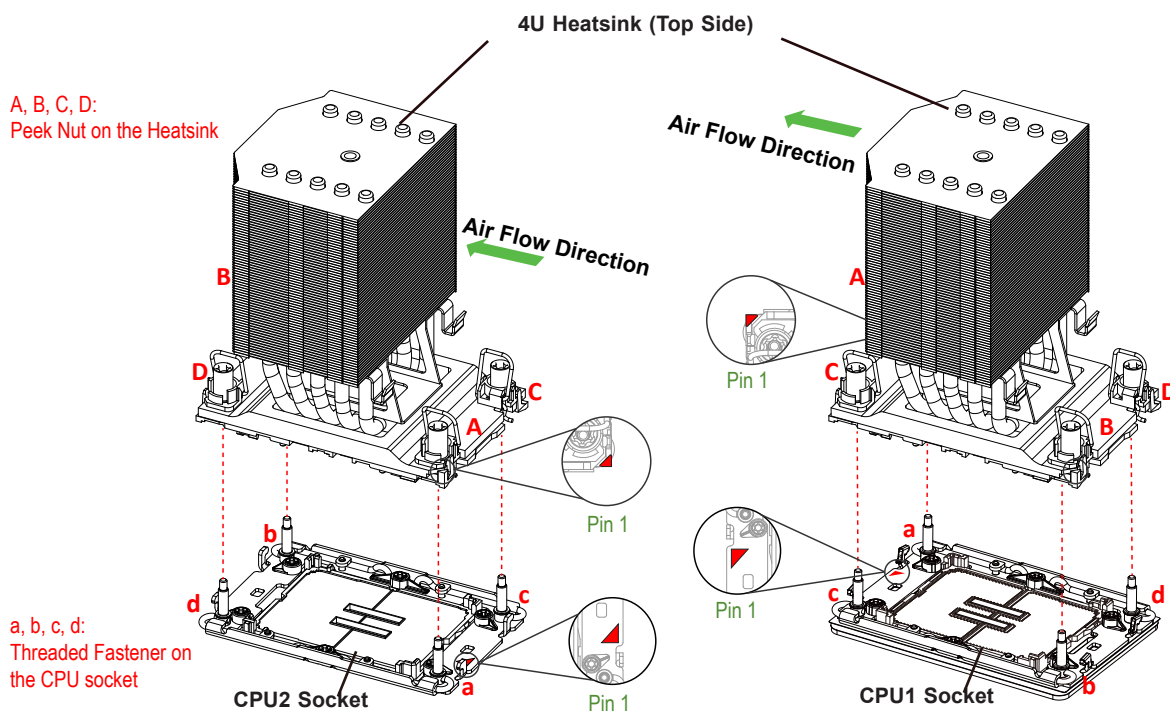
3. Press all four rotating wires outwards and make sure that the heatsink is securely latched onto the CPU socket.

Latched State
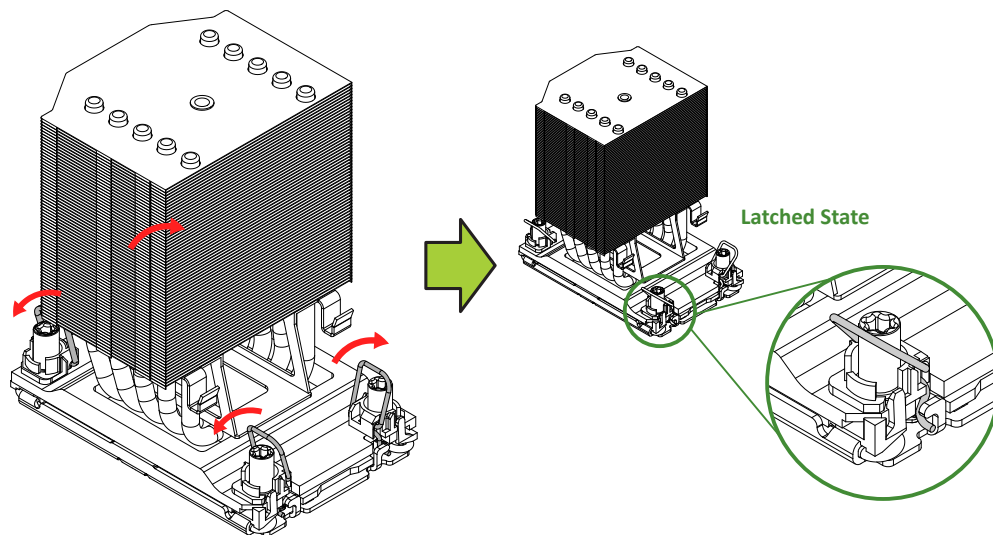
4U Heatsink

4. With a T30 screwdriver, tighten all peek nuts in the sequence of A, B, C, and D with even pressure. To avoid damaging the processor or socket, do not use excessive force when tightening the peek nuts. (For best durability, 8in-lbf torque is recommended.)

5. Examine all corners of the heatsink to ensure that the PHM is firmly attached to the CPU socket.
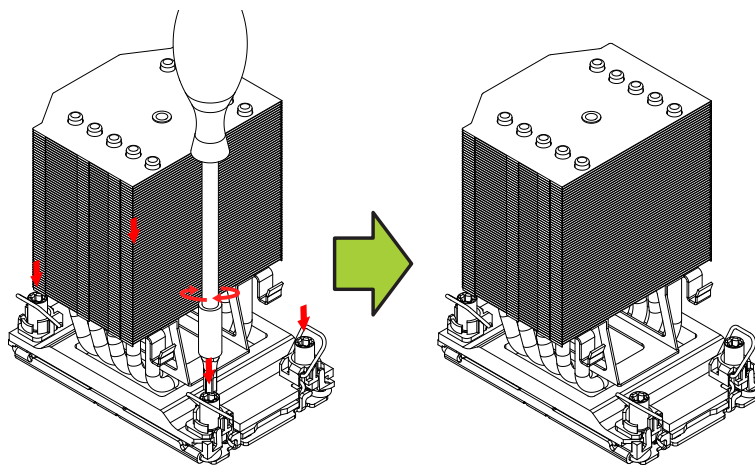
4U Heatsink

Installing the Fan onto the 4U Heatsink

1. Align the aluminum fan shroud against the top of the 4U heatsink. The fan shroud was designed to match perfectly with the top of the heatsink in terms of geometric shape.

2. When the fan shroud and the top of the heatsink are properly aligned, gently push the fan onto the heatsink until the bottom of the fan properly rests on the two hooks of the heatsink as shown below.

Hooks
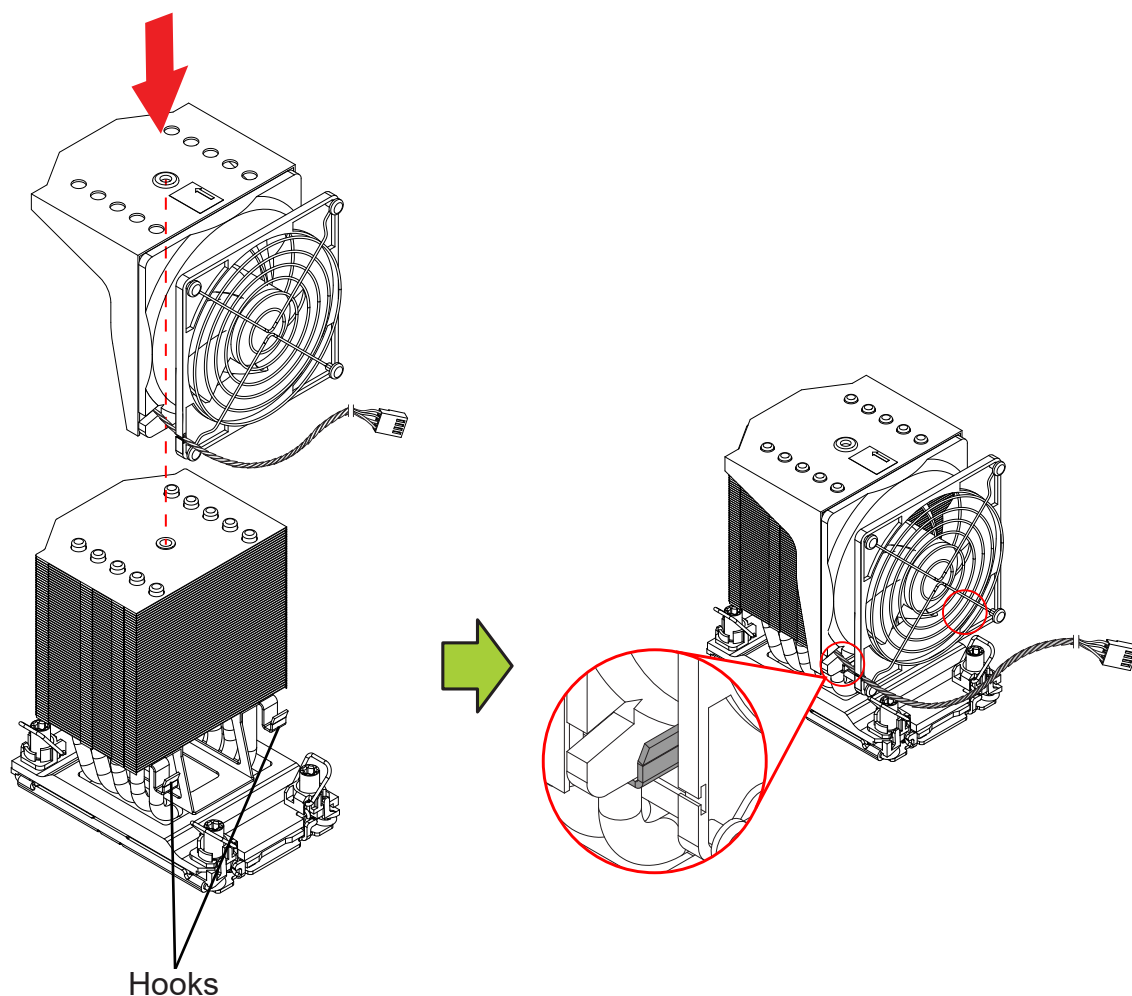
3. Insert the torx screw into the screw hole on top the heatsink and turn it clockwise to tighten the screw.
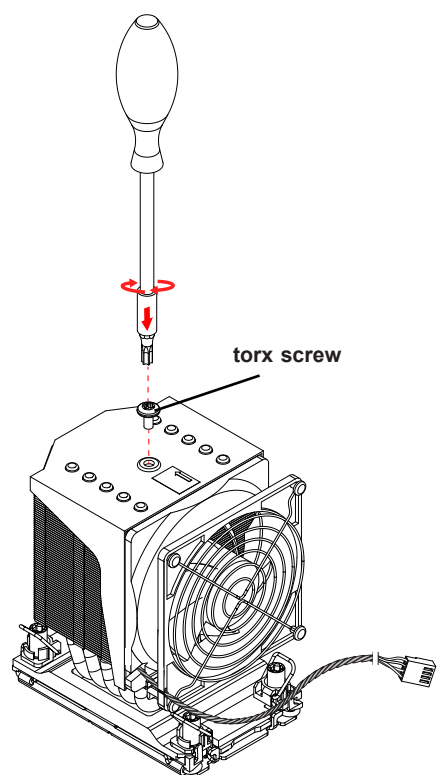
torx screw

4. Connect the fan power connector to a 4-pin fan header on the motherboard.
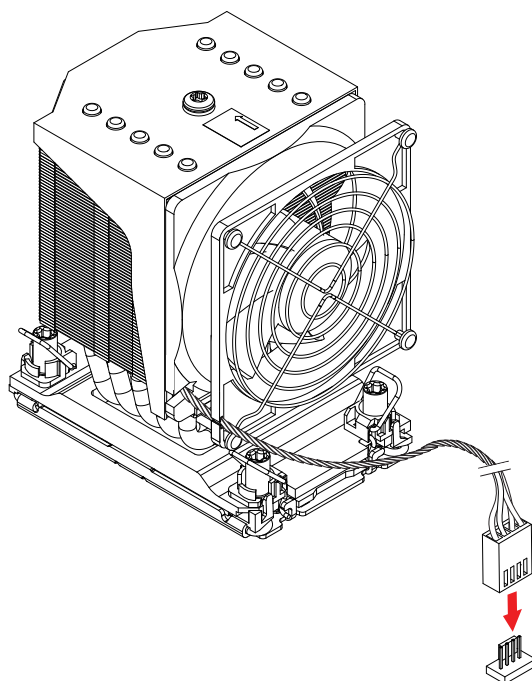
Uninstalling the Fan Before Removing the PHM (4U Heatsinks Only)

1. Loosen the torx screw from the heatsink. Unplug the fan power connector from the fan header.
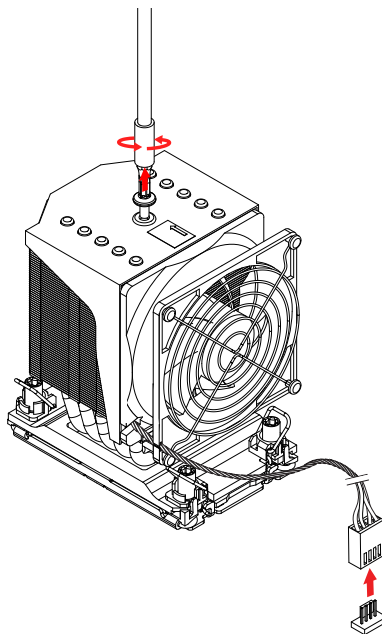
2. Gently pull the heatsink fan upward to detach it from the heatsink.
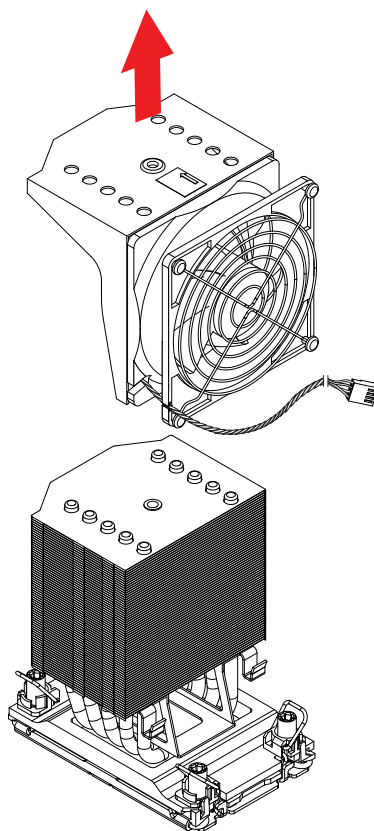
Removing the PHM from the CPU Socket

Before removing the PHM from the motherboard, be sure to shut down the system and unplug the power cables from the power supply. Then follow the steps below.

1. Use a T30 screwdriver to loosen the four peek nuts on the heatsink in the sequence of A, B, C, and D.
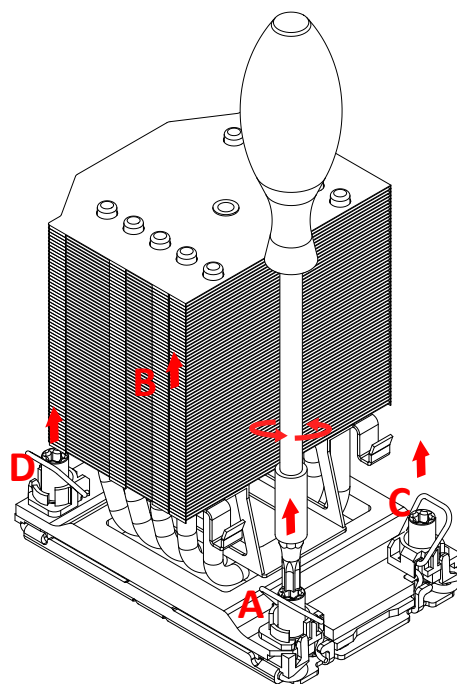
4U Heatsink

2. Once the peek nuts are loosened from the CPU socket, press the rotating wires inwards to unlatch the PHM from the socket as shown below.

Unlatched State
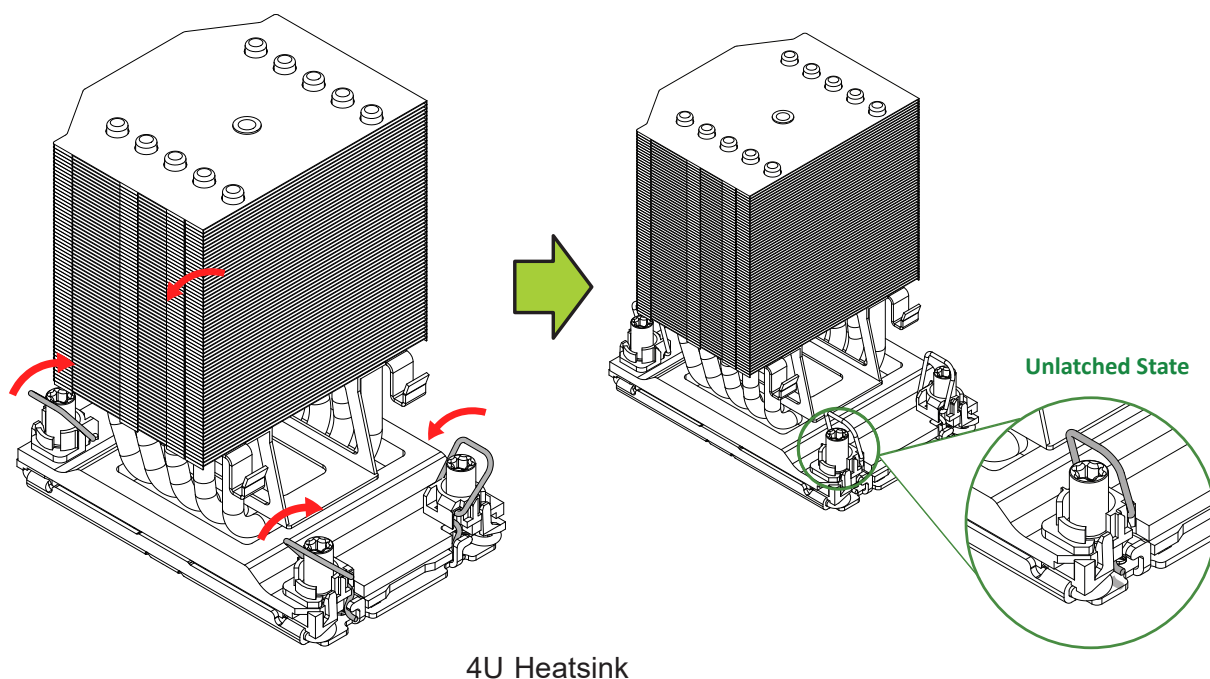
4U Heatsink

3. Gently pull the PHM upwards to remove it from the CPU socket.

4U Heatsink
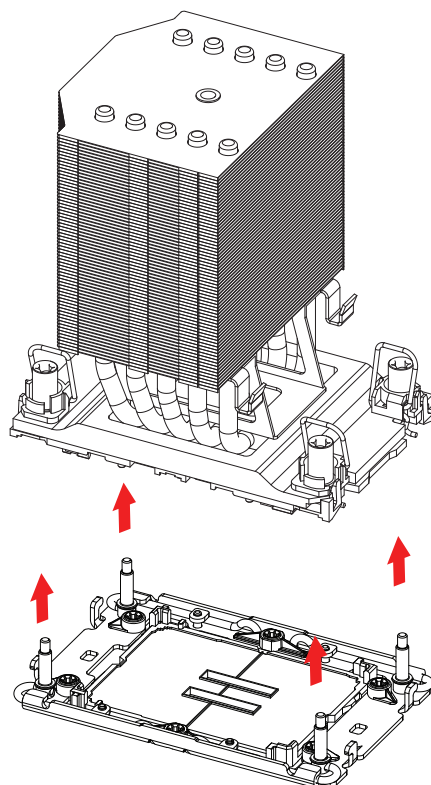
Removing the Processor Carrier Assembly from the PHM

To remove the processor carrier assembly from the PHM, please follow the steps below.

1. Detach the four plastic clips (marked a, b, c, d) on the processor carrier assembly from the four corners of the heatsink (marked A, B, C, D) as shown below.

Processor Carrier Assembly
(Component Side)
(SP XCC, Carrier E1A)

Processor Carrier Assembly
(Component Side)
(Xeon Max, Carrier E1C)

(CPU2) Pin 1

(CPU2) Pin 1

Processor Carrier Assembly
(Component Side)
(SP MCC, Carrier E1B)

(CPU2) Pin 1
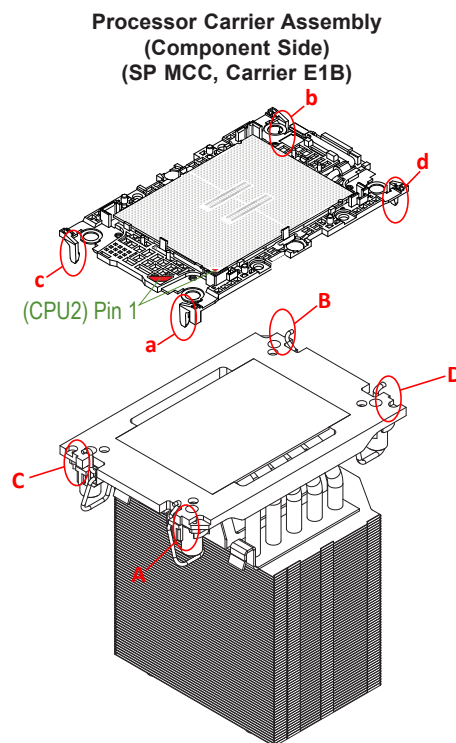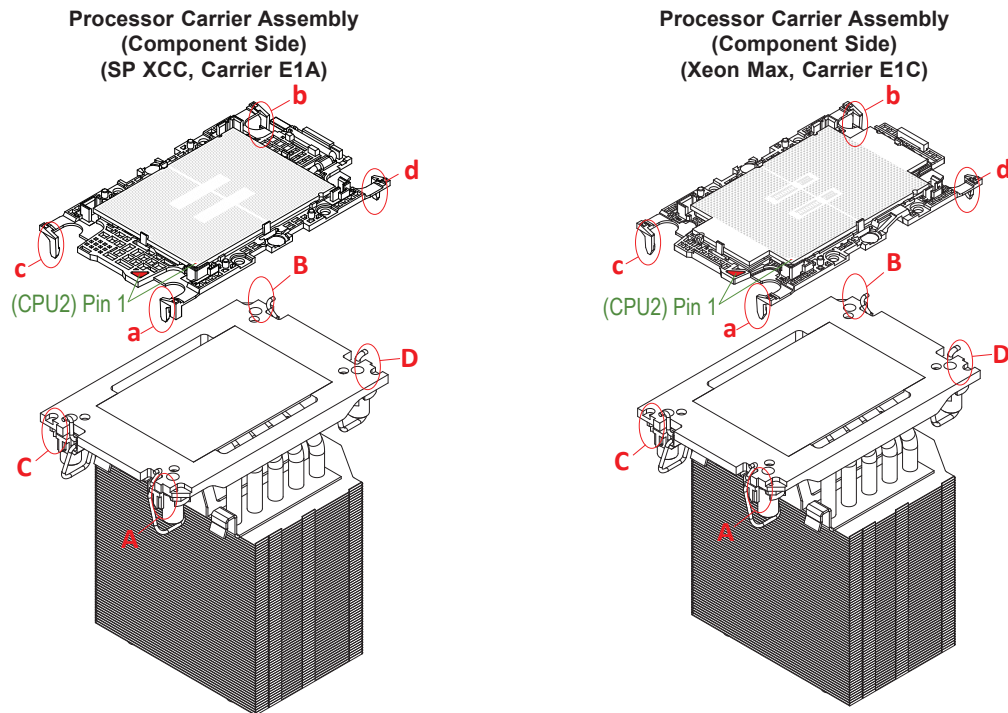
4U Heatsink (Bottom View)

2. When all plastic clips are detached from the heatsink, remove the processor carrier assembly from the heatsink.

SP XCC

Xeon Max

SP MCC

4U Heatsink (Bottom View)
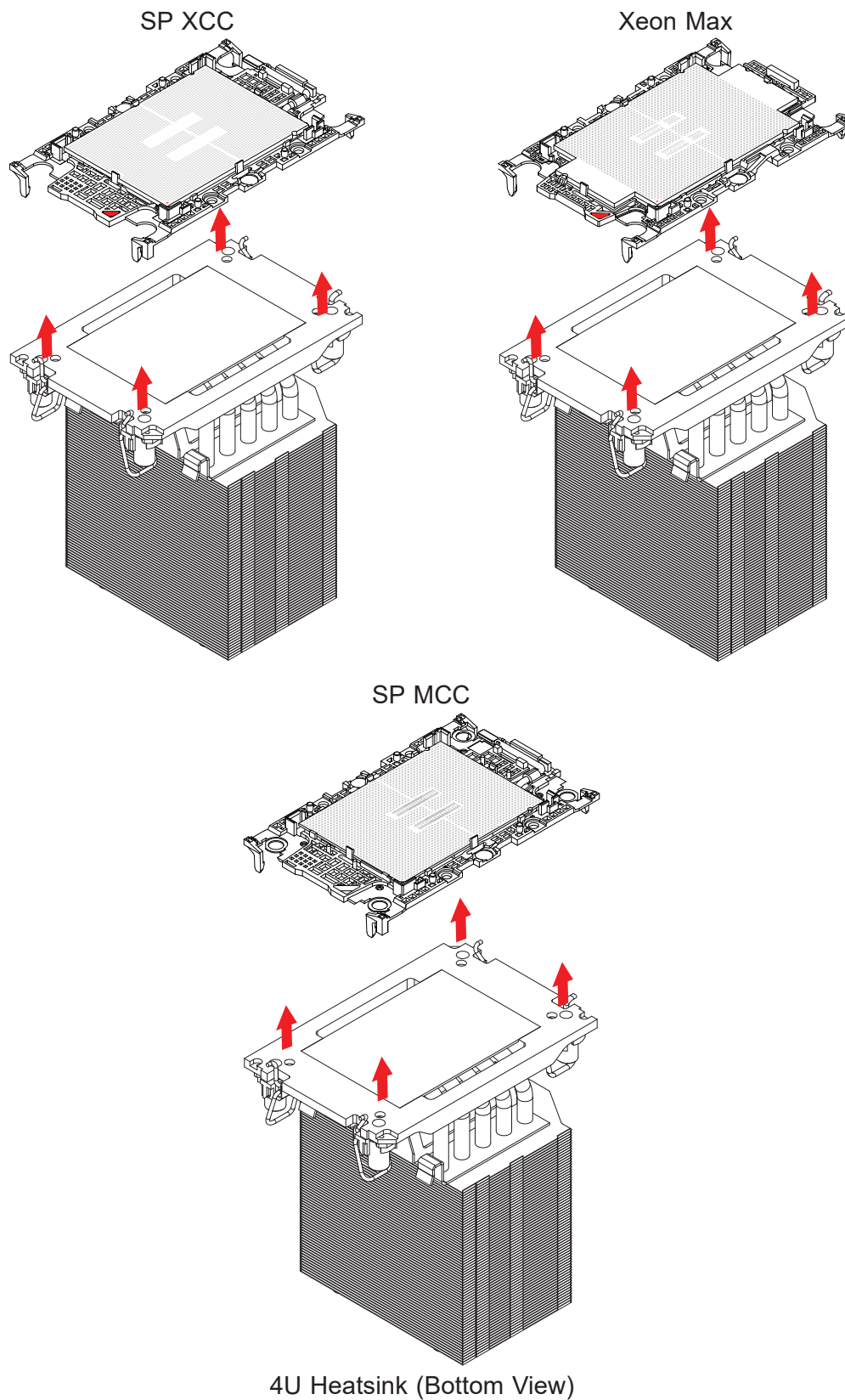
Removing the Processor from the Processor Carrier Assembly

Once you have removed the processor carrier assembly from the PHM, you are ready to remove the processor from the processor carrier by following the steps below.

1. Unlock the lever from its locked position and push the lever upwards to disengage the processor from the processor carrier as shown in the drawings on the right below.

Processor Carrier Assembly (SP XCC, Carrier E1A)
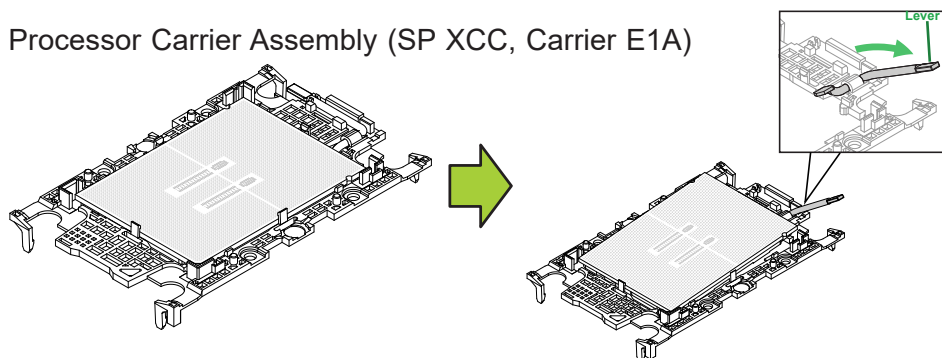
Processor Carrier Assembly (SP MCC, Carrier E1B)
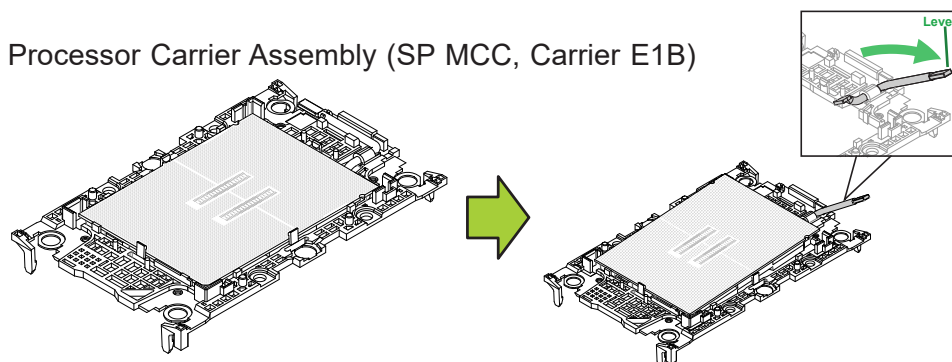
2. Once the processor is loosened from the carrier, carefully remove the processor from the processor carrier.

   Note: Please handle the processor with care to avoid damaging the processor and its pins.

SP XCC   Xeon Max   SP MCC
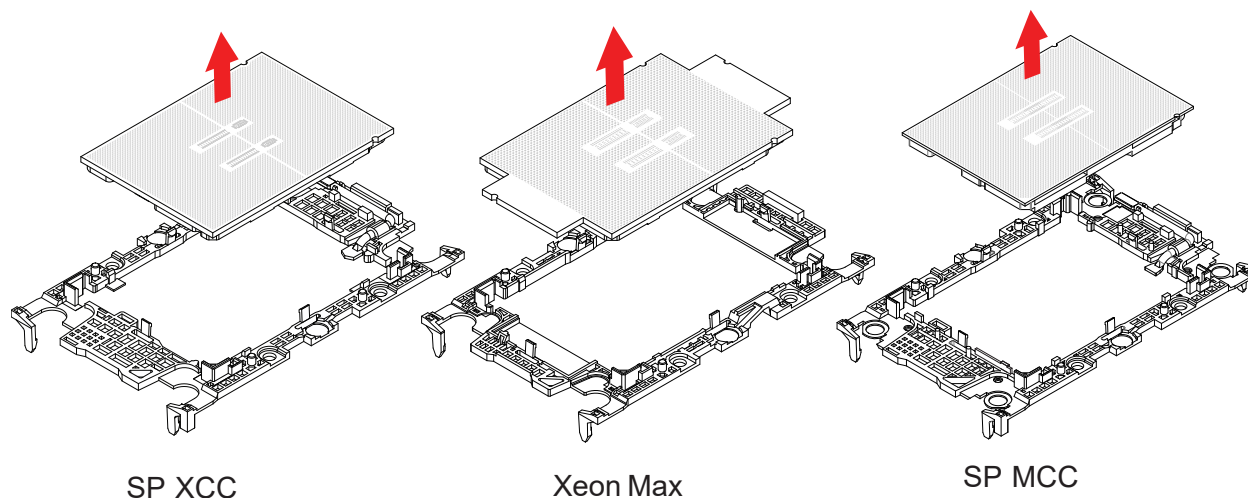
3.4 Memory Support and Installation

Note: Check the Supermicro website for recommended memory modules.

Important: Exercise extreme care when installing or removing DIMM modules to prevent any possible damage.

Memory Support

This motherboard supports up to 4TB of 3DS RDIMM/RDIMM DDR5 (288-pin) ECC memory with speeds of up to 4800 MT/s in 16 DIMM slots.

Note: Memory speed and capacity support depends on the processors used in the system.

DDR5 Memory Support for 4th Gen Intel Xeon Scalable Processors

DDR5 Memory Support for the 4th Gen. Intel Xeon Scalable Processors				
Type	Ranks Per DIMM & Data Width (Stack)	DIMM Capacity (GB)	Speed (MT/s); Voltage (V); DIMM Per Channel (DPC)	
			1DPC*	2DPC
		16 Gb (DRAM Density)	1.1 V	
RDIMM	SRx8 (RC D)	16 GB	4800	4400
	SRx4 (RC C)	32 GB		
	SRx4 (RC F) 9x4	32 GB		
	DRx8 (RC E)	32 GB		
	DRx4 (RC A))	64 GB		
	DRx4 (RC B) 9x4	64 GB		
RDIMM 3DS	(4R/8R) x4 (RC A)	2H-128 GB 4H-256 GB		
LRDIMM/LRDIMM-3DS	N/A	N/A	Not Supported	Not Supported
* 1DPC applies to 1 Socket Per Channel (SPC) or 2SPC implementation.				

DDR5 Memory Support for the 5th Gen. Intel Xeon Scalable Processors

DDR5 Memory Support for the 5th Gen. Intel Xeon Scalable Processors					
Type	Ranks Per DIMM & Data Width (Stack)	DIMM Capacity (GB)		Speed (MT/s); Voltage (V); DIMM Per Channel (DPC)	
				1DPC[Note 1]	2DPC
		16 Gb (DRAM Density)	24 Gb (DRAM Density)	1.1 V	
RDIMM	SRx8 (RC D)	16 GB	24 GB[Note 2]	5600	4400
	SRx4 (RC C)	32 GB	48 GB[Note 2]		
	SRx4 (RC F) 9x4	32 GB	48 GB[Note 2]		
	DRx8 (RC E)	32 GB	48 GB[Note 2]		
	DRx4 (RC A))	64 GB	96 GB		
	DRx4 (RC B) 9x4	64 GB	96 GB		
RDIMM 3DS	(4R/8R) x4 (RC A)	2H-128 GB 4H-256 GB	N/A		
LRDIMM/LRDIMM-3DS	N/A	N/A	N/A	Not Supported	Not Supported
Note 1: 1DPC applies to 1 Socket Per Channel (SPC) or 2SPC implementation. Note 2: The 24 Gb 2DPC configuration with 24 GB and 48 GB DIMMs is NOT recommended.					

Notes: For the memory support on the Intel Xeon Max Series, which is with the high bandwidth memory (HBM), please note the following:

1. CPU Only Mode: supported when the Intel Xeon Max Series is installed only.

2. Cache Mode: supported when the Intel Xeon Max Series and the DIMM(s) are installed. The processor will be configured in the Two-Level Memory mode (2LM), which is the default setting.

3. Flat Mode: supporting the One-Level Memory mode (1LM). Please go to the BIOS Setup utility to set this memory mode.

Memory Population for the X13DEG-QT Motherboard (with 16 DIMM Slots)

DDR5 Memory Population Table for the X13DEG-QT Motherboard (with 16 DIMM Slots)	
1 CPU:	*Memory Population Sequence*
1 CPU & 1 DIMM	P1-DIMMA1 or P1-DIMME1 or P1-DIMMB1 or P1-DIMMF1
1 CPU & 2 DIMMs	P1-DIMMA1 / P1-DIMMG1 or P1-DIMMC1 / P1-DIMME1
1 CPU & 4 DIMMs	P1-DIMMA1 / P1-DIMMC1 / P1-DIMME1 / P1-DIMMG1
1 CPU & 6 DIMMs	P1-DIMMA1 / P1-DIMMC1 / P1-DIMMD1 / P1-DIMME1 / P1-DIMMF1 / P1-DIMMG1 or P1-DIMMA1 / P1-DIMMB1 / P1-DIMMC1 / P1-DIMME1 / P1-DIMMG1 / P1-DIMMH1 or P1-DIMMB1 / P1-DIMMC1 / P1-DIMMD1 / P1-DIMME1 / P1-DIMMF1 / P1-DIMMH1 or P1-DIMMA1 / P1-DIMMB1 / P1-DIMMD1 / P1-DIMMF1 / P1-DIMMG1 / P1-DIMMH1
1 CPU & 8 DIMMs	P1-DIMMA1 / P1-DIMMB1 / P1-DIMMC1 / P1-DIMMD1 / P1-DIMME1 / P1-DIMMF1 / P1-DIMMG1 / P1-DIMMH1
2 CPUs: *(Recommended)*	*Memory Population Sequence*
2 CPUs & 2 DIMMs	**CPU1:** P1-DIMMA1, **CPU2:** P2-DIMMA1 or **CPU1:** P1-DIMME1, **CPU2:** P2-DIMME1 or **CPU1**: P1-DIMMB1, **CPU2:** P2-DIMMB1 or **CPU1:** P1-DIMMF1, **CPU2:** P2-DIMMF1
2 CPUs & 4 DIMMs	**CPU1:** P1-DIMMA1 / P1-DIMMG1, **CPU2:** P2-DIMMA1 / P2-DIMMG1 or **CPU1:** P1-DIMMC1 / P1-DIMME1, **CPU2:** P2-DIMMC1 / P2-DIMME1
2 CPUs & 8 DIMMs	**CPU1:** P1-DIMMA1 / P1-DIMMC1 / P1-DIMME1 / P1-DIMMG1 **CPU2:** P2-DIMMA1 / P2-DIMMC1 / P2-DIMME1 / P2-DIMMG1
2 CPUs & 12 DIMMs	**CPU1:** P1-DIMMA1/P1-DIMMC1/P1-DIMMD1/P1-DIMME1/P1-DIMMF1/P1-DIMMG1 **CPU2:** P2-DIMMA1/P2-DIMMC1/P2-DIMMD1/P2-DIMME1/P2-DIMMF1/P2-DIMMG1 or **CPU1:** P1-DIMMA1/P1-DIMMB1/P1-DIMMC1/P1-DIMME1/P1-DIMMG1/P1-DIMMH1 **CPU2:** P2-DIMMA1/P2-DIMMB1/P2-DIMMC1/P2-DIMME1/P2-DIMMG1/P2-DIMMH1 or **CPU1:** P1-DIMMB1/P1-DIMMC1/P1-DIMMD1/P1-DIMME1/P1-DIMMF1/P1-DIMMH1 **CPU2:** P2-DIMMB1/P2-DIMMC1/P2-DIMMD1/P2-DIMME1/P2-DIMMF1/P2-DIMMH1 or **CPU1:** P1-DIMMA1/P1-DIMMB1/P1-DIMMD1/P1-DIMMF1/P1-DIMMG1/P1-DIMMH1 **CPU2:** P2-DIMMA1/P2-DIMMB1/P2-DIMMD1/P2-DIMMF1/P2-DIMMG1/P2-DIMMH1
2 CPUs & 16 DIMMs	**CPU1**: P1-DIMMA1/P1-DIMMB1/P1-DIMMC1/P1-DIMMD1/P1-DIMME1/P1-DIMMF1/P1-DIMMG1/P1-DIMMH1 **CPU2**: P2-DIMMA1/P2-DIMMB1/P2-DIMMC1/P2-DIMMD1/P2-DIMME1/P2-DIMMF1/P2-DIMMG1/P2-DIMMH1

Note: The memory configuration is recommended by Supermicro for optimal memory performance. Please use this configuration to maximize your memory performance.

DDR5 Memory Population Table for the X13DEG-QT Motherboard (with the Intel Xeon Max Series and 16 DIMM Slots)										Intel Xeon Max Series Partitioning Modes				
	P1/P2-DIMMH1	P1/P2-DIMMG1	P1/P2-DIMMF1	P1/P2-DIMME1	P1/P2-DIMMA1	P1/P2-DIMMB1	P1/P2-DIMMC1	P1/P2-DIMMD1	SNC2	SNC4 (DDR+ HBM)	Hemi (DDR only)	Quad (HBM)	Quad (DDR)	All2All (DDR only)
Xeon Max Only										V		V		
Xeon Max & 1 DIMM					DDR5							V		V
Xeon Max & 1 DIMM				DDR5								V		V
Xeon Max & 2 DIMMs		DDR5			DDR5							V		V
Xeon Max & 2 DIMMs				DDR5			DDR5					V		V
Xeon Max & 4 DIMMs		DDR5		DDR5	DDR5		DDR5			V		V	V	
Xeon Max & 8 DIMMs	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5		V		V	V	
* SNC: Sub NUMA Cluster														

Notes: For the memory support on the Intel Xeon Max Series, which is with the high bandwidth memory (HBM), please note the following:

- CPU Only Mode: This mode is supported when the Intel Xeon Max Series is installed with no DDR memory module. The feature of "Total Memory" on the Main screen of the BIOS Setup utility displays the HBM size.

- Cache Mode: This mode is supported when the Intel Xeon Max Series is installed with the DDR memory module(s). The processor will be configured in the Two-Level Memory mode (2LM), which is the default setting. The feature of "Total Memory" on the Main screen of the BIOS Setup utility displays the size of DDR memory module(s) installed in your system.

- Flat Mode: This mode supports the One-Level Memory mode (1LM). Please go to the BIOS Setup utility (Advanced > Chipset Configuration > North Bridge > Memory Configuration) to set "Volatile Memory Mode" to 1LM. The feature of "Total Memory" on the Main screen of the BIOS Setup utility displays the result of adding the HBM size to the DDR size.

- The total DDR size must be at least two times of the HBM size for each CPU socket.

3.5 Motherboard Battery

The motherboard uses non-volatile memory to retain system information when system power is removed. This memory is powered by a lithium battery residing on the motherboard.

Replacing the Battery

Begin by removing power from the system.

1. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.

2. To insert a new battery, slide one edge under the lip of the holder with the positive (+) side facing up. Then push the other side down until the clamp snaps over it.

Note: Handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

LITHIUM BATTERY

BATTERY HOLDER
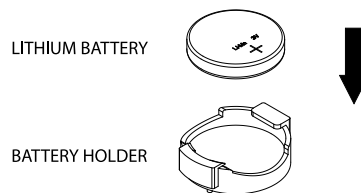
Figure 3-4. Installing the Onboard Battery

Warning: There is a danger of explosion if the onboard battery is installed upside down (which reverses its polarities). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (CR2032).

3.6 PCIe Expansion Card Removal

This motherboard supports seven PCIe 5.0 x16 slots. Please read the instructions below carefully before you remove an expansion card from the PCIe slot.

1. PCIe slot with the latch closed (locked):

(side view)

Latch closed (locked)
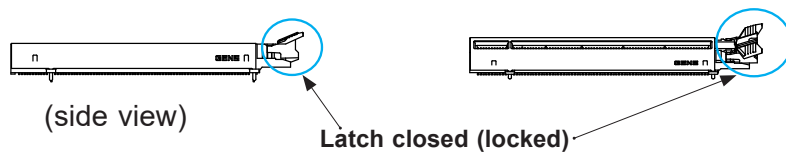
2. PCIe slot with the latch opened (unlocked):

(side view)

Latch opened (unlocked)
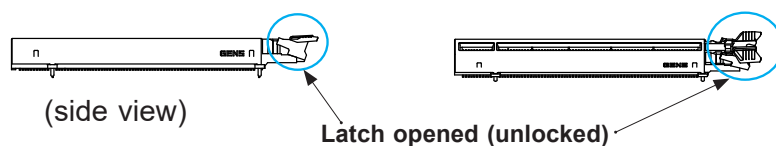
3. PCIe slot with the expansion card installed:

Expansion card

(side view)

Latch closed (locked)
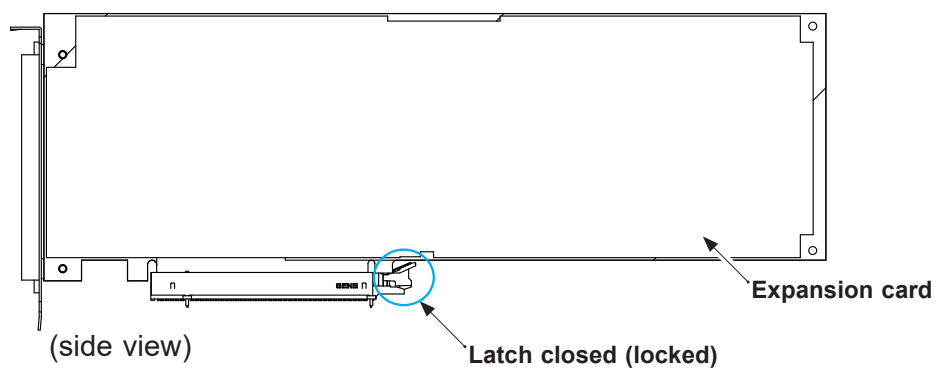
4. To remove the expansion card from the PCIe slot, be sure to press the latch to unlock it first. Once the expansion card has been loosened, remove it from the slot.

(side view)

Expansion card

Latch opened (unlocked)

(side view)

Expansion card

Latch opened (unlocked)
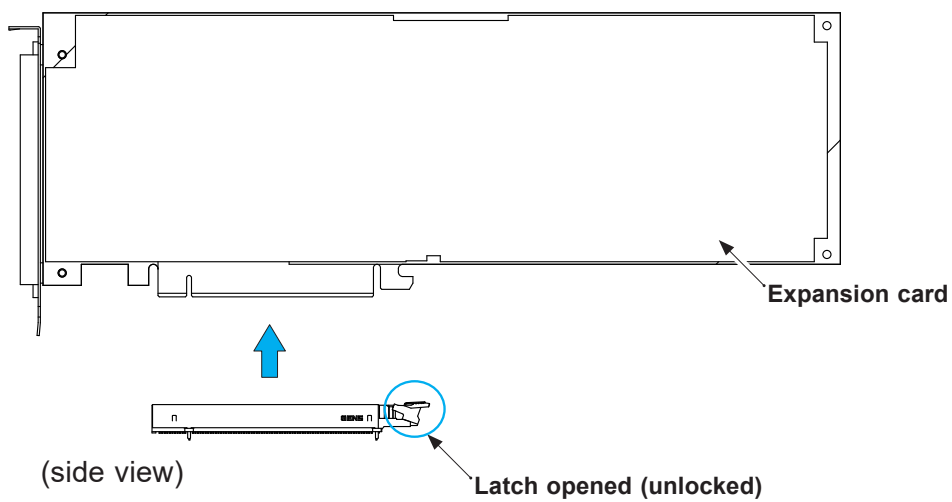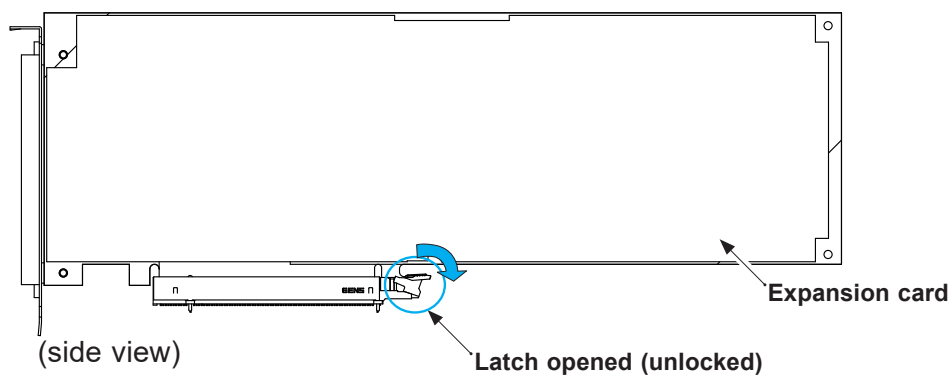
3.7 Chassis Components

Hard Drives

A total of eight SATA, SAS3 and NVMe hard drives may be housed in the CSE-749TS-R2K05BP chassis. The drive IDs are preconfigured as 0 through 7 in order from bottom to top (or from left to right if rackmounted).

The drives are mounted in drive carriers to simplify their installation and removal from the chassis. (Both procedures may be done without removing power from the system.)

Removing a Hot-Swap Drive Carrier

1. Open the front bezel then push the release button located beside the drive LEDs.

2. Swing the handle fully out and then use it to pull the unit straight out.

Note: Your operating system must have RAID support to enable the hot-swap capability of the SATA drives.

Mounting a Drive in a Drive Carrier

The SATA drive carriers help to promote proper airflow for the system. For this reason, even carriers without SATA drives must remain in the chassis.

1. To add a new drive, install it into the carrier with the printed circuit board side facing down so that the mounting holes align with those in the carrier.

2. Secure the drive to the carrier with the screws provided, then push the carrier completely into the drive bay. You should hear a *click* when the drive is fully inserted. This indicates that the carrier has been fully seated and connected to the midplane, which automatically makes the power and logic connections to the hard drive.

Removing a Drive from a Drive Carrier

1. Remove the screws that secure the hard drive to the carrier and separate the hard drive from the carrier.

2. Replace the carrier back into the drive bay.

Note: Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro website at http://www.supermicro.com/products/nfo/storage.cfm

SATA Backplane

The SATA drives plug into a drive backplane. A data cable for each drive and two LED cables need to be connected from the motherboard to the appropriate connectors on the backplane. Note that you cannot cascade the SATA backplane.

Installing Components in the 5.25" Drive Bays

The SYS-741GE-TNRT has two 5.25" drive bays. Components such as an extra DVD-ROM drive can be installed into these 5.25" drive bays.

Removing the Empty Drive Bay

1. First power down the system.

2. Remove the top/left chassis cover to access the drive components.

3. With the cover off, remove the screws that secure the drive carrier to the chassis (one side only) then push the entire empty drive carrier out from the back.

Adding a DVD-ROM Drive

1. Remove the guide plates (one on each side) from the empty drive carrier and screw them into both sides of the DVD-ROM drive using the holes provided.

2. Slide the DVD-ROM into the bay and secure it to the chassis with the drive carrier screws you first removed.

3. Attach the power and data cables to the drive.

4. Replace the top/left chassis cover and restore power to the system.

3.8 CPU and GPU Air Shrouds

The air shroud is used to prevent the processors from overheating by concentrating airflow to maximize fan efficiency. The air shroud does not require screws to set up.

Installing the CPU and GPU Air Shrouds

1. Lay the chassis on a flat, stable surface and remove the chassis cover.

2. If necessary, move any cables that interfere with the air shroud placement.

3. Place the CPU air shroud in the chassis first. The air shroud fits just behind the two middle fans in the fan rack. Slide the air shroud into the grooves just behind the fan rack.

4. Then place the GPU air shrouds in the chassis. Both air shrouds fit behind the left and right fans in the fan rack. Slide the air shroud one by one into the grooves just behind the fan rack.

5. Reroute any cables that were moved and replace the chassis cover.
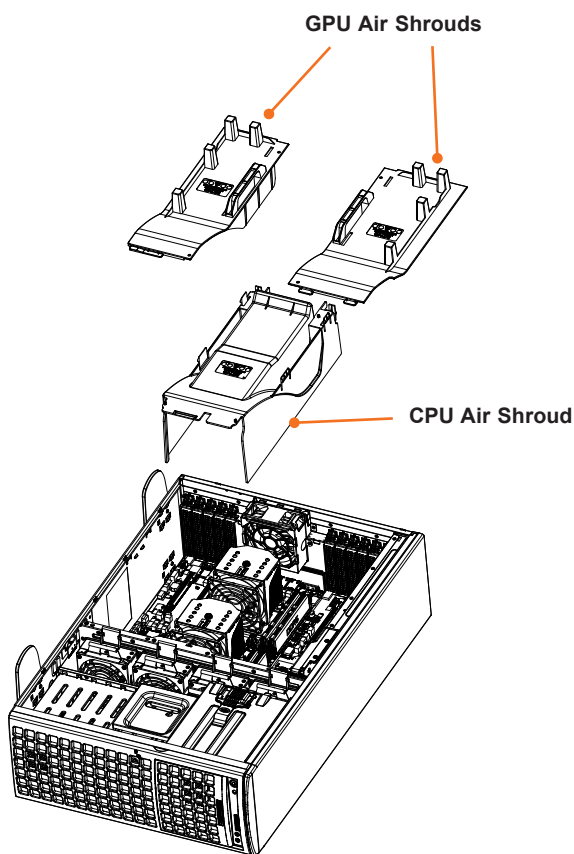
Figure 3-5. Installing the CPU and GPU Air Shrouds

3.9 System Cooling

Heavy-duty fans provide cooling for the chassis. Four fans are located in the mid-section of the chassis, two fans are located in the rear, and two optional fans can be mounted on the external rear of the chassis, required for GPUs.

The internal fans come pre-installed to the chassis. Each fan is hot-swappable and can be replaced without removing any connections.

System Fan Failure

Fan speed is controlled by system temperature through BMC. If a fan fails, the remaining fans will ramp up to full speed. Replace any failed fan at your earliest convenience with the same type and model (the system can continue to run with a failed fan).

Replacing System Fans

The chassis contains two types of system fans: mid-system fans and rear system fans.

Replacing Mid-System Fans (FAN-0199L4-2)

1. Determine which fan has failed. Because the fans are hot-swappable, the system does not need to be powered-down.

2. Press the fan release tab and lift the failed fan from the chassis. Mid fans must be pulled straight out of the chassis.

3. Place the new fan into the vacant space in the housing while making sure the arrows on the top of the fan (indicating air direction) point in the same direction as the arrows on the other fans. As soon as the fan is connected, it will begin working.

Replacing the Rear System Fan (FAN-0199L4-1)

1. Determine which fan has failed.

2. Press the rear fan release tab.

3. Pull the fan away from the chassis by pulling out the top first.

4. Place the new fan in the chassis, inserting the bottom of the fan first. Push the fan fully into the housing until the fan clicks into place. Check that the fan is working properly before replacing the chassis cover.

FAN-0199L4-2

Mid-Fan Release Tab
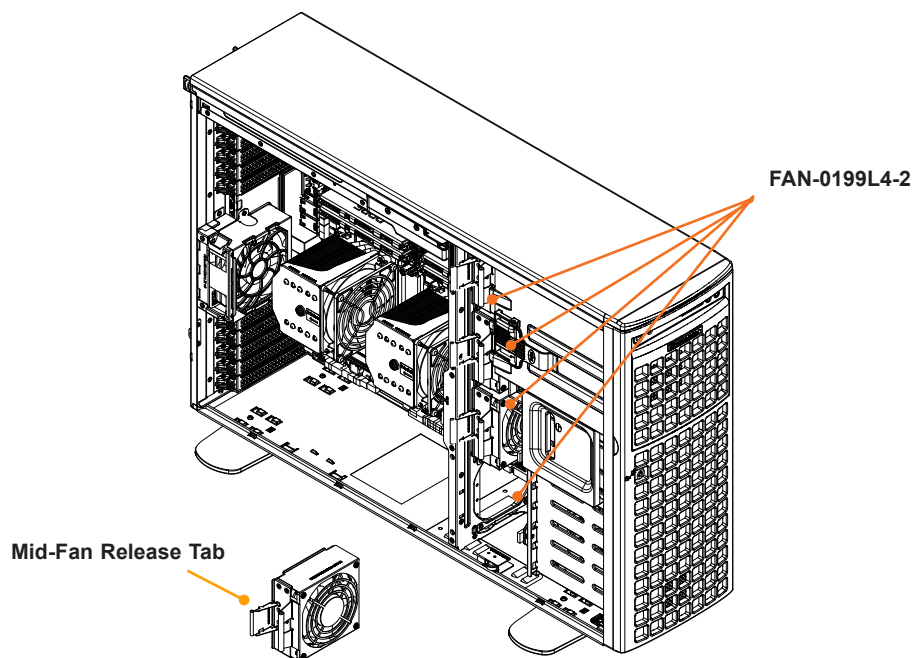
Figure 3-6. Mid-System Chassis Fans

FAN-0199L4-1

Rear Fan Release Tab
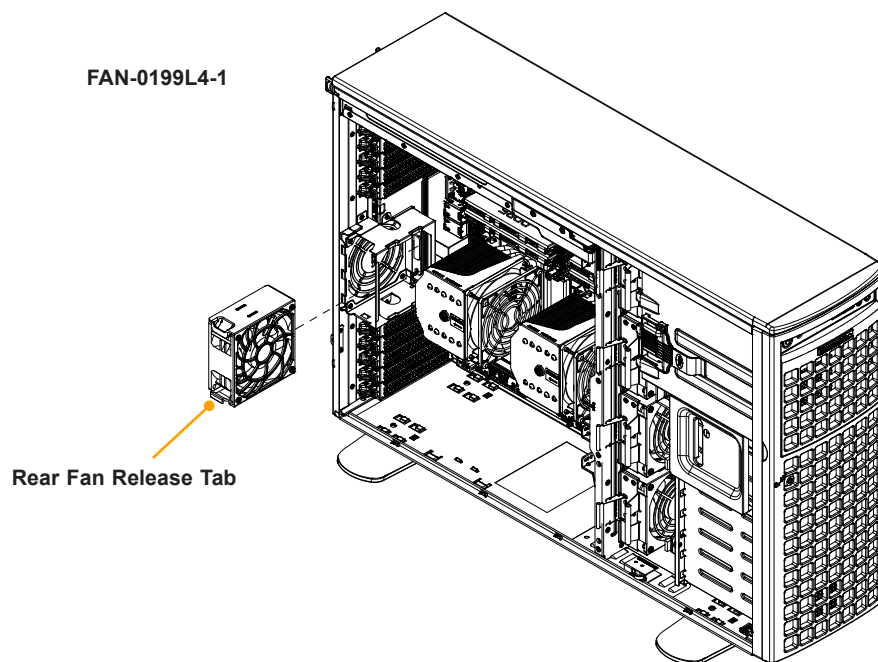
Figure 3-7. Rear System Chassis Fans

Power Supply

The SuperServer SYS-741GE-TNRT includes two 1+1 2000W redundant power supplies. These power supplies are hot-swap and auto-switching capable. This enables it to automatically sense and operate at a 100V to 240V input voltage. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating. In the event of a power supply failure, the remaining power supply will automatically take over. The failed power module can be replaced without powering down the system.

Replacing the Power Supply

1. Push the release button on the back of the failed power module.

2. Pull the power module out using the handle provided.

3. Replace the failed power module with the same model.

4. Push the new power module into the power bay until you hear a click.
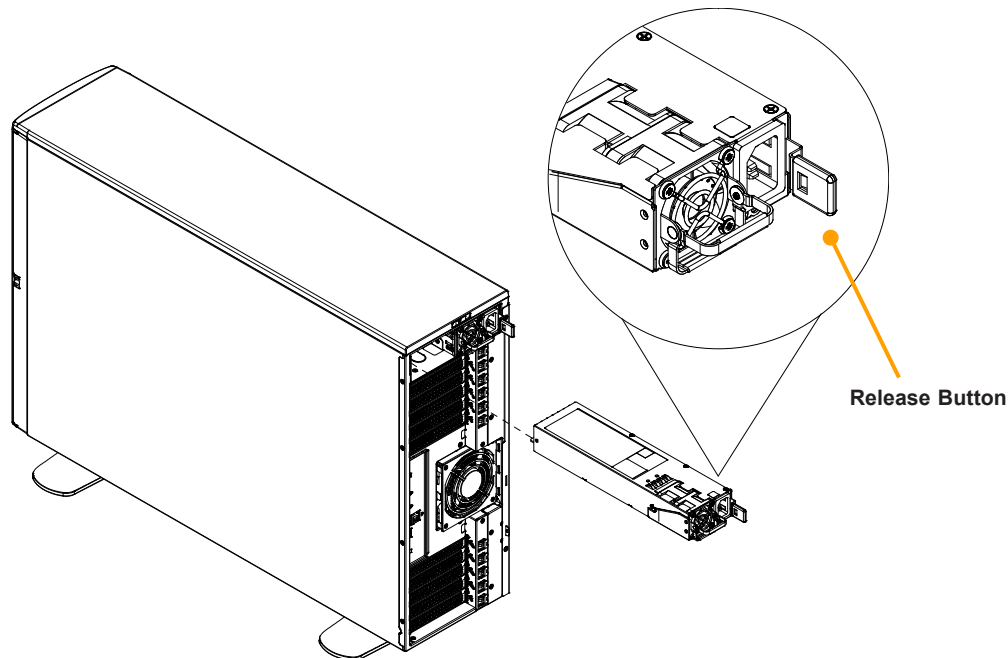
Release Button

Figure 3-8: Power Supply Release Button

Warning: Power cords shall be connected to a socket-outlet with a ground connection.

3.10 Cable Routing Diagram

Refer to the diagram below for a representation of how the main cables are routed throughout the system. When disconnecting cables to add or replace components, refer to this diagram when adding or replacing components so you can reroute them in the same manner. Proper cable routing is important in maintaining proper airflow through the system.
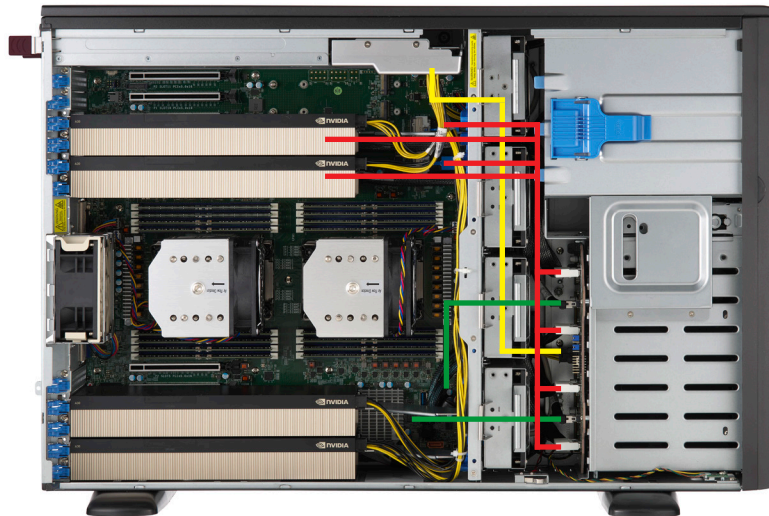
Micro-Hi Backplane Power Cable

SlimSAS to Backplane (SATA) Cable

MCIO to Backplane (NVMe) Cable

Figure 3-9. Cable Routing Diagram

Chapter 4

Motherboard Connections

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in Chapter 1. More detail can be found in the Motherboard Manual

Please review the Safety Precautions in Appendix A before installing or removing components.

4.1 Power Connections

Power Distribution Board Slot (JPW1)

There is one 12 VDC power connector (JPW1) on the motherboard to provide adequate power supply to your system. Refer to the table below for pin definitions.

12 VDC Power Connector Pin Definitions	
Pin#	**Definition**
1-9, 19-27, C, D, J, K	Ground
10-18, 28-36	+12 V
A, B, E, F, G, H, I, L, M, N	Sideband

Required Connection

4.2 Headers and Connectors

Headers

Fan Headers

There are twelve 4-pin fan headers (FAN1 - FAN10, FANA, FANB) on the motherboard. FANA is the fan header for CPU1. FANB is the fan header for CPU2. All these 4-pin fan headers are backwards compatible with the traditional 3-pin fans. However, fan speed control is available for 4-pin fans only by Thermal Management via the BMC interface. Refer to the table below for pin definitions.

Fan Header Pin Definitions	
Pin#	Definition
1	Ground
2	2.5 A/+12 V
3	Tachometer
4	PWM_Control

TPM/Port 80 Header

The JTPM1 header is used to connect a Trusted Platform Module (TPM)/Port 80, which is available from Supermicro (optional). A TPM/Port 80 connector is a security device that supports encryption and authentication in hard drives. It allows the motherboard to deny access if the TPM, which is associated with the hard drive, is not installed in the system. Refer to the motherboard layout in Chapter 1 for location. Please go to the following link for more information on the TPM: https://www.supermicro.com/manuals/other/AOM-TPM-9670V_9670H.pdf.

Trusted Platform Module Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+3.3 V	2	SPI_CS#
3	RESET#	4	SPI_MISO
5	SPI_CLK	6	GND
7	SPI_MOSI	8	NC
9	+3.3 V Stdby	10	SPI_IRQ#

VROC RAID Key Header

An Intel VROC RAID Key header is located at JRK1 on the motherboard. Install a VROC RAID Key on JRK1 for NVMe RAID support as shown in the illustration below. Refer to the motherboard layout in Chapter 1 for the location of JRK1.

> **Note:** For detailed instructions on how to configure VROC RAID settings, please refer to the VROC RAID Configuration User's Guide posted on the web page under the link: http://www.supermicro.com/support/manuals/.

Intel VROC Key Pin Definitions	
Pin#	Definition
1	Ground
2	3.3 V Standby
3	Ground
4	PCH RAID Key

VROC Key

VROC Key Header (JRK1)
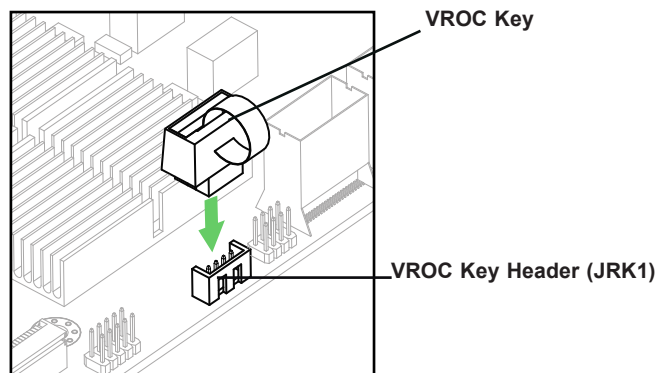
> **Note:** The graphics contained in this user's manual are for illustration only. The components installed in your system may or may not look exactly the same as the graphics shown in the manual.

4-pin BMC External I²C Header

A System Management Bus header for the BMC is located at JIPMB1. Connect the appropriate cable here to use the IPMB I²C connection on your system. Refer to the layout for the location of JIPMB1.

NC-SI Connector

The Network Controller Sideband Interface (NC-SI) connector is located at JNCSI1. This connector is used to connect a Network Interface Card (NIC) to the motherboard to allow the onboard BMC to communicate with a network.

> **Note:** For detailed instructions on how to configure Network Interface Card (NIC) settings, please refer to the Network Interface Card Configuration User's Guide posted on the web page under the link: http://www.supermicro.com/support/manuals/.

S-SGPIO Header

The S-SGPIO (Serial General Purpose Input/Output) header (S-SGPIO1) is used to communicate with the enclosure management chip on the backplane. Refer to the table below for pin definitions.

S-SGPIO Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	NC	2	NC
3	Ground	4	Data
5	Load	6	Ground
7	Clock	8	NC

NC = No Connection

Audio Front Panel Header

A 10-pin audio header (AUDIO_FP) located on the motherboard allows you to use the onboard sound chip (ALC888S) for audio function. Connect an audio cable to this header to use this feature. Refer to the table below for pin definitions.

Audio Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Microphone_Left	2	Audio_Ground
3	Microphone_Right	4	Audio_Detect
5	Line_2_Right	6	Ground
7	Jack_Detect	8	Key
9	Line_2_Left	10	Ground

Standby Power Header

The Standby Power header is located at JSTBY1 on the motherboard. You must have a card with a Standby Power connector and a cable to use this feature. Refer to the table below for pin definitions.

Standby Power Pin Definitions	
Pin#	Definition
1	+5 V Standby
2	Ground
3	No Connection

Disk-On-Module Power Connector

The Disk-On-Module (DOM) power connectors at JSD1 and JSD2 provide 5 V power to solid-state DOM storage devices connected to one of the SATA ports. Refer to the table below for pin definitions.

DOM Power Pin Definitions	
Pin#	Definition
1	5 V
2	Ground
3	Ground

Chassis Intrusion

A Chassis Intrusion header is located at JL1 on the motherboard. Attach the appropriate cable from the chassis to inform you when the chassis is opened. Refer to the table below for pin definitions.

Chassis Intrusion Pin Definitions	
Pin#	Definition
1	Intrusion Input
2	Ground

Inlet Sensor Header

This header (JSEN1) allows BMC to monitor thermal inlet temperature. A special module is required. Please contact Supermicro at www.supermicro.com to purchase the module for this header. Refer to the table below for pin definitions.

Inlet Sensor Header Pin Definitions	
Pin#	Definition
1	SMBDAT
2	Ground
3	SMBCLK
4	3.3 V STBY

M.2-C1/M.2-C2 Slots (for NVMe Only)

Two M.2 slots are located at M.2-C1 and M.2-C2 on the motherboard. These M.2 slots support PCIe 5.0 x4 M.2 NVMe devices in the 2280 and 22110 form factors. M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency.

SPDIF_IN Header

The Sony/Philips Digital Interface (JSPDIF_IN) header is used for digital audio. A cable is needed to use the connection.

SPDIF_In Pin Definitions	
Pin#	Definition
1	S/PDIF_In
2	Ground

MCIO NVMe Connectors

Four PCIe 5.0 x8 MCIO connectors, located at P1_NVME0/1, P1_NVME2/3, P2_NVME0/1, and P2_NVME2/3, provide eight U.2 NVMe connections on the motherboard. P1_NVME0/1 and P1_NVME2/3 connections are supported by CPU1. P2_NVME0/1 and P2_NVME2/3 connections are supported by CPU2. Use these MCIO connectors to support high-speed PCIe NVMe storage devices.

> **Note:** When installing an NVMe device on a motherboard, please be sure to connect the NVMe port (P1_NVME0/1) first for your system to work properly.

SATA 3.0 Connections

This motherboard has four SATA 3.0 connectors, located at SATA0-3, SATA4-7, S-SATA0, and S-SATA1, support ten SATA connections on the motherboard. These SATA connectors are supported by the Intel C741 chipset. S-SATA0 and S-SATA1 can be used with Supermicro SuperDOMs, which are orange SATA DOM connectors with power pins built in, and do not require external power cables. S-SATA0 and S-SATA1 are compatible with regular SATA HDDs or SATA DOMs that need external power cables.

4.3 Front Control Panel

The front control panel header (JF1) contains header pins for various buttons and indicators that are normally located on a control panel at the front of the chassis. These connectors are designed specifically for use with Supermicro chassis. Refer to the figure below for the descriptions of the front control panel buttons and LED indicators.

JF1

	1	2	
Power Button	○	○	Ground
Reset Button	○	○	Ground
3.3V	○	○	Power Fail (for LED6)
Red+ (Blue LED_Cathode_UID)	○	○	Blue+ (Red OH/Fan Fail/PWR Fail for LED5/Blue UID LED)
NIC2 (Activity) LED	○	○	NIC2 (Link) LED
NIC1 (Activity) LED	○	○	NIC1 (Link) LED
ID_UID/3.3V Stby	○	○	HDD LED
3.3V	○	○	FP PWR LED
Key	○	○	Key
NMI	○	○	Ground
	19	20	
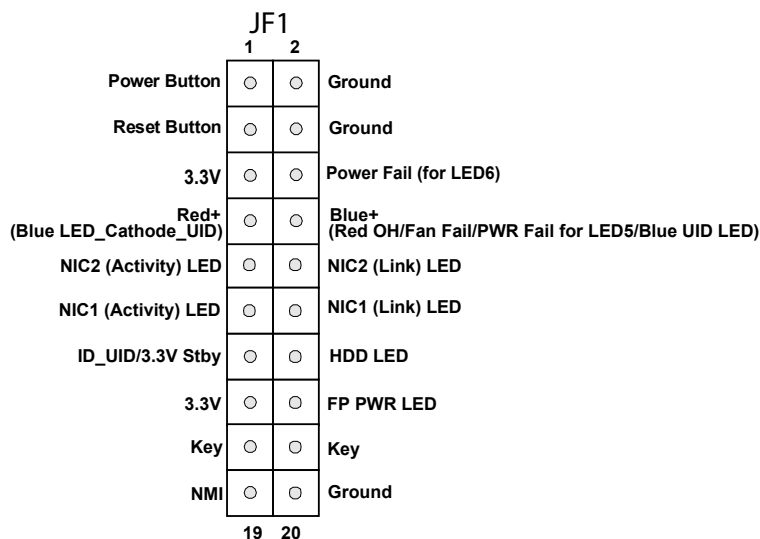
Front Control Panel (JF1) LEDs

Front Control Panel (JF1) LED Indicators						
Event	**Power (LED1)**	**HDD (LED2)**	**LAN (LED3/4)**	**UID (LED6)**	**Information (LED5)**	**Power Fail (LEDPWR)**
Power On	Solid On					
HDD Activity		Blinking				
NIC Activity			Blinking			
Overheat					Solid On	
Fan Fail					Blinking at 1 Hz	
Power Fail					Blinking at 1/4 Hz	Solid On
Local UID On				Solid On		
Remote UID On				Blinking at 1 Hz		
Checking	BMC/BIOS Blinking at 4 HZ					
Recovering/ Updating	BMC Blinking at 4 HZ BMC 2 Blinks at 4 Hz, 1 Pause at 2 Hz (on-on-off-off)			BIOS/BMC Blinking at 10 Hz		
Flash Not Detected or Golden Image Check Failed	BMC/BIOS Blinking at 1 HZ					
CPLD Recovery Mode				Blinking at 10 Hz (MB UID LED)	Blinking at 10 Hz (FP Red LED)	

Power On & BMC/BIOS Status LED Button

The Power On and BMC/BIOS Status LED button is located on pin 1 and pin 2 of JF1. Momentarily contacting both pins will power on/off the system or display BMC/BIOS status. Refer to the tables below for more information.

Power Button & BIOS/BMC Status LED Indicator Pin Definitions (JF1)	
Pin#	Definition
1	Signal
2	Ground

Power Button LED Indicator Status	
Status	Event
Green: solid on	System power on
BMC/BIOS blinking green at 4 Hz	BMC/BIOS checking
BIOS blinking green at 4 Hz	BIOS recovery/update in progress
BMC blinking red x2 (2 blinks red) at 4 Hz, 1 pause at 2 Hz (on-on-off-off)	BMC recovery/update in progress
BMC/BIOS blinking green at 1 Hz	Flash not detected or golden image checking failure

Reset Button

The Reset Button connection is located on pin 3 and pin 4 of JF1. Momentarily contacting both pins will reset the system. Refer to the table below for pin definitions.

Reset Button Pin Definitions (JF1)	
Pin#	Definition
3	Reset
4	Ground

Power Fail LED

The Power Fail LED connection is located on pin 5 and pin 6 of JF1. When this LED turns solid red, it indicates a power failure. Refer to the table below for pin definitions.

Power Fail LED Pin Definitions (JF1)	
Pin#	Definition
5	3.3 V
6	PWR Fail for LEDPWR (Solid red on: PWR failure)

Information LED (OH/Fan Fail/PWR Fail/UID LED)

The Information LED (OH/Fan Fail/PWR Fail/UID LED) connection is located on pin 7 and pin 8 of JF1. The LED on pin 7 is active when the UID button (UID-SW) on the rear I/O panel is pressed. The LED on pin 8 provides warnings of overheat, power failure, or fan failure. Refer to the table below for more information.

Information LED-Blue+ (OH/Fan Fail/PWR Fail LED/blue UID LED) (Pin 7 & Pin 8 of JF1) LED Indicator Status	
Status	**Description**
Solid red (on)	An overheating has occurred.
Blinking red (1 Hz)	Fan failure: check for an inoperative fan.
Blinking red (0.25 Hz)	Power failure: check for a non-operational power supply.
Blinking red (10 Hz) (FP red LED)	CPLD recovery mode error(s)
Solid blue	Local UID is activated. Use this function to locate a unit in a rack mount environment that might be in need of service.
Blinking blue (1 Hz)	Remote UID is on. Use this function to identify a unit from a remote location that might be in need of service.
BIOS/BMC blinking blue (10 Hz)	BIOS/BMC: recovery and/or update in progress
Red Info LED blinking (10 Hz) and MB UID LED blue blinking (10 Hz)	CPLD: recovery and/or update in progress

NIC1/NIC2 (LAN1/LAN2)

The NIC (Network Interface Controller) LED connection for LAN port 1 is located on pin 11 and pin 12 of JF1, and LAN port 2 is on pin 9 and pin 10. Refer to the tables below for pin definitions.

LAN1/LAN2 LED Pin Definitions (JF1)			
Pin#	**Definition**	**Pin#**	**Definition**
9	NIC 2 Activity LED	10	NIC 2 Link LED
11	NIC 1 Activity LED	12	NIC 1 Link LED

LAN1/LAN2 LED LED Indicator Status	
Color	**State**
NIC 2: Blinking green	LAN 2: Active
NIC 1: Blinking green	LAN 1: Active

ID_UID Button/HDD LED

The UID Button/HDD LED connection is located on pin 13 and pin 14 of JF1. The UID Button is used for a chassis that supports a front UID Button. The front UID Button functions in the same way as the rear UID Button; both are for input only and cannot be used for output.

When this LED is blinking green, it indicates HDD is active. Attach a cable to pin 13 and pin 14 to show ID_UID status and hard drive activity. Refer to the tables below for pin definitions.

ID_UID/HDD LED Pin Definitions (JF1)	
Pins	**Definition**
13	ID_UID/3.3 V Stdby
14	HDD Activity

ID_UID/HDD LED Pin Definitions (JF1)	
Color	**State**
Blinking Green	HDD Active

Front Panel Power LED

The Front Panel Power LED connection is located on pin 15 and pin 16 of JF1. Refer to the table below for pin definitions.

FP Power LED Pin Definitions (JF1)	
Pins	**Definition**
15	3.3 V
16	FP PWR LED

NMI Button

The non-maskable interrupt (NMI) button header is located on pin 19 and pin 20 of JF1. Refer to the table below for pin definitions.

NMI Button Pin Definitions (JF1)	
Pins	**Definition**
19	NMI
20	Ground

4.4 Input/Output Ports

Rear I/O Ports

See the figure below for the locations and descriptions of the I/O ports on the rear of the motherboard.
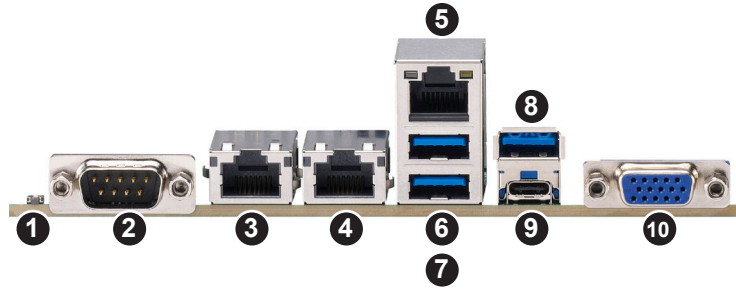
Figure 4-1. Rear I/O Ports

Rear I/O Ports			
#	Description	#	Description
1	UID Switch	6	USB0 (3.0)
2	COM Port	7	USB1 (3.0)
3	LAN1	8	USB2 (3.0)
4	LAN2	9	USB3 (Type C 3.0)
5	Dedicated BMC LAN	10	VGA Port

UID (Unit Idenfication)/BMC Reset Switch and UID/BMC Reset LED Indicators

A UID LED/BMC Reset switch (UID-SW) is located on the rear side of the motherboard. This switch has dual functions. It can be used to identify a system unit that is in need of service, and it can also be used to reset the BMC settings.

When functioning as a BMC reset switch, UID-SW will trigger a cold reboot when the user presses and holds the switch for six seconds. It will also restore the BMC to the manufacturer's default when the user presses and holds the switch for 12 seconds.

When functioning as a UID LED switch, UID-SW will turn both rear UID LED (UID-LED) and front UID LED (pin 7/pin 8 of JF1) on and off when the user presses the switch on/off.

To achieve these dual purposes, the UID LED/BMC Reset switch works in conjunction with the BMC Heartbeat LED (LEDBMC) and front/rear UID LEDs. Please note that UID can also be triggered via BMC on the motherboard. For more details on the UID LEDs and BMC LEDs, refer to the tables below. Also, refer to the BMC User's Guide posted on our website at http://www.supermicro.com for more information on BMC.

UID/BMC Reset Switch (UID-SW) Features & Settings					
When Used as a UID LED Switch			**When Used as a BMC Reset Switch**		
Work w/ Rear UID LED (UID-LED) & Front UID LED (JF1: Pin 7 & Pin 8)			**Work with BMC Heartbeat LED (LEDBMC)**		
Rear UID LED	UID-LED	Blue: Unit identified	BMC Heartbeat LED	LEDBMC	Blinking green: BMC Normal
Front UID LED	Pin 7/Pin 8 (JF1)	Blue: Unit identified	BMC Reset: Press & hold the switch (UID-SW) for six seconds	LEDBMC: Solid green: during reboot	
Press the switch (UID-SW) to turn on and off both rear and front UID LED indicators;				Triggering a cold reboot; LED: Solid green on during cold reboot	
			BMC Reset: Press & hold the switch (UID-SW) for 12 seconds	LEDBMC: Solid green: during BMC reset	
				BMC: Reset to the manufacturer's default; LED solid on during BMC Reset	

UID/BMC Reset Switch (UID-SW) Pin Definitions	
Pin#	Definition
1	Ground
2	Ground
3	Button In
4	Button In

COM Port/Header

One COM port and one COM header that support serial link interface are included on the motherboard. COM1 is located on the rear I/O panel. The COM header is located at COM2 on the motherboard. Refer to the motherboard layout in Chapter 1 for locations.

LAN Ports (LAN1/LAN2 and BMC LAN)

Two Ethernet LAN ports (LAN1, LAN2) and a dedicated BMC LAN port (BMC_LAN) are located on the rear I/O panel. LAN1/LAN2 ports support 10 GbE LAN connections (via the Intel X550-AT2 LAN controller). The dedicated BMC LAN port (BMC_LAN) provides LAN support for the Baseboard Management Controller (BMC). All of these LAN ports accept RJ45 cables. Please refer to 4.6 LED Indicators for LAN LED information.

Universal Serial Bus (USB) Ports and Headers

There are four USB 3.0 ports (USB0, USB1, USB2, USB3) on the rear I/O panel. The USB 3.0 header, located at USB4/5, supports two USB connections for front access. USB6 is the vertical Type-A USB 3.0 connector. These USB ports and headers can be used for USB support via USB cables (not included).

Front Panel USB 3.0 Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	VBUS	19	Power
2	Stda_SSRX-	18	USB3_RN
3	Stda_SSRX+	17	USB3_RP
4	GND	16	GND
5	Stda_SSTX-	15	USB3_TN
6	Stda_SSTX+	14	USB3_TP
7	GND	13	GND
8	D-	12	USB_N
9	D+	11	USB_P
10		x	

Rear I/O Panel USB 3.0 Port Pin Definitions			
Pin#	Definition	Pin#	Definition
A1	VBUS	B1	Power
A2	D-	B2	USB_N
A3	D+	B3	USB_P
A4	GND	B4	GND
A5	Stda_SSRX-	B5	USB3_RN
A6	Stda_SSRX+	B6	USB3_RP
A7	GND	B7	GND
A8	Stda_SSTX-	B8	USB3_TN
A9	Stda_SSTX+	B9	USB3_TP

Type-A USB 3.0 (USB6) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	VBUS	5	SSRX-
2	USB_N	6	SSRX+
3	USB_P	7	GND
4	Ground	8	SSTX-
		9	SSTX+

VGA Connector

There is one VGA connector in your system. The rear VGA connector is located at VGA on the rear I/O panel. The VGA connector provides analog interface support between the computer and the video displays. Refer to the motherboard layout in Chapter 1 for the location of the VGA connector.

4.5 Jumpers

Explanation of Jumpers

To modify the operation of the motherboard, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. See the diagram below for an example of jumping pins 1 and 2. Refer to the motherboard layout page for jumper locations.

> **Note:** On two-pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.
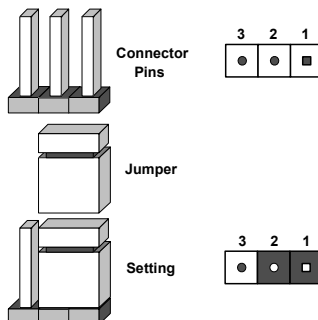
CMOS Clear

JBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.

To Clear CMOS

1. First power down the system and unplug the power cord(s).

2. Remove the cover of the chassis to access the motherboard and remove the battery from the motherboard.

3. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.

4. Remove the screwdriver (or shorting device).

5. Replace the cover, reconnect the power cord(s), and power on the system.

> **Note 1:** Clearing CMOS will also clear all passwords.

> **Note 2:** Do not use the PW_ON connector to clear CMOS.

Onboard Audio Enable

JPAC1 allows you to enable or disable the onboard audio support. The default setting is on pins 1-2 to enable onboard audio connections. Refer to the table below for jumper settings.

Audio Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled

I²C Bus for VRM

JVRM1 and JVRM2 allow the BMC or the PCH to access CPU and memory VRM controllers. Refer to the table below for jumper settings.

VRM Jumper Settings	
Jumper Setting	Definition
Pins 1-2	BMC (Default)
Pins 2-3	PCH

ME Recovery

JPME2 is used for ME Firmware Recovery mode, which will limit system resource for essential function use only without putting restrictions on power use. In the single operation mode, online upgrade will be available via Recovery mode. Refer to the table below for jumper settings.

ME Recovery Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Normal (Default)
Pins 2-3	ME Recovery

4.6 LED Indicators

Unit ID LED

The rear UID LED indicator is located at UID-LED. This UID indicator provides easy identification of a system that may need service.

UID LED LED Indicator	
LED Color	Definition
Blue: On	System Identified

LAN LEDs

Two LAN ports (LAN1 and LAN2) are located on the rear I/O panel of the motherboard. Each Ethernet LAN port has two LEDs. The green LED indicates activity, while the other Link LED may be green, amber, or off to indicate the speed of the connection. Refer to the tables below for more information.

LAN1/2 Link LED (Left) LED State	
LED Color	Definition
Green	10Gbps
Yellow/Amber	1Gbps

LAN1/2 Activity LED (Right) LED State		
Color	State	Definition
Green	Flashing	Active

BMC LAN LEDs

A dedicated BMC LAN port is provided on the rear I/O panel of the motherboard. The LED on the right side of the BMC LAN indicates activity, and the LED on the left indicates the speed of the connection. Refer to the table below for more information.

BMC LAN LEDs		
LED	Color/State	Definition
Link (left)	Green: Solid	100 Mbps
	Amber: Solid	1Gbps
Activity (Right)	Amber: Blinking	Active

BMC_LAN

Link LED — Activity LED
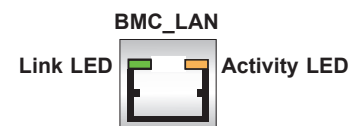
Onboard Power LED

The Onboard Power LED is located at LEDPWR on the motherboard. When this LED is on, the system power is on. Be sure to turn off the system power and unplug the power cords before removing or installing components. Refer to the table below for more information.

Onboard Power LED Indicator	
LED Color	Definition
Off	System Power Off (power cable not connected)
Green	System Power On

BMC Heartbeat LED

A BMC Heartbeat LED is located at LEDBMC on the motherboard. When LEDBMC is blinking green, the BMC is functioning normally.

BMC Heartbeat LED Indicator	
LED Color	**Definition**
Green: Blinking	BMC Normal

M.2 LED Indicators

Two M.2 LED indicators are located at M2_1_LED1 and M2_2_LED1 on the motherboard. When M2_1_LED1 is blinking, M.2-C1 is functioning normally, while M2_2_LED1 is blinking, M.2-C2 is functioning properly.

M.2 LED Indicators (M2_1_LED1/M2_2_LED1)		
LED#	**LED Color**	**State**
M2_1_LED1	Green: Blinking	M.2-C1: M.2 device working properly
M2_2_LED1	Green: Blinking	M.2-C2: M.2 device working properly

Chapter 5

Software

After the hardware has been installed, you can install the Operating System (OS), configure RAID settings and install the drivers.

5.1 Microsoft Windows OS Installation

If you will be using RAID, you must configure RAID settings before installing the Windows OS and the RAID driver. Refer to the RAID Configuration User Guides posted on our website at www.supermicro.com/support/manuals.

Installing the OS

1. Create a method to access the MS Windows installation ISO file. That might be a DVD, perhaps using an external USB/SATA DVD drive, or a USB flash drive, or the BMC KVM console.

2. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **<F11>** during the system startup.
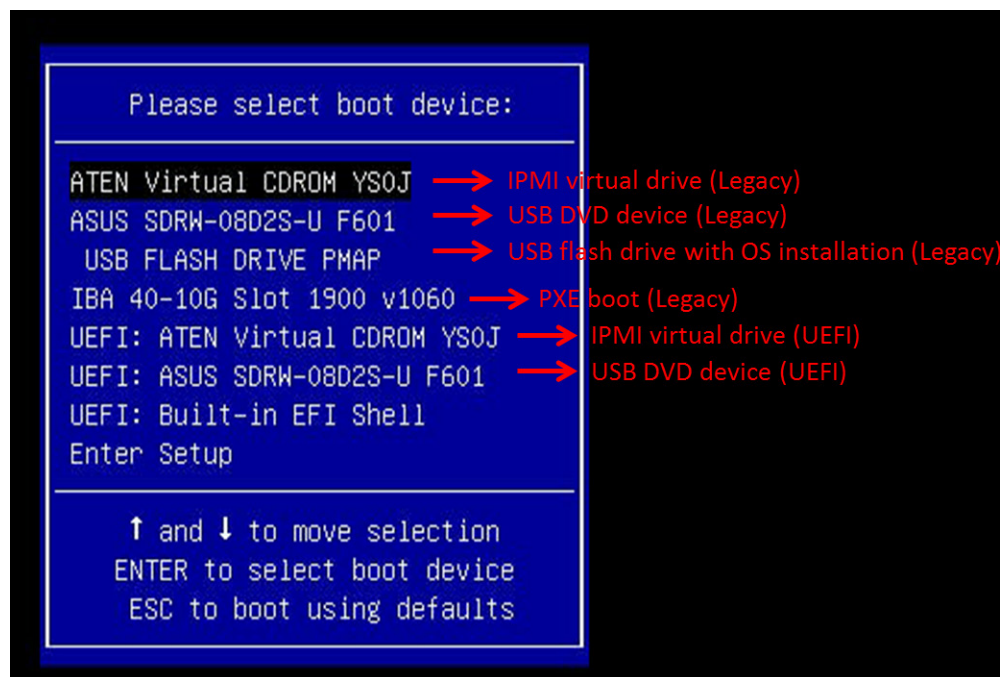
Figure 5-1. Select Boot Device

3. During Windows Setup, continue to the dialog where you select the drives on which to install Windows. If the disk you want to use is not listed, click on "Load driver" link at the bottom left corner.
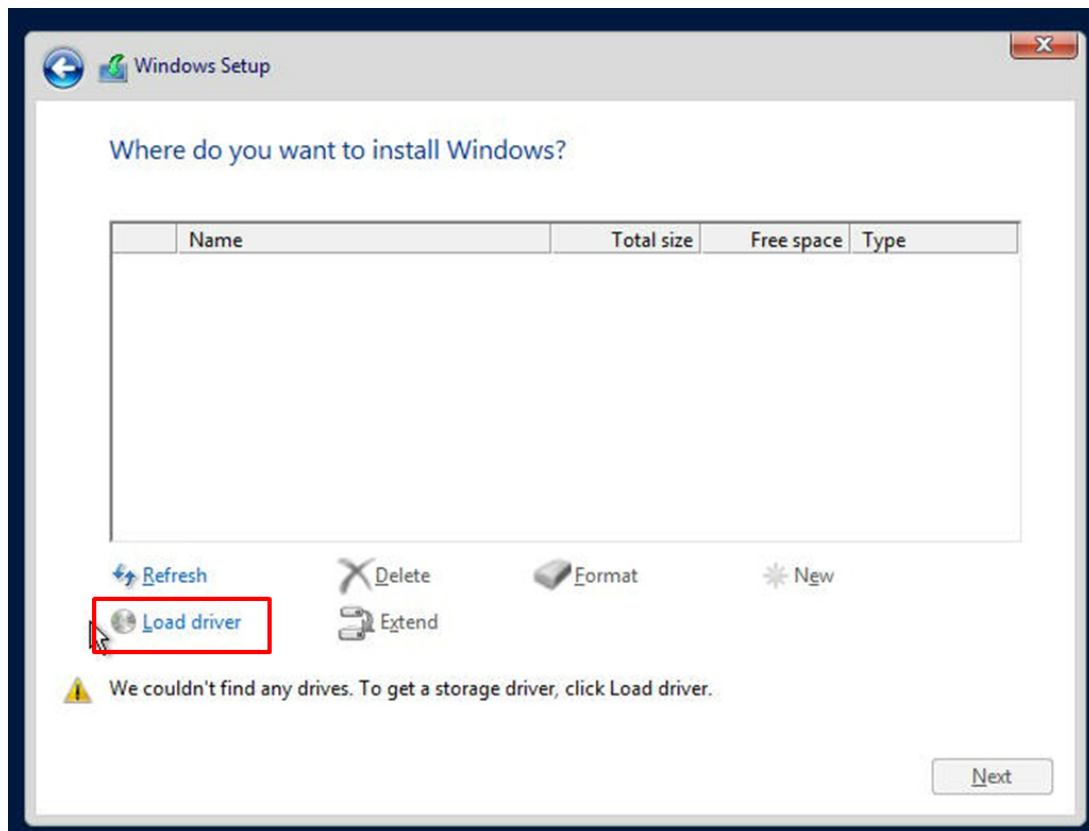
Figure 5-2. Load Driver Link

To load the driver, browse the USB flash drive for the proper driver files.

- For RAID, choose the SATA/sSATA RAID driver indicated then choose the storage drive on which you want to install it.

- For non-RAID, choose the SATA/sSATA AHCI driver indicated then choose the storage drive on which you want to install it.

4. Once all devices are specified, continue with the installation.

5. After the Windows OS installation has completed, the system will automatically reboot multiple times.

5.2 Driver Installation

The Supermicro website contains drivers and utilities for your system at https://www.supermicro.com/wdl. Some of these must be installed, such as the chipset driver.

After accessing the website, go into the CDR_Images (in the parent directory of the above link) and locate the ISO file for your motherboard. Download this file to a USB flash drive or a DVD. (You may also use a utility to extract the ISO file if preferred.)

Another option is to go to the Supermicro website at http://www.supermicro.com/products/. Find the product page for your motherboard, and "Download the Latest Drivers and Utilities".

Insert the flash drive or disk and the screenshot shown below should appear.
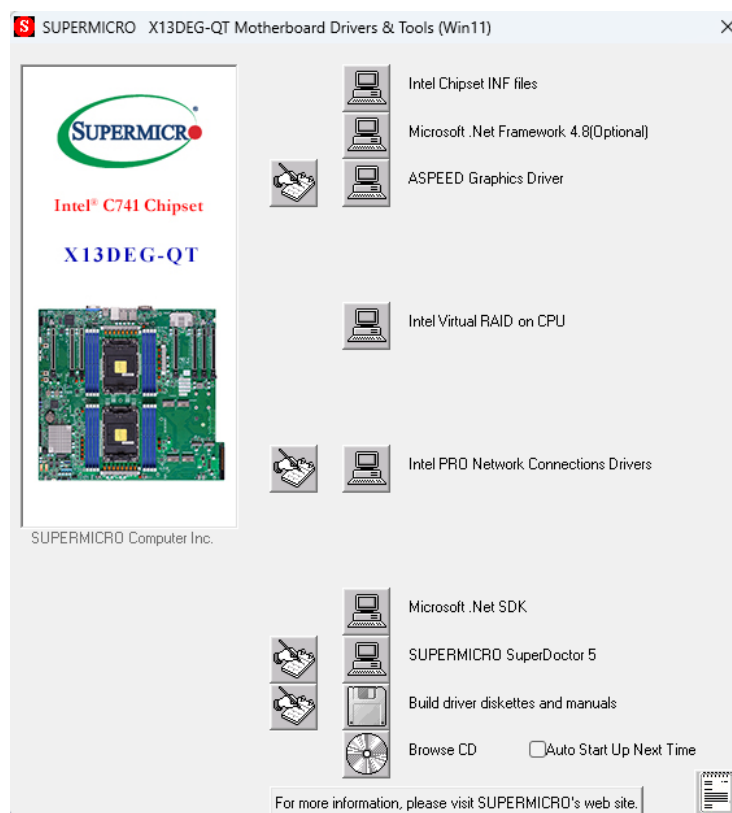
Figure 5-3. Driver & Tool Installation Screen

Note: Click the icons showing a hand writing on paper to view the readme files for each item. Click the computer icons to the right of these items to install each item (from top to the bottom) one at a time. **After installing each item, you must re-boot the system before moving on to the next item on the list.** The bottom icon with a CD on it allows you to view the entire contents.

5.3 SuperDoctor® 5

The Supermicro SuperDoctor 5 is a program that functions in a command-line or web-based interface for Windows and Linux operating systems. The program monitors such system health information as CPU temperature, system voltages, system power consumption, fan speed, and provides alerts via email or Simple Network Management Protocol (SNMP).

SuperDoctor 5 comes in local and remote management versions and can be used with Nagios to maximize your system monitoring needs. With SuperDoctor 5 Management Server (SSM Server), you can remotely control power on/off and reset chassis intrusion for multiple systems with SuperDoctor 5 or BMC. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.
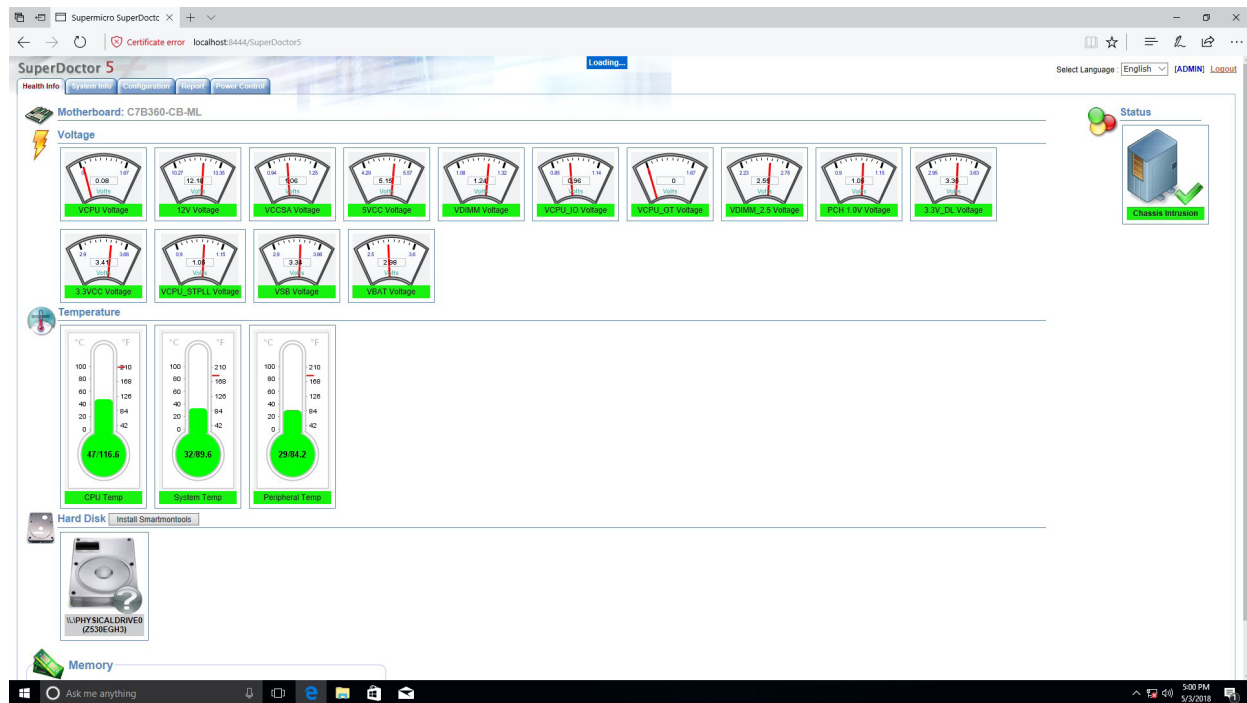
Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

5.4 BMC

The X13DEG-QT provides remote access, monitoring and management through the baseboard management controller (BMC) and other management controllers distributed among different system modules. There are several BIOS settings that are related to BMC.

For general documentation and information on BMC, visit our website at: https://www.supermicro.com/en/solutions/management-software/bmc-resources

BMC ADMIN User Password

For security, each system is assigned a unique default BMC password for the ADMIN user. This can be found on a sticker on the chassis and a sticker on the motherboard. The sticker also displays the BMC MAC address.

Figure 5-5. BMC Password Label

See Chapter 1 for the locations of the labels.

Chapter 6

Optional Components

This chapter describes optional system components and installation procedures.

6.1 Optional Parts List

Optional Parts List		
Description	**Part Number**	**Quantity**
GPU Kit	MCP-320-74901-NN	1
HDD Converter	MCP-220-93801-0B	
DVD Kit	CBL-0044L	1
	CBL-0082L	1
	CBL-PWEX-0947Y-30	1
	DVM-TEAC-DVDRW24-HBT	1
Super Cap for LSI 3908	BTR-CVPM05	1
	BKT-BBU-BRACKET-05	1
Intel VROC RAID Key	AOC-VROCINTMOD	1
	AOC-VROCSTNMOD	1
	AOC-VROCPREMOD	1
Mounting Rails	MCP-290-00059-0B	1
Front Bezel	MCP-210-74703-0B	1
TPM Security Module	AOM-TPM-9670V-O	1

6.2 GPU Support

These optional parts provide GPU support.

GPU Support			
GPU Configuration	Part Number	Description	Quantity
4x GPUs with PCIe 16-Pin Power Connector (ex.: H100, L40, RTX6000 Ada,etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-0962Y-20	MicroFit 2x6, PH3.0+4S to 2 MicroHi 2x4, 20 cm, 9.5 A/p, 16 AWG, RoHS	2
	CBL-PWEX-0962Y-50	MicroFit 2x6, PH3.0+4S to 2 MicroHi 2x4, 50 cm, 9.5 A/p, 16 AWG, RoHS	2
4x GPUs with CPU 8-Pin Power Connector (ex.: A100, A40, A30, RTX A6000, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-1148-20	MicroHi, 2x4, PH3. to 2x4, PH 4.2, MiniFit, 20 cm, 8.5 A/p, 18AWG	2
	CBL-PWEX-1148-50	MicroHi 2x4, PH3. to 2x4, PH 4.2, MiniFit, 50 cm, 8.5 A/p, 18 AWG	2
4x GPU with PCIe 6+2 Pin Power Connector (ex: RTX A5500, A5000, A4000, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-1173-20	MicroHi 2x4 F/P 3.0 to PCIe 2x(3+1) F/P 4.2, 20 cm, 8.5 A/p, RoHS	2
	CBL-PWEX-1173-50	MicroHi 2x4 F/P3.0 to PCIe 2x(3+1) F/P 4.2, 50 cm, 8.5 A/p, RoHS	2
3x GPUs with PCIe 16-Pin Power Connector (ex.: H100, L40, RTX6000 Ada, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-0962Y-20	MicroFit 2x6, PH3.0+4S to 2 MicroHi 2x4, 20 cm, 9.5 A/p, 16 AWG, RoHS	1
	CBL-PWEX-0962Y-50	MicroFit 2x6, PH3.0+4S to 2 MicroHi 2x4, 50 cm, 9.5 A/p, 16 AWG, RoHS	2
3x GPUs with CPU 8-Pin Power Connector (ex.:A100, A40, A30, RTX A6000, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-1148-20	MicroHi, 2x4, PH3. to 2x4, PH 4.2, MiniFit, 20 cm, 8.5 A/p, 18 AWG	1
	CBL-PWEX-1148-50	MicroHi, 2x4, PH3. to 2x4, PH 4.2, MiniFit, 50 cm, 8.5 A/p, 18 AWG	2
3x GPU with PCIe 6+2 Pin Power Connector (ex:RTX A5500, A5000, A4000, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-1173-20	MicroHi 2x4F/P3.0 to PCIe 2x(3+1) F/P 4.2, 20 m, 8.5 A/p, RoHS	1
	CBL-PWEX-1173-50	MicroHi 2x4F/P3.0 to PCIe 2x(3+1) F/P4.2, 50 cm, 8.5A /p, RoHS	2

GPU Support			
GPU Configuration	**Part Number**	**Description**	**Quantity**
2x GPUs with PCIe 16-Pin Power Connector (ex.: H100, L40, RTX6000 Ada, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-0962Y-50	MicroFit 2x6, PH3.0+4S to 2 MicroHi 2x4, 50 cm, 9.5 A/p, 16 AWG, RoHS	2
2x GPUs with CPU 8-Pin Power Connector (ex.: A100, A40, A30, RTX A6000, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-1148-50	MicroHi, 2x4, PH3. to 2x4, PH4.2, MiniFit, 50 cm, 8.5 A/p, 18 AWG	2
2x GPU with PCIe 6+2 Pin Power Connector (ex: RTX A5500, A5000, A4000, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-1173-50	MicroHi 2x4 F/P3.0 to PCIe 2x(3+1) F/P 4.2, 50 cm, 8.5 A/p, RoHS	2
1x GPU with PCIe 16-Pin Power Connector (ex.: H100, L40, RTX6000 Ada, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-0962Y-50	MicroFit 2x6, PH3.0+4S to 2 MicroHi 2x4, 50 cm, 9.5 A/p, 16 AWG, RoHS	1
1x GPU with CPU 8-Pin Power Connector (ex.: A100, A40, A30, RTX A6000, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-1148-50	MicroHi, 2x4, PH3. to 2x4, PH 4.2, MiniFit, 50 cm, 8.5 A/p, 18AWG	1
1x GPU with PCIe 6+2 Pin Power Connector (ex: RTX A5500, A5000, A4000, etc)	MCP-320-74901-NN	SC749 chassis rear external fan for GPU cooling kit	1
	CBL-PWEX-1173-50	MicroHi 2x4F/P3.0 to PCIe 2x(3+1) F/P 4.2, 50 cm, 8.5 A/p, RoHS	1

6.3 Storage Controller Card

Storage Controller Card		
Item	**Part Number**	**Cable**
Storage Control Card	AOC-S3908L-H8IR AOC-S3908L-H8IR-16DD-O AOC-S3908L-H8IR-32DD-O	CBL-SAST-1261-100 x1

6.4 Intel Virtual RAID on CPU (VROC)

Intel® Virtual RAID on CPU (Intel VROC) is an enterprise RAID solution for NVMe SSDs directly attached to Intel Xeon Scalable processors. Intel Volume Management Device (VMD) is an integrated controller inside the CPU PCIe root complex.

- A single processor supports up to 12 NVMe SSDs and up to 6 RAID arrays.

- A dual processor system supports up to 24 NVMe SSDs and 12 RAID arrays.

Strip sizes are 4K, 8K, 16K, 32K, 64K, 128K.

Requirements and Restrictions

- **Intel VROC is only available when the system is configured for UEFI boot mode.**

- To enable the **mdadm** command and support for RSTe, install the patch from

  - Linux: https://downloadcenter.intel.com/download/28158/Intel-Virtual-RAID-on-CPU-Intel-VROC-and-Intel-Rapid-Storage-Technology-enterprise-Intel-RSTe-Driver-for-Linux-

  - Windows: https://downloadcenter.intel.com/download/28108/Intel-Virtual-RAID-on-CPU-Intel-VROC-and-Intel-Rapid-Storage-Technology-enterprise-Intel-RSTe-Driver-for-Windows-

- To enable Intel VROC, a hardware key must be inserted on the motherboard, and the appropriate processor's Virtual Management Devices must be enabled in the BIOS setup.

- It is possible to enable Intel VROC without a hardware key installed, but only RAID0 will be enabled.

- Intel VROC is not compatible with secure boot. This feature must be disabled.

- When creating bootable OS RAID1 devices, you must have both devices on the same CPU, and a VMD on that CPU.

- Spanning drives when creating RAID devices is not recommended to due to performance issues, even though it is supported.

Supported SSDs and Operating Systems

To see the latest support information: https://www.intel.com/content/www/us/en/support/articles/000030310/memory-and-storage/ssd-software.html

Additional Information

Additional information is available on the product page for the Supermicro add-on card and the linked manuals.

www.supermicro.com/products/accessories/addon/AOC-VROCxxxMOD.cfm

Hardware Key

The Intel VROC hardware key is a license key that detects the Intel VROC SKU and activates the function accordingly. The key must be plugged into the Supermicro motherboard (connector JRK1). The key options are:

Intel® VROC Keys			
VROC Package	**Description**	**Part Number**	**Intel MM Number**
Standard	RAID 0, 1, 10 Supports 3rd party SSDs	AOC-VROCSTNMOD	951605
Premium	RAID 0, 1, 5, 10 Supports 3rd party SSDs	AOC-VROCPREMOD	951606
Intel SSD only	RAID 0, 1, 5, 10 Supports Intel SSDs only	AOC-VROCINTMOD	956822
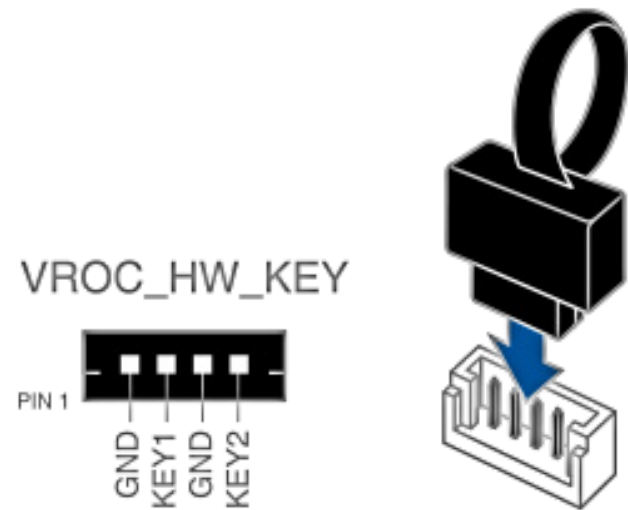
Figure 6-1. Intel® VROC RAID Key and Motherboard Connector JRK1

Status Indications

An LED indicator on the drive carrier shows the RAID status of the drive.

Drive Carrier Status LED Indicator	
Status	**State (red)**
Normal function	Off
Locating	4 Hz blink
Fault	Solid on
Rebuilding	1 Hz Blink

IBPI SFF 8489 Defined Status LED States

Hot Swap Drives

Intel VMD enables hot-plug and hot-unplug for NVMe SSDs, whether from Intel or other manufacturers. Under vSphere ESXi, several steps are necessary to avoid potential stability issues. See the information at link [1] below.

Hot-unplug

1. Prevent devices from being re-detected during rescan:

```
esxcli storage core claiming autoclaim --enabled=false
```

2. Unmount the VMFS volumes on the device. Check [2] for details.

3. Detach the device. Check [3] for details.

4. Physically remove the device.

Hot-plug

• Physically install the device.

ESXi will automatically discover NVMe SSDs, but a manual scan may be required in some cases.

Related Information Links

[1] https://kb.vmware.com/s/article/2151404

[2] https://docs.vmware.com/en/VMware-vSphere/6.5/com.vmware.vsphere.storage.doc/GUID-1B56EF97-F60E-4F21-82A7-8F2A7294604D.html

[3] https://docs.vmware.com/en/VMware-vSphere/6.5/com.vmware.vsphere.storage.doc/GUID-F2E75F67-740B-4406-9F0C-A2D99A698F2A.html

6.5 TPM Security Module

SPI capable TPM 2.0 (or 1.2) with Infineon 9670 controller, Horizontal form factor

The JTPM1 header is used to connect a Trusted Platform Module (TPM). A TPM is a security device that supports encryption and authentication in hard drives. It enables the motherboard to deny access if the TPM associated with the hard drive is not installed in the system.

Details and installation procedures are at:

http://www.supermicro.com/manuals/other/TPM.pdf.

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

A great deal of information is available on the Supermicro website, supermicro.com.
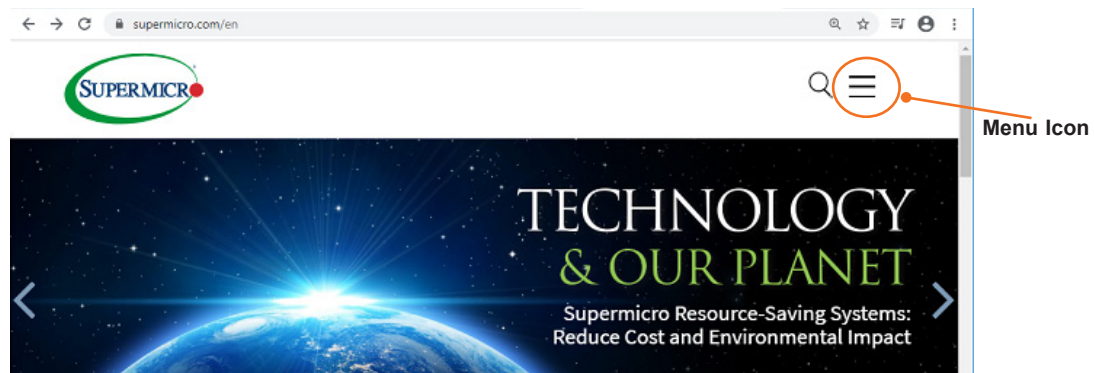
Figure 7-1. Supermicro Website

- Specifications for servers and other hardware are available by clicking the menu icon, then selecting the **Products** option.

- The **Support** option offers downloads (manuals, BIOS/BMC, drivers, etc.), FAQs, RMA, warranty, and other service extensions.

Direct Links for the SYS-741GE-TNRT System

Web SYS-741GE-TNRT specifications page

X13DEG-QT motherboard page for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

BPN-SAS3-116A-N2 Backplane Manual

Direct Links for General Support and Information

Frequently Asked Questions

Add-on card descriptions

TPM User Guide

BMC User Guide

Direct Links (continued)

SuperDoctor5 Large Deployment Guide

For validated memory, use our Product Resources page.

Product Matrices page for links to tables summarizing specs for systems, motherboards, power supplies, riser cards, add-on cards, etc.

Security Center for recent security notices

Supermicro Phone and Addresses

7.2 BMC Interface

The system supports a Baseboard Management Controller (BMC) interface. It provides remote access, monitoring and management. There are several BIOS settings related to the BMC.

For general documentation and information on the BMC, please visit our website at: www.supermicro.com/manuals/other/BMC_Users_Guide_X12_H12.pdf.
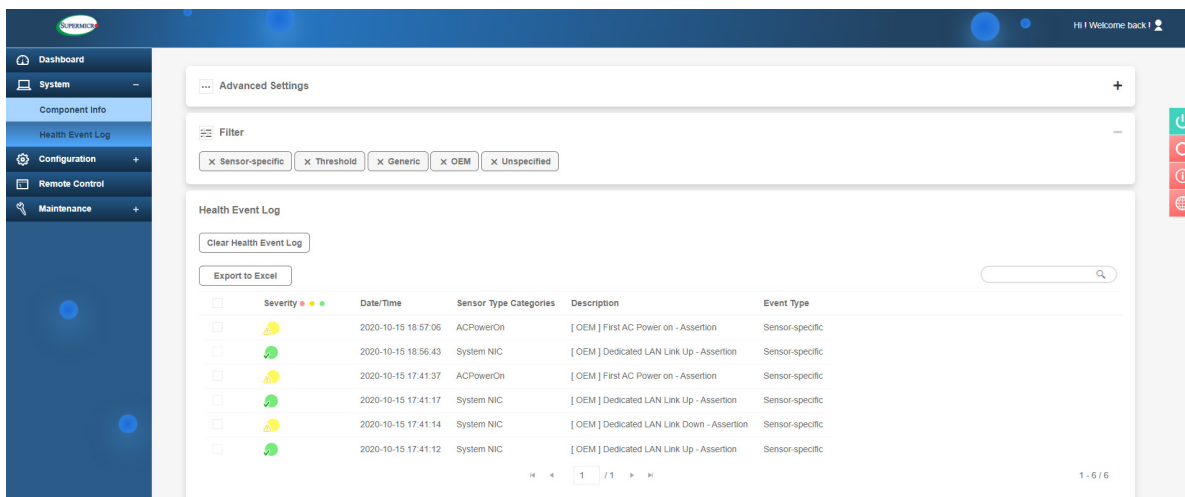
Figure 7-2. BMC Sample

7.3 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the Technical Support Procedures or Returning Merchandise for Service section(s) in this chapter. Power down the system before changing any non hot-swap hardware components.

No Power

- As you try to power up the system, note any beep codes. Refer to the next section for details on beep codes.

- Check that the BMC heartbeat LED on the motherboard is on.
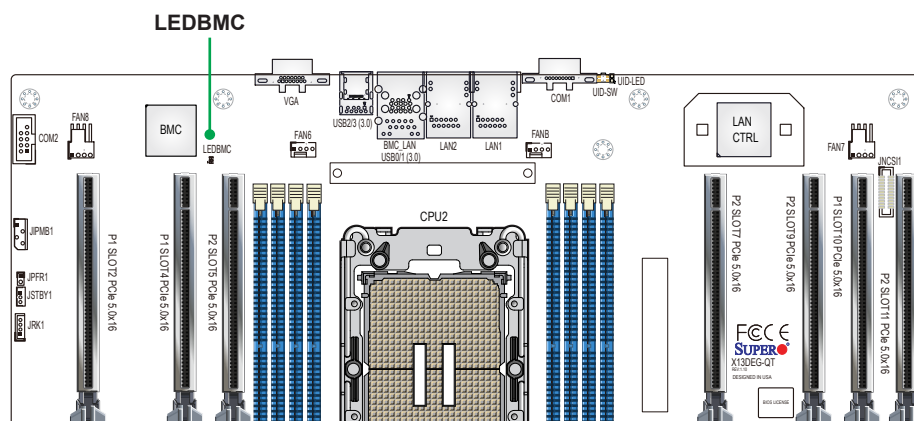
Figure 7-3. Location of the MB BMC Heartbeat LED

- Make sure that the power connector is connected to your power supply.

- Make sure that no short circuits exist between the motherboard and chassis.

- Disconnect all cables from the motherboard, including those for the keyboard and mouse.

- Remove all add-on cards.

- Install a CPU, a heatsink, connect the internal speaker (if applicable), and the power LED to the motherboard. Make sure that the heatsink is fully seated.

- Use the correct type of onboard CMOS battery as recommended by the manufacturer. Check to verify that it still supplies approximately 3 V DC. If it does not, replace it with a new one. **Warning:** To avoid possible explosion, do not install the battery upside down.

- Verify that all jumpers are set to their default positions.

- Check that the power supplies' input voltage operate at 100-120 V or 180-240 V.

- Turn the power switch on and off to test the system.

No Video

- If the power is on but you have no video, remove all the add-on cards and cables.

- As you try to power up the system, note any beep codes. Refer to the next section for details on beep codes.

System Boot Failure

If the system does not display POST (Power-On-Self-Test) or does not respond after the power is turned on, check the following:

Turn on the system with only one DIMM module installed. If the system boots, check for bad DIMM modules or slots by following the Memory Errors Troubleshooting procedure below.

Memory Errors

- Make sure that the DIMM modules are properly and fully installed.

- Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See Section 3.4 for memory details.

- Check for bad DIMM modules or slots by swapping modules between slots and noting the results.

- Check the power supply voltage 115 V/230 V switch.

Losing the System's Setup Configuration

- Make sure that you are using a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information. .

- The battery on your motherboard may be old. Check to verify that it still supplies approximately 3 V DC. If it does not, replace it with a new one.

- If the above steps do not fix the setup configuration problem, contact your vendor for repairs.

When the System Becomes Unstable

If the system becomes unstable during or after OS installation, check the following:

- CPU/BIOS support: Make sure that your CPU is supported and that you have the latest BIOS installed in your system.

- Memory support: Make sure that the memory modules are supported by testing the modules using memtest86 or a similar utility.

- **Note**: Refer to the product page on our website at http://www.supermicro.com for memory and CPU support and updates.

- HDD support: Make sure that all hard disk drives (HDDs) work properly. Replace the bad HDDs with good ones.

- System cooling: Check the system cooling to make sure that all heatsink fans and CPU/system fans, etc., work properly. Check the hardware monitoring settings in the BMC to make sure that the CPU and system temperatures are within the normal range. Also check the front panel Overheat LED and make sure that it is not on.

- Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Please refer to our website for more information on the minimum power requirements.

- Proper software support: Make sure that the correct drivers are used.

If the system becomes unstable before or during OS installation, check the following:

- Source of installation: Make sure that the devices used for installation are working properly, including boot devices such as CD.

- Cable connection: Check to make sure that all cables are connected and working properly.

- Using the minimum configuration for troubleshooting: Remove all unnecessary components (starting with add-on cards first), and use the minimum configuration (but with a CPU and a memory module installed) to identify the trouble areas. Refer to the steps listed in Section A above for proper troubleshooting procedures.

- Identifying bad components by isolating them: If necessary, remove a component in question from the chassis, and test it in isolation to make sure that it works properly. Replace a bad component with a good one.

- Check and change one component at a time instead of changing several items at the same time. This will help isolate and identify the problem.

- To find out if a component is good, swap this component with a new one to see if the system will work properly. If so, then the old component is bad. You can also install the component in question in another system. If the new system works, the component is good and the old system has problems.

7.4 BIOS Error Beep (POST) Codes

During the POST (Power-On Self-Test) routines, which are performed each time the system is powered on, errors may occur.

Non-fatal errors are those which, in most cases, allow the system to continue the boot-up process. The error messages normally appear on the screen.

Fatal errors are those which will not allow the system to continue the boot-up procedure. If a fatal error occurs, you should consult with your system manufacturer for possible repairs.

These fatal errors are usually communicated through a series of audible beeps. The table below lists some common errors and their corresponding beep codes encountered by users.

BIOS Error Beep (POST) Codes		
Beep Code	**Error Message**	**Description**
1 short	Refresh	Circuits have been reset (Ready to power up)
5 short, 1 long	Memory error	No memory detected in system
5 long, 2 short	Display memory read/write error	Video adapter missing or with faulty memory
1 long continuous	System OH	System overheat condition

Additional BIOS POST Codes

The AMI BIOS supplies additional checkpoint codes, which are documented online at http://www.supermicro.com/support/manuals/ ("AMI BIOS POST Codes User's Guide").

When BIOS performs the Power On Self Test, it writes checkpoint codes to I/O port 0080h. If the computer cannot complete the boot process, a diagnostic card can be attached to the computer to read I/O port 0080h (Supermicro p/n AOC-LPC80-20).

For information on AMI updates, please refer to http://www.ami.com/products/.

7.5 Crash Dump Using the BMC Dashboard

In the event of a processor internal error (IERR) that crashes your system, you may want to provide information to support staff. You can download a crash dump of status information using the BMC Dashboard. The BMC manual is available at www.supermicro.com/manuals/other/BMC_Users_Guide_X12_H12.pdf.

Check Error Log

1. Access the BMC web interface.

2. Click the **Server Health** tab, then **Event Log** to verify an IERR error.
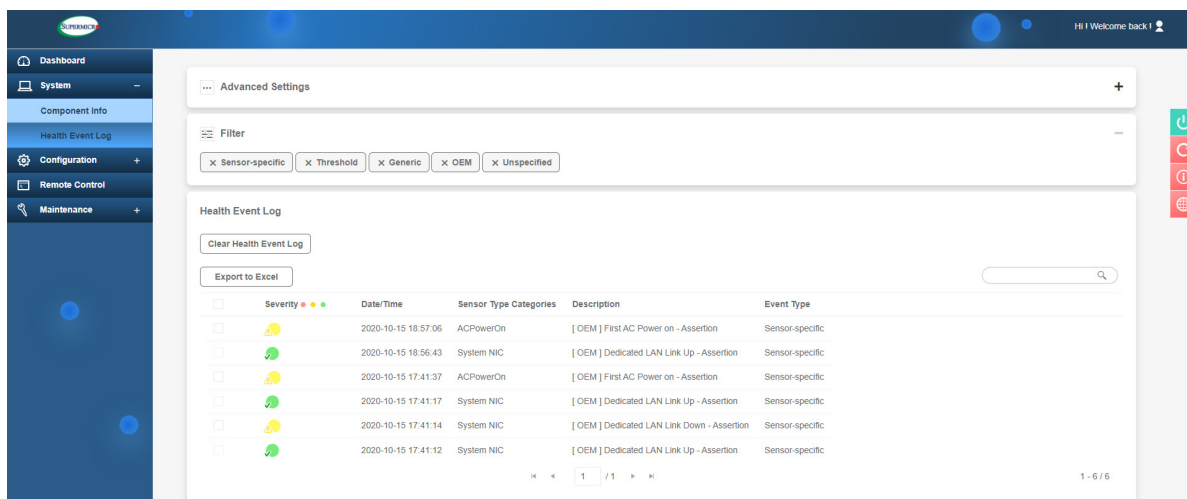
Figure 7-4. BMC Event Log

In the event of an IERR, the BMC executes a crash dump. You must download the crash dump and save it.

7.6 UEFI BIOS Recovery

Warning: Do not upgrade the BIOS unless your system has a BIOS-related issue. Flashing the wrong BIOS can cause irreparable damage to the system. In no event shall Supermicro be liable for direct, indirect, special, incidental, or consequential damages arising from a BIOS update. If you do update the BIOS, do not shut down or reset the system while the BIOS is updating to avoid possible boot failure.

Overview

The Unified Extensible Firmware Interface (UEFI) provides a software-based interface between the operating system and the platform firmware in the pre-boot environment. The UEFI specification supports an architecture-independent mechanism that will allow the UEFI OS loader stored in an add-on card to boot the system. The UEFI offers clean, hands-off management to a computer during system boot.

Recovering the UEFI BIOS Image

A UEFI BIOS flash chip consists of a recovery BIOS block and a main BIOS block (a main BIOS image). The recovery block contains critical BIOS codes, including memory detection and recovery codes for the user to flash a healthy BIOS image if the original main BIOS image is corrupted. When the system power is turned on, the recovery block codes execute first. Once this process is complete, the main BIOS code will continue with system initialization and the remaining POST (Power-On Self-Test) routines.

Note 1: Follow the BIOS recovery instructions below for BIOS recovery when the main BIOS block crashes.

Note 2: When the BIOS recovery block crashes, you will need to follow the procedures to make a Returned Merchandise Authorization (RMA) request. Also, you may use the Supermicro Update Manager (SUM) Out-of-Band (https://www.supermicro.com.tw/products/nfo/SMS_SUM.cfm) to reflash the BIOS.

Recovering the Main BIOS Block with a USB Device

This feature allows the user to recover the main BIOS image using a USB-attached device without additional utilities used. A USB flash device such as a USB Flash Drive, or a USB CD/DVD ROM/RW device can be used for this purpose. However, a USB Hard Disk drive cannot be used for BIOS recovery at this time.

The file system supported by the recovery block is FAT (including FAT12, FAT16, and FAT32) which is installed on a bootable or non-bootable USB-attached device. However, the BIOS might need several minutes to locate the SUPER.ROM file if the media size becomes too large due to the huge volumes of folders and files stored in the device.

To perform UEFI BIOS recovery using a USB-attached device, follow the instructions below.

1. Using a different machine, copy the "Super.ROM" binary image file into the Root "\" directory of a USB device or a writable CD/DVD.

   Note 1: If you cannot locate the "Super.ROM" file in your drive disk, visit our website at www.supermicro.com to download the BIOS package. Extract the BIOS binary image into a USB flash device and rename it "Super.ROM" for the BIOS recovery use.

   Note 2: Before recovering the main BIOS image, confirm that the "Super.ROM" binary image file you download is the same version or a close version meant for your motherboard.

2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and reset the system when the following screen appears.

3. After locating the healthy BIOS binary image, the system will enter the BIOS Recovery menu as shown below.

Note: At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.

```
                    Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc.
         Main  Advanced  Event Logs  IFMI  Recovery  Security  Boot  Save & Exit

          Please select blocks you want to update            Set this option to reset
          Reset NVRAM                        [Enabled]        NVRAM to default values
          Boot Block Update                  [Enabled]

        ▶ Proceed with flash update




                                                             ↔: Select Screen
                                                             ↑↓: Select Item
                                                             Enter: Select
                                                             +/-: Change Opt.
                                                             F1: General Help
                                                             F2: Previous Values
                                                             F3: Optimized Defaults
                                                             F4: Save & Exit
                                                             ESC: Exit

                    Version 2.19.1266. Copyright (C) 2017 American Megatrends, Inc.
```

4. When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

    Note: *Do not interrupt the BIOS flashing process until it has completed*.

5. After the BIOS recovery process is complete, press any key to reboot the system.

6. Using a different system, extract the BIOS package into a USB flash drive.

```
                    Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc.
                                          Recovery

          WARNING! System firmware is being updated.
          Keyboard is locked.
          DO NOT TURN THE POWER OFF !!!
          Once firmware update is completed
          press any key to reboot the system


                          ┌─────────── Program new data ───────────┐
                          │          Write new boot block...        │
                          │                                         │
                          │ ───────────────17%───────────────       │
                          │ ▓▓▓                                     │
                          └─────────────────────────────────────────┘

                                                             ↔: Select Screen
                                                             ↑↓: Select Item
                                                             Enter: Select
                                                             +/-: Change Opt.
                                                             F1: General Help
                                                             F2: Previous Values
                                                             F3: Optimized Defaults
                                                             F4: Save & Exit
                                                             ESC: Exit

                    Version 2.19.1266. Copyright (C) 2017 American Megatrends, Inc.
```

7. Press <Del> continuously during system boot to enter the BIOS Setup utility. From the top of the tool bar, select Boot to enter the submenu. From the submenu list, select Boot Option #1 as shown below. Then, set Boot Option #1 to [UEFI AP:UEFI: Built-in EFI Shell]. Press <F4> to save the settings and exit the BIOS Setup utility.

```
            Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
                                  Recovery

  WARNING! System firmware is being updated.
  Keyboard is locked.
  DO NOT TURN THE POWER OFF !!!
  Once firmware update is completed
  press any key to reboot the system



                        ┌───────── Flash update ─────────┐
                        │                                │
                        │ Flash update completed. Press any key to │
                        │          reset the system       │
                        │                                │
                        └────────────────────────────────┘

                                                      →←: Select Screen
                                                      ↑↓: Select Item
                                                      Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit

            Version 2.19.1266. Copyright (C) 2017 American Megatrends, Inc.
```

8. When the UEFI Shell prompt appears, type fs# to change the device directory path. Go to the directory that contains the BIOS package you extracted earlier from Step 6. Enter flash. nsh BIOSname.### at the prompt to start the BIOS update process.

    Note: *Do not interrupt this process* until the BIOS flashing is complete.

```
            Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
    Main  Advanced  Event Logs  IPMI  Security  Boot  Save & Exit

  Boot Configuration                            ▲ Sets the system boot order

  Boot mode select              [DUAL]
  LEGACY to EFI support         [Disabled]

  FIXED BOOT ORDER Priorities
  Boot Option #1                [UEFI AP:UEFI: Bui...]
  Boot Option #2                [CD/DVD]
  Boot Option #3                [USB Hard Disk]
  Boot Option #4                [USB CD/DVD]
  Boot Option #5                [USB Key:SanDisk]
  Boot Option #6                [USB Floppy]
  Boot Option #7                [USB Lan]
  Boot Option #8                [Network:IBA GE S1...]
  Boot Option #9                [UEFI Hard Disk]
  Boot Option #10               [UEFI CD/DVD]
  Boot Option #11               [UEFI USB Hard Disk]
  Boot Option #12               [UEFI USB CD/DVD]    →←: Select Screen
  Boot Option #13               [UEFI USB Key:UEFI...] ↑↓: Select Item
  Boot Option #14               [UEFI USB Floppy]    Enter: Select
  Boot Option #15               [UEFI USB Lan]       +/-: Change Opt.
  Boot Option #16               [UEFI Network]       F1: General Help
  Boot Option #17               [Hard Disk]          F2: Previous Values
                                                     F3: Optimized Defaults
  ▶ Add New Boot Option                            ▼ F4: Save & Exit
                                                     ESC: Exit

            Version 2.19.1266. Copyright (C) 2017 American Megatrends, Inc.
```

9. The screen above indicates that the BIOS update process is complete. When you see the screen above, unplug the AC power cable from the power supply, clear CMOS, and plug the AC power cable in the power supply again to power on the system.

```
UEFI Interactive Shell v2.1
EDK II
UEFI v2.50 (American Megatrends, 0x0005000C)
Mapping table
        FS0: Alias(s):HD0r0b::BLK1:
                PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x37901D72,0x800,0x1
CA3592)
        BLK0: Alias(s):
                PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)
Press ESC in 1 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:\> cd AFUDOS
FS0:\AFUDOS\> cd SWJPME2_03162017
FS0:\AFUDOS\SWJPME2_03162017\> flash.nsh X11DPU7.314_
```

10. Press <Del> continuously to enter the BIOS Setup utility.

11. Press <F3> to load the default settings.

```
Done.
[ Access Cmos Port Ex ]
<Read>
Index 0x51: 0x18

Done.
*****************************************************************************
*
* Program BIOS and ME (including FDT) regions...
*
*****************************************************************************
+--------------------------------------------------------------------------+
|              AMI Firmware Update Utility v5.09.01.1317                    |
|      Copyright (C)2017 American Megatrends Inc. All Rights Reserved.      |
+--------------------------------------------------------------------------+
  CPUID = 50652

  Reading flash ............... done
  - ME Data Size checking . ok
  - FFS checksums ......... ok
  - Check RomLayout ......... Ok.
  Erasing Boot Block .......... done
  Updating Boot Block ......... done
  Verifying Boot Block ........ done
 _Erasing Main Block .......... 0x00132000 (0%)
```

12. After loading the default settings, press <F4> to save the settings and exit the BIOS Setup utility.

```
  Verifying NCB Block ......... done
  - Update success for FDR
  - Update success for IE. -
  - Successful Update Recovery Loader to OPRx!!
  - Successful Update MFSB!!-
  - Successful Update FTPR!!-
  - Successful Update MFS, IVB1 and IVB2!!
  - Successful Update FLOG and UTOK!!
  - ME Entire Image update success !!
  WARNING : System must power-off to have the changes take effect!
  Moving FS0:\AFUDOS\SWJPME2_03162017\fdtx64.efi -> FS0:\AFUDOS\SWJPME2_03162017\f
  dt.smc
  - [ok]
  Moving FS0:\AFUDOS\SWJPME2_03162017\afuefix64.efi -> FS0:\AFUDOS\SWJPME2_0316201
  7\afuefi.smc
  - [ok]
  *****************************************************************************
  *
  * Please ignore this 'Shell: Cannot read from file - Device Error'
  * warning message due to it does not impact flashing process.
  *
  *****************************************************************************
  Deleting '                   '
  Delete successful.
  FS0:\> _
```

7.7 CMOS Clear

JBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.

To Clear CMOS

1. First power down the system completely.

2. Remove the cover of the chassis to access the motherboard.

3. Remove the onboard battery from the motherboard.

4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.

5. Remove the screwdriver or shorting device.

6. Replace the cover, reconnect the power cords and power on the system.

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.

JBT1 contact pads

7.8 BMC Reset

The BMC can be reset using the UID button.

- Reset – Press and hold the button. After six seconds, the LED blinks at 2 Hz. The BMC resets and the reset duration is approximately 250 ms. Then the BMC starts to boot.

- Restore factory default configuration – Hold the button for twelve seconds. The LED blinks at 4 Hz while the defaults are configured. **Note**: All BMC settings including username and password will be removed except the FRU and network settings.

Firmware update – When the BMC firmware is being updated, the UID LED blinks at 10 Hz.

BMC Reset Options		
Event	**UID LED**	**BMC Heartbeat LED**
Reset	Blue, Blinks at 2 Hz	Green, solid
Restore Defaults	Blue, Blinks at 4 Hz	Off
Update	Blue, Blinks at 10 Hz	

7.9 Where to Get Replacement Components

If you need replacement parts for your system, to ensure the highest level of professional service and technical support, purchase exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list can be found at: http://www.supermicro.com. Click the "Where to Buy" tab.

7.10 Reporting an Issue

Technical Support Procedures

Before contacting Technical Support, please take the following steps. If your system was purchased through a distributor or reseller, please contact them for troubleshooting services. They have the best knowledge of your specific system configuration.

1. Please review the Troubleshooting Procedures in this manual and Frequently Asked Questions on our website before contacting Technical Support.

2. BIOS upgrades can be downloaded from our website. **Note**: Not all BIOS can be flashed depending on the modifications to the boot block code.

3. If you still cannot resolve the problem, include the following information when contacting us for technical support:

    - System, motherboard, and chassis model numbers and PCB revision number

    - BIOS release date/version (this can be seen on the initial display when your system first boots up)

    - System configuration

An example of a Technical Support form is posted on our website. Distributors: For immediate assistance, please have your account number ready when contacting our technical support department by email.

Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Vendor Support Filing System

For issues related to Intel, use the Intel IPS filing system:

https://www.intel.com/content/www/us/en/design/support/ips/training/welcome.html

For issues related to Red Hat Enterprise Linux, since it is a subscription based OS, contact your account representative.

7.11 Feedback

Supermicro values your feedback as we strive to improve our customer experience in all facets of our business. Please email us at techwriterteam@supermicro.com to provide feedback on our manuals.

7.12 Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc.
	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information)
	Sales-USA@supermicro.com (Sales Inquiries)
	Government_Sales-USA@supermicro.com (Gov. Sales Inquiries)
	support@supermicro.com (Technical Support)
	RMA@supermicro.com (RMA Support)
	Webmaster@supermicro.com (Webmaster)
Website:	www.supermicro.com

Europe

Address:	Super Micro Computer B.V.
	Het Sterrenbeeld 28, 5215 ML
	's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	Sales_Europe@supermicro.com (Sales Inquiries)
	Support_Europe@supermicro.com (Technical Support)
	RMA_Europe@supermicro.com (RMA Support)
Website:	www.supermicro.nl

Asia-Pacific

Address:	Super Micro Computer, Inc.
	3F, No. 150, Jian 1st Rd.
	Zhonghe Dist., New Taipei City 235
	Taiwan (R.O.C)
Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3992
Email:	Sales-Asia@supermicro.com.tw (Sales Inquiries)
	Support@supermicro.com.tw (Technical Support)
	RMA@supermicro.com.tw (RMA Support)
Website:	www.supermicro.com.tw

Appendix A

Standardized Warning Statements for AC Systems

About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our website at http://www.supermicro.com/about/policies/safety_information.cfm.

Warning Definition

Warning! This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、

電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符號代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

Warnung

WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

תקנון הצהרות אזהרה

הצהרות הבאות הן אזהרות על פי תקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים. יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

احذر! خطرٌ عُ الزهز هذا ةٌ جسد اصابة ف تتسبب أى وُي حالة ف اكَ .
قبل أى تعول على أي هعذات،كي على علن بالوخاطز ال اُجوة عي الذوائز
الكهزبائ ةٍ
وكَي على درا ةٌ بالوواراست النقائ ةٍ لو عٌ وقع أي حادث
استخذم رقن الب إٍى الو صُص ف هًا ةٌ كل تحذ زٌ للعثر تزجوتها

안전을 위한 주의사항

경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES

Installation Instructions

Warning! Read the installation instructions before connecting the system to the power source.

設置手順書
システムを電源に接続する前に、設置手順書をお読み下さい。

警告
将此系统连接电源前,请先阅读安装说明。

警告
將系統與電源連接前，請先閱讀安裝說明。

Warnung

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

¡Advertencia!

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Attention

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

Circuit Breaker

Warning! This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

サーキット・ブレーカー
この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。
保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告
此产品的短路(过载电流)保护由建筑物的供电系统提供,确保短路保护设备的额定电流不大于250V,20A。

警告
此產品的短路(過載電流)保護由建築物的供電系統提供,確保短路保護設備的額定電流不大於250V,20A。

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Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי המכשיר המוגן מפני הקצר החשמלי הוא לא יותר מ- 250VDC, 20A

هذا المنتج يعتمد على معداث الحمايت مه الدوائرالقصيرة التي تم تثبيتها في المبنى
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

경고!
이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 250V, 20A.

Power Disconnection Warning

Warning! The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components (except for hot-swap components).

電源切断の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシー内部にアクセスするには、システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

Attention

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chassis pour installer ou enlever des composants de systéme.

אזהרה מפני ניתוק חשמלי

אזהרה!

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק

לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים.

يجب فصم اننظاو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد

انطاقت قبم

انصل إى امناطق انداخهيت نههيكم نتشبيج أو إزانت مكناث الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 섀시 내부에 접근하기 전에 반드시 전원
공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Waarschuwing

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of
verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels
aangesloten op de voeding(en) van de behuizing te verwijderen

Equipment Installation

Warning! Only authorized personnel and qualified service persons should be allowed
to install, replace, or service this equipment.

機器の設置

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されていま
す。

警告
只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告
只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

Nur autorisiertes Personal und qualifizierte Servicetechniker dürfen dieses Gerät installieren,
austauschen oder warten..

¡Advertencia!

Sólo el personal autorizado y el personal de servicio calificado deben poder instalar,
reemplazar o dar servicio a este equipo.

Attention

Seul le personnel autorisé et le personnel de maintenance qualifié doivent être autorisés à installer, remplacer ou entretenir cet équipement..

אזהרה!

יש לאפשר רק צוות מורשה ואנשי שירות מוסמכים להתקין, להחליף או לטפל בציוד זה.

.ينبغي السماح فقط للموظفين المعتمدين وأفراد الخدمة المؤهلين بتركيب هذا الجهاز أو استبداله أو صيانته

경고!

승인된 직원과 자격을 갖춘 서비스 담당자만이 이 장비를 설치, 교체 또는 서비스할 수 있습니다.

Waarschuwing

Alleen geautoriseerd personeel en gekwalificeerd onderhoudspersoneel mag deze apparatuur installeren, vervangen of onderhouden..

Restricted Area

Warning! This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

警告
此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

警告
此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

אזור עם גישה מוגבלת

אזהרה!

יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת כלי אבטחה בלבד)מפתח, מנעול וכד.('

تخصيص هذه انحذة نترك بُها ف مناطق محظورة تم .

مَكن انفصل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت،

أو أ وس هُت أخري نلالأمما قفم ومفتاح

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

Battery Handling

CAUTION: There is risk of explosion if the battery is replaced by an incorrect type. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

電池の取り扱い

バッテリーを間違ったタイプに交換すると爆発の危険があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

警告

如果更换的电池类型不正确，则存在爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

警告

如果更換的電池類型不正確，則有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

WARNUNG

Es besteht Explosionsgefahr, wenn die Batterie durch einen falschen Typ ersetzt wird. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

ATTENTION

Il existe un risque d'explosion si la batterie est remplacée par un type incorrect. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

ADVERTENCIA

Existe riesgo de explosión si la batería se reemplaza por un tipo incorrecto. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

אזהרה!

קיימת סכנת פיצוץ אם הסוללה תוחלף בסוג שגוי. יש להחליף

את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

<div dir="rtl">

.هناك خطر الانفجار إذا تم استبدال البطارية بنوع غير صحيح

اسحبذال البطارية

فقط بنفس النع أو ما يعادلها مما أوصث به الشرمة المصنعة

جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة الصانعة

</div>

경고!

배터리를 잘못된 종류로 교체하면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

WAARSCHUWING

Er bestaat explosiegevaar als de batterij wordt vervangen door een verkeerd type. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

Redundant Power Supplies

 Warning! This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告
此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告
此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein trom zugeführt wird, müssen alle Verbindungen entfernt werden.

¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

אם קיים יותר מספק אחד

אזהרה!

ליחדה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן

את היחידה.

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

경고!

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

Backplane Voltage

Warning! Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

バックプレーンの電圧

システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。

修理する際には注意ください。

警告
当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告
當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

¡Advertencia!

Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

מתח בפנל האחורי
אזהרה!
קיימת סכנת מתח בפנל האחורי בזמן תפעול המערכת. יש להיזהר במהלך
העבודה.

هناك خطز مه التيار الكهزبائي أوالطاقة المجددة على اللحة
عندما يكن النظام يعمل كه حذرا عند خدمة هذا الجهاس

경고!

시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생 합니다.
서비스 작업 시 주의하십시오.

Waarschuwing

Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in
gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

Comply with Local and National Electrical Codes

Warning! Installation of the equipment must comply with local and national electrical
codes.

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention

L'équipement doit être installé conformément aux normes électriques nationales et locales.

תיאום חוקי החשמל הארצי

אזהרה!

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقاوويه المحلية والطية المتعلقة بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

Product Disposal

Warning! Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

סילוק המוצר

אזהרה!

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القوانين واللوائح الوطنية عند

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

Fan Warning

Warning! Hazardous moving parts. Keep away from moving fan blades. The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

ファンの警告

警告!回転部品に注意。運転中は回転部(羽根)に触れないでください。シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

警告!

警告！危险的可移动性零件。请务必与转动的风扇叶片保持距离。 当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

警告

危险的可移动性零件。請務必與轉動的風扇葉片保持距離。 當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

Warnung

Gefährlich Bewegende Teile. Von den bewegenden Lüfterblätter fern halten. Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

¡Advertencia!

Riesgo de piezas móviles. Mantener alejado de las aspas del ventilador. Los ventiladores podran dar vuelta cuando usted quite ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Pieces mobiles dangereuses. Se tenir a l'ecart des lames du ventilateur Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

אזהרה!

חלקים נעים מסוכנים. התרחק מלהבי המאוורר בפעולהכאשר מסירים את חלקי המאוורר מהמארז, יתכן והמאווררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

تحذير! أجزاء متحركة خطرة. ابتعد عن شفرات المروحة المتحركة.من الممكن أن المراوح لا تزال تدورعند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع ومفكات البراغي وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

경고!

움직이는 위험한 부품. 회전하는 송풍 날개에 접근하지 마세요. 섀시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조립품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

Gevaarlijk bewegende onderdelen. Houd voldoende afstand tot de bewegende ventilatorbladen. Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

Power Cable and AC Adapter

Warning! When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the cord) for any other electrical devices than products designated by Supermicro only.

電源コードとACアダプター

製品を設置する場合、提供または指定および購入された接続ケーブル、電源コードとACアダプターを 該当する地域の条例や安全基準に適合するコードサイズやプラグと共に使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。

電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSAマークがコードに表記)を Supermicro が指定する製品以外に使用することを禁止しています。

警告

安装此产品时,请使用本身提供的或指定的或采购的连接线,电源线和电源适配器，包含遵照当地法规和安全要求的合规的电源线尺寸和插头.使用其它线材或适配器可能会引起故障或火灾。
除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止
使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告

安裝此產品時,請使用本身提供的或指定的或採購的連接線,電源線和電源適配器，包含遵照當地法規和安全要求的合規的電源線尺寸和插頭.使用其它線材或適配器可能會引起故障或火災。
除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止
使用未經UL或CSA認證的線材。 (線材上會顯示UL/CSA符號)。

Warnung

Nutzen Sie beim Installieren des Produkts ausschließlich die von uns zur Verfügung gestellten Verbindungskabeln, Stromkabeln und/oder Adapater, die Ihre örtlichen Sicherheitsstandards einhalten. Der Gebrauch von anderen Kabeln und Adapter können Fehlfunktionen oder Feuer verursachen. Die Richtlinien untersagen das Nutzen von UL oder CAS zertifizierten Kabeln (mit UL/CSA gekennzeichnet), an Geräten oder Produkten die nicht mit Supermicro gekennzeichnet sind.

¡Advertencia!

Cuando instale el producto, utilice la conexión provista o designada o procure cables, Cables de alimentación y adaptadores de CA que cumplan con los códigos locales y los requisitos de seguridad, incluyendo el tamaño adecuado del cable y el enchufe. El uso de otros cables y adaptadores podría causar un mal funcionamiento o un incendio. La Ley de Seguridad de Aparatos Eléctricos y de Materiales prohíbe El uso de cables certificados por UL o CSA (que tienen el certificado UL / CSA en el código) para cualquier otros dispositivos eléctricos que los productos designados únicamente por Supermicro.

Attention

Lors de l'installation du produit, utilisez les cables de connection fournis ou désigné ou achetez des cables, cables de puissance et adaptateurs respectant les normes locales et les conditions de securite y compris les tailles de cables et les prises electriques appropries. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et la Loi sur la Sécurité Matériel interdit l'utilisation de câbles certifies- UL ou CSA (qui ont UL ou CSA indiqué sur le code) pour tous les autres appareils électriques sauf les produits désignés par Supermicro seulement.

כבלים חשמליים ומתאמי AC

אזהרה!

כאשר מתקינים את המוצר, שי להשתמש בכבלים, ספקים ומתאמים אשר נרכשו או AC לצורך כבל שימוש . עקתהו לבכה לש הנוכנ הדימ ללוכ ,תוימוקמה תוחיטבה תושירדל ומאתוה רשאו ,הנקתהה למשחה ירישכמב שומישה יקוחל םאתהב .למשחה רצק וא הלקתל םורגל לולע ,רחא גוסמ םאתמ וא לבכ לש דוק םהילע עיפומ רשאכ) CSA-ב וא UL -ב םיכמסומה םילבכב שמתשהל רוסיא םייק ,תוחיטבה יקוחו .דבלב Supermicro י"ע םאתוה רשא רצומב קר אלא ,רחא ילמשח רצומ לכ רובע UL/CSA)

عند تركيب المنتج، قم باستخدام التوصيلات المتوفرة أو المحددة قم بشراء الكابلات الكهربائية ومحولات التيار المتردد مع الالتزام بقوانين ومتطلبات السلامة المحلية بما في ذلك حجم الموصل والقابس السليم. استخدام أي كابلات ومحولات أخرى قد يتسبب في عطل أو حريق. يحظر قانون السلامة للأجهزة الكهربائية والمعدات استخدام الكابلات المعتمدة من قبل UL أوCSA والتي تحمل علامة (UL/CSA) مع أي معدات أخرى غير المنتجات المعينة والمحددة من قبل Supermicro.

전원 케이블 및 AC 어댑터

경고! 제품을 설치할 때 현지 코드 및 적절한 굵기의 코드와 플러그를 포함한 안전 요구 사항을 준수하여 제공되거나 지정된 연결 혹은 구매 케이블, 전원 케이블 및 AC 어댑터를 사용하십시오.

다른 케이블이나 어댑터를 사용하면 오작동이나 화재가 발생할 수 있습니다. 전기 용품 안전법은 UL 또는 CSA 인증 케이블 (코드에 UL / CSA가 표시된 케이블)을 Supermicro 가 지정한 제품 이외의 전기 장치에 사용하는 것을 금지합니다.

Stroomkabel en AC-Adapter

Waarschuwing! Bij het aansluiten van het Product uitsluitend gebruik maken van de geleverde Kabels of een andere geschikte aan te schaffen Aansluitmethode, deze moet altijd voldoen aan de lokale voorschriften en veiligheidsnormen, inclusief de juiste kabeldikte en stekker. Het gebruik van niet geschikte Kabels en/of Adapters kan een storing of brand veroorzaken. Wetgeving voor Elektrische apparatuur en Materiaalveiligheid verbied het gebruik van UL of CSA -gecertificeerde Kabels (met UL/CSA in de code) voor elke andere toepassing dan de door Supermicro hiervoor beoogde Producten.

Appendix B

System Specifications

Processors

Dual 5th/4th Gen. Intel® Xeon® Scalable Processors (in Socket E LGA 4677), with four UPIs (20 GT/s max.) and a Thermal Design Power (TDP) of up to 350 W

Note: Refer to the motherboard specifications pages on our website for updates to supported processors.

Chipset

Intel® C741

BIOS

AMI 32 Mb SPI Flash ROM

Memory

Supports up to 4 TB of 3DS RDIMM/RDIMM DDR5 (288-pin) ECC memory with speeds of up to 5600 MT/s in 16 DIMM slots

SATA Controller

On-chip (Intel® C741) Controller

Drive Bays

Eight hot-swap 3.5" drive bays

PCI Expansion Slots

Seven PCIe 5.0 x16 slots (P1 SLOT2/4/10, P2 SLOT5/7/9/11)

Four PCIe 5.0 x8 MCIO NVMe connectors with support of eight connections (P1_NVME0/1, P1_NVME2/3, P2_NVME0/1, P2_NVME2/3)

Two PCIe 5.0 NVMe M.2 slots (support M-Key 2280 and 22110)

Input/Output

Network: Two LAN ports

BMC: Dedicated LAN port

USB: Six USB 3.0 ports—4 rear, 2 front, 1 Type A port

Video: One VGA port

Serial: One serial header

Motherboard

X13DEG-QT; 14.567" (W) x 15.866" (L) (370 mm x 402.996 mm)

Chassis

CSE-749TS-R2K05BP; 4U Tower Rackmount, 7.0 x 18.2 x 26.5 in. / 178 x 462 x 673 mm. (WxHxD)

System Cooling

Four heavy duty fans

One rear exhaust fan

Two CPU cooling modules

Two optional fans for GPUs

Power Supply

Model: 2000 W Titanium Level efficiency redundant power supply

Rated Input Current: 14 A (100 V) to 11 A (240 V)

Rated Input Frequency: 50-60 Hz

Rated Output Power: 2000 W

Rated Output Voltages: +12 V (164.68), +12 Vsb (2.07 A)

Operating Environment

Operating Temperature: 10º to 35º C (50º to 95º F)

Non-operating Temperature: -40º to 60º C (-40º to 140º F)

Operating Relative Humidity: 8% to 90% (non-condensing)

Non-operating Relative Humidity: 5% to 95% (non-condensing)

Regulatory Compliance

FCC, ICES, CE, UKCA, VCCI, RCM, NRTL, CB

Applied Directives, Standards

EMC/EMI: 2014/30/EU (EMC Directive)

Electromagnetic Compatibility Regulations 2016

FCC Part 15 Subpart B

ICES-003

VCCI-CISPR 32

AS/NZS CISPR 32

BS/EN 55032

BS/EN 55035

CISPR 32

CISPR 35

BS/EN 61000-3-2

BS/EN 61000-3-3

BS/EN 61000-4-2

BS/EN 61000-4-3

BS/EN 61000-4-4

BS/EN 61000-4-5

BS/EN 61000-4-6

BS/EN 61000-4-8

BS/EN 61000-4-11

Product Safety: 2014/35/EU (LVD Directive)

UL/CSA 62368-1 (USA and Canada)

Electrical Equipment (Safety) Regulations 2016

IEC/BS/EN 62368-1

Environment:

2011/65/EU (RoHS Directive)

EC 1907/2006 (REACH)

2012/19/EU (WEEE Directive)

California Proposition 65

Perchlorate Warning

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate"

この装置は、クラスＡ機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。　　　　　　　　　　**VCCI － A**

Appendix C

BSMI RoHS Certification

限用物質含有情況標示聲明書
Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱: 伺服器 / Server
Equipment name

型號（型式）：749-R20X13 (系列型號: 749-20, SYS-741GE-TNRT)
Type designation (Type)

單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
機殼 (Chassis)	○	○	○	○	○	○
機殼風扇 (Chassis Fan)	−	○	○	○	○	○
線材 (Cable)	○	○	○	○	○	○
主機板 (Motherboard)	−	○	○	○	○	○
電源供應器 (Power Supply)	−	○	○	○	○	○
電源背板 (PDB)	−	○	○	○	○	○
硬碟 (HDD)	−	○	○	○	○	○
附加卡 (Add-on Card)	−	○	○	○	○	○

備考1.〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。
Note 1："Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考2.〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。
Note 2："○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3.〝−〞係指該項限用物質為排除項目。
Note 3：The "−" indicates that the restricted substance corresponds to the exemption.

警告: 為避免電磁干擾, 本產品不應安裝或使用於住宅環境。

輸入額定:

100-127V ~, 60-50Hz, 12-9.5A (x2)

200-240V ~, 60-50Hz, 10-9.8A (x2)

*使用者不能任意拆除或替換內部配備
*報驗義務人之姓名或名稱：美超微電腦股份有限公司
*報驗義務人之地址：新北市中和區建一路 150 號 3 樓