

Altos
工作站/Workstaion
BrainSphere P330 F6
Altos P330 F6
P330 F6
User Manual

Revision 1.4

ALTOS

System setup

System notes

Thank you for purchasing your Altos Workstation. This user guide is intended as a reference for experienced Workstation technicians and helps detail many of the features available in Altos Workstations. For more detailed information about any particular component or software solution, you may consult the technical specifications or the user manual for that application.



Note: Before opening or removing any components please contact your local certified Altos service representative



Warning: Any parts or components damaged during replacement by a non-certified technician are not covered by the warranty. For details, please consult the warranty guide from your system.

Notice :

Rated Electrical Specifications:

- 1200W Power Supply: 100-240V~, 12.5A-8A, 50-60Hz

Power Supply Spec
Model: PWS-1K26P-PQ, 1200W multi-output module, 80Plus Platinum level
Input:100-240Vac, 12.5-8A, 50-60HZ; 200-240Vac, 8A, 50-60Hz(Only for China);
Input:100-114.9Vac
Output:+3.3Vdc/20A,+5Vdc/20A, +12Vdc/83A,-12Vdc/0.3A,+5Vsb/3A, Max:1000W;
Input:114.9-240Vac
Output:+3.3Vdc/20A, +5Vdc/20A,+12Vdc/99A,-12Vdc/0.3A,+5Vsb/3A, Max:1200W;
+3.3Vdc,+5Vdc Max:120W, 50°C, 5000m Class I

System component identification

Overview:

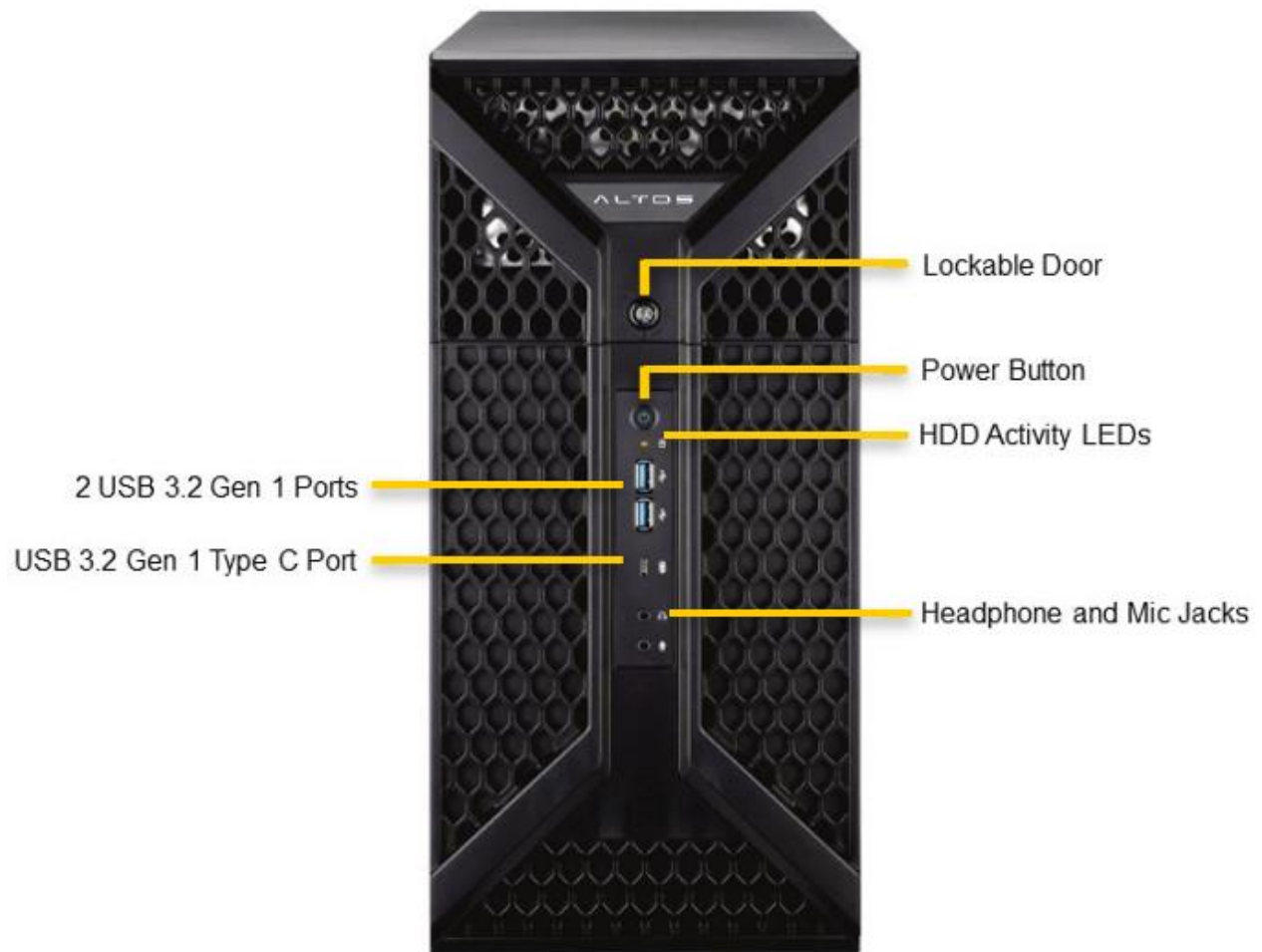
System Overview	
Processor Support	Supports a single Intel Xeon W-2400 (64L) series processor in Socket E1 LGA4677, with up to 24 CPU cores and a thermal design power (TDP) of up to 225W.
Chipset	Intel PCH W790
Memory	Supports up to 512GB of ECC RDIMM and 2TB of 3DS RDIMM with speeds of up to 4800MT/s (1DPC) and 4400MT/s (2DPC) in eight ECC DDR5 (288-pin) SMD DIMM slots Note: Memory speed and capacity support depends on the processors used in the system.
Storage Support	Four fixed 3.5" or four 2.5" internal drive bays Two 5.25" external peripheral bays (support DVD or mobile rack for additional drives) Two M.2 PCIe 5.0 x4 M-key 22110/2280 (PCIe 5.0 x4 via CPU)
Expansion Slots	Three PCIe Gen5 x16 slots One PCIe Gen4 x4 slot
Networking	Intel i210AT for one 1Gb Ethernet LAN port (shared IPMI port) Aquantia AQC113 for one 10Gb Ethernet LAN port
I/O Ports	Front: One power button, one Audio In, one MIC-in, two USB3.2 Gen1 Type A, one USB3.2 Gen2 Type C Rear: One 1Gb LAN (Intel i210AT), one 10Gb LAN (RJ45, AQC113C), one USB4.0 (40Gb) Type C (optional), one USB3.2 Gen2 x2 (20Gb) Type C, four USB3.2 Gen2 x1 (10Gb) Type A, 7.1 HD Audio Channel connector (Realtek ALC888S), one VGA, one COM port
System Cooling	One 12-cm rear fan One 12-cm front fan One active CPU heatsink (optional)
Power	One PS2 1200W Multi-output 80Plus Platinum Level power supply
Form Factor	Mid-Tower (WxHxD) 7.6 x 16.7 x 21.2 in. (193 x 424 x 536 mm)

Operating Environment

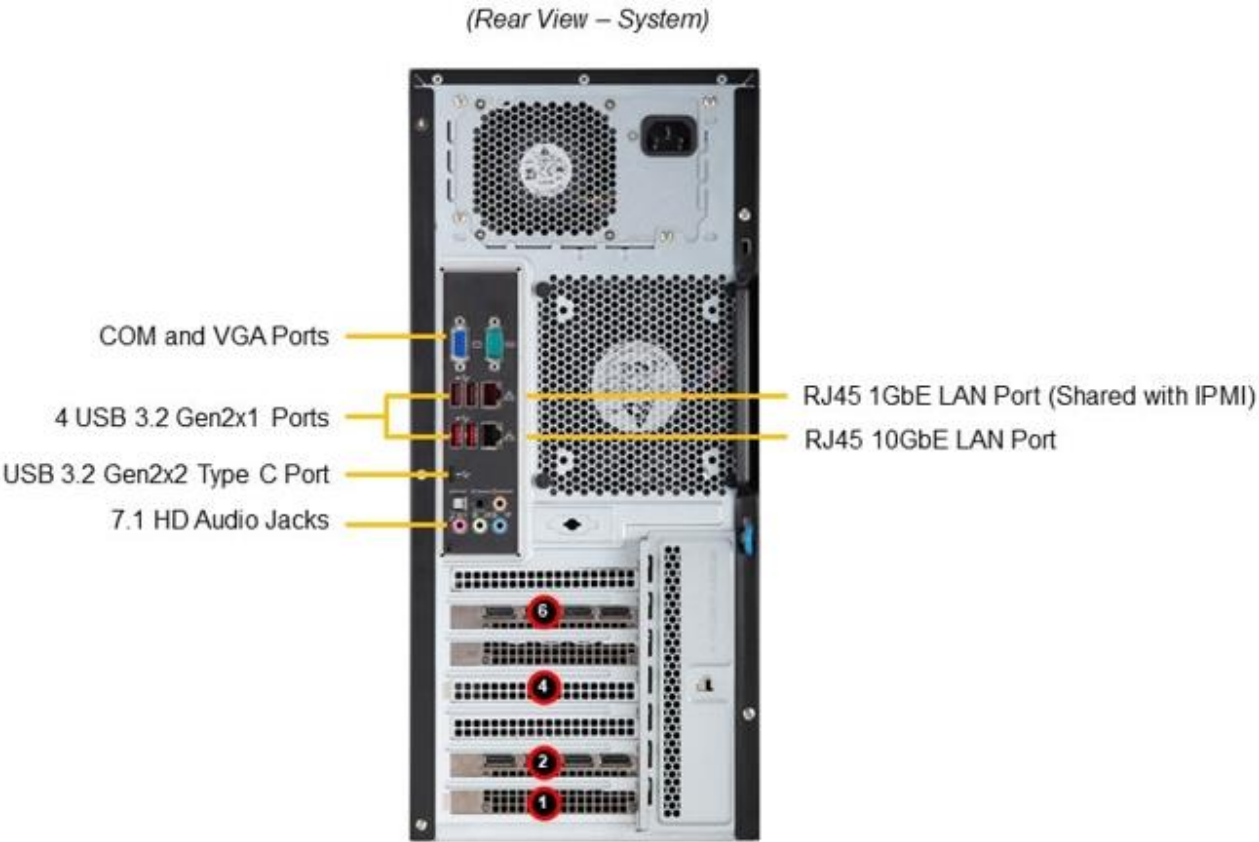
Operating Temperature: 10° to 40° C (50° to 95° F)
Non-operating Temperature: -40° to 60° C (-40° to 140° F)
Operating Relative Humidity: 8% to 90% (non-condensing)
Non-operating Relative Humidity: 5% to 95% (non-condensing)

System Front View:

(Front View – System)

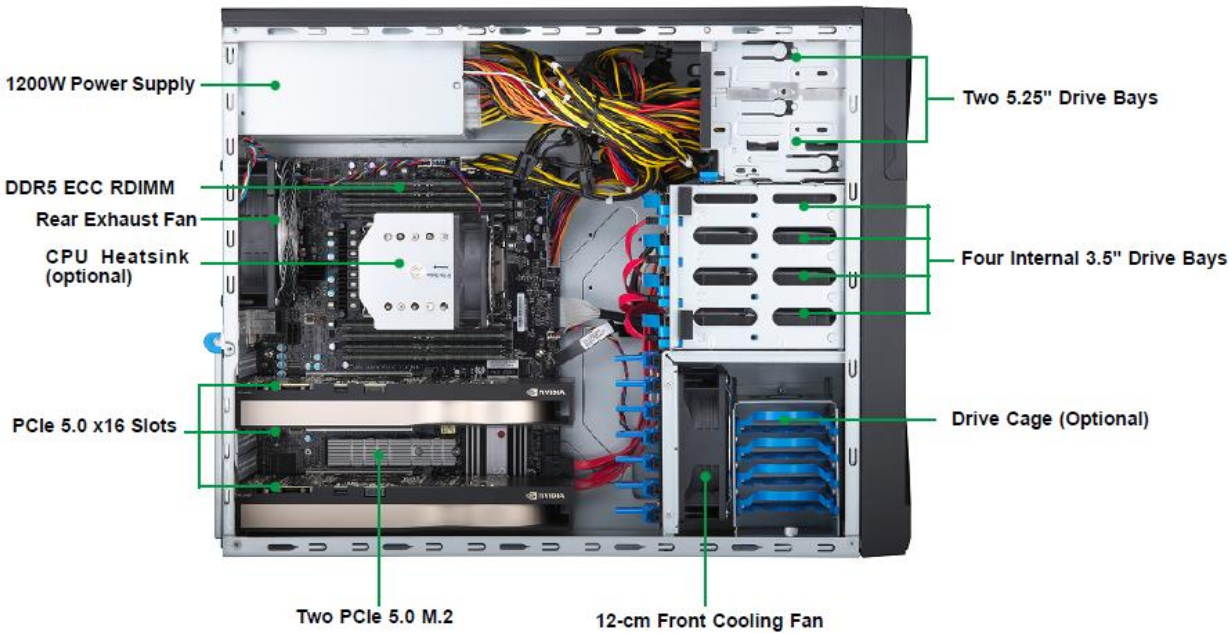


System Rear View:

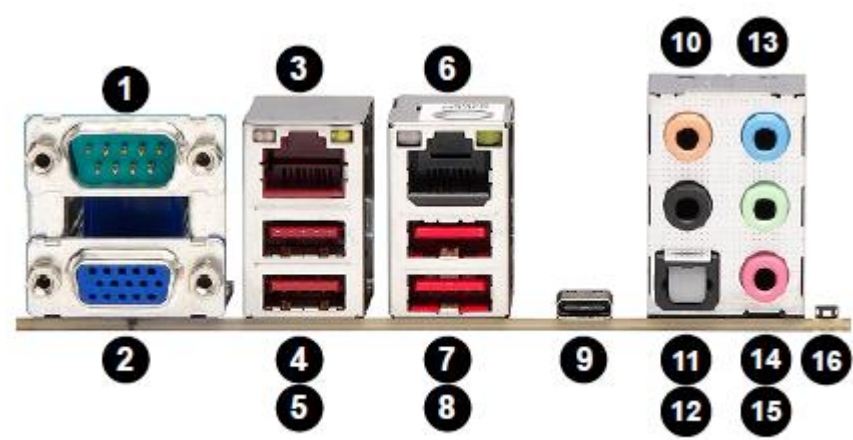


Slot Name	Slot Description
2 4 6	PCIe 5.0 x16 (FHFL); Supports up to 2 Double-Width GPUs
1	PCIe 4.0 x4

System Side View:



Rear I/O

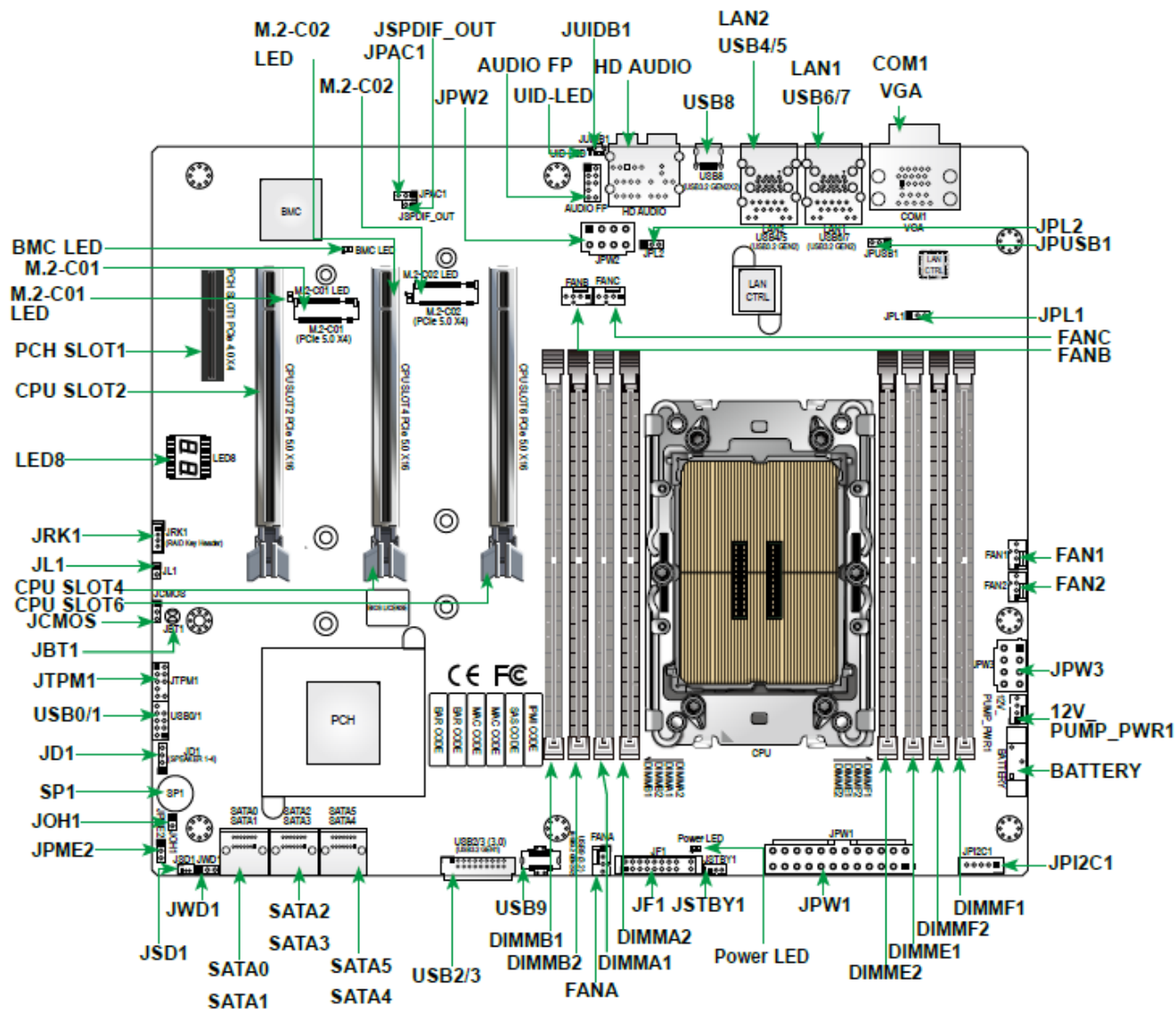


Rear I/O Ports							
#	Description	#	Description	#	Description	#	Description
1	COM1 Port	6	LAN2 (10GbE)	11	Surround Out	16	UID Switch / BMC Reset Button
2	VGA Port (IPMI only)	7	USB4 (3.2 Gen. 2)	12	S/PDIF Out		
3	LAN1 (1GbE)	8	USB5 (3.2 Gen. 2)	13	Line In		
4	USB6 (3.2 Gen. 2)	9	USB8 (3.2 Gen. 2x2)	14	Line Out		
5	USB7 (3.2 Gen. 2)	10	Center/LFE Out	15	Mic In		

Specification introduction:

CPU	Single Intel® Xeon® Sapphire Rapids W-2400 Processor (LGA4677), up to 24Core / 225W TDP
Chipset	Intel® W790
RAID	SATA RAID 0,1,5,10 (Windows OS only) PCIe RAID 0, 1(Optional VROC)
Memory	<ul style="list-style-type: none">8 DIMMs, 4-Channel, ECC RDIMM up to 2TB , DDR5 up to 4800 MHz
PCIe Expansion	4 PCI-E Slots <ul style="list-style-type: none">3x PCI-E 5.0 x16 slots1x PCI-E 4.0 x4 slot
M.2	<ul style="list-style-type: none">2 x M.2 2280/22110 slot (M key, PCIe 5.0 x4)
Network	<ul style="list-style-type: none">2x LAN ports (1Gb with Intel i210AT share with IPMI & 10Gb with AQC113C)
BMC	<ul style="list-style-type: none">AST 2600
Media/Storage bays	<ul style="list-style-type: none">[External bays] 2x 5.25“ ODD bay[Internal bays] 4x 3.5”, 4x2.5”(Optional)
I/O Ports	Front I/O 1x USB3.2 Gen 2x1 Type C, 2x USB3.2 Gen1 Type-A, 2x Audio jacks (Line-out/Mic-In) Rear I/O 2x RJ45(10GB/1GB), 4x USB 3.2 Gen2x1, 1x USB3.2 Gen2x2(Type C), 1x VGA, 1x COM, HD Audio 7.1 channel connector via Realtek ALC888S5-port Audio jacks (7.1 HD Audio)+1x SPDIF port
Audio	<ul style="list-style-type: none">7.1 CH HD Audio (Realtek ALC888S-VD)
GPU Support	<ul style="list-style-type: none">Maximum RTX A6000/ RTX 4080
Power supply	<ul style="list-style-type: none">1200 80PLUS® Platinum PSU
Compliance	<ul style="list-style-type: none">CE, FCC, CB, BSMI
OS Support	Microsoft® Windows 11 Pro, Red Hat 8.6/9.0, Ubuntu 20.04/22.04

Motherboard Layout

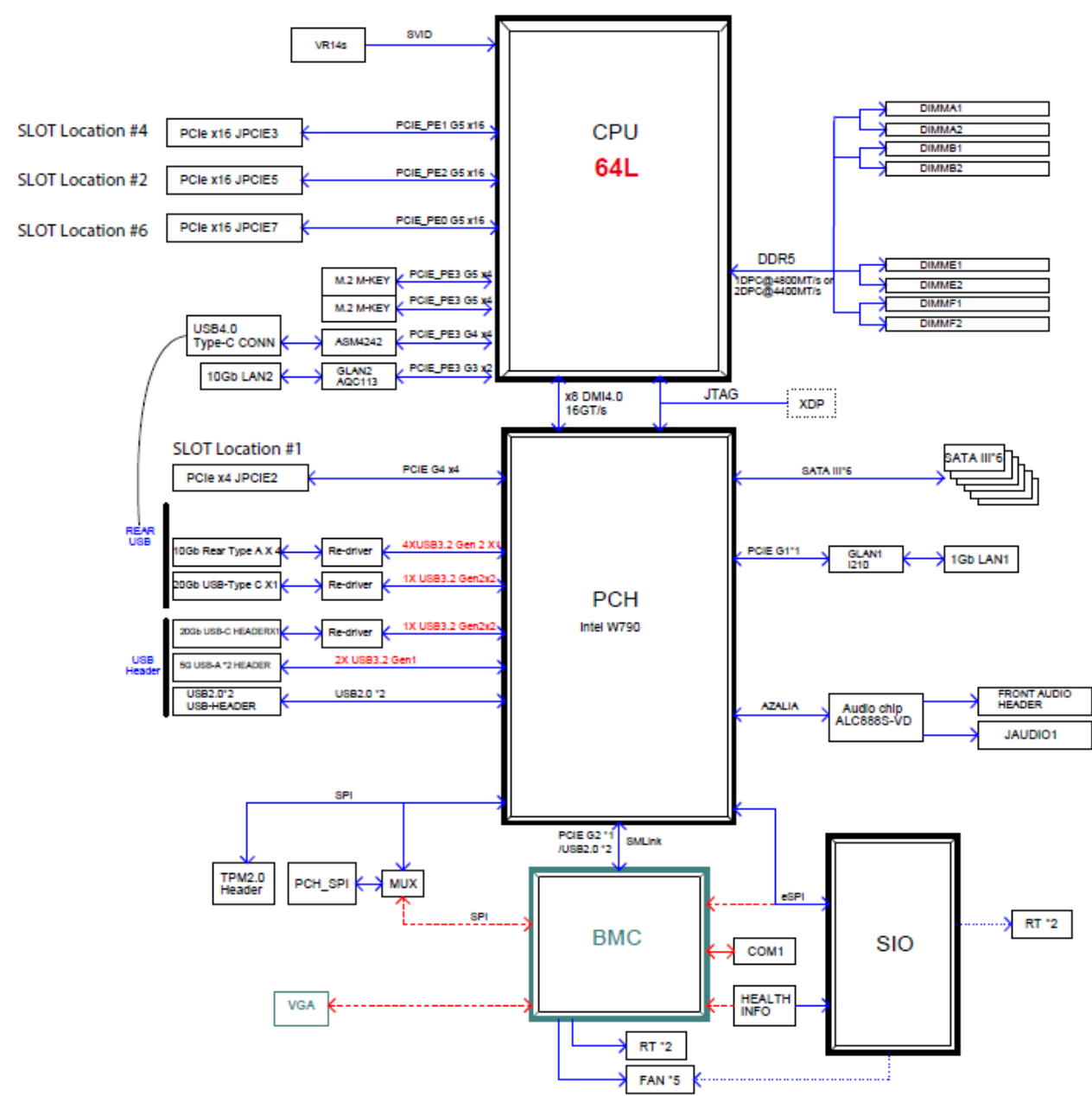


Jumper	Description	Default Setting
JBT1	Clear CMOS (Onboard)	Contact Pads to Clear CMOS
JCMOS	Clear CMOS (Onboard)	Pins 1-2 (Normal)
JPAC1	HD Audio Enable / Disable	Pins 1-2 (Enabled)
JPL1, JPL2	LAN1/LAN2 Enable / Disable	Pins 1-2 (Enabled)
JPME2	Intel Manufacturing Mode	Pins 1-2 (Normal)
JPUSB1	USB6/7 Standby Power	Pins 1-2 (Enabled)
JWD1	Watch Dog Function Enable	Pins 1-2 (Reset)

LED	Description	Color/State
BMC_LED	BMC Heartbeat LED	Blinking Green: BMC Normal
LED8	Status Code LED	Digital Readout
M.2-C01/M.2-C02 LED	M.2 LEDs for M.2-C01 / M.2-C02	Blinking Green: Device Working
Power LED	Onboard Power LED	Solid Green: Power On
UID-LED	Unit Identifier (UID) LED	Blue On: Unit Udentified

Connector	Description
12V_PUMP_PWR1	12V 4-pin Power Connector for CPU Liquid Cooling Pump
AUDIO_FP	Front Panel Audio Header
BATTERY	Onboard Battery
COM1	COM Port (Back Panel)
CPU SLOT2/4/6	PCIe 5.0 x16 Slots
FAN1, FAN2	CPU Fan Headers
FANA - FANC	System Fan Headers
HD AUDIO	Back Panel High Definition Audio Port
JD1	Speaker / Buzzer Header
JF1	Front Control Panel Header
JL1	Chassis Intrusion Header
JOH1	Overheat LED Header
JPI2C1	Power Supply SMBus I ² C Header
JPW1	24-pin ATX Main Power Connector (Required)
JPW2, JPW3	+12V 8-pin CPU Power Connectors
JRK1	Intel VROC RAID Key Header Note: A VROC hardware key is required for VROC RAID function.
JSD1	SATA DOM (Disk-On-Module) Power Connectors
JSPDIF_OUT	Sony/Philips Digital Interface (S/PDIF) Out Header
JSTBY1	Standby Power Header (5V)
JTPM1	Trusted Platform Module (TPM) / Port 80 Header
JUIDB1	Unit Identifier (UID) Switch / BMC Reset Button
LAN1	RJ45 1GbE LAN Port (Shared IPMI Port)
LAN2	RJ45 10GbE LAN Port
M.2-C01, M.2-C02	PCIe 5.0 x4 M.2 M-key Sockets (Support 22110 and 2280 form factors, and RAID 0/1/5/10)
SATA0 - SATA5	Intel Serial ATA (SATA 3.0) Ports 0 - 5 (6 Gb/second) (Support RAID 0/1/5/10)
PCH SLOT1	PCIe 4.0 x4 Slot
SP1	Internal Speaker / Buzzer
USB0/1	Front Access USB 2.0 Header
USB2/3	Front Access USB 3.2 Gen. 1 Header (5Gb, Type A)
USB4, USB5	Back Panel USB 3.2 Gen. 2 x1 Ports (10Gb, Type A)
USB6, USB7	Back Panel USB 3.2 Gen. 2 x1 Ports (10Gb, Type A)
USB8	Back Panel USB 3.2 Gen. 2 x2 Port (20Gb, Type C)
USB9	Front Access USB 3.2 Gen. 2 x2 Header (20Gb, Type C)
VGA	VGA Port (through BMC)

System Block Diagram:



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.

Removing Power

Use the following procedure to ensure that power has been removed from the system.

1. Use the operating system to power down the system.
2. After the system has completely shut down, disconnect the AC power cord from the power strip or outlet.
3. Disconnect the power cord from the power supply unit.

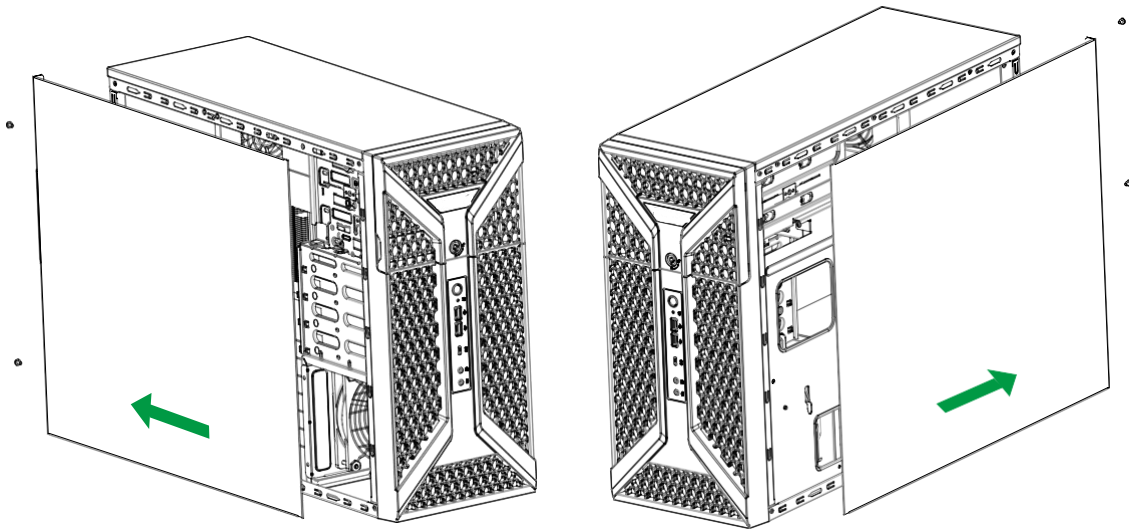
Accessing the System

The Chassis has removable side covers for interior access.

Caution: Except for short periods of time, do not operate the system without the cover in place. The chassis covers must be in place to allow proper airflow and prevent overheating.

Removing the Side Cover

- i. Begin by removing power from the system, follow instructions in Section 3.1.
- ii. Remove the two screws securing the left side cover to the chassis.
- iii. Slide the left cover toward the rear of the chassis.
- iv. Lift the left cover from the chassis.
- v. Remove the three screws securing the right side cover to the chassis.
- vi. Slide the right cover toward the rear of the chassis
- vii. Lift the right cover from the chassis.

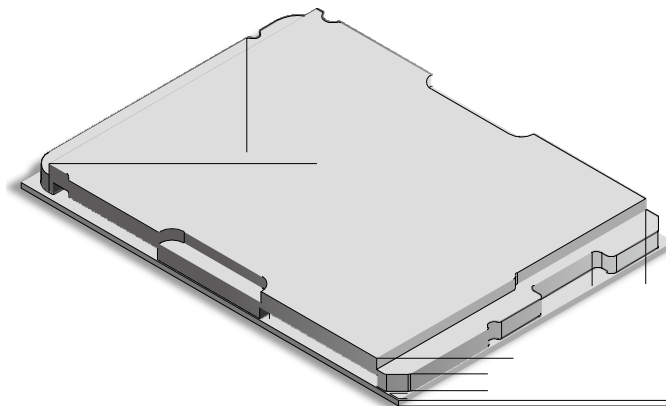


Processor and Heatsink Installation

The processor (CPU) and processor carrier should be assembled together first to form the processor carrier assembly. This will be 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 below:

- Please carefully follow the instructions given on the previous page to avoid ESD-related damages.
- Shut down the system and then unplug the AC power cord from all power supplies.
- 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.
- All graphics in this manual are for illustrations only. Your components may look different.

The 4th Gen. Intel Xeon W Processor

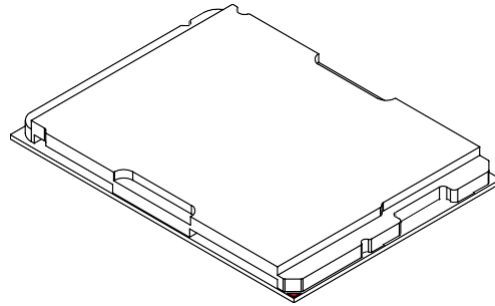


**Intel Xeon W-2400 series CPU
(64L, MCC)**

Overview of the Processor Carrier Assembly

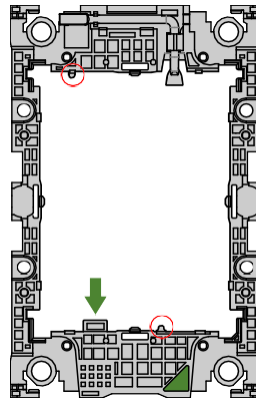
The processor carrier assembly contains the Intel Xeon processor and a processor carrier.

4. Intel Xeon Processor



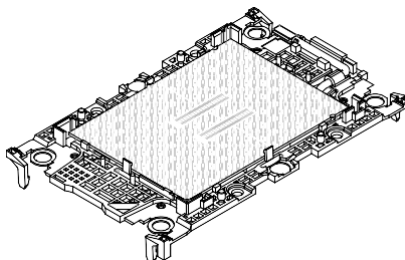
Intel Xeon W-2400 series CPU
(64L, MCC)

5. Processor Carrier



Carrier E1B (P/N: SKT-1424L-001B-LTS) For
MCC CPU

6. CPU Carrier Assembly (with CPU Seated inside the Carrier)

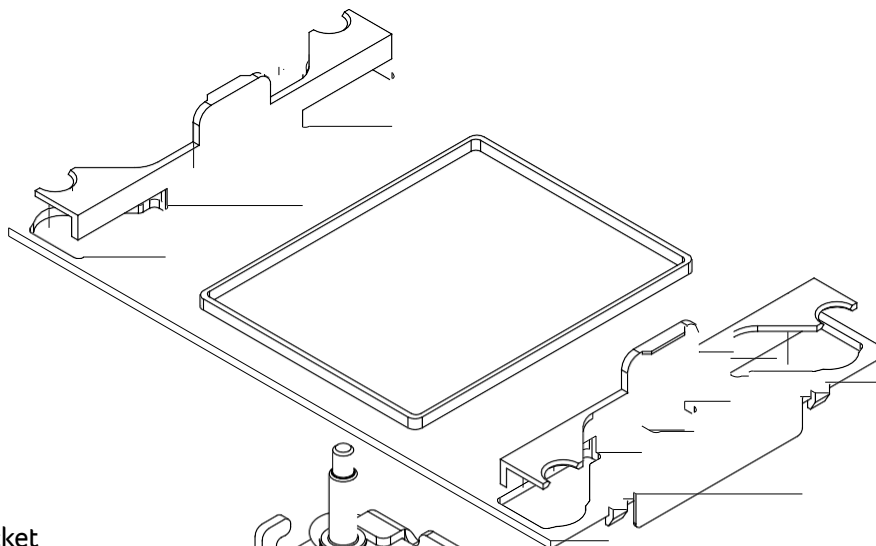


Carrier E1A with Intel Xeon W-2400 series CPU

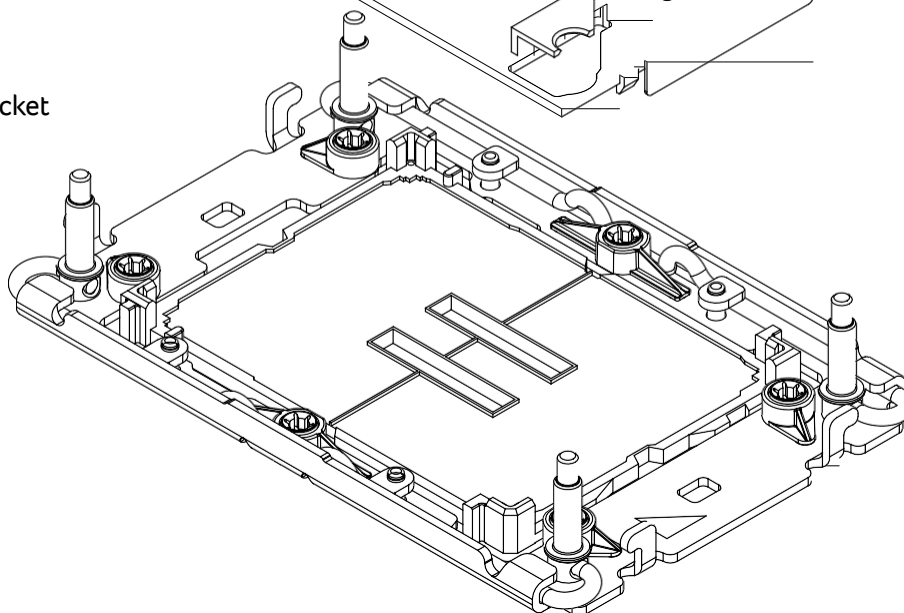
Overview of the CPU Socket

The CPU socket is protected by a plastic protective cover.

1. Plastic Protective Cover



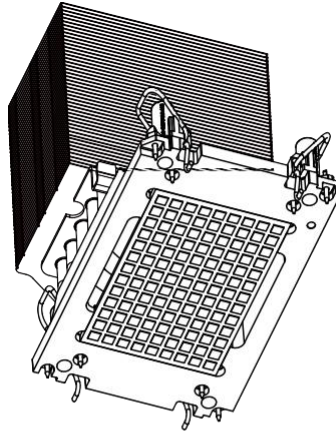
2. CPU Socket



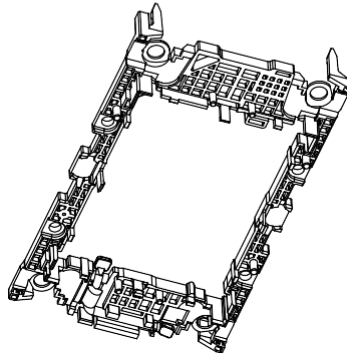
Overview of the Processor Heatsink Module

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

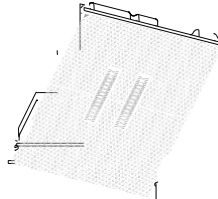
1. Heatsink with Thermal Grease



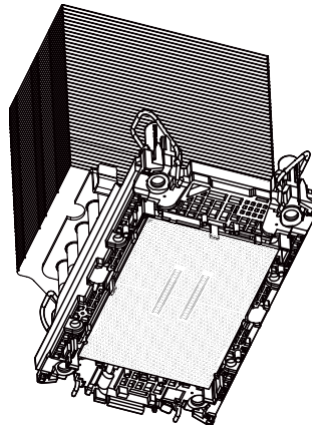
2. Processor Carrier



3. Intel Xeon Processor



4. Processor Heatsink Module (PHM)

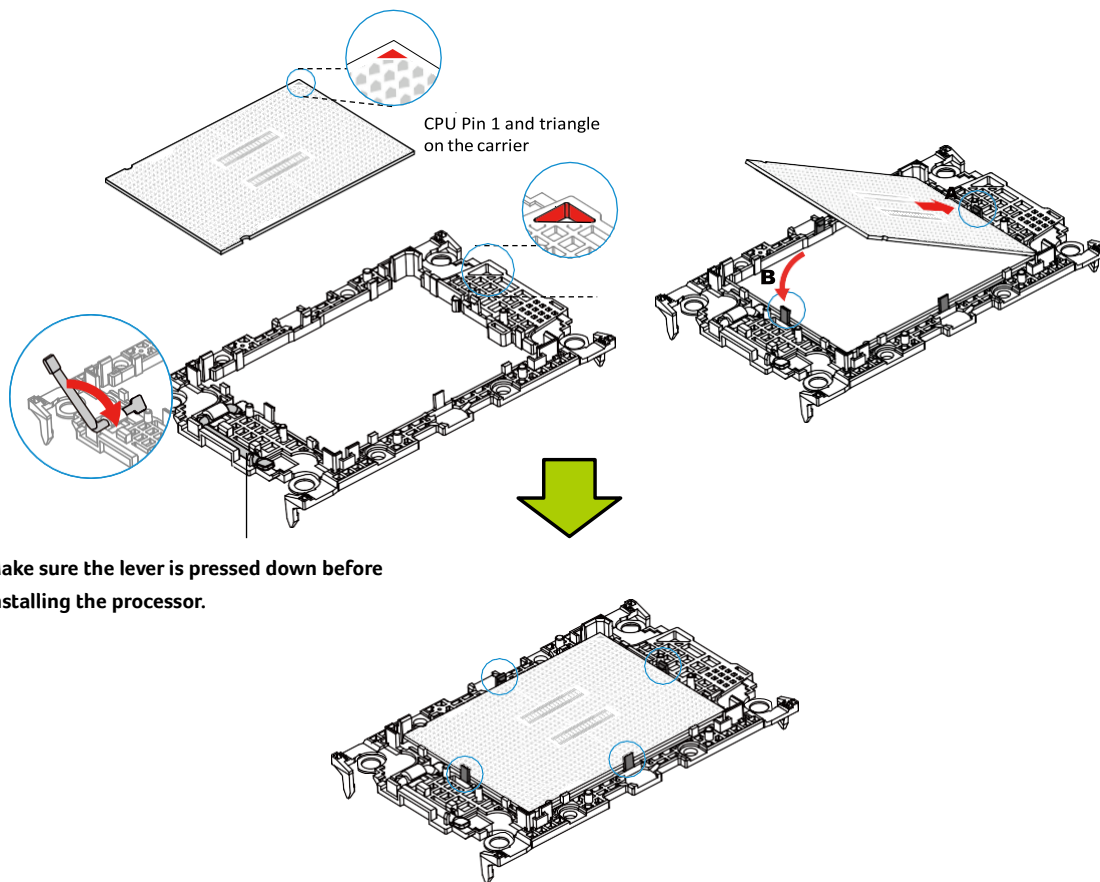


Bottom View

Creating the Processor Carrier Assembly

To install a processor into the processor carrier, follow the steps below:

1. Before installation, make sure the lever on the processor carrier is pressed down as shown below.
2. Hold the processor with the LGA lands (gold contacts) facing up. Locate the small, gold triangle in the corner of the processor and the corresponding hollowed triangle on the processor carrier. These triangles indicate pin 1. See the images below.
3. Use the triangles as a guide to carefully align and place one end of the processor into the latch marked A, and place the other end of processor into the latch marked B as shown below.
4. Examine all corners to ensure that the processor is firmly attached to the carrier.



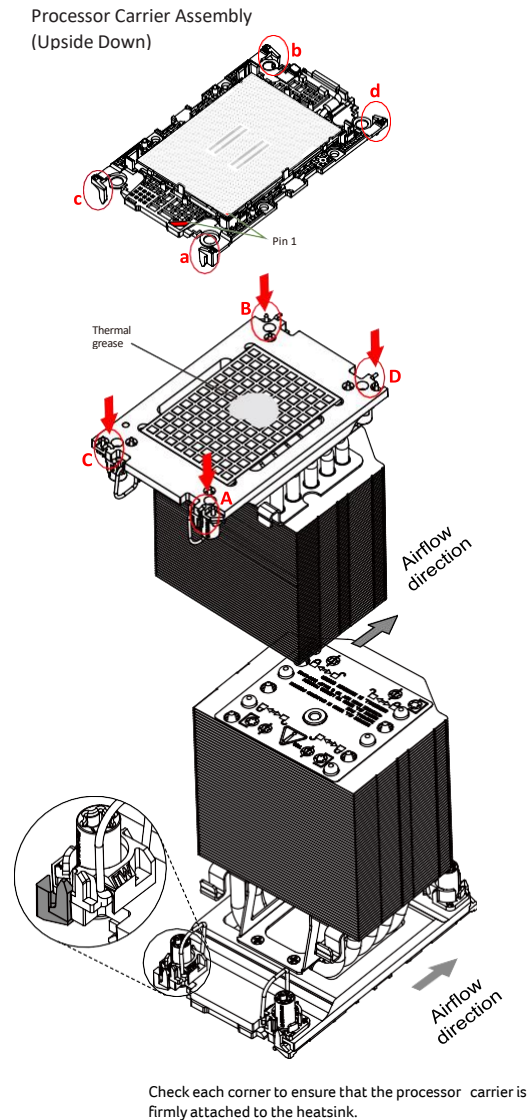
Make sure the lever is pressed down before installing the processor.

Processor Carrier Assembly

Assembling the Processor Heatsink Module

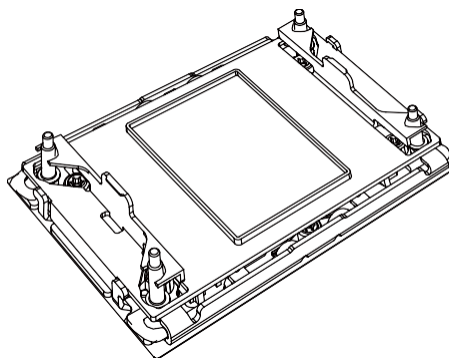
After creating the processor carrier assembly for the processor, mount it onto the heatsink to create the processor heatsink module (PHM):

1. Turn the heatsink over. If this is a new heatsink, the thermal grease has been pre-applied. Otherwise, apply the proper amount of thermal grease.
2. Hold the processor carrier assembly so the processor's gold contacts are facing up.
3. Align the corner marked "a" on the processor carrier assembly with the corner of the heatsink marked "A", and align the corners marked "b", "c", "d" on processor assembly against the corners marked "B", "C", "D" on the heatsink.
4. Press the processor carrier assembly down until it snaps into place. The plastic clips of the processor carrier assembly will lock at the four corners.
5. Examine all corners to ensure that the plastic clips on the processor carrier assembly are firmly attached to the heatsink.

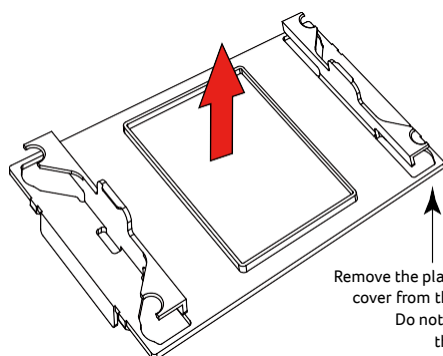


Preparing the CPU Socket for Installation

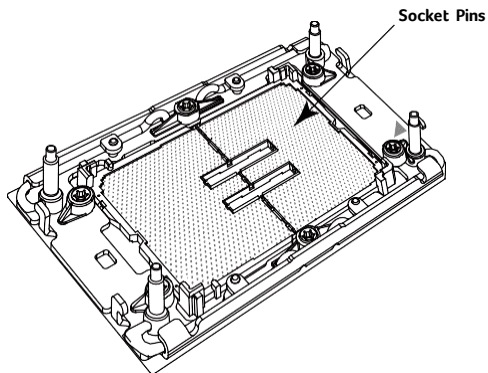
This motherboard comes with a plastic protective cover installed on the CPU socket. Remove it from the socket to install the Processor Heatsink Module (PHM). Gently pull up one corner of the plastic protective cover to remove it.



CPU Socket with Plastic Protective Cover



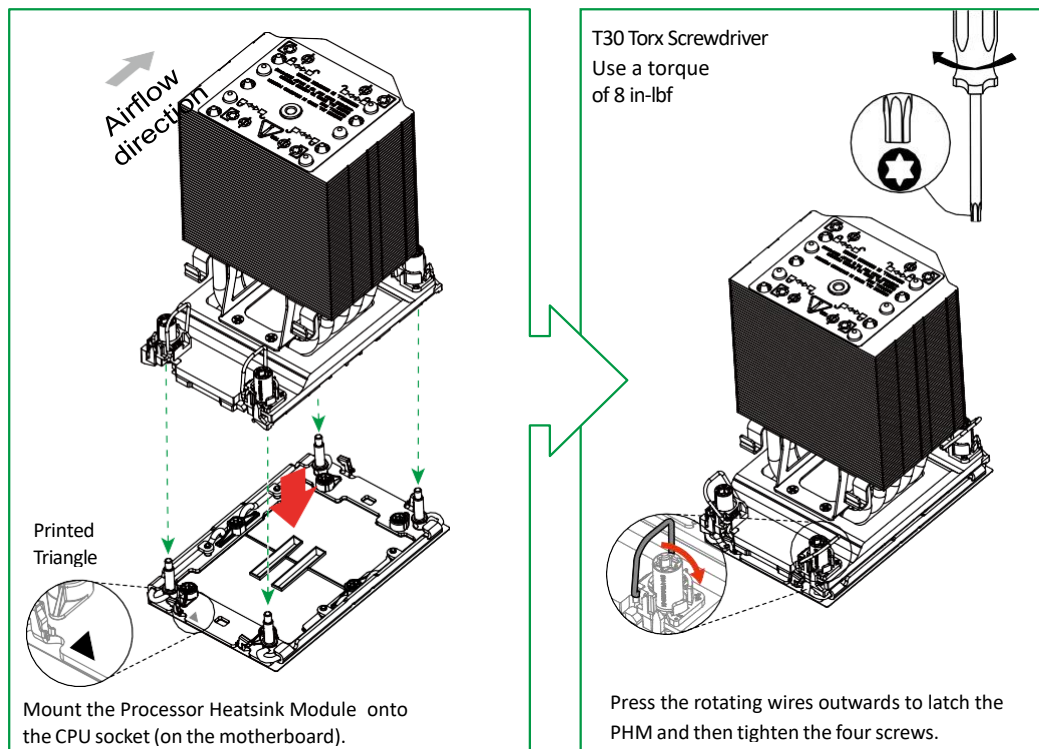
Remove the plastic protective cover from the CPU socket. Do not touch or bend the socket pins.



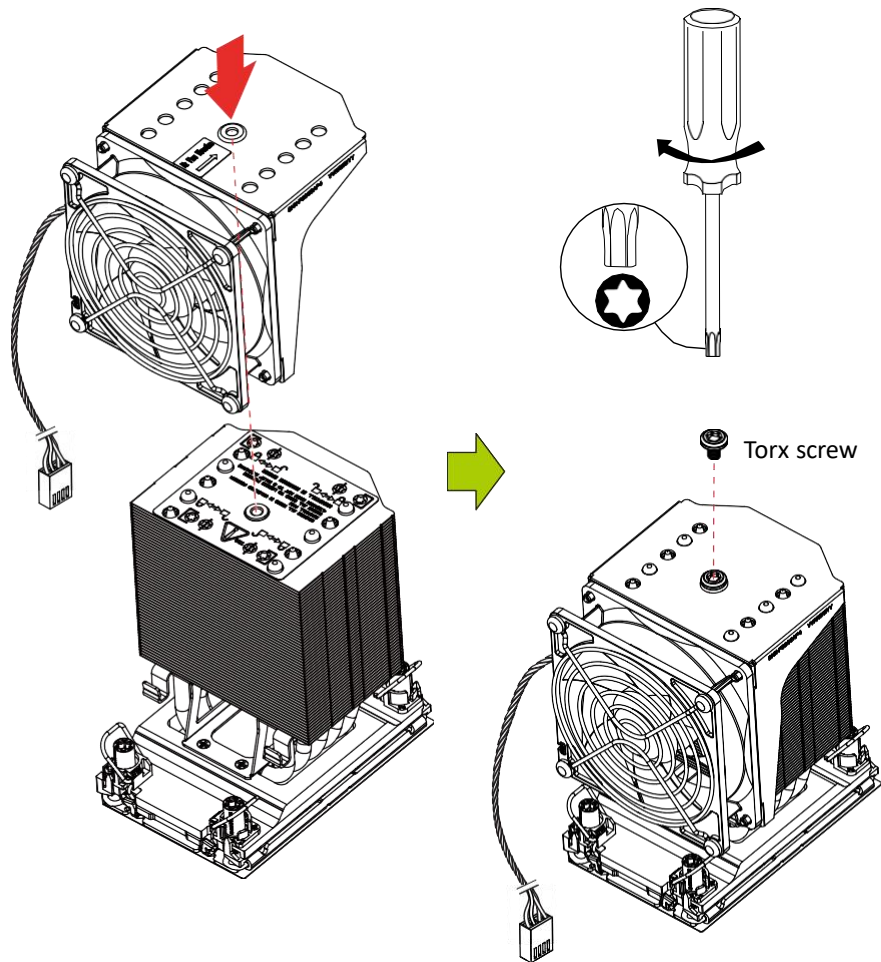
Installing the Processor Heatsink Module

After assembling the Processor Heatsink Module (PHM), install it onto the CPU socket:

1. Align pin 1 of the PHM with the printed triangle on the CPU socket. See the left image below.
2. Make sure all four holes of the heatsink are aligned with the socket, then gently place the heatsink on top of the CPU socket.
3. Press all four rotating wires outwards and make sure that the heatsink is securely latched into the CPU socket.
4. With a T30 Torx-bit screwdriver, gradually tighten the four screws to ensure even pressure. You can start with any screw, but make sure to tighten the screws in a diagonal pattern. To avoid damaging the processor or socket, do not use a force greater than 8 in-lbf when tightening the screws.
5. Examine all corners to ensure that the PHM is firmly attached to the socket



6. Place the fan on top of the heatsink so that the fan shroud and the top of the heatsink are properly aligned.
7. Insert the torx screw into the screw hole on top of the heatsink and use a Torx screwdriver to tighten the screw.
8. Connect the fan power connector to a 4-pin fan header on the motherboard.

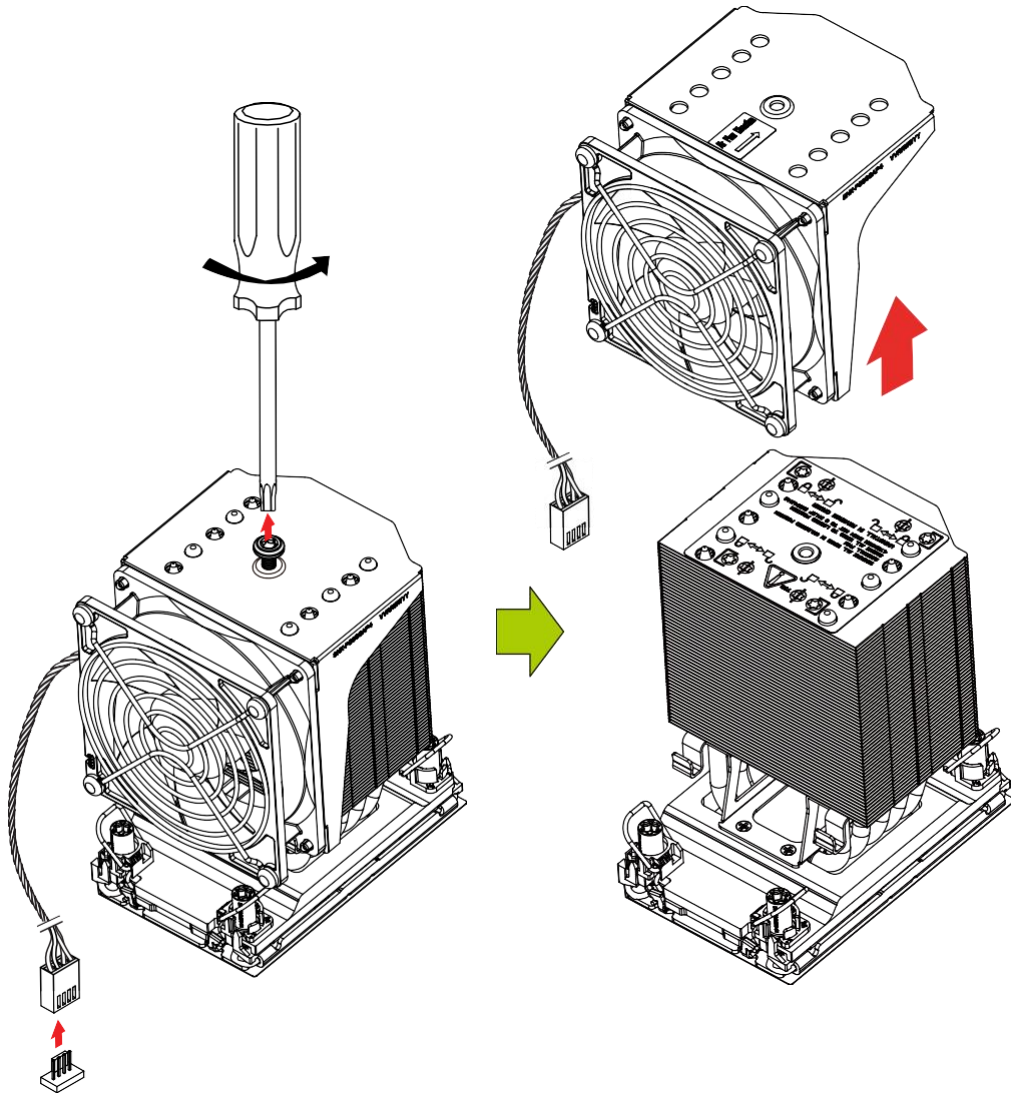


Uninstalling the Fan before Removing the PHM

Before removing the processor heatsink module (PHM) from the motherboard, shut down the system and unplug the AC power cord from all power supplies.

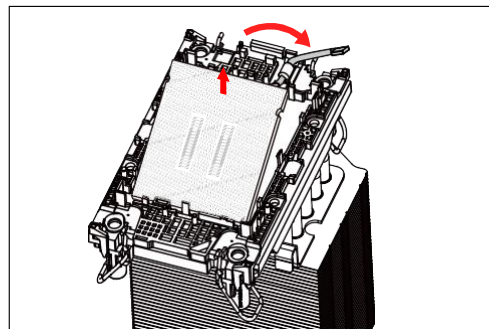
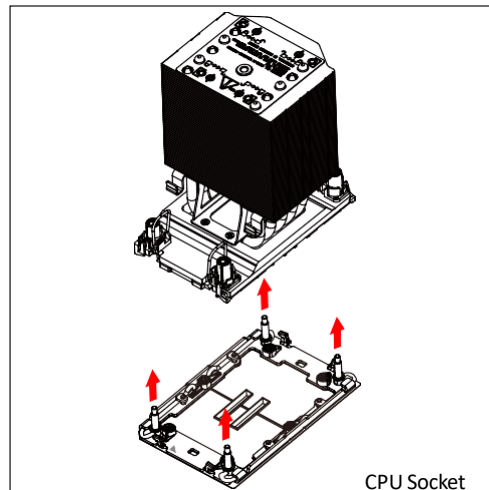
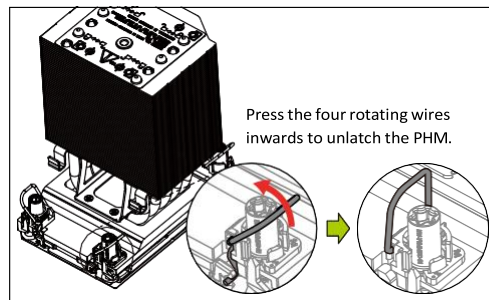
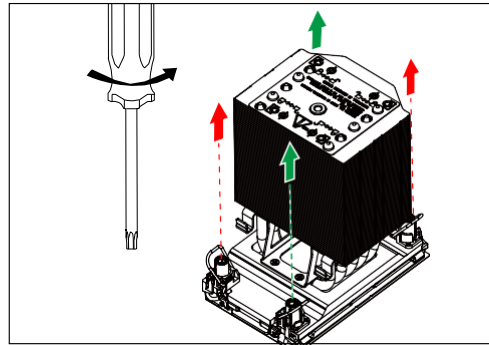
Then follow the steps below to uninstall the fan:

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



Removing the Processor Heatsink Module

1. Use a T30 Torx-bit screwdriver to loosen the four screws. You can start with any screw, but make sure to loosen the screws in a diagonal pattern.
2. Press the four rotating wires inwards to unlatch the PHM from the socket.
3. Gently lift the PHM upwards to remove it from the socket.
4. To remove the CPU, move the lever to its unlocked position and gently remove the CPU.



Memory

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

Memory Support

This motherboard supports up to 512GB of RDIMM and 2TB of 3DS RDIMM with speeds of up to 4800MT/s (1DPC) and 4400MT/s (2DPC) in eight ECC DDR5 (288-pin) SMD DIMM slots.

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

DDR5 Memory Support

DDR5 Memory Support				
Type	Ranks Per DIMM & Data Width	DIMM Capacity (GB)	Speed (MT/s); Voltage (V); DIMM Per Channel (DPC)	
			1DPC (Note)	2DPC
		16GB	1.1V	
RDIMM	SRx8 (RC D)	16GB	4800	4400
	SRx4 (RC C)	32GB		
	DRx8 (RC E)	32GB		
	DRx4 (RC A)	64GB		
RDIMM 3DS	(4R/8R) x4 (RC A)	2H-128GB 4H-256GB		

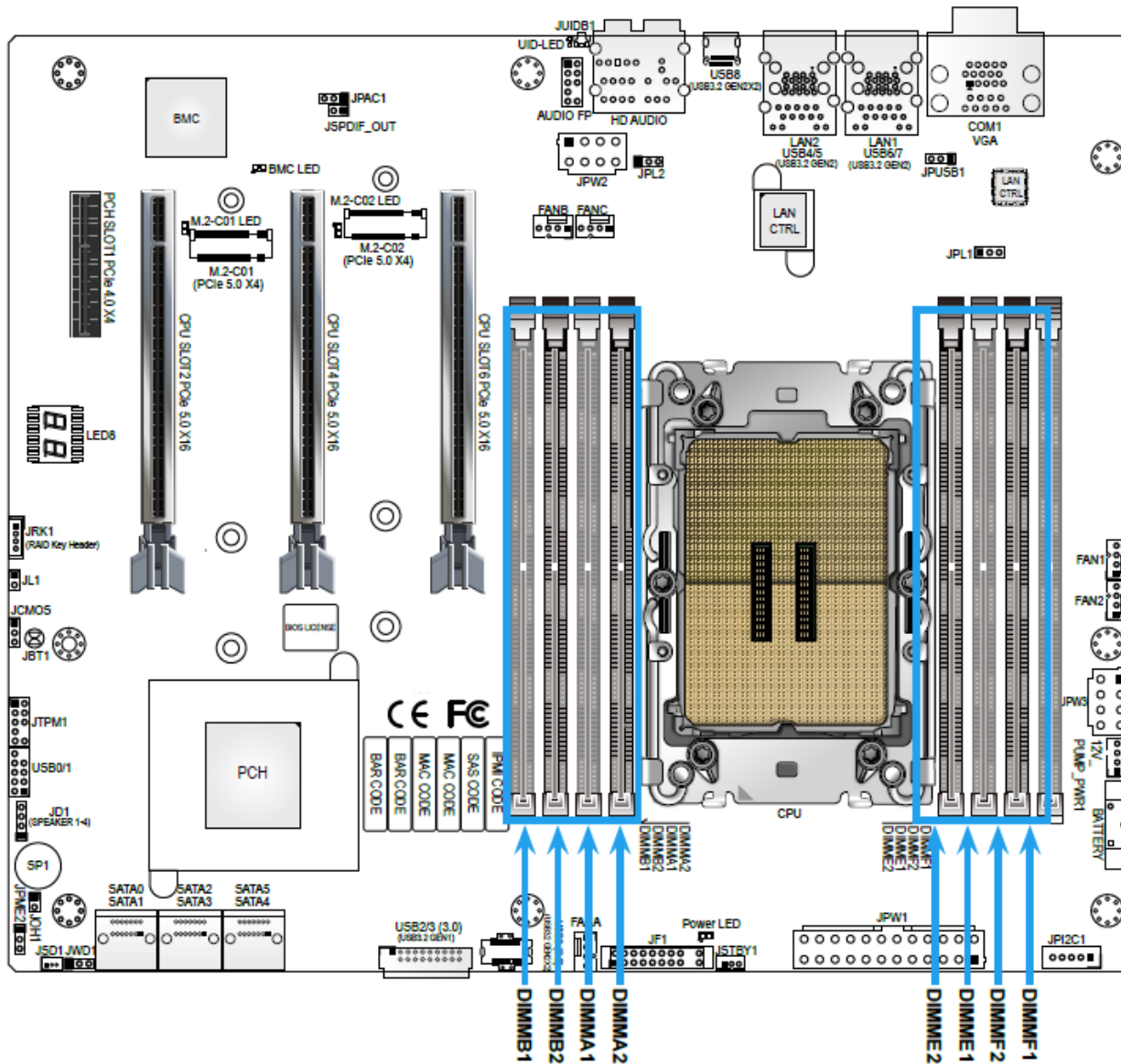
Note: 1DPC applies to 1 SPC (Sockets Per Channel) or 2 SPC implementation.

Memory Population Table

DDR5 Memory Population Table									
DDR5	DIMMF1	DIMMF2	DIMME1	DIMME2	CPU	DIMMA2	DIMMA1	DIMMB2	DIMMB1
1							DDR5		
			DDR5						
2			DDR5				DDR5		
4	DDR5		DDR5				DDR5		DDR5
6	DDR5		DDR5	DDR5		DDR5	DDR5		DDR5
	DDR5	DDR5	DDR5				DDR5	DDR5	DDR5
8	DDR5	DDR5	DDR5	DDR5		DDR5	DDR5	DDR5	DDR5

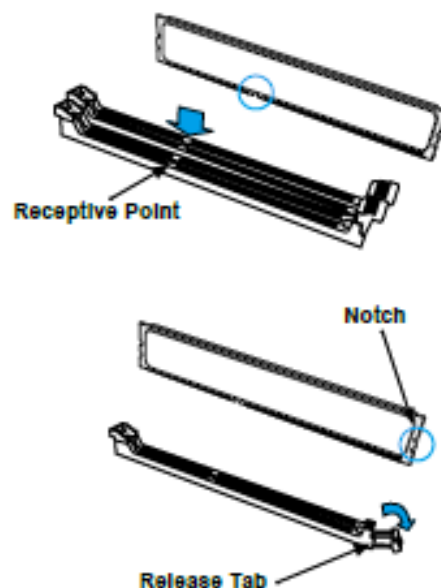
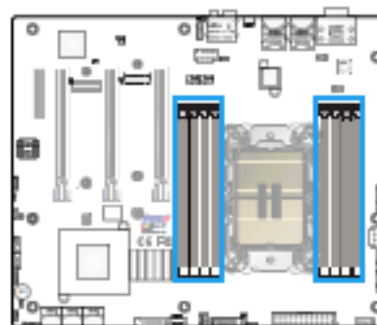
General Guidelines for Optimizing Memory Performance

- It is recommended to use DDR5 memory of the same type, size, and speed.
- The motherboard will support odd-numbered modules (one module installed). However, to achieve the best memory performance, a balanced memory population is recommended.



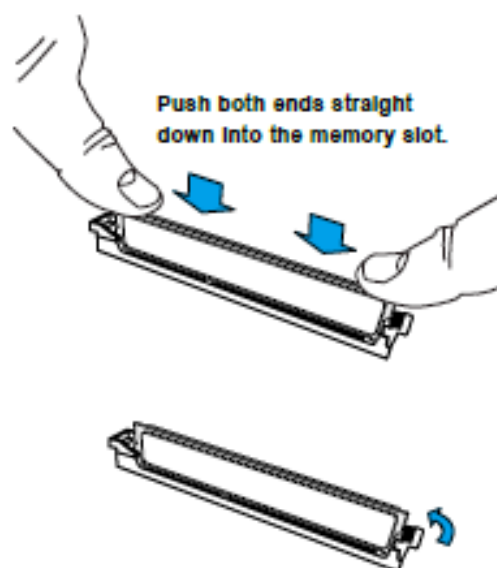
DIMM Installation

1. Insert the desired number of DIMMs into the memory slots based on the recommended DIMM population tables in the previous section. Locate DIMM memory slots on the motherboard as shown on the left.
2. Align the DIMM module key with the receptive point on the single-latch DIMM slot.
3. Push the release tab outwards to unlock the slot.
4. Align the notch on the end of the module against the receptive point on the end of the slot.
5. Press both ends of the module straight down into the slot until the module snaps into place.
6. Push the release tab to the lock position to secure the module into the slot.



DIMM Removal

Press the release tab on one end of the DIMM module to unlock it. Once the DIMM module is loosened, remove it from the memory slot.

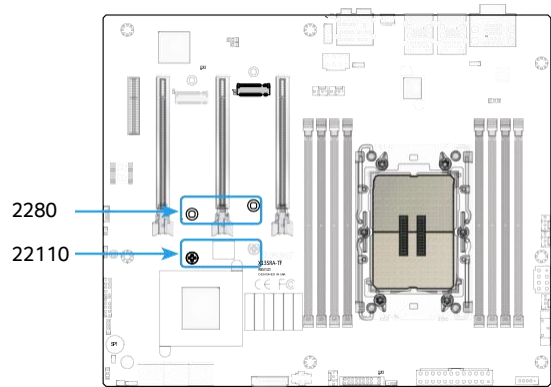


Warning! Please do not use excessive force when pressing the release tabs on the ends of the DIMM socket to avoid causing any damage to the DIMM module or the DIMM socket. Please handle DIMM modules with care. Carefully follow all the instructions given on Page 1 of this chapter to avoid ESD-related damages done to your memory modules or components.

M.2 Installation

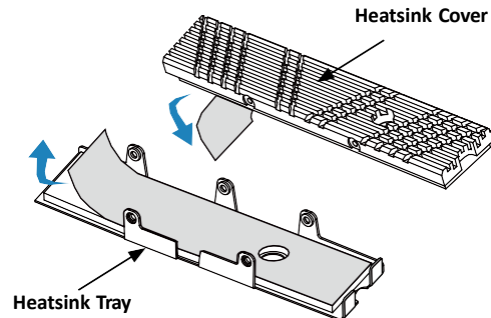
This motherboard has two M.2 M-key sockets that support 2280 and 22110 M.2 devices. One standoff is pre-installed into 22110 mounting holes. Refer to the illustration on the right for the locations of M.2 sockets and mounting holes. Follow the steps below to install the M.2 device.

Note: It is strongly recommended that you install an optional Altos M.2 heatsink on the M.2 device.

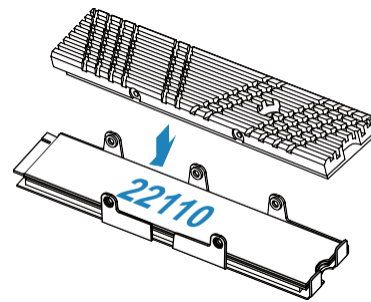
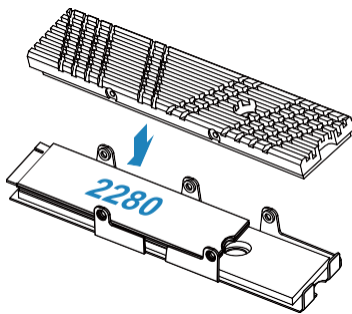


M.2 Heatsink Installation (Optional)

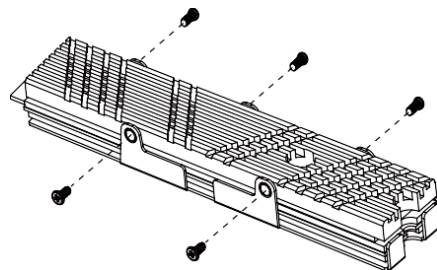
1. Remove the thermal pad protective films from the cover and the tray of the M.2 heatsink.



2. Place the M.2 device into the tray, then put the heatsink cover in place. Be careful to align the holes on the tray with the holes on the cover.

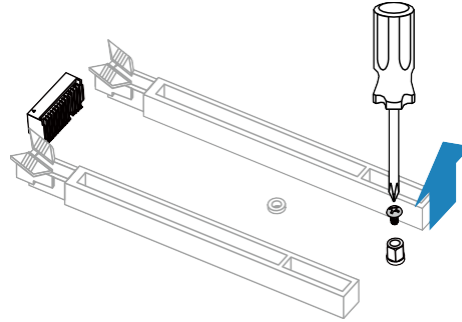


3. Tighten the screws to secure the heatsink assembly.

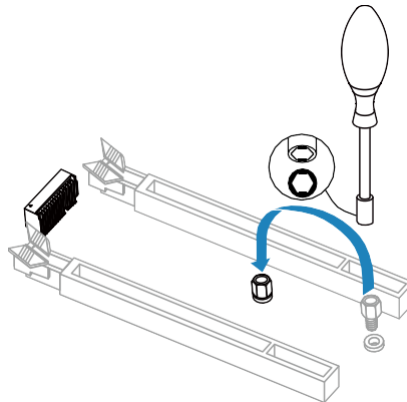


2280 M.2 Device Installation

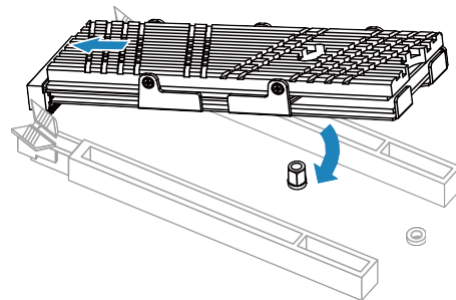
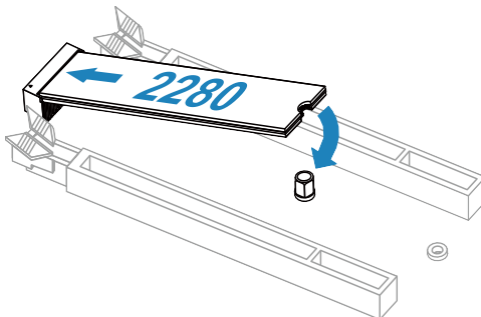
1. Locate the pre-installed standoff on the 2280 mounting hole. Remove the standoff screw and set it aside.



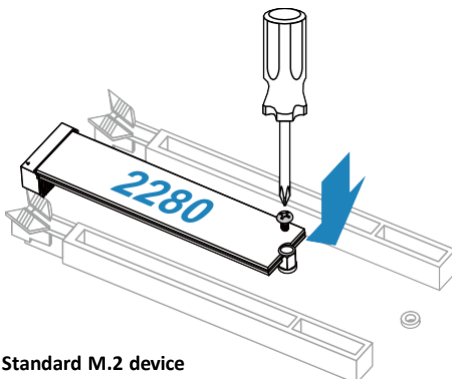
2. Using a hex socket screwdriver, remove and then re-install the standoff in 2280 mounting holes.



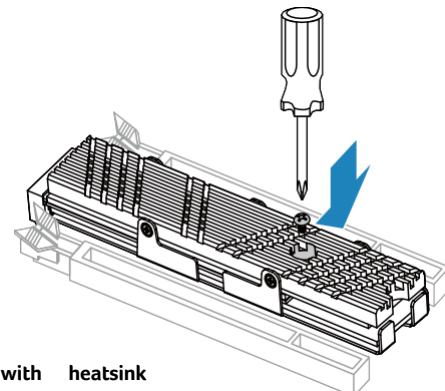
3. Insert the M.2 device or the heatsink assembly into the M.2 socket at a 30-degree angle and press it down.



4. Tighten the standoff screw to secure the M.2 device or the heatsink assembly into place. Do not overtighten so as to avoid damaging the M.2 device.



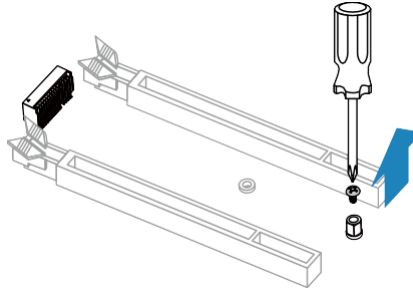
Standard M.2 device



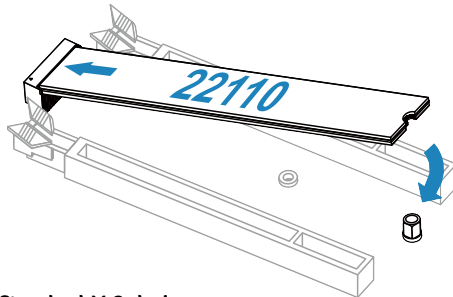
M.2 device with heatsink

22110 M.2 Device Installation

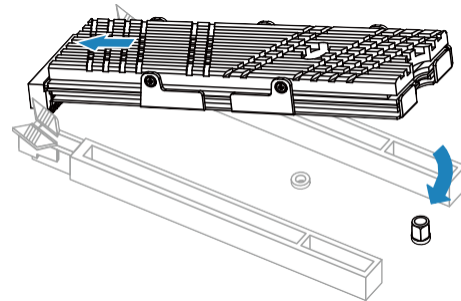
1. Locate the pre-installed standoff. Remove the standoff screw and set it aside.



2. Insert the M.2 device or the heatsink assembly into the M.2 socket at a 30-degree angle and press it down.

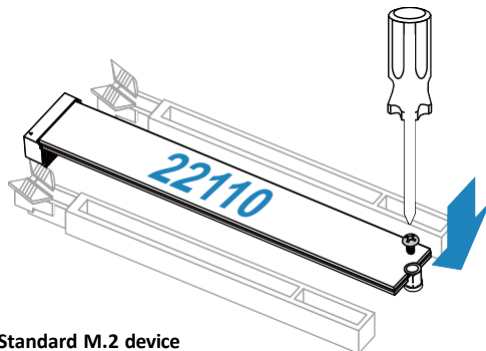


Standard M.2 device

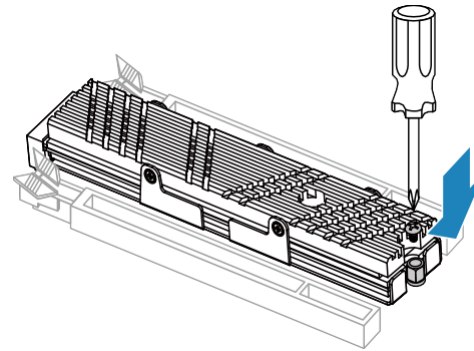


M.2 device with Altos heatsink

3. Tighten the standoff screw to secure the M.2 device or the heatsink assembly into place. Do not overtighten so as to avoid damaging the M.2 device.



Standard M.2 device



M.2 device with Altos heatsink

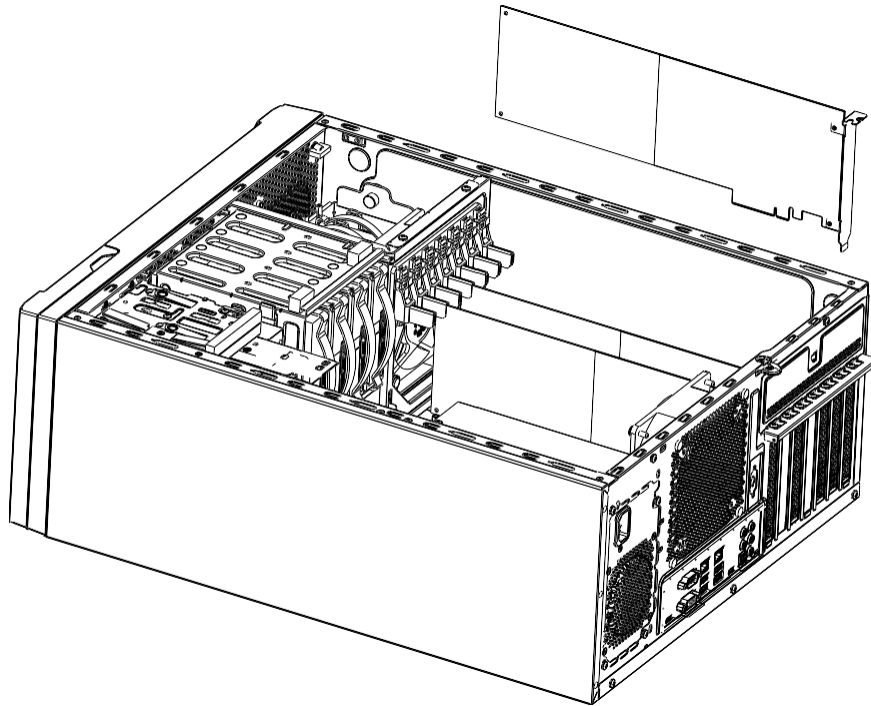
PCI Expansion Card Installation

After the motherboard has been installed, expansion cards may be installed.

Installing Expansion Cards

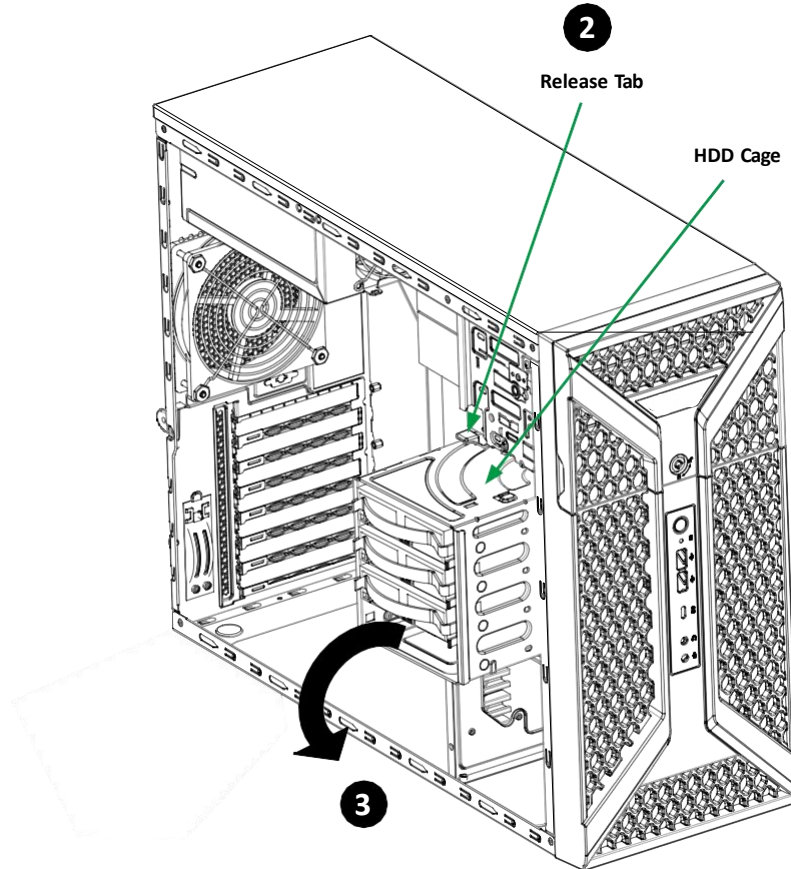
1. Locate the release tab on the top of the PCI slot bracket.
2. Gently apply pressure in the middle of the release tab to unlock the PCI slot bracket.
3. Pull the release tab upward.

4. Remove the screw holding the bracket in place and pull the bracket from the chassis.
5. Install your PCI card or other add-on card into the PCI slot bracket and motherboard. To do this, slide the PCI card (with "L" bracket) into the PCI slot and secure the card to the motherboard.
6. Push the PCI bracket release tab down until it locks into place with an audible "click".
7. Secure the PCI card with the screw previously removed from the chassis.
8. Repeat this process with each PCI card you want to install into the chassis.



Storage Drives

The P330 F6 supports four internal 3.5" SATA drives installed in a rotating cage.

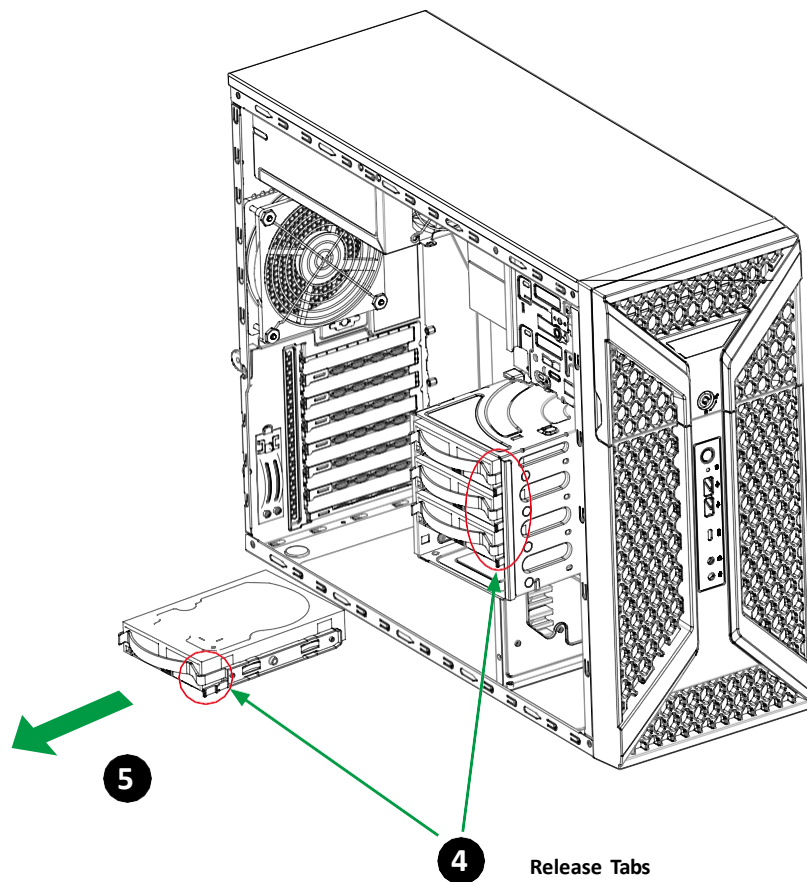


Drive Cage

The drive cage rotates to access the drives.

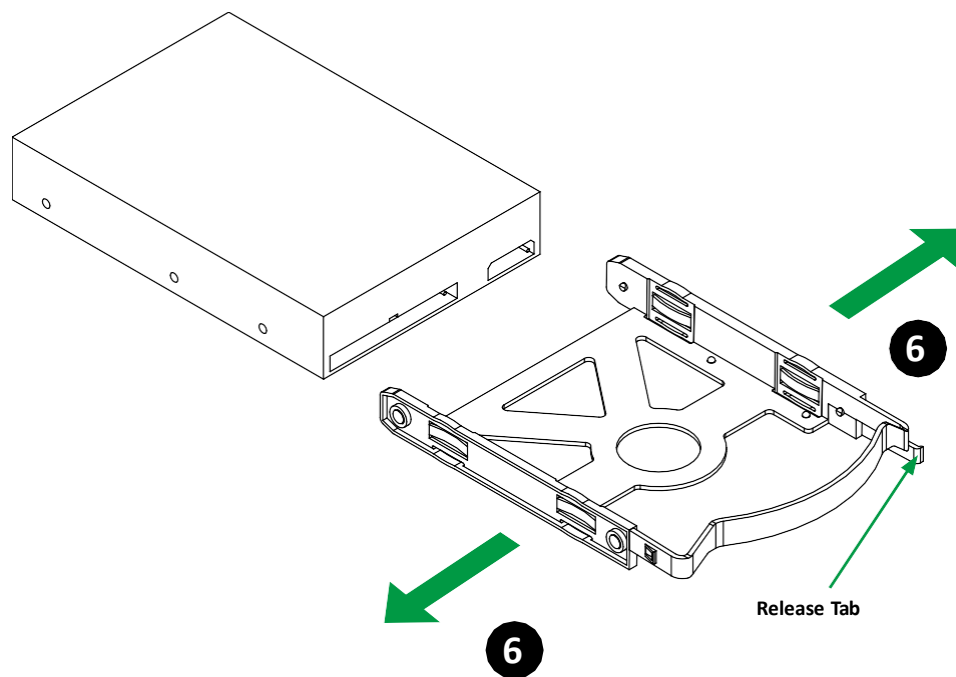
Rotating the Hard Drive Cage

- 1 Begin by removing power from the system and remove the side cover
- 2 Lift the release tab located at the top of the hard drive cage.
- 3 Rotate the hard drive cage 90 degrees so the drive carriers are facing outward.

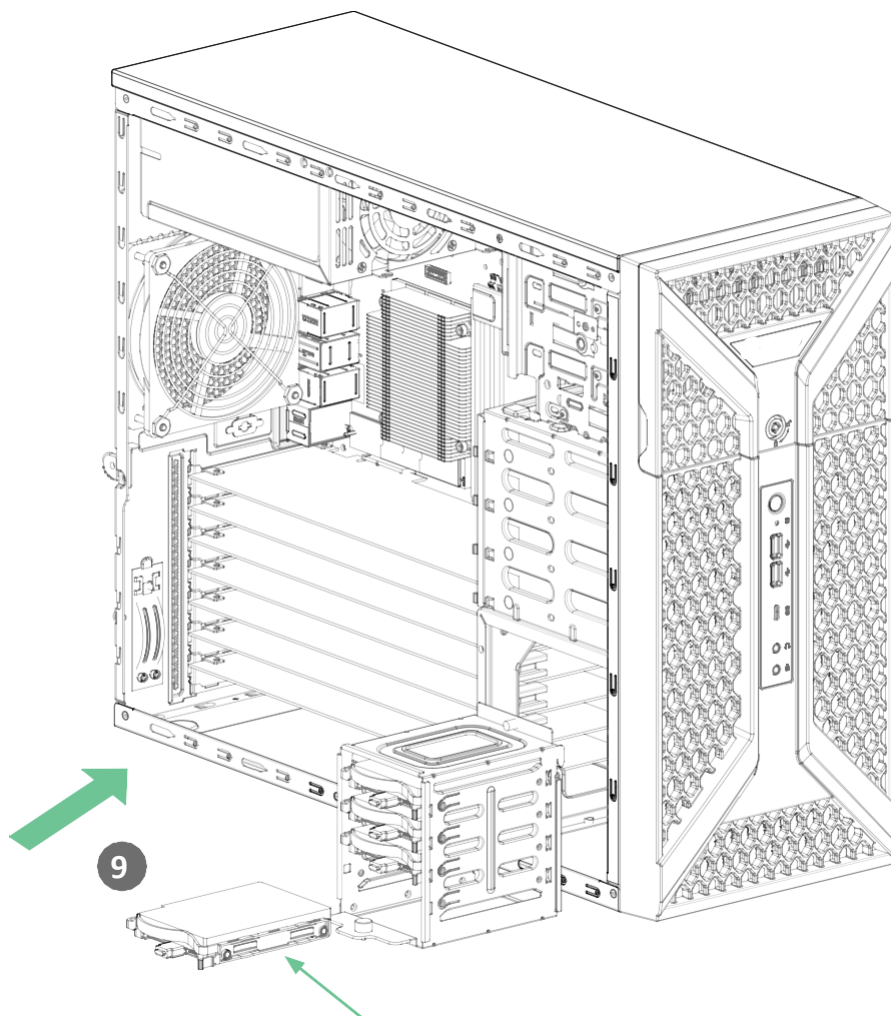


Removing and Installing 3.5" Hard Drives

1. Begin by removing power from the system and remove the side cover
2. Rotate the hard drive cage outward.
3. Disconnect all of the cables from the hard drive.
4. Press the release tab on the side of the hard drive carrier.
5. Slide the hard drive carrier out of the cage.



6. If a hard drive is already present, pull the sides of the carrier and remove the drive from the carrier.
7. Insert a new drive into the carrier and push the sides of the carrier together.
8. Insert the carrier into the cage. Slide the carrier towards the back of the cage until it clicks into place.
9. If desired, each carrier may be secured to the exterior of the hard drive cage using one optional screw.
10. Connect the hard drive cables.
11. Rotate the cage 90 degrees inward.



Optional Screw

Setting up the system

Pre-installation requirements

Selecting a site

Before unpacking and installing the system, select a suitable site for the system for maximum efficiency. Consider the following factors when choosing a site for the system:

- Near a grounded power outlet.
- Clean and dust-free
- Stable surface free from vibration.
- Well-ventilated and away from sources of heat.
- Secluded from electromagnetic fields produced by electrical devices such as air conditioners, radio and TV transmitters, etc.

Checking the package contents

Check the following items from the package:

- System unit
- Accessory box

If any of the above items is damaged or missing, contact your dealer immediately.

Save the boxes and packing materials for future use.

Turning on the system

After making sure that you have properly set up the system, applied power and connected all the necessary peripherals, you can now power on the system. Follow the procedure below.

Press the power button .

The system starts up and displays a welcome message on the monitor. After that, a series of power-on self-test (POST) messages appears. The POST messages indicate if the system is running well or not.



Note: If the system does not turn on or boot after pressing the power button, go to the next section for the possible causes of the boot failure

Aside from the POST messages, you can determine if the system is in good condition by checking if the following occurred.

- The power status indicator on the front panel lights up blue.
- The Num Lock, Caps Lock and Scroll Lock indicators on the keyboard light up.

Power-on problems

If the system fails to boot after you have applied power, check the following factors that might have caused the boot failure.

- The external power cord may be loosely connected.
- Check the power cord connection from the power outlet to the power cord socket on the rear panel. Make sure that the cord is properly connected to the power outlet and to the power cord socket.

No power comes from the grounded power outlet. Have an electrician check your power outlet.

- Loose or improperly connected internal power cables.
Check the internal cable connections. If you are not confident to perform this step, ask a qualified technician to assist you.



Warning! Make sure all power cords are disconnected from the electrical outlet before performing this task.



Note: If you have gone through the preceding actions and the system still fails to boot, ask your dealer or a qualified technician for assistance.

Turning off the system

There are two ways to turn off the Workstation—via software or via hardware. The software procedure below applies to a system running on a Windows OS. For other shutdown procedures, refer to the related user documentation.

To turn off the system via software:

1. Press <Ctrl> + <Alt> + <Delete> on the attached keyboard or click **Start** on the Windows taskbar.
2. Select **Shut Down**.
3. Select Shut Down from the drop-down menu, then click **OK**.

To turn off the system via hardware

If you cannot shut down the Workstation via software, press the power button for at least four seconds. Quickly pressing the button may put the Workstation in a Suspend mode only.

Initial system startup problems

Problems that occur at initial system startup are usually caused by an incorrect installation or configuration. Hardware failure is a less possible cause. If the problem you are experiencing is with a specific application.

Initial troubleshooting checklist

- AC power is available at the wall outlet?
- Is the power supply module properly installed?
- Is the system power cord properly plugged into the power supply module socket? and connected to a NEMA 5-15R outlet for 100-120 V or a NEMA 6-15R outlet for 200-240 V?
- Are all peripheral cables correctly connected and secured?
- Did you press the system power button to turn the Workstation on (power on indicator should be lit green)?
- Are all device drivers properly installed?
- Are hard disk drive(s) properly formatted and configured?
- Are the BIOS configuration settings in the BIOS Setup Utility correct?
- Is the operating system properly loaded?
Refer to the operating system documentation.
- Are all hardware components compliant with the tested components lists?
- Are all internal cables correctly connected and secured?
- Is the processor properly seated in its mainboard socket?
- Are all standoffs in the proper location and not touching any components, causing a potential short?
- Are all add-in expansion cards fully seated in their mainboard slots?
- Are all system jumpers correctly set?
- Are all switch settings on add-in boards and peripheral devices correct?

To check these settings, refer to the manufacturer's documentation that comes with them. If applicable, ensure that there are no conflicts (e.g., two add-in boards sharing the same interrupt).

Hardware diagnostic testing

This section provides a detailed approach to identifying a hardware problem and its cause.

Checking the boot-up status



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Caution: Before disconnecting any peripheral cables from the Workstation, turn off the system and any peripheral devices. Failure to do so can cause permanent damage to the system and/or the peripheral device.

1. Turn off the system and all external peripheral devices.
2. Disconnect all peripheral devices from the system, except for the keyboard and the display monitor.
3. Make sure the system power cord is plugged into a properly grounded AC outlet and in the power supply module cord socket.
4. Make sure the display monitor and keyboard are correctly connected to the system.
5. Turn on the display monitor.
6. Set the display brightness and contrast controls to at least two thirds of their maximum range.
Refer the documentation that came with your display monitor.
7. If the operating system normally loads from the hard drive, make sure there is no diskette in floppy drive and no disc in the optical drive.
8. If the power indicator is lit, attempt to boot from a disc.
9. Turn on the system.

Verifying the condition of the storage devices

As POST determines the system configuration, it tests for the presence of each mass storage device installed in the system. As each device is checked, its activity indicator should turn blue briefly. Check the activity indicators for the hard drive(s), and any other 5.25" device you may have installed.

If any of these indicators fail to light up, refer to related problems listed in the Specific problems and corrective actions section.

Specific problems and corrective actions

Listed below are specific problems that may arise during the use of your Workstation and their possible solutions

Confirming loading of the operating system

Once the system boots up, the operating system prompt appears on the screen. The prompt varies according to the operating system. If the operating system prompt does not appear.

Specific problems and corrective actions

Listed below are specific problems that may arise during the use of your Workstation and their possible solutions

Specific problems and corrective actions

Listed below are specific problems that may arise during the use of your Workstation and their possible solutions.

Power indicator does not light.

Do the following:

- Make sure the power supply module is properly installed.
- Make sure the power cord is connected correctly.
- Make sure that the wall outlet has power. Test it by plugging in another device.
- Make sure the power indicator on the front panel is lit up.
- Remove all add-in cards and see if the system boots.
If reboot is successful, install the cards back in one at a time with a reboot between each addition to determine if one of them is causing the problem.
- Make sure that you have properly installed system compliant memory modules, and that they are populated according to the system guidelines.
- Make sure that you have installed system compliant processors, and that they are populated according to the system guidelines.

Optical drive activity indicator does not light

Do the following:

- Make sure the SATA and power cables are properly connected.
- Check that relevant switches and jumpers on the drive are set correctly.
- Check that the drive is properly configured.

Optical drive tray cannot be ejected

Insert the tip of a paperclip into the small hole on the optical drive. Slowly pull the tray out from the drive until the tray is fully extended.

Optical drive cannot read a disc

Do the following:

- Make sure you are using the correct type of disc.
- Make sure the disc is properly seated in the drive.
- Make sure the disc is unscratched.
- Make sure the drive's cables are properly connected.

Newly installed memory modules are not detected.

Do the following:

- Make sure the memory modules specifications comply with the system requirements.
- Make sure the memory modules have been populated according to the system guidelines.
- Make sure the memory modules are properly installed on their mainboard slots.

Network activity indicators do not light.

Do the following:

- Make sure the correct network drivers are loaded on the system.
- Network might be idle.

Peripheral device connected to a USB port does not work.

Do the following:

- Reduce the number of external devices connected to a USB hub.
- Refer to the documentation that came with the device

There is problem with the software program.

Do the following:

- Verify that the software is properly configured for the system.

- Refer to the software installation and operation documentation for instructions on setting up and using the software. Try a different version of the software to see if the problem is with the copy you are using. If the other version runs correctly on the system, contact your vendor about the defective software.

No characters appear on the display monitor.

Do the following:

- Is the keyboard functioning? Test it by turning the Num Lock function on and off to check if the Num Lock indicator lights up.
- Is the display monitor plugged in and turned on? If you are using a switch box, is it switched to the correct system?
- Are the brightness and contrast controls on the video monitor properly adjusted?
- Is the display monitor signal cable properly connected?
- Does this display monitor work correctly if plugged into a different system?
- Remove all add-in cards and see if the system boots.
If reboot is successful, install the cards back in one at a time with a reboot between each addition to determine if one of them is causing the problem.
- Make sure that you have properly installed system-compliant memory modules, and that they are populated according to the system guidelines.
- Make sure that you have installed system compliant processors, and that they are populated according to the system guidelines.

If you are using an add-in video controller card, do the following:

1. Verify that the display monitor works using the onboard video controller.
2. Verify that the add-in video controller card is fully seated in its slot.
3. Reboot the system for the changes to take effect.
4. If there are still no characters on the screen after you reboot the system, reboot it again.
Take note of the beep codes emitted during POST. This information may be required if you seek technical assistance.

If POST does not emit any beep code and characters still do not appear, the display monitor or the video controller may be defective. Contact your local Altos representative or authorized dealer for technical assistance.



Note: If POST does not emit any beep code and characters still do not appear, the display monitor or the video controller may be defective. Contact your local Altos representative or authorized dealer for technical assistance.

Notices

Information for your safety and comfort

Safety instructions

Read these instructions carefully. Keep this document for future reference. Follow all warnings and instructions marked on the product.

Turning the product off before cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

CAUTION for plug as disconnecting device

Observe the following guidelines when connecting and disconnecting power to the power supply unit:

- Install the power supply unit before connecting the power cord to the AC power outlet.
- Unplug the power cord before removing the power supply unit from the computer.
- If the system has multiple sources of power, disconnect power from the system by unplugging all power cords from the power supplies.

CAUTION for accessibility

Be sure that the power outlet you plug the power cord into is easily accessible and located as close to the equipment operator as possible. When you need to disconnect power to the equipment, be sure to unplug the power cord from the electrical outlet.

Warnings

- Do not use this product near water.
- Do not place this product on an unstable cart, stand or table. If the product falls, it could be seriously damaged.
- Slots and openings are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

- Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind onto or into the product.
- To avoid damage of internal components and to prevent battery leakage, do not place the product on a vibrating surface.
- Never use it under sporting, exercising, or any vibrating environment which will probably cause unexpected short current or damage rotor devices, HDD, Optical drive, and even exposure risk from lithium battery pack.
- 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.

Using electrical power

- This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Do not allow anything to rest on the power cord. Do not locate this product where people will walk on the cord.
- If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.
- Do not overload a power outlet, strip or receptacle by plugging in too many devices. The overall system load must not exceed 80% of the branch circuit rating. If power strips are used, the load should not exceed 80% of the power strip's input rating.
- This product's power supply is equipped with a three-wire grounded plug. The plug only fits in a grounded power outlet. Make sure the power outlet is properly grounded before inserting the power supply plug. Do not insert the plug into a non-grounded power outlet. Contact your electrician for details.



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Warning ! The grounding pin is a safety feature.
Using a power outlet that is not properly grounded
may result in electric shock and/or injury.



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Note: The grounding pin also provides good
protection from unexpected noise produced by
other nearby electrical devices that may interfere
with the performance of this product.

- Use the product only with the supplied power supply cord set. If you need to replace the power cord set, make sure that the new power cord meets the following requirements: detachable type, UL listed/CSA certified, VDE approved or its equivalent, 4.6 meters (15 feet) maximum length.

Product servicing

Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

Unplug this product from the wall outlet and refer servicing to qualified service personnel when:

- the power cord or plug is damaged, cut or frayed
- liquid was spilled into the product
- the product was exposed to rain or water
- the product has been dropped or the case has been damaged
- the product exhibits a distinct change in performance, indicating a need for service
- the product does not operate normally after following the operating instructions



Notes : Adjust only those controls that are covered by the operating instructions, since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.

This Workstation should be located in a restricted access location or an area with similar instruction.



Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Disposal instructions

Do not throw this electronic device into the trash when discarding. To minimize pollution and ensure utmost protection of the global environment, please recycle.



Regulations and safety notices

CLASS 1 LASER PRODUCT

CAUTION: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE
TO BEAM.

Declaration of Conformity for EU countries

Hereby, Altos, declares that this system is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

List of applicable countries

This device must be used in strict accordance with the regulations and constraints in the country of use. For further information, please contact local office in the country of use. Please see <http://ec.europa.eu/enterprise/rtte/implement.htm> or the latest country list.



Note: The following sections are applicable only to
Class A systems

FCC notice Class A

This device has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and receiver.
- Connect the device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help

Notice: Shielded cables

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations. In compliance with FCC regulations, use shielded cables to connect to other computing devices.

Notice: Peripheral devices

Only peripherals (input/output devices, terminals, printers, etc.) certified to comply with the Class A limits may be attached to this equipment. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Caution

Changes or modifications not expressly approved by the manufacture could void the user's authority, which is granted by the Federal Communications Commission, to operate this computer.

Operation conditions

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice: Canadian users

This Class A digital apparatus complies with Canadian ICES-003.

HEVC