



SUPERWORKSTATION SYS-531AD-I



USER'S MANUAL

Revision 1.0

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Manual Revision 1.0

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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 workstation. Installation and maintenance should be performed by experienced technicians only.

Please refer to the SYS-531AD-I workstation 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 workstation.

- 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:
support@supermicro.com

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.

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Chapter 1

Introduction

1.1 Overview

This chapter provides a brief outline of the functions and features of the SYS-531AD-I. It is based on the C9Z790-CG motherboard and the CSE-GS5A-754K chassis.

The following provides an overview of the specifications and capabilities.

System Overview	
Chassis	CSE-GS5A-754K
Motherboard	C9Z790-CG
Processor Support	12th/13th Generation Intel® Core™ i9/i7/i5/i3
Memory	Up to 128GB Unbuffered non-ECC UDIMM, DDR5 4400MT/s, in four DIMM slots
Drive Support	Two 5.25" drive bays (optional) Four 2.5" drive bays Six combinations of drive bays to house 3.5" or 2.5" drives
Expansion Slots	Two PCIe 5.0 x16 slots (supporting x16 or x8/x8) Two PCIe 3.0 x1 slots Three M.2 slots *Slots 4 and 7 share a x16 link. When both slots are populated, they will both run at x8. If only slot 7 is populated, it will run at x16.
I/O Ports	Six SATA3 (6Gbps) ports Two USB 3.2 Gen 1 ports (front) Six USB 2.0 ports (two header; four rear) Two USB 3.2 Gen 2 ports (rear) Three USB 3.2 Gen 2x2 ports (one header; two rear) One COM Port (header) One DisplayPort 1.4b One HDMI 2.1
System Cooling	Three 120mm PWM fans with optimal fan speed control 1200 RPM
Power	750W 80PLUS Gold PS/2 Power Supply
Form Factor	Mid tower

Note: The following safety models associated with the SYS-531AD-I have been certified as compliant with UL or CSA as GS5A-S7C9, GS5A-7.

1.2 System Features

The following views of the system display the main features. Refer to [Appendix B](#) for additional specifications.

Front View

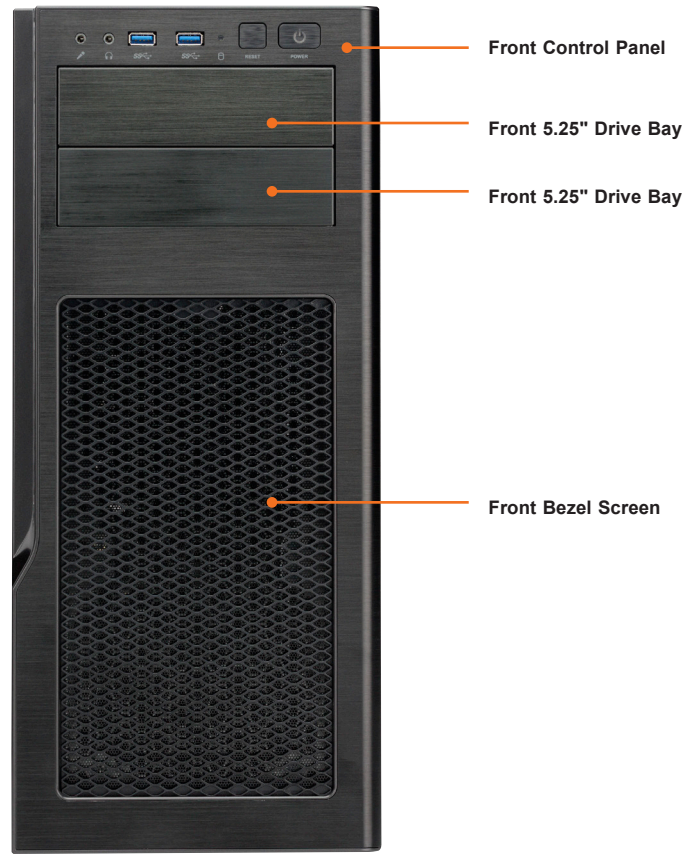


Figure 1-1. Front View

System Features: Front	
Feature	Description
Front Control Panel	Front control panel with LEDs and buttons (see the following page)
Front 5.25" Drive Bay	Drive bay for 3.5" HDDs, 2.5" HDDs, SSDs, or removable media devices
Front Bezel Screen	Front grille with dust filter

Control Panel



Figure 1-2. Control Panel

Control Panel Features		
Item	Feature	Description
1	Microphone Port	The microphone port allows you to connect a cable for audio input.
2	Audio Port	The audio port allows you to connect a cable for audio output.
3	USB Ports	Two universal serial bus 3.2 Gen 1 ports.
4	HDD LED	Indicates hard drive activity when flashing.
5	Reset Button	The reset button is used to reboot the system.
6	Power Button	<p>The main power button is used to apply or remove power from the power supply to the workstation. Turning off system power with this button removes the main power but maintains standby power. To perform maintenance tasks, you must also unplug the system before servicing.</p> <p>The power button LED indicates that power is being supplied to the system power supply. This LED should normally be illuminated when the system is operating.</p>

Rear View

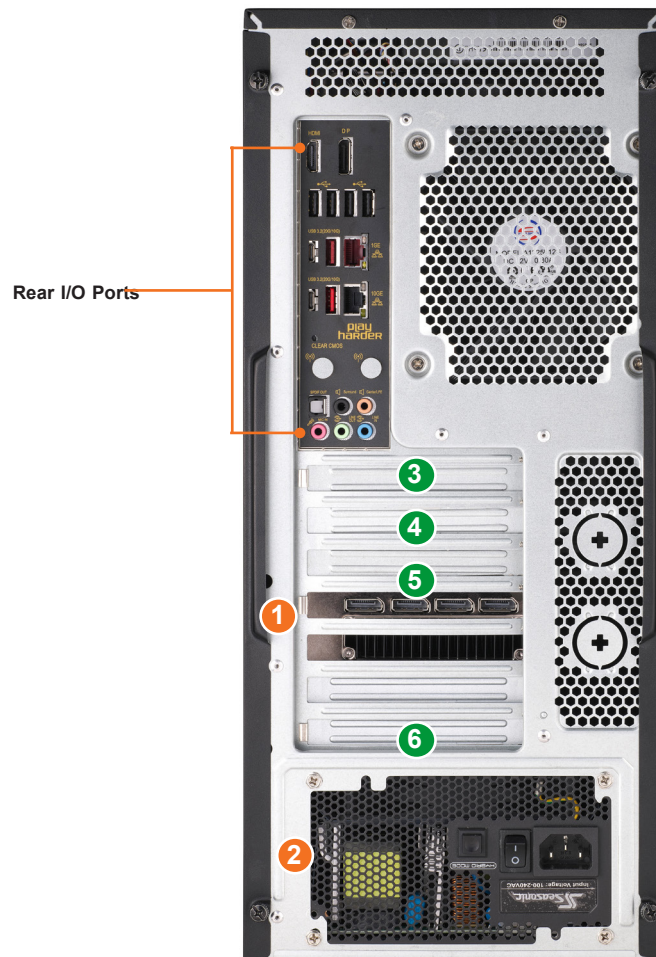


Figure 1-3. System: Rear View

System Features: Rear	
Feature	Description
Rear I/O Ports	For details, see 4.3 Input/Output Ports .
1	Add-on card slots
2	A 750W power module

Expansion Slot Locations	
Item	Description
3	Slot 7: PCIe 5.0 x16
4	Slot 5: PCIe 3.0 x1
5	Slot 4: PCIe 5.0 x8 (in x16)
6	Slot 1: PCIe 3.0 x1

*Slots 4 and 7 share a x16 link. When both slots are populated, they will both run at x8. If only slot 7 is populated, it will run at x16.

Side View

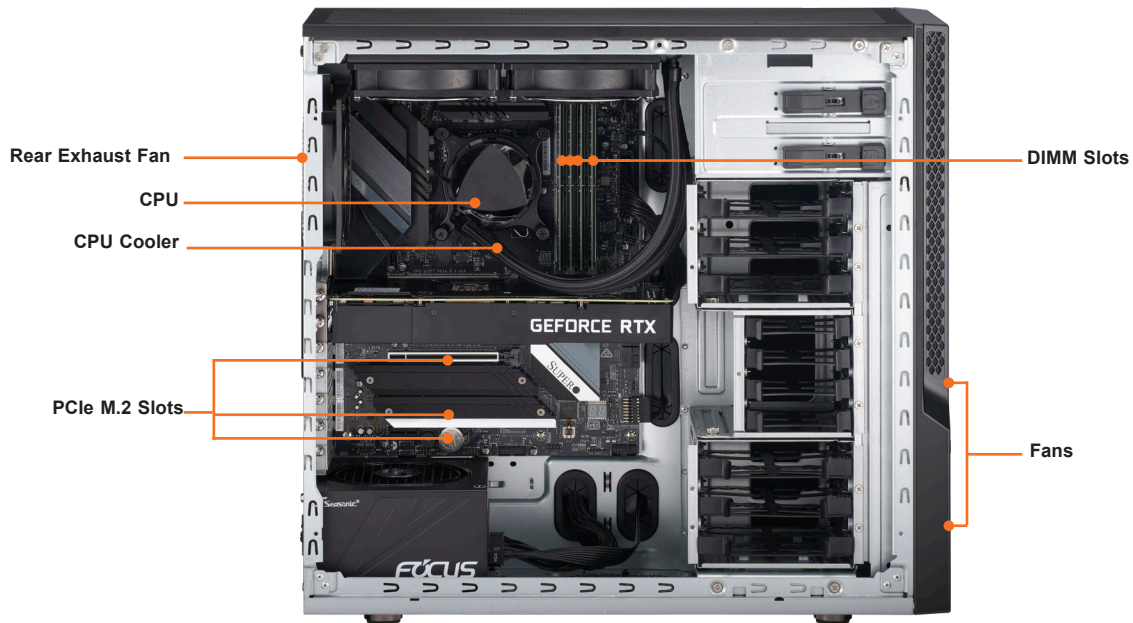


Figure 1-4. System: Side View

System Features: Side	
Feature	Description
Rear Exhaust Fan	One 120-mm PWM rear exhaust fan
CPU	Supports 12th/13th Generation Intel® Core™ i9/i7/i5/i3 processors
CPU Cooler	Closed-loop water cooling (optional)
PCle M.2 Slots	One PCIe 4.0 x4 M.2 slot Two PCIe 3.0 x4 M.2 slots
DIMM Slots	Four DDR5 DIMM slots support up to 128GB
Fans	Two 120-mm PWM front intake fans

Quick Reference Table

Jumper	Description	Default Setting
CLEAR CMOS	Clear CMOS Button	Push Button Switch
JD1	Speaker / Buzzer	Pins 1-4: External Speaker Pins 3-4: Buzzer (Default)
JPME2	Intel Manufacturing Mode	Pins 1-2: Normal
JWD1	Watch Dog Function Enable	Pins 1-2: Reset
POWER BUTTON	Internal Power Button	Push Button Switch
RESET BUTTON	Onboard System Reset Button	Push Button Switch
SW1	Back Panel Clear CMOS Switch	Push Button Switch

LED	Description	Color/State
BOOT LED	Bootable Device Power-On Self-Test (POST) Status	Bootable Device POST: Orange ON Bootable Device POST Completion: OFF
CPU LED	CPU Power-On Self-Test (POST) Status	CPU POST: Yellow ON CPU POST Completion: OFF
DIMM LED	DIMM Power-On Self-Test (POST) Status	DIMM POST: Blue ON DIMM POST Completion: OFF
LED1	Onboard Power LED S3 (Suspend to RAM) LED	Power On: Green On S3: Green Blinking
LED17	WLAN Power-On Self-Test (POST) Status	WLAN POST: Green ON WLAN POST Completion: OFF
LED18	Bluetooth Device Power-On Self-Test (POST) Status	Bluetooth Device POST: Green ON Bluetooth Device POST Completion: OFF
LED2, LED3, LED4801	M.2 LEDs for M.2-P2 / M.2-P1 / M.2-C1	PCIe Device Detected: Green ON Activity: Green Blinking
LED4	BIOS POST Code LED	Digital Readout
VGA LED	Onboard VGA Power-On Self-Test (POST) Status	Onboard VGA POST: Green ON Onboard VGA POST Completion: OFF

Note: The table above is continued on the next page.

Connector	Description
12V_PUMP_PWR1	12V 4-pin Power Connector (for CPU Liquid Cooling Pump)
AUDIO FP	Front Panel Audio Header
B1	Onboard Battery
COM1	COM Header
CPU_FAN1, CPU_FAN2 SYS_FAN1 - SYS_FAN3	CPU_FAN1, CPU_FAN2: CPU Fan Headers SYS_FAN1 - SYS_FAN3: System Fan Headers
DP/HDMI	Back Panel DisplayPort 1.4b / High-Definition Multimedia Interface 2.1
HD AUDIO	High Definition Audio Ports
I-SATA0 - I-SATA5	(Intel Z790) SATA 3.0 Ports (6Gb/sec)
JF1	Front Control Panel Header * Please align the printed indications on the S-Connector with the corresponding pins on JF1 when plugging in.
JL1	Chassis Intrusion Header
JLED_POGO1, JLED_POGO2	Pogo Pin Headers * Provide power to LED boards in M.2 heatsinks (M.2-C1 and M.2-P1 only).
JLED1	3-pin Power LED Indicator Header
JLED_IO	4-pin Connector (for the LED board pre-installed inside the I/O cover)
JPW1	24-pin ATX Main Power Connector (Required)
JPW2	+12V 8-pin CPU Power Connector (Required)
JRLED1, JRLED2	5V 3-pin Addressable RGB (ARGB) LED Connection Headers * The two headers are for the 5V 3-pin ARGB LED connections only.
JSD1	SATA Disk-On-Module (DOM) Power Connector
JSTBY1	5V Standby Power Header
JTPM1	Trusted Platform Module (TPM)/Port 80 Header (TPM 2.0 only)
LAN1/LAN2	RJ45 1GbE/10GbE LAN Ports
M.2-C1	PCIe 4.0 x4 M.2 M-Key Socket (from CPU) * Supports M.2 2260/2280 modules (NVMe SSD storage devices) and RAID 0/1/5.
M.2-P1, M.2-P2	PCIe 3.0 x4 M.2 M-Key Sockets (from PCH) * Support M.2 2260/2280/22110 modules (NVMe SSD storage devices) and RAID 0/1/5.
(PCH) SLOT1, SLOT 5	PCIe 3.0 x1 Slots
(CPU) SLOT4	PCIe 5.0 x8 (IN x16) Slot * SLOT4 shares PCIe x16 link with SLOT7. SLOT7 will change to PCIe 5.0 x8 link when SLOT4 is installed with a graphics card.
(CPU) SLOT7	PCIe 5.0 x16 Slot * Always install the graphics card into SLOT7 first to maximize performance.
SP1	Internal Speaker/Buzzer
USB0/1/2/3	Back Panel USB 2.0 Ports (Type-A)
USB4/5	Front Panel Accessible USB 2.0 Header
USB6	Back Panel USB 3.2 Gen 2 Port (10Gb, Type-A)
USB7	Back Panel USB 3.2 Gen 2x2 Port (20Gb, Type-C)
USB8	Back Panel USB 3.2 Gen 2 Port (10Gb, Type-A)
USB9	Back Panel USB 3.2 Gen 2x2 Port (20Gb, Type-C)
USB10/11	Front Panel Accessible USB 3.2 Gen 1 Header (5Gb)
USB12	Front Panel Accessible USB 3.2 Gen 2x2 20-pin Header (20Gb, Type-C)

Chapter 2

Workstation Installation

2.1 Overview

This chapter provides advice and instructions for installing a workstation. 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. 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. It will also require a grounded AC power outlet nearby. Be sure to read the precautions and considerations noted in [Appendix A](#).

2.3 Workstation Precautions

- Verify that the caster wheels on the workstation are locked.
- Review the electrical and general safety precautions in [Appendix A](#).
- Use a regulating uninterruptible power supply (UPS) to protect the workstation from power surges, voltage spikes, and to keep your system operating in case of a power failure.
- Allow the power supply units and hot-swap SATA drives to cool before touching them.

2.4 Installing the GPU

A compatible graphics processing unit (GPU) must be installed into one of the PCIe expansion slots. If the 2.5" HDD cage is installed, the maximum supported GPU size is 320mm. If the 2.5" HDD cage is *not* installed, the maximum supported GPU size is 420mm.

For instructions, refer to [3.7 Installing PCIe Expansion Cards](#).

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 SYS-531AD-I has two removable side covers. Except for short periods of time, do not operate the system without the cover in place. The chassis cover allows proper cooling airflow.

Side Covers

Removing a Side Chassis Cover

Begin by removing power from the system as described in Section 3.1.

1. Remove the two thumb screws on the rear of the chassis.
2. Slide the cover toward the rear of the chassis.
3. Remove the cover from the chassis.

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

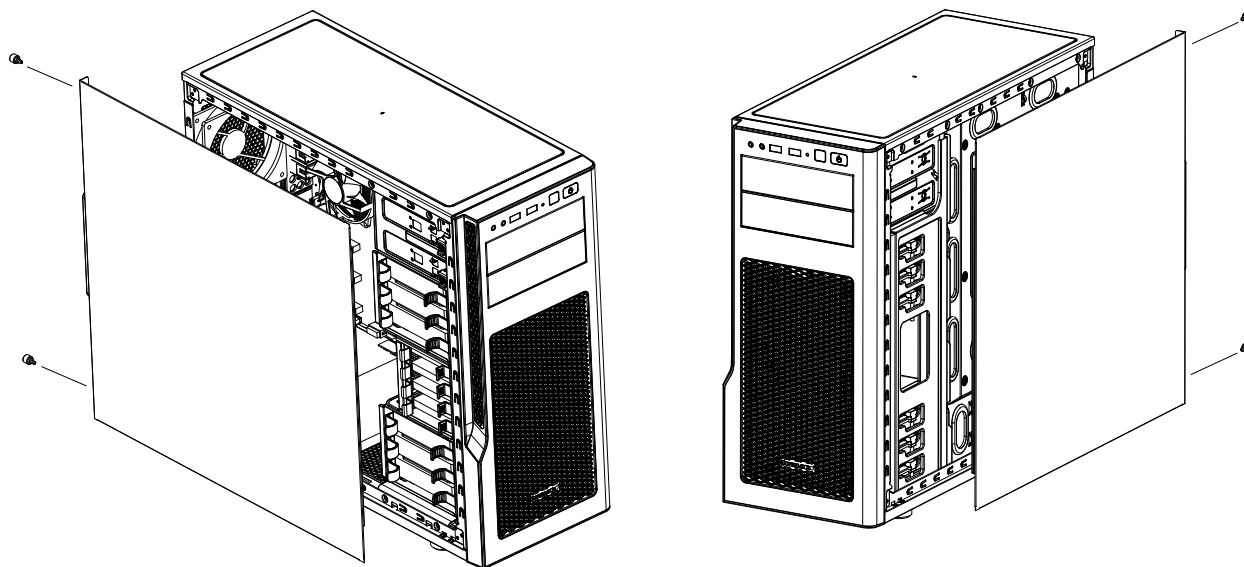


Figure 3-1. Removing the Side Chassis Covers

Front Bezel

Remove the front bezel by pulling off the bottom first. Generally, this is only necessary when replacing the front fans.

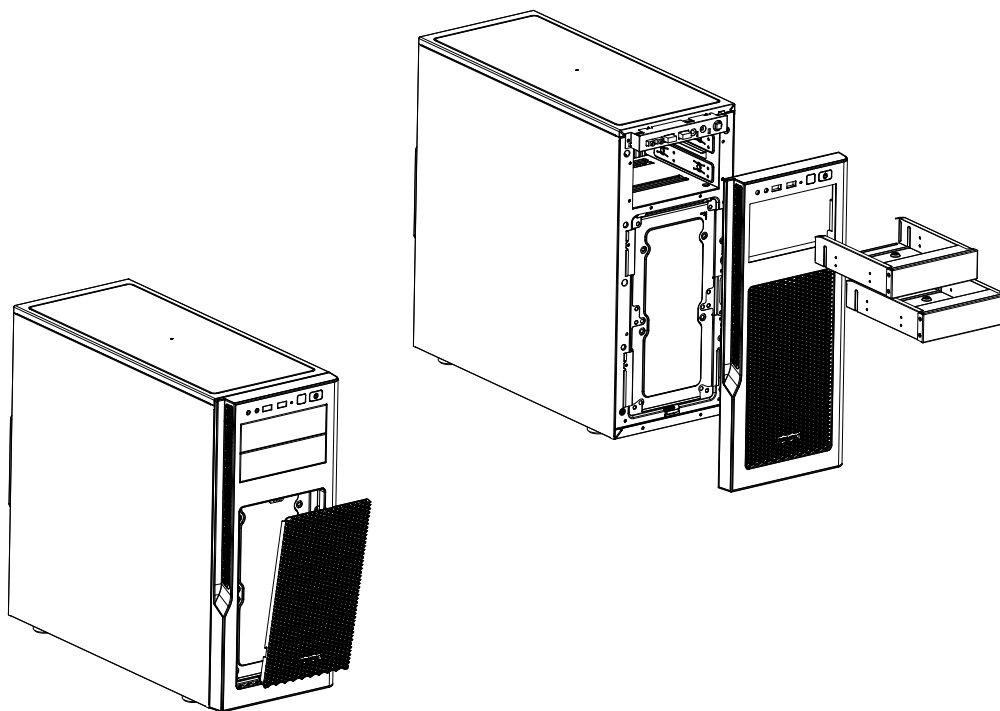


Figure 3-2. Removing the Front Bezel

3.3 Static-Sensitive Devices

Electrostatic Discharge (ESD) can damage electronic components. To avoid damaging your motherboard, it is important to handle it very carefully. The following measures are generally sufficient to protect the system PCBs from ESD.

Precautions

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing any PCB (printed circuit board) from its antistatic bag.
- Handle PCBs by their edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the PCBs back into their antistatic bags when not in use.
- Use only the correct type of onboard CMOS battery. Do not install the onboard battery upside down to avoid possible explosion.

3.4 Processor and Heatsink Installation

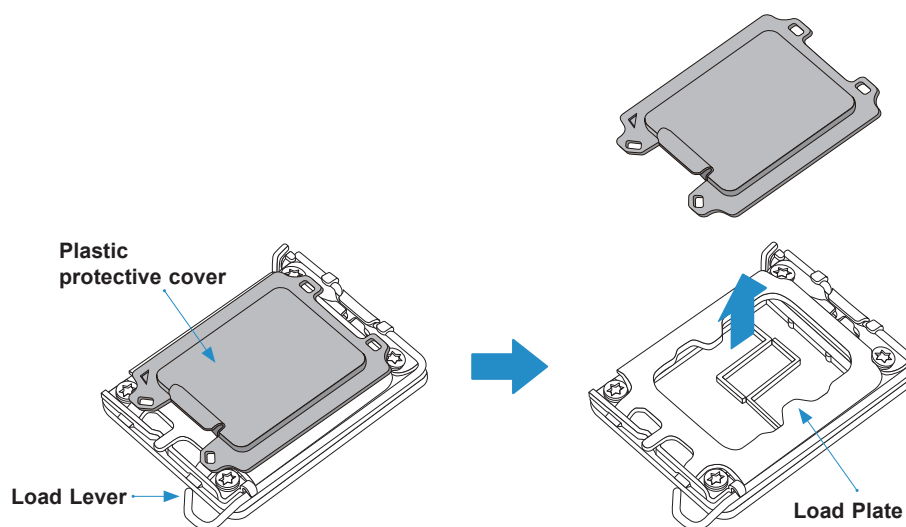
Install the processor in the CPU socket first and then install the heatsink. Follow the steps in the following sections.

Notes:

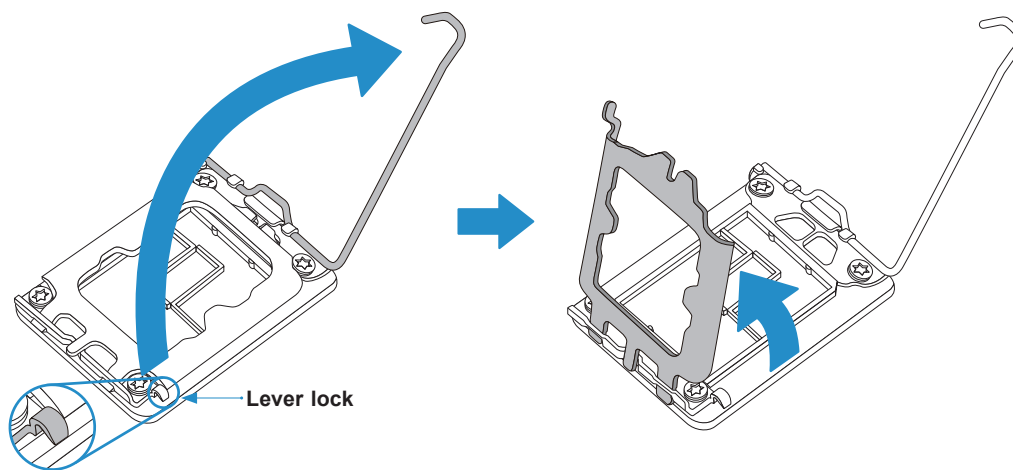
- Use ESD protection.
- Unplug the AC power cord from all power supplies after shutting down the system.
- Check that the plastic protective cover is on the CPU socket and none of the socket pins are bent. If they are, contact your retailer.
- When handling the processor, avoid touching or placing direct 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 support.
- All graphics in this manual are for illustration only. Your components may look different.

Installing an LGA1700 CPU

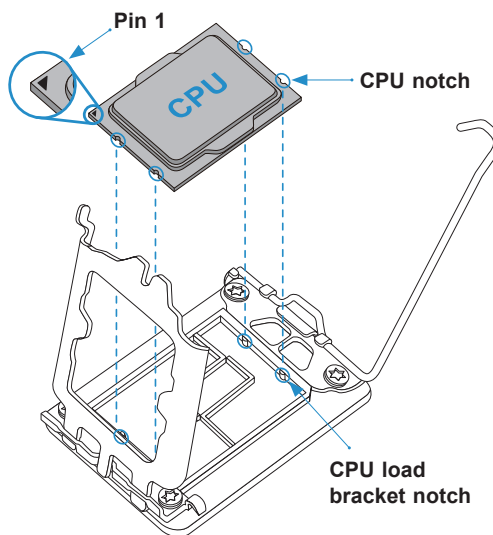
1. Remove the plastic protective cover from the load plate.



2. Gently push down the load lever to release and lift it, then lift the load plate to open it completely.

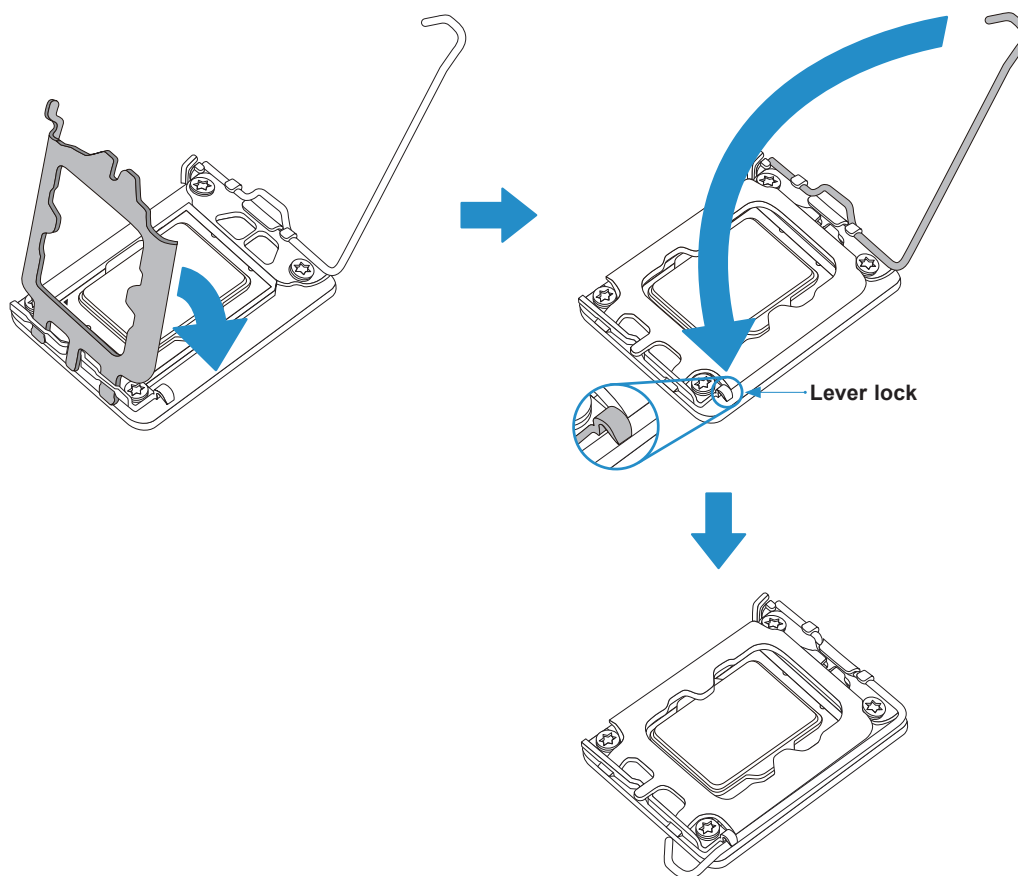


3. Use your thumb and your index finger to hold the CPU. Align the small triangle marker and notches on the CPU to the corresponding triangle marker and notches on the CPU load bracket. Once aligned, carefully lower the CPU straight down into the socket. (Do not drop the CPU on the socket, or move it horizontally or vertically.)



4. Do not rub the CPU against the surface or against any pins of the socket to avoid damaging the CPU or the socket.
5. With the CPU inside the socket, inspect all the corners to make sure it is properly installed.

6. Close the load plate with the CPU inside the socket. Gently push the load lever down until it locks under the Lever Lock latch.



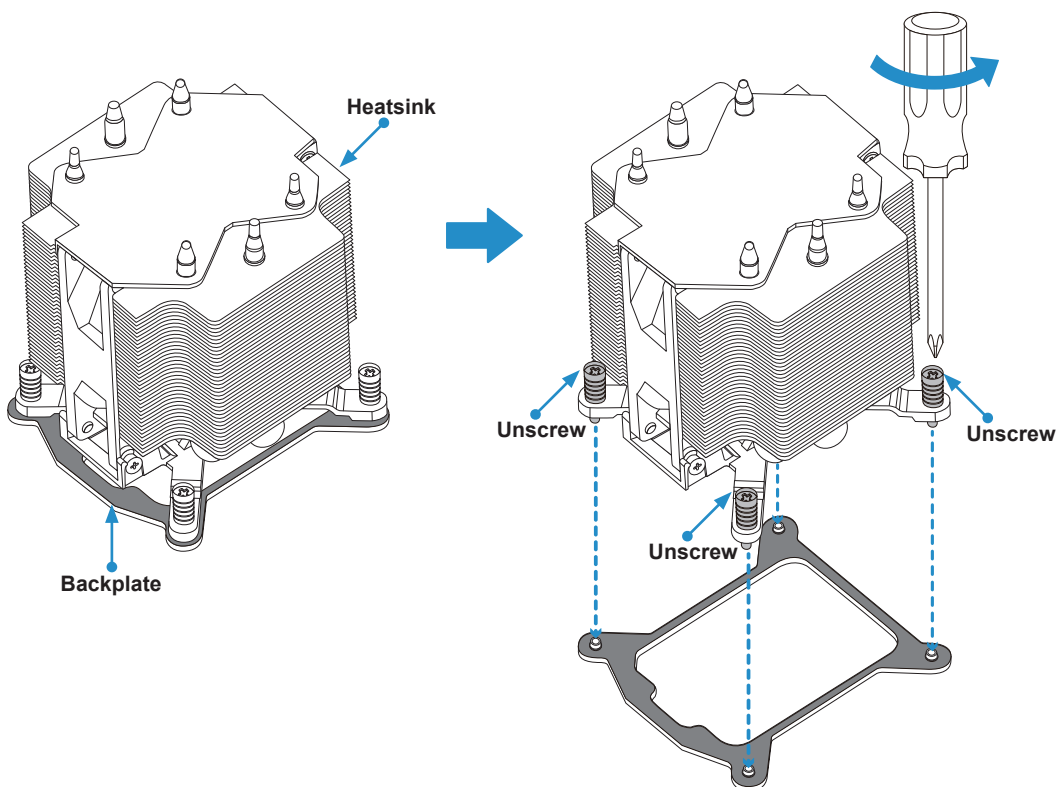
Attention! You can only install the CPU inside the socket in one direction. Make sure that it is properly inserted into the CPU socket before closing the load plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the load plate again and double-check that the CPU is aligned properly.

Installing a CPU Heatsink

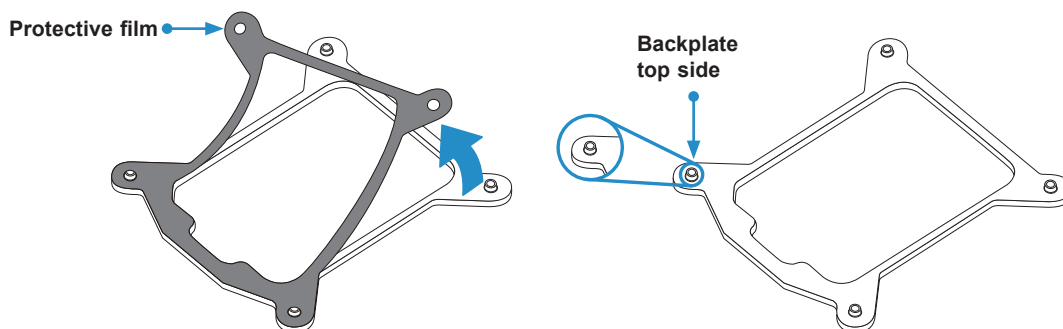
Note 1: The installation described in this section is for reference only. The actual installation steps may vary depending on the CPU heatsink model. Please refer to the heatsink instruction for more details.

Note 2: Graphic drawings included in this manual are for reference only. They might look different from the components installed in your system.

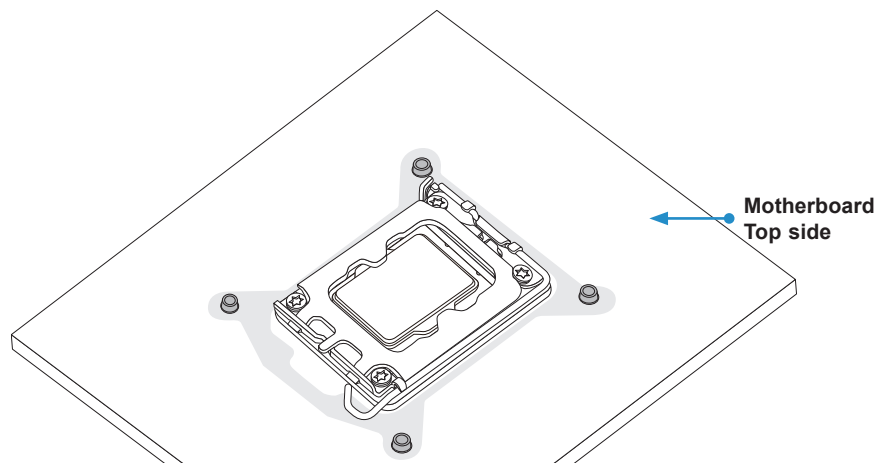
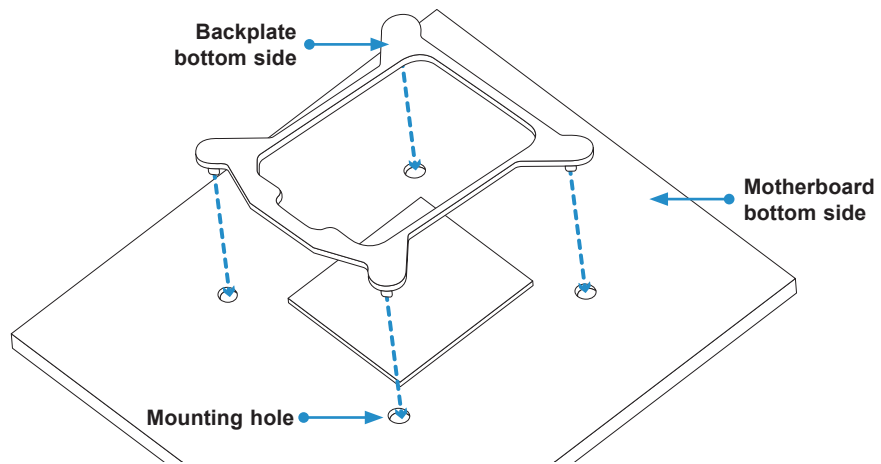
1. Loosen four screws to release the backplate. Note that one screw is not shown in the illustration below.



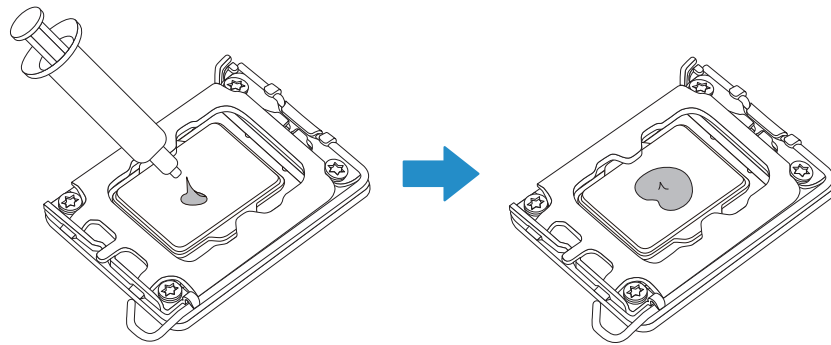
2. If there is a thin layer of protective film on the backplate, please remove it.



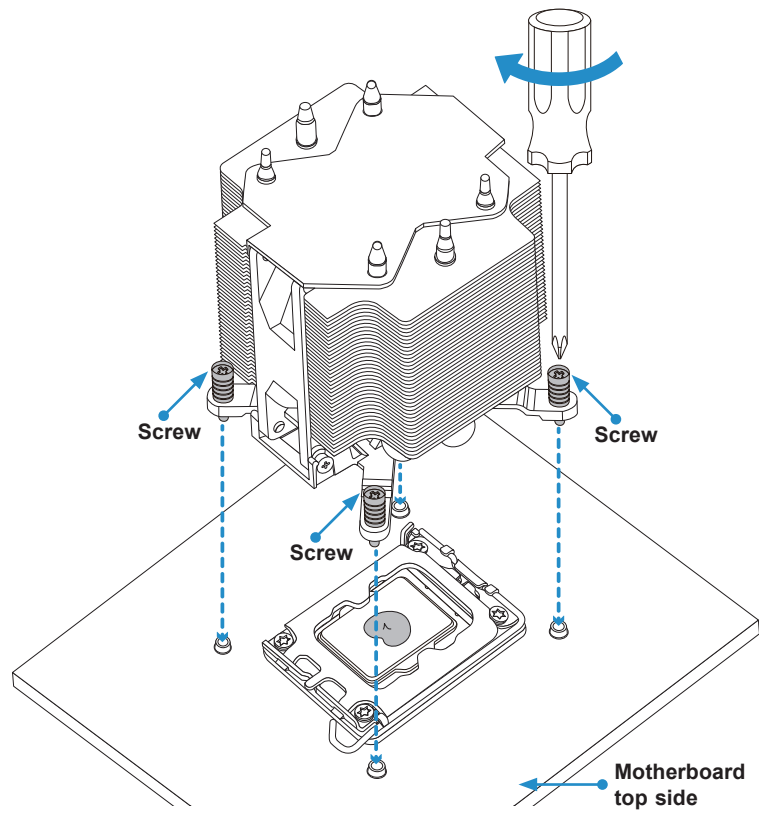
3. Attach the backplate into the mounting holes around the CPU socket on the bottom side of the motherboard.



4. Apply the proper amount of thermal grease on the CPU.



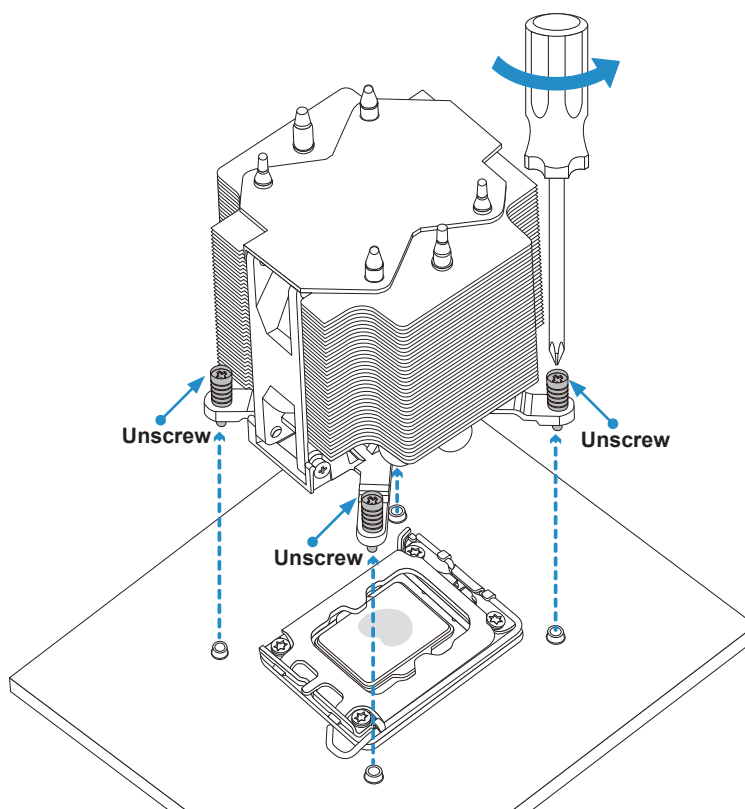
5. Place the heatsink on top of the CPU so that the four mounting holes on the heatsink are aligned with those on the retention mechanism.
6. Tighten the screws.



Removing a CPU Heatsink

Warning: We do not recommend that the CPU or heatsink be removed. However, if you do need to remove the heatsink, please follow the instruction below to uninstall the heatsink to avoid damaging the CPU or other components.

1. Unplug the power cord from the power supply and the power connector from the cooler and fan header.
2. Loosen the screws as shown below.
3. Gently wiggle the heatsink to loosen it. Do not use excessive force when wiggling the heatsink.

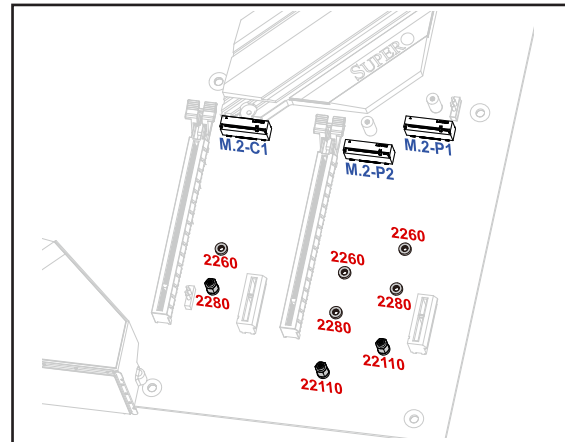


4. Once the heatsink is loosened, remove it from the motherboard.

3.5 M.2 Installation (optional)

The motherboard has three PCIe M.2 M-key sockets that support the M.2 2260/2280/22110 modules (M.2-P1 and M.2-P2), and 2260/2280 modules (M.2-C1).

Refer to the illustration on the right for the locations of M.2 sockets and mounting holes. Follow the steps below in order to install an M.2 device.

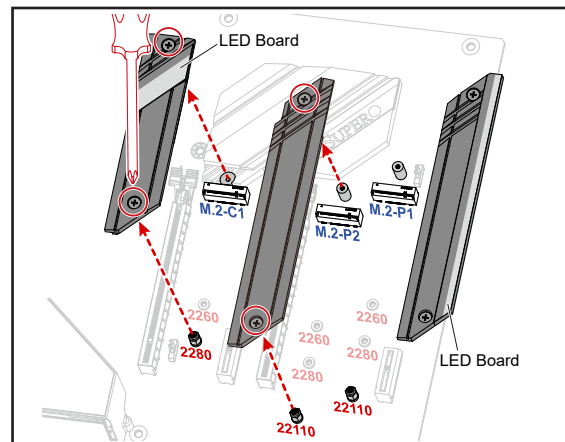


Note 1: It is strongly recommended that you use the M.2 heatsinks that came with the motherboard. Using other heatsinks may cause a short circuit if your heatsink comes in contact with the pogo pins on the motherboard.

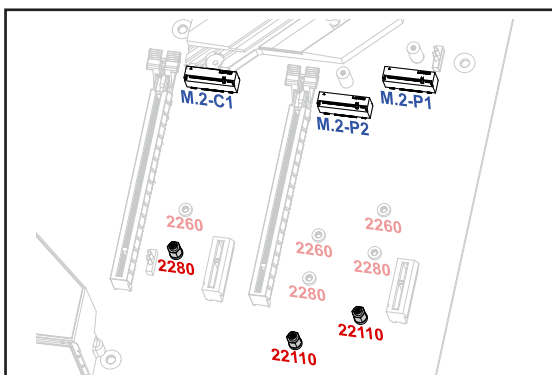
Note 2: Please install the M.2 heatsink back to the motherboard if the M.2 device has been removed.

1. Remove the mounting screws on the M.2 heatsinks.

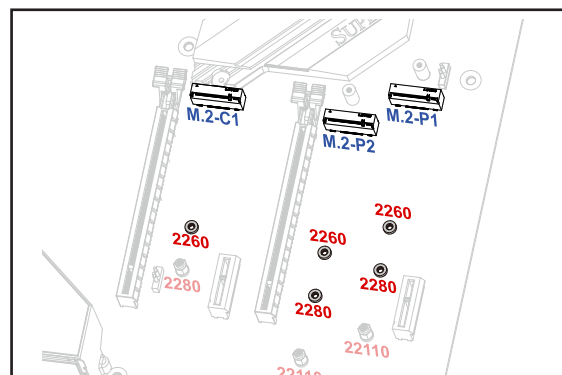
*The M.2 heatsinks for M.2-P1 and M.2-C1 are with LED boards pre-installed.



2. Locate the intended M.2 socket and mounting hole. The 22110 mounting holes for M.2-P1/M.2-P2 and 2280 mounting hole for M.2-C1 come with pre-installed standoffs while others don't.

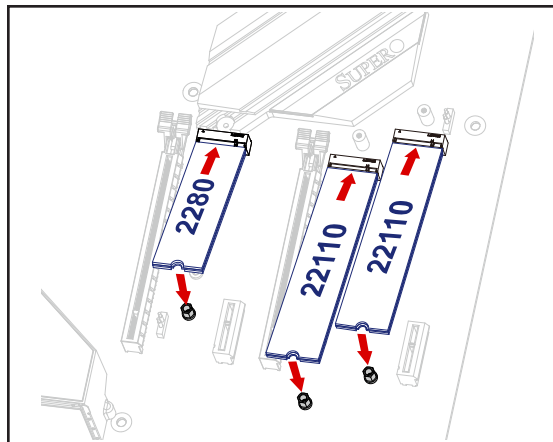


Mounting Holes with Pre-installed Standoffs



Mounting Holes without Pre-installed Standoffs

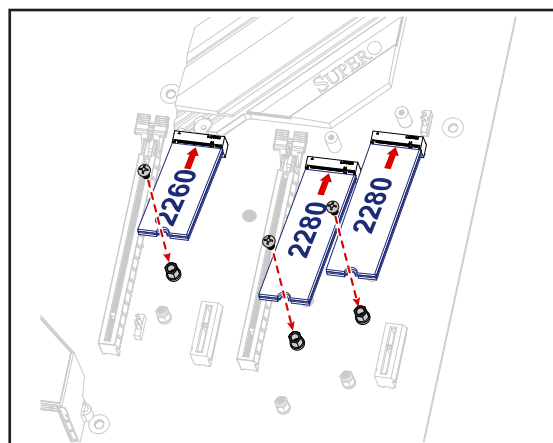
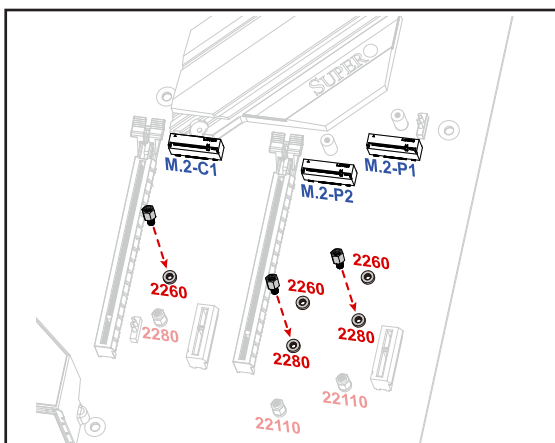
3. Installation WITH pre-installed standoffs:
Insert the M.2 device into the M.2 socket at a 30-degree angle and press it down.



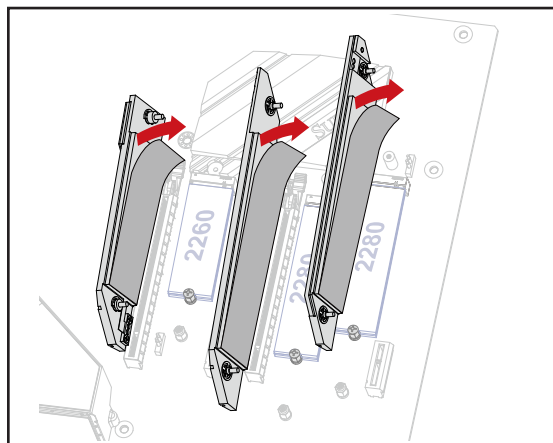
Installation WITHOUT pre-installed standoffs:

Install the standoff to the intended mounting hole first. Then insert the M.2 device into the M.2 socket at a 30-degree angle and press it down.

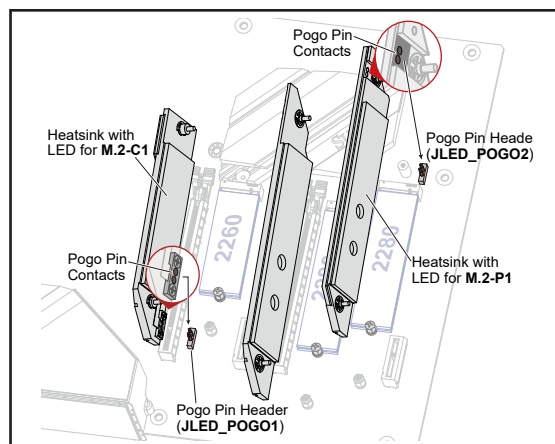
Tighten the M.2 device with the screw to secure the device into place.



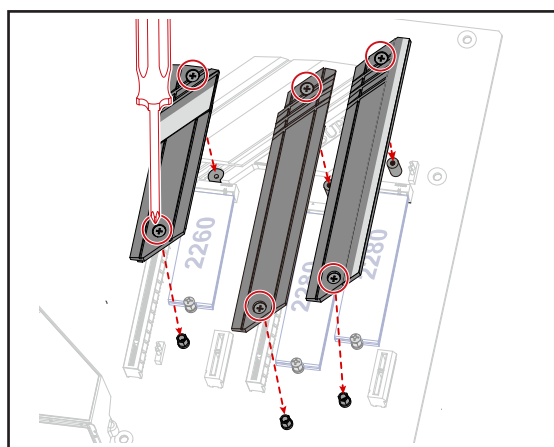
4. Remove the thermal pad protective film from the M.2 heatsink.



5. To install the heatsink correctly, make sure the pogo pin contacts are properly touching the pogo pins on the motherboard. Refer to the illustration on the right for the locations of pogo pin contacts and pogo pin headers (JLED_POGO1 and JLED_POGO2).



6. Resecure the M.2 heatsink in place with the mounting screws removed in Step 1.



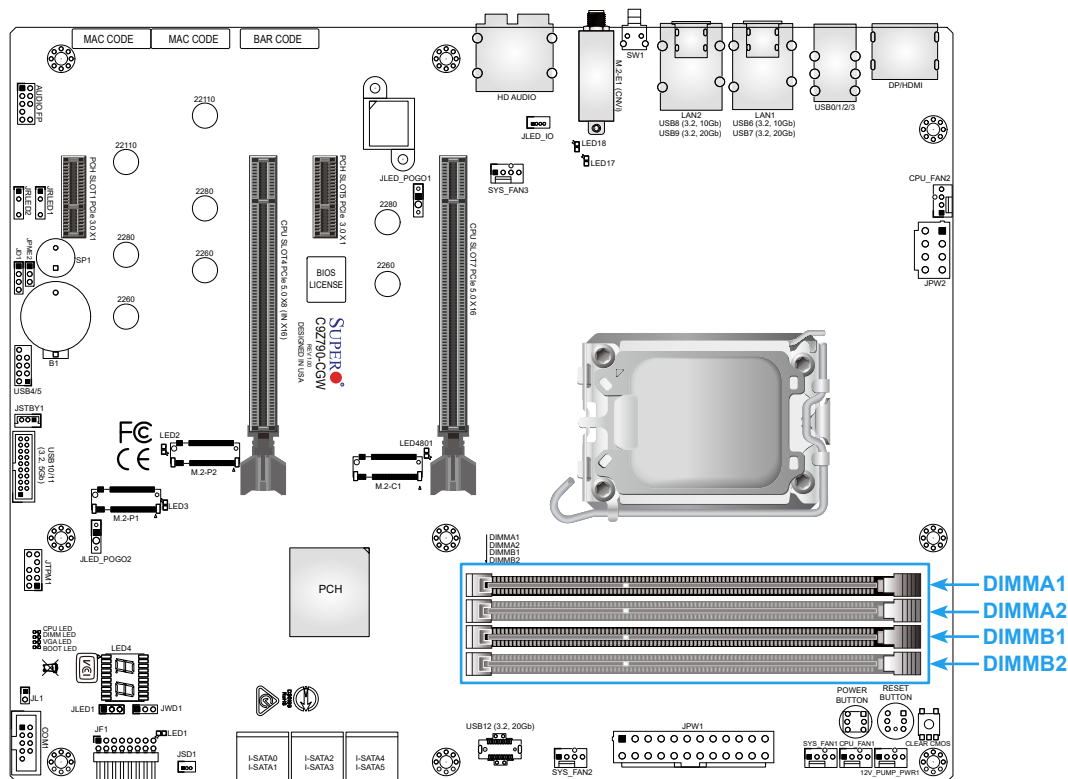
3.6 Memory

Memory Support

The C9Z790-CG supports up to 128GB Unbuffered non-ECC UDIMM, DDR5-4400MT/s, in four DIMM slots. Refer to the tables below for the recommended DIMM population order and additional memory information.

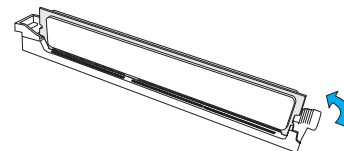
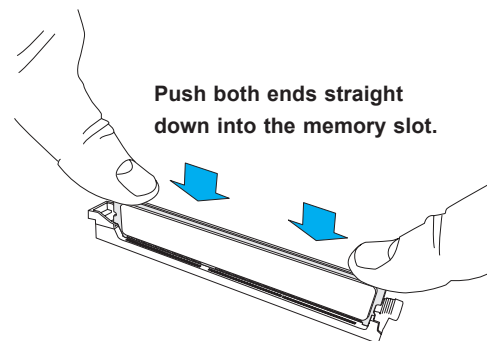
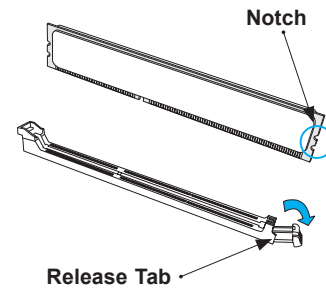
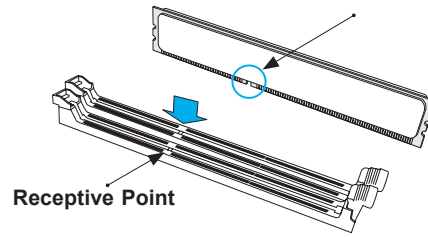
General Guidelines for Optimizing Memory Performance

- When installing memory modules, the DIMM slots should be populated in the following order: DIMMA2, DIMMB2, then DIMMA1, DIMMB1.
- When installing only two memory modules, please use DIMMA2 and DIMMB2.
- To optimize memory performance, please use DDR5 memory of the same type, size, and speed on the motherboard.
- The motherboard will support odd-numbered modules (one or three modules installed). However, to achieve the best memory performance, a balanced memory population is recommended.



DIMM Installation

1. Insert DIMM modules in the following order: DIMMA2, DIMMB2, then DIMMA1, DIMMB1. For the system to work properly, use memory modules of the same type and speed.
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

Reverse the steps above to remove the DIMM modules from the motherboard.

3.7 PCIe Expansion Cards

The SYS-531AD-I can accommodate up to two PCIe 5.0 x16 slots (supporting x16 or x8/x8) and two PCIe 3.0 x1 expansion cards. Install your graphics card into a PCIe expansion slot.

Note: Slots 4 and 7 share a x16 link. When both slots are populated, they will both run at x8. If only slot 7 is populated, it will run at x16.

Installing an Expansion Card

Begin by [removing power](#) from the system as described in Section 3.1 and [removing the cover](#) as described in Section 3.2.

1. Remove the shield for the PCIe slot that you wish to populate. Verify that the card you are installing is supported by the slot.
2. Seat the card firmly into the slot by pushing down with your thumbs evenly on both sides of the card.
3. Use the thumb screw to secure the expansion card bracket to the rear of the chassis.

3.8 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.

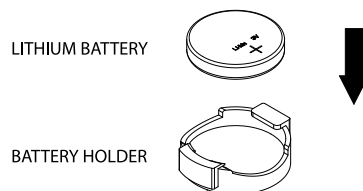


Figure 3-3. Installing the Onboard Battery

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).

3.9 Drives

Hard Drives

Your system might ship with hard drives installed. The chassis has two 5.25" drive bays, four 2.5" drive bays, and six bays that can hold 3.5" or 2.5" drives.

- Each 5.25" bay can be fitted with a removable media drive (e.g. DVD) or a storage device (3.5" HDD, 2.5" HDD, or solid state drive).
- Four 2.5" drives in removable center cage.
- Three 2.5" or 3.5" drives in each of two removable combination cages.

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

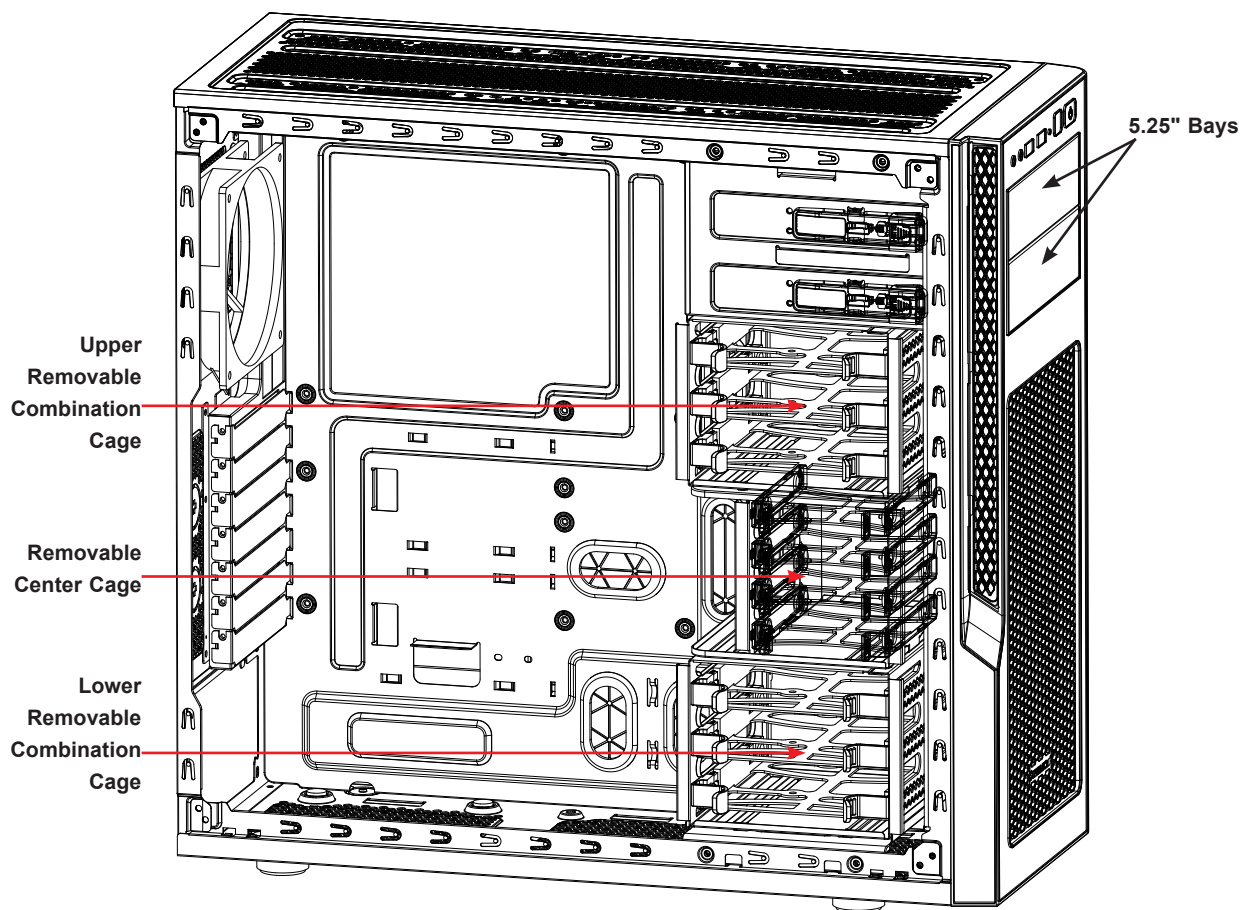


Figure 3-4. Drive Bays

Removing a Hot-Swap Drive Carrier

1. Push the release button on the carrier.
2. Swing the handle fully out.
3. Grasp the handle and use it to pull the drive carrier out of its bay.

Installing a Storage Device in the 5.25" Drive Tray

You can install a 3.5" hard disk or up to two 2.5" hard disks or solid state drives. To install two 2.5" disks, the 2.5" dual HDD bracket is required (P/N MCP-220-00044-0N).

Begin by [removing power](#) from the system as described in Section 3.1 and [removing the chassis left side cover](#) as described in Section 3.2.

1. Locate and press the release tab for the drive tray in which you want to place the drive.
2. Push the drive tray toward the front of the chassis and remove it.
3. Secure the storage drive to the drive tray with screws through the bottom of the tray.
4. Slide the drive tray into the chassis. An audible click indicates that the tray is locked in place.

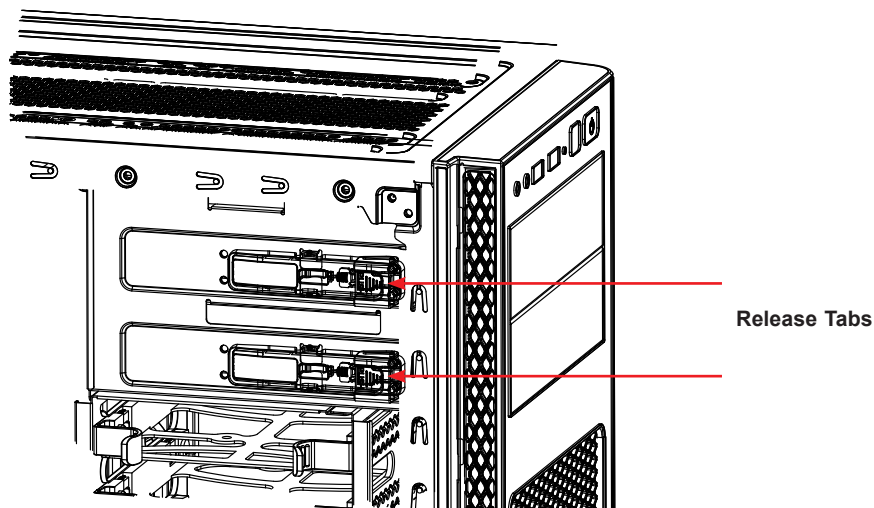


Figure 3-5. Release Tabs for 5.25" Drive Tray

Installing a DVD Drive in the 5.25" Drive Bay

1. Open the chassis left side cover.
2. Press the release tab for the drive tray where you want to place the DVD drive.
3. Push the drive tray toward the front of the chassis and remove it.
4. Slide the DVD drive into the vacated bay until it clicks into place.

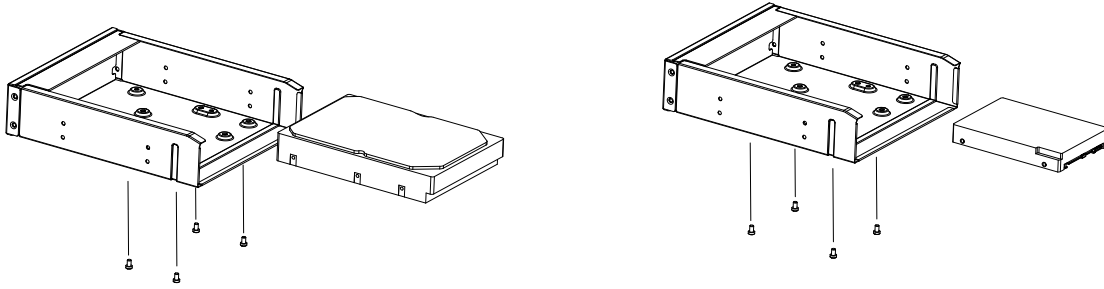


Figure 3-6. Storage Device Configurations for 5.25" Bays

Installing Drives into a Removable Cage

You can install up to four 2.5" drives in the dedicated center cage. Also, you can install up to three 2.5" or 3.5" drives into each combination cage (upper and lower).

Begin by [removing power](#) from the system as described in Section 3.1 and [removing the chassis left side cover](#) as described in Section 3.2.

1. Remove the drive mounting bracket from the cage. Pinch the tabs and pull the bracket out.
2. Secure the drive into the mounting bracket.
 - For 2.5" drives in the center cage, flex the drive bracket and slide the drive inside with the connectors facing the chassis rear.
 - For 2.5" drives in a combination cage, use screws through the bottom of the bracket to secure the drive with the connectors facing the chassis rear.
 - For 3.5" drives in a combination cage, flex the drive bracket and slide the drive inside with the connectors facing the chassis rear.

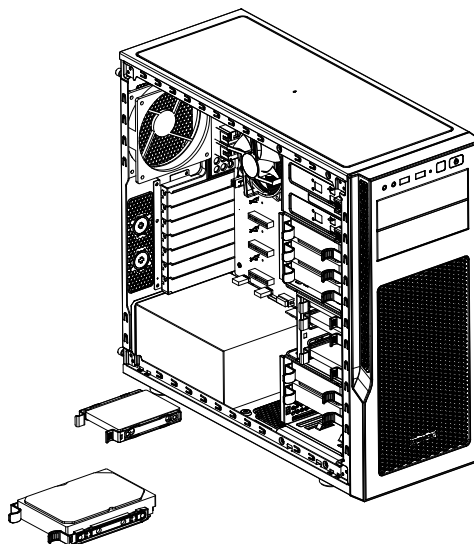


Figure 3-7. Installing Drives and Mounting Brackets into the Cage

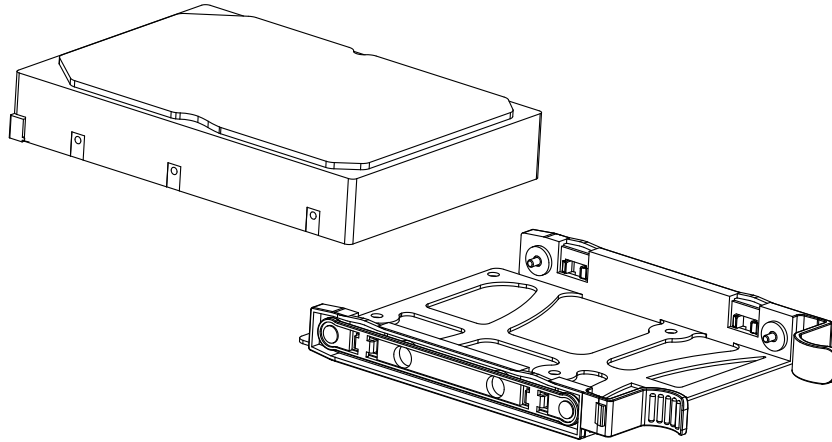


Figure 3-8. Mounting Tray for 3.5" Drive

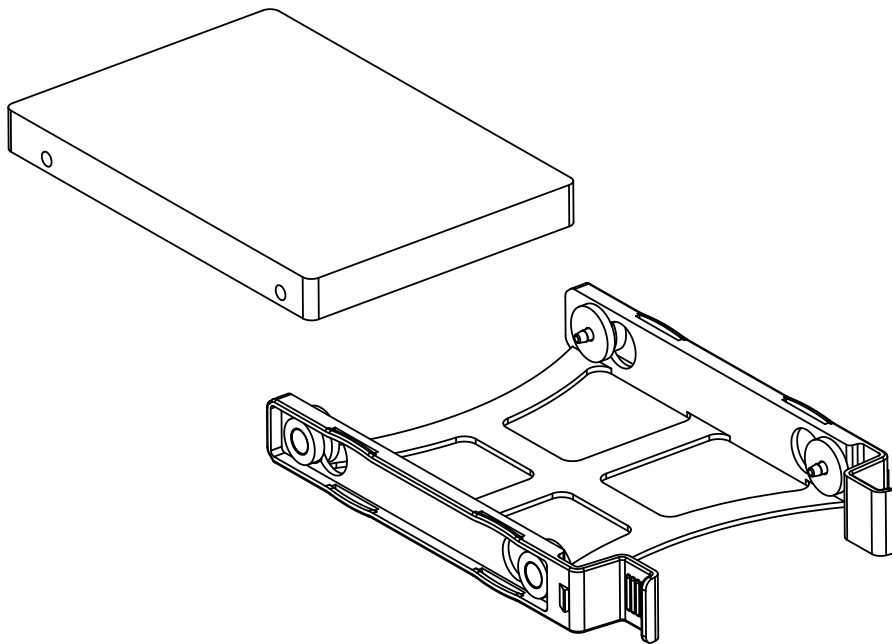


Figure 3-9. Mounting Tray for 2.5" Drive

3.10 System Cooling

Three 120-mm fans provide the cooling for the system (two in the front, one in the rear). Additionally, the following fan mount configurations are supported:

- Front fans can be replaced with 140-mm fans.
- Three fans can be installed on the chassis top (120-mm or 140-mm).
- One 120-mm fan can be installed on the chassis bottom.

It is very important that the chassis top cover is properly installed and forms a tight seal so that the cooling air can circulate through the chassis.

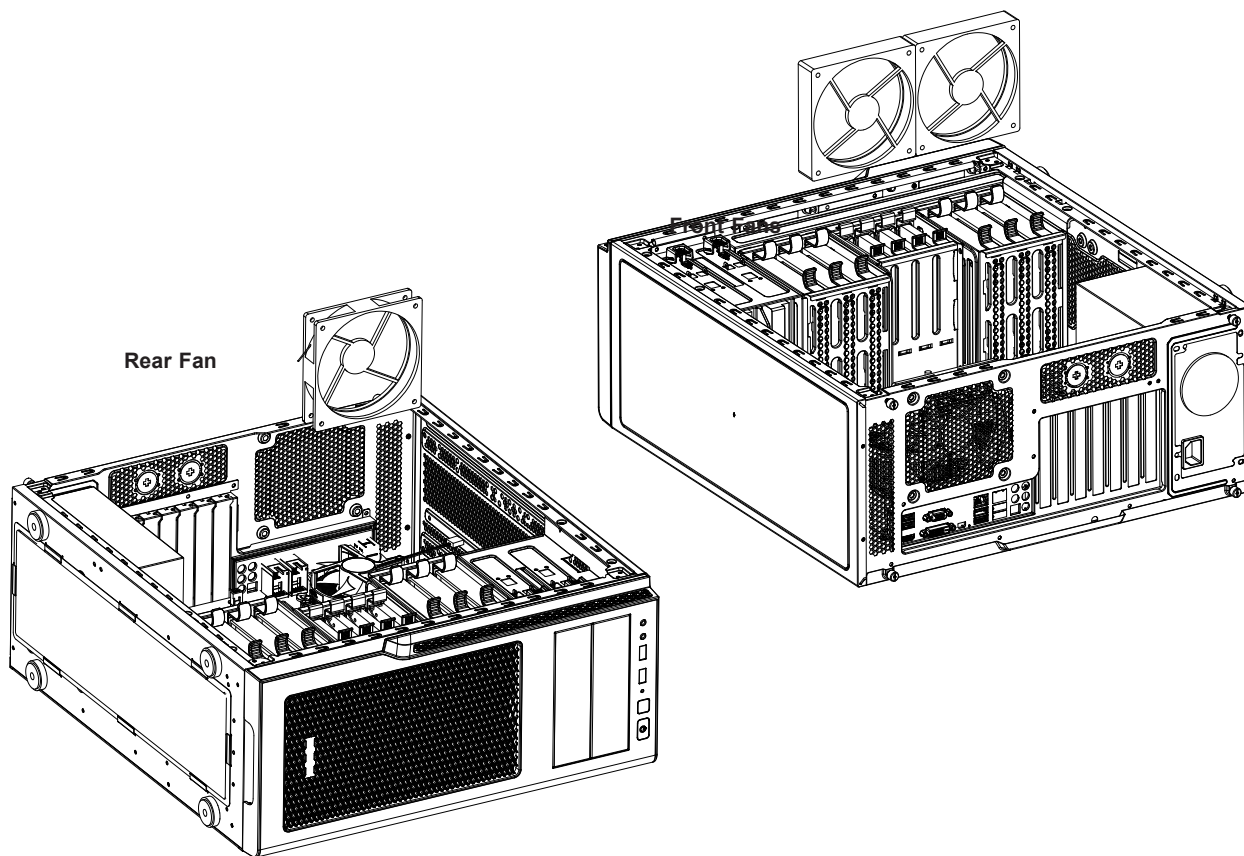


Figure 3-10. Standard Fan Placement

Adding or Replacing Fans

- To replace the standard front fans, remove the chassis front dust filter.
- To add a fan to the chassis bottom, the lower combination HDD cage must be removed.

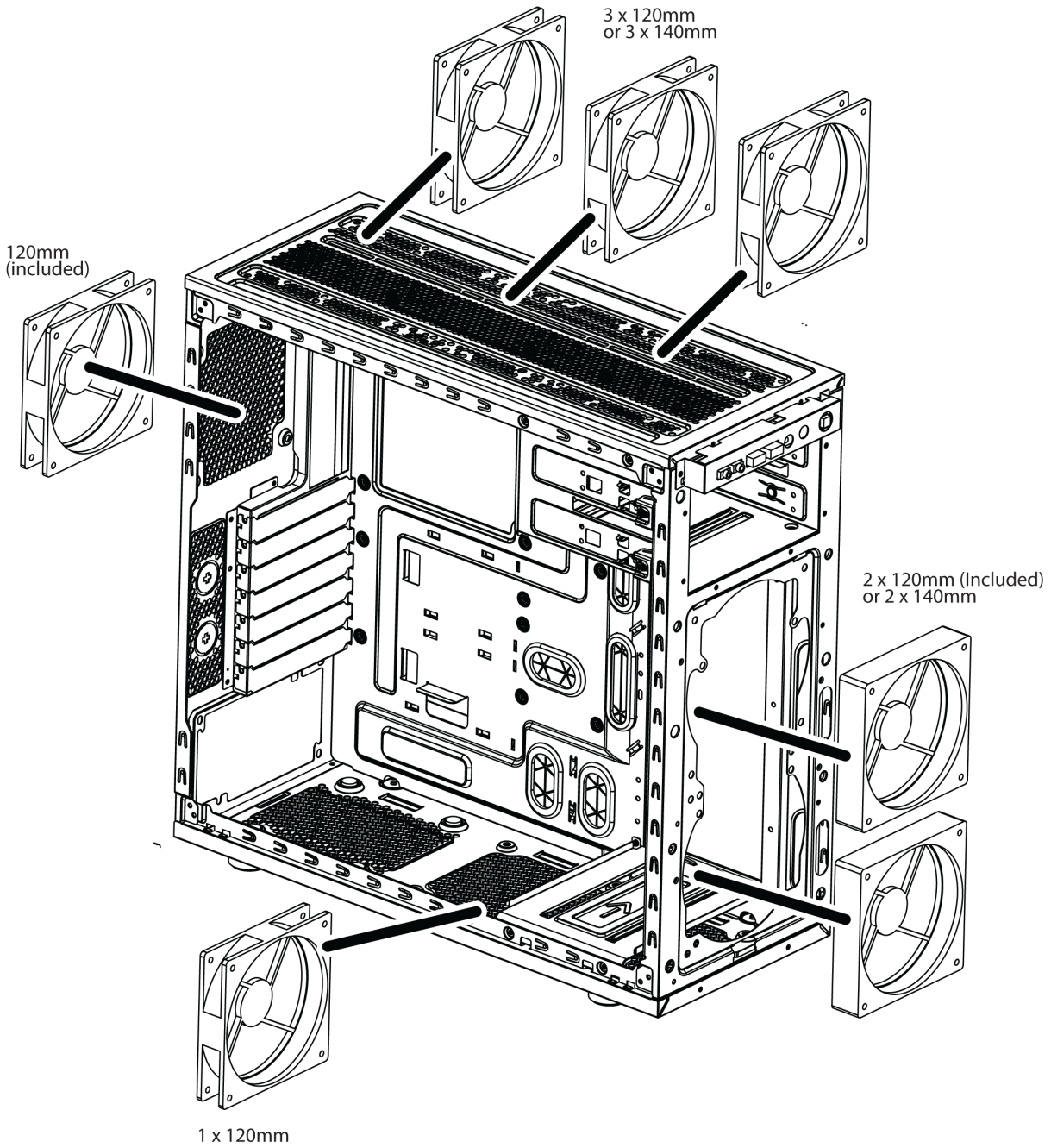


Figure 3-11. All Possible Fan Placements

Water Cooled Heatsink

The chassis supports a water cooled CPU heatsink. A 120-mm radiator can be placed over the rear fan. A 240-mm radiator can be placed under the top of the chassis. Consult your water cooling kit instructions for installation.

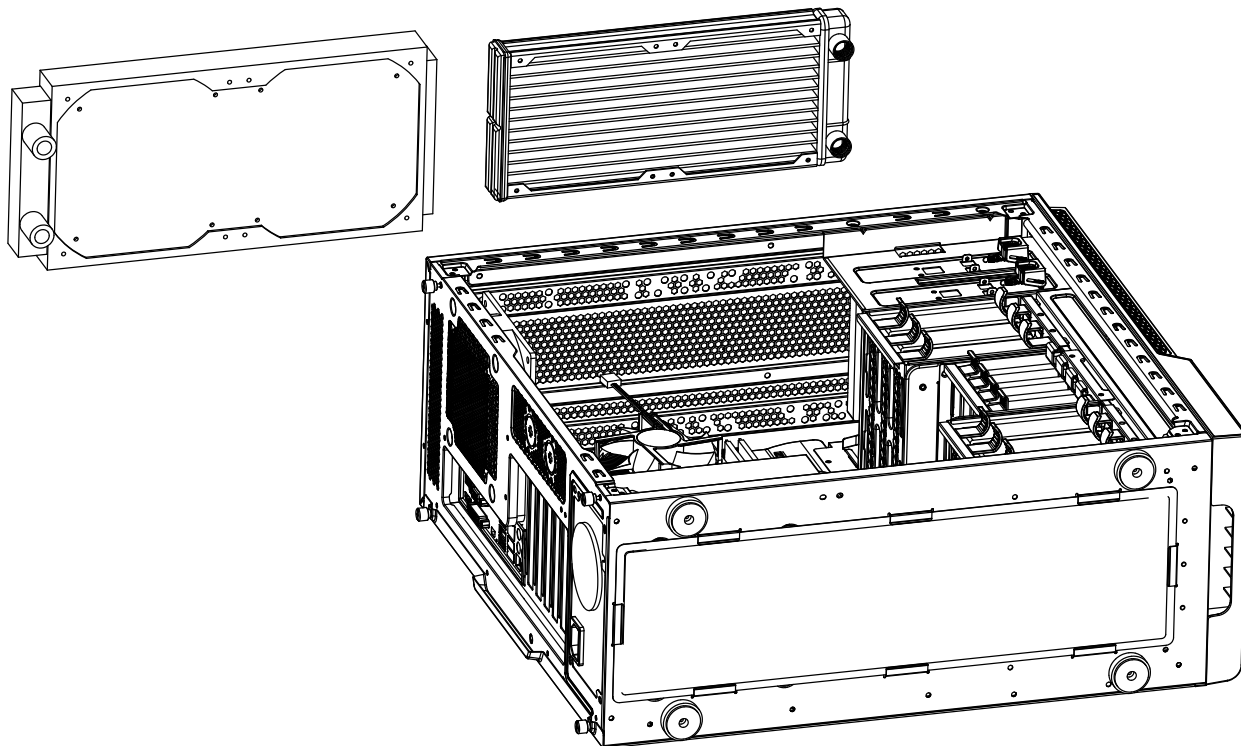


Figure 3-12. Example 240-mm Radiator

Mounting the Pump

1. To mount the backplate to motherboard, place the backplate (if required) on the rear of the CPU socket and secure it in place using the provided four standoffs.

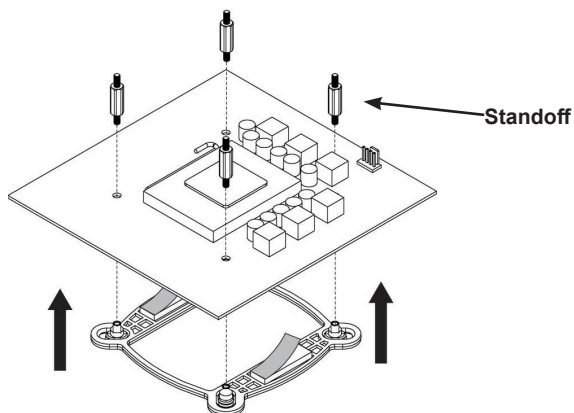


Figure 3-13. Mounting the Backplate to Motherboard

2. Identify the specific CPU socket on the motherboard, and then position the pump on the appropriate retention ring and rotate clockwise to lock it in place.



Figure 3-14. Mounting the Retention to the Pump

3. Position pump/retention ring assembly on the CPU. Ensure the holes on the retention ring align with the standoffs, and then tighten thumb screws onto standoffs tight.

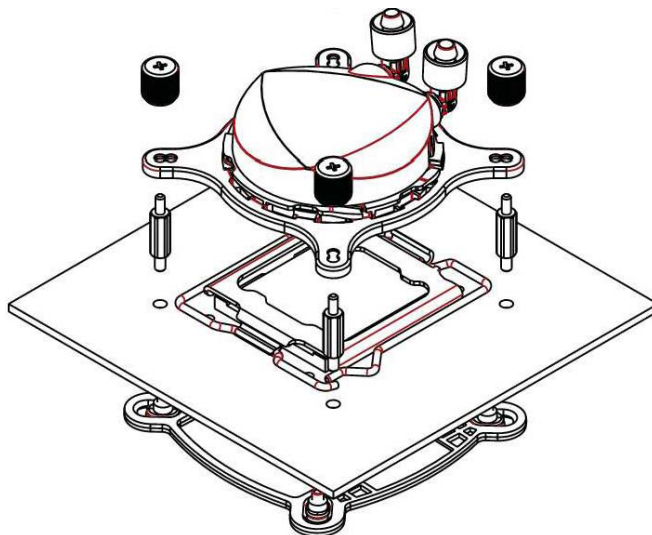


Figure 3-15. Mounting the Pump to Motherboard

4. Install the fans on the radiator with the provided UNC 6-32, 30-mm screws, and mount the radiator (attached with fans) onto the case with the UNC 6-32, 5-mm screws and washers.

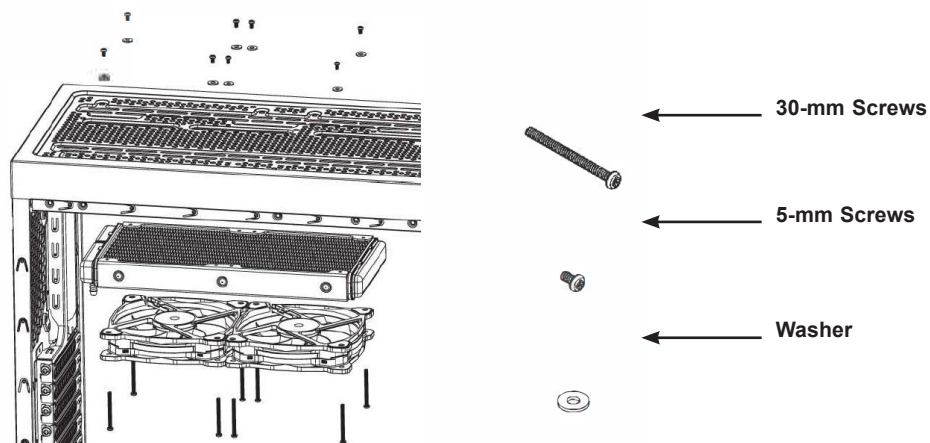


Figure 3-16. Mounting the Radiator and Fans

5. Connect the pump power cable to a fan header on the motherboard.

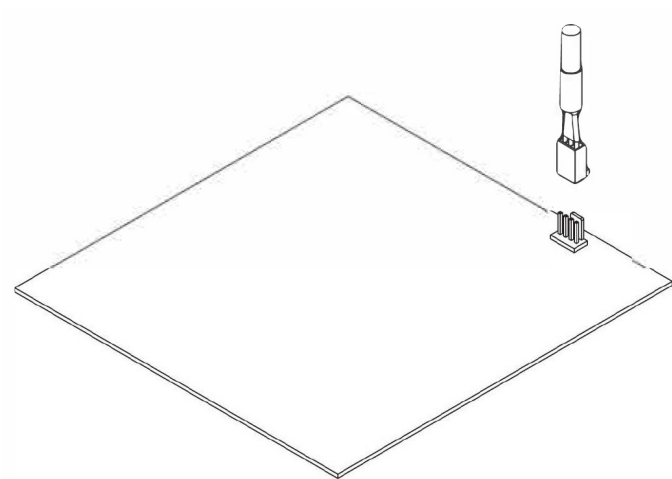


Figure 3-17. Connecting the Pump Power Cable

Air Flow

Verify that cables do not obstruct the cooling airflow.

Dust Filters

The chassis has two magnetic dust filters (one on the top and one on the bottom) and a dust filter that covers the front fans. Dust filters can be removed and cleaned to improve system air flow circulation.

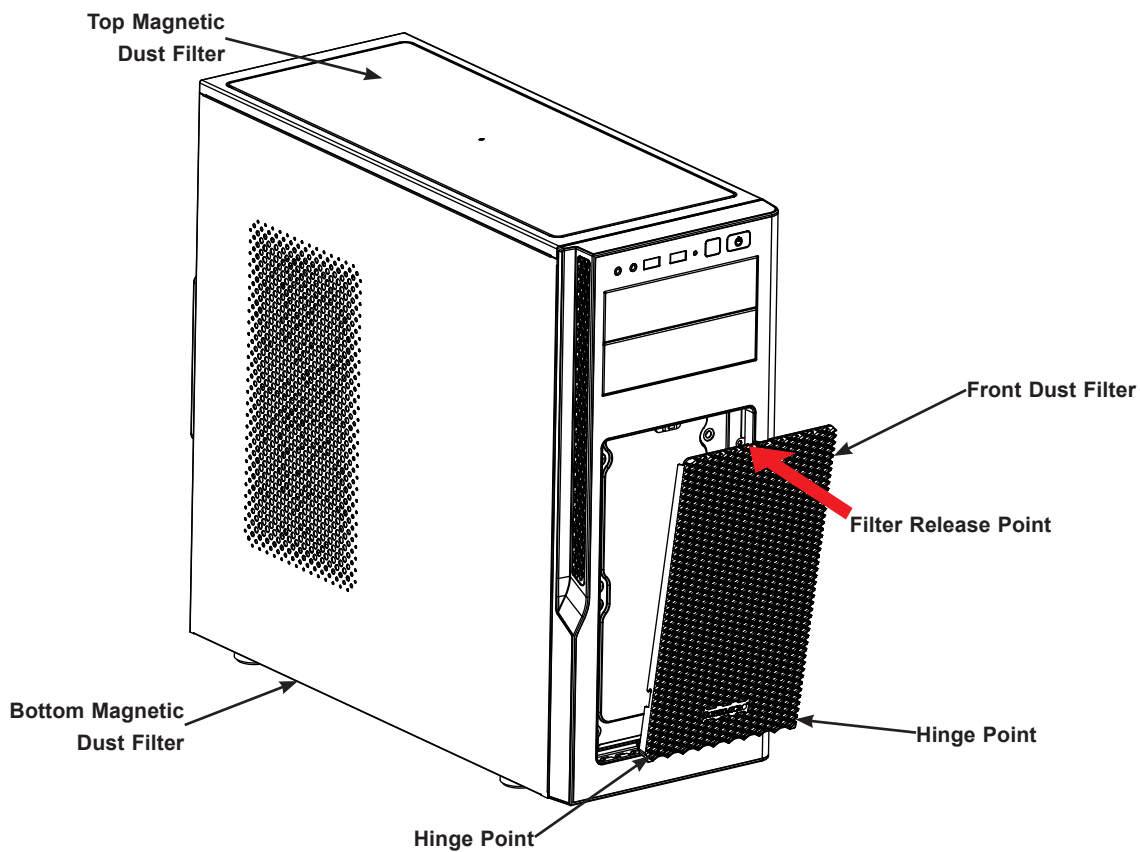


Figure 3-18. Dust Filters

Cleaning the Front Dust Filter

1. Release the filter by pushing the center of the top edge. The top pops loose.
2. Rotate the filter top downward to release it from the hinge points on the bottom.
3. Clean the filter.
4. Replace the filter. Align it with the bottom hinge points, then push the top edge into place. Push the top center until it clicks.

The top and bottom magnetic filters can also be removed for cleaning.

Power Supply

The SYS-531AD-I has a 750 watt power supply module. Mount the power supply on the rear floor of the chassis. The power supply can be mounted with the fan facing either up or down.

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 Connections

ATX Power Supply Connector

The 24-pin power supply connector (JPW1) meets the ATX SSI EPS 12V specification. You must also connect the 8-pin (JPW2) processor power connector to the power supply.

ATX Power Supply Connector Pin Definitions			
Pin#	Definition	Pin#	Definition
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	Ground	3	Ground
16	PS_ON	4	+5V
17	Ground	5	Ground
18	Ground	6	+5V
19	Ground	7	Ground
20	Res (NC)	8	PWR_OK
21	+5V	9	5VSB
22	+5V	10	+12V
23	+5V	11	+12V
24	Ground	12	+3.3V

Required Connection

8-Pin Power Connector

JPW2 is an 8-pin 12V DC power input for the CPU that must be connected to the power supply. Refer to the table below for pin definitions.

8-pin Power Pin Definitions	
Pin#	Definition
1 - 4	Ground
5 - 8	+12V

Required Connection

Important: To provide adequate power supply to the motherboard, be sure to connect the 24-pin ATX PWR and the 8-pin PWR connectors to the power supply. Failure to do so may void the manufacturer warranty on your power supply and motherboard.

4.2 Headers and Connectors

Headers

Fan Headers

There are five 4-pin fan headers (CPU_FAN1 - CPU_FAN2, SYS_FAN1 - SYS_FAN3) on the motherboard. Although pins 1-3 of the system fan headers are backwards compatible with the traditional 3-pin fans, the 4-pin fans are recommended to take advantage of the fan speed control. This allows fan speeds to be automatically adjusted based on the motherboard temperature. Refer to the table below for pin definitions.

Fan Headers Pin Definitions	
Pin#	Definition
1	Ground (Black)
2	2A/+12V (Red)
3	Tachometer
4	PWM_Control

Pump Power Header

This motherboard has one +12V header for optional CPU liquid cooling systems. When using a liquid cooling system, attach the pump power cable to the 12V_PUMP_PWR1 header.

Pump Power Header Pin Definitions	
Pin#	Definition
1	Ground (Black)
2	2A/+12V (Red)
3	N/A
4	N/A

Chassis Intrusion Header

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

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

Speaker Header

On the JD1 Header, pins 3 and 4 are used for the internal speaker. Close pins 3 and 4 with a cap to use the onboard speaker. If you wish to use an external speaker, close pins 1-4 with a cable. Refer to the table below for pin definitions.

Speaker Header Pin Definitions	
Pin#	Definition
3-4	Internal Speaker
1-4	External Speaker

Power LED Header

An onboard Power LED header is located at JLED1. This Power LED header is connected to the Front Control Panel located at JF1 to indicate the status of system power. Refer to the table below for pin definitions.

Power LED Header Pin Definitions	
Pin#	Definition
1	VCC / POWER LED (+) in JF1
2	POWER LED (-) in JF1
3	POWER LED (-) in JF1

I/O Cover LED Board Connector

JLED_IO is a 4-pin connector to connect to the LED board pre-installed inside the I/O cover. Refer to the table below for pin definitions.

I/O Cover LED Board Connector Pin Definitions	
Pin#	Definition
1	VCC
2	NC
3	NC
4	Ground

Addressable RGB (ARGB) LED Connection Header

The motherboard has two +5V ARGB connection headers (JRLED1/2) for connection to optional ARGB LED device such as an LED strip or LED fan. If connecting to an ARGB LED fan, also connect the fan's power connector to one of the motherboard's fan headers (SYS_FAN1 - SYS_FAN3).

ARGB LED Header Pin Definitions	
Pin#	Definition
1	+5V
2	DATA
3	NC
4	Ground

Pogo Pin Header

The two pogo pin headers on the motherboard are used to provide power to the LED boards of M.2 heatsinks. JLED_POGO1 is used for M.2-C1 heatsink LED board while JLED_POGO2 is for M.2-P1 heatsink LED board. With the heatsinks properly installed, the pogo pins will be in direct contact with the pogo pin contacts inside the heatsinks.

Pogo Pin Header Pin Definitions	
Pin#	Definition
1	5V
2	GND

DOM PWR Connector

The Disk-On-Module (DOM) power connector, located at JSD1, provides 5V power to a solid state DOM storage device connected to one of the SATA ports. Refer to the table below for pin definitions.

DOM PWR Connector Pin Definitions	
Pin#	Definition
1	5V
2	Ground
3	Ground

Standby Power Header

The Standby Power header is located at JSTBY1 on the motherboard. Refer to the table below for pin definitions.

Standby Power Header Pin Definitions	
Pin#	Definition
1	+5V Standby
2	Ground
3	Wake-up

M.2 Sockets

This motherboard has three M.2 sockets. M.2 was formerly known as Next Generation Form Factor (NGFF) and serves to replace mini PCIe. M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency. Refer to the table below for more information.

Sockets	Bus Interface	Form Factors	RAID Levels
M.2-P1 (from PCH)	PCIe 3.0 x4	2260, 2280, and 22110	0, 1, and 5
M.2-P2 (from PCH)	PCIe 3.0 x4	2260, 2280, and 22110	0, 1, and 5
M.2-C1 (from CPU)	PCIe 4.0 x4	2260 and 2280	0, 1, and 5

SATA Ports

Six Serial ATA (SATA) 3.0 connectors (I-SATA 0 - 5) are supported on the motherboard. These I-SATA 3.0 ports are supported by the Intel Z790 PCH chip (supports RAID 0, 1, 5, and 10). SATA ports provide serial-link signal connections, which are faster than the connections of Parallel ATA.

Note: For more information on the SATA HostRAID configuration, please refer to the Intel SATA HostRAID user's guide posted on our website at <https://www.supermicro.com/support/manuals/>.

Front Panel Audio Header

A 10-pin Audio header at AUDIO FP is supported on the motherboard. This header allows you to connect the motherboard to a front panel audio control panel, if needed. Connect an audio cable to the audio header to use this feature (not supplied). Refer to the table below for pin definitions.

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

Internal Speaker/Buzzer

The Internal Speaker/Buzzer (SP1) is used to provide audible indications for various beep codes. Refer to the table below for pin definitions.

Internal Buzzer Pin Definitions		
Pin#	Definition	
1	Pos (+)	Beep In
2	Neg (-)	Alarm Speaker

COM Header

The motherboard has one COM header. COM1 is located next to the JF1 header. Refer to the table below for pin definitions.

COM Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	Ground	10	N/A

TPM/Port 80 Header

A Trusted Platform Module (TPM)/Port 80 header is located at JTPM1 to provide TPM support and Port 80 connection. Use this header to enhance system performance and data security. Refer to the table below for pin definitions. Please go to the following link for more information on the TPM: https://www.supermicro.com/manuals/other/AOM-TPM-9670V_9670H.pdf.

TPM/Port 80 Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	P3V3	2	SPI_TPM_CS_N
3	PCIE_RESET_N	4	SPI_PCB_MISO
5	SPI_PCH_CLK	6	GND
7	SPI_PCH_MOSI	8	X
9	P3V3_STBY	10	IRQ_TPM_SPI_N

4.3 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.

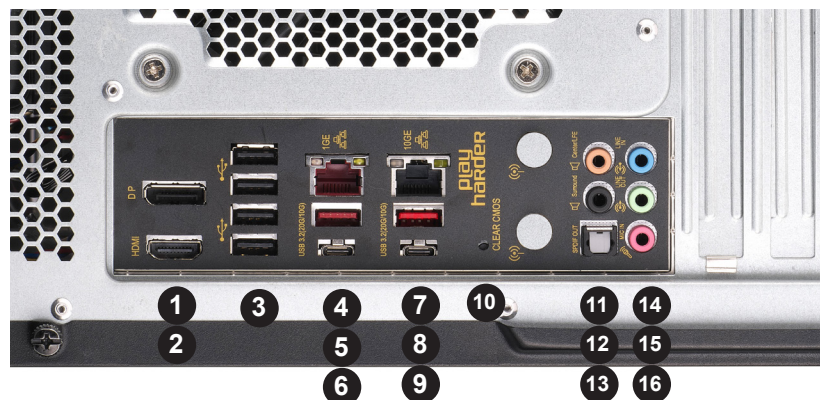


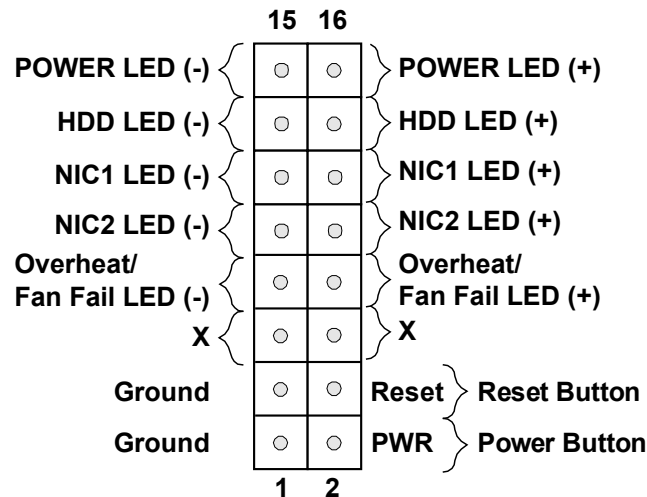
Figure 4-1. Rear I/O Ports

Rear I/O Ports			
#	Description	#	Description
1	DisplayPort 1.4b	9	USB9: USB 3.2 Gen 2x2 (20Gb, Type C)
2	HDMI 2.1	10	SW1: CLEAR CMOS
3	USB0/1/2/3: USB 2.0 (Type A)	11	Center/LFE Out
4	Ethernet RJ45 1GbE Port 1	12	Surround Out
5	USB6: USB 3.2 Gen 2 (10Gb, Type A)	13	S/PDIF Out
6	USB7: USB 3.2 Gen 2x2 (20Gb, Type C)	14	Line In
7	Ethernet Port 2: RJ45, 10GbE	15	Line Out
8	USB8: USB 3.2 Gen 2 (10Gb, Type A)	16	Mic In

Note: Type C: 5V, 20 Gbit/s

Front Control Panel LEDs

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.



Power LED

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

Power LED Pin Definitions (JF1)	
Pin#	Definition
15	Power LED (-)
16	Vcc / Power LED (+)

HDD LED

The HDD LED connection is located on pins 13 and 14 of JF1. Attach a cable here to indicate the status of HDD-related activities, including SATA activities. Refer to the table below for pin definitions.

HDD LED Pin Definitions (JF1)	
Pin#	Definition
13	HDD LED (-)
14	Vcc / HDD LED (+)

NIC1/NIC2 (LAN1/LAN2) LED

The Network Interface Controller (NIC) LED connection for LAN1/LAN2 is located on pins 9/11 and 10/12 of JF1. Attach an LED indicator to this header to display network activity. Refer to the table below for pin definitions.

NIC1/NIC2 LED Pin Definitions (JF1)	
Pin#	Definition
9/11	NIC2/NIC1 LED (-)
10/12	Vcc / NIC2/NIC1 LED (+)

Overheat (OH)/Fan Fail LED

Connect an LED cable to OH/Fan Fail connections on pins 7 and 8 of JF1 to provide warnings for chassis overheat/fan failure. Refer to the tables below for pin definitions.

OH/Fan Fail LED Pin Definitions (JF1)	
Pin#	Definition
7	OH/Fan Fail LED (-)
8	Vcc / OH/Fan Fail LED (+)

OH/Fan Fail Indicator Pin Definitions (JF1)	
State	Definition
Off	Normal
On	Overheat
Flashing	Fan Fail

Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1. Attach it to a hardware reset switch on the computer case to reset the system. Refer to the table below for pin definitions.

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

Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. To turn off the power in the suspend mode, press the button for at least four seconds. Refer to the table below for pin definitions.

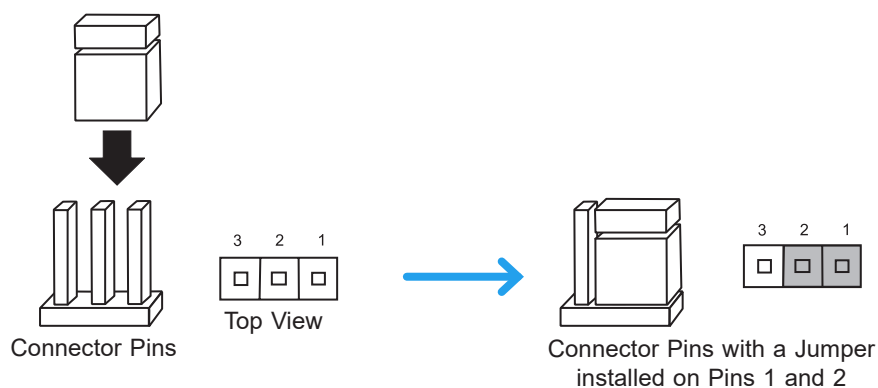
Power Button Pin Definitions (JF1)	
Pin#	Definition
1	Ground
2	Power Button

4.4 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. Refer to 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.



Clear CMOS/SW1 Button

Clear CMOS Button is used to clear the saved system setup configuration stored in the CMOS chip. All the settings will be erased and restored to the factory defaults after pressing this button. On this motherboard, there are two buttons which built-in this function. One is the SW1 button located on the I/O back panel and the other is the Clear CMOS button located next to the Reset Button.

Power Button

In addition to the soft power switch provided in JF1, your motherboard is equipped with a 'soft' power button on the motherboard. This switch works the same way as the soft power switch on JF1.

Reset Button

When pressed, the Reset Button will reset the system and reboot. This action will erase everything in memory and restart the system.

Manufacturing Mode

Close pins 2 and 3 of JPME2 to bypass SPI flash security and force the system to operate in Manufacturing Mode, allowing you to flash the system firmware from a host server for system setting modifications. Refer to the table below for jumper settings.

Manufacturing Mode Jumpers Settings	
Pin#	Definition
1-2	Normal (Default)
2-3	Manufacture Mode

Watch Dog

Watch Dog (JWD1) is a system monitor that can reboot the system when a software application hangs. Close pins 1 and 2 to reset the system if an application hangs. Close pins 2 and 3 to generate a non-maskable interrupt signal for the application that hangs. Refer to the table below for jumper settings.

Watch Dog Jumpers Settings	
Jumper Setting	Definition
Pins 1-2	Reset (Default)
Pins 2-3	NMI
Open	Disabled

4.5 LED Indicators

LAN1 LEDs

The LED of LAN1 on the left indicates the speed of the connection, and the LED of LAN1 on the right indicates activity. Refer to the tables below for more information.

LAN1 Link Indicator LED Settings	
LED Color	Definition
Off	10Mbps
Green	100Mbps
Amber	1 Gbps

LAN1 Activity Indicator LED Settings		
Color	Status	Definition
Yellow	Flashing	Active

LAN2 LEDs

The LED of LAN2 on the left indicates activity, and the LED of LAN2 on the right indicates the speed of the connection. Refer to the tables below for more information.

LAN2 Activity Indicator LED Settings		
Color	Status	Definition
Yellow	Flashing	Active

LAN2 Link Indicator LED Settings	
LED Color	Definition
Off	No Connection
Amber	5Gbps/2.5Gbps/ 1Gbps/100Mbps
Green	10 Gbps

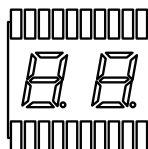
M.2 LED

Three M.2 LEDs are provided and indicated the status of connected M.2 devices. When an M.2 LED is blinking, the corresponding M.2 device is functioning normally. These LEDs are located nearby the corresponding M.2 sockets. Refer to the table below for the status information.

M.2 LED State	
LED Color	Definition
Green: On	Device detected
Green: Blinking	Device Working

BIOS POST Code LED

LED4 is made up of two alpha-numeric displays that will display a status or BIOS POST code, when the motherboard is powered on. For more information, refer to https://www.supermicro.com/manuals/other/AMI_AptioV_BIOS_POST_Codes_for_SM_Motherboards.pdf.



Power LED

An onboard power LED is located at LED1 on the motherboard. When LED1 is on, the AC power cable is connected. Make sure to disconnect the power cable before removing or installing any component. Refer to the tables below for more information.

Power LED Indicator LED Status	
Status	Definition
Off	System Off
On	System on, or System off, and PWR Cable Connected

Power-On Self-Test (POST) LEDs

Multiple LEDs are built-in and used to display the status of system Power-On Self-Test (POST). These LEDs are located next to the JTPM1 header on the motherboard. Refer to the tables below for more information.

CPU LED State	
LED Color	Definition
Yellow	CPU POST Working
Off	CPU POST Completed

DIMM LED State	
LED Color	Definition
Blue	DIMM POST Working
Off	DIMM POST Completed

VGA LED State	
LED Color	Definition
Green	VGA POST Working
Off	VGA POST Completed

BOOT LED State	
LED Color	Definition
Orange	BOOT POST Working
Off	BOOT POST Completed

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.supernmicro.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. Retrieve the proper RST/RSTe driver. Go to the Supermicro web page for your motherboard and click on "Download the Latest Drivers and Utilities", select the proper driver, and copy it to a USB flash drive.
3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **[F11]** during the system startup.

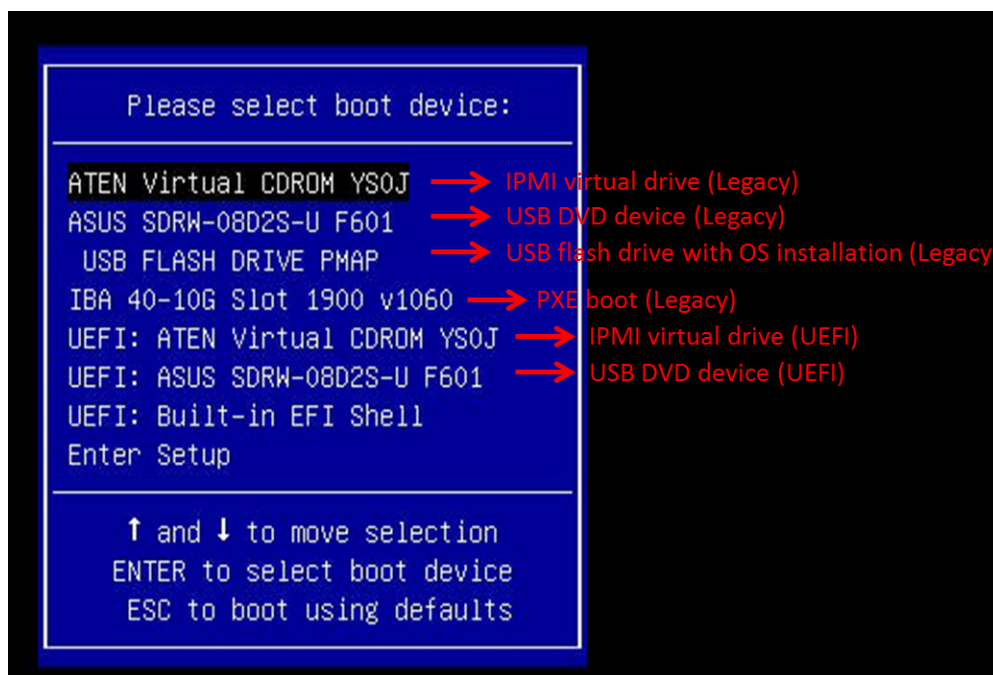


Figure 5-1. Select Boot Device

4. 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.

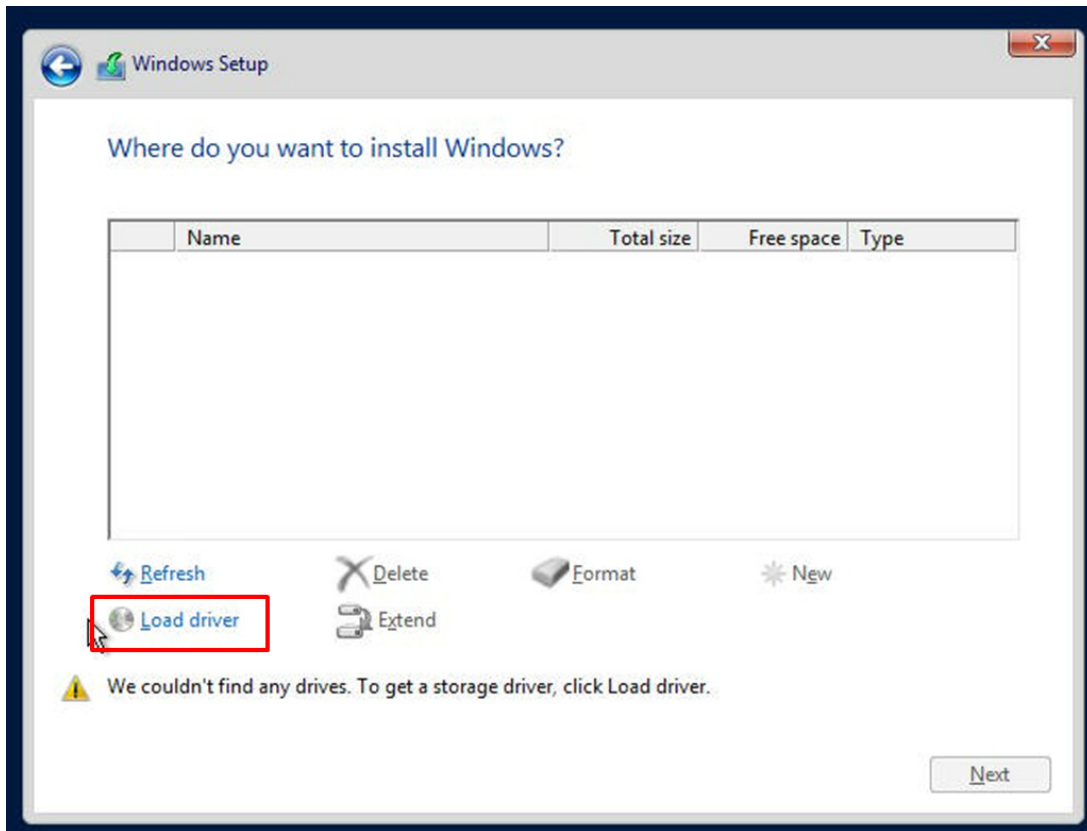


Figure 5-2. Load Driver Link

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.
5. Once all devices are specified, continue with the installation.
 6. 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.

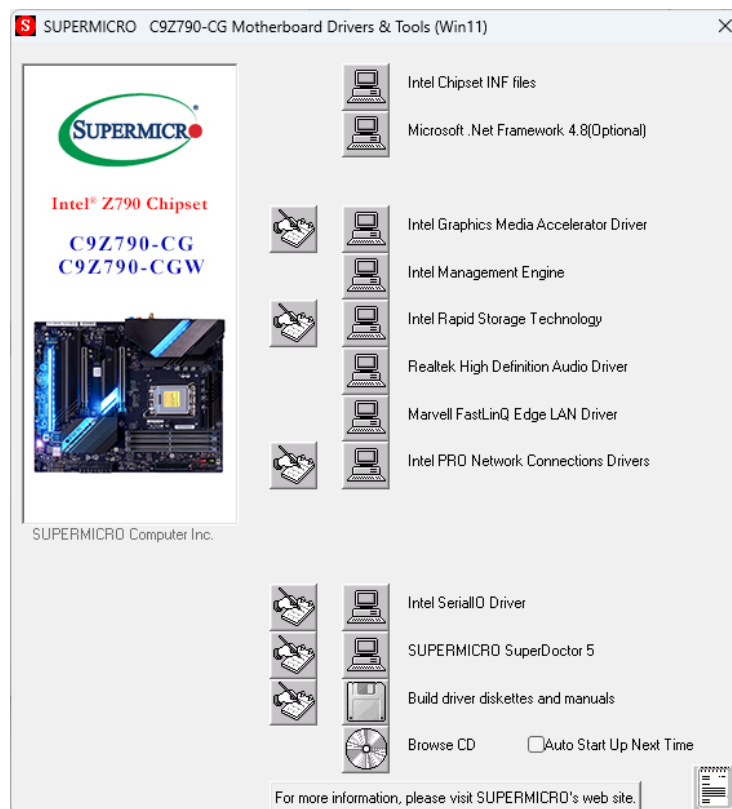


Figure 5-3. Driver & Tool Installation Screen

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.

[SuperDoctor® Manual and Resources](#)

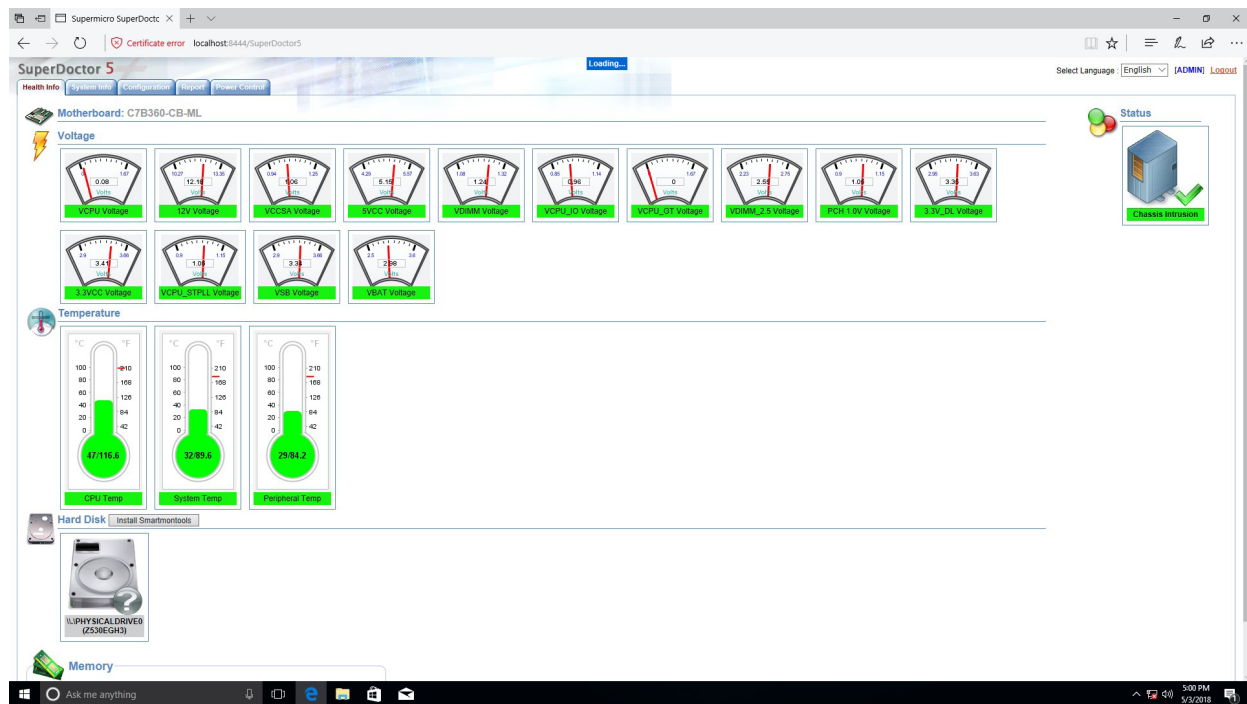


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

Chapter 6

Optional Components

This chapter describes optional system components and installation procedures.

6.1 Optional Parts List

Optional Parts List	
Description	Part Number
High Performance Active CPU Heat Sink	SNK-P0086AP4
High Performance Close-looped Liquid Cooling Kit for the CPU	SNK-P3017A
Black LITE-ON 5.25" HH 24X DVD-RW SATA Drive PBF	DVM-TEAC-DVDRW24-HBT
Y Split, Big 4-pin to Two RA SATA Power Extension 15 cm, 18AWG	CBL-0082L
SATA, INT, ROUND, ST-ST, 70 cm, 30AWG	CBL-SAST-0624

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

A great deal of information is available on the Supermicro website, supermicro.com.

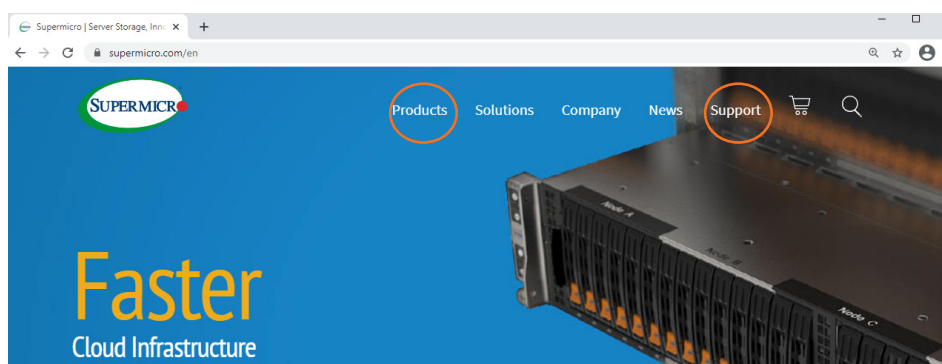


Figure 7-1. Supermicro Website

- 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-531AD-I System

Web [SYS-531AD-I](#) specifications page

[C9Z790-CG motherboard page](#) for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

Direct Links for General Support and Information

[Frequently Asked Questions](#)

[Add-on card descriptions](#)

[TPM User Guide](#)

General Memory Configuration Guide: [X12](#)

7.2 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.

Before Power On

- Make sure that there are no short circuits between the motherboard and chassis.
- Disconnect all ribbon/wire cables from the motherboard, including those for the keyboard and mouse.
- Remove all add-on cards.
- Install the CPU (making sure it is fully seated) and connect the front panel connectors to the motherboard.

No Power

- Make sure that there are no short circuits between the motherboard and the chassis.
- Make sure that the ATX power connectors are properly connected.
- Check that the 115V/230V switch, if available, on the power supply is properly set.
- Turn the power switch on and off to test the system, if applicable.
- Check the CPU socket for bent pins and make sure the CPU is fully seated.
- The battery on your motherboard may be old. Check to verify that it still supplies approximately 3VDC. If it does not, replace it with a new one.

System Boot Failure

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

- Check for any error beep from the motherboard speaker.
 - If there is no error beep, try to turn on the system without DIMM modules installed. If there is still no error beep, replace the motherboard.
 - If there are error beeps, clear the CMOS settings by unplugging the power cord and pressing either the SW1 button or Clear CMOS button on the motherboard. Refer to [Clear CMOS Button](#) in Chapter 4.

- Remove all components from the motherboard, especially the DIMM modules. Make sure that system power is on and that memory error beeps are activated.
- 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 in this chapter.

Memory Errors

When a no-memory beep code is issued by the system, check the following:

- Make sure that the memory modules are compatible with the system and are properly installed. Refer to [Chapter 3](#) for installation instructions. (For memory compatibility, refer to the "Tested Memory List" link on the motherboard's product website page to see a list of supported memory.)
- Check if different speeds of DIMMs have been installed. It is strongly recommended that you use the same RAM type and speed for all DIMMs in the system.
- Make sure that you are using the correct type of non-ECC UDIMM DDR4 modules recommended by the manufacturer.
- Check for bad DIMM modules or slots by swapping a single module among all memory slots and check the results.

Losing the System Setup Configuration

- Always replace power supplies with the exact same model that came with the system. A poor quality power supply may cause the system to lose the CMOS setup configuration.
- The battery on your motherboard may be old. Check to verify that it still supplies approximately 3VDC. 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.

7.3 CMOS Clear

To clear the saved system setup configuration stored in the CMOS chip, press either the Clear CMOS button located next to the [Reset Button](#) on the board or the [Clear CMOS/SW1 Button](#) on the I/O back panel. For details, see [Clear CMOS/SW1 Button](#) in section [4.4 Jumpers](#).

7.4 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.

7.5 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.

7.6 Feedback

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

7.7 Contacting Supermicro

Headquarters

Address: Super Micro Computer, Inc.
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Fax: +1 (408) 503-8008

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Government_Sales-USA@supermicro.com (Gov. Sales Inquiries)
support@supermicro.com (Technical Support)
RMA@supermicro.com (RMA Support)
Webmaster@supermicro.com (Webmaster)

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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。

此警告符号代表危險。

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 הזהרות אזהרה

הזהרות 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.

اَكْ ف حالة وُكِي أَي تتسبب ف اصابة جسدهُ هذا الزهز عُ خطر! تحذُرُ .
 قبل أَي تعول على أَي هعدات، كي على علن بالوخاطز ال أجوة عي الذوائر
 الكهزبائِة
 وكي على دراةُ بالووارسات النقاائِة لو عُ وقع أَي حادث
 استخدم رقن الب اي الو صُص ف هَّاةُ كل تحذُرُ للعشر 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.

اقرأ 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。

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 המגן מפני הקצר החשמלי הוא לא יותר מ-250VDC, 20A

هذا المنتج يعتمد على معدات الحماية من الدوائر القصيرة 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.

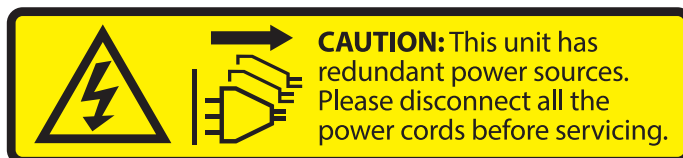
Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw elektrische installatie. Controleer of het beveiligde apparaat 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.



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 chasis pour installer ou enlever des composants de système.

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 فصل انظاؤ من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد انطاقت قېم

انصل إلى امناطق انداخهيت نههيكم نتشيج أو إزانت مكناث الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 새시 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 trained and qualified personnel 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せん。

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

Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.

¡Advertencia!

Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.

Attention

Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.

אזהרה!

צוות מוסמך בלבד רשאי להתקין, להחליף את הציוד או לתת שירות עבור הציוד.

والمدربيه لتزكيب واستبدال أو خدمة هذا الجهاز يجب أن يسمح فقط للمظفيه المؤهليه

경고!

훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.

Waarschuwing

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door geschoold en gekwalificeerd personeel.

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

此装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 installé 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 انحدة نترك بها ف مناطق محظورة تم .
ممكن اننصل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت
أو أ وس هُت أخري نلالأمما ققم 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



Warning! There is the danger of explosion if the battery is replaced incorrectly. 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

電池交換が正しく行われなかった場合、破裂の危険性があります。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

電池更換不當會有爆炸危險。請只使用同類電池或制造商推荐的功能相当的電池更換原有電池。請按制造商的說明處理廢舊電池。

警告

電池更換不當會有爆炸危險。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

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Attention

Danger d'explosion si la pile n'est pas remplacée correctement. 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 peligro de explosión si la batería se reemplaza de manera incorrecta. 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 של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת. סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة اسبدال البطارية بطريقة غير صحيحة فعلياً
اسبدال البطارية
فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة
جخلص من البطاريات المسحومة وفقاً لعمليات الشركة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. 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

此装置连接的电源可能不只一个，必须切断所有电源才能停止对该装置的供电。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein Strom 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!

ליחידה 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 خطر من التيار الكهربائي أو الطاقة المتجددة على اللوحة
عندما يكون النظام يعمل كه حذرا عند خدمة هذا الجهاز

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 instalación 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 للقوايه المحلية والبطية 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.

Hot Swap 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・ホットスワップの警告

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! 危險的可移動性零件。請務必與轉動的风扇叶片保持距離。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

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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 el montaje del ventilador del chasis. Mantenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Pieces mobiles dangereuses. Se tenir a l'écart 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 בפעולה כאשר מסירים את חלקי המאוורר מהמארז, יתכן והמאווררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

تحذير! أجزاء متحركة خطيرة. ابتعد عن شفرات المروحة المتحركة. من الممكن أن المراوح لا تزال تدور عند 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. 새시로부터 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 adapters. Using any other cables and adapters 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 Adapter, 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 certifiés- 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.

AC ימאתמו מיילמשח מילבכ

!הרהזא

ךרוצל ומאתוה וא ושכרנ רשא AC מימאתמו מיקפס, מילבכב שמתשהל שי, רצומה תא מיניקתמ רשאכ לכב שומיש . עקתהו לבכה לש הנוכח הדימ ללוכ, תוימוקמה תוחיטבה תושירדל ומאתוה רשאו, הנקתהה למשחה ירישכמב שומישה יקוחל מאתהב. ילמשח רצק וא הלקתל מורגל לולע, רחא גוסמ מאתמ וא לבכ לש דוק מהילע עיפומ רשאכ) UL-ב או CSA-ב (ב-UL מיכמומה מילבכב שמתשהל רוסיא מייק, תוחיטבה יקוחו דבלב Supermicro י"ע מאתוה רשא רצומב קר אלא, רחא ילמשח רצומ לכ רובע UL/CSA)

תאלבאלא אארשב מץ וא ענדחמלא וא ערפוטמלא תאליצוטלא מאדחטסאב מץ, גתנמלא בייקרת דנע לכלז יפ אמב עילחמלא עמאלסלא תאבלטתמו נינאוץב מאזתלאל עמ דדרתמלא ראיטלא תאלוחמו עיזאברמלא קיירח וא לטע יפ בבסטטי דץ ירזא תאלוחמו תאלבאלא יא מאדחטסא. מילסלא סבאלאו לטוומלא מץח CSA וא UL לבק נמ ענדמטעמלא תאלבאלא מאדחטסא תאדעמלא עיזאברמלא עזעאלל עמאלסלא נונאק רזחי Supermicro לבק נמ ענדחמלא עינעמלא תאגתנמלא ריזג ירזא תאדעמ יא עמ (UL/CSA) עמאלע למחתיטלאו

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 Supermicro가 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

Supports 12th/13th Generation Intel® Core™ i9/i7/i5/i3

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

Chipset

Intel® Z790

BIOS

256Mb SPI Flash with AMI BIOS

Memory

Supports up to 128GB unbuffered non-ECC UDIMM, DDR5 4400MT/s, in four DIMM slots

SATA Controller

On-chip (Intel® Z790) controller

Bays

Two 5.25" drive bays (optional)

Four 2.5" drive bays

Six combinations of drive bays to house 3.5" or 2.5" drives

Expansion Slots

Two PCIe 5.0 x16 slots (supporting x16 or x8/x8)

Two PCIe 3.0 x1 slots

Three M.2 slots

Note: Slots 4 and 7 share a x16 link. When both slots are populated, they will both run at x8. If only slot 7 is populated, it will run at x16.

Input/Output

Six SATA3 (6Gbps) ports

Two USB 3.2 Gen 1 ports (front)

Six USB 2.0 ports (two header; four rear)

Two USB 3.2 Gen 2 ports (rear)

Three USB 3.2 Gen 2x2 ports (one header; two rear)

One COM port (header)

One DisplayPort 1.4b

One HDMI 2.1

Motherboard

C9Z790-CG; Length 12", width 9.6" (304.8 mm x 243.8 mm)

Chassis

CSE-GS5A-754K; mid-tower, (WxHxD) 7.9 x 18.1 x 19.4 in. (200 x 460 x 493 mm)

System Cooling

Three 120-mm PWM fans with fan speed control

Power Supply

SSR-750FX

AC Input: 100-240Vac / 50-60Hz

+12V: Max: 62A (100Vdc-240Vdc)

Output Type: PS/2

Certification: 80PLUS Gold

Operating Environment

Operating Temperature: 10° to 30° C (50° to 86° F)

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

Operating Relative Humidity: 8% to 80% (non-condensing)

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

Regulatory Compliance

FCC, CE, VCCI, CSA/ UL, 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"

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: 工作站 / Workstation Equipment name						
型號 (型式) : GS5A- S7C9 (系列型號: GS5A -7、SYS-531AD-I) 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)	—	○	○	○	○	○
硬碟 (HDD,M.2)	—	○	○	○	○	○
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.						

輸入額定:

100-240V ~, 60-50Hz, 10-5A

*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