



# SuperWorkstation SYS-531A-IL



USER'S MANUAL

Revision 1.0

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Manual Revision 1.0

Release Date: March 10, 2022

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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-531A-IL 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](http://www.supermicro.com/about/policies/safety_information.cfm)

If you have any questions, please contact our support team at:  
[support@supermicro.com](mailto: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/](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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Website: [www.supermicro.com.tw](http://www.supermicro.com.tw)

# Chapter 1

## Introduction

### 1.1 Overview

This chapter provides a brief outline of the functions and features of the SuperWorkstation SYS-531A-IL. It is based on the [X13SAE](#) motherboard and the CSE-735D4-668B chassis.

The following provides an overview of the specifications and capabilities.

<b>Motherboard</b>	X13SAE
<b>Chassis</b>	CSE-735D4-668B
<b>Processor Support</b>	Single Intel Alder Lake-S processor, 12th Gen (8+8 cores) Core i9/i7/i5/i3 series processor, LGA-1700 (Socket V), TDP 125W
<b>Chipset</b>	Intel W680
<b>Memory</b>	Supports four ECC/non-ECC DDR5 UDIMM socket with speed of up to 4400MHz (one DIMM) or 4000MHz (two DPC), max. up to 128GB (4x 32GB) *ECC function only available on Intel select CPU SKUs.
<b>Storage Support</b>	Four fixed 3.5" drive bays, with optional four fixed 2.5" drive bays. Three M.2 PCIe 4.0 x4 sockets (support M-Key 2280, one from CPU and two from PCH)
<b>Expansion Slots</b>	One PCI slot (5V 33MHz) Two PCIe 3.0 x4 slot Two PCIe 5.0 x16 slots (support auto-switch: 16/NA or 8/8) *For optimum performance, if only one card to install, be sure to install in CPU slot7. CPU slot4 shares bandwidth with slot7. When slot7 is populated, both slots operate at up to x8 signal.
<b>Networking</b>	One 1GbE LAN port with Intel® i219LM (AMT/vPro) One 2.5GbE LAN port with Intel® i225V
<b>I/O Ports</b>	Front: one USB3.2 Gen2x1 type C, two USB3.2 Gen1 type A, one line-out, one mic-in Rear: one HDMI 2.0b, one Display Port 1.4a, one DVI-D (with DVI-I connector) display output, two USB 2.0, three USB3.2 Gen2x1 (10Gb) TypeA, one USB3.2 Gen2x2 (20Gb) Type-C, audio outputs with SPDIF optical
<b>System Cooling</b>	One rear fan One optional front fan One active CPU heatsink (optional)
<b>Power</b>	One PS2 668W Multi-output 80+ Platinum power supply
<b>Form Factor</b>	Mid-Tower (WxHxD) 7.6 x 16.7 x 21.2 in. (193 x 424 x 536 mm)

A Quick Reference Guide can be found on the [product page](#) of the Supermicro website. The following safety models associated with the SYS-531A-IL have been certified as compliant with UL or CSA: 735-6, 735D4-S6X13.

## 1.2 System Features

The SYS-531A-IL is a mid-tower barebone workstation system designed for small and medium-sized businesses. The workstation can be proposed-built and configured for professional video editing, 3D modeling, or other professional applications. The following views of the system display the main features.

### Front View



Figure 1-1. Front View

System Features: Front	
Feature	Description
Lock	Front Bezel Lock
5.25" Drive Bays	For optional DVD-ROM drives or mobile rack module
Control Panel	Front control panel with LEDs and buttons

## Control Panel

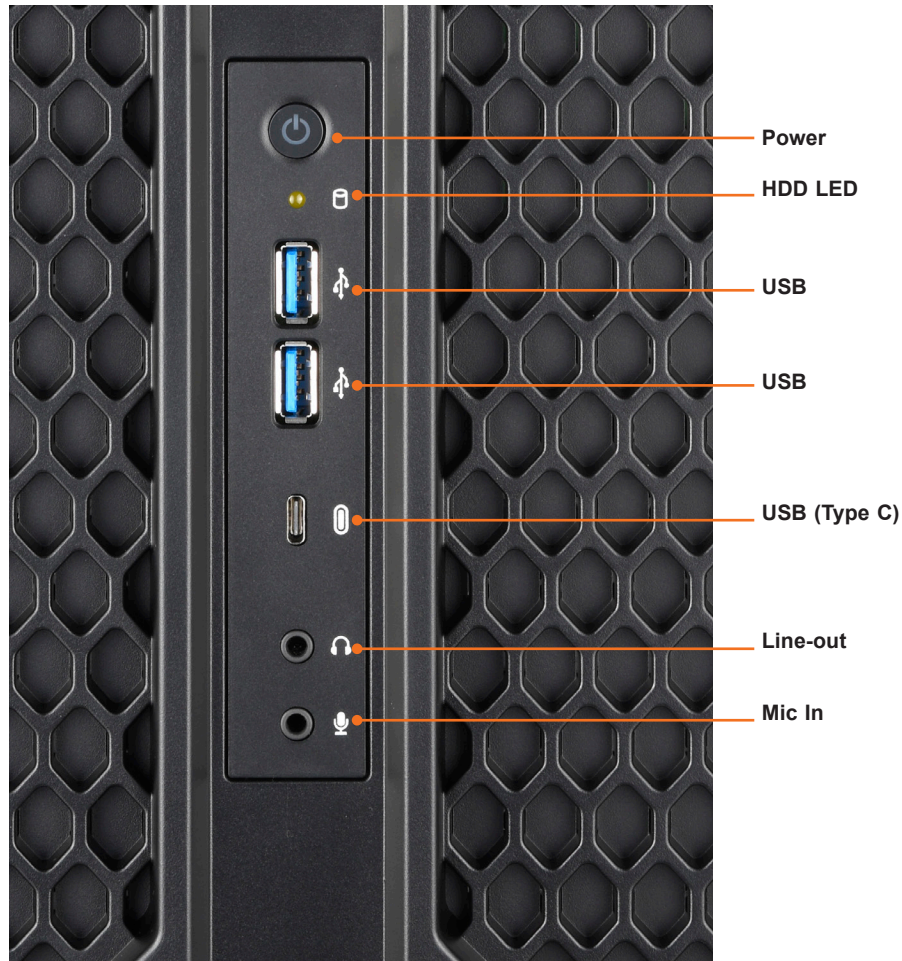


Figure 1-2. Control Panel

Control Panel Features	
Feature	Description
Power Button with LED	The main power switch applies or removes primary power from the power supply to the workstation but maintains standby power.
HDD LED	Indicates activity on the storage drives when flashing.
USB3.2 Gen1	Front accessible USB3.2 Gen1 port
USB3.2 Gen1	Front accessible USB3.2 Gen1 port
USB3.2	One front accessible USB3.2 Gen2x1 (10G) Type-C port
Line out	Line out port
Mic in	Mic in port

## Rear View

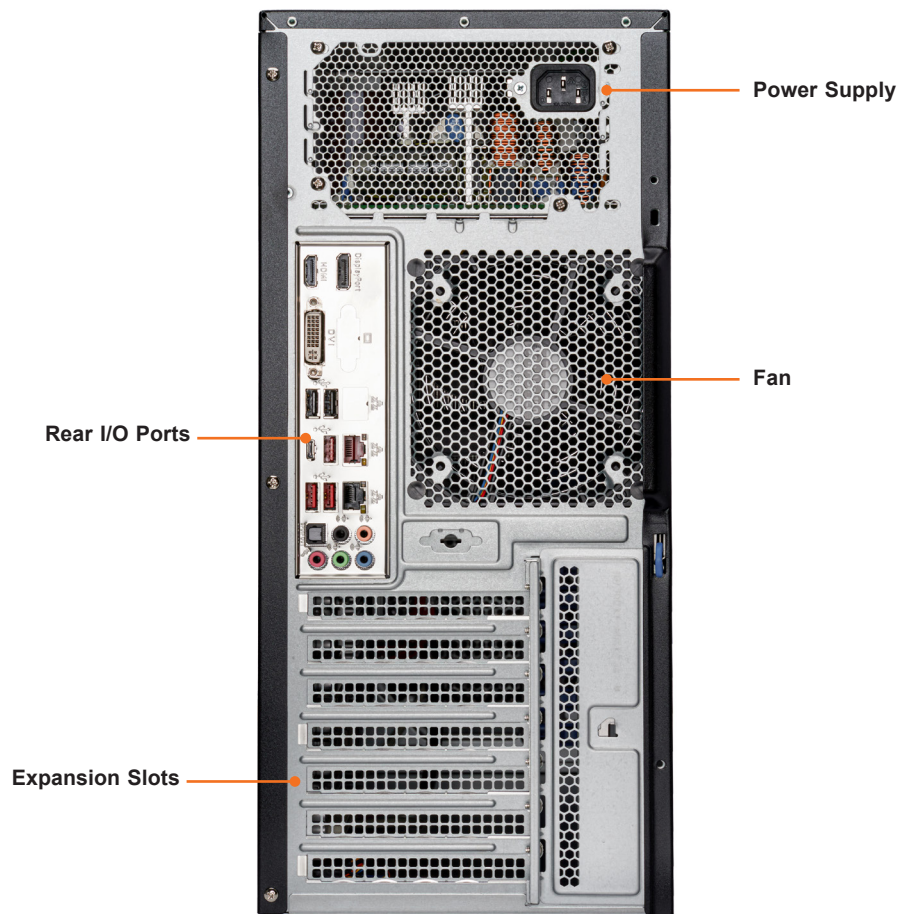


Figure 1-3. System: Rear View

System Features: Rear	
Feature	Description
Power Supply	One PS2 668W multi-output 80+ Platinum power supply
Rear Exhaust Fan	One 12cm fan
Rear I/O Backpanel	For details, see <i>4.3 Input/Output Ports</i> .
Expansion Slots	Seven full-height & full-length expansion slots



## Side View

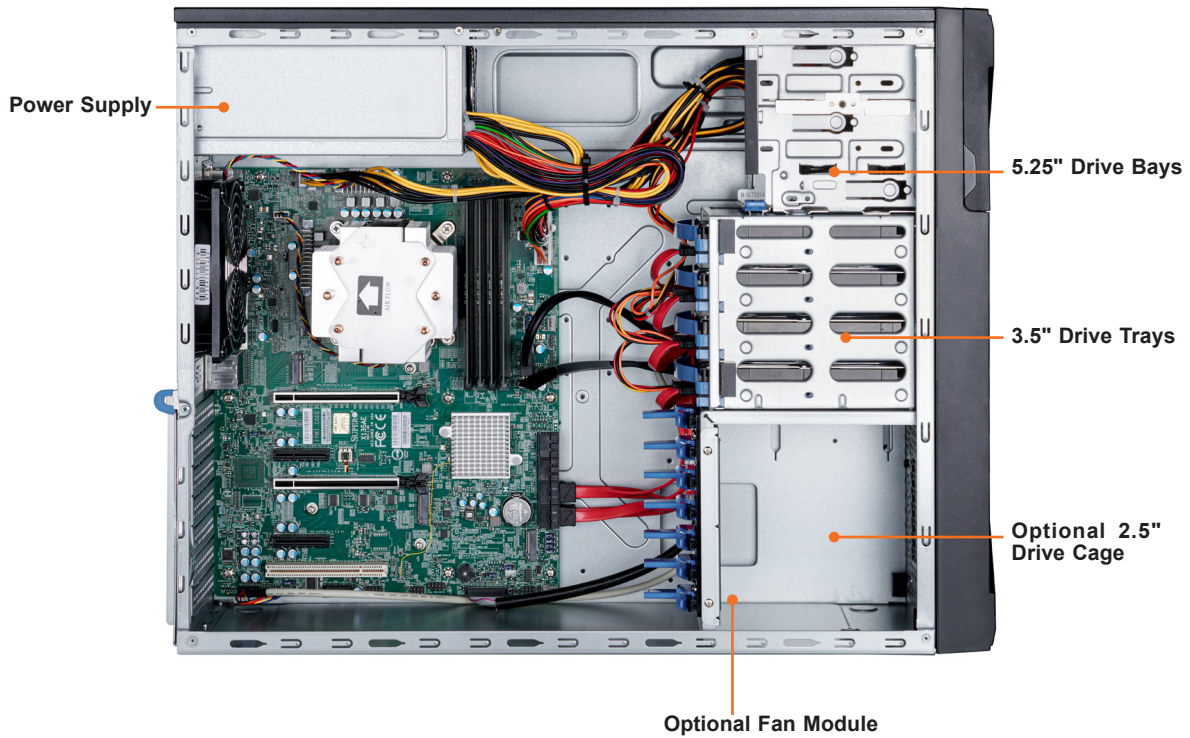


Figure 1-4. System: Side View

System Features: Side	
Feature	Description
Power Supply	One 668W 80PLUS Platinum PS2 power supply
5.25" Drive Bays	Two 5.25" drive bays
3.5" Storage Trays	Four 3.5" drive trays
Optional 2.5" Drive Cage	Up to four 2.5" storage drives with optional cage
Optional Fan Module	One 120mm fan



## 1.3 Motherboard Layout

Below is a layout of the X13SAE motherboard with jumper, connector and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information and jumper settings, refer to [Chapter 4](#) or the [Motherboard Manual](#).

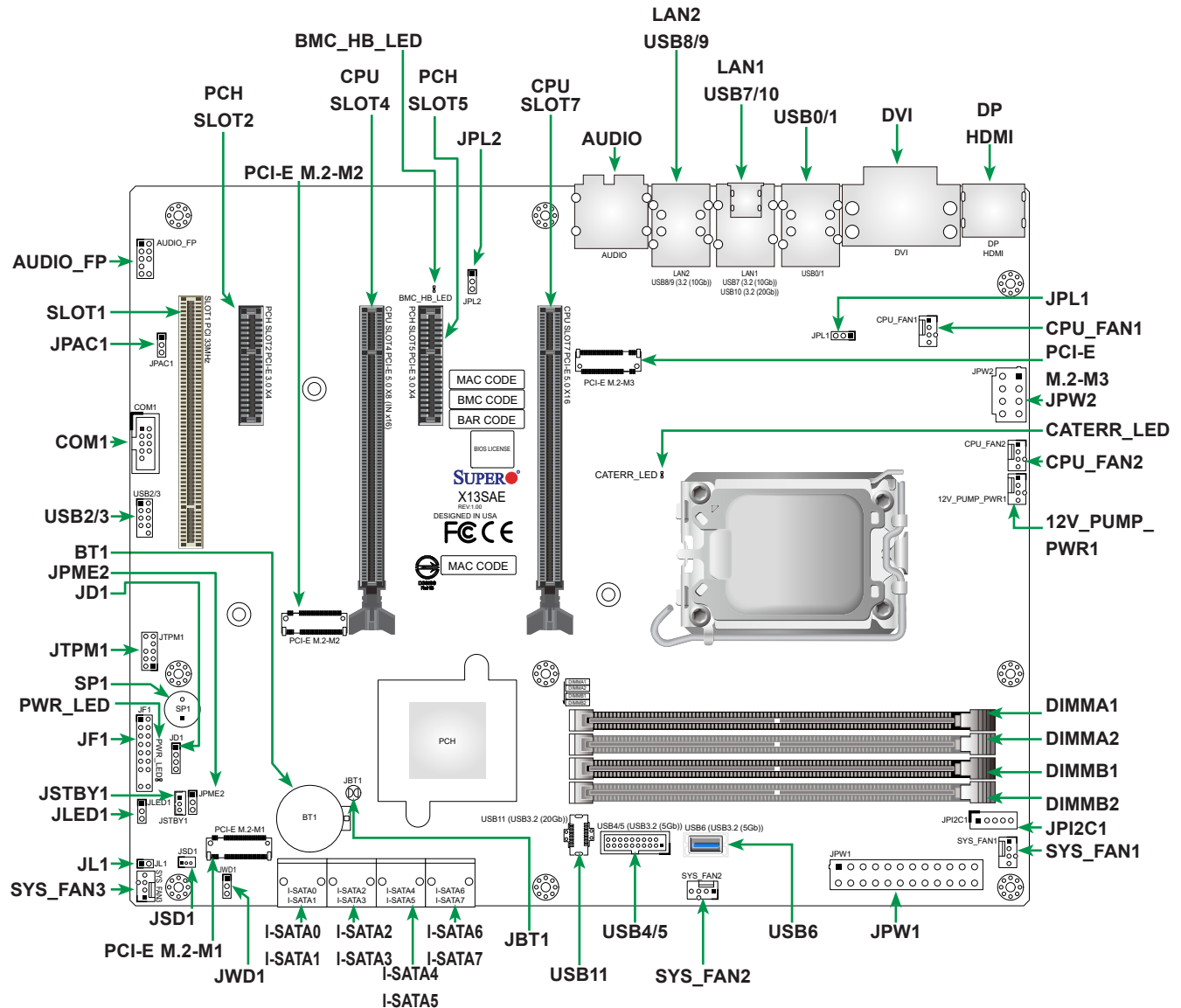


Figure 1-5. Motherboard Layout

## Quick Reference Table

Jumper	Description	Default Setting
JBT1	Clear CMOS (Onboard)	Short pads to clear CMOS
JD1	Speaker/Buzzer	Pins 1-4: External Speaker Pins 3-4: Buzzer (Default)
JPAC1	HD Audio Enable/Disable	Pins 1-2 (Enabled)
JPL1, JPL2	LAN1/LAN2 Enable/Disable	Pins 1-2 (Enabled)
JPME2	ME Manufacturing Mode	Pins 1-2 (Normal)
JWD1	Watch Dog Function Enable	Pins 1-2 (Reset)

LED	Description	Color/State
BMC_HB_LED	Standby Power LED	Solid Green (Standby Power On)
CATERR_LED	Catastrophic Error LED	Solid Orange: System CATERR
PWR_LED	Onboard Power LED	Solid Green: Power On

**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	Back Panel High Definition Audio Ports
AUDIO_FP	Front Panel Audio Header
BT1	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	Back Panel DisplayPort (1.4a)
HDMI	Back Panel High Definition Multimedia Interface (2.0b)
DVI	Digital Video Interface (DVI-D)
I-SATA0 - I-SATA7	Intel Serial ATA (SATA 3.0) Ports (6Gb/second)
JF1	Front Control Panel Header
JL1	Chassis Intrusion Header
JLED1	3-pin Power LED Header
JPI2C1	Power Supply SMBus I <sup>2</sup> C Header
JPW1	24-pin ATX Main Power Connector (Required)
JPW2	+12V 8-pin CPU Power Connector (Required)
JSD1	SATA Disk-On-Module (DOM) Power Connector
JSTBY1	Standby Power Header (5V)
JTPM1	Trusted Platform Module (TPM)/Port 80 Header
LAN1	RJ45 1GbE LAN Port
LAN2	RJ45 2.5GbE LAN Port
MH10, MH14, MH15	M.2 Device Mounting Holes
PCI-E M.2-M1, PCI-E M.2-M2	PCIe 4.0 x4 M.2 M-key Sockets (from PCH)
PCI-E M.2-M3	PCIe 4.0 x4 M.2 M-Key Socket (from CPU)
SLOT1 PCI 33MHZ	PCI Slot (32 Bit/33MHz with 5V single voltage)
(PCH) SLOT2, (PCH) SLOT5	PCIe 3.0 x4 Slots
(CPU) SLOT4	PCIe 5.0 x8 (in x16 slots)
(CPU) SLOT7	PCIe 5.0 x16 Slot
SP1	Internal Speaker/Buzzer
USB0, USB1	Back Panel USB 2.0 Ports (Type-A)
USB2/3	Front Access USB 2.0 Header
USB4/5	Front Access USB 3.2 Gen. 1 Header (5Gb)
USB6	Internal USB 3.2 Gen. 1 Connector (5Gb, vertical Type-A)
USB7, USB8, USB9	Back Panel USB 3.2 Gen. 2 Ports (10Gb, Type-A)
USB10	Back Panel USB 3.2 Gen. 2x2 Ports (20Gb, Type-C)
USB11	Front Access USB 3.2 Gen. 2x2 Header (20Gb, Type-C)

## System Block Diagram

The block diagram below shows the connections and relationships between the subsystems and major components of the overall system.

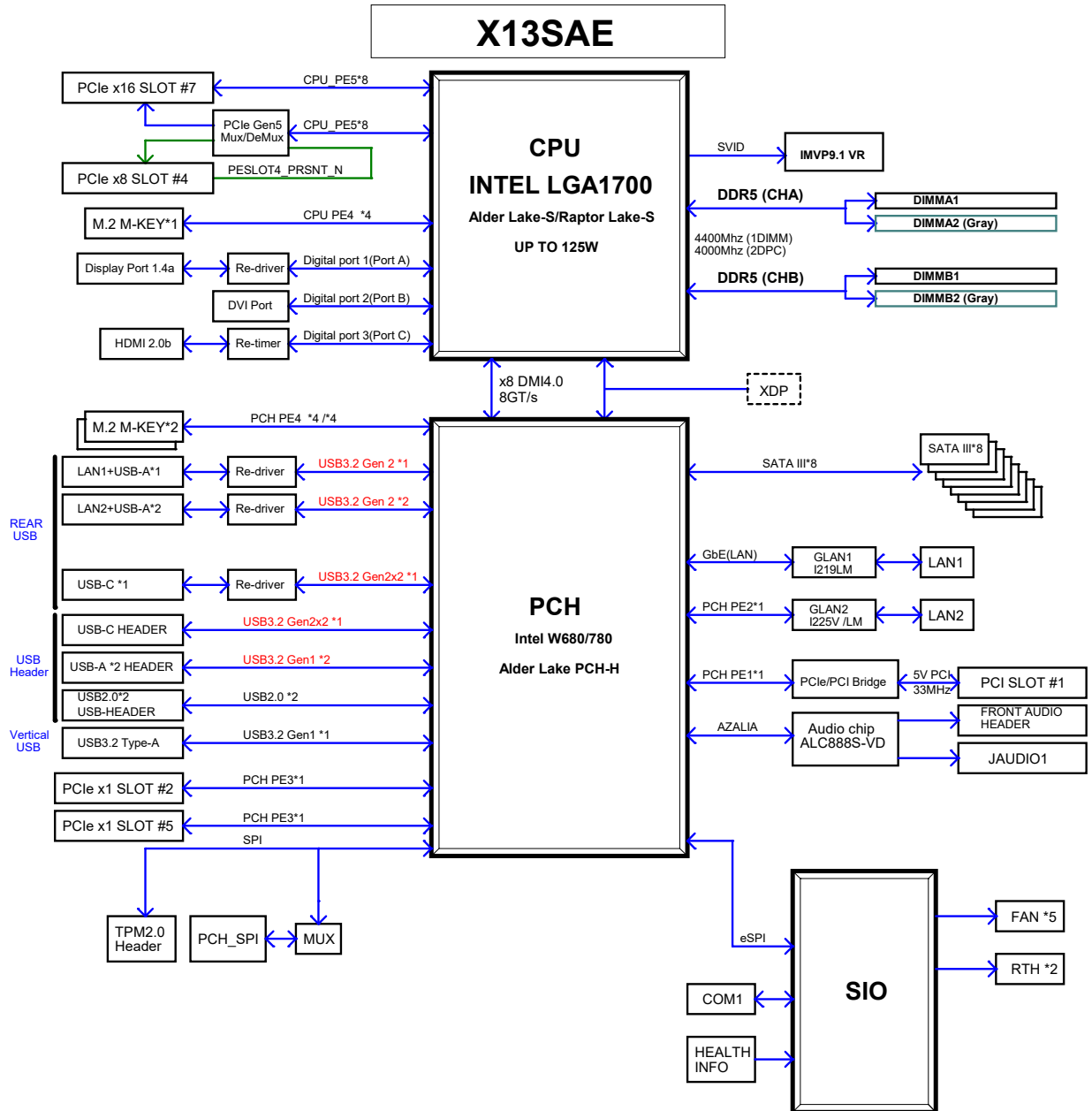


Figure 1-6. System Block Diagram

# Chapter 2

## Workstation Installation

### 2.1 Overview

This chapter provides advice and instructions for rack or workstation installation. 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 SuperWorkstation SYS-531A-IL was shipped, and note if it was damaged in any way. If any equipment appears damaged, file a damage claim with the carrier who delivered it.

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

### 2.3 Preparing for Setup

Please read this section in its entirety before you begin the installation.

#### Choosing a Setup Location

- Leave enough clearance in front and back of the system to allow sufficient airflow and access when servicing.
- This product is not suitable for use with visual display workplace devices according to §2 of the German Ordinance for Work with Visual Display Units.

#### Workstation Precautions

- 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 unit to cool before touching it.
- To maintain proper cooling, always keep all chassis panels closed when not being serviced.

## 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.

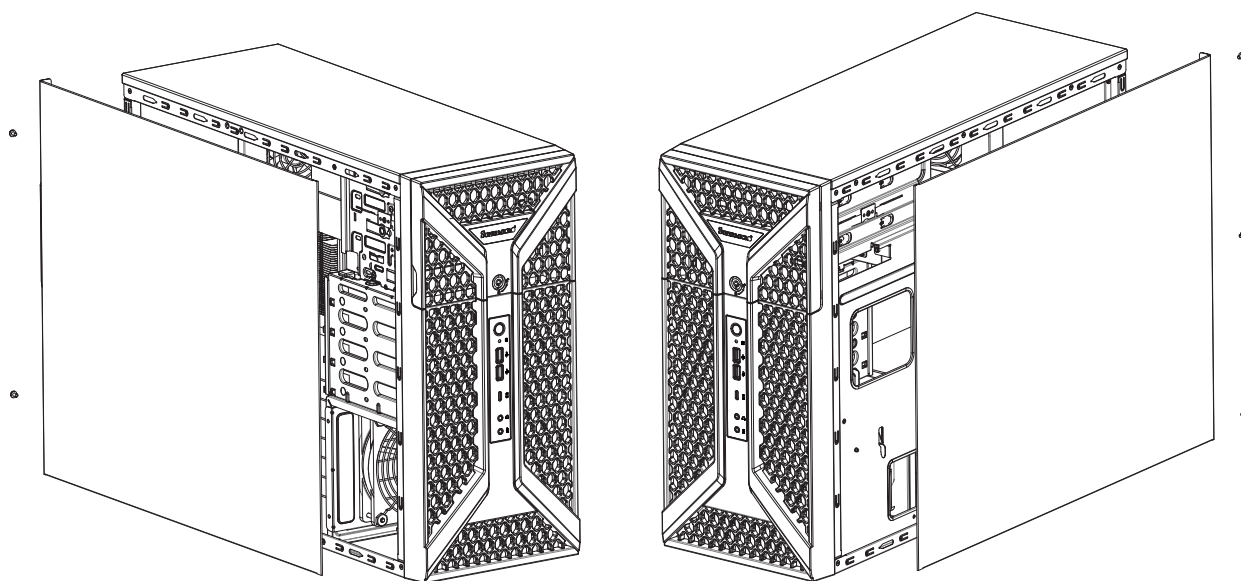
1. Use the operating system to power down the system.
2. After the system has completely shut down, disconnect the AC power cord from the power strip or outlet.
3. Disconnect the power cord from the power supply unit.

## 3.2 Accessing the System

The CSE-735D4-668B has removable side and front covers for interior access.

### *Removing the Side Cover*

1. Begin by removing power from the system, follow instructions in [section 3.1](#).
2. Remove the two screws securing the left side cover to the chassis.
3. Slide the left cover toward the rear of the chassis.
4. Lift the left cover from the chassis.
5. Remove the three screws securing the right side cover to the chassis.
6. Slide the right cover toward the rear of the chassis
7. Lift the right cover from the chassis.



**Figure 3-1. Removing the Side Cover**

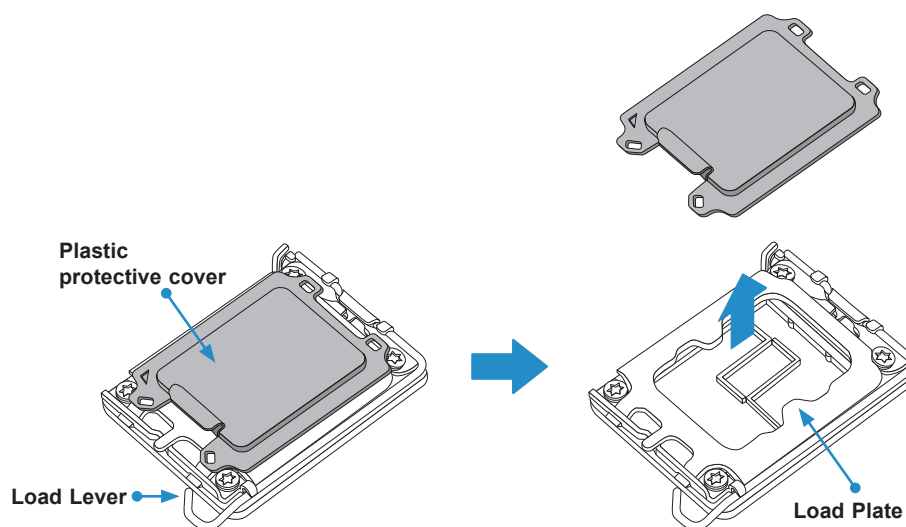


### 3.3 Processor and Heatsink Installation

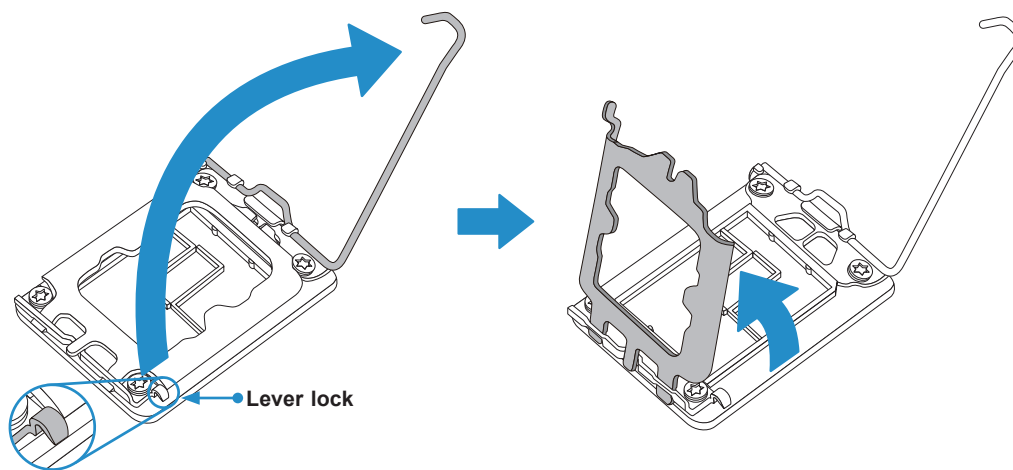
- Use ESD protection.
- Unplug the AC power cord from all power supply after shutting down the system.
- Check that the plastic protective cover is on the CPU socket and none of the socket pins are bent. If they are, contact your retailer.
- When handling the processor, avoid touching or placing direct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

#### Installing a LGA1700 CPU

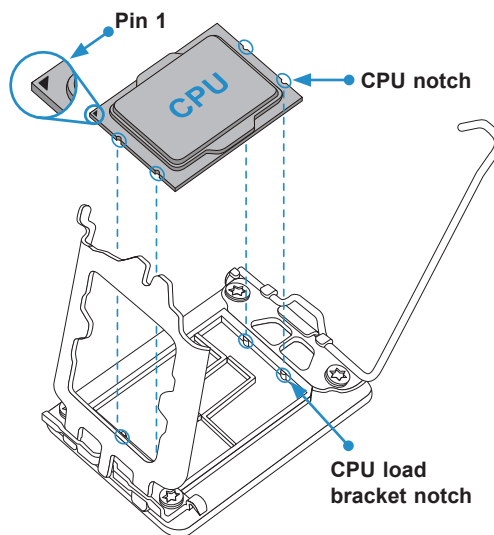
1. Remove the plastic protective cover from the load plate.



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

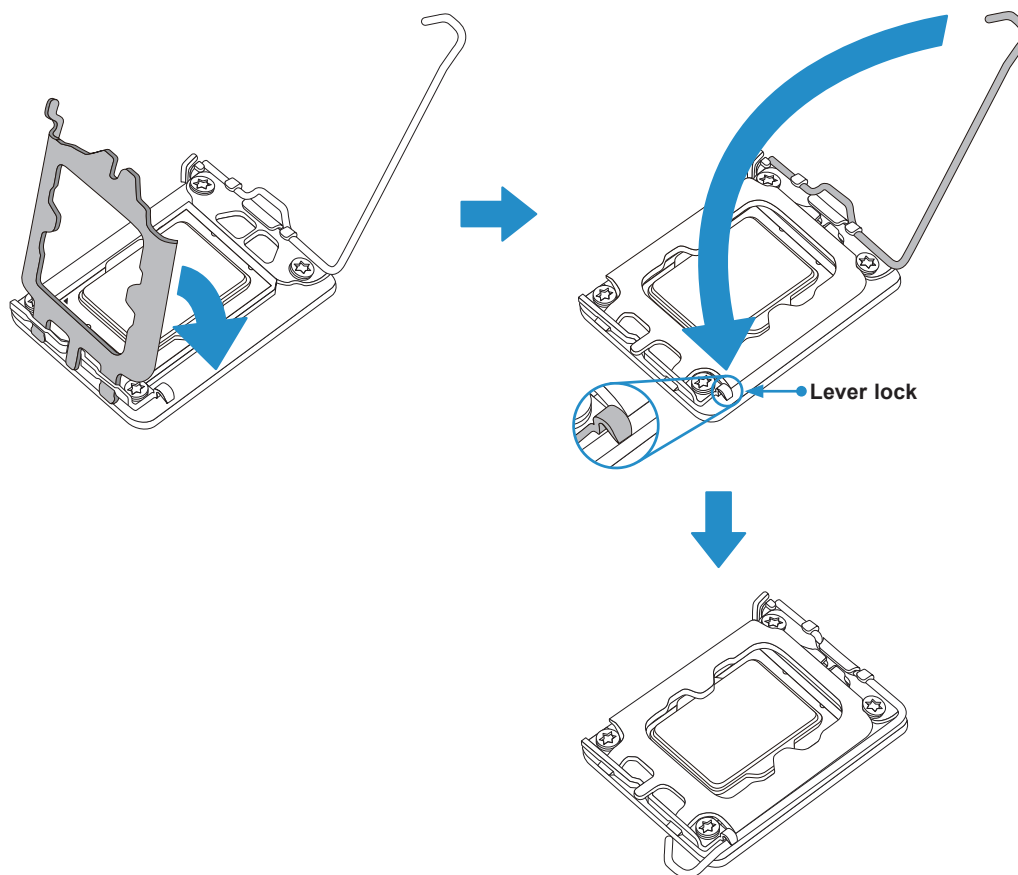


3. Use your thumb and your index finger to hold the CPU. Align the small triangle marker and notches on the CPU to the corresponding triangle marker and notches on the CPU load bracket. Once aligned, carefully lower the CPU straight down into the socket. (Do not drop the CPU on the socket, or move it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



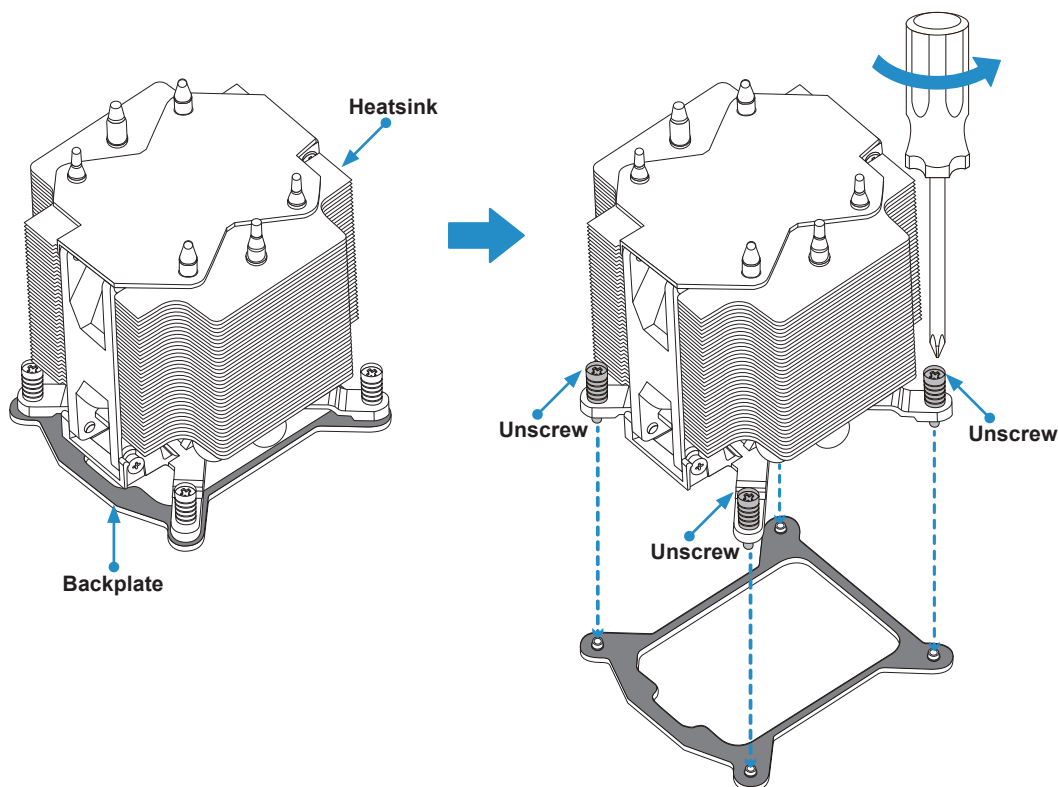
- ! **Attention!** You can only install the CPU inside the socket in one direction. Make sure that it is properly inserted into the CPU socket before closing the load plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the load plate again and double-check that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

## Installing a CPU Heatsink

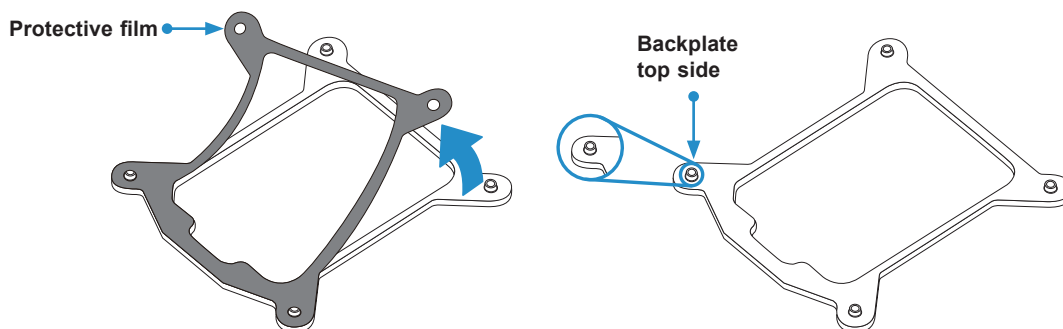
 **Note 1:** The installation described in this section is for reference only. The actual installation steps may vary depending on the CPU heatsink model. Please refer to the heatsink instruction for more details.

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

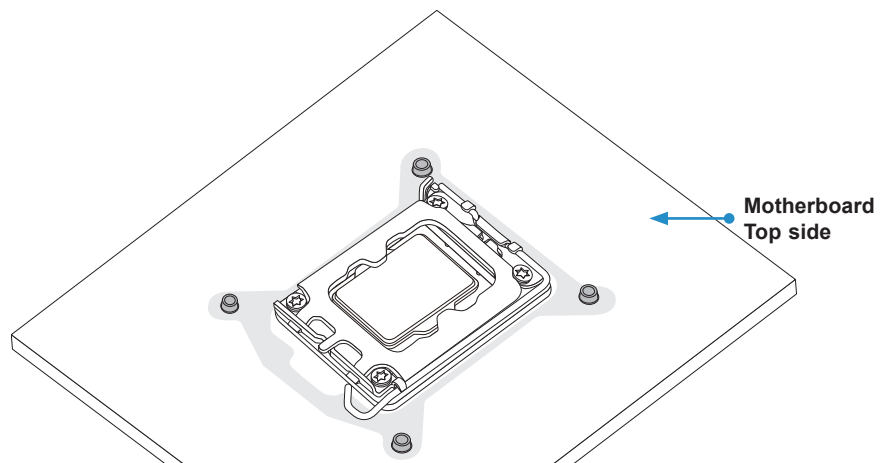
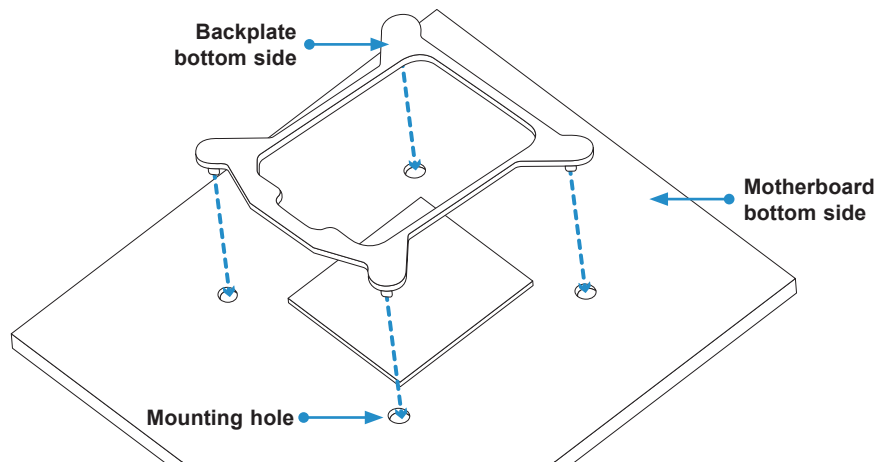
1. Loosen four screws to release the backplate. Note that one screw is not shown in the illustration below.



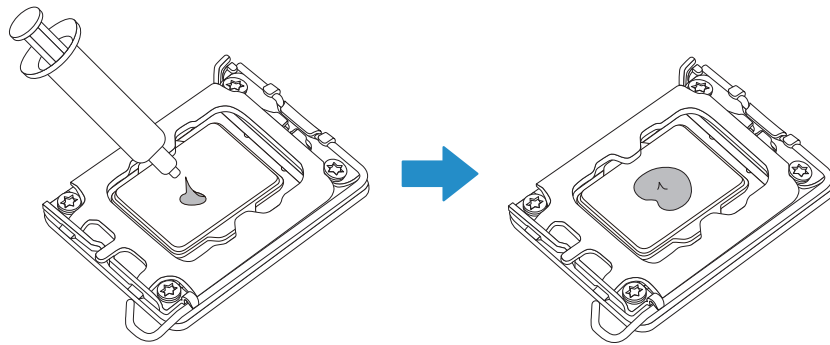
2. If there is a thin layer of protective film on the backplate, please remove it.



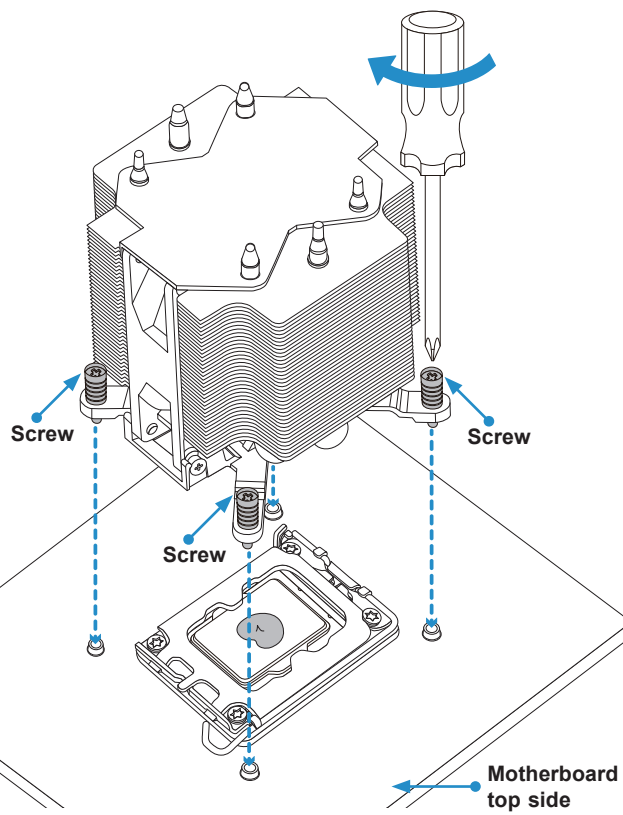
3. Attach the backplate into the mounting holes around the CPU socket on the bottom side of the motherboard.



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



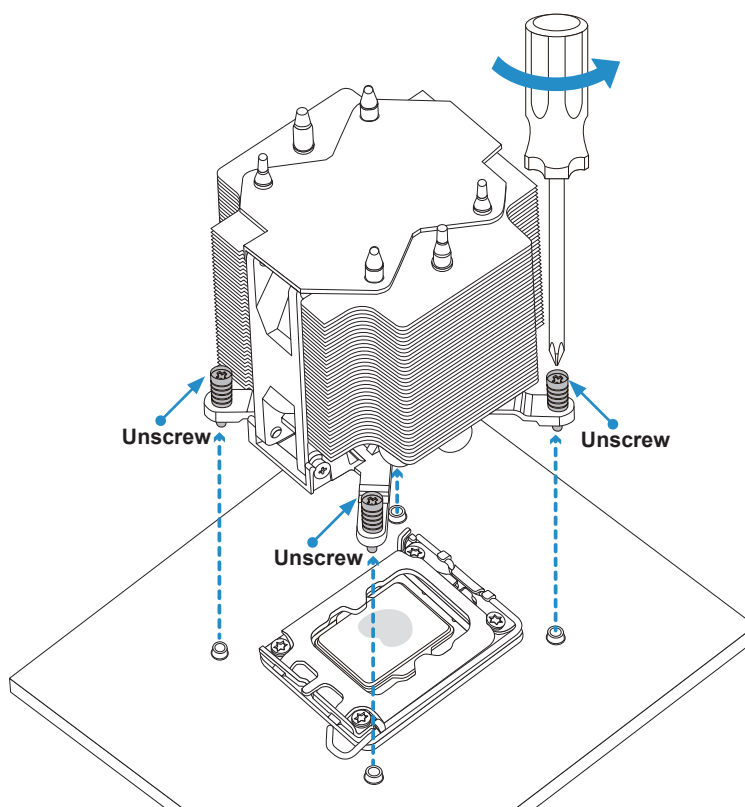
5. Place the heatsink on top of the CPU so that the four mounting holes on the heatsink are aligned with those on the retention mechanism.
6. Tighten the screws.



## 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.

## 3.4 Memory

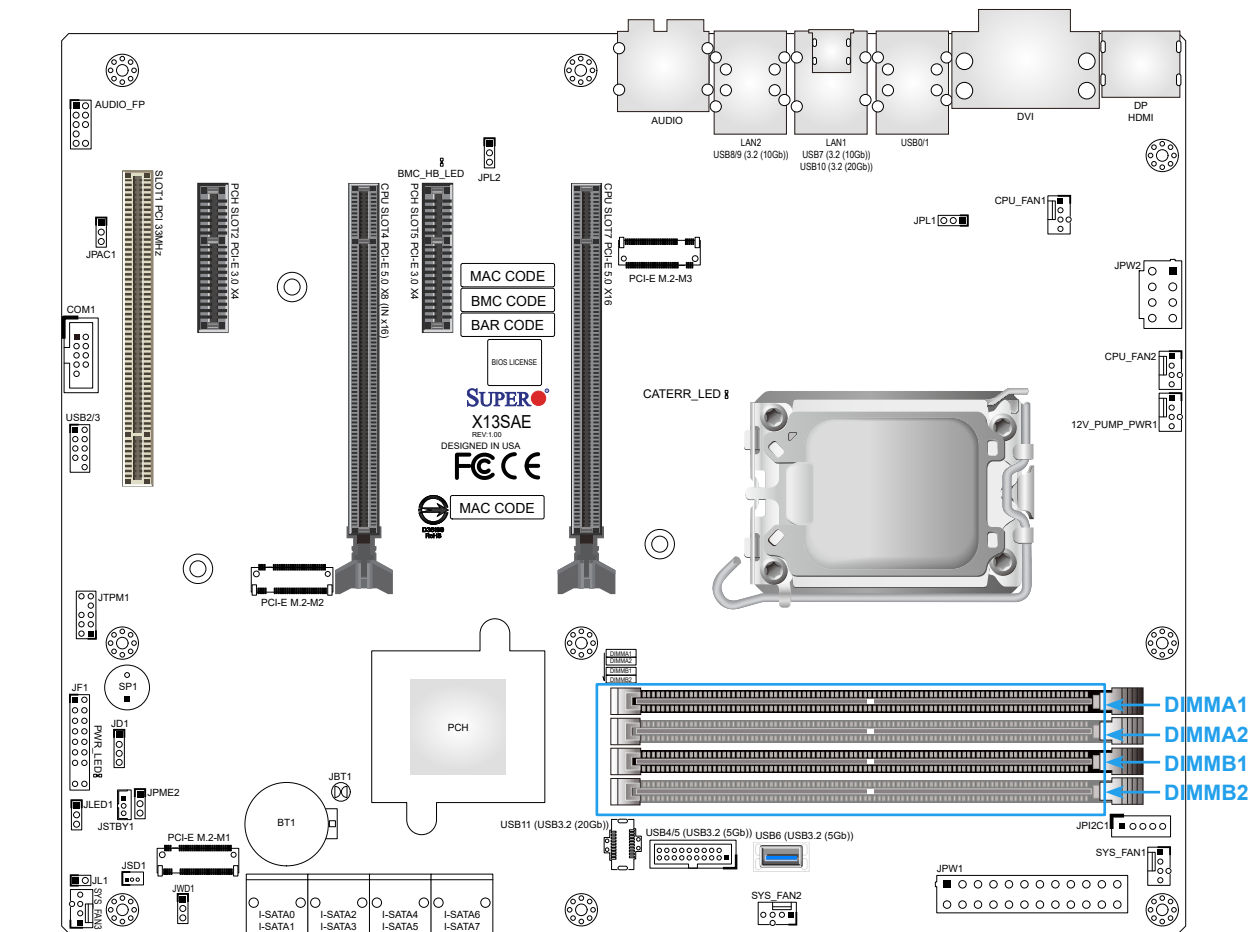
The X13SAE supports up to 128GB of DDR5 Unbuffered DIMM (UDIMM) ECC/non-ECC with speeds of up to 4400MHz.

**Note:** Check the Supermicro website for recommended memory modules.

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

### General Guidelines for Optimizing Memory Performance

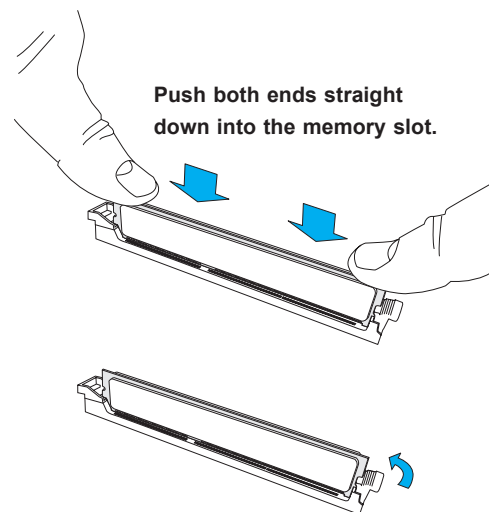
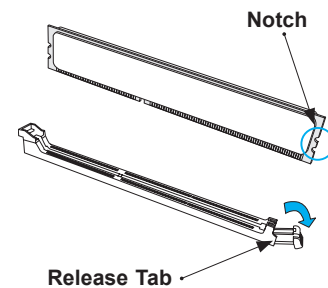
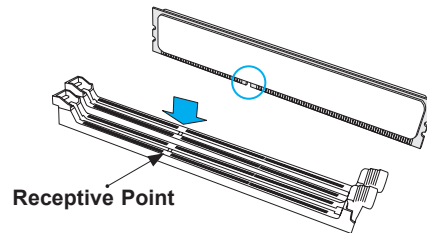
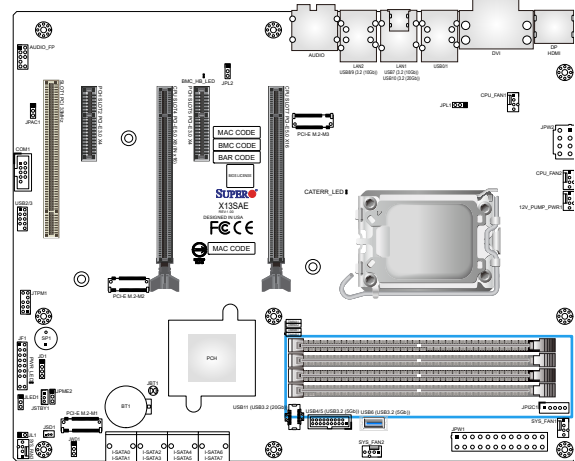
- When installing memory modules, the DIMM slots should be populated in the following order: DIMMA2, DIMMB2, then DIMMA1, DIMMB1.
- For optimal performance, use DDR5 memory of the same type, size, and speed.
- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard supports 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. Press both ends of the module straight down into the slot until the module snaps into place.
5. Push the release tab to the lock position to secure the module into the slot.

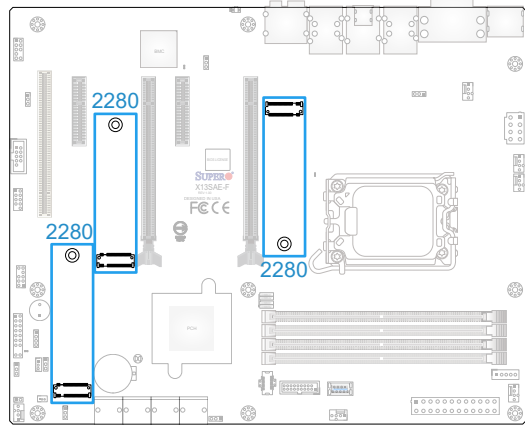


## DIMM Removal

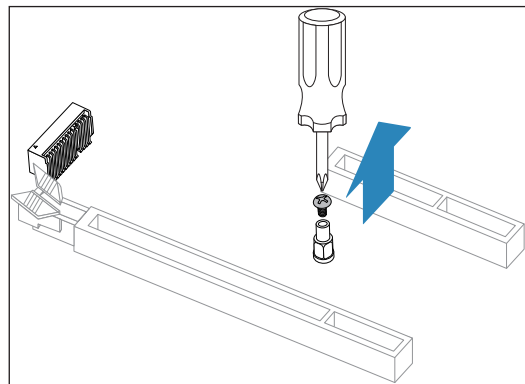
Reverse the steps above to remove the DIMM modules from the motherboard.

## M.2 Installation

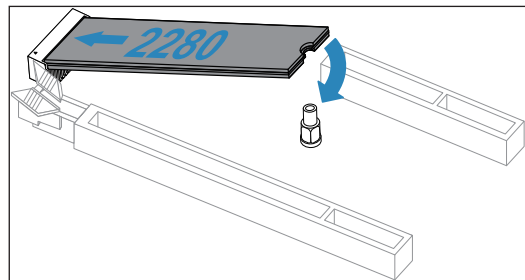
This motherboard has three PCIe 4.0 M.2 M-key sockets that support the M.2 2280 module. One standoff is pre-installed into the position of 2280 mounting hole. Refer to the illustration on the right for the locations of M.2 sockets and mounting holes. Follow the steps below to install the M.2 device.



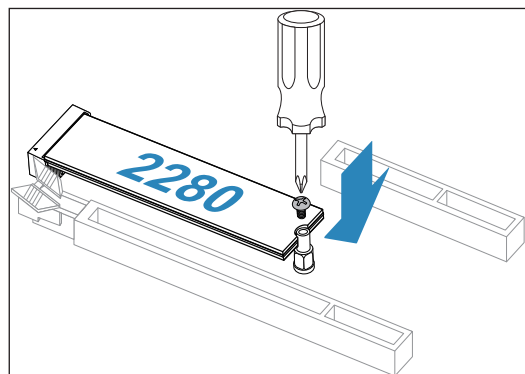
1. Locate the pre-installed standoff. Remove the standoff screw and set it aside.



2. Carefully insert the M.2 device into the M.2 socket and lower the semi-circle notched end onto the standoff.



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

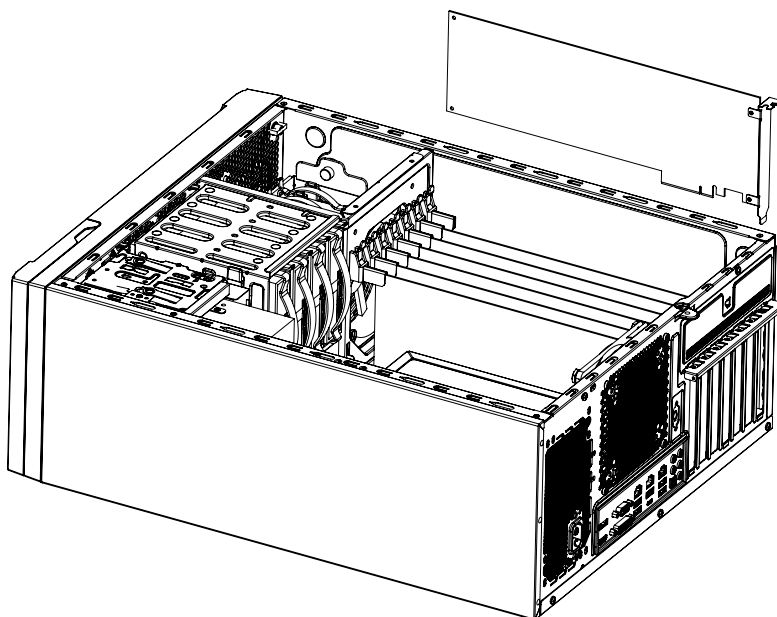


## PCI Expansion Card Installation

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

### *Installing Expansion Cards*

1. Begin by [removing power](#) from the system as described in Section 3.1 and [remove the side cover](#) as described in section 3.2.
2. Locate the release tab on the top of the PCI slot bracket.
3. Gently apply pressure in the middle of the release tab to unlock the PCI slot bracket.
4. Pull the release tab upward.
5. Remove the screw holding the bracket in place and pull the bracket from the chassis.
6. Install your PCI card or other add-on card into the PCI slot bracket and motherboard. To do this, slide the PCI card (with "L" bracket) into the PCI slot and secure the card to the motherboard.
7. Push the PCI bracket release tab down until it locks into place with an audible "click".
8. Secure the PCI card with the screw previously removed from the chassis.
9. Repeat this process with each PCI card you want to install into the chassis.



**Figure 3-2. Installing Add-on Cards**

## 3.5 Motherboard Battery

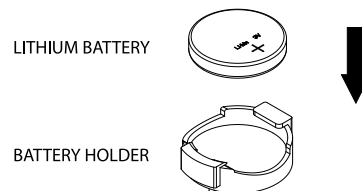
The motherboard uses non-volatile memory to retain system information when system power is removed. This memory is powered by a lithium battery residing on the motherboard.

### *Replacing the Battery*

Begin by [removing power](#) from the system.

1. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.
2. To insert a new battery, slide one edge under the lip of the holder with the positive (+) side facing up. Then push the other side down until the clamp snaps over it.

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



**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).

## 3.6 Storage Drives

The SYS-531A-IL supports four internal 3.5" SATA drives installed in a rotating cage.

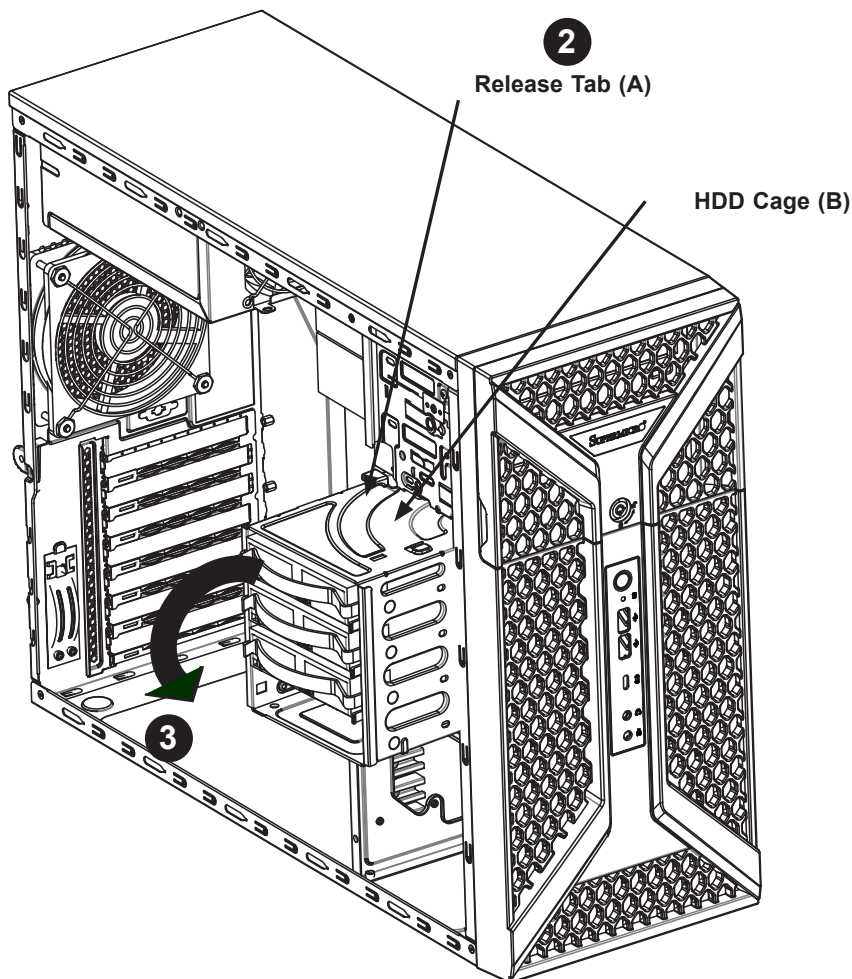


Figure 3-4. Rotating the Internal Hard Drive Cage

### *Rotating the Hard Drive Cage*

1. Begin by [removing power](#) from the system as described in Section 3.1 and [remove the side cover](#) as described in section 3.2.
2. Lift the release tab located at the top of the hard drive cage.
3. Rotate the hard drive cage 90 degrees so the drive carriers are facing outward.

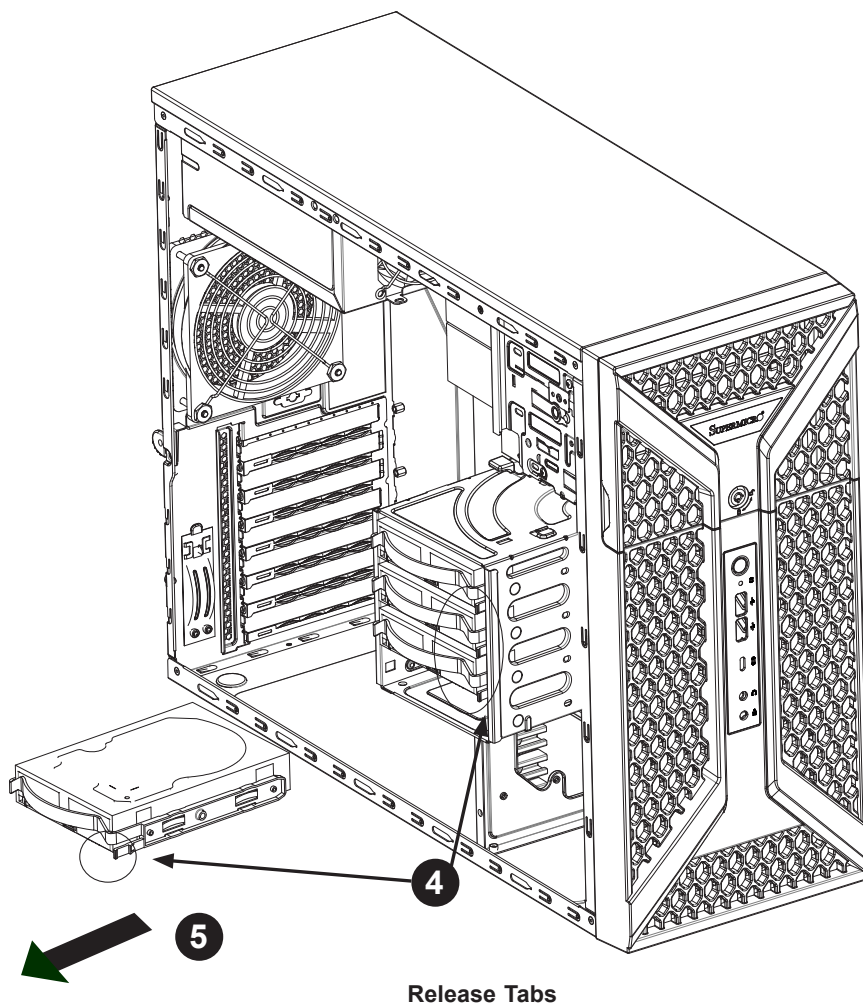
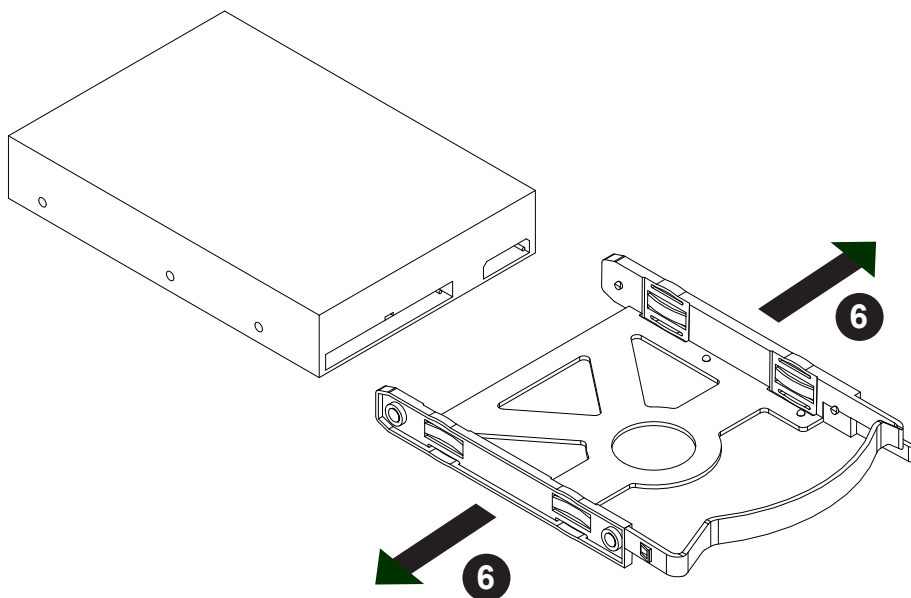


Figure 3-5. Remove a Drive Carrier from the Cage

### ***Removing and Installing 3.5" Hard Drives***

1. Begin by [removing power](#) from the system as described in Section 3.1 and [remove the side cover](#) as described in section 3.2.
2. Rotate the hard drive cage outward.
3. Disconnect all of the cables from the hard drive.
4. Press the release tab on the side of the hard drive carrier.
5. Slide the hard drive carrier out of the cage.



**Figure 3-6. Remove a Drive Carrier from the Cage**

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

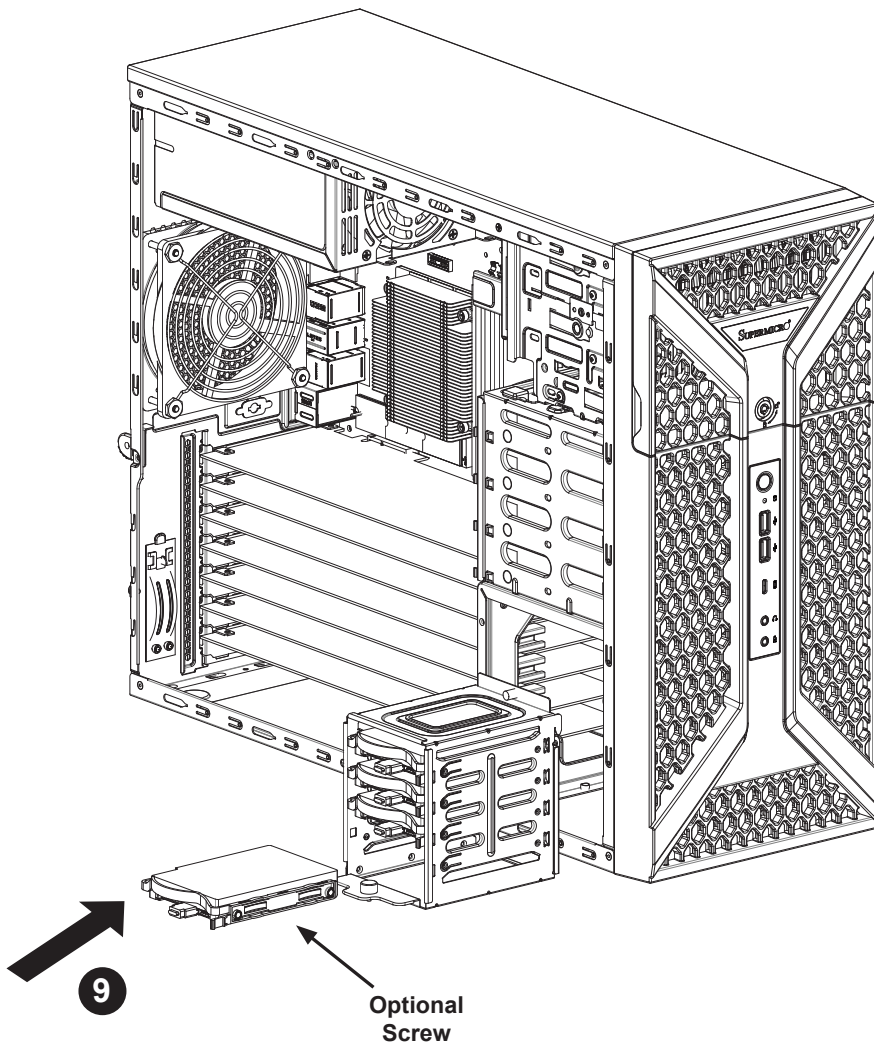


Figure 3-7. Installing a Hard Drive



## 3.7 System Cooling

The cooling system for the SYS-531A-IL includes a 12-cm pulse-width modulated fan at the chassis rear and an optional fan at the chassis front. An air shroud directs air flow to the CPU for optimized cooling.

### Fans

One 12-cm exhaust fan is mounted in the chassis rear below the power supply. One optional 12-cm fan can be mounted at the chassis front.

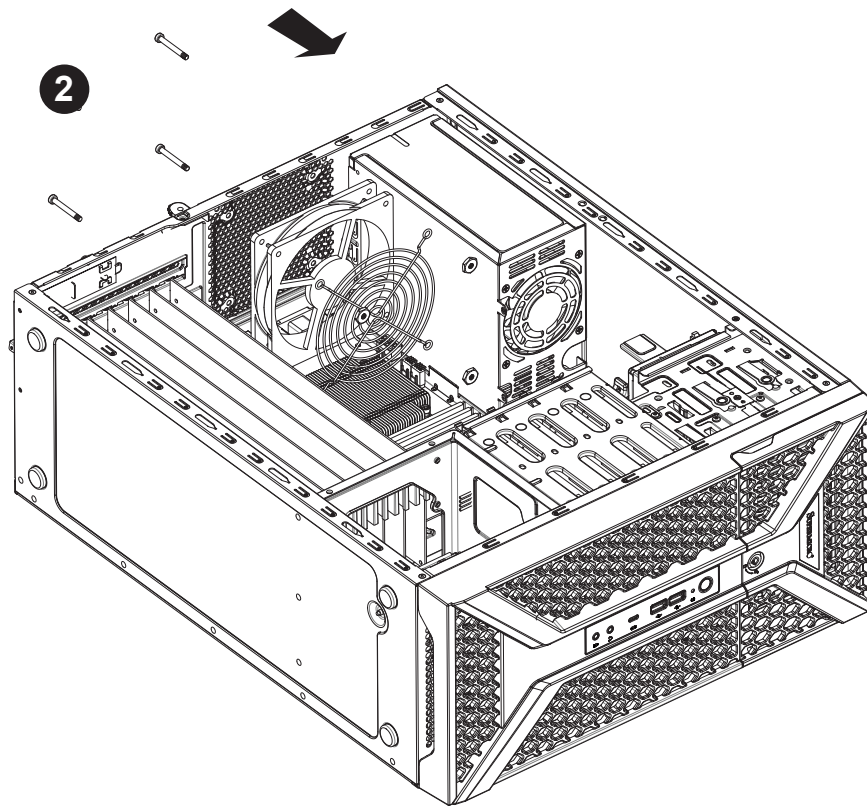
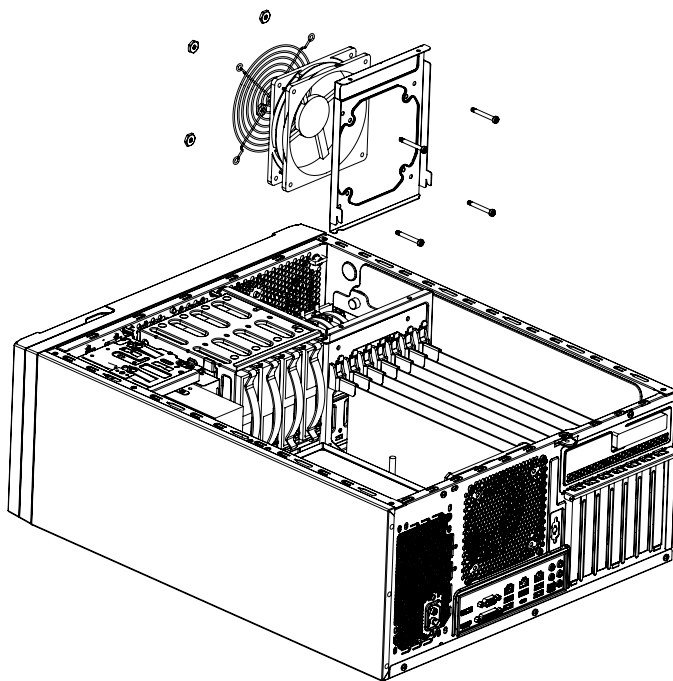


Figure 3-8. Installing the Rear Exhaust Fan

#### *Replacing or Installing the Rear Fan*

1. Begin by [removing power](#) from the system as described in Section 3.1 and [remove the side cover](#) as described in section 3.2.
2. Insert the four rubber pins through mounting holes in the rear of the chassis and through the mounting holes in the rear fan.
3. Pull the rubber pins through the mounting holes of the fan to secure the fan to the chassis.
4. Connect the fan cable to the motherboard.



**Figure 3-9. Installing the Front Fan**

***Replacing or Installing the Front Fan***

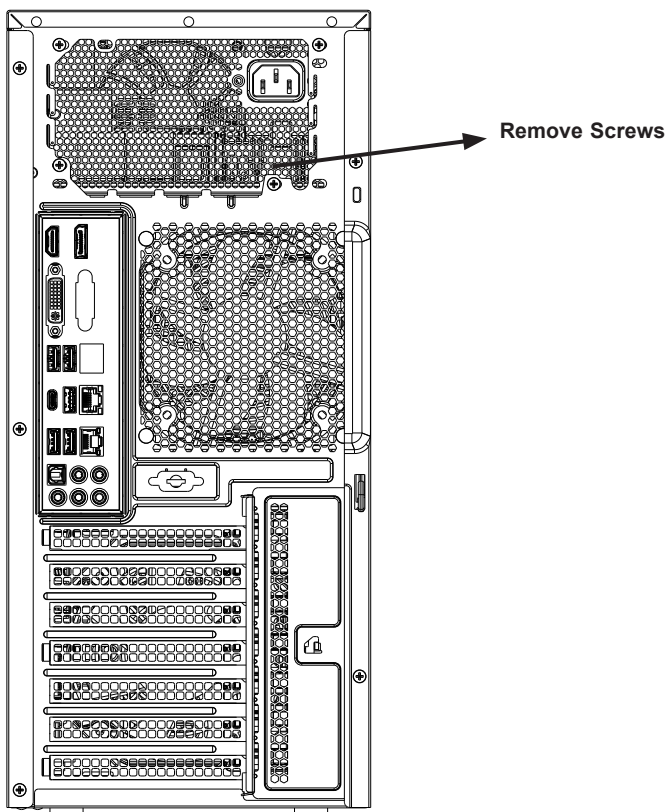
1. [Remove power](#) from the system as described in Section 3.1 and [remove the side cover](#) as described in section 3.2.
2. Insert the four rubber pins through the front fan bracket and into the mounting holes in the front fan.
3. Pull the rubber pins through the mounting holes of the system fan to secure the fan to the chassis.
4. Lower the fan into the chassis, aligning the holes at the top of the front fan bracket with the holes in the chassis.
5. Secure the fan to the chassis using the two screws provided.

## 3.8 Power Supply

The SuperWorkstation SYS-531A-IL includes one PS2/ATX 668W 80Plus Platinum power supply. The power supply is auto-switching capable. This feature enables it to automatically sense the input voltage and operate at a 100-240Vac, 60-50Hz, 8-4A.

### ***Replacing the Power Supply***

1. [Remove power](#) from the system as described in section 3.1, and remove the left chassis cover.
2. Disconnect the cables from the motherboard to the power supply.
3. Remove the screws securing the power supply to the chassis, which are located on the rear of the chassis. Save the screws for later use.
4. Lift the power supply out of the chassis.
5. Replace the failed power supply with an identical power supply model.
6. Secure the new power supply using the screws previously saved.
7. Plug the AC power cord back into the module and power-up the system.



**Figure 3-10. Removing the Power Supply Screws**

**Note:** The figure is for illustrative purposes only. Some components may differ on the SYS-531A-IL.

## 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

#### 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 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

### 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	2.5A/+12V (Red)
3	Tachometer
4	PWM_Control

### Pump Power Connector

This motherboard has one +12V connector for optional CPU liquid cooling systems. When using a liquid cooling system, attach the pump power cable to this connector (12V\_PUMP\_PWR1).

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

### 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	N/A

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

### M.2 Sockets

M.2 sockets are designed for devices such as memory cards, wireless adapters, etc. These devices must conform to the PCIe M.2 specifications (formerly known as NGFF). There are three M.2 sockets (M-Key), supporting the 2280 form factor, located on the motherboard. Refer to the table below for more information.

Sockets	Bus Interface	Form Factor	RAID Levels
PCI-E M.2-M1 PCI-E M.2-M2	PCIe 4.0 x4	2280	0, 1, and 5
PCI-E M.2-M3	PCIe 4.0 x4	2280	0 and 1

**Note:** RAID 0 and 1 via PCIe interface can be supported only with Intel NVMe PCIe SSD devices installed in both CPU-attached (PCI-E M.2-M3) and PCH-attached (PCI-E M.2-M1, PCI-E M.2-M2) sockets.



## SATA Ports

With the Intel W680 PCH chipset, this motherboard has built-in eight Serial ATA (SATA) 3.0 connectors (I-SATA0 - I-SATA07). You can connect up to eight SATA storage devices and create SATA RAID (0, 1, 5, and 10) with up to six SATA storage devices.

**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/>.

SATA 3.0 Ports Pin Definitions	
Pin#	Definition
1	Ground
2	SATA_TXP
3	SATA_TXN
4	Ground
5	SATA_RXN
6	SATA_RXP
7	Ground

## Front Panel Audio Header

A 10-pin Audio header (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

### Serial (COM) Header

There is one serial (COM) header on the motherboard. COM1 is located next to expansion SLOT1 (PCI 33MHz). Refer to the table below for pin definitions.

Serial (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

### Power LED Header

An onboard Power LED header is located at JLED1. This Power LED header is connected to 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
2-3	Connection to PWR LED in JF1

### TPM/Port 80 Header

A Trusted Platform Module (TPM)/Port 80 header is located at JTPM1 to provide TPM 2.0 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: <http://www.supermicro.com/manuals/other/TPM.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

## Control Panel

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

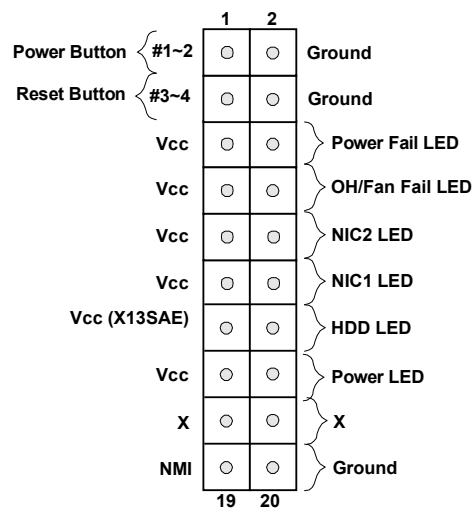


Figure 4-1. JF1 Control Panel Pins

### 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. This button can also be configured to function as a suspend button. 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	Signal
2	Ground

### 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	Reset
4	Ground

### Power Fail LED

The Power Fail LED connection is located on pins 5 and 6 of JF1. Refer to the table below for pin definitions.

Power Fail LED Pin Definitions (JF1)	
Pin#	Definition
5	3.3V
6	PWR Supply Fail

### 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	+3.3V
8	OH/Fan Fail LED

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

### NIC1/NIC2 (LAN1/LAN2) LED

The Network Interface Controller (NIC) LED connection for LAN port 2 and LAN port 1 are located on pins 9/10 and 11/12 of JF1 respectively. 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	+3.3V Stby
10/12	NIC2/NIC1 Active

## HDD LED

The HDD LED/UID Switch connection is located on pins 13 and 14 of JF1. Attach a cable to pin 14 to show hard drive activity status.

HDD LED Pin Definitions (JF1)	
Pin#	Definition
14	HD Active

## 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	+3.3V Stby
16	Power LED

## 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.

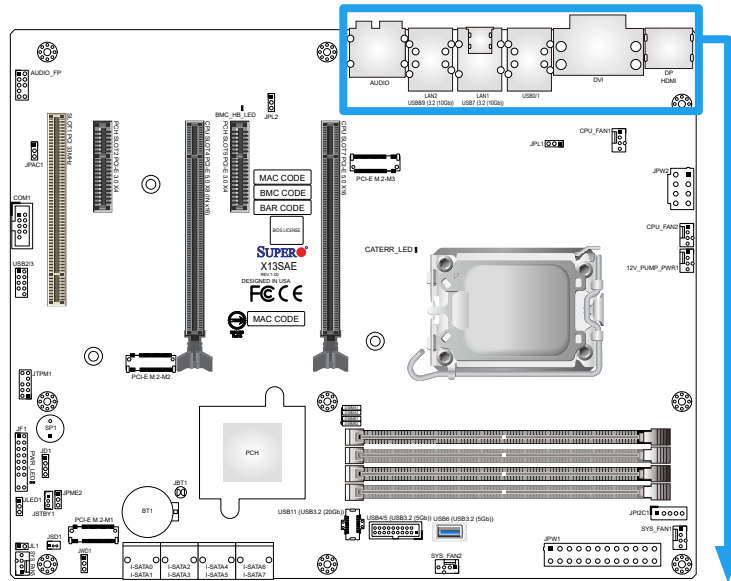
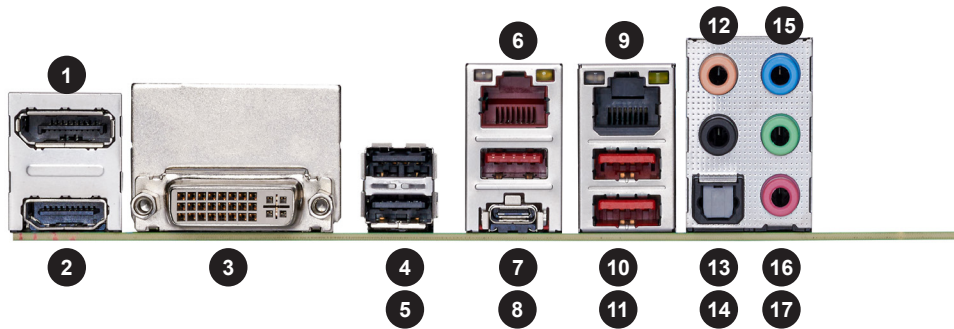


Figure 4-2. I/O Port Locations and Definitions



Rear I/O Ports			
#	Description	#	Description
1	DisplayPort 1.4a	11	USB9: USB 3.2 Gen. 2 (Type-A)
2	HDMI 2.0b Port	12	Center/LFE Out
3	Digital Video Interface (DVI-D)	13	Surround Out
4	USB0: USB 2.0 (Type-A)	14	S/PDIF Out
5	USB1: USB 2.0 (Type-A)	15	Line In
6	LAN1: 1GbE LAN Port	16	Line Out
7	USB7: USB 3.2 Gen. 2 (Type-A)	17	Mic In
8	USB10: USB 3.2 Gen. 2x2 (Type-C)		
9	LAN2: 2.5GbE LAN Port		
10	USB8: USB 3.2 Gen. 2 (Type-A)		

## Universal Serial Bus (USB) Connections

There are two USB 2.0 Type-A ports (USB0, USB1), three USB 3.2 Gen. 2x1 Type-A ports (USB7, USB8, USB9), and one USB 3.2 Gen. 2x2 Type-C port (USB10) are located on the I/O back panel. One internal USB 3.2 Gen. 1 vertical Type-A connector (USB6) has been built-in on the motherboard. In addition, one USB 2.0 header (USB2/3), one USB 3.2 Gen. 1 header (USB4/5), and one USB 3.2 Gen. 2x2 20-pin header (USB11) are also located on the motherboard to provide front chassis access using USB cables (not included). Refer to the tables below for pin definitions.

Front Panel USB2/3 (2.0) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5V	2	+5V
3	USB_PN2#	4	USB_PN3
5	USB_PP2	6	USB_PP3
7	Ground	8	Ground
9	Key	10	Ground

Front Panel USB4/5 (3.2 Gen. 1) Pin Definitions			
Pin#	Pin#	Signal Name	Description
1	19	VBUS	Power
2	18	StdA_SSRX-	USB 2.0 Differential Pair
3	17	StdA_SSRX+	
4	13	Ground	Ground of PWR Return
5	15	StdA_SSTX-	SuperSpeed Receiver
6	14	StdA_SSTX+	Differential Pair
7	16	GND_DRAIN	Ground for Signal Return
8	12	D-	SuperSpeed Transmitter
9	11	D+	Differential Pair

Front Panel USB 11 (3.2 Gen. 2x2) Pin Definitions									
Pin#	Definition	Pin#	Definition	Pin#	Definition	Pin#	Definition	Pin#	Definition
1	VBUS	5	RX1+	9	NC	13	TX2-	17	GND
2	TX1+	6	RX1-	10	NC	14	GND	18	D-
3	TX1-	7	VBUS	11	VBUS	15	RX2+	19	D+
4	GND	8	CC1	12	TX2+	16	RX2-	20	CC2

### Back Panel High Definition Audio (HD Audio)

This motherboard features a 7.1+2 Channel High Definition Audio (HDA) codec that provides 10 DAC channels. The HD Audio connections simultaneously supports multiple-streaming 7.1 sound playback with 2 channels of independent stereo output through the front panel stereo out for front, rear, center, and subwoofer speakers. Use the Advanced software included in the CD-ROM with your motherboard to enable this function.

Audio Configuration					
		2 Channel	4.1 Channel	5.1 Channel	7.1 Channel
1	Orange (Center/LFE Out)			Center/Subwoofer	Center/Subwoofer
2	Black (Surround)		Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
3	Light Blue (Line In/Side Speaker Out)	Line In	Line In	Line In	Side Speaker Out
4	Lime (Line Out/Front Speaker Out)	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
5	Pink (Mic In)	Mic In	Mic In	Mic In	Mic In

### DisplayPort Port 1.4a

DisplayPort, developed by the VESA consortium, delivers digital display at a fast refresh rate. It can connect to virtually any display device using a DisplayPort adapter for devices, such as VGA, DVI, and HDMI.

### HDMI Port 2.0b

One High-Definition Multimedia Interface (HDMI) 2.0b port is located on the I/O back panel. This port is used to display both high definition video and digital sound through an HDMI display, using a single HDMI cable (not included).

### DVI-D Port

A DVI-D port is located on the I/O back panel. Use this port to connect to a compatible Digital Visual Interface (DVI) display.



## LAN Ports

Two Gigabit Ethernet ports (LAN1, LAN2) are located on the I/O back panel. In addition, a dedicated IPMI LAN port (IPMI\_LAN) is located above the USB0/USB1 ports on the I/O back panel. All of these ports accept RJ45 cables.

LAN1 Port Pin Definitions				LAN2 Port Pin Definitions			
Pin#	Definition	Pin#	Definition	Pin#	Definition	Pin#	Definition
19	SGND	28	SGND	10	SGND	19	SGND
20	TD0+	29	Link 1000 LED (Yellow, +3V3SB)	11	TD0+	20	Link 1000 LED (Yellow, +3V3SB)
21	TD0-	30	Link 100 LED (Green, +3V3SB)	12	TD0-	21	Link 100 LED (Green, +3V3SB)
22	TD1+	31	P3V3SB	13	TD1+	22	P3V3SB
23	TD1-	32	Act LED	14	TD1-	23	Act LED
24	TD2+	33	Ground	15	TD2+	24	
25	TD2-	34	Ground	16	TD2-	25	
26	TD3+	35	Ground	17	TD3+	26	
27	TD3-	36	Ground	18	TD3-	27	

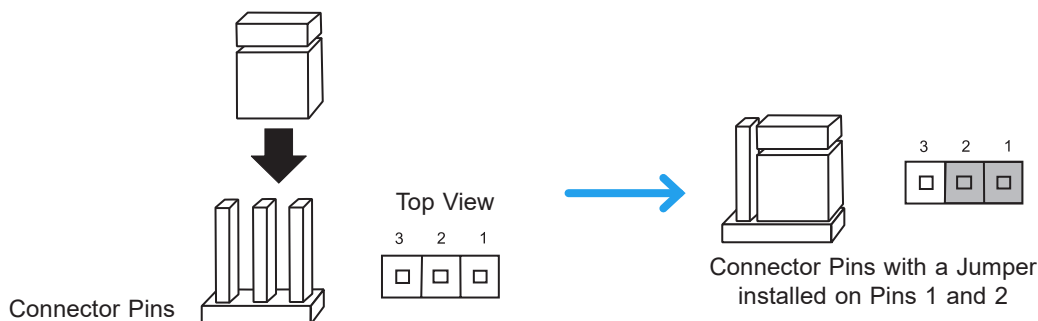
IPMI LAN Port (IPMI_LAN) Pin Definitions			
Pin#	Definition	Pin#	Definition
9		19	GND
10	TD0+	20	Act LED (Yellow)
11	TD0-	21	Link 100 LED (Green)
12	TD1+	22	Link 1000 LED (Amber)
13	TD1-	23	SGND
14	TD2+	24	SGND
15	TD2-	25	SGND
16	TD3+	26	SGND
17	TD3-		
18	GND		

## 4.4 Jumpers

### How Jumpers Work

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.



### LAN Enable/Disable

JPL1 and JPL2 will enable or disable the LAN1 and LAN2 ports on the motherboard. Refer to the table on the right for jumper settings. The default setting is Enabled.

LAN1/LAN2 Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled

## Clear CMOS

Clear CMOS (JBT1) is used to clear the saved system setup configuration stored in the CMOS chip. To clear the contents of the CMOS using JBT1, short the two pads of JBT1 with metallic conductor such as a flathead screwdriver. This will erase all user settings and revert everything to their factory-set defaults.

## Watch Dog Enable/Disable

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

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

## Manufacturing Mode

Close pins 2-3 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.

Manufacture Mode Jumpers Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Manufacturing Mode

## External Speaker / Buzzer

Close pins 3-4 of JD1 with a cap to use the onboard buzzer. If you wish to use an external speaker, close pins 1-4 with a cable. Refer to the table below for pin definitions.

External Speaker / Buzzer Pin Definitions	
Jumper Setting	Definition
Pins 1-4	External Speaker
Pins 3-4	Buzzer (Default)

**Audio Enable/Disable**

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

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

## 4.5 LED Indicators

### LAN1/LAN2 LEDs

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

LAN2 Speed LED (Left) LED State	
LED Color	Definition
Green	2500Mbps
Yellow	1000Mbps
Off	100/10Mbps

LAN1 Speed LED (Left) LED State	
LED Color	Definition
Yellow	1000Mbps
Green	100Mbps
Off	10Mbps

LAN1/LAN2 Activity LED (Right) LED State		
Color	Status	Definition
Yellow	Flashing	Active

### Power LED (PWR\_LED)

An Onboard Power LED is located at PWR\_LED on the motherboard. When the PWR\_LED is on, the AC power cable is connected. Make sure to disconnect the power cable before removing or installing any component. Refer to the table below for more information.

Power LED (PWR_LED) LED Status	
Status	Definition
Off	System Off
On	System On

### BMC Heartbeat LED

BMC Heartbeat LED (BMC\_HB\_LED) is located next to the PCIe SLOT5 on the motherboard. Refer to the table below for more information.

BMC Heartbeat LED (BMC_HB_LED) LED Status		
Motherboard	Color	Status
X13SAE	Solid Green	Standby Power On

### CATERR LED

A CATERR LED is located at CATERR\_LED. The orange LED indicates the system has experienced a catastrophic error. Refer to the table below for more information.

CATERR_LED LED Indicator	
LED Color	Definition
Orange: On	System CATERR

# Chapter 5

## Software

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

### 5.1 Microsoft Windows OS Installation

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

#### *Installing the OS*

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

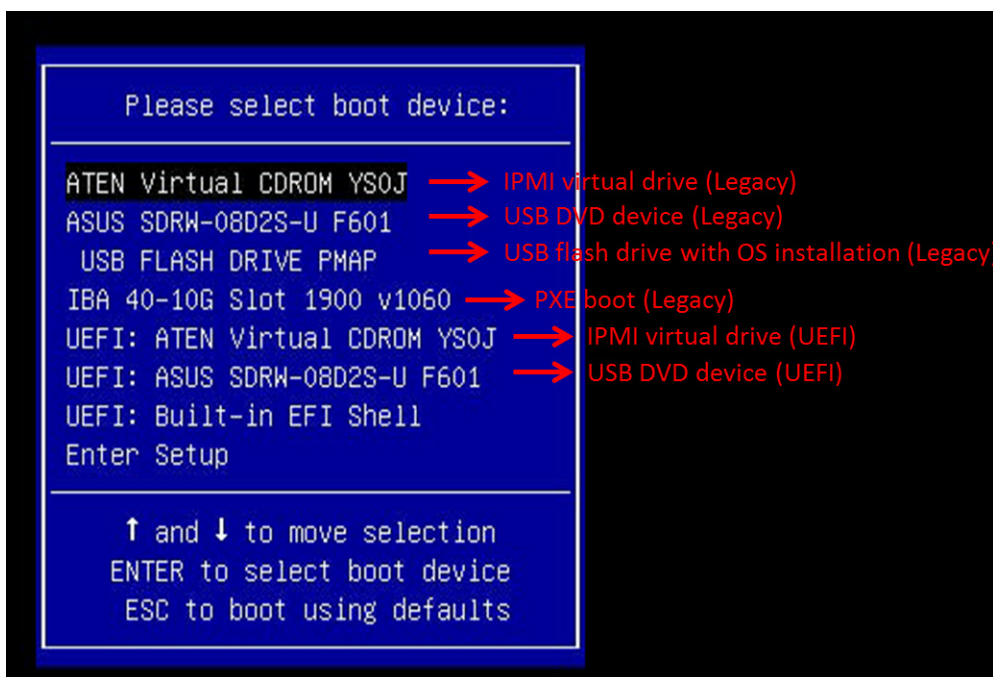
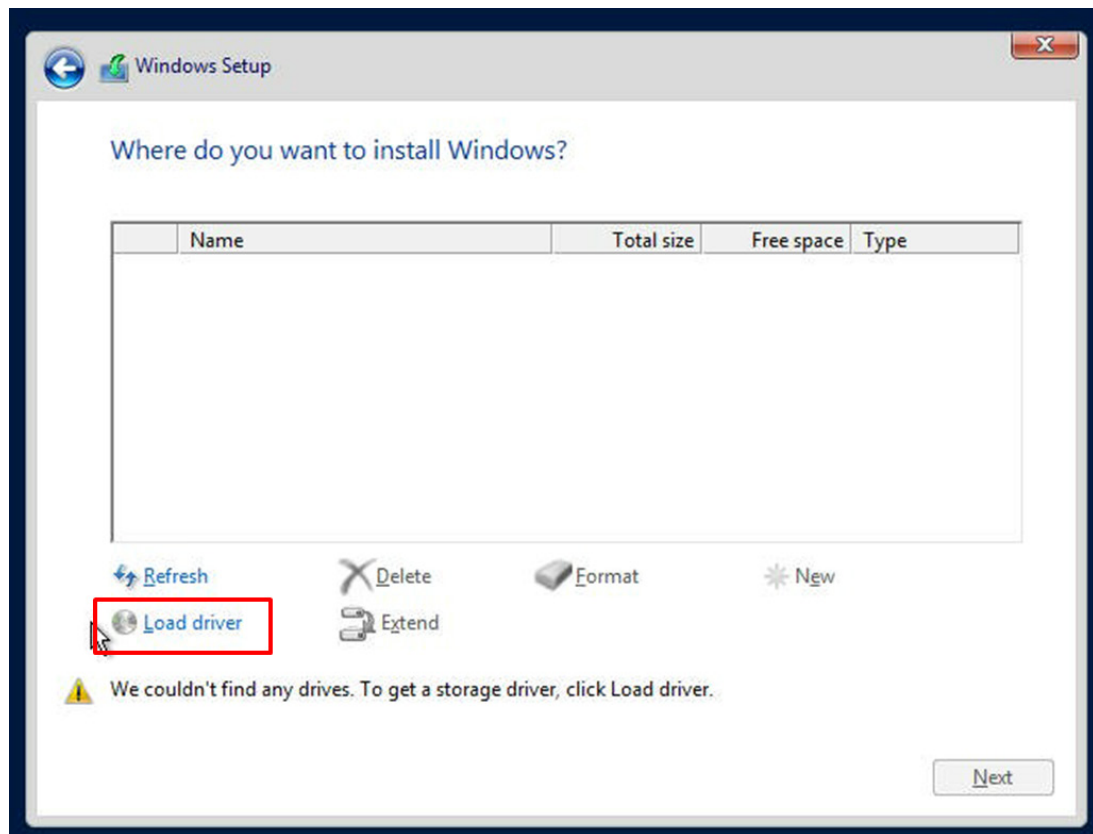


Figure 5-1. Select Boot Device

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



**Figure 5-2. Load Driver Link**

bottom left corner.

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.

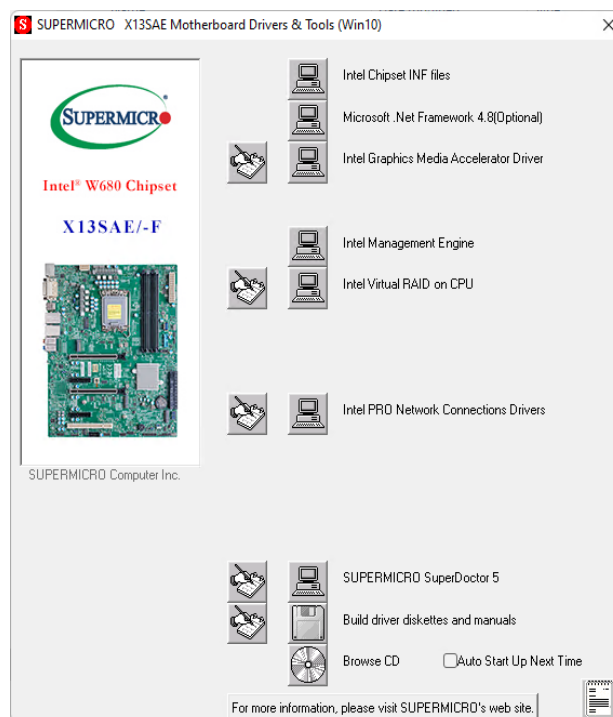


## 5.2 Driver Installation

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 and 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 (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. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

[SuperDoctor® Manual and Resources](#)

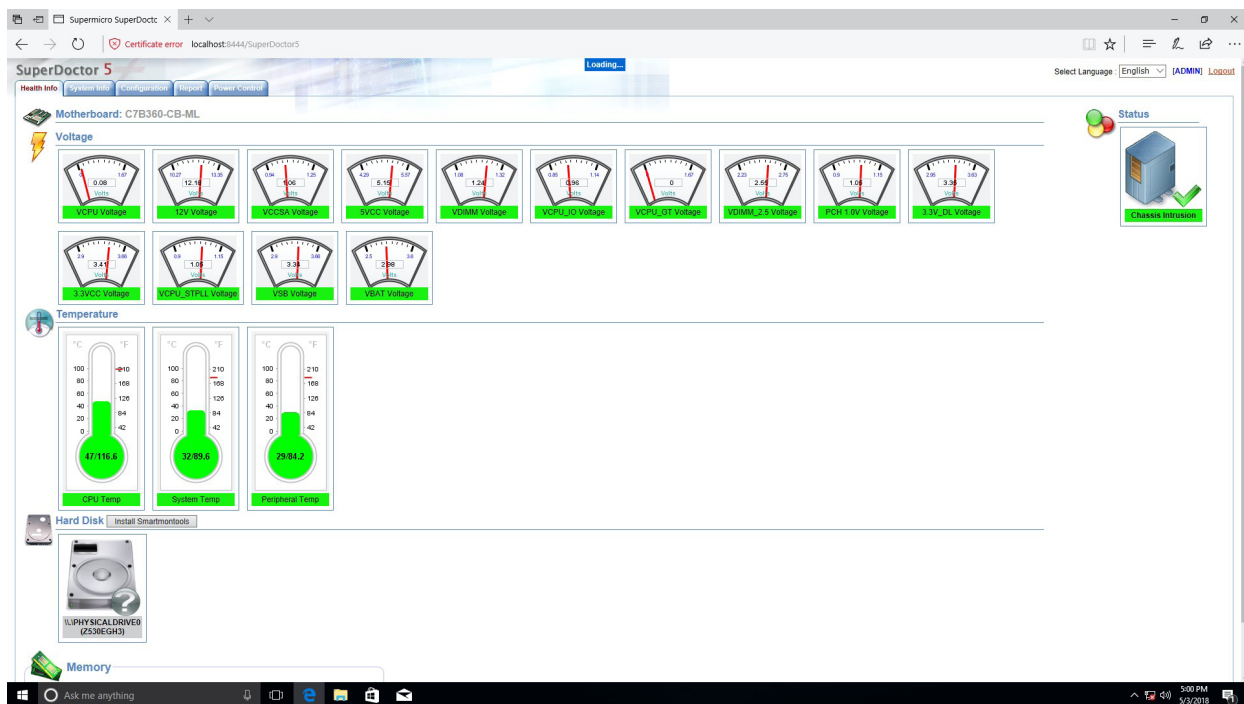


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

# Chapter 6

## Optional Components

This chapter describes optional system components and installation procedures.

### 6.1 Optional Parts List

Optional Parts List		
Description	Part Number	Quantity
Mobile Rack	CSE-M14TQC/CSE-M28SACB	1
2.5" to 3.5" SSD/HDD adapter tray	MCP-220-73102-0N	1
2.5" HDD cage (4x Internal 2.5" HDD)	MCP-220-73201-0N	1
5.25" HH 24X DVD-RW SATA DRIVE PBF	DVM-LITE-DVDRW24-HBT1	1
Front Fan	FAN-0124L4	1

### 6.2 Mobile Rack

The SuperWorkstation SYS-531A-IL allows to install an optional Supermicro mobile rack (CSE-M14TQC or CSE-M28SACB) in place of one or two 5.25" bays. The CSE-M14TQC supports four 2.5" solid state disk drive bays with SATA3 or SAS3 connections and takes up one 5.25" bay. The CSE-M28SACB supports eight 2.5" hard disk drive bays with SATA3 or SAS3 connections and takes up two 5.25" bays.

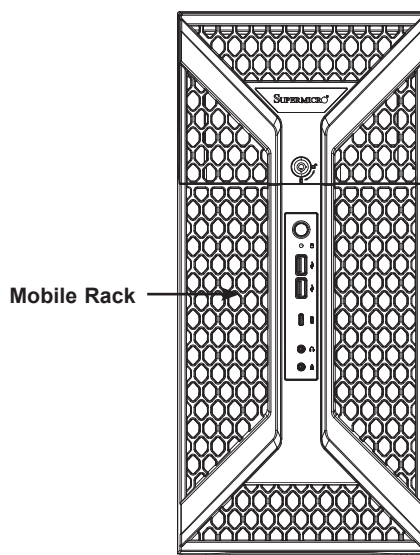
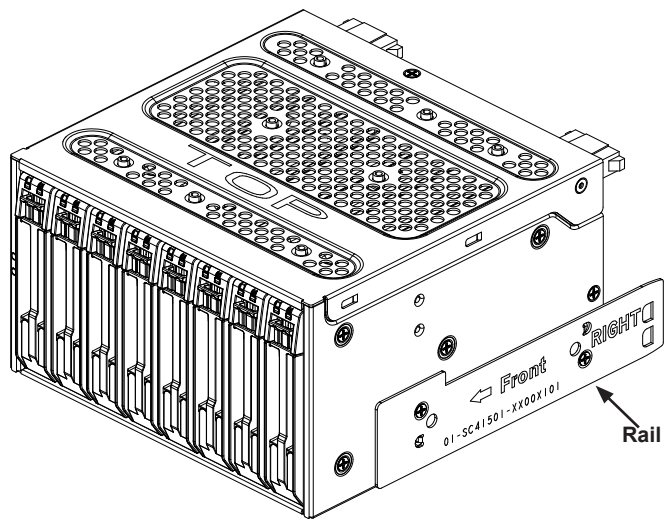


Figure 6-1. Chassis with a Mobile Rack Installed

### ***Installing the Mobile Rack***

1. Remove one tray or two adjacent trays from the chassis.
2. Remove the drive tray rails.
3. Install a drive tray rail onto each side of the mobile rack. Make sure the arrow on the rail points toward the front of the chassis.
4. Slide the mobile rack into the chassis.



**Figure 6-2. Mobile Rack with Drive Tray Rails**

5. Install the 2.5" solid state drives.
6. Connect the data cables to the motherboard. There are four SATA 3.0 connectors on the motherboard (I-SATA0~3).
7. Connect a 4-pin power cable from the power supply to the backplane of the mobile rack.

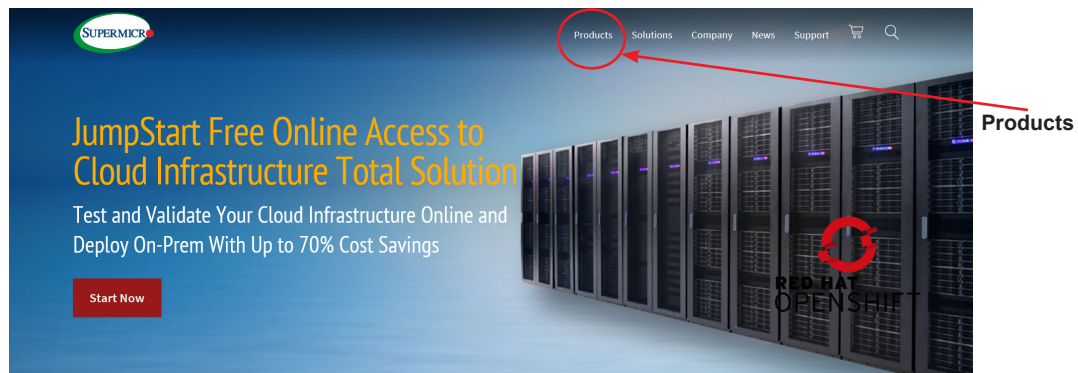
# Chapter 7

## Troubleshooting and Support

### 7.1 Information Resources

#### Website

A great deal of information is available on the Supermicro website, [www.supermicro.com](http://www.supermicro.com).



**Figure 7-1. Supermicro Website**

- Specifications for workstations and other hardware are available by clicking on **Products**.
- The **Support** option offers downloads (manuals, BIOS/BMC, drivers, etc.), FAQs, RMA, warranty, and other service extensions.

#### ***Direct Links for the SYS-531A-IL System***

[SYS-531A-IL specifications page](#)

[X13SAE 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](#)

[SuperDoctor5 Large Deployment Guide](#)

For validated memory, see our [Product Resources page](#)

***Direct Links (continued)***

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

[Security Center](#) for recent security notices

[Supermicro Phone and Addresses](#)

## 7.2 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.

### General Technique

If you experience unstable operation or get no boot response, try:

1. With power off, remove all but one DIMM and other added components, such as add-on cards, from the motherboard. Make sure the motherboard is not shorted to the chassis.

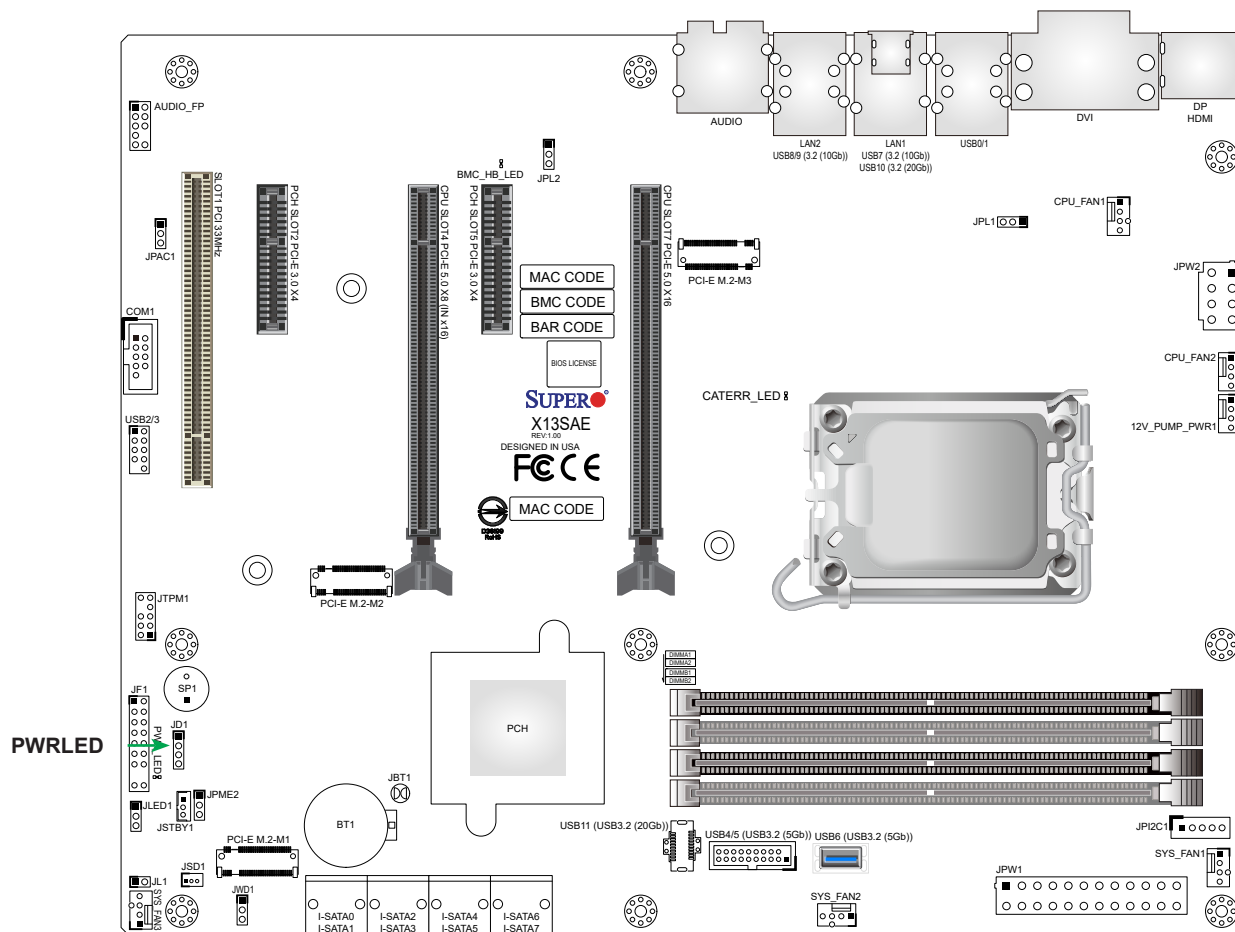


Figure 7-3. Location of the MB Power LED

2. Set all jumpers to their default positions.
3. Power up. If the system boots, check for memory errors and add-on card problems.

## No Power to the System

- Check that the power LED on the motherboard is on.
- Make sure AC power is being supplied to the power supply.
- Check that the power cord is plugged into a power outlet that supply 100-240V, 60-50Hz, 8-4A.
- Turn the power switch on and off to test the system.

## No Video

1. If the power is on, but you have no video, remove all add-on cards and cables.
2. Use the speaker to determine if any beep codes are present. Refer to Appendix A for details on beep codes.
3. Remove all memory modules and turn on the system (if the alarm is on, check the specs of memory modules, reset the memory or try a different 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:

1. 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 contacting both pads on the CMOS clear jumper (JB1). Refer to Clear CMOS in Chapter 2.
2. Remove all components from the motherboard, especially the DIMM modules. Make sure that system power is on and that memory error beeps are activated.
3. 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

- Make sure that the DIMM modules are properly and fully installed.
- Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See Section 3.3 for memory details.
- Check for bad DIMM modules or slots by swapping modules between slots and noting 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.
- Check that the motherboard battery still supplies approximately 3VDC. If it does not, replace it. See [Figure 3-3 \(Section 3.5\)](#).

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: Make sure that the memory modules are supported. Refer to the product page on our website at [www.supermicro.com](http://www.supermicro.com). Test the modules using **memtest86** or a similar utility.
- Storage drives: Make sure that all drives work properly. Replace if necessary.
- System cooling: Check that all heatsink fans and system fans work properly.
- Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Refer to the Supermicro website for 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.

- Cable connection: Check to make sure that all cables are connected and working properly.
  - Use 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.
  - Identify a bad component by isolating it. Check and change one component at a time.
    - Remove a component in question from the chassis, and test it in isolation. Replace it if necessary.
    - Or swap in a new component for the suspect one.
4. Or install the possibly defective component into a known good system. If the new system works, the component is likely not the cause of the problem.

## 7.3 BIOS Error Beep (POST) Codes

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

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

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

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

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

### Additional BIOS POST Codes

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

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

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

## 7.4 UEFI BIOS Recovery

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

### Overview

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

### Recovering the UEFI BIOS Image

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

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

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

### Recovering the Main BIOS Block with a USB Device

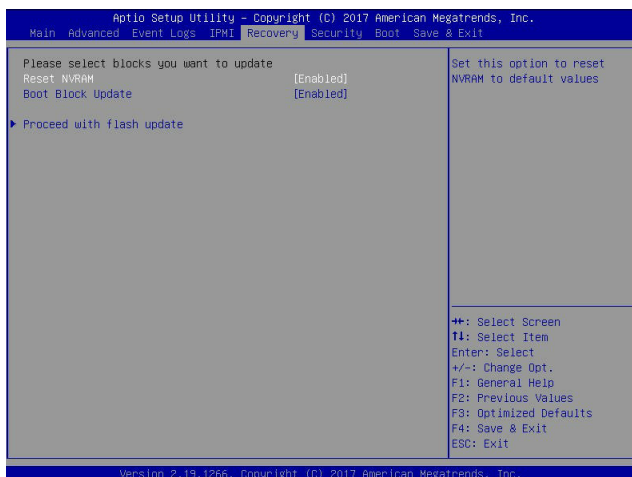
This feature allows the user to recover the main BIOS image using a USB-attached device without additional utilities used. A USB flash device such as a USB Flash Drive, or a USB CD/DVD ROM/RW device can be used for this purpose. However, a USB Hard Disk drive cannot be used for BIOS recovery at this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

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

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



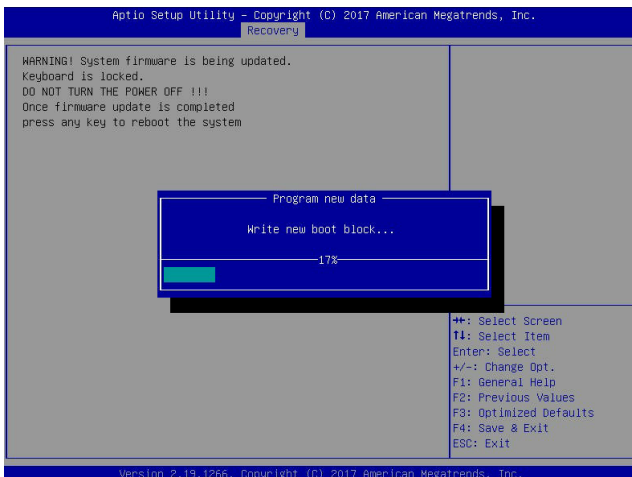
**Note:** At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.



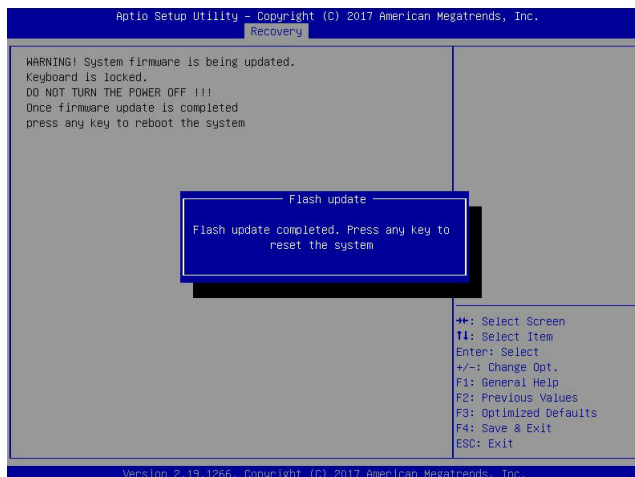
4. When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

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

5. After the BIOS recovery process is complete, press any key to reboot the system.
6. Using a different system, extract the BIOS package into a USB flash drive.

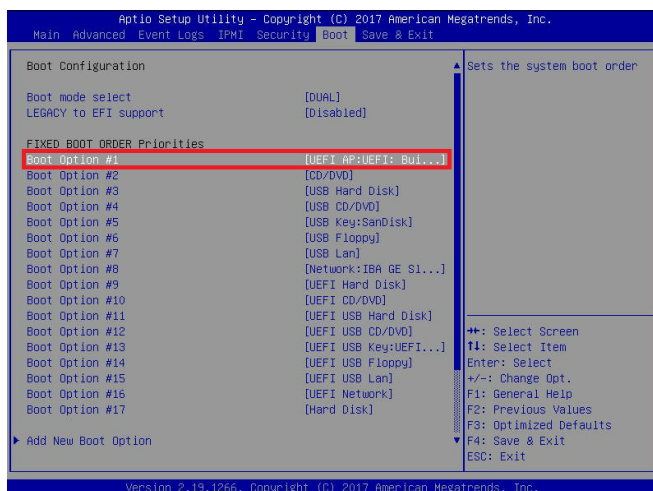


7. Press <Del> continuously during system boot to enter the BIOS Setup utility. From the top of the toolbar, select Boot to enter the submenu. From the submenu list, select Boot Option



#1 as shown below. Then, set Boot Option #1 to [UEFI AP:UEFI: Built-in EFI Shell]. Press <F4> to save the settings and exit the BIOS Setup utility.

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



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

```

UEFI Interactive Shell v2.1
EDK II
UEFI v2.50 (American Megatrends, 0x0005000C)
Mapping table
  FS0: Alias(s):HD0:0B:BLK1:
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x37901D72,0x800,0x1
CR9592)
  BLK0: Alias(s):
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)
Press F8 in 1 seconds to skip startup.nsh or any other key to continue.
Shell: fs0:
FS0:\> cd \AFUDOS
FS0:\AFUDOS> cd SNIJPM2_03162017
FS0:\AFUDOS\SNIJPM2_03162017> flash.nsh X110PU7_314

```

9. The screen above indicates that the BIOS update process is complete. When you see the screen above, unplug the AC or DC power cable from the power supply, clear CMOS, and

```

Done.
[ Access Cmos Port Ex ]
<Read>
Index 0x51: 0x10

Done.
*****
* Program BIOS and ME (including FDT) regions...
*****
| AMT Firmware Update Utility v5.09.01.1917 |
| Copyright (C)2017 American Megatrends Inc. All Rights Reserved. |
-----
CPUID = 50652
Reading flash ..... done
- ME Data Size checking - ok
- FFS checksums ..... ok
- Check RomLayout ..... Ok
Erasing Boot Block ..... done
Updating Boot Block ..... done
Verifying Boot Block ..... done
_Erasing Main Block ..... 0x00132000 (0x)

```

plug the AC or DC power cable in the power supply again to power on the system.

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

```

Verifying NDB Block ..... done
- Update success for FDR
- Update success for IE
- Successful Update Recovery Loader to OPRx11
- Successful Update MFSB11
- Successful Update FPR11
- Successful Update MFS, IVB1 and IVB211
- Successful Update FLOG and UTDK11
- ME Entire Image update success !!
WARNING : System must power-off to have the changes take effect!
Moving FS0:\AFUDOS\SNIJPM2_03162017\Fdtv64.efi -> FS0:\AFUDOS\SNIJPM2_03162017\
dt1.smc
- [ok]
Moving FS0:\AFUDOS\SNIJPM2_03162017\Fuef1x64.efi -> FS0:\AFUDOS\SNIJPM2_0316201
7\Fuef1.smc
- [ok]
*****
* Please ignore this 'Shell: Cannot read from file - Device Error'
* warning message due to it does not impact flashing process.
*****
Deleting " "
Delete successful.
FS0:\>

```

11. Press <F3> to load the default settings.
12. After loading the default settings, press <F4> to save the settings and exit the BIOS Setup utility.



## 7.5 CMOS Clear

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

### **To Clear CMOS**

1. First [power down](#) the system completely.
2. [Remove the cover](#) of the chassis to access the motherboard.
3. [Remove the onboard battery](#) from the motherboard.
4. To clear the contents of the CMOS using JBT1, short the two pads of JBT1 with metallic conductor such as a flathead screwdriver. This will erase all user settings and revert everything to their factory-set defaults.
5. Replace the cover, reconnect the power cords, and power on the system.

**Notes:** Clearing CMOS will also clear all passwords.

*Do not use the PW\_ON connector to clear CMOS.*

## 7.6 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.

## 7.7 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.

## 7.8 Feedback

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

## 7.9 Contacting Supermicro

### Headquarters

Address: Super Micro Computer, Inc.  
980 Rock Ave.  
San Jose, CA 95131 U.S.A.

Tel: +1 (408) 503-8000

Fax: +1 (408) 503-8008

Email: [marketing@supermicro.com](mailto:marketing@supermicro.com) (General Information)  
[support@supermicro.com](mailto:support@supermicro.com) (Technical Support)

Website: [www.supermicro.com](http://www.supermicro.com)

### Europe

Address: Super Micro Computer B.V.  
Het Sterrenbeeld 28, 5215 ML  
's-Hertogenbosch, The Netherlands

Tel: +31 (0) 73-6400390

Fax: +31 (0) 73-6416525

Email: [sales@supermicro.nl](mailto:sales@supermicro.nl) (General Information)  
[support@supermicro.nl](mailto:support@supermicro.nl) (Technical Support)  
[rma@supermicro.nl](mailto:rma@supermicro.nl) (Customer Support)

Website: [www.supermicro.nl](http://www.supermicro.nl)

### Asia-Pacific

Address: Super Micro Computer, Inc.  
3F, No. 150, Jian 1st Rd.  
Zhonghe Dist., New Taipei City 235  
Taiwan (R.O.C)

Tel: +886-(2) 8226-3990

Fax: +886-(2) 8226-3992

Email: [support@supermicro.com.tw](mailto:support@supermicro.com.tw)

Website: [www.supermicro.com.tw](http://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](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.

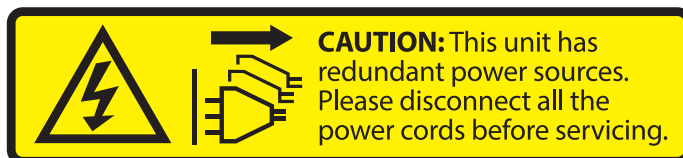
#### Waarschuwing

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 ننتهيج 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 اسحبذال البطارية بطريقة غير صحيحة فعليلا  
اسحبذال البطارية  
فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة  
جخلص من البطاريات المسحعملة وفقا 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! 危险的可移动性零件。请务必与转动的风扇叶片保持距离。当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

## 警告

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

**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 adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the cord) for any other electrical devices than products designated by Supermicro only.

### 電源コードとACアダプター

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

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

### 警告

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

### 警告

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

### Warnung

Nutzen Sie beim Installieren des Produkts ausschließlich die von uns zur Verfügung gestellten Verbindungskabeln, Stromkabeln und/oder 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 מיכמוסומה 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 עדדחמלא וא ערפוטמלא תאליצוולא מאדחטסאב מץ, גתנמלא בייקרת דנע לכלז יפ אמב עילחמלא עמאלסלא תאבלטתמו נינאוץב מאזתלאלא עמ דדרתמלא ראיטלא תאלוחמו עיזאברמלא קיירח וא לטע יפ בבסטטי דץ ירזא תאלוחמו תאלבאלא יא מאדחטסא. מילסלא סבאלאו לטוולא מץ ח CSA וא UL לביק נמ ענדמתעמלא תאלבאלא מאדחטסא תאדעמלאו עיזאברמלא עזחאלל עמאלסלא נונאק רזחי Supermicro לביק נמ עדדחמלאו עינעמלא תאגתנמלא ריזא 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 Supermicro 가 지정한 제품 이외의 전기 장치에 사용하는 것을 금지합니다.

#### Stroomkabel en AC-Adapter

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



# Appendix B

## System Specifications

### Processors

Supports 12th Gen Intel® Core™ i9/i7/i5/i3 processors, LGA-1700 (Socket V), TDP 125W.

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

### Chipset

Intel W680

### BIOS

256Mb AMI BIOS® SPI Flash BIOS

ACPI 6.0, Plug and Play (PnP), BIOS rescue hot-key, riser card auto detection support, and SMBIOS 3.0 or later

### Memory

Supports four ECC/non-ECC UDIMM socket, 4400MHz (one DIMM), 4000MHz (two DPC), max. up to 128GB

\*ECC function only available on Intel® select CPU SKUs.

### Storage Drives

Four fixed 3.5" SATA drives,

Three M.2 PCIe 4.0 x4 sockets (support M-Key 2280, one from CPU and two from PCH)

### PCI Expansion Slots

One PCI slot

Two PCIe 3.0 x4 slots

Two PCIe 5.0 x16 slots (support auto-switch: 16/NA or 8/8)

\*For optimum performance, if only one card to install, be sure to install in slot7. Slot4 shares bandwidth with slot7. When slot7 is populated, both slots operate at up to x8 signal.

### Networking

One Gb LAN port (Intel® i219LM)

One 2.5Gb LAN port (Intel® i225V)

### Input/Output

Front: one USB3.2 Gen2x1 type C, two USB3.2 Gen1 type A, one line-out, one mic-in

Rear: one HDMI 2.0a, one Display Port, one DVI display output, two USB 3.2 Gen1, three USB Type-A, one USB Type-C, audio outputs with SPDIF optical

### Motherboard

X13SAE 12" x 9.6" ATX

### Chassis

CSE-735D4-668B; Mid-Tower (WxHxD) 7.6 x 16.7 x 21.2 in. (193 x 424 x 536 mm)

### System Cooling

One rear fan, one optional front fan, one optional CPU heatsink

### Power Supply

Model: PWS-668-PQ, 668W multi-output module, 80Plus Platinum level

AC Input: 100-240 Vac, 60-50 Hz, 8-4A

+5V standby: 2 A

+12V: 54.0 A

+5V: 20.0A

+3.3V: 15.0A

-12V: 0.1A

**Operating Environment**

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

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

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

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

**Regulatory Compliance**

FCC, ICES, CE, UKCA, VCCI, RCM, CSA/ UL, CB

**Applied Directives, Standards**

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

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

Warning! This product can expose you to chemicals including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**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](http://www.dtsc.ca.gov/hazardouswaste/perchlorate)

この装置は、クラスBの機械です。この装置は、住宅環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをしてください。

VCCI-B

## BSMI/RoHS

## 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: 超級工作站 / Superworkstation Equipment name						
型號 (型式) : 735D4-S6X13 (系列型號: 735 -6, 735D4-6, SYS-531A-IL)						
Type designation (Type)						
單元 Unit	Restricted substances and its chemical symbols 限用物質及其化學符號					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr <sup>+6</sup> )	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)	-	○	○	○	○	○
<p>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。</p> <p>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.</p> <p>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。</p> <p>Note 2 : “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.</p> <p>備考3. “-” 係指該項限用物質為排除項目。</p> <p>Note 3 : The “-” indicates that the restricted substance corresponds to the exemption.</p>						

輸入額定:

100-240V ~, 60-50Hz, 8-4A

\*使用者不能任意拆除或替換內部配備

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