



SuperServer®
AS -C521D

USER'S MANUAL

Revision 1.0b (MNL-2876)

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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 AS -C521D server. Installation and maintenance should be performed by certified service technicians only.

Notes

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

- Supermicro product manuals: <https://www.supermicro.com/support/manuals>
- Product drivers and utilities: <https://www.supermicro.com/wdl>
- Product safety info: https://www.supermicro.com/about/policies/safety_information.cfm
- 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
- Frequently Asked Questions: <https://www.supermicro.com/FAQ/index.php>
- If you still have questions after referring to our FAQs, contact our support team. Region-specific Technical Support email addresses can be found at: "[Contacting Supermicro](#)" on page 10
- If you have any feedback on Supermicro product manuals, contact our writing team at: Techwriterteam@supermicro.com

This manual may be periodically updated without notice. Check the Supermicro website for possible updates to the manual revision level.

Conventions Used in the Manual

Special attention should be given to the following symbols for proper installation and to prevent damage done to the components or injury to yourself.



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



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



Warning! Indicates hazardous moving parts may be encountered while handling a fan or components near a fan.

Important: Important information given to ensure proper server installation or to relay safety precautions.

Note: Additional information given to differentiate various models or to provide information for proper server setup.

Contents

Contacting Supermicro	10
Chapter 1: Introduction	11
1.1 Overview	12
1.2 System Features	13
Front View	14
Control Panel	15
Motherboard Block Diagram	16
Rear View	17
1.3 System Architecture	18
Main Components	19
1.4 Motherboard Quick Reference	20
Motherboard Layout	20
Quick Reference Table	22
Chapter 2: Unpacking the System	24
2.1 Unpacking the System	25
Chapter 3: Maintenance and Component Installation	26
3.1 Removing Power	28
3.2 Accessing the System	29
Removing the Chassis Cover	29
Removing the Front Bezel	30
3.3 Static-Sensitive Devices	31
Precautions	31
3.4 Processor and Heatsink Installation	32
Preparing the Processor Socket	32
The AMD EPYC 4004 / 4005 or Ryzen 7000 / 9000 Series Processor	32
Overview of the Processor Socket	32
Overview of the Heatsink	34
Installing the Processor	34
Installing the Heatsink	37
3.5 Memory Support and Installation	40
Memory Support	40

General Guidelines for Optimizing Memory Performance	40
DIMM Population	41
DIMM Installation	42
DIMM Removal	45
3.6 Motherboard Battery Removal and Installation	46
Battery Removal	46
Proper Battery Disposal	46
Battery Installation	46
3.7 Storage Drives	47
Removing Drives from the Chassis	47
3.8 Expansion Cards	49
PCIe Cards	49
Removing an Expansion Card	49
3.9 Power Supply	50
Removing the Power Supply	50
Chapter 4: Motherboard Connections, Jumpers, and LEDs	51
4.1 Power Supply and Power Connections	52
Power Supply	52
Power Connectors	52
4.2 Headers and Connections	54
Audio Front Panel Header	54
COM Header	54
Fan Headers	55
Onboard Battery (BT1)	55
PCIe M.2 Connectors (M.2-C1, M.2-P1)	55
Standby Power Header	55
USB Ports (USB0~3, USB4~5, USB6~7, USB8~9, USB10~11)	56
4.3 Jumper Settings	58
CMOS Clear	58
Watchdog Timer	59
4.4 LED Indicators	60
Power Fail/Fan Fail LED	60
Onboard Power LED	60
Power-On Self-Test (POST) LEDs	60

M.2 SSD LEDs	61
Chapter 5: Software	62
5.1 Microsoft Windows OS Installation	63
Installing the OS	63
5.2 Driver Installation	65
Chapter 6: Troubleshooting and Support	66
6.1 Online Resources	67
Direct Links for the SuperServer AS -C521D System	67
Direct Links for General Support and Information	67
6.2 Troubleshooting Procedures	68
Before Power On	68
No Power	68
No Video	68
System Boot Failure	68
Memory Errors	69
Losing the System's Setup Configuration	69
If the System Becomes Unstable	69
6.3 CMOS Clear	71
6.4 Motherboard Battery	72
6.5 Where to Get Replacement Components	73
6.6 Technical Support Procedures	74
Returning Merchandise for Service	74
6.7 Feedback	76
Chapter 7: UEFI BIOS	77
7.1 Introduction	78
Starting the Setup Utility	78
7.2 Main Setup	79
7.3 Advanced Setup Configurations	81
Boot Feature	81
CPU Configuration	83
North Bridge	84
Trusted Computing	85
AMD fTPM Configuration	86
IT5631 Super IO Configuration	86

Serial Port Console Redirection	87
SATA Configuration	87
PCIe/PCI/PnP Configuration	87
USB Configuration	89
Network Configuration	89
HTTP Boot Configuration	91
Supermicro KMS Server Configuration Menu	92
Super-Guardians Configuration Menu	94
Realtek PCIe 5 GBE Family Controller	96
TLS Authenticate Configuration	96
Driver Health	97
7.4 Thermal & Fan	97
Fan Control	99
7.5 Security	101
7.6 Boot	103
7.7 Save & Exit	105
Appendix A: BIOS Codes	107
BIOS Error POST (Beep) Codes	107
Additional BIOS POST Codes	107
Appendix B: Standardized Warning Statements for AC Systems	108
Standard Warning Definition	108
Electrical Warning Definition	110
Installation Instructions	112
Circuit Breaker	113
Power Disconnection Warning	114
Equipment Installation	116
Rack Stability Hazard	118
Rack-Mounted Equipment Warning	120
Restricted Access Location	121
Battery Handling	123
Redundant Power Supplies	125
Backplane Voltage	126
Comply with Local and National Electrical Codes	128
Fan Warning	129

Connection to Earth	131
Power Cable and AC Adapter	132
Product Disposal	135
Appendix C: System Specifications	137
RF Module	140
Appendix D: General Data Center Environmental Specifications	142
Appendix D: BSMI RoHS	143

Contacting Supermicro

Headquarters

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

Tel: +1 (408) 503-8000

Fax: +1 (408) 503-8008

Email: Marketing@supermicro.com (General Information)
Sales-USA@supermicro.com (Sales Inquiries)
Government_Sales-USA@supermicro.com (Gov. Sales Inquiries)
Support@supermicro.com (Technical Support)
RMA@Supermicro.com (RMA Support)
Webmaster@supermicro.com (Webmaster)

Website: <https://www.supermicro.com>

Europe

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

Tel: +31 (0) 73-6400390

Fax: +31 (0) 73-6416525

Email: Sales_Europe@supermicro.com (Sales Inquiries)
Support_Europe@supermicro.com (Technical Support)
RMA_Europe@supermicro.com (RMA Support)

Website: <https://www.supermicro.nl>

Asia-Pacific

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

Tel: +886 (2) 8226-3990

Fax: +886 (2) 8226-3992

Email: Sales-Asia@supermicro.com.tw (Sales Inquiries)
Support@supermicro.com.tw (Technical Support)
RMA@supermicro.com.tw (RMA Support)

Website: <https://www.supermicro.com.tw>

Chapter 1:

Introduction

This chapter provides a brief outline of the functions and features of the AS -C521D system. It is based on the CARAM5-M motherboard and the CSE-GS2B chassis.

1.1 Overview	12
1.2 System Features	13
Front View	14
Rear View	17
1.3 System Architecture	18
Main Components	19
1.4 Motherboard Quick Reference	20
Motherboard Layout	20
Quick Reference Table	22

1.1 Overview

This chapter provides a brief outline of the functions and features of the SuperServer AS - C521D. The following provides an overview of the system specifications and capabilities.

System Overview	
Motherboard	CARAM5-M
Chassis	CSE-GS2B
Processor Support	AMD Ryzen (Zen5) Series Processor in Socket AM5
Memory	Up to 96 GB of Non-ECC UDIMM DDR5 5600 MT/s speed in two DIMM slots. Supports Extreme Memory Profile (XMP) memory modules.
Drive Support	Two M-Key NVMe slots: one PCIe 5.0 x4, 2280/22110 and one PCIe 4.0 x4, 2280 Internal drive bays: one 3.5" fixed drive bays (optional one 2.5" fixed drive bay)
Expansion Slots	One PCIe 5.0 x16 slot for double-width (low-profile) GPU cards One PCIe 4.0 x4 slot (Chipset)
I/O Ports	Two USB 4.0 ports (rear DP2.0 Alt mode, type-C) Four USB 2.0 rear ports Two USB 3.2 Gen 2x1 ports (Type-A) Two USB 3.2 Gen 2x2 ports (Type-C) One 5 GbE LAN port
Power	One 300 W PS2 multi-output power module (80Plus Gold)
Form Factor	Slim form factor

Note: A Quick Reference Guide can be found on the product page of the Supermicro website. The following safety models associated with the AS -C521D have been certified as compliant with UL or CSA: GS2B-S3CA and GS2B-3.

1.2 System Features

The following views of the system display the main features. Refer to the System Specifications appendix of this manual for additional specifications.

Front View

The following features are located on the front of the AS -C521D server.

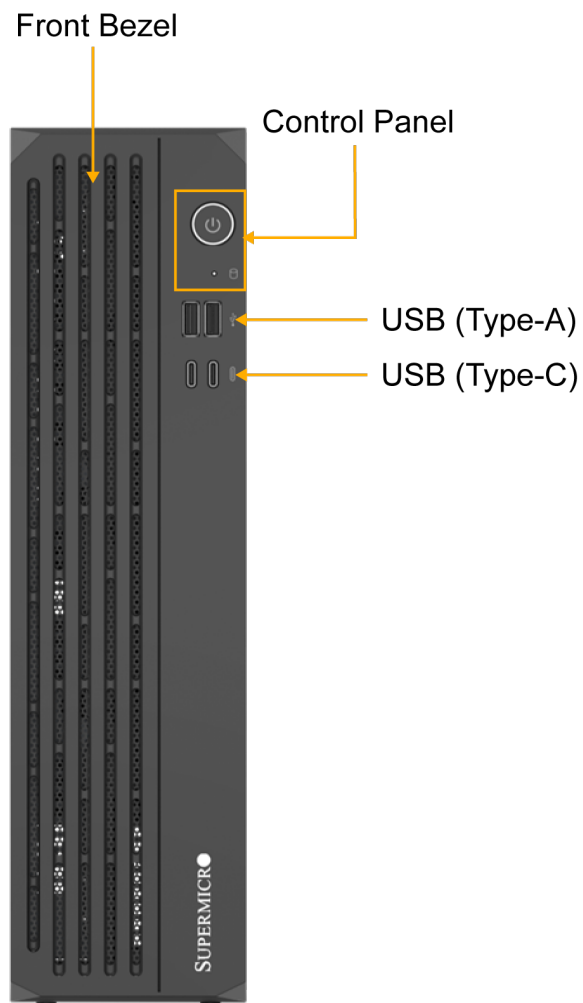


Figure 1-1. AS -C521D Front View

System Features: Front	
Feature	Description
Front Bezel	One front bezel
Control Panel	See " Control Panel " for more information
USB (Type-C)	Two USB 3.1 GEN2 Type-C
USB (Type-A)	Two USB 3.1 GEN1 Type-A

Control Panel

The following switches and LEDs are located on the AS -C521D server control panel.

The buttons and LEDs located on the CSE-GS2B control panel are described below.

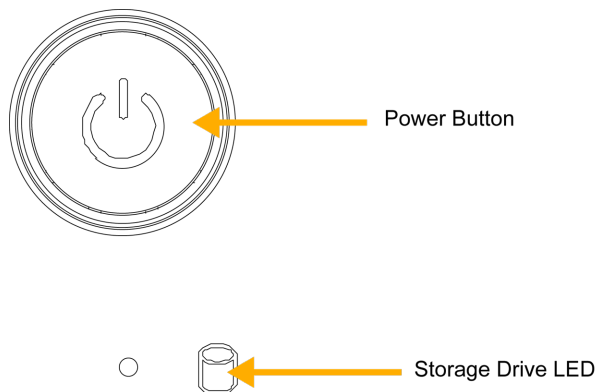


Figure 1-2. AS -C521D Control Panel

Control Panel Features	
Feature	Description
Storage Drive LED	Indicates activity on the installed storage devices when blinking.
Power Button	Applies or removes primary power from the power supply to the server but maintains standby power.

Motherboard Block Diagram

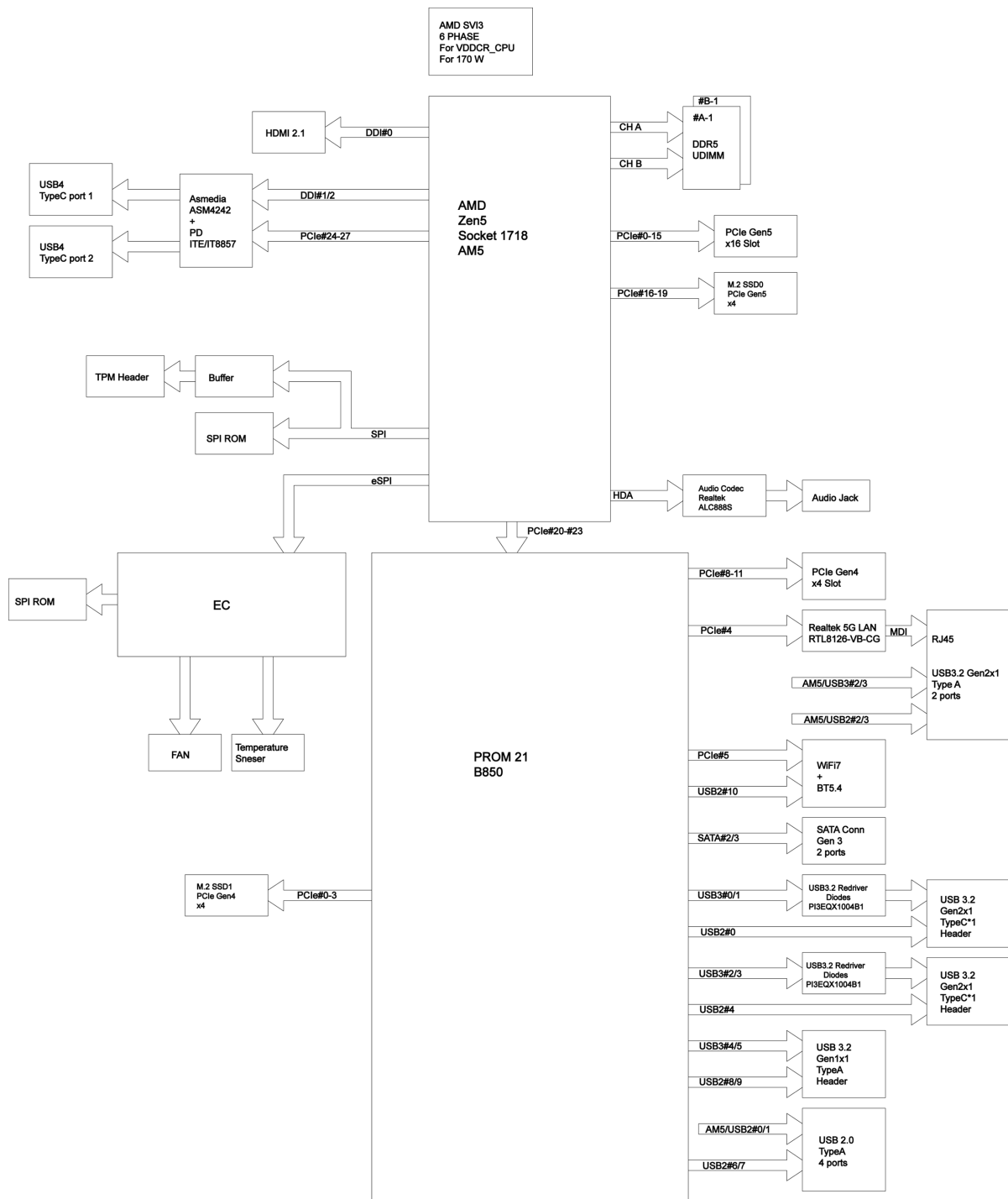


Figure 1-3. Motherboard Block Diagram

Rear View

The following features are located on the rear of the AS -C521D server.

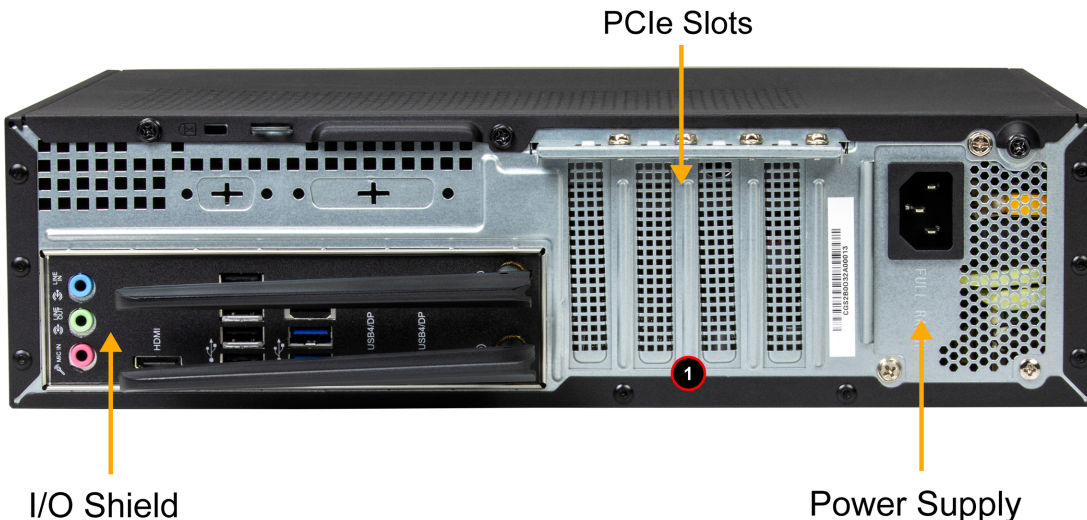


Figure 1-4. AS -C521D Rear View

System Features: Rear	
Feature	Description
I/O Shield	One I/O shield
PCIe Slots	Four low profile PCIe slots
Power Supply	One 300 W power supply

Slot Description	
Slots	Description
1	PCIe 5.0 x16 (HHFL)

1.3 System Architecture

This section covers the locations of the system's main components and provides a motherboard block diagram.

Main Components

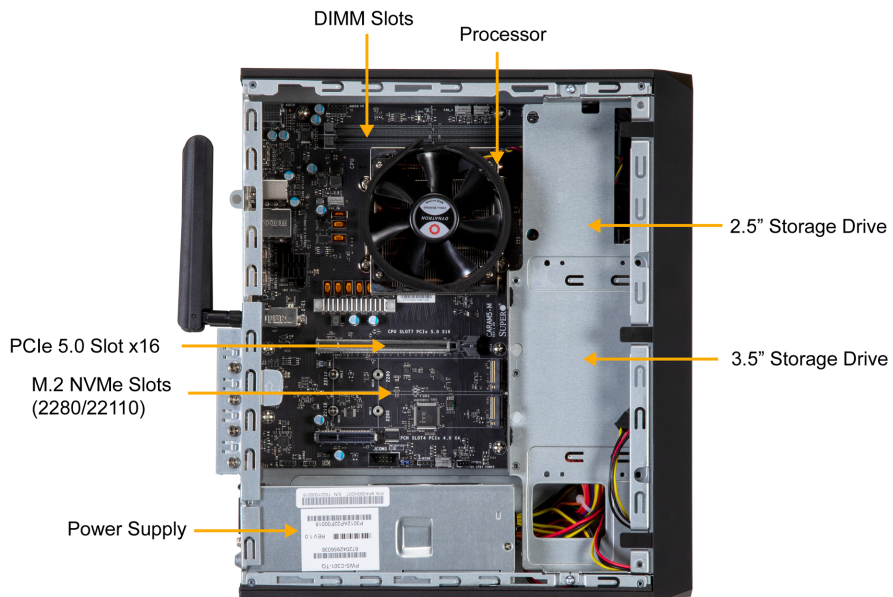


Figure 1-5. AS -C521D Top View

System Features: Top	
Feature	Description
Power Supply	One 300 W PS2 multi-output power module (80Plus Gold)
Processor	One AMD Ryzen (Zen5) Series Processor
DIMM Slots	Two DIMM slots
Storage Drives	One 3.5" fixed drive bays (optional one 2.5" fixed drive bay)
PCIe Slot	One PCIe 5.0 slot x16
M.2 NVMe Slots	Two M.2 NVMe slot (2280/22110)

1.4 Motherboard Quick Reference

For details on the CARAM5-M motherboard layout and other quick reference information, refer to the content below.

Motherboard Layout

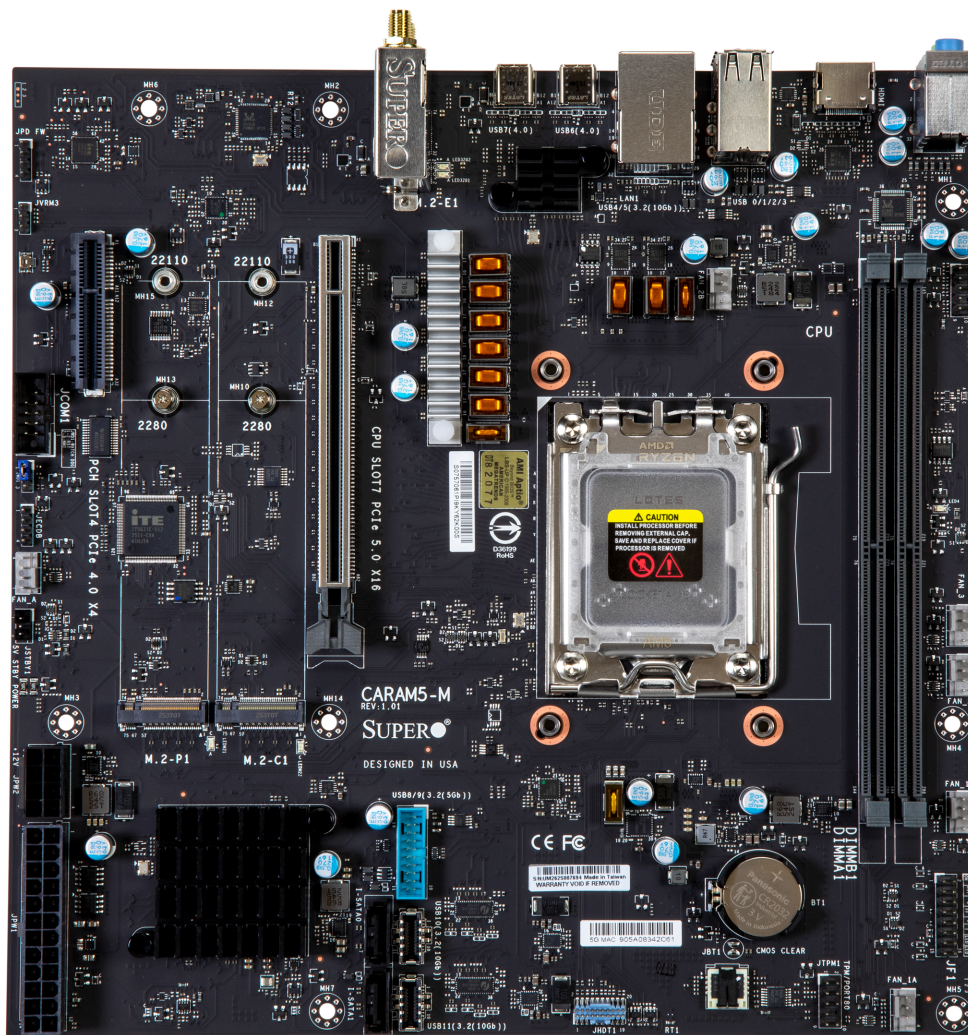


Figure 1-6. Motherboard Image

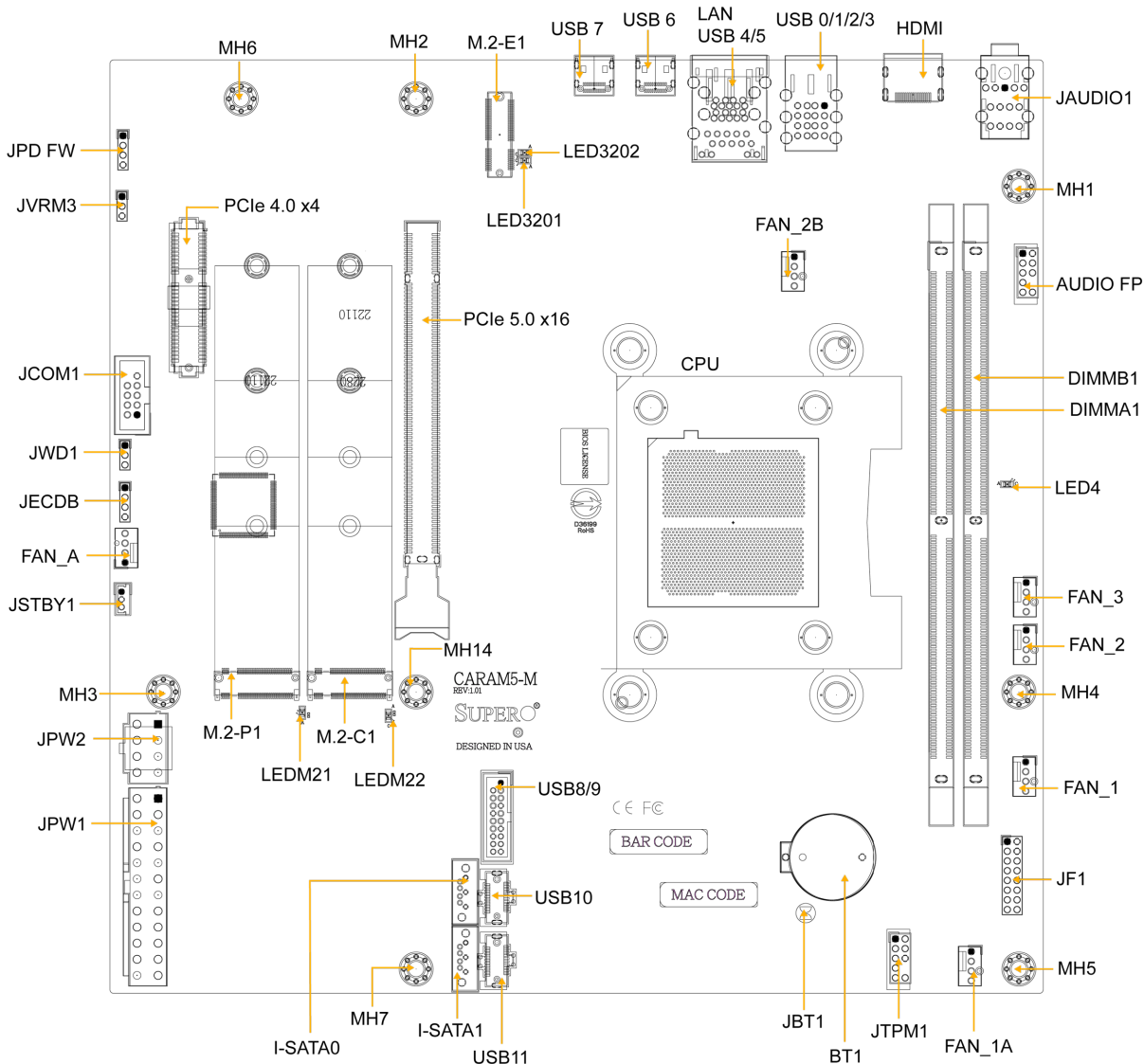


Figure 1-7. Motherboard Layout

Notes:

- For detailed information on jumpers, connectors, and LED indicators, see ["Maintenance and Component Installation"](#) on page 26.
- "■" indicates the location of pin 1.
- "MH" indicates the location of a mounting hole.
- Components not documented are for internal testing purposes only.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer. To avoid possible explosion, do not install the onboard battery upside down.

Quick Reference Table

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JWD1	Watch Dog Timer	Pins 1-2: Reset

LED	Description	Status
LED3201	WLAN Power-On Self-Test (POST) Status	Green ON: WLAN POST OFF: WLAN POST Completion
LED3202	Bluetooth Device Power-On Self-TEST (POST) Status	Green ON: Bluetooth Device POST OFF: Bluetooth Device POST Completion
LEDM21- LEDM22	M.2 SSD LED	Blinking: Device Working
LED4	Onboard Power LED	Solid Green: Power On

Connector	Description
AUDIO FP	Front Audio Header * This header is designed for a headphone/microphone combo jack. If you are using a standalone microphone, use the MIC jack on the rear panel. * Standalone headphone and microphone jacks are provided on the rear panel.
BT1	Onboard Battery
FAN_A/FAN_1A/FAN_2B	4-pin Fan Headers
FAN_1-3	4-pin Fan Headers
I-SATA0/I-SATA1	Dual SATA Port Connectors Supporting up to Two Devices
JAUDIO1	High Definition Audio Ports
JCOM1	Serial Port/Header
JF1	Front Control Panel Header
JPW1	24-pin ATX Main Power Connector (Required)
JPW2	12V 8-pin CPU Core Power Supply Connector

Connector	Description
JSTBY1	Inject External P5V_STBY Power
JTPM1	Trusted Platform Module (TPM)/Port 80 Connector
M.2-C1/P1	M.2 M-Key (2280/22110) PCIe Interfaces
M.2-E1 (PCIe)	WiFi 7 and Bluetooth 5.4
PCIe 4.0 x4	PCIe 4.0 x4 Slot
PCIe 5.0 x16	PCIe 5.0 x16 Slot
USB0/1/2/3	USB 2.0 Ports
USB4/5	USB 3.2 10 Gb Ports
USB6/7	USB 4.0 Port
USB8/9	USB 3.2 5 Gb Port
USB10/11	USB 3.2 10 Gb Port

Note: Jumpers, connectors, switches, and LED indicators that are not described in the preceding tables are for manufacturing testing purposes only, and are not covered in this manual.

Chapter 2:

Unpacking the System

This chapter provides advice and instructions for inspecting, handling, and selecting an appropriate environment for installing your server system. If your server is not already fully integrated with processors, system memory, etc., refer to "[Maintenance and Component Installation](#)" on page 26 for details on installing those specific components.

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

2.1 Unpacking the System	25
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2.1 Unpacking the System

Inspect the box the AS -C521D server was shipped in 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 rack unit that will hold the system. 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. AC systems will also require a grounded AC power outlet nearby. Be sure to read the precautions and considerations noted in the Standardized Warning Statements appendix of this manual.

Chapter 3:

Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components for the AS -C521D server. 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. Follow the procedures given in each section.

3.1 Removing Power	28
3.2 Accessing the System	29
Removing the Chassis Cover	29
Removing the Front Bezel	30
3.3 Static-Sensitive Devices	31
Precautions	31
3.4 Processor and Heatsink Installation	32
Preparing the Processor Socket	32
Installing the Processor	34
Installing the Heatsink	37
3.5 Memory Support and Installation	40
Memory Support	40
General Guidelines for Optimizing Memory Performance	40
DIMM Population	41
DIMM Installation	42
DIMM Removal	45
3.6 Motherboard Battery Removal and Installation	46
Battery Removal	46
Proper Battery Disposal	46
Battery Installation	46
3.7 Storage Drives	47
Removing Drives from the Chassis	47
3.8 Expansion Cards	49
PCIe Cards	49

3.9 Power Supply	50
Removing the Power Supply	50

3.1 Removing Power

Before performing some setup or maintenance tasks, use the following procedure to ensure that power has been removed from the AS -C521D server. This step is necessary when removing or installing non hot-swappable components or when replacing a non-redundant power supply.

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

3.2 Accessing the System

The AS -C521D server features a removable top cover, which allows easy access to the inside of the server.

Removing the Chassis Cover

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

1. Power down the system as described in ["Removing Power" on the previous page](#).
2. Remove the three screws located towards the rear of the chassis cover.
3. Slide the cover to the rear as illustrated.
4. Lift the cover up and off the chassis.

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

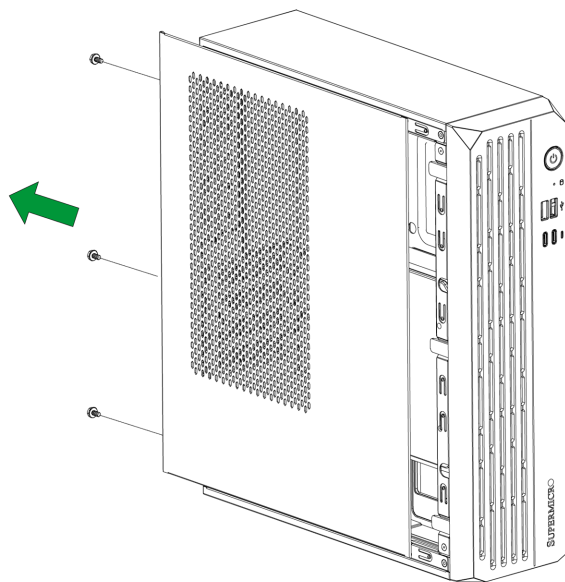


Figure 3-1. Removing the Chassis Cover

Removing the Front Bezel

1. Push the latch forward to unlock.
2. Rotate the front bezel outward and pull it down.

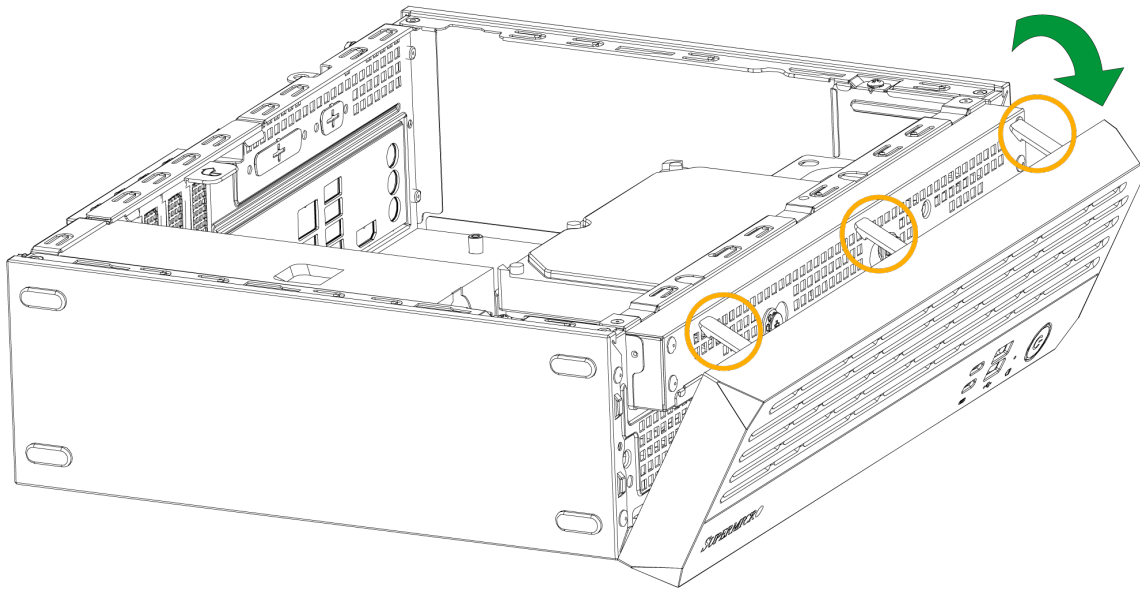


Figure 3-2. Removing the Front Bezel

3.3 Static-Sensitive Devices

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

Precautions

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Handle the motherboard only by its edges. Do not touch its components, peripheral chips, memory modules, or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the motherboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure that your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners, and the motherboard.
- Use only the correct type of onboard CMOS battery. To avoid possible explosion, do not install the onboard battery upside down.

3.4 Processor and Heatsink Installation

This section provides procedures to install the processor(s) and heatsink(s).

Notes:

- Take industry standard precautions to avoid ESD damage. For details, see "[Static-Sensitive Devices](#)" on the previous page.
- Before starting, make sure that the plastic socket cap is in place and none of the socket pins are bent. If any damage is noted, contact your retailer.
- Do not connect the system power cord before the processor and heatsink installation is complete.
- 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 processor socket.
- When buying a processor separately, use only a Supermicro certified heatsink.
- Refer to the Supermicro website for the most recent processor support.
- When installing the heatsink, ensure a torque driver set to the correct force is used for each screw.
- Thermal grease is pre-applied on a new heatsink. No additional thermal grease is needed.

Preparing the Processor Socket

The AMD EPYC 4004 / 4005 or Ryzen 7000 / 9000 Series Processor

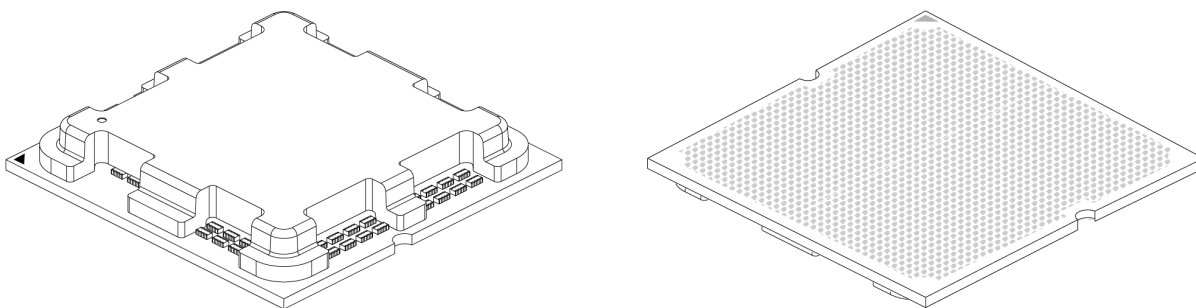


Figure 3-3. AMD EPYC 4004 / 4005 or Ryzen 7000 / 9000 Series Processor

Overview of the Processor Socket

The processor socket is protected by an outer plastic protective cover.

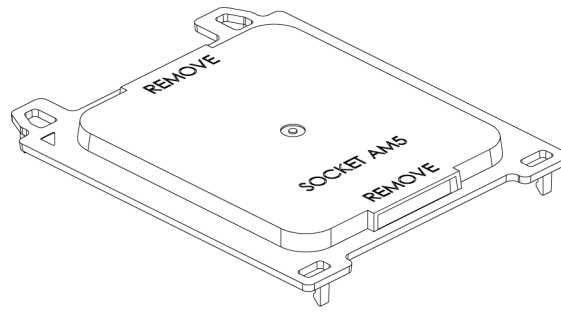


Figure 3-4. Outer Plastic Cover

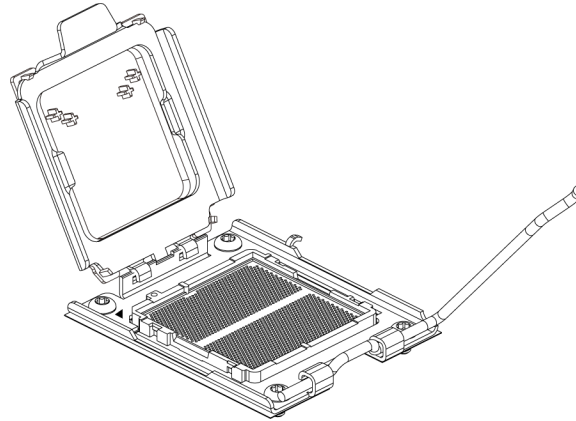


Figure 3-5. Socket AM5

Overview of the Heatsink

The heatsink is attached to the socket with Phillips #1 screws after the processor is secured. If this is a new heatsink, thermal grease is pre-applied.

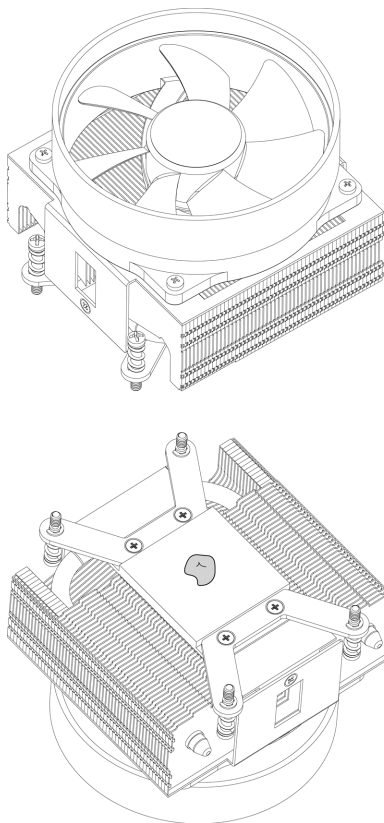


Figure 3-6. Installing the Heatsink

Installing the Processor

Note: Do not remove the plastic cover covering the outside of the socket. This cover will pop out during installation of the processor.

1. Use a finger to push down the lever, then move the lever rightward. Pull the lever until it passes over the processor socket.

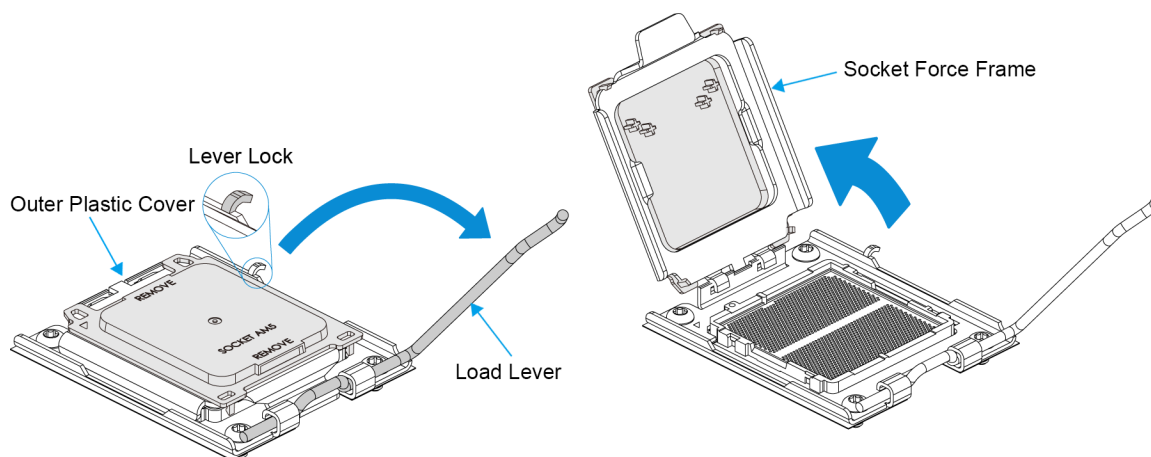


Figure 3-7. Releasing the Processor Socket Lever

2. Pick up the processor on its left and right edges. Hold the processor over the socket and align the arrow on the top-left corner of the processor with the arrow on the top-left corner of the socket. Gently lower it onto the AM5 socket pins.

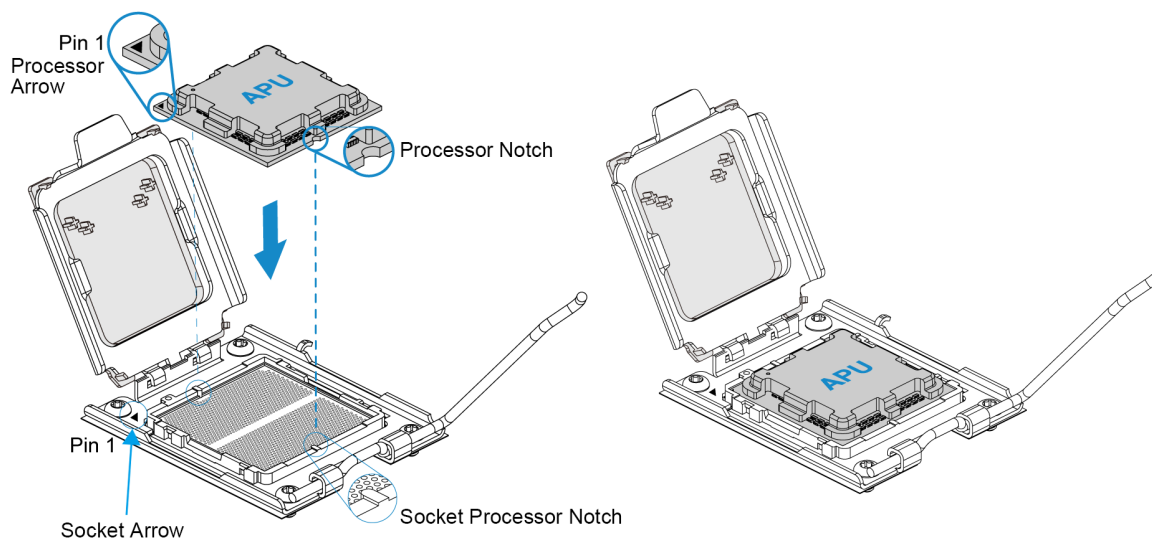


Figure 3-8. Installing the Processor onto the AM5 Socket

3. With the processor in the socket, lower the socket force frame.

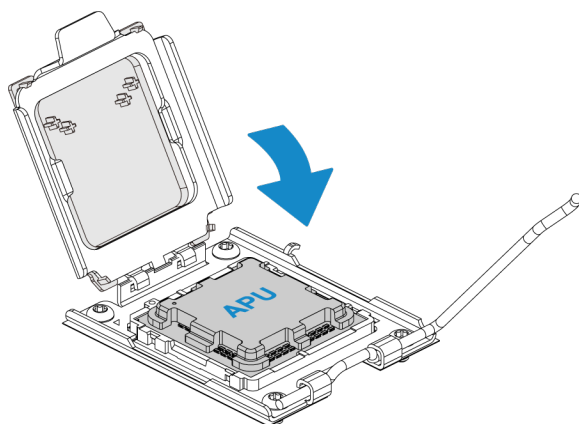


Figure 3-9. Lowering the Socket Force Frame

4. Reattach the lever arm onto the right side of the socket. The outer plastic cover will pop out when the lever arm is reattached.

Note: Store the outer plastic cover. Attach the outer plastic cover to the socket force frame when storing or transporting the motherboard without a processor.

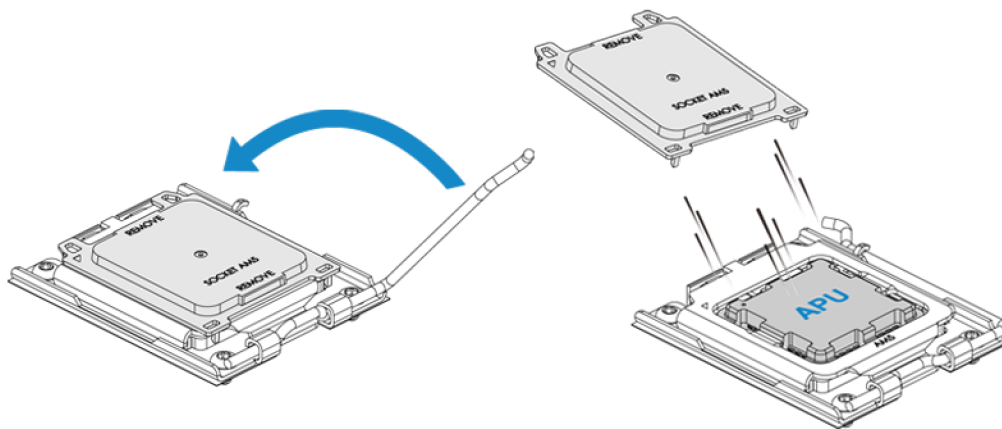


Figure 3-10. Reattaching the Socket Lever Arm

5. When finished, the socket force frame will secure the processor.

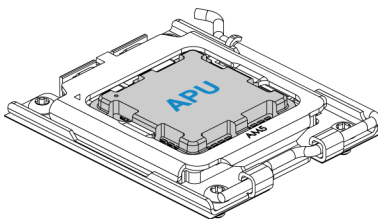
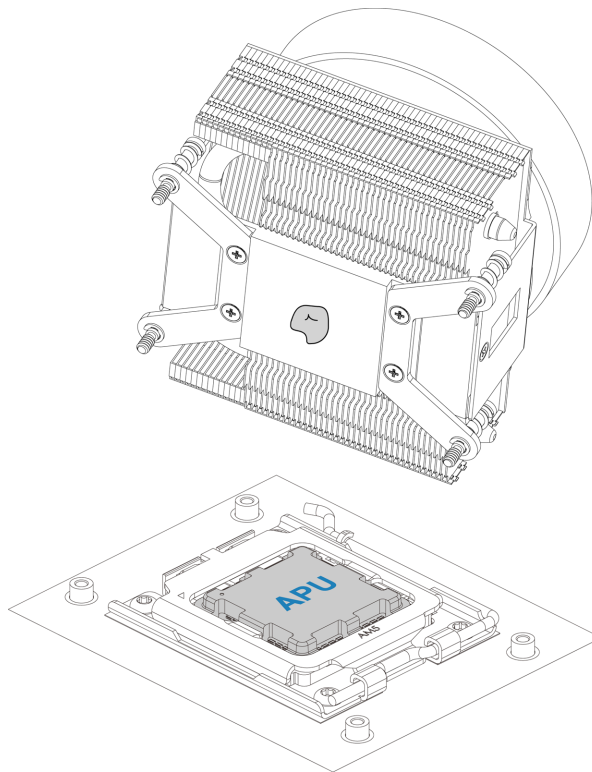


Figure 3-11. Completing the Socket Installation

Installing the Heatsink

1. After the processor is secure, you must install the heatsink to the socket frame. Ensure a proper amount of thermal grease is applied to the heatsink. Lower the heatsink down until the four screws on the heatsink align with the four screw holes on the socket frame.



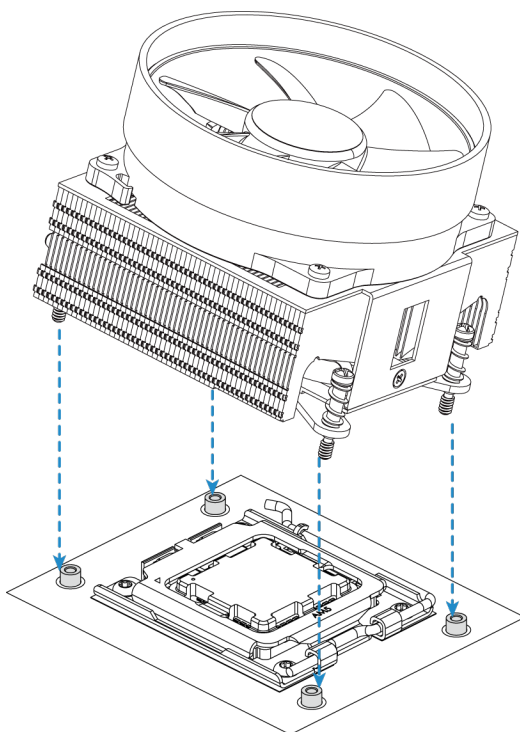


Figure 3-12. Mounting the Heatsink onto the Socket Frame

2. Align the heatsink to the socket. With a Phillips #1 bit torque driver set to a force of 8.3-9.1 lbf-in (9.5-10.5 kgf-cm), gradually secure the heatsink by starting with two screws on opposite corners. When finished, the heatsink will be secured over the socket and processor.

Important: Do not use a force greater than 9.1 lbf-in (10.5 kgf-cm). Exceeding this force may over-torque the screw, causing damage to the processor, heatsink, and screw.

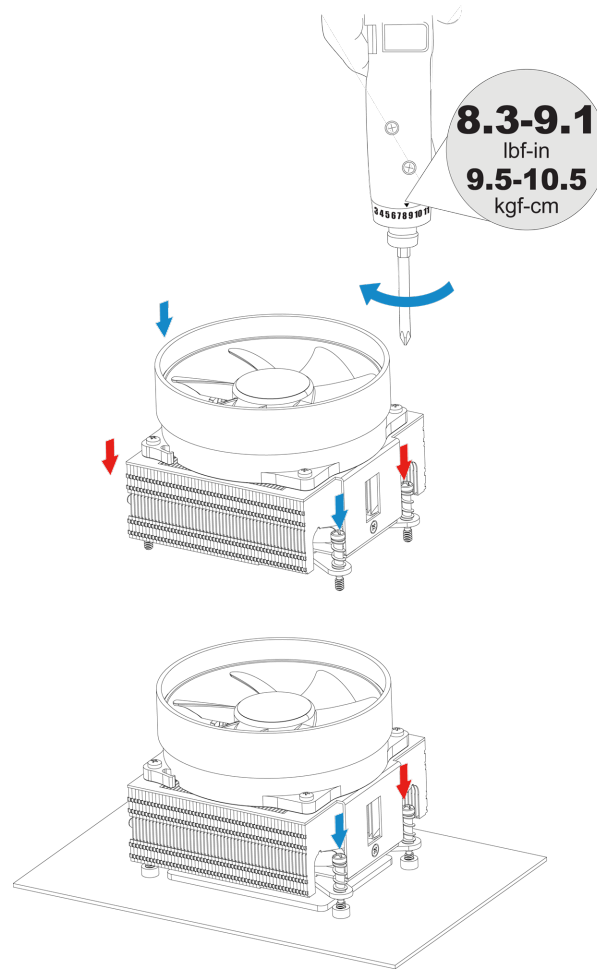


Figure 3-13. Securing the Heatsink with Proper Torque

3.5 Memory Support and Installation

Important: To prevent any damage, exercise extreme care when installing or removing memory modules.

Note: Check the Supermicro website for recommended memory modules.

Memory Support

The motherboard supports up to 96 GB of Non ECC UDIMM DDR5 memory across two DIMM slots. When populating DDR5 memory modules with AMD EPYC™ 4004 / 4005 or Ryzen™ 7000 / 9000 series processors, memory speeds are supported as follows: 5200 MT/s for 4004 / 7000 series, and 5600 MT/s for 4005 / 9000 series. Refer to the table below for additional memory information.

DIMM Population Guide		
Type	Channel	
	A1	B1
1 DIMM		V
1 DIMM	V	
2 DIMMs	V	V

General Guidelines for Optimizing Memory Performance

- It is recommended to 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 will support an odd number amount of memory modules. However, to achieve the best memory performance, a balanced memory population is recommended.
- Please use Supermicro validated memory. Contact Supermicro representative for more details.

DIMM Population

This table shows the recommended slots to populate.

Populating DDR5 Memory Modules with AMD EPYC™ 4004 or Ryzen™ 7000 Series (Up to 5200 MT/s)			
Type	Number of DIMMs Populated	DIMMA1	DIMMB1
UDIMM	1	SR: 5200 MT/s DR: 5200 MT/s	N/A
	1	N/A	SR: 5200 MT/s DR: 5200 MT/s
	2	SR: 5200 MT/s DR: 5200 MT/s	SR: 5200 MT/s DR: 5200 MT/s

Populating DDR5 Memory Modules with AMD EPYC™ 4005 or Ryzen™ 9000 Series (Up to 5600 MT/s)			
Type	Number of DIMMs Populated	DIMMA1	DIMMB1
UDIMM	1	SR: 5600 MT/s DR: 5600 MT/s	N/A
	1	N/A	SR: 5600 MT/s DR: 5600 MT/s
	2	SR: 5600 MT/s DR: 5600 MT/s	SR: 5600 MT/s DR: 5600 MT/s

Note: Fully populate the motherboard with validated memory modules to achieve the best memory performance. The NPS setting should be based on the applications. Selecting "Auto" in the BIOS will default to NPS1.

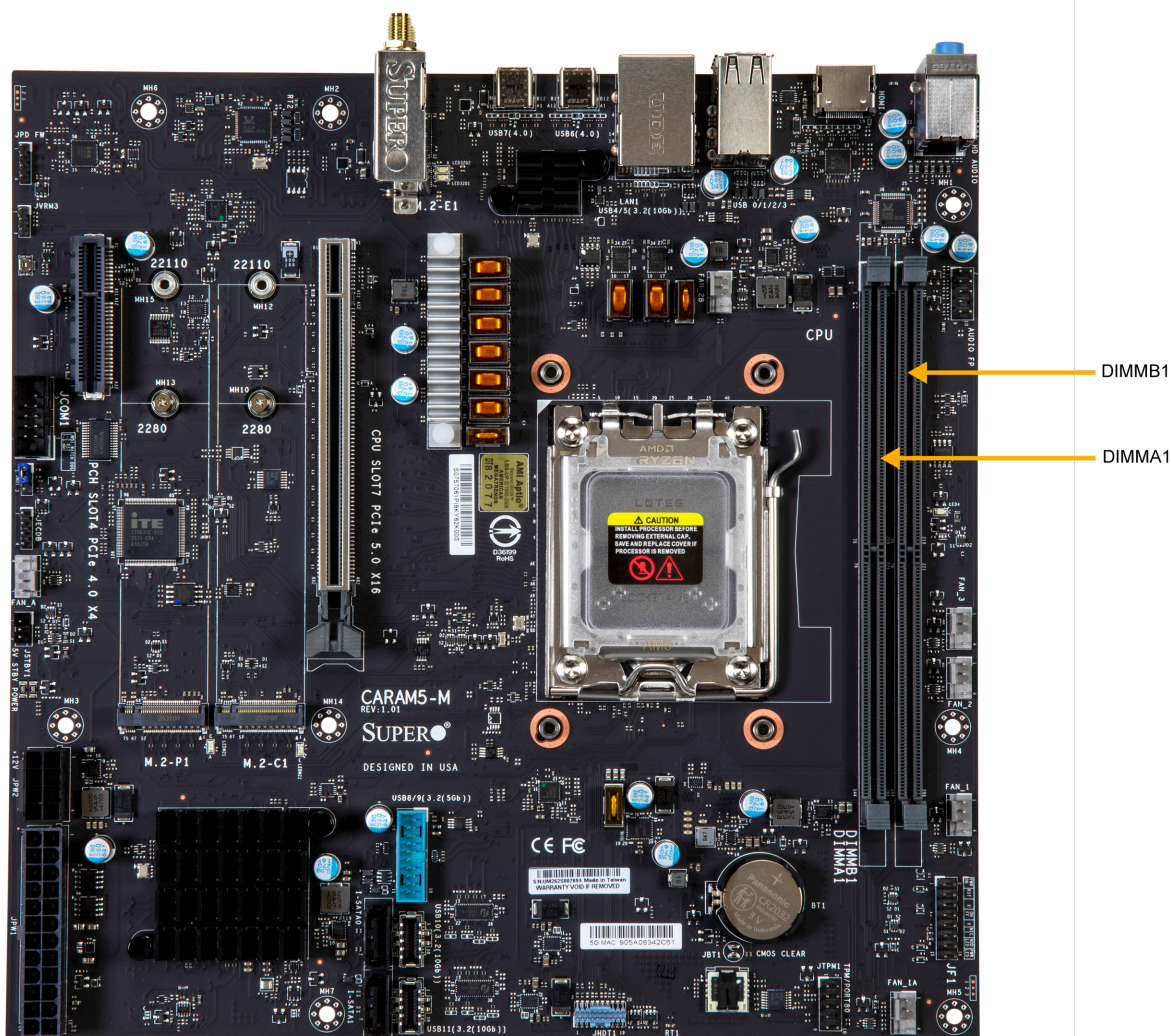


Figure 3-14. DIMM Labels

DIMM Installation

Important: To avoid causing any damage to the memory module or the DIMM socket, do not use excessive force when pressing the release tabs on the ends of the DIMM socket. Handle memory modules with care. To avoid ESD-related damage to your memory modules or components, carefully follow all the instructions given in ["Static-Sensitive Devices"](#) on page 31.

1. Insert the desired number of DIMMs into the memory slots based on the recommended DIMM population table earlier in this section.
2. Push the release tabs outwards on both ends of the DIMM slot to unlock it.

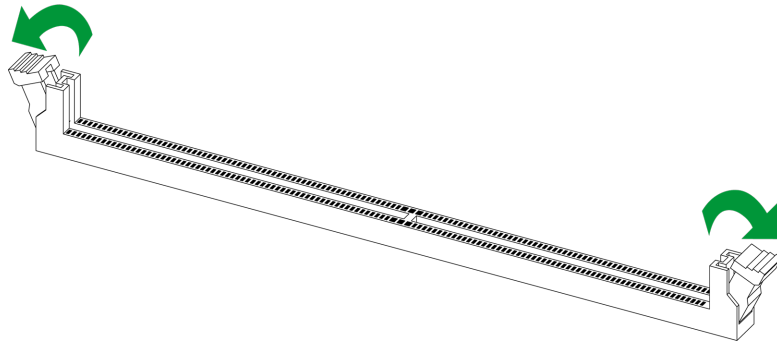


Figure 3-15. Unlocking the DIMM Slot

3. Align the key of the DIMM with the receptive point on the memory slot.

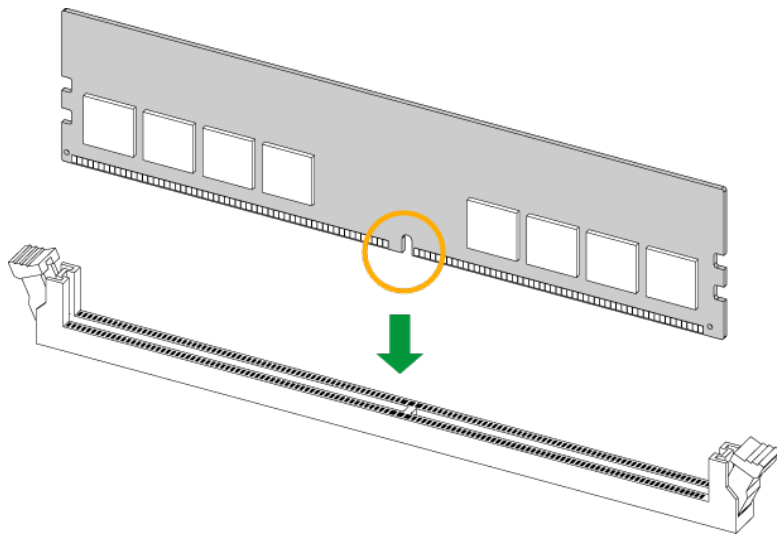


Figure 3-16. Aligning the DIMM Slot with the Receptive Point

4. Align the notches on both ends of the module against the receptive points on the ends of the slot.

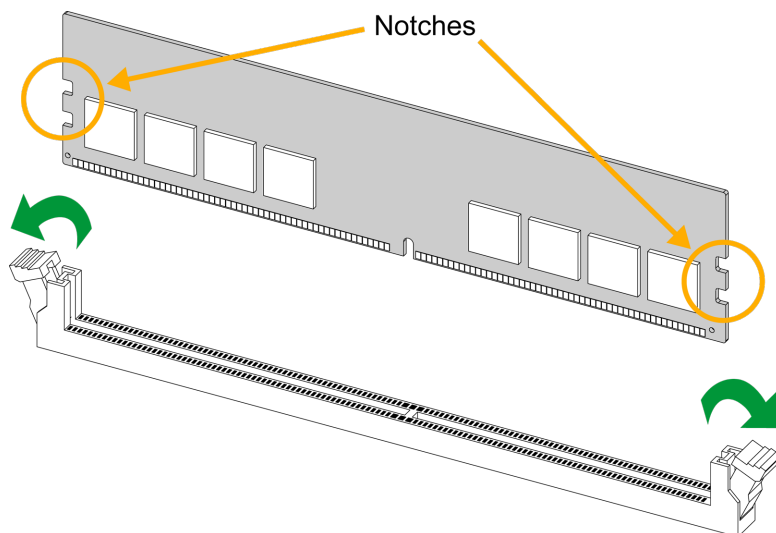


Figure 3-17. Aligning the Notches

5. Press both ends of the module straight down into the slot until the module snaps into place.
6. Press the release tabs to the lock positions to secure the DIMM into the slot.

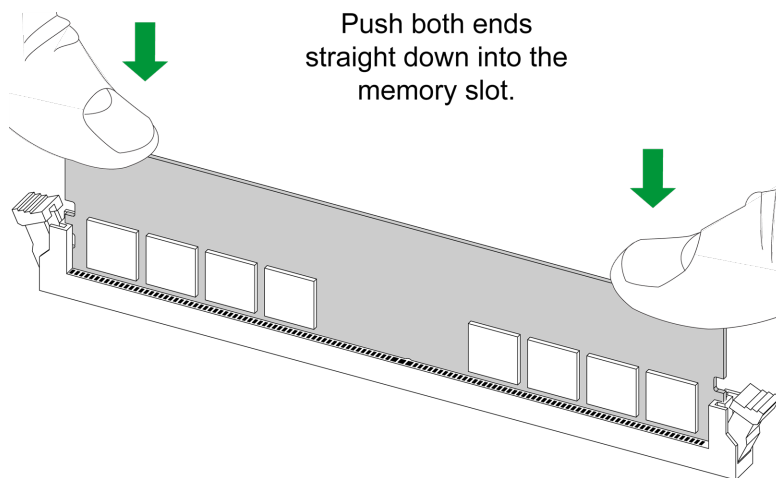


Figure 3-18. Securing the DIMM

For a detailed diagram of the CARAM5-M motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 20.

DIMM Removal

Important: To avoid causing any damage to the memory module or the DIMM socket, do not use excessive force when pressing the release tabs on the ends of the DIMM socket. Handle memory modules with care. To avoid ESD-related damage to your memory modules or components, carefully follow all the instructions given in "[Static-Sensitive Devices](#)" on [page 31](#).

Press both release tabs on the ends of the DIMM socket to unlock it. Once the DIMM is loosened, remove it from the memory slot.

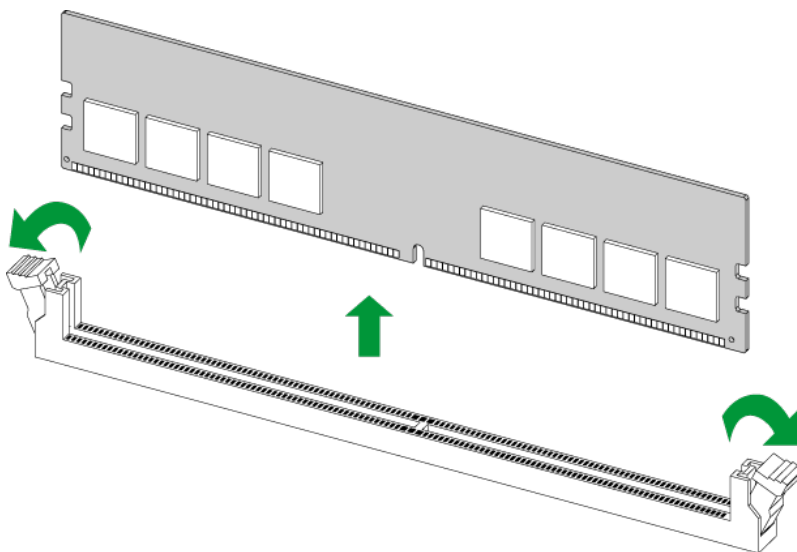


Figure 3-19. Unlocking the DIMM Slot

For a detailed diagram of the CARAM5-M motherboard, see the layout under "[Motherboard Quick Reference](#)" on [page 20](#).

3.6 Motherboard Battery Removal and Installation

Battery Removal

To remove the onboard battery, follow the steps below:

1. Power off your system and unplug your power cable.
2. Place the system on a workbench.
3. Remove the top cover from the system.
4. Locate the onboard battery as shown below.
5. Using a tool such as a pen or a small screwdriver, push the battery lock outwards to unlock it. Once unlocked, the battery will pop out from the holder.
6. Remove the battery.

Proper Battery Disposal

Important: 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. Comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

Battery Installation

To install an onboard battery, follow steps 1 and 2 above and continue below:

Important: When replacing a battery, be sure to only replace it with the same type.

1. Identify the battery's polarity. The positive (+) side should be facing up.
2. Insert the battery into the battery holder and push it down until you hear a click to ensure that the battery is securely locked.

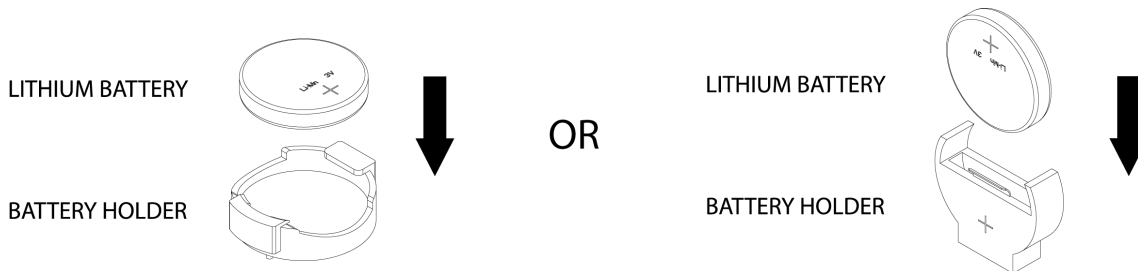


Figure 3-20. Installing a Battery

3.7 Storage Drives

The CSE-GS2B chassis supports one fixed 2.5" and one 3.5" storage drive. The drives are mounted respectively on the top and bottom sides of the drive bracket.

Note: Enterprise-level storage modules are recommended for use in Supermicro systems.

Removing Drives from the Chassis

1. Make sure to power down the system as described earlier.
2. After removing the front bezel, remove the two screws securing the storage drive bracket.
3. Rotate the bracket outward and lift it up.

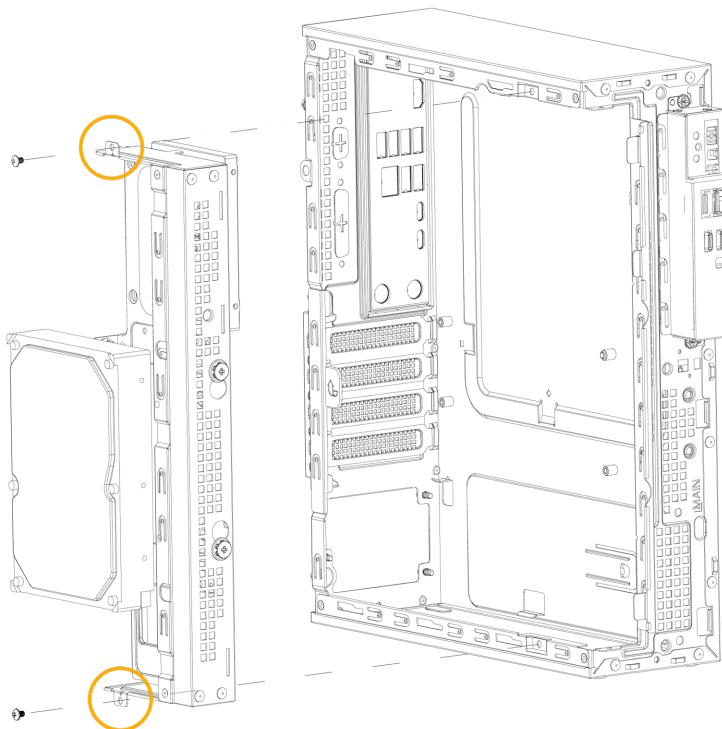


Figure 3-21. Removing the Drive Bracket

4. Remove the two screws securing the 3.5" and 2.5" storage drives on the left and right sides of the bracket.
5. Remove the drives.

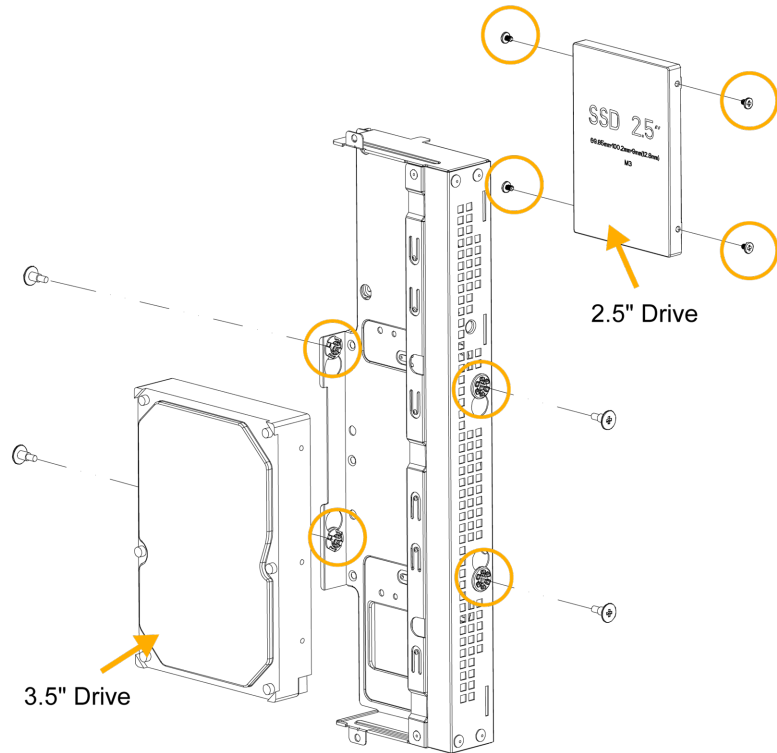


Figure 3-22. Removing the Storage Drives

3.8 Expansion Cards

Refer to the following sections for information on the expansion cards supported by the AS - C521D server.

PCIe Cards

The CSE-GS2B chassis provides four PCIe slots for low-profile, half-length expansion cards.

Removing an Expansion Card

1. Power down the system and remove the chassis cover as described earlier in this section.
2. At the rear of the chassis, remove the four screws securing the PCIe bracket at the top.
3. Pull the bracket outward to release it.
4. Slide the expansion card upward to remove it.

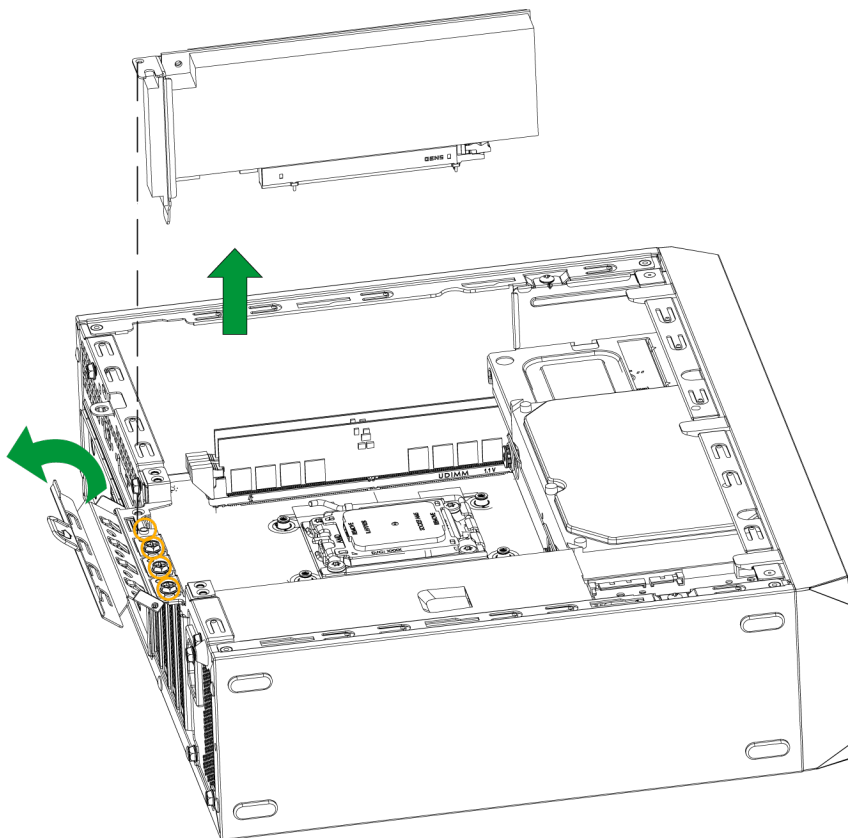


Figure 3-23. Removing an Expansion Card

3.9 Power Supply

The chassis includes one 300 W power supply module. The power supply will automatically sense and operate at an input voltage between 100 - 240 V. Note that different input voltages will result in different maximum power output levels. Replacement modules can be ordered directly from Supermicro.

An amber light on the power supply is illuminated when the power is switched off. A green light indicates that the power supply is operating.

Removing the Power Supply

1. Power down the system as described in ["Removing Power" on page 28](#).
2. Remove the three screws securing the power supply to the rear of the chassis.
3. Grasp the power supply and pull it backward to remove it from the chassis.

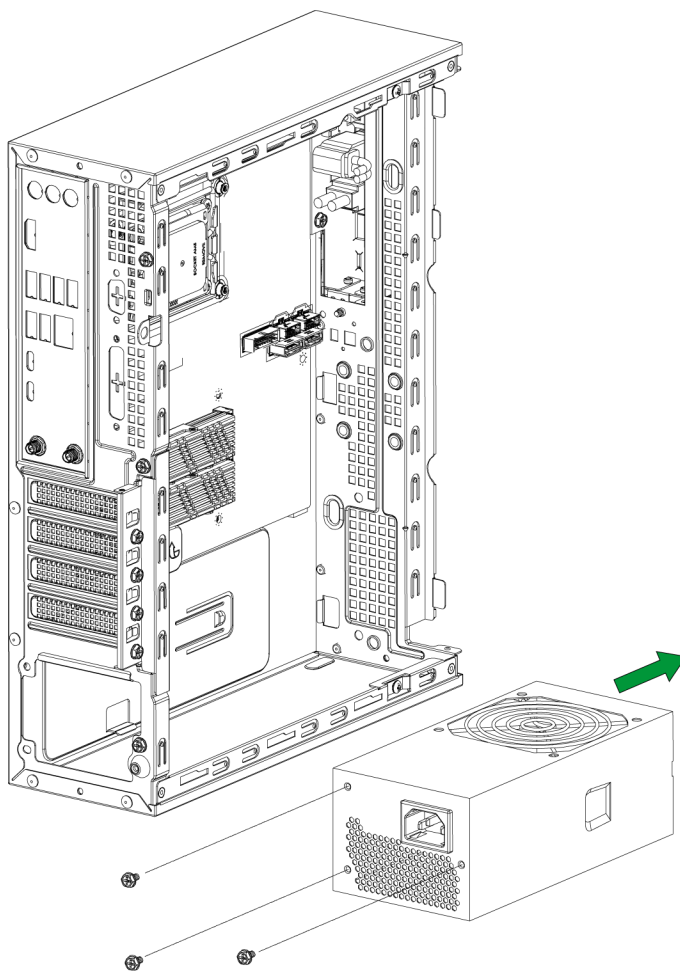


Figure 3-24. Removing the Power Supply Module

Chapter 4:

Motherboard Connections, Jumpers, and LEDs

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 the ["Introduction" on page 11](#). More detail can be found in the CARAM5-M motherboard manual.

Review the ["Standardized Warning Statements for AC Systems" on page 108](#) before installing or removing components.

4.1 Power Supply and Power Connections	52
Power Supply	52
Power Connectors	52
4.2 Headers and Connections	54
Audio Front Panel Header	54
COM Header	54
Fan Headers	55
Onboard Battery (BT1)	55
PCIe M.2 Connectors (M.2-C1, M.2-P1)	55
Standby Power Header	55
USB Ports (USB0~3, USB4~5, USB6~7, USB8~9, USB10~11)	56
4.3 Jumper Settings	58
CMOS Clear	58
Watchdog Timer	59
4.4 LED Indicators	60
Power Fail/Fan Fail LED	60
Onboard Power LED	60
Power-On Self-Test (POST) LEDs	60
M.2 SSD LEDs	61

4.1 Power Supply and Power Connections

For information about the power supply and power connections of the AS -C521D server, refer to the following content.

Power Supply

As with all computer products, a stable power source is necessary for proper and reliable operation. It is even more important for processors that have high CPU clock rates where noisy power transmission is present.

There are two 12 V power connectors (JPW1 and JPW2) on the CARAM5-M motherboard.

Power Connectors

12V 8-pin Auxiliary Power Connector (JPW2)

JPW2 is an 8-pin ATX power input to provide auxiliary power to the processor. Refer to the table below for pin definitions.

12 V 8-pin Power Connector			
Pin Definitions: Eight Total			
Pin#	Definition	Pin#	Definition
1	Ground	5	+12 V
2	Ground	6	+12 V
3	Ground	7	+12 V
4	Ground	8	+12 V

Main Power Supply Connector (JPW1)

The primary power supply connector (JPW1) is an ATX power connector that the power supply plugs directly into.

ATX Power 24-pin Connector			
Pin Definitions: 24 Total			
Pin#	Definition	Pin#	Definition
1	+3.3 V	13	+3.3 V
2	+3.3 V	14	-12 V
3	Ground	15	Ground

ATX Power 24-pin Connector			
Pin Definitions: 24 Total			
Pin#	Definition	Pin#	Definition
4	+5 V	16	PS_ON
5	Ground	17	Ground
6	+5 V	18	Ground
7	Ground	19	Ground
8	PWR_OK	20	Res (NC)
9	5 VSB	21	+5 V
10	+12 V	22	+5 V
11	+12 V	23	+5 V
12	+3.3 V	24	Ground

4.2 Headers and Connections

For information about the headers on the CARAM5-M motherboard, refer to the following content.

Audio Front Panel Header

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

For a detailed diagram of the CARAM5-M motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 20.

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

COM Header

There is one COM header at JCOM1 on the CARAM5-M motherboard. Use a cable with the COM header to access the COM port. COM ports provide serial communication support.

For a detailed diagram of the CARAM5-M motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 20.

COM Header			
Pin Definitions: Nine Total			
Pin#	Definition	Pin#	Definition
1	SP_DCD0	6	SP_DSR0
2	SP_RXD0	7	SP_RTS0
3	SP_TXD0	8	SP_CTS0
4	SP_DTR0	9	SP_RI0
5	GND		

Fan Headers

There are six 4-pin fan headers (FAN_A/1A/2B, FAN_1/2/3) on the CARAM5-M motherboard.

4-pin Fan Headers	
Pin Definitions: Four Total	
Pin#	Definition
1	Ground
2	+12 V Standby
3	Tachometer
4	PWM Control

Onboard Battery (BT1)

The onboard backup battery is located at BT1. The onboard battery provides backup power to the on-chip CMOS, which stores the BIOS' setup information. It also provides power to the Real Time Clock (RTC) to keep it running.

PCIe M.2 Connectors (M.2-C1, M.2-P1)

The PCIe M.2 connectors are for devices such as memory cards, wireless adapters, etc. These devices must conform to the PCIe M.2 specifications (formerly known as NGFF). These particular PCIe M.2 connectors support M-Key (PCIe x4) storage cards. M.2-C1 supports a speed of PCIe 5.0, while M.2 -P1 supports a speed of PCIe 4.0 only.

For a detailed diagram of the CARAM5-M motherboard, see the layout under ["Motherboard Quick Reference"](#) on page 20.

Standby Power Header

A Standby Power header is located at JSTBY1 on the CARAM5-M motherboard.

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

USB Ports (USB0~3, USB4~5, USB6~7, USB8~9, USB10~11)

There are a total of 12 USB ports supported on the CARAM5-M motherboard. Eight are located on the rear panel, and four are located on the front panel. Note that USB devices are not able to wake up from an S3/S4 state.

Rear Panel USB8~9 (3.2)			
Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5 V		
2	USB32_RN	19	+5 V
3	USB32_RP	18	USB32_RN
4	GND	17	USB32_RP
5	USB32_TN	16	GND
6	USB32_TP	15	USB32_TN
7	GND	14	USB32_TP
8	USB_N	13	GND
9	USB_P	12	USB_N
10	GND	11	USB_P

Rear Panel USB10 (3.2)			
Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5 V	20	CC2
2	USB32_TP0	19	USB_P
3	USB32_TN0	18	USB_N
4	GND	17	GND
5	USB32_RP0	16	USB32_RN1
6	USB32_RN0	15	USB32_RP1
7	+5 V	14	GND
8	CC1	13	USB32_TN1
9	X	12	USB32_TP1
10	X	11	+5 V

Rear Panel USB11 (3.2)			
Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5 V	20	CC2
2	USB32_TP0	19	USB_P
3	USB32_TN0	18	USB_N
4	GND	17	GND
5	USB32_RP0	16	USB32_RN1
6	USB32_RN0	15	USB32_RP1
7	+5 V	14	GND
8	CC1	13	USB32_TN1
9	X	12	USB32_TP1
10	X	11	+5 V

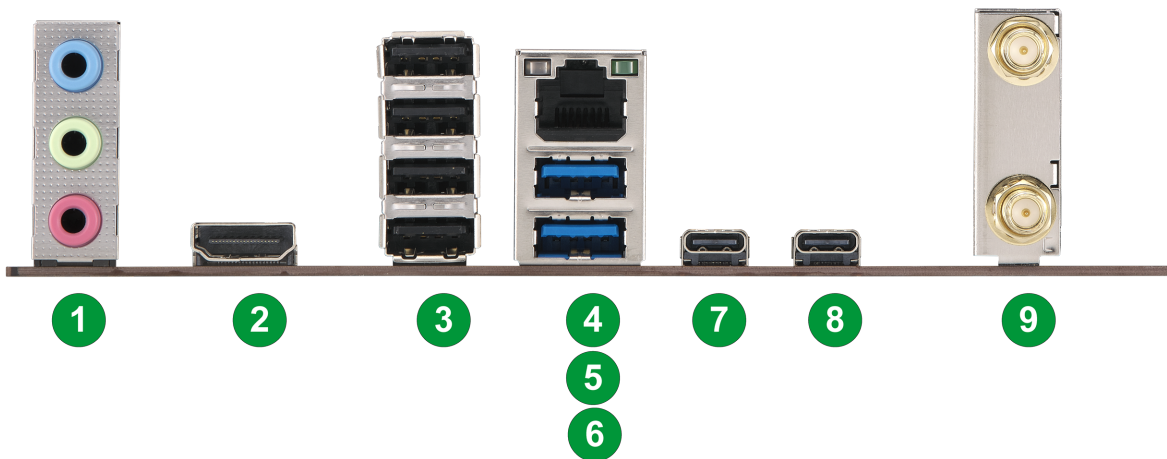


Figure 4-1. CARAM5-M I/O Ports

I/O Ports			
#	Description	#	Description
1	Audio Jacks	6	USB 3.2 Gen2 (10 G)
2	HDMI	7	USB 4.0 (Type-C, supports DP Alt mode)
3	USB 2.0	8	USB 4.0 (Type-C, supports DP Alt mode)
4	LAN	9	Wi-Fi 7 + Bluetooth® 5.4 Antenna(s) port(s)
5	USB 3.2 Gen2 (10 G)		

4.3 Jumper Settings

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

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

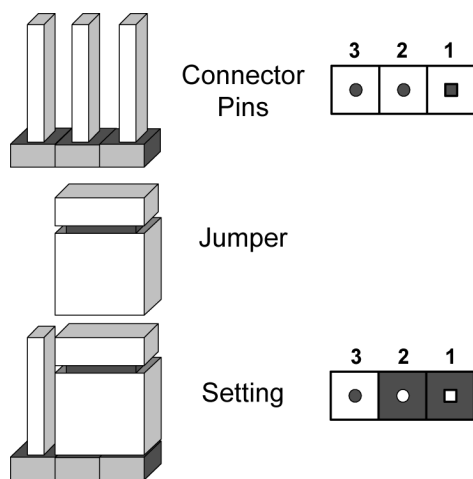


Figure 4-2. Jumping Connector Pins

CMOS Clear

JBT1 on the CARAM5-M motherboard 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.

For a detailed diagram of the CARAM5-M motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 20.



JBT1 contact pads

1. Power down the system.
2. Unplug the power cord(s).
3. Remove the cover of the chassis to access the motherboard.
4. Remove the onboard battery from the motherboard.

5. Short the CMOS pads, JBT1, with a metal object such as a small screwdriver for at least four seconds.

Note: Clearing CMOS will also clear all passwords.

6. Remove the screwdriver or shorting device.
7. Reinsert the battery.
8. Replace the cover.
9. Reconnect the power cord(s).
10. Power on the system.

Watchdog Timer

Watchdog (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 (NMI) signal for the application that hangs. The watchdog must also be enabled in the BIOS.

For a detailed diagram of the CARAM5-M motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 20.

Watchdog Timer Jumper Settings	
Jumper Setting	Definition
Pins 1–2	Reset (Default)
Pins 2–3	NMI
Open	Disabled

4.4 LED Indicators

For information about the LED indicators on the AS -C521D server, refer to the following content.

Power Fail/Fan Fail LED

LED6 is the power and fan fail LED. Refer to the table below for the LED status.

For a detailed diagram of the CARAM5-M motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 20.

Power Fail/Fan Fail LED	
LED Indicator	
Pin#	Definition
Blinking Red	Power Fail or Fan Fail
Solid Red	Overheat

Onboard Power LED

An Onboard Power LED is located on the CARAM5-M motherboard. When this LED is on, the system is on. Be sure to turn off the system and unplug the power cord before removing or installing components.

For a detailed diagram of the CARAM5-M motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 20.

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

Power-On Self-Test (POST) LEDs

A WLAN POST LED (LED3201) and a Bluetooth POST LED (LED3202) are built-in to indicate the WLAN and Bluetooth devices POST status .

For a detailed diagram of the CARAM5-M motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 20.

WLAN LED Indicator	
LED Color	Definition
Green	WLAN POST Working
Off	WLAN POST Completed

Bluetooth LED Indicator	
LED Color	Definition
Green	Bluetooth POST Working
Off	Bluetooth POST Completed

M.2 SSD LEDs

M.2 LEDs are located at LEDM21 and LEDM22 on the CARAM5-M motherboard. When an M.2 LED is blinking, the corresponding M.2 device is functioning normally.

For a detailed diagram of the CARAM5-M motherboard, see the layout under ["Motherboard Quick Reference"](#) on page 20.

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

Chapter 5:

Software

After the AS -C521D server has been installed, you can install the Operating System (OS), configure RAID settings, and install the drivers.

5.1 Microsoft Windows OS Installation	63
Installing the OS	63
5.2 Driver Installation	65

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 <https://www.supermicro.com/support/manuals>.

Installing the OS

1. Create a method to access the Microsoft Windows installation ISO file. That can be a USB flash or media drive.
2. Retrieve the proper drivers. 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 bootup.

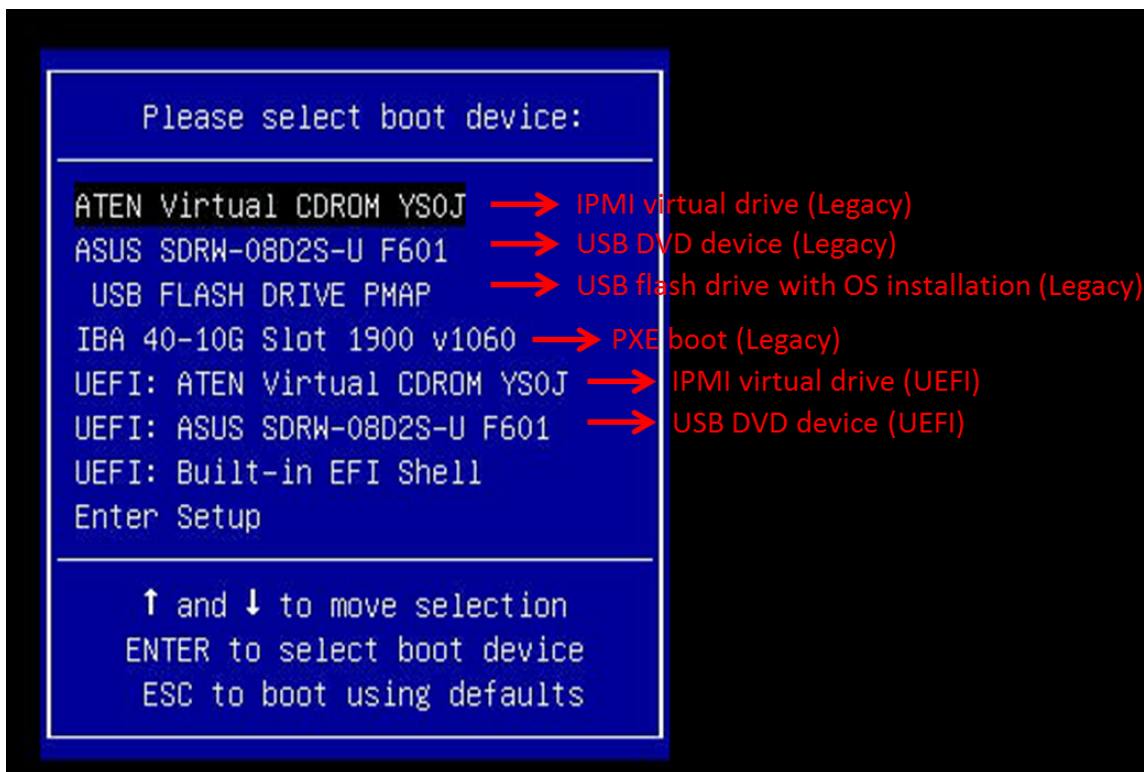


Figure 5-1. Selecting the Boot Device

4. During Windows Setup, continue to the dialog box where you select the drives on which to install Windows. If the disk you want to use is not listed, click on the "Load driver" link at the bottom left corner.

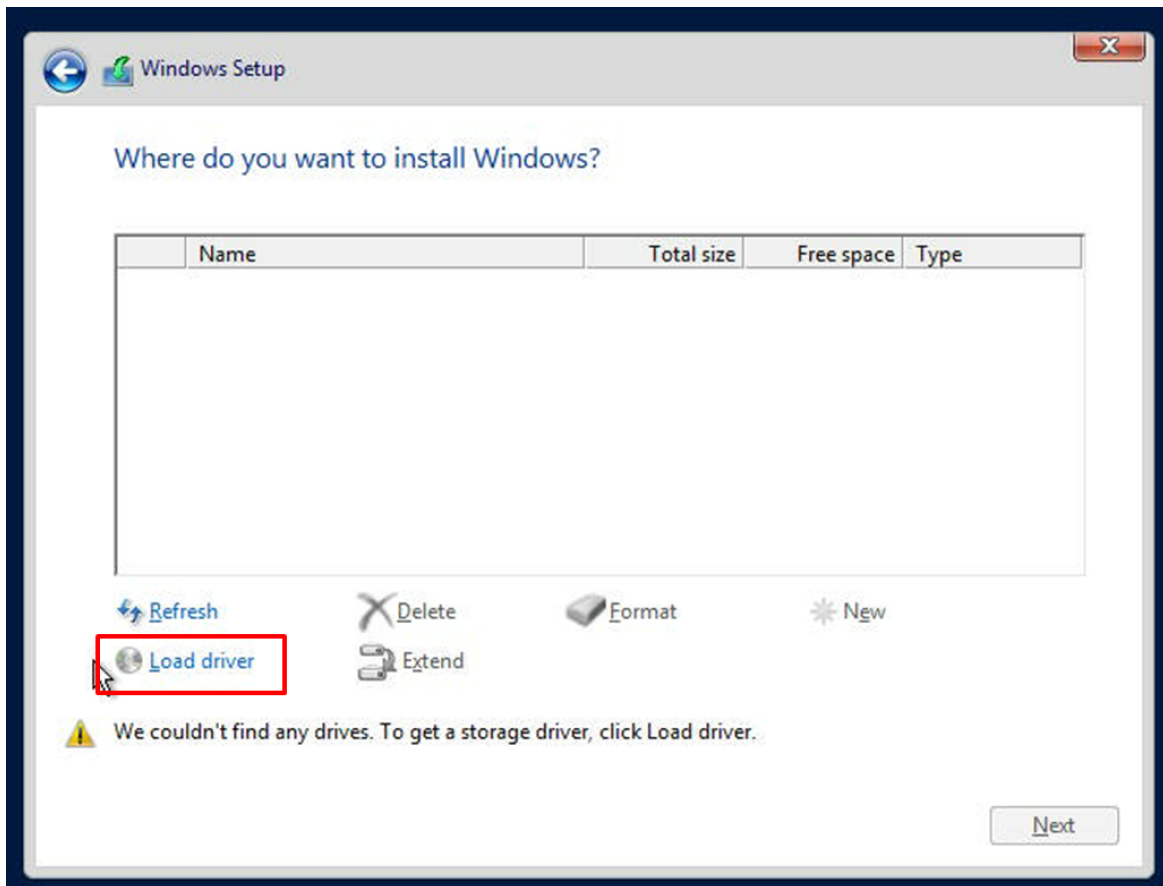


Figure 5-2. Loading the Driver Link

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

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 for system updates.

5.2 Driver Installation

The Supermicro website contains drivers and utilities for your system at the following page:

<https://www.supermicro.com/wdl>.

Some of these drivers and utilities 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 or media drive. You may also use a utility to extract the ISO file if preferred.

Another option is to go to the Supermicro website at <https://www.supermicro.com>. 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 Download Screenshot

Note: Click the icons showing a hand writing on paper to view the readme files for each item. Click the computer icons to the right of these items to install each item (from top to bottom) one at a time. After installing each item, you must reboot 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.

Chapter 6:

Troubleshooting and Support

The following content contains information on common issues and how to resolve them.

6.1 Online Resources	67
Direct Links for the SuperServer AS -C521D System	67
Direct Links for General Support and Information	67
6.2 Troubleshooting Procedures	68
Before Power On	68
No Power	68
No Video	68
System Boot Failure	68
Memory Errors	69
Losing the System's Setup Configuration	69
If the System Becomes Unstable	69
6.3 CMOS Clear	71
6.4 Motherboard Battery	72
6.5 Where to Get Replacement Components	73
6.6 Technical Support Procedures	74
Returning Merchandise for Service	74
6.7 Feedback	76

6.1 Online Resources

A great deal of information is available on the Supermicro website. From the top menu of the Supermicro home page at <https://www.supermicro.com>:

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

Direct Links for the SuperServer AS -C521D System

[AS -C521D](#) specifications page

[CARAM5-M](#) 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: <https://www.supermicro.com/FAQ/index.php>
- TPM User Guide: https://www.supermicro.com/manuals/other/AOM-TPM-9670V_9670H_X12_H12.pdf
- Product Resources page for validated memory details: <https://www.supermicro.com/en/support/product-resources>
- Product Matrices page for links to tables summarizing specs for systems, motherboards, power supplies, riser cards, add-on cards, and more: <https://www.supermicro.com/en/support/product-matrices>
- Security Center for recent security notices: https://www.supermicro.com/en/support/security_center
- Supermicro Phone and Addresses: <https://www.supermicro.com/en/about/contact>

6.2 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" on page 74](#) section in this chapter. Always disconnect the AC power cord before adding, changing or installing any non hot-swap hardware components. If the below steps do not fix the setup configuration problem, contact your vendor for repairs.

Before Power On

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

No Power

1. Make sure that there are no short circuits between the motherboard and the chassis.
2. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3 VDC. If it does not, replace it with a new one.

No Video

1. If the power is on, but you do not have video, remove all add-on cards and cables.
2. 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, do the following:

1. Remove all components from the motherboard, especially the DIMMs. Power on the system and check if the power-on LED is on, and system fans are spinning.
2. Turn on the system with only one DIMM installed. If the system boots, check for bad DIMMs or slots by following the Memory Errors Troubleshooting procedure in this chapter.

Memory Errors

When suspecting faulty memory is causing the system issue, check the following:

1. Make sure that the memory modules are compatible with the system and are properly installed. See "[Maintenance and Component Installation](#)" on page 26 for installation instructions. (For memory compatibility, refer to the "Tested Memory List" link on the motherboard's product page to see a list of supported memory.)
2. Check if different speeds of DIMMs have been installed. It is strongly recommended that you use the same RAM type and speed for all DIMMs in the system.
3. Make sure that you are using the correct type of DIMMs recommended by the manufacturer.
4. Check for bad DIMMs or slots by swapping a single module among all memory slots and check the results.

Losing the System's Setup Configuration

1. Make sure that you are using a high-quality power supply. A poor-quality power supply may cause the system to lose the CMOS setup information. Refer to "[Introduction](#)" on page 11 for details on recommended power supplies.
2. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3 VDC. If it does not, replace it with a new one.

If the System Becomes Unstable

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

1. Processor/BIOS support: Make sure that your processor is supported and that you have the latest BIOS installed in your system.
2. Memory support: Make sure that the memory modules are supported. Refer to the product page on our website at <https://www.supermicro.com>. Test the modules using memtest86 or a similar utility.

Note: Click on the "Tested Memory List" link on the motherboard's product page to see a list of supported memory.

3. Storage Drive support: Make sure that all storage drives work properly. Replace the failed storage drives with good ones.

4. System cooling: Check the system cooling to make sure that all heatsink fans and processor/system fans, etc., work properly.
5. 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 our website for more information on the minimum power requirements.
6. Proper software support: Make sure that the correct drivers are used.

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

1. Source of installation: Make sure that the devices used for installation are working properly, including boot devices such as a CD/Media drive.
2. Cable connection: Check to make sure that all cables are connected and working properly.
3. Use the minimum configuration for troubleshooting: Remove all unnecessary components (starting with add-on cards first), and use the minimum configuration (but with the processor and a memory module installed) to identify the trouble areas. Refer to the steps listed above in this section for proper troubleshooting procedures.
4. Identify bad components by isolating them: If necessary, remove a component in question from the chassis, and test it in isolation to make sure that it works properly. Replace a bad component with a good one.
5. Check and change one component at a time instead of changing several items at the same time. This will help isolate and identify the problem.
6. To find out if a component is good, swap this component with a new one to see if the system will work properly. If so, then the old component is bad. You can also install the component in question in another system. If the new system works, the component is good and the old system has problems.

6.3 CMOS Clear

JBT1 on the CARAM5-M motherboard is used to clear CMOS, which will also clear any passwords. For information on clearing CMOS, refer to ["CMOS Clear" on page 58](#) earlier in this manual.

6.4 Motherboard Battery

For information on removing, disposing of, and replacing the motherboard battery of your system, refer to ["Motherboard Battery Removal and Installation" on page 46](#).

6.5 Where to Get Replacement Components

If you need replacement parts for your AS -C521D server, 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 on the Supermicro website:

<https://www.supermicro.com>

Under the "Buy" menu, click the "Where to Buy" link.

6.6 Technical Support Procedures

Before contacting Technical Support, take the following steps. Also, note that as a motherboard manufacturer, Supermicro also sells motherboards through its channels, so it is best to first check with your distributor or reseller for troubleshooting services. They should know of any possible problems with the specific system configuration that was sold to you.

1. Refer to [Troubleshooting Procedures](#) or see the FAQs on our website (<https://www.supermicro.com/FAQ/index.php>) before contacting Technical Support.
2. BIOS upgrades can be downloaded from our website (https://www.supermicro.com/support/resources/bios_ipmi.php).
3. If you still cannot resolve the problem, include the following information when contacting Supermicro for technical support:
 - Motherboard model and PCB revision number
 - BIOS release date/version (This can be seen on the initial display when your system first boots up.)
 - System configuration
4. An example of a Technical Support form is on our website at <https://webpr3.supermicro.com/SupportPortal>.
5. Distributors: For immediate assistance, have your account number ready when placing a call to our Technical Support department. For Supermicro contact information, refer to ["Contacting Supermicro"](#) on page 10.

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 the server to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and the shipping package is 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 can be requested online at the following page:

<https://www.supermicro.com/RmaForm>

Whenever possible, repack the server in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the server securely, using packaging material to surround the server 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.

6.7 Feedback

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

Chapter 7:

UEFI BIOS

The following content contains information on BIOS configuration with the AS -C521D server.

7.1 Introduction	78
7.2 Main Setup	79
7.3 Advanced Setup Configurations	81
7.4 Thermal & Fan	97
7.5 Security	101
7.6 Boot	103
7.7 Save & Exit	105

7.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for the motherboard. The BIOS is stored on a chip and can be easily upgraded using the UEFI script (flash.nsh), or the SuperServer Automation Assistant (SAA) utility.

Note: Due to periodic changes to the BIOS, some settings may have been added or deleted and might not yet be recorded in this manual. Refer to the Manual Download area of our website for any changes to BIOS that may not be reflected in this manual.

Starting the Setup Utility

To enter the BIOS Setup utility, press the <Delete> key while the system is booting-up. In most cases, the <Delete> key is used to invoke the BIOS Setup screen. There are a few cases when other hot keys are used, such as <F1>, <F2>, etc. Each main BIOS menu option is described in this manual.

The Main BIOS screen has two main frames. The left frame displays all the options that can be configured. “Grayed-out” options cannot be configured. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When a BIOS submenu or item is selected in the left frame, it is highlighted in white. Often a text message will accompany it. (Note that BIOS has default text messages built in. We retain the option to include, omit, or change any of these text messages.) Settings printed in Bold are the default values.

A "►" indicates a submenu. Highlighting such an item and pressing the <Enter> key open the list of settings within that submenu.

The BIOS Setup utility uses a key-based navigation system called hot keys. Most of these hot keys (<F1>, <F2>, <F3>, <F4>, <F5>, <F6>, <Enter>, <ESC>, the arrow keys, etc.) can be used at any time during the setup navigation process.

7.2 Main Setup

The Main setup screen appears when the AMI BIOS Setup utility is first entered. To return to the Main setup screen, select the Main tab at the top of the screen. The Main BIOS setup screen is shown below.

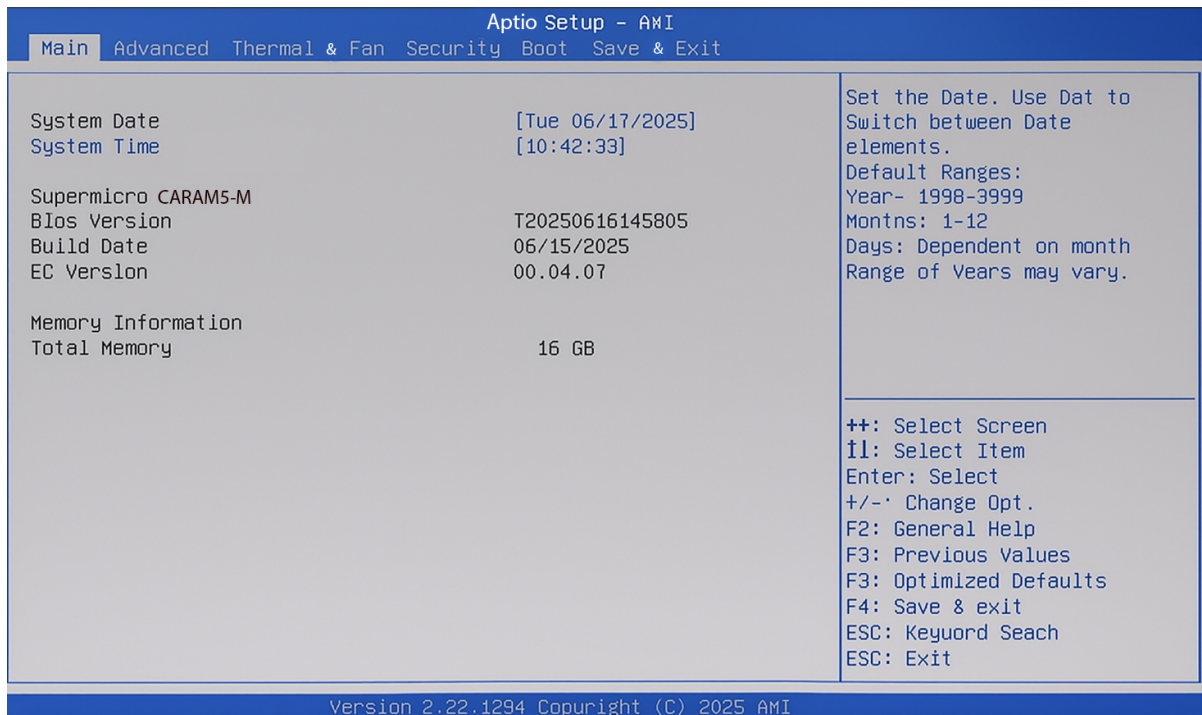


Figure 7-1. UEFI BIOS Main Tab Screen

System Date/System Time

Use these two settings to change the system date and time. Highlight **System Date** or **System Time** using the arrow keys. Enter new values using the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in MM/DD/YYYY format. The time is entered in HH:MM:SS format.

Note: The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00.

Supermicro CARAM5-M

BIOS Version

This displays the version of the BIOS ROM used in the system.

Build Date

This feature displays the date when the version of the BIOS ROM used in the system was built.

EC Version

This feature displays the version of the Embedded Controller (EC) firmware used in the system.

Memory Information

Total Memory

This feature displays the total size of memory available in the system.

7.3 Advanced Setup Configurations

Use the arrow keys to select the Advanced submenu and press <Enter> to access the submenu items.

Important: Use caution when changing the Advanced settings. An incorrect value, an improper DRAM frequency, or a wrong BIOS timing setting may cause the system to malfunction. When this occurs, revert the settings to the default manufacturing settings.

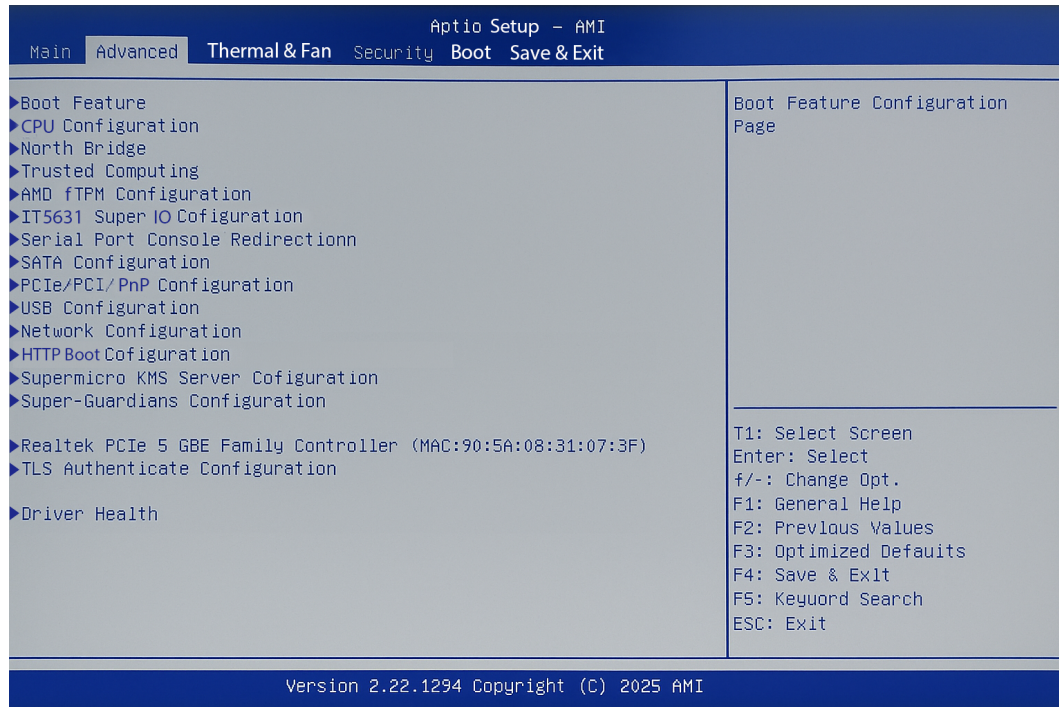


Figure 7-2. Advanced BIOS Screen

Boot Feature

Quiet Boot

Use this feature to select the screen between displaying the Power On Self Test (POST) messages or the OEM logo upon bootup. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are Disabled and **Enabled**.

Note: BIOS POST messages are always displayed regardless of the setting of this feature.

Option ROM Messages

Use this feature to set the display mode for the Option ROM. Select Keep Current to display the current AddOn ROM display settings. Select Force BIOS to use the Option ROM display mode set by the system BIOS. The options are **Force BIOS** and Keep Current.

Bootup NumLock State

Use this feature to set the power on state for the <Num Lock> key. The options are **On** and Off.

Wait For "F1" If Error

Select Enabled to force the system to wait until the <F1> key is pressed if an error occurs. The options are Disabled and **Enabled**.

INT19 Trap Response

Interrupt 19 is the software interrupt that handles the boot disk function. When this feature is set to Immediate, the ROM BIOS of the host adaptors will "capture" Interrupt 19 at bootup immediately and allow the drives that are attached to these host adaptors to function as bootable drives. If this feature is set to Postponed, the ROM BIOS of the host adaptors will not capture Interrupt 19 immediately to allow the drives attached to these adaptors to function as bootable devices at bootup. The options are **Immediate** and Postponed.

Re-try Boot

If this feature is set to Enabled, the system BIOS will automatically reboot the system from an Extensible Firmware Interface (EFI) boot device after an initial boot failure. The options are **Disabled** and EFI Boot.

Power Configuration

Watch Dog Function

Select Enabled to allow the Watchdog timer to reboot the system when it is inactive for more than five minutes. The options are **Disabled** and Enabled.

Restore on AC Power Loss

Use this feature to set the power state after a power outage. Select Stay Off for the system power to remain off after a power loss. Select Power On for the system power to be turned on after a power loss. Select Last State to allow the system to resume its last power state before a power loss. The options are Stay Off, Power On, and **Last State**.

Power Button Function

This feature controls how the system shuts down when the power button is pressed. Select 4 Seconds Override to power off the system after pressing and holding the power button for four seconds or longer. Select Instant Off to instantly power off the system as soon as you press the power button. The options are **Instant Off** and 4 Seconds Override.

DeepS5 Power Policy

Use this setting to enable or disable S5 Deep Sleep Mode. The options are **Disabled** and **Enabled**.

ACPI Sleep State

Selects the highest ACPI sleep state that the system will enter when the SUSPEND button is pressed. The options are Suspend Disabled and **S3 (Suspend to RAM)**.

Enable Hibernation

Use this setting to enable or disable the system's ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems. The options are **Disabled** and **Enabled**.

CPU Configuration

Module Version

Global C-state Control

Controls I/O-based C-state generation and DF C-states. The options are **Disabled**, **Enabled**, and **Auto**.

PSS Support

Use this setting to enable or disable the generation of ACPI_PPC, _PSS, and PCT objects. The options include **Disabled** and **Enabled**.

PPC Adjustment

Use this setting to adjust PPC objects. The options include **PState 0** and **PState 1**.

NX Mode

Use this setting to enable or disable no-execute page protection function. The options include **Disabled** and **Enabled**.

SVM Mode

This setting enables or disables CPU Virtualization. The options are **Disabled** and **Enabled**.

SMT Control

This setting is used to disable symmetric multithreading. To re-enable SMT, a power cycle is needed after selecting the **Enable** option. Select **Auto** based on BIOS PCD default setting. The options are **Disabled** and **Auto**.

Core Performance Boost

Use this setting to configure Core Performance Boost. The options are **Disabled** and **Auto**.

► CPU Information

These sections are for informational purposes. They will display some details about the detected CPUs on the motherboard, such as:

- CPU Version
- Number of Cores Running
- Processor Family
- Processor Model
- CPUID
- Max Speed
- Min Speed
- Microcode Patch Level
- L1 Instruction Cache (Size/Method)
- L1 Data Cache (Size/Method)
- L2 Cache (Size/Method)
- Total L3 Cache per Socket (Size/Method)

North Bridge

North Bridge Configuration

Above 4GB MMIO Limit

Use this setting to set Above 4GB MMIO Limit to 38 to 43 bits limit. This option only works when "Above 4G decoding" is enabled. Options include **40bit (1TB)**, 41bit (2TB), 42bit (4TB), 43bit (8TB), 44bit (16TB), 45bit (32TB), 46bit (64TB), 47bit (128TB), and 48bit (256TB).

IOMMU

Use this setting to enable or disable IOMMU. The options are Disabled, Enabled, and **Auto**.

PPT Control

The options are Manual and **Auto**.

NB Azalia

This setting enables the Integrate HD Audio Controller. The options are Disabled, Enabled, and **Auto**.

HD Audio

This setting enables the HD Audio Controller. The options are Disabled and **Enabled**.

► Memory Information

Memory Information

DIMMA1

DIMMB1: Size/Current speed/Max speed

Trusted Computing

Configuration

Security Device Support

If this feature and the TPM jumper on the motherboard are both set to Enabled, onboard security devices will be enabled for Trusted Platform Module (TPM) support to enhance data integrity and network security. Please reboot the system for a change on this setting to take effect. The options are Disabled and **Enabled**.

When "Security Device Support" is set to Enabled and a TPM 2.0 device is detected by the BIOS, the following information is displayed:

- Active PCR banks
- Available PCR banks

Note: The following features are available when a TPM 2.0 device is detected by the BIOS.

SHA256 PCR Bank

Use this feature to disable or enable the SHA256 Platform Configuration Register (PCR) bank for the installed TPM device. The options are Disabled and **Enabled**.

SHA384 PCR Bank

Use this feature to disable or enable the SHA384 Platform Configuration Register (PCR) bank for the installed TPM device. The options are **Disabled** and Enabled.

Pending Operation

Use this feature to schedule a TPM-related operation to be performed by a security device for system data integrity. The options are **None** and TPM Clear.

Note: Your system will reboot to carry out a pending TPM operation.

Platform Hierarchy

Use this feature to disable or enable platform hierarchy for platform protection. The options are Disabled and **Enabled**.

Storage Hierarchy

Use this feature to disable or enable storage hierarchy for cryptographic protection. The options are Disabled and **Enabled**.

Endorsement Hierarchy

Use this feature to disable or enable endorsement hierarchy for privacy control. The options are Disabled and **Enabled**.

PH Randomization

Use this feature to disable or enable Platform Hierarchy (PH) Randomization. The options are **Disabled** and Enabled.

AMD fTPM Configuration

AMD fTPM Switch

The options are Route to SPI TPM and **AMD CPU fTPM**.

Erase fTPM NV For Factory Reset

When a new CPU is installed, select Enabled to reset fTPM. If you have a BitLocker or encryption enabled system, the system will not boot without a recovery key. Select Disabled to keep the previous fTPM record and continue with system boot. Note that fTPM will not be active with the new CPU unless it is reset (reinitialized). If necessary, you can swap back to the old CPU to recover TPM-related keys and data. The options are Disabled and **Enabled**.

IT5631 Super IO Configuration

Super IO Chip: IT5631

► Serial Port 1 Configuration

Serial Port 1

Select Enabled to enable serial port 1. The options are Disabled and **Enabled**.

Change Settings

Use this feature to select an optimal setting for Super IO Device. The options are **Auto**, (IO=3F8h; IRQ=4;), (IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;), (IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;), (IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;), and (IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;).

Serial Port Console Redirection

COM1

Console Redirection

Select Enabled to enable COM port 1 for Console Redirection, which allows a client machine to be connected to a host machine at a remote site for networking. The options are **Disabled** and Enabled.

Note: This feature will be set to Enabled if there is no BMC support.

► Legacy Console Redirection Settings

Legacy Serial Redirection Port

Select a COM port to display redirection of legacy OS and legacy OPROM messages. The options are **COM1** and SOL/COM2 (Disabled).

Resolution

On legacy OS, the number of rows and columns supported redirection. The options are 80x24 and **80x25**.

Redirection After BIOS Post

When bootloader is selected, then legacy console redirection is disabled before booting to legacy OS. When always is select, then legacy console redirection is enabled for legacy OS. The options are **Always Enable** and BootLoader.

Console Redirection EMS

Select Enabled to use the SOL port for Console Redirection. The options are **Disabled** and Enabled.

SATA Configuration

SATA Configuration

SATA Mode

The options are **AHCI Mode** and RAID Mode.

PCIe/PCI/PnP Configuration

Above 4G Decoding

This setting enables 64-bit PCI device access to memory beyond 4 GB for improved memory utilization and performance. The options are Disabled and **Enabled**.

Re-Size BAR Support

This setting enables or disables the Re-Size Base Address Register feature for compatible PCIe devices, which allows the system to allocate more memory to the device. The options are Disabled and **Enabled**.

SR-IOV Support

Use this feature to enable Single Root I/O Virtualization (SR-IOV) support for SR-IOV capable PCIe devices. The options are **Disabled** and Enabled.

BME DMA Mitigation

This setting enables or disables Bus Mastering Error (BME) Direct Memory Access (DMA) mitigation for protection during the pre-boot process. The options are **Disabled** and Enabled.

ASPM Support

Configure the Active State Power Management (ASPM) level for PCIe links to optimize power consumption and performance. The options are **Disabled**, Auto, and Force L1.

Relaxed Ordering

This setting determines whether PCI Express devices are permitted to bypass strict transaction ordering, which can lead to potential performance improvements. The options are Disabled and **Enabled**.

No Snoop

This setting configures the No Snoop option for PCI Express devices, determining whether memory accesses bypass the cache. The options are Disabled and **Enabled**.

DATA Link Feature Exchange

Use this feature to disable or enable storage hierarchy for cryptographic protection. The options are **Enabled** and Disabled.

NVMe Firmware Source

This setting determines the source of firmware for NVMe devices, allowing you to select between native support or vendor-specific firmware. The options are Vendor Defined Firmware and **AMI Native Support**.

NVMe RAID Mode

This setting enables or disables NVMe RAID Mode. The options are **Disabled** and Enabled.

CPU SLOT7 PCIe 5.0 x16 OPROM

This setting enables or disables PCH SLOT7 PCIe 5.0 x16 OPROM option. The options are Disabled and **EFI**.

PCH SLOT4 PCIe 4.0 x4 OPROM

This setting enables or disables PCH SLOT4 PCIe 4.0 x4 OPROM option. The options are Disabled and **EFI**.

M.2-E1 OPROM

This setting enables or disables the OPROM for the M.2-E1 slot. The options are Disabled and **EFI**.

Onboard LAN1 Option ROM

Select which firmware function to be loaded for onboard LAN1. The options are Disabled and **EFI**.

Onboard LAN1 Support

Select which firmware function to be loaded for onboard LAN1 support. The options are **Enabled** and Disabled.

M.2-C1 OPROM

This setting enables or disables the OPROM for the M.2-C1 slot. The options are Disabled and **EFI**.

M.2-P1 OPROM

This setting enables or disables the OPROM for the M.2-P1 slot. The options are Disabled and **EFI**.

USB Configuration

USB Devices: 1 Keyboard

XHCI Hand-off

This setting provides a workaround for operating systems that do not support XHCI hand-off. The XHCI ownership change must be claimed by the XHCI driver. The options are **Enabled** and Disabled.

Port 60/64 Emulation

This setting enables or disables I/O port 60h/64h emulation support. The options are Disabled and **Enabled**.

Network Configuration

Network Stack

Select Enabled to enable Preboot Execution Environment (PXE) or Unified Extensible Firmware Interface (UEFI) for network stack support. The options are Disabled and **Enabled**.

IPv4 PXE Support (Available when "Network Stack" is set to Enabled)

Select Enabled to enable IPv4 PXE boot support. If this feature is disabled, it will not create the IPv4 PXE boot option. The options are Disabled and **Enabled**.

IPv4 HTTP Support

This setting enables IPv4 HTTP boot support. The options are **Disabled** and Enabled.

IPv6 PXE Support (Available when "Network Stack" is set to Enabled)

Select Enabled to enable IPv6 PXE boot support. If this feature is disabled, it will not create the IPv6 PXE boot option. The options are Disabled and **Enabled**.

IPv6 HTTP Support

This setting enables IPv6 HTTP boot support. The options are **Disabled** and Enabled.

PXE Boot Wait Time (Available when "Network Stack" is set to Enabled)

Use this feature to set the wait time (in seconds) upon which the system BIOS will wait for you to press the <ESC> key to abort PXE boot instead of proceeding with PXE boot by connecting to a network server immediately. Press the <+> or <-> key on your keyboard to change the value. The default setting is **0**.

Media Detect Count (Available when "Network Stack" is set to Enabled)

Use this feature to set the wait time (in seconds) for the BIOS ROM to detect the presence of a LAN media either via the Internet connection or via a LAN port. Press the <+> or <-> key on your keyboard to change the value. The default setting is **1**.

► IPv4 Network Configuration**Configured**

This setting enables or disables network address configuration. The options are **Disabled** and Enabled.

Save Changes and Exit

The options are **Yes** and no.

► IPv6 Network Configuration

Set IPv6 Network parameters.

► Enter Configuration Menu

Interface Name

Interface Type

MAC address

Host addresses

Route Table

Gateway addresses

DNS addresses

Interface ID

DAD Transmit Count

Use this feature to set the number of consecutive neighbor solicitation messages that have been sent while performing duplicate address detection on a tentative address. The default setting is **1**.

Policy

Use this feature to select how the policy is to be configured. The options are **automatic** and **manual**.

Save Changes and Exit

Press <Enter> to save changes and exit.

HTTP Boot Configuration

HTTP Boot Configuration

HTTP Boot Policy

Use this feature to set the HTTP boot policy. The options are Apply to all LANs, **Apply to each LAN**, and Boot Priority #1 instantly.

HTTPS Boot Checks Hostname

Important: Disabling "HTTPS Boot Checks Hostname" is a violation of RFC 6125 and may expose you to Man-in-the-Middle Attacks. Supermicro is not responsible for any and all security risks incurred by you disabling this feature.

Enable this feature for HTTPS boot to check the hostname of the TLS certificates to see if it matches the host name provided by the remote server. The options are **Enabled** and **Disabled** (WARNING: Security Risk!!).

Priority of HTTP Boot

Instance of Priority 1: (Available when your motherboard supports this feature)

This feature sets the rank target port. The default setting is **1**.

Select IPv4 or IPv6

This feature specifies which connection the target LAN port should boot from. The options are **IPv4** and IPv6.

Boot Description

Use this feature to enter a boot description, which cannot be longer than 75 characters. Be sure to enter a boot description; otherwise, the boot option for the URI cannot be created.

Boot URI

Enter a Boot Uniform Research Identifier (URI) with 128 characters or shorter. This Boot URI determines how IPv4 Boot Option and IPv6 Boot Option will be created. This feature is only supported on Dual or EFI Boot Mode.

Supermicro KMS Server Configuration Menu

Supermicro KMS Server IP address

Use this feature to set the Supermicro Key Management Service (KMS) server IPv4 address in dotted-decimal notation.

Second Supermicro KMS Server IP address

Use this feature to set the second Supermicro KMS server IPv4 address in dotted-decimal notation.

Supermicro KMS TCP Port number

Use this feature to set the TCP port number used in Supermicro KMS Server. The valid range is 100–9999. The default setting is 5696. Do not change the default setting unless a different TCP port number has been specified and used in the Supermicro KMS Server.

KMS Time Out

Use this feature to enter the KMS server connecting time-out (in seconds). The default setting is **5** (seconds).

TimeZone

Use this feature to set the correct time zone. The default setting is 0 (not specified).

Client UserName

Press <Enter> to set the client identity (UserName). The username can be between 0 and 63 characters in length.

Client Password

Press <Enter> to set the client identity (Password). The password can be between 0 and 31 characters in length.

► CA Certificate

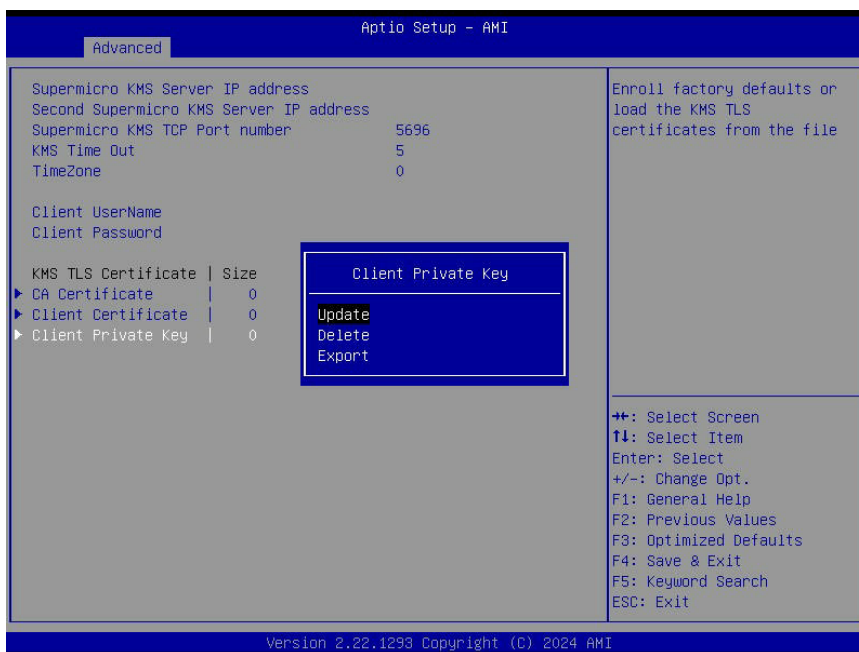
This setting provides options for managing the Certificate Authority (CA) certificate. The options are **Update**, Delete, and Export.

► Client Certificate

This setting provides options for managing the client certificate. The options are **Update**, Delete, and Export.

► Client Private Key

Use the three features to enroll factory defaults or load the KMS Transport Layer Security (TLS) certificates, which are generated by the KMS Server, from the file stored in the USB flash drive as shown below.



Private Key Password (Available when "Client Private Key" above has been set)

Use this feature to change the password for the client private key.

Super-Guardians Configuration Menu

► Super-Guardians Configuration

Super-Guardians Protection Policy

Use this feature to enable the Super-Guardians Protection Policy. The options are **Storage**, **System**, and **System and Storage**. Set this feature to **Storage** to protect and have secure access to the Trusted Computing Group (TCG) NVMe devices with the Authentication-Key (AK). Set this feature to **System** to protect and have secure access to your system/motherboard with the AK. Set this feature to **System and Storage** to protect and have secure access to your system/motherboard/storage devices with the AK.

KMS Security Policy (Available when "TPM Security Policy" and "USB Security Policy" are set to Disabled)

Set this feature to **Enabled** to enable the KMS Security Policy. When this feature has not previously been set to **Enabled**, the options are **Disabled** and **Enabled**. Changes take effect after you save settings and reboot the system.

When this feature has previously been set to **Enabled**, the options are **Enabled**, **Reset**, and **Key Rotation**. Set this feature to **Key Rotation** to obtain an existing AK from the KMS server and create a new AK. To disable the KMS Security Policy, set this feature to **Reset**. When this feature is set to **Reset**, the system and TCG NVMe devices chosen in "Super-Guardians Protection Policy" will be in the unprotected mode.

Notes:

- Be sure that the KMS server is ready before configuring this feature.
- Use the professional KMS server solutions (e.g., Thales Server) or the Supermicro PyKMIP Software Package to establish the KMS server.

KMS Server Retry Count (Available when "TPM Security Policy" and "USB Security Policy" are set to Disabled)

Use this feature to specify how many times the system will attempt reconnecting to the KMS server. The valid range is 0–10. Press the <+> or <-> key on your keyboard to change the value. The default setting is **5**. If the value is 0, the system will retry infinitely.

TPM Security Policy (Available when "KMS Security Policy" and "USB Security Policy" are set to Disabled)

Set this feature to **Enabled** to enable the TPM Security Policy. When this feature has not previously been set to **Enabled**, the options are **Disabled** and **Enabled**. Changes take effect after you save settings and reboot the system.

When this feature has previously been set to Enabled, the options are **Enabled**, Reset, and Key Rotation. To disable the TPM Security Policy, set this feature to Reset. When this feature is set to Reset, the system and TCG NVMe devices chosen in "Super-Guardians Protection Policy" will be in the unprotected mode.

Note: The TPM 2.0 (either onboard or external) is required to configure this feature.

Load Authentication-Key (Available when "KMS Security Policy," "TPM Security Policy," and "USB Security Policy" are set to Disabled)

Use this feature to load the Authentication-Key. The options are **Disabled** and Enabled. Set this feature to Enabled. Changes take effect after you save settings and reboot the system. While booting, the BIOS will automatically load the Authentication- Key (filename: TPMAuth.bin) from the USB flash drive. Afterwards, the default setting will be set to Disabled by the BIOS.

Notes:

- Be sure to connect a USB flash drive with the Authentication-Key (filename: TPMAuth.bin) to your system before the system reboot.
- Be sure to save the Authentication-Key (filename: TPMAuth.bin) to the USB flash drive and keep a backup. Load the Authentication-Key (filename: TPMAuth.bin) after the TPM (either onboard or external) is detected by your system. Otherwise, the TPM function can not work properly.

Save Authentication-Key (Available when "TPM Security Policy" is set to Enabled)

Use this feature to save the Authentication-Key. The options are **Disabled** and Enabled. Set this feature to Enabled. Changes take effect after you save settings and reboot the system. While booting, the BIOS will automatically save the Authentication- Key (filename: TPMAuth.bin) to the USB flash drive. Afterwards, the default setting will be set to Disabled by the BIOS.

Note: Be sure to connect a USB flash drive to your system before the system reboot.

USB Security Policy (Available when "KMS Security Policy" and "TPM Security Policy" are set to Disabled)

Use this feature to enable the USB Security Policy. The options are **Disabled** and Enabled. Set this feature to Enabled. Changes take effect after you save settings and reboot the system. Connect a USB flash drive to your system before the system reboot. While booting, the BIOS will automatically create the USB Authentication-Key (filename: USBAuth.bin) and save it to the USB flash drive.

When this feature has been previously set to Enabled, the options are **Enabled** and Reset. To disable the USB Security Policy, set this feature to Reset. When this feature is set to Reset, the system and TCG NVMe devices chosen in "Super-Guardians Protection Policy" will be in the unprotected mode.

Note: Be sure to connect a USB flash drive to your system before configuring this feature. Save the USB Authentication-Key (filename: USBAuth.bin) to the USB flash drive and keep a backup.

Realtek PCIe 5 GBE Family Controller

Driver Information

Driver Name

Driver Version

Driver Released Date

Device Information

Device Name

PCI Slot

MAC Address

Patent Information

TLS Authenticate Configuration

► Server CA Configuration

Use this feature to configure the server Certificate Authority (CA).

► Enroll Certification

Use this feature to enroll the certificates in the system.

► Commit Changes and Exit

Use this feature to save all changes and exit TLS settings.

► Discard Changes and Exit

Use this feature to discard all changes and exit TLS settings.

▶ Delete Certification

Use this feature to delete the certificates that have been enrolled in the system.

▶ Client Certification Configuration

This feature is to manage the certificates used to authenticate remote clients connecting to your system. Add, view, or delete client certificates as needed.

Driver Health

This provides the health status of the drivers/controllers.

7.4 Thermal & Fan

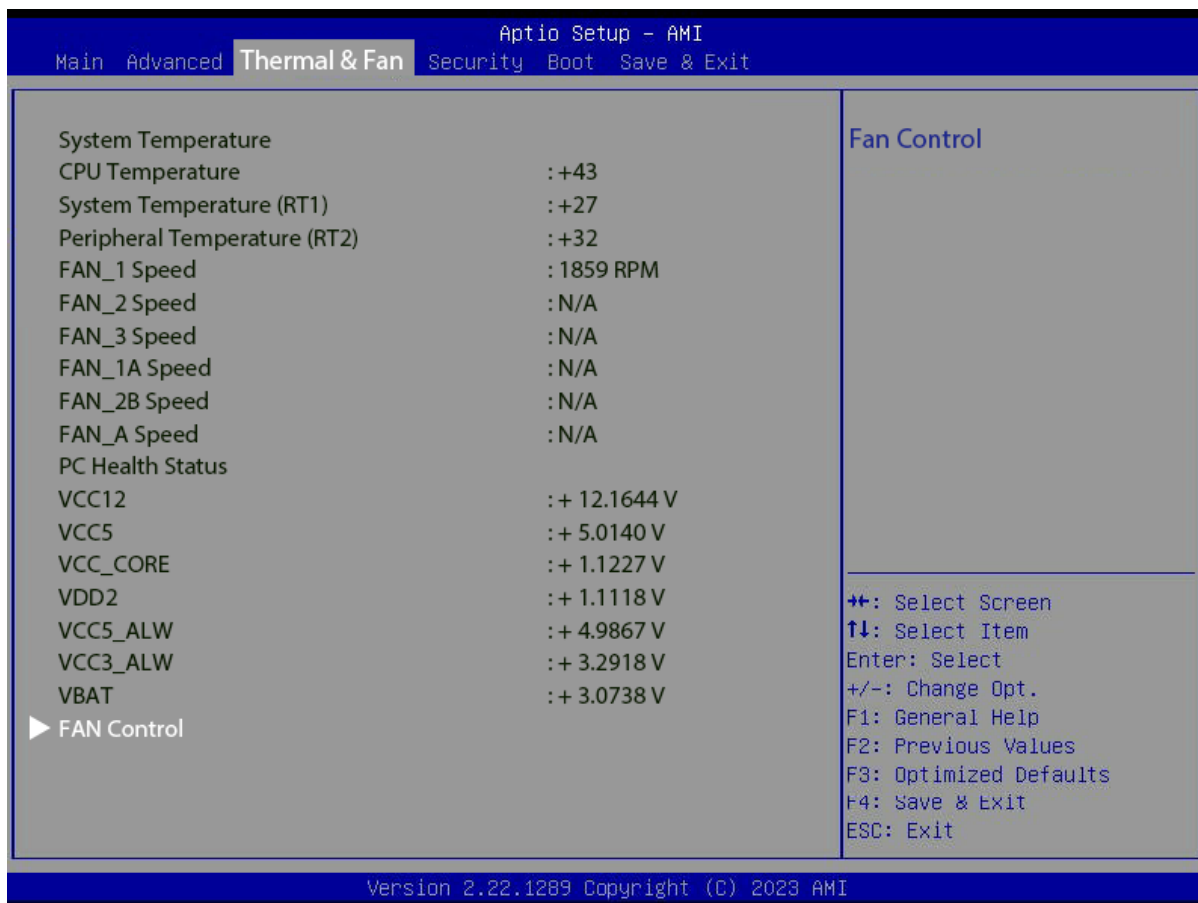


Figure 7-3. Thermal & Fan Tab Screen

System Temperature

CPU Temperature

System Temperature (RT1)

Peripheral Temperature (RT2)

FAN_1 Speed

FAN_2 Speed

FAN_3 Speed

FAN_1A Speed

FAN_2B Speed

FAN_A Speed

PC Health Status

VCC12

VCC5

VCC_CORE

VDD2

VCC5_ALW

VCC3_ALW

VBAT

Fan Control

► Boot Feature

Quiet Boot

Use this feature to select the screen between displaying the Power On Self Test (POST) messages or the OEM logo upon bootup. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are Disabled and **Enabled**.

Note: BIOS POST messages are always displayed regardless of the setting of this feature.

Option ROM Messages

Use this feature to set the display mode for the Option ROM. Select Keep Current to display the current AddOn ROM display settings. Select Force BIOS to use the Option ROM display mode set by the system BIOS. The options are **Force BIOS** and Keep Current.

Bootup NumLock State

Use this feature to set the power on state for the <Num Lock> key. The options are **On** and Off.

Wait For "F1" If Error

Select Enabled to force the system to wait until the <F1> key is pressed if an error occurs. The options are **Disabled** and Enabled.

Re-try Boot

If this feature is set to Enabled, the system BIOS will automatically reboot the system from an Extensible Firmware Interface (EFI) boot device after an initial boot failure. The options are **Disabled** and Enabled.

Power Configuration

Watch Dog Function

Select Enabled to allow the Watchdog timer to reboot the system when it is inactive for more than five minutes. The options are **Disabled** and Enabled.

Watch Dog Action (Available when "Watch Dog Function" is set to Enabled)

Use this feature to configure the Watchdog timeout setting. The options are **Reset** and NMI.

Restore on AC Power Loss

Use this feature to set the power state after a power outage. Select Stay Off for the system power to remain off after a power loss. Select Power On for the system power to be turned on after a power loss. Select Last State to allow the system to resume its last power state before a power loss. The options are Stay Off, Power On, and **Last State**.

Power Button Function

This feature controls how the system shuts down when the power button is pressed. Select 4 Seconds Override to power off the system after pressing and holding the power button for four seconds or longer. Select Instant Off to instantly power off the system as soon as you press the power button. The options are **Instant Off** and 4 Seconds Override.

7.5 Security

This menu allows you to configure the following security settings for the system.

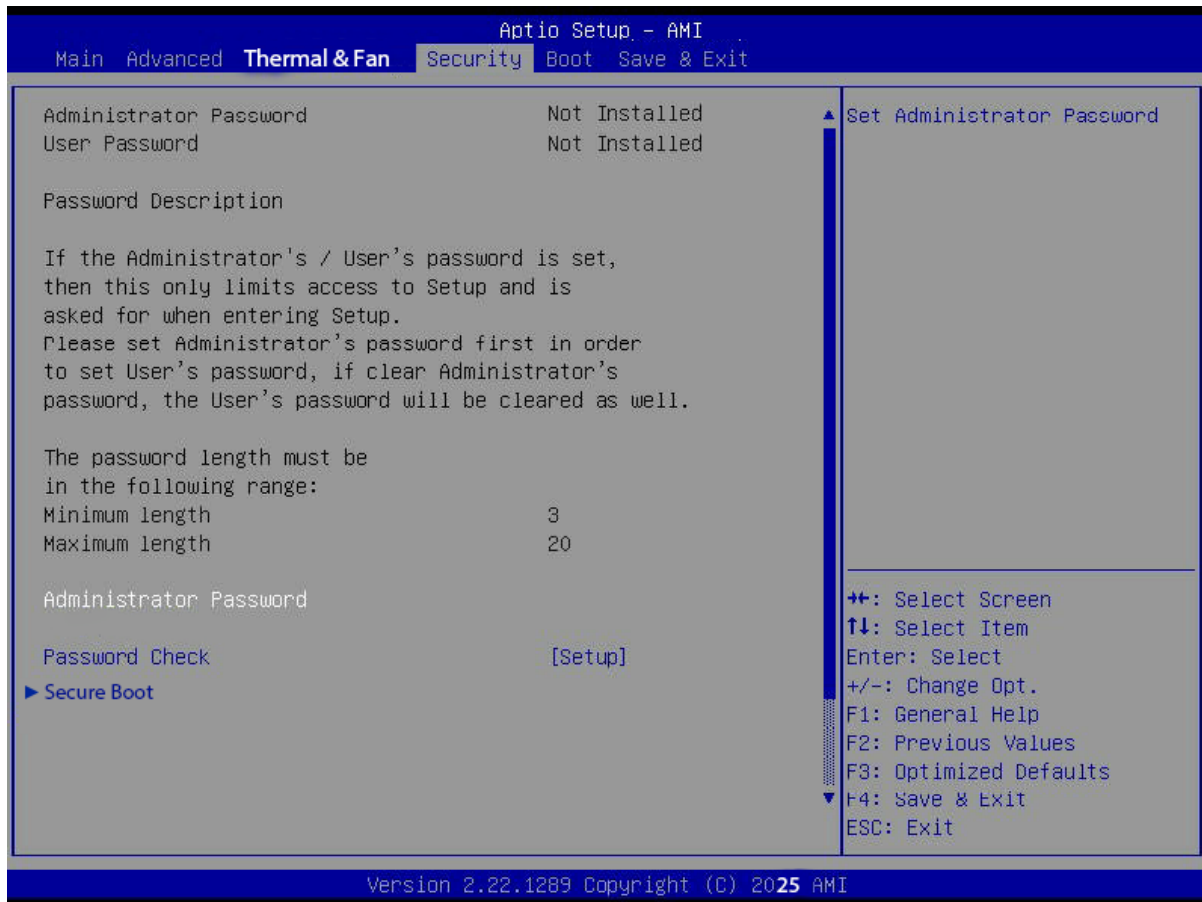


Figure 7-4. Security Tab Screen

The following information is displayed:

- Administrator Password
- User Password
- Password Description

Administrator Password

This feature indicates if an administrator password has been installed. Use this feature to set the administrator password, which is required to enter the BIOS Setup utility. The length of the password can be between three and 20 characters long.

Password Check

Select Setup for the system to check for a password upon entering the BIOS Setup utility. Select Always for the system to check for the passwords needed at bootup and upon entering the BIOS Setup utility. The options are **Setup** and Always.

▶ Secure Boot

Secure Mode: Setup

Secure Boot: Not Active

Secure Boot

The options are **Disabled** and Enabled.

Secure Boot Mode

The options are Standard and **Custom**.

▶ Key Management

Vendor Keys

Provision Factory Defaults

Install the factory default Secure Boot keys after a platform reset and while the system is in setup mode. The options are **Disabled** and Enabled.

Restore Factory Keys

This setting forces the system into user mode. Install the factory default Secure Boot key databases.

Enroll Efi Image

This setting allows Efi images to run in Secure Boot mode.

Secure Boot Variable

Platform Key (PK)

Key Exchange Keys (KEK)

Authorized Signatures (db)

Forbidden Signatures (dbx)

Authorized TimeStamps (dbt)

OsRecovery Signatures (dbr)

7.6 Boot

Use this menu to configure Boot settings.

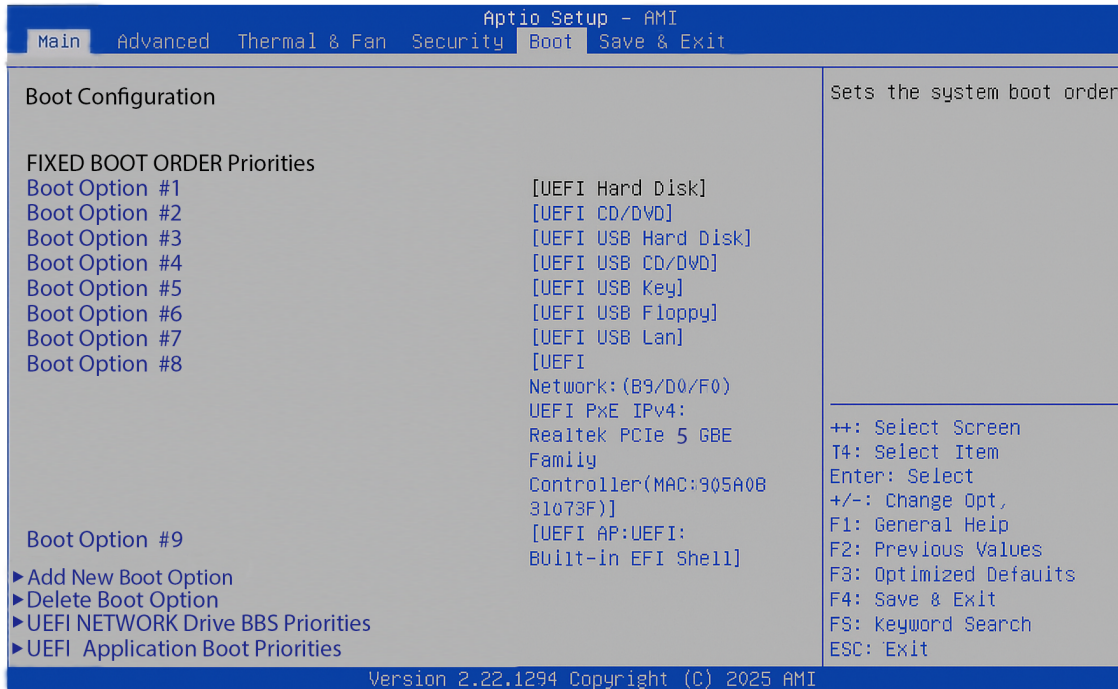


Figure 7-5. Boot Tab Screen

Boot Configuration

FIXED BOOT ORDER Priorities

Use this feature to prioritize the order of bootable devices from which the system will boot. Press <Enter> on each item sequentially to select the device.

- Boot Option #1 – Boot Option #9

► Add New Boot Option

Add boot option

Use this feature to specify the name for the new boot option.

Path for boot option

Use this feature to enter the path for the new boot option in the format `fsx:\path\filename.efi`.

Create

After setting the name and the file path for the boot option, press <Enter> to create the new boot option in the boot priority list.

► **Delete Boot Option**

Use this feature to select a boot device to delete from the boot priority list.

Delete Boot Option

Use this feature to remove an EFI boot option from the boot priority list.

► **UEFI NETWORK Drive BBS Priorities**

Use this feature to set the system boot order of detected devices.

► **UEFI Application Boot Priorities**

Use this feature to set the system boot order of detected devices.

7.7 Save & Exit

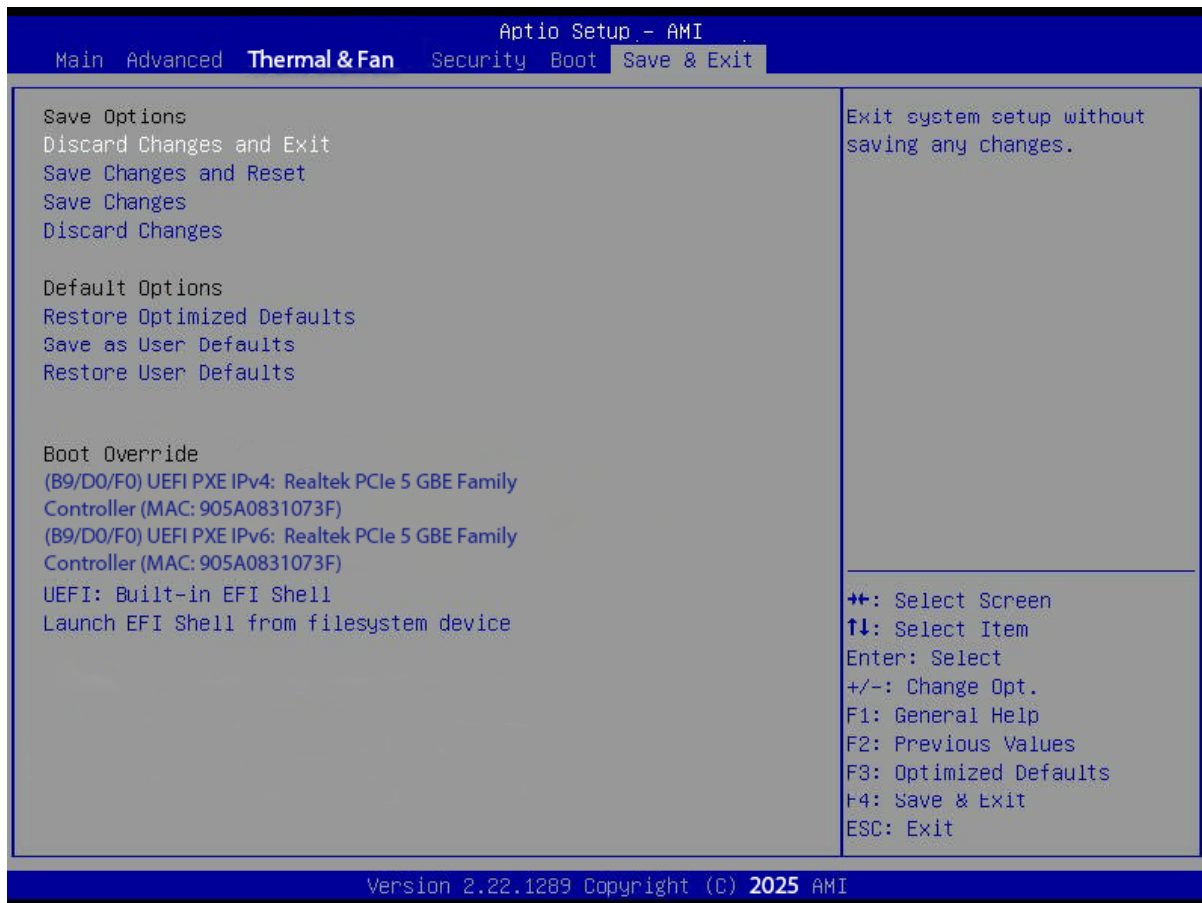


Figure 7-6. Save & Exit Tab

Save Options

Discard Changes and Exit

Use this feature to exit from the BIOS Setup utility without making any permanent changes to the system configuration and reboot the system.

Save Changes and Reset

On completing the system configuration changes, use this feature to exit the BIOS Setup utility and reboot the system for the new system configuration parameters to take effect.

Save Changes

On completing the system configuration changes, use this feature to save all changes made. This will not reset (reboot) the system.

Discard Changes

Select this feature and press <Enter> to discard all changes made and return to the BIOS Setup utility.

Default Options**Restore Optimized Defaults**

Select this feature and press <Enter> to load manufacturer optimized default settings, which are intended for maximum system performance but not for maximum stability.

Note: Reboot the system for the changes to take effect to ensure that the system has the optimized default settings.

Save as User Defaults

Select this feature and press <Enter> to save all changes as the default values specified to the BIOS Setup utility for future use.

Restore User Defaults

Select this feature and press <Enter> to restore user-defined default settings that have been saved previously.

Boot Override

Note: Use this section to override the Boot priorities sequence in the Boot menu, and immediately boot the system with a device specified here instead of the one specified in the boot list. This is a one-time boot override.

Appendix A:

BIOS Codes

For information about BIOS codes for the AS -C521D server, refer to the following content.

BIOS Error POST (Beep) Codes

During the Power-On Self-Test (POST) 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 process. 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 that can be heard on an external buzzer connected to JD1. The table shown below lists some common errors and their corresponding beep codes encountered by users.

BIOS Beep (POST) Codes		
Beep Code	Error Message	Description
1 beep	Refresh	Circuits have been reset (Ready to power up)
5 short, 1 long	Memory error	No memory detected in system
5 short, 2 long	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 <https://www.supermicro.com/support/manuals> ("AMI BIOS POST Codes User's Guide").

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

Appendix B:

Standardized Warning Statements for AC Systems

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 section in its entirety before installing or configuring components in the Supermicro AS -C521D server.

These warnings may also be found on our website at the following page:

https://www.supermicro.com/about/policies/safety_information.cfm

Standard 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 familiar with standard practices for preventing accidents.

تحذير! هذا الرمز التحذيري يعني خطر. إنك في موقف قد يتسبب في إصابة جسدية. قبل العمل على أي أجهزة يجب أن تكون على دراية بالممارسات القياسية للحيلولة دون وقوع حوادث.

警告！此警告符号代表危险，表示正处于可能遭受严重身体伤害的工作环境。在使用任何设备开始工作之前，务必熟悉防止事故发生的标准工作规范。

警告！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。操作任何設備之前，請熟悉標準做法以預防事故發生。

Advarsel! Dette advarselssymbol betyder fare. Du er i en situation, der kan føre til personskader. Før du arbejder på noget udstyr, skal du være bekendt med standardpraksis for at forebygge ulykker.

Waarschuwing! Dit waarschuwingssymbool betekent gevaar. U bevindt zich in een situatie die lichamelijk letsel zou kunnen veroorzaken. Voordat u aan enige apparatuur gaat werken, moet u vertrouwd zijn met standaard praktijken voor het voorkomen van ongevallen.

Varoitus! Tämä varoitussymboli tarkoittaa vaaraa. Olet tilanteessa, joka voi aiheuttaa ruumiinvammoja. Ennen kuin ryhdyt työskentelemään laitteiden parissa, tutustu onnettomuuksien ehkäisemistä koskeviin vakiintuneisiin käytäntöihin.

Attention! 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, familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents.

Warnung! Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Körperverletzungen führen kann. Bevor Sie an Geräten arbeiten, machen Sie sich mit den üblichen Verfahren zur Unfallverhütung vertraut.

אזהרה! סמל אזהרה זה מסמן סכנה. אתה נמצא במצב שעלול לגרום לפגיעה גופנית. לפני שתתחיל לעבוד על כל ציוד, הכר את הנהלים הסטנדרטיים למניעת תאונות.

चेतावनी! यह चेतावनी चिह्न खतरे का प्रतीक है। आप ऐसी स्थिति में हैं जिससे शारीरिक चोट लग सकती है। किसी भी उपकरण पर काम करने से पहले, दुर्घटनाओं को रोकने के लिए मानक प्रथाओं से परिचित हो लें।

警告! この警告記号は危険を意味します。人身事故につながる可能性のある状況にあります。機器で作業を行う前に、標準的な事故防止策に精通してください。

경고! 이 경고 기호는 위험이 있음을 알려 줍니다. 신체 상해를 초래할 수 있는 상황입니다. 장비에서 작업하기 전에 사고 예방을 위한 표준 수칙을 숙지하십시오.

Advarsel! Dette advarselsymbolet betyr fare. Du er i en situasjon som kan forårsake kroppsskade. Før du arbeider på noe utstyr, må du gjøre deg kjent med standardrutiner for å forhindre ulykker.

¡Advertencia! Este símbolo de advertencia significa peligro. Se encuentra en una situación que podría provocar lesiones corporales. Antes de trabajar con cualquier equipo, familiarícese con las prácticas estándar para prevenir accidentes.

Varning! Denna varningssymbol betyder fara. Du befinner dig i en situation som kan orsaka personskada. Innan du arbetar på någon utrustning måste du bekanta dig med standardrutiner för att förhindra olyckor.

Electrical Warning Definition



Warning! This warning symbol indicates high voltage may be encountered when performing a procedure. Before you work on any equipment, be aware of the hazards involved with electrical circuitry.

تحذير! يشير رمز التحذير هذا إلى احتمالية مواجهة جهد كهربائي عالٍ عند إجراء عملية ما. قبل البدء في العمل على أي أجهزة كن على دراية بالمخاطر المرتبطة بالدوائر الكهربائية.

警告！此警告符号表示作业过程中可能会遇到高电压。操作任何设备之前，请务必了解电路的危险。

警告！此警告符號表示執行程序時可能會遇到高電壓。操作任何設備之前，請瞭解與電路相關的危害。

Advarsel! Dette advarselssymbol indikerer, at der kan opstå høj spænding under udførelsen af en procedure. Før du arbejder på noget udstyr, skal du være opmærksom på de farer, der er forbundet med elektriske kredsløb.

Waarschuwing! Dit waarschuwingssymbool geeft aan dat men hoge spanning tegen kan komen bij het uitvoeren van een procedure. Voordat u aan enige apparatuur gaat werken, moet u zich bewust zijn van de gevaren van elektrische schakelssystemen.

Varoitus! Tämä varoitussymboli osoittaa, että toimenpiteen suorittamisen aikana voi esiintyä korkeaa jännitettä. Ennen kuin ryhdyt työskentelemään laitteiden parissa, ota huomioon sähköpiireihin liittyvät vaarat.

Attention! Ce symbole d'avertissement indique un risque d'exposition à une tension élevée lors de l'exécution d'une procédure. Avant de travailler sur un équipement, prenez connaissance des dangers liés aux circuits électriques.

Warnung! Dieses Warnsymbol weist darauf hin, dass bei der Durchführung eines Vorgangs Hochspannung auftreten kann. Bevor Sie an Geräten arbeiten, machen Sie sich mit den Gefahren elektrischer Schaltungen vertraut.

אזהרה! סמל אזהרה זה מציינ כי ייתכן שתיתקל במתח גבוה בעת ביצוע הליך. לפני עבודה על ציוד כלשהו, עליך להיות מודע לסכנות הכרוכות במעגלים חשמליים.

चेतावनी! यह चेतावनी चिह्न इंगित करता है कि प्रक्रिया को निष्पादित करते समय उच्च वोल्टेज का सामना करना पड़ सकता है। किसी भी उपकरण पर काम करने से पहले, विद्युत सर्किट्री से जुड़े खतरों के प्रति सचेत रहें।

警告! この警告記号は、手順を実行する際に高電圧が発生する可能性があることを示しています。機器で作業を行う前に、電気回路に関連する危険に注意してください。

경고! 이 경고 기호는 절차 수행 중 고전압에 노출될 수 있음을 알려 줍니다. 장비에서 작업하기 전에 전기 회로와 관련된 위험 요소를 충분히 인지하십시오.

Advarsel! Dette varselsymbolet indikerer at det kan oppstå høy spenning når en prosedyre utføres. Før du arbeider på utstyr, må du være oppmerksom på farene forbundet med elektriske kretser.

¡Advertencia! Este símbolo de advertencia indica que puede haber alto voltaje al realizar un procedimiento. Antes de trabajar con cualquier equipo, tenga en cuenta los peligros que conllevan los circuitos eléctricos.

Varning! Denna varningssymbol indikerar att hög spänning kan förekomma när en procedur utförs. Innan du arbetar med någon utrustning ska du vara medveten om de faror som är förknippade med elektriska kretsar.

Installation Instructions



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

تحذير! اقرأ تعليمات التثبيت قبل توصيل النظام بمصدر الطاقة.

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。

Advarsel! Læs monteringsvejledningen, før systemet slutes til strømforsyningen.

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

Varoitus! Lue asennusohjeet ennen järjestelmän liittämistä virtälähteeseen.

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

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

אזהרה! יש לקרוא את הוראות ההתקנה לפני חיבור המערכת למקור המתח.

चेतावनी! सिस्टम को बिजली के स्रोत से जोड़ने से पहले स्थापना निर्देश पढ़ें।

警告！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。

경고! 시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Advarsel! Les installasjonsinstruksjonene før du kobler systemet til strømkilden.

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

Varning! Läs installationsanvisningarna innan du ansluter systemet till strömkällan.

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 VAC, 20 A.

تحذير! يعتمد هذا المنتج على التركيبات الكهربائية في المبنى للحماية من حدوث قصر دائرة (تيار زائد). تأكد من أن تصنيف جهاز الحماية لا يتجاوز: 250 فولت تيار متردد, 20 أمبير.

警告！此产品由建筑物的供电系统提供短路（过载）保护，并确保额定电压/电流不大于 250 VAC/20 A。

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 250 VAC、20 A。

Advarsel! Dette produkt forudsætter, at bygningens elinstallation sørger for kortslutningsbeskyttelse (overstrøm). Sørg for, at beskyttelsesanordningen ikke er klassificeret til mere end: 250 VAC, 20 A.

Waarschuwing! Dit product vertrouwt op de installatie van het gebouw voor kortsluitbeveiliging (overstroombeveiliging). Zorg ervoor dat de beveiligingsvoorziening is gespecificeerd voor niet meer dan: 250 VAC, 20 A.

Varoitus! Tämä tuote on riippuvainen rakennuksen asennuksesta oikosulku- (ylivirta-) suojauksen osalta. Varmista, että suojalaitteen nimellisärvot eivät ylitä seuraavia arvoja: 250 VAC, 20 A.

Attention! Ce produit dépend de l'installation du bâtiment pour la protection contre les courts-circuits (surintensité). Assurez-vous que le dispositif de protection n'est pas supérieur à : 250 VAC, 20 A.

Warnung! Dieses Produkt ist auf den Kurzschluss- bzw. Überstromschutz der Gebäudeinstallation angewiesen. Stellen Sie sicher, dass die Schutzvorrichtung für maximal 250 VAC, 20 A ausgelegt ist.

אזהרה! מוצר זה מסתמך על תשתית החשמל של המבנה להגנה מפני קצר חשמלי (זרם יתר). ודא שדירוג התקן ההגנה אינו עולה על: 250 VAC, 20 A.

चेतावनी! यह उत्पाद शॉर्ट-सर्किट (ओवरकरंट) सुरक्षा के लिए भवन की स्थापना पर निर्भर करता है। सुनिश्चित करें कि सुरक्षात्मक उपकरण की रेटिंग निम्नलिखित से अधिक न हो: 250 VAC, 20 A.

警告! 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。保護装置の定格が次の値以下であることを確認ください: 250 VAC、20 A。

경고! 이 제품은 단락(과전류) 방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호 장치의 정격이 다음 값을 초과하지 않도록 하십시오: 250 VAC(볼트), 20 A(암페어).

Advarsel! Dette produktet er avhengig av bygningens installasjon for kortslutningsbeskyttelse (overstrømsbeskyttelse). Sørg for at beskyttelsesanordningen ikke er klassifisert som høyere enn: 250 V vekselstrøm, 20 A.

¡Advertencia! Este producto depende de la instalación del edificio para protección contra cortocircuitos (sobrecorriente). Asegúrese de que el dispositivo de protección tenga una clasificación no mayor a: 250 VAC, 20 A.

Varning! Denna produkt är beroende av byggnadens installation för kortslutningsskydd (överströmsskydd). Se till att skyddsanordningen inte är märkt för mer än: 250 VAC, 20 A.

Power Disconnection Warning



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

تحذير! يجب فصل النظام عن جميع مصادر الطاقة، وإزالة سلك الطاقة من وحدة/وحدات إمداد الطاقة قبل الدخول إلى الجزء الداخلي من الهيكل لتركيب أو فك مكونات النظام (باستثناء المكونات القابلة للاستبدال السريع).

警告！在打开机箱并安装或移除内部器件（热插拔器件除外）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（熱插拔元件除外）前，必須將系統完全斷電，並移除電源線。

Advarsel! Systemet skal afbrydes fra alle strømkilder, og strømkablet skal fjernes fra strømforsyningsmodulerne, før der gives adgang til kabinettet for at montere eller fjerne systemkomponenter (undtagen hot-swap-komponenter).

Waarschuwing! Het systeem moet worden losgekoppeld van alle voedingen en het stroomsnoer moet uit de voedingsmodule(s) worden gehaald voorafgaand aan toegang tot de binnenkant van het chassis voor installeren of verwijderen van systeemcomponenten (behalve hot-swap componenten).

Varoitus! Järjestelmä on irrotettava kaikista virtalähteistä ja virtajohto on irrotettava virtalähdemoduulista (moduuleista) ennen kotelon sisälle pääsyä järjestelmän komponenttien asentamista tai poistamista varten (lukuun ottamatta hot-swap-komponentteja).

Attention! Le système doit être déconnecté de toutes les sources d'alimentation et le cordon d'alimentation doit être débranché du/des modules d'alimentation avant d'accéder à l'intérieur du châssis pour installer ou retirer des composants du système (à l'exception des composants remplaçables à chaud).

Warnung! Das System muss von allen Stromquellen getrennt und das Netzkabel von den Netzteilmodulen entfernt werden, bevor auf den Innenraum des Chassis zugegriffen wird, um Systemkomponenten zu installieren oder zu entfernen (ausgenommen Hot-Swap-Komponenten).

אזהרה! יש לנתק את המערכת מכל מקורות הכוח ולהסיר את כבל החשמל ממודולי/אספקת החשמל לפני הגישה לחלק הפנימי של המארז לצורך התקנה או הסרה של רכיבי המערכת (למעט רכיבים הניתנים להחלפה חמה).

चेतावनी! सिस्टम के घटकों को इंस्टॉल करने या निकालने (हॉट-स्वैप घटकों को छोड़कर) के लिए चेसिस के आंतरिक भाग तक पहुँचने से पहले, सिस्टम को बिजली के सभी स्रोतों से डिस्कनेक्ट किया जाना चाहिए और बिजली की आपूर्ति मॉड्यूल से पावर कॉर्ड को निकाल दिया जाना चाहिए।

警告! システムコンポーネント(ホットスワップコンポーネントを除く)の取り付けまたは取り外しを行うために、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。

경고! (핫스왑 구성품을 제외하고) 시스템에 부품들을 장착하거나 제거하기 위해서는 새시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Advarsel! Systemet må kobles fra alle strømkilder, og strømledningen må fjernes fra strømforsyningsmodulen (e) før man går inn i kabinettet for å installere eller fjerne systemkomponenter (unntatt komponenter som kan byttes ut under drift).

¡Advertencia! El sistema debe estar desconectado de todas las fuentes de energía y el cable de alimentación debe retirarse de los módulos de fuente de alimentación antes de acceder al interior del chasis para instalar o quitar componentes del sistema (excepto los componentes reemplazables en caliente).

Varning! Systemet måste vara frångopplat från alla strömkällor och strömsladden måste vara borttagen från strömförsörjningsmodulerna innan du öppnar chassit för att installera eller ta bort systemkomponenter (med undantag för hot-swap-komponenter).

Equipment Installation



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

تحذير! لا يُسمح إلا للعاملين المعتمدين وفنيي الخدمة المؤهلين بتركيب هذا الجهاز أو استبداله أو صيانته.

警告！仅限经过授权培训且拥有相关资质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。

Advarsel! Dette udstyr må kun installeres, udskiftes eller serviceres af autoriseret personale og kvalificerede servicemedarbejdere.

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

Varoitus! Vain valtuutetut henkilöt ja pätevät huoltoteknikot saavat asentaa, vaihtaa tai huoltaa tätä laitetta.

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

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

אזהרה! רק אנשי צוות מורשים ואנשי שירות מוסמכים רשאים להתקין, להחליף או לטפל בצידוד זה.

चेतावनी! केवल अधिकृत कर्मियों और योग्य सेवा व्यक्तियों को ही इस उपकरण को स्थापित करने, बदलने या सेवा देने की अनुमति दी जानी चाहिए।

警告！トレーニングを受け認定された人だけがこの機器の設置、交換、またはサービスを許可されています。

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

Advarsel! Kun autorisert personell og kvalifiserte servicefolk skal ha tillatelse til å installere, bytte ut eller utføre service på dette utstyret.

¡Advertencia! Sólo el personal autorizado y el personal de servicio calificado pueden instalar, reemplazar o dar servicio a este equipo.

Varning! Endast auktoriserad personal och kvalificerade servicetekniker får installera, byta ut eller utföra service på denna utrustning.

Rack Stability Hazard



Warning! Stability hazard. The rack may tip over causing serious personal injury. Before extending the rack to the installation position, read the installation instructions. Do not put any load on the slide-rail mounted equipment in the installation position. Do not leave the slide-rail mounted equipment in the installation position.

تحذير! خطر عدم الاستقرار. قد ينقلب الحامل، مما قد يتسبب في إصابات شخصية خطيرة. قبل تمديد الحامل إلى موضع التركيب اقرأ إرشادات التركيب. لا تضع أي حمولة على الأجهزة المركبة على حوامل منزلقة في وضع التركيب. لا تترك الأجهزة المركبة على حوامل منزلقة في وضع التركيب.

警告！稳定性危险。机架可能会翻倒，造成严重的人身伤害。在将机架延伸到安装位置之前，请阅读安装说明。请勿在安装位置对滑轨安装的设备施加任何负载。请勿将滑轨安装的设备留在安装位置。

警告！穩定性危險。機架可能會翻倒，造成嚴重的人身傷害。將機架延伸至安裝位置前，請先閱讀安裝說明。請勿在安裝位置的滑軌安裝設備上放置任何負載。請勿將滑軌安裝設備留在安裝位置。

Advarsel! Stabilitetsfare. Udstyrsskabet kan vælte, hvilket kan føre til alvorlige personskader. Læs monteringsvejledningen, før udstyrsskabet trækkes ud til monteringsstedet. Anbring ikke nogen belastning på udstyr monteret på skinner, når det er på monteringsstedet. Efterlad ikke udstyr monteret på skinner på monteringsstedet.

Waarschuwing! Gevaar voor instabiliteit. Het rack kan kantelen en ernstig persoonlijk letsel veroorzaken. Lees de installatie-instructies voordat u het rack uitschuift naar de installatiepositie. Plaats geen last op de op de glijrail gemonteerde apparatuur in de installatiepositie. Laat de op de glijrail gemonteerde apparatuur niet in de installatiepositie staan.

Varoitus! Vakausvaara. Teline voi kaatua ja aiheuttaa vakavia henkilövahinkoja. Ennen telineen asettamista asennusasentoon, lue asennusohjeet. Älä aseta mitään kuormitusta liukukiskoon asennettuihin laitteisiin asennusasennossa. Älä jätä liukukiskoon asennettuja laitteita asennusasentoon.

Attention! Danger d'instabilité. Le rack peut basculer et provoquer des blessures corporelles graves. Avant d'étendre le rack en position d'installation, lire les instructions d'installation. Ne pas charger l'équipement monté sur rail de glissière en position d'installation. Ne pas laisser l'équipement monté sur rail de glissière en position d'installation.

Warnung! Gefahr der Instabilität. Das Rack kann umkippen und schwere Verletzungen verursachen. Lesen Sie vor dem Ausziehen des Racks in die Installationsposition die Installationsanweisungen. Belasten Sie in der Installationsposition keine auf Gleitschienen montierten Geräte. Lassen Sie auf Gleitschienen montierte Geräte nicht unbeaufsichtigt in der Installationsposition.

אזהרה! סכנת יציבות. הארון עלול להתהפך ולגרום לפציעה גופנית חמורה. לפני הארכת הארון למצב התקנה, יש לקרוא את הוראות ההתקנה. אין להניח עומס כלשהו על הציוד המותקן על מסילות ההחלקה כשהוא במצב התקנה. אין להשאיר את הציוד המותקן על מסילות ההחלקה במצב התקנה.

चेतावनी! स्थिरता का खतरा। रैक पलट सकता है जिससे गंभीर व्यक्तिगत चोट लग सकती है। रैक को इंस्टालेशन स्थिति तक बढ़ाने से पहले, स्थापना निर्देश पढ़ें। स्थापना स्थिति में स्लाइड-रेल पर लगे उपकरणों पर कोई भार न डालें। स्लाइड-रेल पर लगे उपकरणों को स्थापना स्थिति में न छोड़ें।

警告！安定性に危険があります。ラックが転倒して、重大な人身事故を引き起こす可能性があります。ラックを設置位置まで伸ばす前に、設置手順をお読みください。設置位置にあるスライドレールに取り付けられた機器に負荷をかけないでください。スライドレールに取り付けられた機器を設置位置に放置しないでください。

경고! 안정성 위험. 랙이 넘어져 심각한 개인 부상을 입을 수 있습니다. 랙을 설치 위치까지 확장하기 전에 설치 지침을 읽으십시오. 설치 위치에서 슬라이드 레일 장착 장비에 하중을 가하지 마십시오. 슬라이드 레일 장착 장비를 설치 위치에 두지 마십시오.

Advarsel! Stabilitetsfare. Stativet kan velte og forårsake alvorlig personskade. Les installasjonsanvisningen før du forlenger stativet till installasjonsposisjonen. Ikke belast utstyret som er montert på glideskinnen i installasjonsposisjon. Ikke la utstyret som er montert på glideskinnen stå i installasjonsposisjon.

¡Advertencia! Peligro de inestabilidad. El rack podría volcarse y causar lesiones personales graves. Antes de extender el rack a la posición de instalación, lea las instrucciones de instalación. No coloque ninguna carga sobre el equipo montado sobre rieles deslizantes en la posición de instalación. No deje el equipo montado sobre rieles deslizantes en la posición de instalación.

Varning! Stabilitetsrisk. Racket kan välta och orsaka allvarliga personskador. Läs monteringsanvisningarna innan du skjuter ut racket till monteringspositionen. Belasta ej utrustning som är monterad på glidskena i installationsläget. Lämna ej utrustning som är monterad på glidskena i monteringsläget.

Rack-Mounted Equipment Warning



Warning! Rack-mounted equipment should not be used as a shelf or work space.

تحذير! لا ينبغي استخدام المعدات المثبتة على حوامل كرف أو مساحة عمل.

警告！机架式设备不应用作货架或工作空间。

警告！不得將機架式設備當作置物架或工作空間使用。

Advarsel! Udstyr, der er monteret i udstyrsskabe, må ikke bruges som hylder eller arbejdsflader.

Waarschuwing! In rack gemonteerde apparatuur moet niet worden gebruikt als plank of werkruimte.

Varoitus! Telineasennettavia laitteita ei saa käyttää hyllyinä tai työtasoina.

Attention! Un équipement installé en rack ne doit pas être utilisé comme une étagère ou un espace de travail.

Warnung! In Racks montierte Geräte dürfen nicht als Ablagefläche oder Arbeitsfläche verwendet werden.

אזהרה! אין להשתמש בצידוד המותקן במסד (Rack) כמדף או כמשטח עבודה.

चेतावनी! रैक-माउंटेड उपकरण का उपयोग शेल्फ या कार्यक्षेत्र के रूप में नहीं किया जाना चाहिए।

警告！ラックマウント機器を棚や作業スペースとして使用しないでください。

경고! 랙 장착 장비를 선반 또는 작업대처럼 사용하지 마십시오.

Advarsel! Rackmontert utstyr skal ikke brukes som hylle eller arbeidsområde.

¡Advertencia! Los equipos montados en rack no deben utilizarse como estante o espacio de trabajo.

Varning! Rackmonterad utrustning ska inte användas som hylla eller arbetsyta.

Restricted Access Location



Warning! This unit is intended for installation in restricted access areas. A restricted access area can be accessed only by an instructed person or a skilled person.

تحذير! هذه الوحدة مخصصة للتركيب في المناطق الممنوع الدخول إليها. يقتصر الدخول إلى منطقة منع الدخول إلا للأشخاص المدربين أو المهرة.

警告！此装置应安装在限制进出的场所，而此类场所仅限经过相关训练或技术熟练的人员进出。

警告！此部件應安裝在限制進出區域。只有受過指導的人員或專業人員才可進出限制進出區域。

Advarsel! Denne enhed er beregnet til montering i områder med begrænset adgang. Et område med begrænset adgang må kun tilgås af en instrueret person eller en fagkyndig person.

Waarschuwing! Deze eenheid is bedoeld voor installatie in gebieden met beperkte toegang. Er kan alleen toegang worden verkregen tot een gebied met beperkte toegang door een geïnstrueerde persoon of een ervaren persoon.

Varoitus! Tämä laite on tarkoitettu asennettavaksi rajoitetun pääsyn alueille. Rajoitetun pääsyn alueelle pääsee vain koulutettu tai ammattitaitoinen henkilö.

Attention! Cet appareil est destiné à être installé dans des zones à accès restreint. Une zone à accès restreint n'est accessible qu'à une personne formée ou qualifiée.

Warnung! Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Ein Bereich mit beschränktem Zutritt darf nur von unterwiesenen oder fachkundigen Personen betreten werden.

אזהרה! יחידה זו מיועדת להתקנה באזורים עם גישה מוגבלת. ניתן לגשת לאזור עם גישה מוגבלת רק על ידי אדם שהוכשר לכך או אדם מיומן.

चेतावनी! यह इकाई प्रतिबंधित पहुँच वाले क्षेत्रों में स्थापना के लिए ही है। प्रतिबंधित पहुँच वाले क्षेत्र में केवल एक निर्देशित व्यक्ति या कुशल व्यक्ति द्वारा ही पहुँचा जा सकता है।

警告！このユニットはアクセス制限区域に設置することを想定しています。アクセス制限区域は、トレーニングを受けた人または熟練者だけが出入り可能です。

경고! 본 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 교육을 받은 사람 또는 숙련된 사람만 접근 제한 구역에 들어갈 수 있습니다.

Advarsel! Denne enheten er beregnet for installasjon i områder med begrenset tilgang. Et område med begrenset tilgang kan kun nås av en person som har fått instruksjoner eller en fagperson.

¡Advertencia! Esta unidad está diseñada para su instalación en áreas de acceso restringido. A un área de acceso restringido solo puede acceder una persona instruida o una persona capacitada.

Varning! Denna enhet är avsedd för installation i områden med begränsad åtkomst. Ett område med begränsad åtkomst får endast beträdas av en instruerad eller kvalificerad person.

Battery Handling



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

تحذير! يوجد خطر حدوث انفجار إذا تم استبدال البطارية بنوع غير صحيح. استبدل البطارية بنفس النوع أو نوع مكافئ موصى به من قبل الشركة المصنعة فقط. يجب التخلص من البطاريات المستخدمة وفقاً لإرشادات الجهة المصنعة.

警告！如果更换的电池类型不正确，有爆炸危险。更换电池时，请使用制造商推荐的相同或同等型号的电池。请按制造商的说明处理废旧电池。

警告！如果更換的電池類型不正確，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。

Advarsel! Der er risiko for eksplosion, hvis batteriet skiftes med et batteri af den forkerte type. Batteriet må kun skiftes med et batteri af samme eller tilsvarende type, der anbefales af producenten. Opbrugte batterier skal bortskaffes i henhold til vejledningerne fra producenten.

Waarschuwing! Er bestaat een explosiegevaar als de batterij wordt vervangen door een onjuist type. Vervang de batterij alleen door hetzelfde type of een soortgelijk type aanbevolen door de fabrikant. Verwijder gebruikte batterijen overeenkomstig de instructies van de fabrikant.

Varoitus! Väärän tyyppisen akun käyttö voi aiheuttaa räjähdysvaaran. Vaihda akku vain valmistajan suosittelemaan samaan tai vastaavaan tyyppiseen akkuun. Hävitä käytetyt paristot valmistajan ohjeiden mukaisesti.

Attention! Il y a un risque d'explosion si la batterie est remplacée par une d'un type incorrect. Remplacez la batterie uniquement par une d'un type identique ou équivalent recommandé par le fabricant. Éliminez les batteries usagées conformément aux instructions du fabricant.

Warnung! Es besteht Explosionsgefahr, wenn die Batterie durch einen falschen Typ ersetzt wird. Ersetzen Sie die Batterie ausschließlich durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ. Entsorgen Sie gebrauchte Batterien gemäß den Anweisungen des Herstellers.

אזהרה! קיימת סכנת פיצוץ אם הסוללה תוחלף בסוללה מסוג שגוי. החלף את הסוללה רק בסוללה מאותו סוג או בסוללה מקבילה המומלצת על ידי היצרן. השלך סוללות משומשות בהתאם להוראות היצרן.

चेतावनी! यदि बैटरी को गलत प्रकार से बदला जाता है तो विस्फोट का जोखिम है। बैटरी को केवल निर्माता द्वारा अनुशंसित समान या समकक्ष प्रकार से ही बदलें। इस्तेमाल की गई बैटरियों का निपटान निर्माता के निर्देशों के अनुसार करें।

警告！電池を間違ったタイプに交換すると爆発する危険があります。交換する電池はメーカーが推奨するタイプ、または同等のものを使用してください。使用済み電池は、メーカーの指示に従って廃棄してください。

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

Advarsel! Det er fare for eksplosjon hvis batteriet byttes ut med et av feil type. Batterier skal kun byttes ut med et av lik eller tilsvarende type, som anbefalt av produsenten. Kast brukte batterier i henhold til produsentens instruksjoner.

¡Advertencia! Existe riesgo de explosión si se sustituye la batería por una de tipo incorrecto. Reemplace la batería únicamente con el mismo tipo o uno equivalente recomendado por el fabricante. Deseche las baterías usadas de acuerdo con las instrucciones del fabricante.

Varning! Det finns risk för explosion om batteriet byts ut mot en felaktig typ. Byt endast ut batteriet mot ett batteri av samma eller likvärdig typ som rekommenderas av tillverkaren. Kassera förbrukade batterier i enlighet med tillverkarens anvisningar.

Redundant Power Supplies



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

تحذير! قد تحتوي هذه الوحدة على أكثر من وصلة لإمداد الطاقة. يجب فصل جميع التوصيلات لفصل الطاقة عن الوحدة.

警告！本设备可能有多个电源连接。必须切断所有连接，才能使设备断电。

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

Advarsel! Denne enhed kan have mere end én strømforsyningsforbindelse. Alle forbindelser skal fjernes for at deaktivere spændingen.

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

Varoitus! Laitteessa voi olla useampi kuin yksi virtalähteen liitäntä. Laitteen virta on katkaistava irrottamalla kaikki liitännät.

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.

Warnung! Diese Einheit kann über mehr als eine Stromversorgungsanschluss verfügen. Um sicherzustellen, dass die Einheit spannungsfrei ist, müssen alle Verbindungen entfernt werden.

אזהרה! יחידה זו עשויה לכלול יותר מחיבור אחד לספק כוח. יש לנתק את כל החיבורים כדי להפסיק את הזנת המתח ליחידה.

चेतावनी! इस इकाई में एक से अधिक पावर सप्लाय कनेक्शन हो सकते हैं। इकाई को ऊर्जा-मुक्त (डी-एनर्जाइज) करने के लिए सभी कनेक्शन हटा दिए जाने चाहिए।

警告！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。

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

Advarsel! Denne enheten kan ha mer enn én strømforsyningstilkobling. Alle tilkoblinger må fjernes for å gjøre enheten strømløs.

¡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.

Varning! Denna enhet kan ha mer än en strömförsörjningsanslutning. Alla anslutningar måste tas bort för att enheten ska bli strömlös.

Backplane Voltage



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

تحذير! يوجد جهد أو طاقة خطيرة على اللوحة الخلفية أثناء تشغيل النظام. توخ الحذر عند إجراء الصيانة. اقرأ التعليمات قبل إجراء الصيانة.

警告！当系统运行时，背板上存在危险电压或能量，进行维修时务必小心。维修前请阅读使用说明。

警告！系統運作時，背板上存在危險電壓或能量。維修時請小心。維修前請閱讀說明書。

Advarsel! Når systemet er i drift, er farlig spænding eller energi til stede på bagpladen. Vær forsigtig ved servicering. Læs instruktionerne før service.

Waarschuwing! Gevaarlijke spanning of energie is aanwezig op de achterzijde wanneer het systeem in bedrijf is. Wees voorzichtig bij service. Lees de instructies voorafgaand aan service.

Varoitus! Järjestelmän ollessa käynnissä takapaneelissa on vaarallista jännitettä tai energiaa. Ole varovainen huoltotöiden aikana. Lue ohjeet ennen huoltoa.

Attention! Une tension ou de l'énergie dangereuse est présente sur le panneau arrière lorsque le système est en fonctionnement. Soyez prudent lors de l'entretien. Lisez les instructions avant d'effectuer un entretien.

Warnung! Bei eingeschaltetem System liegt an der Backplane gefährliche Spannung oder Energie an. Seien Sie bei Wartungsarbeiten vorsichtig. Lesen Sie vor der Wartung die Anweisungen.

אזהרה! מתח או אנרגיה מסוכנים קיימים בלוח האחורי כאשר המערכת פועלת. יש לנקוט בזהירות בעת ביצוע תחזוקה. קרא את ההוראות לפני ביצוע תחזוקה.

चेतावनी! जब सिस्टम चालू होता है, तो बैकप्लेन पर खतरनाक वोल्टेज या ऊर्जा मौजूद होती है। सर्विसिंग करते समय सावधानी बरतें। सर्विसिंग से पहले निर्देश पढ़ें।

警告! システムの稼働中は、危険な電圧または電流がバックプレーン上にかかっています。修理を行う際には注意してください。修理を行う前に取扱説明書をお読みください。

경고! 시스템이 동작 중일 때 후면판(Backplane)에는 위험한 전압이나 에너지가 발생합니다. 서비스 작업 시 주의하십시오. 서비스 작업 전에 지침을 읽으십시오.

Advarsel! Det er farlig spenning eller energi på bakplaten når systemet er i drift. Vær forsiktig ved service. Les instruksjonene før service.

¡Advertencia! Hay voltaje o energía peligrosos presentes en la placa posterior cuando el sistema está en funcionamiento. Tenga cuidado al realizar el mantenimiento. Lea las instrucciones antes de realizar el mantenimiento.

Varning! Farlig spänning eller energi finns på backplane när systemet är i drift. Var försiktig vid service. Läs instruktionerna före service.

Comply with Local and National Electrical Codes



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

تحذير! يجب أن يتوافق تركيب الأجهزة مع لوائح الكهرباء المحلية والوطنية.

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。

Advarsel! Alle lokale og nationale el-regler skal overholdes under montering af udstyret.

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

Varoitus! Laitteiden asennus on suoritettava paikallisten ja kansallisten sähkömääräysten mukaisesti.

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

Warnung! Die Installation des Geräts muss den lokalen und nationalen elektrotechnischen Vorschriften entsprechen.

אזהרה! התקנת הציוד חייבת להתבצע בהתאם לתקני החשמל המקומיים והארציים.

चेतावनी! उपकरण की इंस्टालेशन स्थानीय और राष्ट्रीय विद्युत कोड के अनुरूप होनी चाहिए।

警告！機器の取り付けはその地域および国の電気規定に準拠する必要があります。

경고! 현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Advarsel! Installasjon av utstyret må være i samsvar med lokale og nasjonale elektriske forskrifter.

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

Varning! Installation av utrustningen måste följa lokala och nationella elektriska föreskrifter.

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.



تحذير! تجنب خطر الأجزاء المتحركة. ابتعد عن شفرات المروحة المتحركة. قد تستمر المراوح في الدوران بعد فك مجموعة المراوح من الهيكل. أبق أصابعك ومفكات البراغي والأغراض الأخرى بعيدة عن الفتحات الموجودة في مبيت مروحة التبريد.

警告！危险的活动零部件。请务必与转动的风扇叶片保持距离。从机箱移除风扇装置时，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外壳开口。

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

Advarsel! Farlige bevægelige dele. Hold dig væk fra ventilatorblade i bevægelse. Ventilatorerne kan stadig køre, når du tager ventilatorsamlingen af kabinettet. Hold fingre, skruetrækkere og andre genstande væk fra åbningerne i ventilatorkabinettet.

Waarschuwing! Gevaarlijke 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.

Varoitus! Vaaralliset liikkuvat osat. Pysy kaukana liikkuvista tuulettimen siivistä. Tuulettimet saattavat edelleen pyöriä, kun irrotat tuulettimen kokoonpanon kotelosta. Pidä sormet, ruuvimeisselit ja muut esineet poissa tuulettimen kotelon aukkojen läheltä.

Attention! Pieces mobiles dangereuses. Se tenir à 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.

Warnung! Gefährliche bewegliche Teile. Halten Sie Abstand von rotierenden Lüfterblättern. Die Lüfter können sich noch drehen, wenn Sie die Lüfterbaugruppe aus dem Chassis entfernen. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses fern.

אזהרה! חלקים נעים מסוכנים. יש להתרחק מלהבי מאוורר נעים. המאווררים עשויים להמשיך להסתובב בעת הסרת מכלול המאוורר מהמארז. יש להרחיק אצבעות, מברגים וחפצים אחרים מהפתחים שבבית מכלול המאוורר.

चेतावनी! खतरनाक चलते हुए भाग। चलते हुए पंखे के ब्लेड से दूर रहें। जब आप चैसिस से पंखे की असेंबली निकालते हैं, तब भी पंखे घूम रहे हो सकते हैं। उंगलियों, स्कूट्राइवर और अन्य वस्तुओं को पंखे की असेंबली के हाउसिंग के छिद्रों से दूर रखें।

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。シャーンからファンアセンブリを取り外す際、ファンがまだ回転している可能性があります。ファンアセンブリの開口部に、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。

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.

Advarsel! Farlige bevegelige deler. Hold deg unna vifteblader i fart. Viftene kan fortsatt gå rundt når du fjerner vifteenheten fra kabinettet. Hold fingre, skrutrekkere og andre gjenstander unna åpningene i viftehuset.

¡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.

Varning! Farliga rörliga delar. Håll dig borta från rörliga fläktblad. Fläktarna kan fortfarande snurra när du tar bort fläktenheten från chassit. Håll fingrar, skruvmejslar och andra föremål borta från öppningarna i fläktenhetens hölje.

Connection to Earth



Warning! Equipment shall be connected to an Earth mains socket-outlet.

تحذير! يجب توصيل الأجهزة بمقبس كهربائي أرضي.

警告！设备应连接到接地电源插座。

警告！應將設備連接至接地電源插座。

Advarsel! Dette udstyr skal sluttes til en jordforbundet stikkontakt.

Waarschuwing! De apparatuur moet worden aangesloten op een geaard netstopcontact.

Varoitus! Laitteet on kytkettävä maadoitettuun pistorasiaan.

Attention! L'équipement doit être connecté à une prise de courant avec mise à la terre.

Warnung! Das Gerät muss an eine geerdete Netzsteckdose angeschlossen werden.

אזהרה! יש לחבר את הציוד לשקע חשמל עם הארקה.

चेतावनी! उपकरण को एक अर्थ मेन्स सॉकेट-आउटलेट से जोड़ा जाना चाहिए।

警告！機器は、接地主電源コンセントに接続するものとします。

경고! 장비는 접지된 전원 콘센트에 연결해야 합니다.

Advarsel! Utstyret skal kobles til en jordet stikkontakt.

¡Advertencia! El equipo deberá conectarse a una toma de corriente con conexión a tierra.

Varning! Utrustningen ska vara ansluten till ett jordat eluttag.

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.

تحذير! عند تركيب المنتج استخدم كابلات التوصيل والطاقة ومحولات التيار المتردد المرفقة أو المخصصة. قد يؤدي استخدام أي كابلات ومحولات أخرى إلى حدوث عطل أو نشوب حريق. يحظر قانون سلامة الأجهزة والمواد الكهربائية استخدام كابلات UL أو المعتمدة من CSA (التي عليها علامة UL/CSA) لأي أجهزة كهربائية أخرى غير المنتجات التي تحددها شركة Supermicro فقط.

警告！安装时，请使用设备本身提供或指定的连接线、电源线和交流适配器。使用任何其他电缆线材或适配器都可能导致故障或火灾。除美超微(Supermicro)指定的产品外，《电气用品和材料安全法》禁止将UL或CSA认证的电缆(线材上标有UL/CSA)用于任何其他电气设备。

警告！安裝此產品時，請使用本身隨附或指定的連接線、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。除了美超微(Supermicro) 所指定的產品，《電氣用品及材料安全法》規定禁止使用未經UL或CSA認證的線材。(線材上標有UL/CSA符號) 。

Advarsel! Når du monterer produktet, skal du bruge de medfølgende eller udpegede forbindelseskabler, strømkabler og vekselstrømsadaptore (AC). Brug af andre kabler og adaptore kan føre til fejl eller brand. Loven om sikkerhed for elektriske apparater og materialer forbyder brugen af UL- eller CSA-certificerede kabler (med UL/CSA angivet på ledningen) til andre elektriske apparater end dem, der udelukkende er godkendt af Supermicro.

Waarschuwing! Bij het installeren van het product moet u de geleverde of aangewezen aansluitkabels, voedingskabels en AC-adapters gebruiken. Het gebruik van enige andere kabels en 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 enige andere elektrische apparaten dan producten die uitsluitend door Supermicro zijn aangewezen.

Varoitus! Käytä tuotteen asennuksessa mukana toimitettuja tai tarkoitukseen sopivia liitäntäkaapeleita, virtajohtoja ja verkkolaitteita. Muiden kaapeleiden ja sovittimien käyttö voi aiheuttaa toimintahäiriön tai tulipalon. Sähkölaitteiden ja materiaalien turvallisuutta koskeva laki kieltää UL- tai CSA-sertifioitujen kaapeleiden (joissa on merkintä UL/CSA) käytön muissa sähkölaitteissa kuin Supermicron nimeämissä tuotteissa.

Attention! Lors de l'installation du produit, utilisez les câbles de connexion, les câbles d'alimentation et les adaptateurs secteur fournis ou recommandés. L'utilisation d'autres câbles et adaptateurs peut causer un dysfonctionnement ou un incendie. La loi sur la sécurité des appareils et des équipements électriques interdit l'utilisation de câbles certifiés UL ou CSA (avec la mention UL/CSA sur le cordon) pour tout autre appareil électrique que les produits désignés par Supermicro uniquement.

Warnung! Verwenden Sie bei der Installation des Produkts ausschließlich die vorgesehenen oder mitgelieferten Anschlusskabel, Netzkabel und AC-Adapter. Die Verwendung anderer Kabel oder Adapter kann zu Fehlfunktionen oder Brand führen. Das Gesetz zur Sicherheit elektrischer Geräte und Materialien untersagt die Verwendung von UL- oder CSA-zertifizierten Kabeln (mit UL/CSA-Kennzeichnung auf dem Kabel) für andere elektrische Geräte als die von Supermicro ausdrücklich vorgesehenen Produkte.

אזהרה! בעת התקנת המוצר, יש להשתמש בכבלי החיבור, בכבלי החשמל ובמתאמי ה-AC המצורפים או הייעודיים. שימוש בכבלים או במתאמים אחרים עלול לגרום לתקלה או לדליקה. החוק לבטיחות מכשירי חשמל וחומרים אוסר על שימוש בכבלים בעלי אישור UL או CSA (הנושאים סימון UL/CSA על גבי הכבל) עבור מכשירים חשמליים אחרים שאינם מוצרים ייעודיים של סופרמיקרו (Supermicro) בלבד.

चेतावनी! उत्पाद इंस्टॉल करते समय, प्रदान की गई या निर्दिष्ट कनेक्शन केबल, पावर केबल और AC एडॉप्टर का ही उपयोग करें। किसी अन्य केबल और एडॉप्टर का उपयोग करने से खराबी आ सकती है या आग लग सकती है। विद्युत उपकरण और सामग्री सुरक्षा कानून केवल सुपरमाइक्रो (Supermicro) द्वारा निर्दिष्ट उत्पादों के अलावा किसी अन्य विद्युत उपकरणों के लिए UL या CSA-प्रमाणित केबल (जिनके कॉर्ड पर UL/CSA दर्शाया गया हो) के उपयोग को प्रतिबंधित करता है।

警告！本製品を設置する際は、付属または指定の接続ケーブル、電源コードとACアダプターを使用してください。それ以外のケーブルやアダプターを使用すると、事故や火災の原因になることがあります。電気用品安全法では、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の電気機器に使用することを禁止しています。

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 안전 법은 UL 또는 CSA 인증 케이블 (코드에 UL / CSA가 표시된 케이블)을 Supermicro가 지정한 제품 이외의 전기 장치에 사용하는 것을 금지합니다.

Advarsel! Når du installerer produktet, bruker du de medfølgende eller angitte tilkoblingskablene, strømkablene og strømadapterne. Bruk av andre kabler og adaptere kan forårsake funksjonsfeil eller brann. Lov om elektriske apparater og materialsikkerhet forbyr bruk av UL- eller CSA-sertifiserte kabler (der UL/CSA står på ledningen) til andre elektriske apparater enn produkter som kun er angitt av Supermicro.

¡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.

Varning! När du installerar produkten ska du använda de medföljande eller avsedda anslutningskablarna, strömkablarna och nätadaptarna. Om du använder andra kablar och adaptrar kan det orsaka funktionsfel eller brand. Lagen om säkerhet för elektriska apparater och material förbjuder användning av UL- eller CSA-certifierade kablar (som har UL/CSA angivet på sladden) för andra elektriska apparater än produkter som endast betecknas av Supermicro.

Product Disposal



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

تحذير! يجب التخلص النهائي من هذا المنتج وفقاً لجميع القوانين واللوائح الوطنية.

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。

Advarsel! Dette produkt skal bortskaffes i henhold til alle nationale love og regler.

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

Varoitus! Tämän tuotteen lopullinen hävittäminen on suoritettava kaikkien kansallisten lakien ja määräysten mukaisesti.

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.

Warnung! Die endgültige Entsorgung dieses Produkts muss gemäß allen nationalen Gesetzen und Vorschriften erfolgen.

אזהרה! סילוק סופי של מוצר זה חייב להתבצע בהתאם לכל החוקים והתקנות הלאומיים.

चेतावनी! इस उत्पाद का अंतिम निपटान सभी राष्ट्रीय कानूनों और नियमों के अनुसार किया जाना चाहिए।

警告！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。

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

Advarsel! Når produktet til slutt skal kasseres, må det håndteres i henhold til alle nasjonale lover og forskrifter.

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

Varning! Slutgiltigt bortskaffande av denna produkt ska ske i enlighet med alla nationella lagar och förordningar.

Appendix C:

System Specifications

Processors

AMD Ryzen (Zen5) Series Processor in Socket AM5

BIOS

256 Mb AMI BIOS® SPI Flash BIOS

ACPI 6.5, SMBIOS 3.7 or later, Plug-and-Play (PnP), RTC (Real Time Clock) wakeup, Riser Card Auto-Detection support

Memory

Up to 96 GB of Non-ECC UDIMM DDR5 5600 MT/s speed in two DIMM slots.

Supports Extreme Memory Profile (XMP) memory modules.

Storage Drives

Two M-Key NVMe slots: one PCIe 5.0 x4, 2280/22110 and one PCIe 4.0 x4, 2280

Internal drive bays: one 3.5" fixed drive bays (optional one 2.5" fixed drive bay)

PCI Expansion Slots

One PCIe 5.0 x16 slot for double-width (low-profile) GPU cards

One PCIe 4.0 x4 slot (Chipset)

Input/Output

Two USB 4.0 ports (rear DP2.0 Alt mode, type-C)

Four USB 2.0 rear ports

Two USB 3.2 Gen 2x1 ports (Type-A)

Two USB 3.2 Gen 2x2 ports (Type-C)

One 5 GbE LAN port

Motherboard

CARAM5-M, 9.6" (W) x 9.6" (L) (243.84 mm x 243.84 mm)

Chassis

CSE-GS2B, 13.4" x 3.62" x 10.4", 341 x 92 x 265 mm (H x W x D)

Security

Trusted Platform Module (TPM) 2.0

Silicon Root of Trust (RoT) – NIST 800-193 Compliant

Power Supply

Model: PWS-C301-PQ, 300 W PS2 multi-output module, 80Plus Gold (90%+)

AC Input Voltages: 100-240 VAC

Rated Input Current:

5900 W: 200-207.9 Vac / 50-60 Hz

+12 V:

Max: 26 A / Min: 0.1 A (200 Vac - 207.9 Vac)

+5 V:

Max: 18 A / Min: 0.2 A (208 Vac - 219.9 Vac)

+3.3 V:

Max: 18 A / Min: 0.3 A (220 Vac - 229.9 Vac)

Standby +5 Vsb:

Max: 3 A / Min 0 A

Operating Environment

Operating Temperature: 0° to 50° C (32° to 122° F)

Non-operating Temperature: -20° to 70° C (-4° to 158° F)

Operating Relative Humidity: 20% to 90% (non-condensing)

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

Regulatory Compliance

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

Applied Directives, Standards**Directives:**

EMC/EMI: 2014/30/EU (EMC Directive)
Electromagnetic Compatibility Regulations 2016
FCC Part 15 Subpart B
ICES-003
VCCI-CISPR 32
AS/NZS CISPR 32
CISPR 32
CISPR 35
BS/EN 55032
BS/EN 55035
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

Environment:

Delegated Directive (EU) 2015/863
Directive 2011/65/EU (RoHS)
REACH Regulation EC 1907/2006
WEEE Directive 2012/19/EU
California Proposition 65

Product Safety:

2014/35/EU (LVD Directive)
UL/CSA 62368-1 (USA and Canada)
Electrical Equipment (Safety) Regulations 2016
IEC/BS/EN 62368-1

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

<https://www.dtsc.ca.gov/hazardouswaste/perchlorate>

RF Module

Brand: Realtek Semiconductor Corp.

Model: RTL8922AE

NCC ID: CCAI23Y10120T0

Operating Frequency: The detailed output power and operating frequencies of this device are as follows.

Operating Frequency (MHz)	Output Power (dBm)	Category
2412-2472	25.7	WLAN 802.11b/g/n/ax/be mode, 20/40MHz Bandwidth
5180-5250	22.45	WLAN 802.11a/n/ac/ax/be mode, 20/40/80/160MHz Bandwidth
5260-5320	22.46	WLAN 802.11a/n/ac/ax/be mode, 20/40/80/160MHz Bandwidth
5500-5720	22.29	WLAN 802.11a/n/ac/ax mode, 20/40/80MHz Bandwidth
5745-5825	25.36	WLAN 802.11a/n/ac/ax mode, 20/40/80MHz Bandwidth

Operating Frequency (MHz)	EIRP Transmit Power (dBm)	Category
5955-6415	22.99	LPI, WLAN 802.11a/ax/be mode, 20/40/80/160MHz Bandwidth
5955-6415	13.97	VLP · WLAN 802.11a/ax/be mode, 20/40/80/160MHz Bandwidth

Operating Frequency (MHz)	Output Power (dBm)	Category
2402-2480	13.1	Bluetooth EDR

Operating Frequency (MHz)	Output Power (dBm)	Category
2402-2480	12.8	Bluetooth LE

Without permission granted by the NCC, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to a approved low power radio-frequency devices. The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved. The said legal

communications means radio communications is operated in compliance with the Telecommunications Management Act. The low power radio-frequency devices must accept any interference from legal communications or ISM radio wave radiated devices.

Appendix D:

General Data Center Environmental Specifications

Particulate Contamination Specifications

Air filtration: Data centers must be kept clean to Class 8 of ISO 14644-1 (ISO 2015). The air entering the data center should be filtered with a MERV 11 filter or better. The air within the data center should be continuously filtered with a MERV 8 filter or better.

Conductive dust: Air should be free of conductive dust, zinc whiskers, or other conductive particles.

Corrosive dust: Air should be free of corrosive dust.

Gaseous Contamination Specifications

Copper coupon corrosion rate: <300 Å/month per class G1 as defined by ANSI.ISA71.04-2013, reference by ASHRAE TC 9.9

Silver coupon corrosion rate: <200 Å/month per class G1 as defined by ANSI.ISA71.04-2013, reference by ASHRAE TC 9.9

Note: If testing with silver or copper coupons results in values less than 200 Å/month or 300 Å/month, respectively, then operating up to 70% relative humidity (RH) is acceptable. If the testing shows corrosion levels exceed these limits, then catalyst type pollutants are probably present and RH should be driven to 50% or lower.

Appendix D:

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: 桌上型電腦 / Desktop 型號 (型式) : GS2B-S3CA Equipment name Type designation (Type)						
(系列型號: GS2B-3、AS -C521D、AS -C521D-11302U、AS -C521D-30101U、AS -C521D-31101U、 AS -C521D-11101U、AS -C521D-11301U、AS -C521D-12311U、AS -C521D-12321U、 AS -C521D-12601U、AS -C521D-12611U、AS -C521D-12621U、AS -C521D-21301U、AS -C521D-31301U)						
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr ⁺⁶)	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
機殼 (Chassis)	○	○	○	○	○	○
機殼風扇 (Chassis Fan)	-	○	○	○	○	○
線材 (Cable)	○	○	○	○	○	○
主機板 (Motherboard)	-	○	○	○	○	○
電源供應器 (Power Supply)	-	○	○	○	○	○
硬碟 (HDD/SSD/M.2)	-	○	○	○	○	○
無線模組 (WiFi module)	-	○	○	○	○	○
備考1. “超出0.1 wt %”及“超出0.01 wt %”係指限用物質之百分比含量超出百分比含量基準值。 Note 1 : “Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.						
備考2. “○”係指該項限用物質之百分比含量未超出百分比含量基準值。 Note 2 : “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.						
備考3. “-”係指該項限用物質為排除項目。 Note 3 : The “-” indicates that the restricted substance corresponds to the exemption.						

輸入額定:

100-240Vac, 60-50Hz, 4-2A

*使用者不能任意拆除或替換內部配備

*報驗義務人之姓名或名稱：美超微電腦股份有限公司

*報驗義務人之地址：新北市中和區建一路 150 號 3 樓