



SuperServer®

SYS-E50-14AM

SYS-E50-14AM-L

SYS-E50-14AM-N5

USER'S MANUAL

Revision 1.0 (MNL-2786)

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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 SYS-E50-14AM/-L/-N5 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.

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

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

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Chapter 1:

Introduction

This chapter provides a brief outline of the functions and features of the SYS-E50-14AM/-L/-N5 system. It is based on the A4SAP-H motherboard and the CSE-E50/-L chassis.

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1.1 Overview

This chapter provides a brief outline of the functions and features of the SuperServer SYS-E50-14AM/-L/-N5. The following provides an overview of the system specifications and capabilities.

System Overview	
Motherboard	A4SAP-H
Chassis	CSE-E50/-L
Processor	Single Intel® Processor N97 with four cores and supporting a Thermal Design Power (TDP) unit of up to 7 W.
Memory	One DIMM slot that supports up to 16 GB non-ECC DDR5 SODIMM at 4800 MT/s
Drive Support	One internal fixed 2.5" SATA drive bay (SYS-E50-14AM and SYS-E50-14AM-N5 only) One M.2 PCIe 3.0 x1 SATA slot (B-key 2242/3042)
I/O Ports	<p>For SYS-E50-14AM only:</p> <ul style="list-style-type: none"> Two RJ45 2.5 GbE LAN ports Two USB 2.0 ports (front) Two USB 3.2 Gen2 Type-A ports (rear) Two HDMI 1.4 ports (rear) Two COM ports (front) One TPM onboard/port 80 <p>For SYS-E50-14AM-L only:</p> <ul style="list-style-type: none"> Two RJ45 2.5 GbE LAN ports Two USB 3.2 Gen2 Type-A ports (rear) One HDMI 1.4 port (rear) <p>For SYS-E50-14AM-N5 only:</p> <ul style="list-style-type: none"> Three RJ45 1 GbE LAN ports (Intel® I210-IT) Two RJ45 2.5 GbE LAN ports Two USB 2.0 ports (front) Two USB 3.2 Gen2 Type-A ports (rear) Two HDMI 1.4 ports (rear) One COM port (front) One TPM onboard/port 80

System Overview	
Expansion Slots	<p>For SYS-E50-14AM and SYS-E50-14AM-N5 only:</p> <p>One M.2 PCIe 3.0 x1 slot (E-key 2230; USB 2.0)</p> <p>One M.2 PCIe 3.0 x1 SATA slot (B-key 2242/3042; USB 3.0)</p> <p>For SYS-E50-14AM-L only:</p> <p>One M.2 PCIe 3.0 x1 slot (E-key 2230)</p> <p>One M.2 PCIe 3.0 x1 SATA slot (B-key 2242/3042)</p>
System Cooling	Fanless
Operating Environment	<p>Operating Temperature: 0°C to 45°C (32°F to 113°F), with an airflow of 0.7 m/s, when using M.2 SATA</p> <p>Operating Temperature: 0°C to 40°C (32°F to 104°F), with an airflow of 0.7 m/s, when using SSD 2.5" SATA</p> <p>Non-Operating Temperature: -30°C to 60°C (-22°F to 140°F)</p> <p>Operating Relative Humidity: 8% to 80% (non-condensing)</p> <p>Non-Operating Relative Humidity: 8% to 90% (non-condensing)</p>
Power Adapter	One lockable 40 W power adapter for 12 VDC
Form Factor	Fanless embedded: 5.82" x 1.72" x 4.64" (148 x 44 x 118 mm) (WxHxD)

Notes:

- Quick Reference Guides can be found on the following pages of the Supermicro website:
 - <https://www.supermicro.com/en/products/system/iot/fanless%20embedded/sys-e50-14am>
 - <https://www.supermicro.com/en/products/system/iot/fanless%20embedded/sys-e50-14am-l>
 - <https://www.supermicro.com/en/products/system/iot/fanless%20embedded/sys-e50-14am-n5>
- The following safety models associated with the SYS-E50-14AM/-L/-N5 have been certified as compliant with UL or CSA: E50-40 or E50-A4A4.

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.

SYS-E50-14AM System Views

The following features are located on the front and rear of the SYS-E50-14AM server.

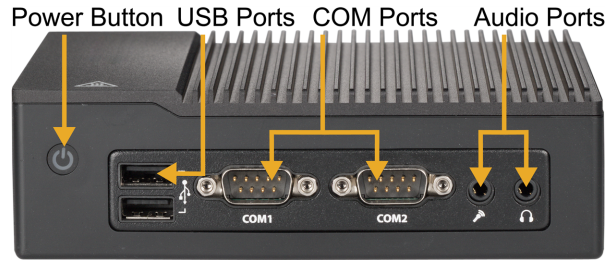


Figure 1-1. SYS-E50-14AM Front View

SYS-E50-14AM System Features: Front	
Feature	Description
Power button	One system power button
USB ports	Two USB 2.0 ports
COM ports	Two COM ports
Audio ports	Two audio ports (one mic-in, one line-out)

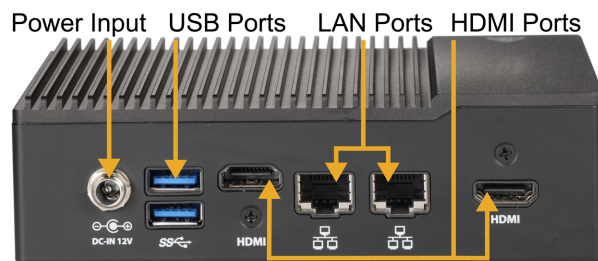


Figure 1-2. SYS-E50-14AM Rear View

SYS-E50-14AM System Features: Rear	
Feature	Description
Power input	One 12 VDC power input socket
HDMI ports	Two HDMI 1.4 ports
USB ports	Two USB 3.2 ports
LAN ports	Two RJ45 2.5GbE LAN ports

SYS-E50-14AM-L System Views

The following features are located on the front and rear of the SYS-E50-14AM-L server.



Figure 1-3. SYS-E50-14AM-L Front View

SYS-E50-14AM-L System Features: Front

Feature	Description
Power button	One system power button

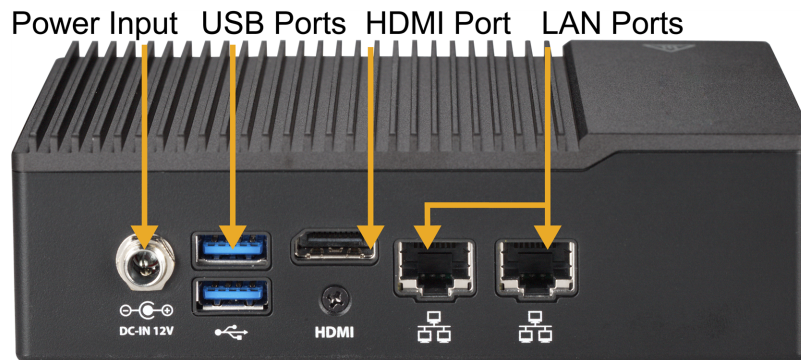


Figure 1-4. SYS-E50-14AM-L Rear View

SYS-E50-14AM-L System Features: Rear

Feature	Description
Power input	One 12 VDC power input socket
HDMI port	One HDMI 1.4 port
USB ports	Two USB 3.2 ports
LAN ports	Two RJ45 2.5GbE LAN ports

SYS-E50-14AM-N5 System Views

The following features are located on the front and rear of the SYS-E50-14AM-N5 server.

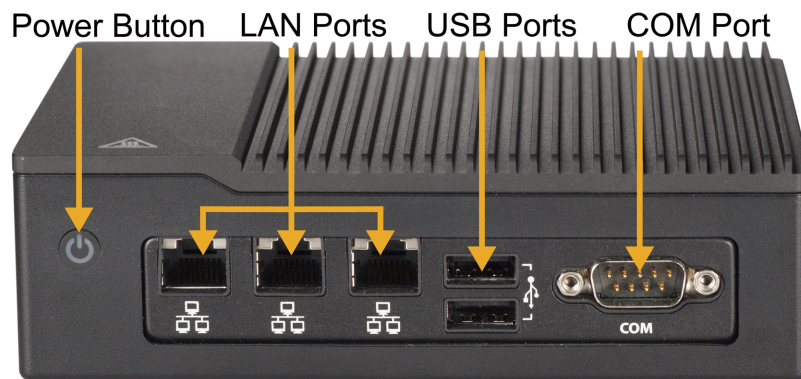


Figure 1-5. SYS-E50-14AM-N5 Front View

SYS-E50-14AM-N5 System Features: Front	
Feature	Description
Power button	One system power button
LAN ports	Three RJ45 1GbE LAN ports
USB ports	Two USB 2.0 ports
COM port	One COM port

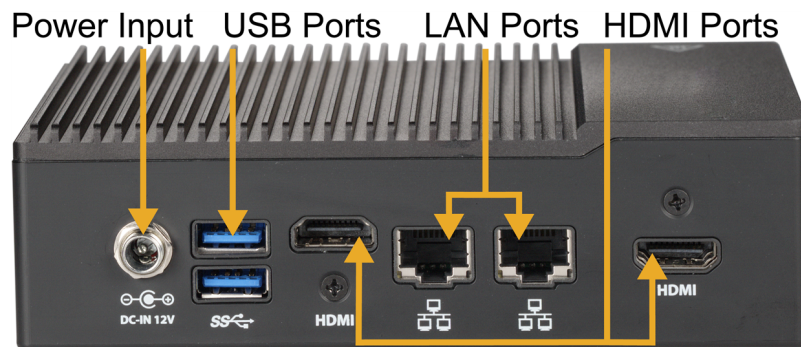


Figure 1-6. SYS-E50-14AM-N5 Rear View

SYS-E50-14AM-N5 System Features: Rear	
Feature	Description
Power input	One 12 VDC power input socket
HDMI ports	Two HDMI 1.4 ports
USB ports	Two USB 3.2 ports
LAN ports	Two RJ45 2.5GbE LAN ports

Chassis Dimensions

The compact SYS-E50-14AM/-L/-N5 server measures 4.64" x 5.82" (118 x 148 mm) from above and 5.82" x 1.72" (148 x 44 mm) from the front or rear.



Figure 1-7. SYS-E50-14AM/-L/-N5 Dimensions (SYS-E50-14AM Shown)

1.3 Motherboard Quick Reference

For details on the A4SAP-H motherboard layout and other quick reference information, refer to the content below.

Motherboard Layout

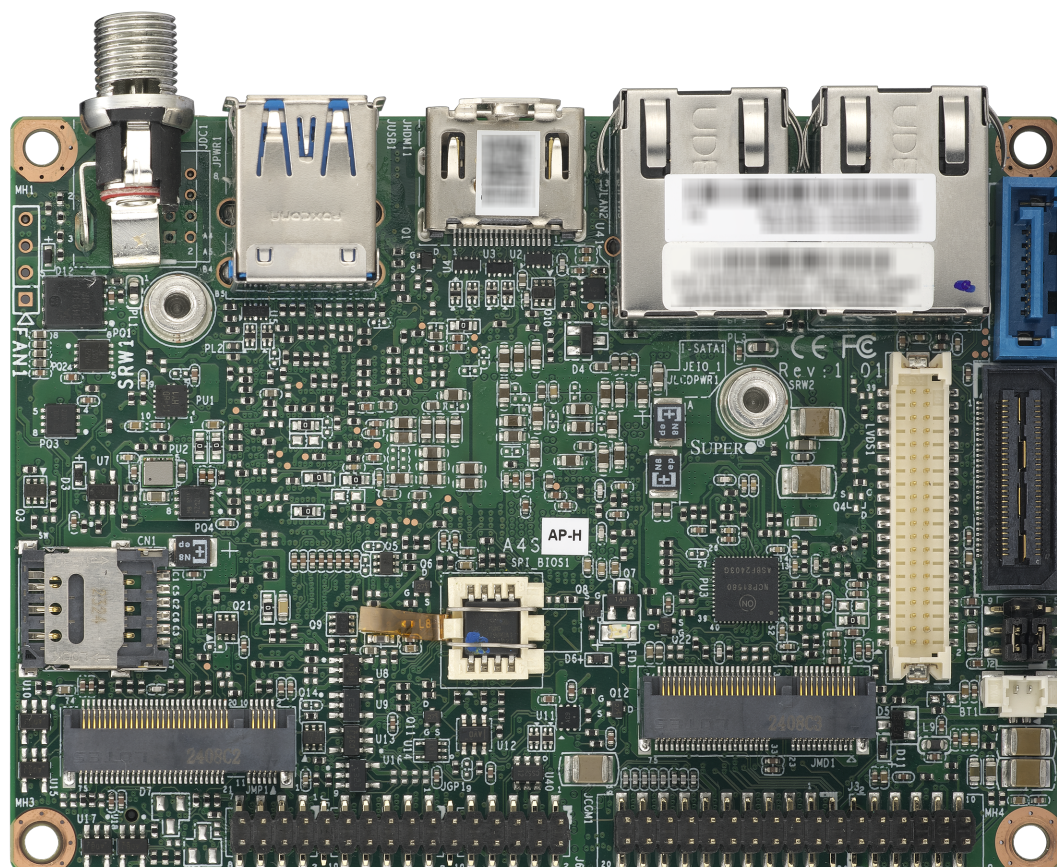


Figure 1-8. A4SAP-H Motherboard Bottom Photo

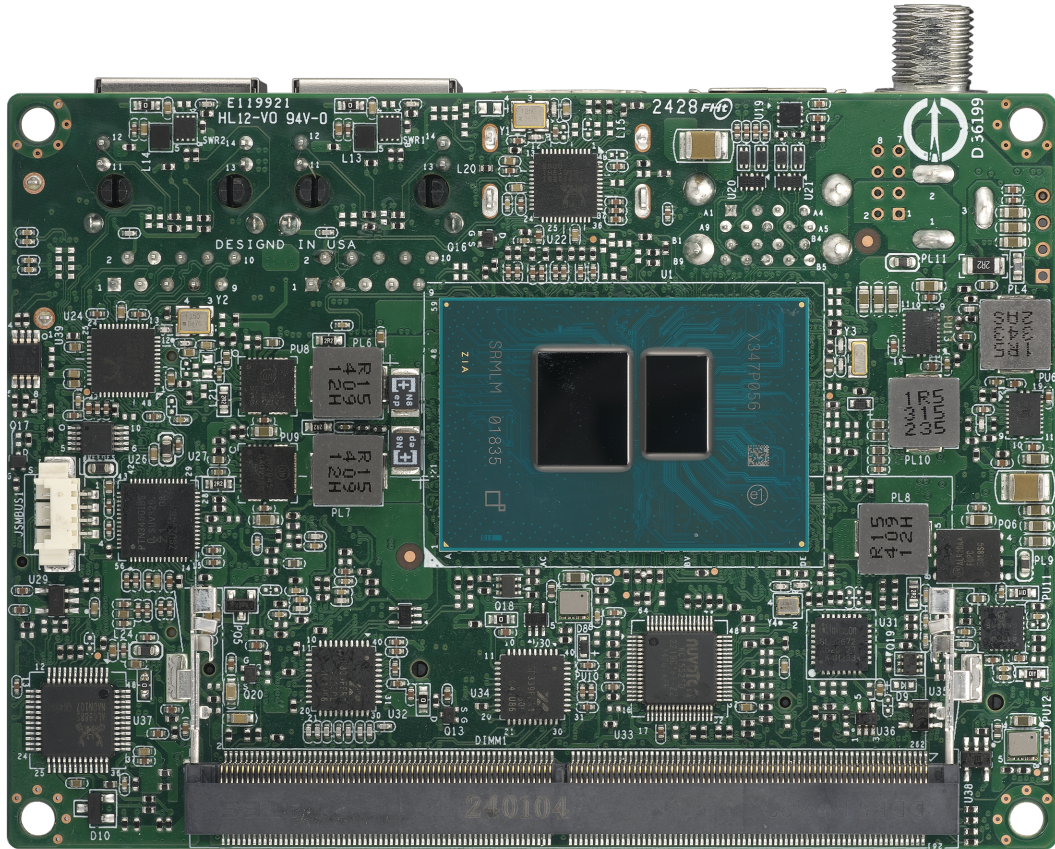


Figure 1-9. A4SAP-H Motherboard Top Photo

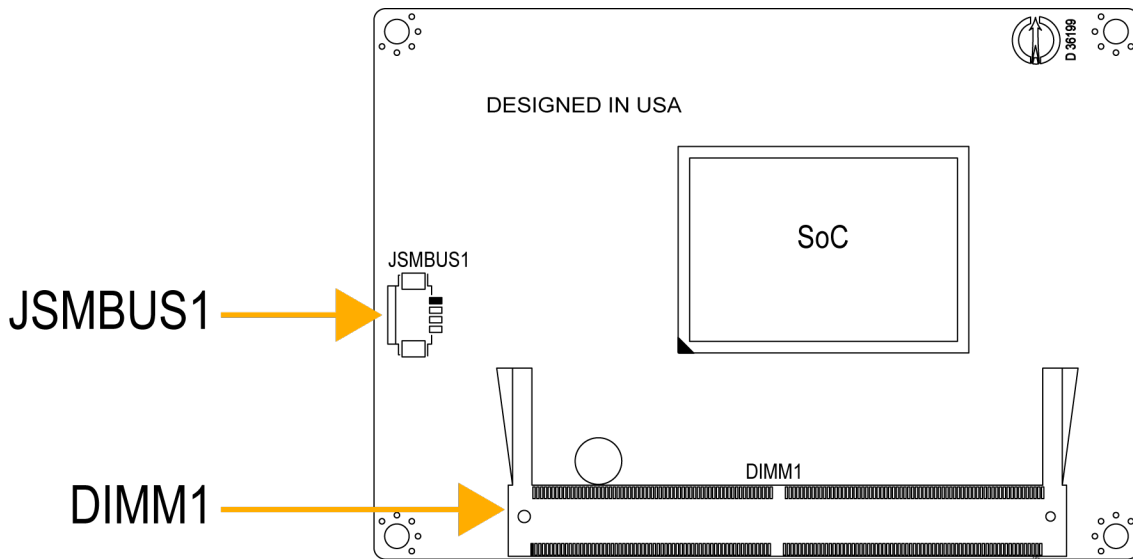


Figure 1-10. A4SAP-H Motherboard Top Layout

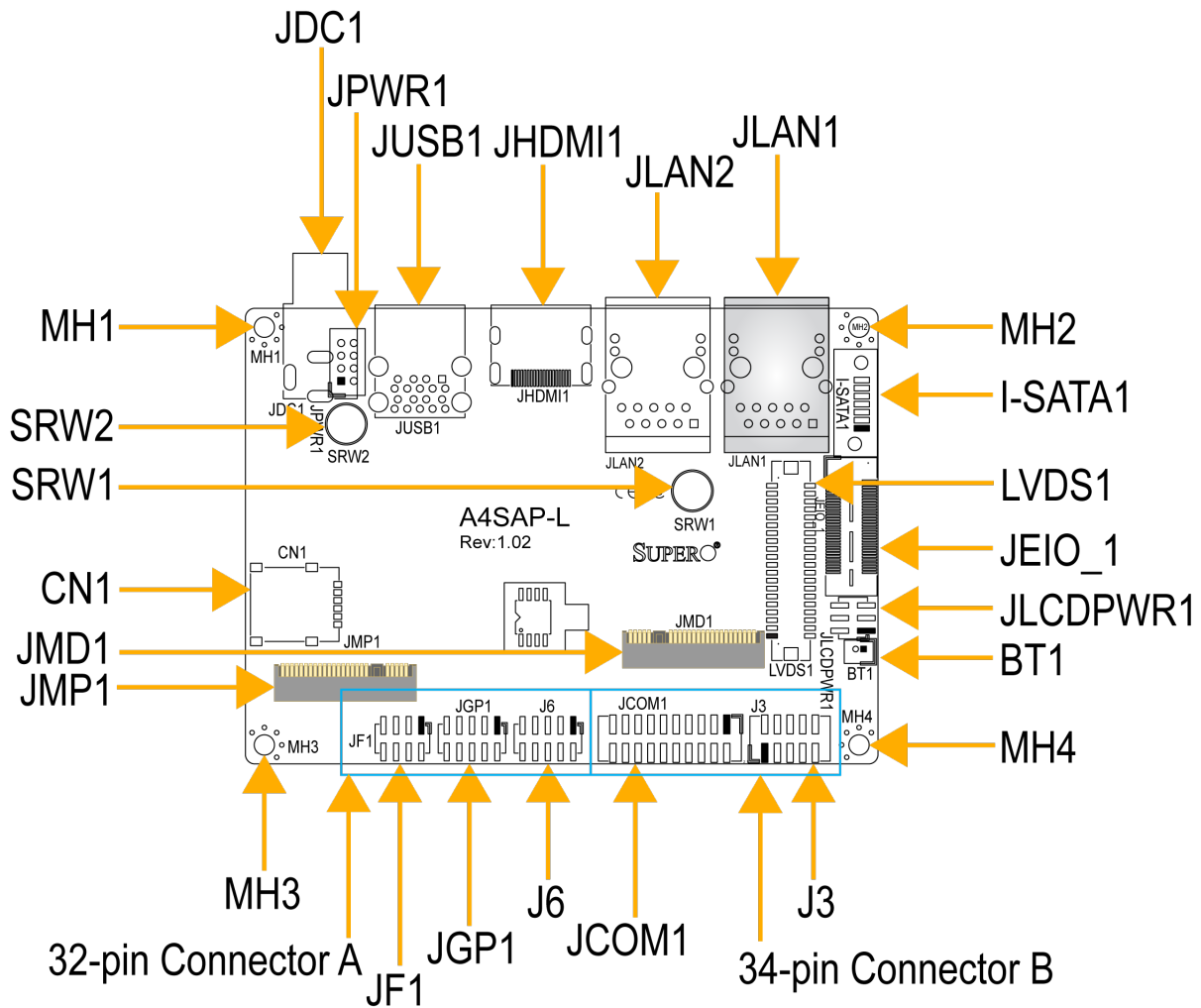


Figure 1-11. A4SAP-H Motherboard Bottom Layout (A4SAP-L pictured)

Notes:

- See ["Maintenance and Component Installation"](#) on page 33 for detailed information on jumpers, connectors, and LED indicators.
- "■" indicates the location of pin 1.
- Components not documented are for internal testing-purposes only.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer. Do not install the onboard battery upside down to avoid possible explosion.

Motherboard Mechanical Drawings

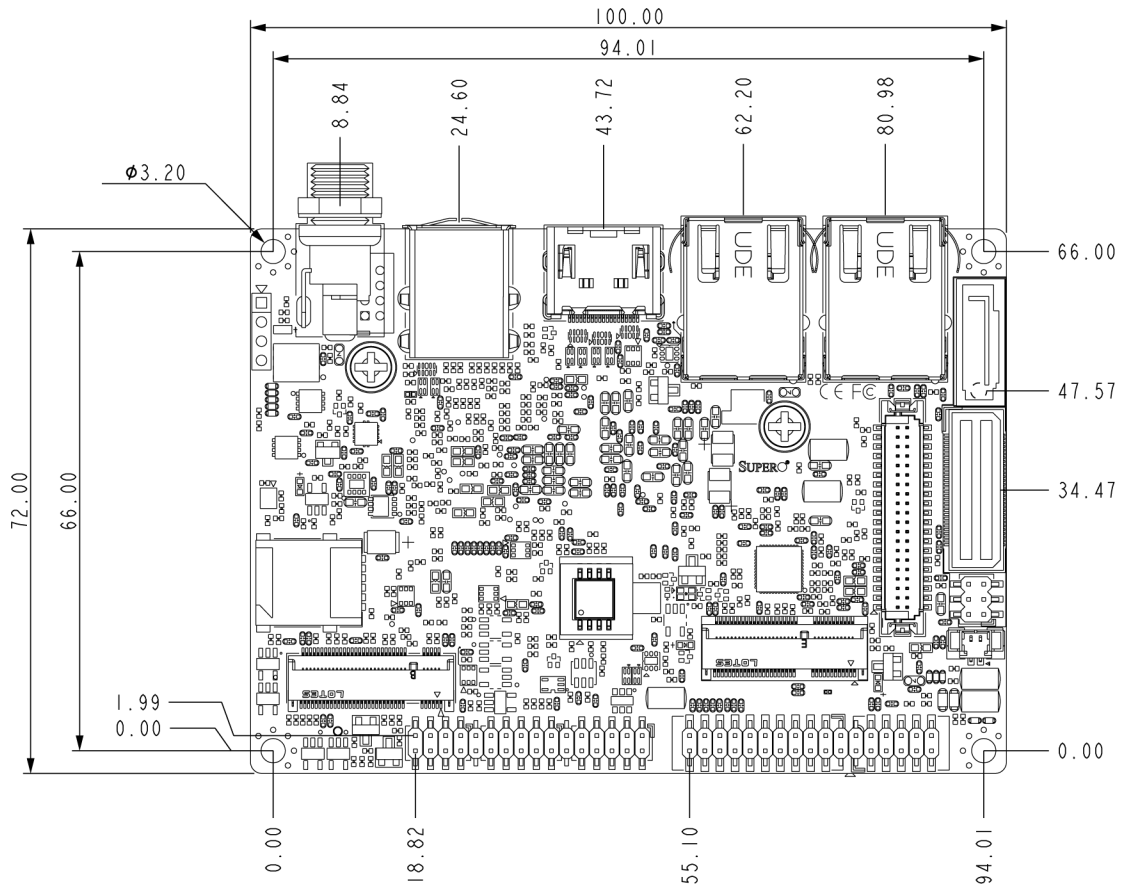


Figure 1-12. A4SAP-H Motherboard 2D Outline Drawing

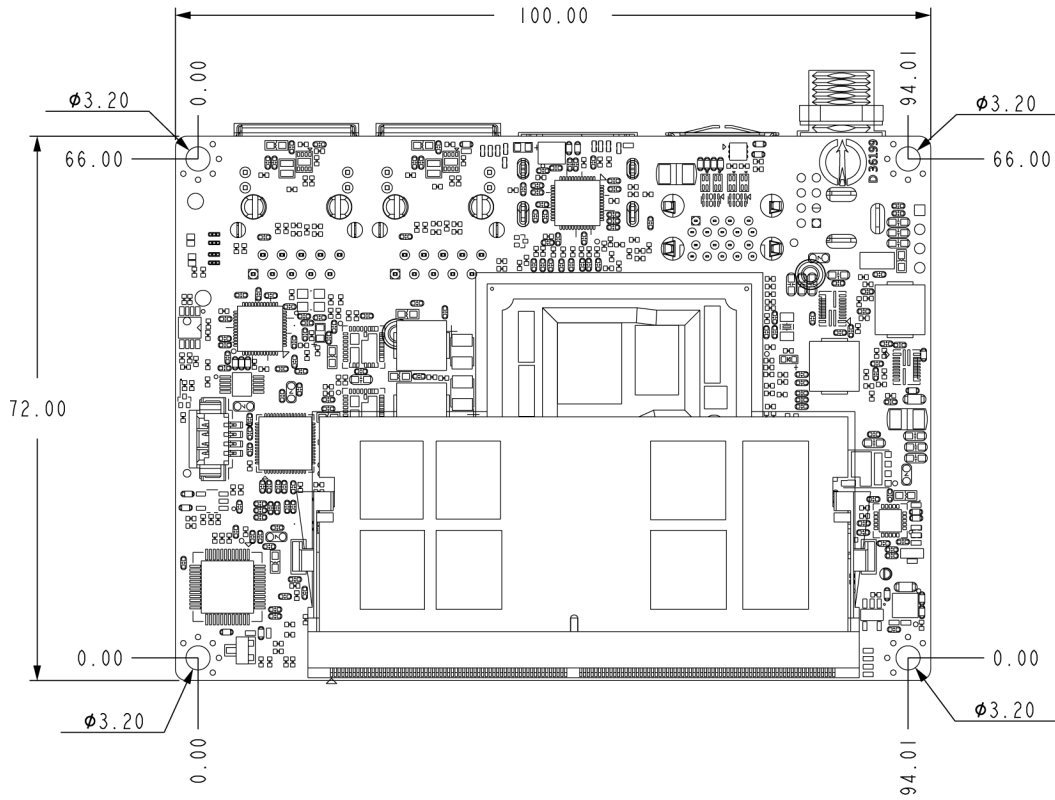


Figure 1-13. A4SAP-H Motherboard 2D Outline Drawing

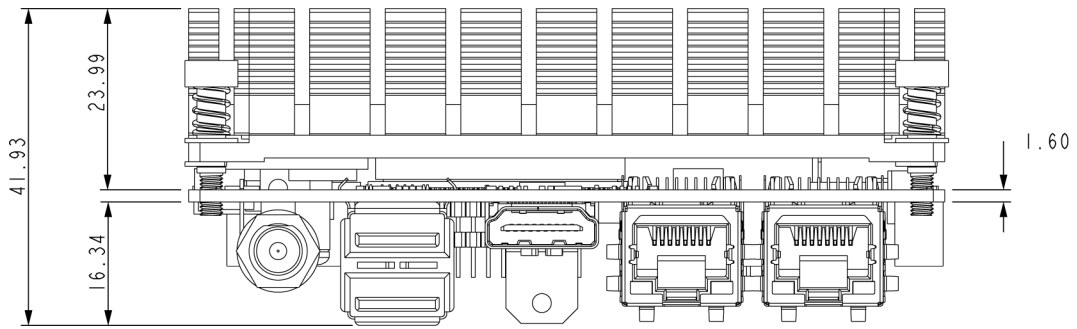


Figure 1-14. A4SAP-H Motherboard with Heatsink

Notes:

- See "[Maintenance and Component Installation](#)" on page 33 for detailed information on jumpers, connectors, and LED indicators.
- "■" indicates the location of pin 1.
- Components not documented are for internal testing-purposes only.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer. Do not install the onboard battery upside down to avoid possible explosion.

Quick Reference Table

Jumper	Description	Jumper Setting
JLCDPWR1	FORCE POWER ON	Pins 2–4 (FORCE POWER ON) Pins 4–6 (POWER BUTTON ON)
	LVDS VCC Power Selection	Pins 1–3 (+3.3 V) Pins 3–5 (+5 V)

Connector	Description
BT1	Battery Connector (to clear CMOS, remove the battery, short pins 1–2 for more than 30 seconds, and install the battery)
CN1	Nano SIM Card Slot
J3	Front Panel Audio Header (Line-out, Mic-in)
J6	USB 2.0 x2 Header
JCOM1	COM x2 Header
JDC1	+12 VDC Jack Power Connector
JEIO_1	Supermicro Extension I/O Header (DP/HDMI, one PCIe x1, two USB 2.0, eSPI, SATA, SMBus, + 5 VSB, +12 VSB)
JF1	Front Control Panel Header
JGP1	General Purpose I/O Header
JHDMI1	High Definition Multimedia Interface (HDMI) Port
JLAN1, JLAN2	2.5G LAN Ports

Connector	Description
JMD1	M.2 E-Key 2230 Slot (PCIe x1/USB 2.0)
JMP1	M.2 B-Key 2242/3042 Slot with Nano SIM (PCIe x1/SATA 3.0/USB 2.0/USB 3.2)
JSMBUS1	SMBus and 5 V / 1 A SATA Power Box Header
JUSB1	Two USB 3.2 Ports
LVDS1	Dual Channel 48-bit LVDS Connector
MH1–MH4	Mounting Holes
SRW1, SRW2	M.2 Mounting Holes
32-Pin Connector A	Front panel, 8-bit GPIO and USB 2.0 x 2 (JF1 + JGP1 + J6)
34-Pin Connector B	RS232/422/485 x 2 and Audio (JCOM1 + J3)

Motherboard Block Diagram

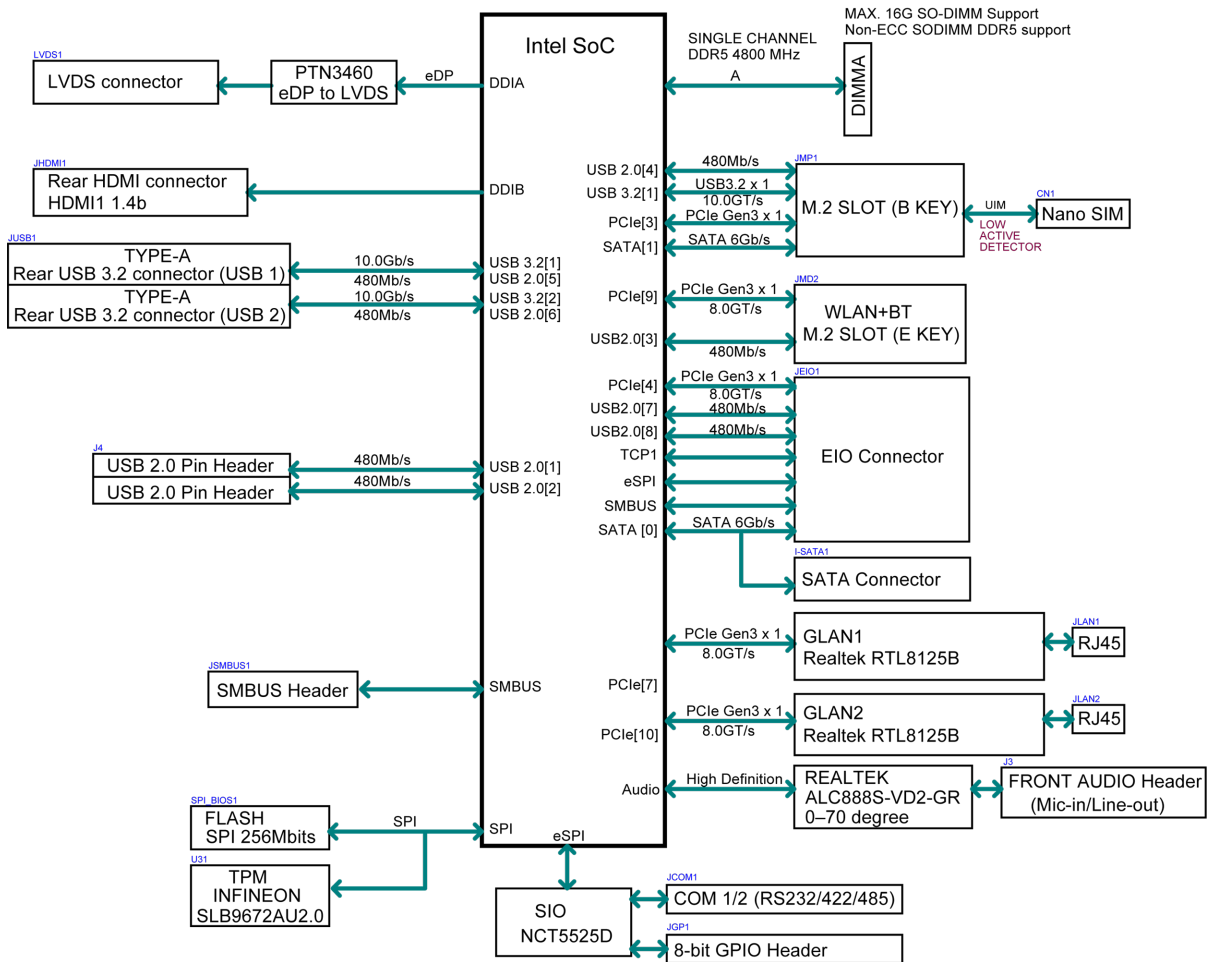


Figure 1-15. A4SAP-H Block Diagram

Chapter 2:

Server Installation

This chapter provides advice and instructions for mounting your server in a server rack. If your server is not already fully integrated with processors, system memory, etc., refer to ["Maintenance and Component Installation" on page 33](#) 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.

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2.1 Preparing for Setup

This section provides advice and instructions for mounting the SYS-E50-14AM/-L/-N5 server on a suitable surface.

Unpacking the System

Inspect the box in which the system was shipped and note if it was damaged. If the system itself shows damage, file a damage claim with the carrier.

Warnings and Precautions

Review the electrical and general safety precautions in "[Standardized Warning Statements for AC Systems](#)" on page 128.

Adding System Components

- **Memory:** If your system is not already fully integrated with system memory, see "[Maintenance and Component Installation](#)" on page 33 for details on compatible types of memory and the relevant installation procedures.
- **Drives and Storage:** See "[Maintenance and Component Installation](#)" on page 33 to add storage capabilities to your server.
- **Input/Output:** See "[Motherboard Connections, Jumpers, and LEDs](#)" on page 40 for I/O ports, and connect them as needed.
- **Software:** See "[Software](#)" on page 60 for description and procedures for installing software, including drivers and monitoring programs.

2.2 Installing Mounting Brackets

The chassis includes mounting brackets that allow it to be mounted on any convenient space.

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

1. Install the brackets to the chassis, with two screws in each bracket.
2. Secure the brackets to the surface where you want the system to be mounted.

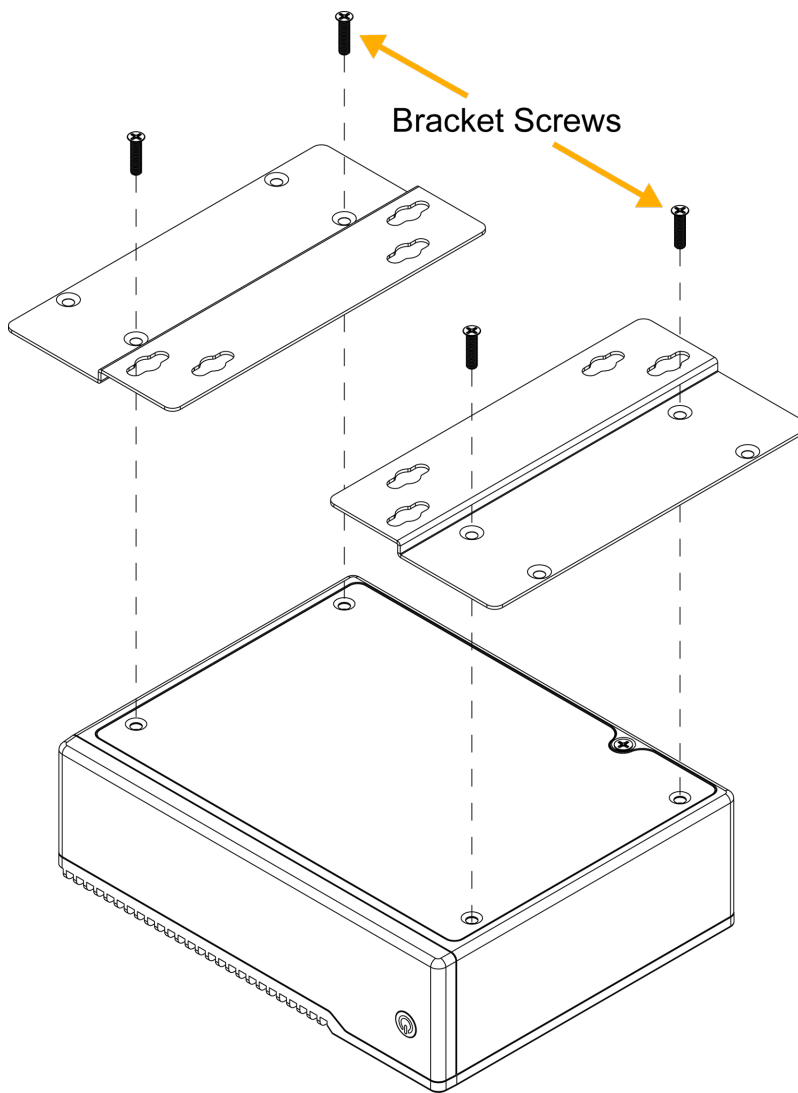


Figure 2-1. Installing the Mounting Brackets to the Chassis

2.3 Installing Storage

The SYS-E50-14AM and SYS-E50-14AM-N5 support M.2 SATA 2242 and SSD SATA 2.5”.

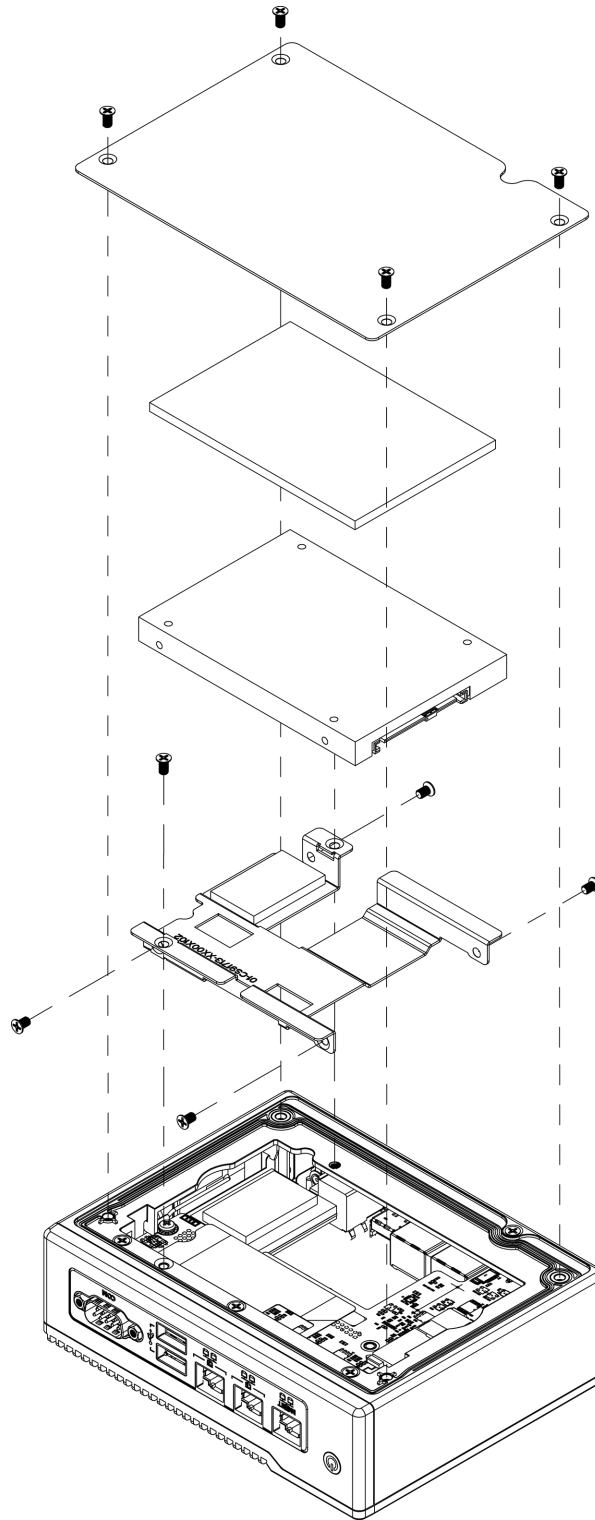


Figure 2-2. Installing M.2 SATA and SSD SATA 2.5” with thermal pads

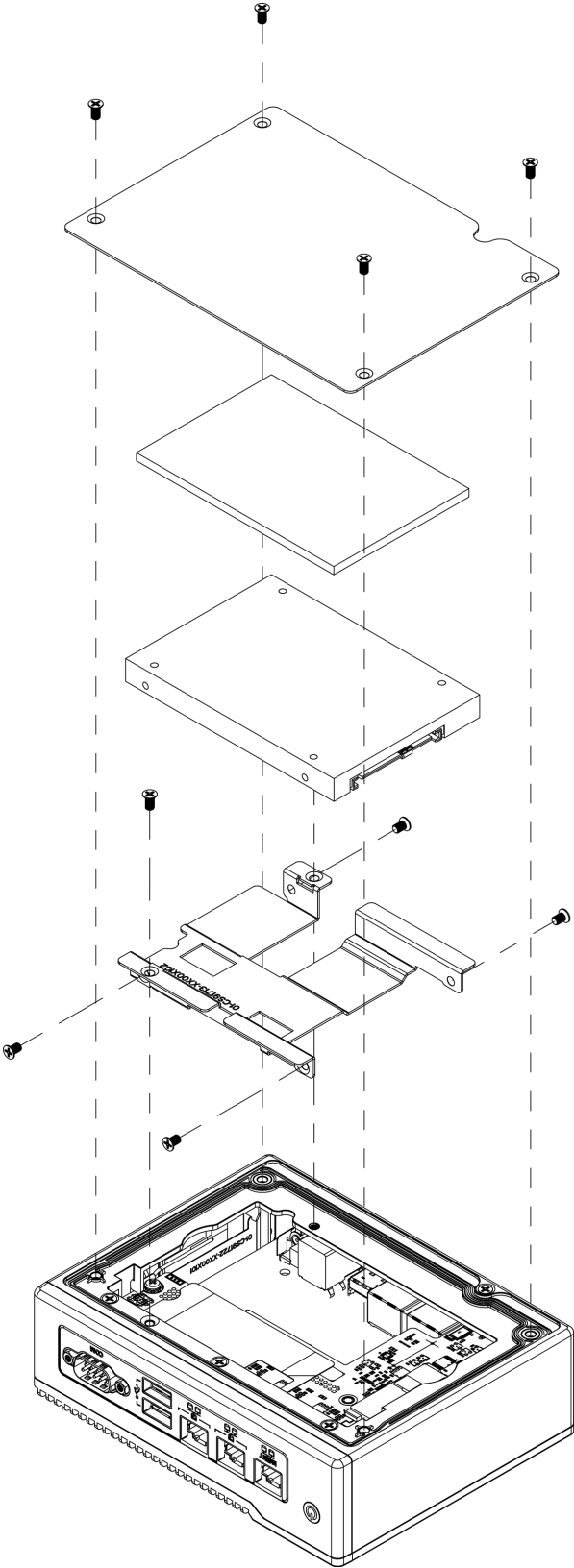


Figure 2-3. Installing SSD SATA 2.5" with thermal pads

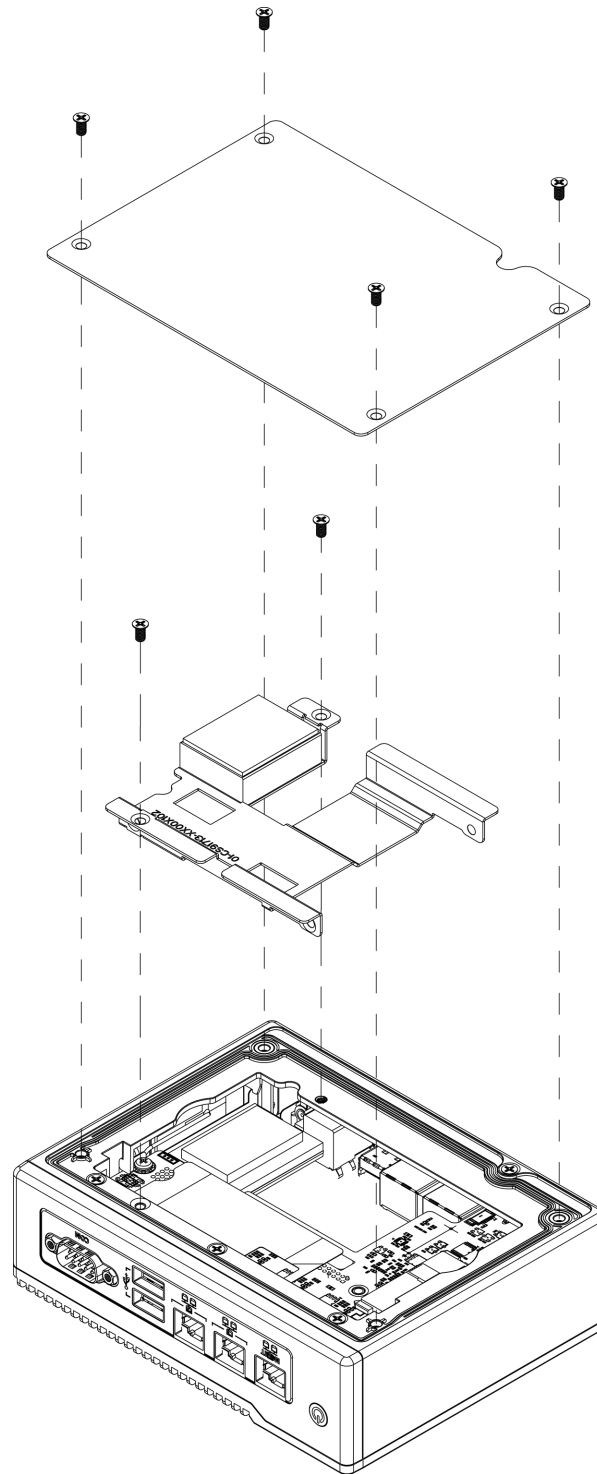


Figure 2-4. Installing M.2 SATA with thermal block/pads

The SYS-E50-14AM-L system supports M.2 SATA 2242.

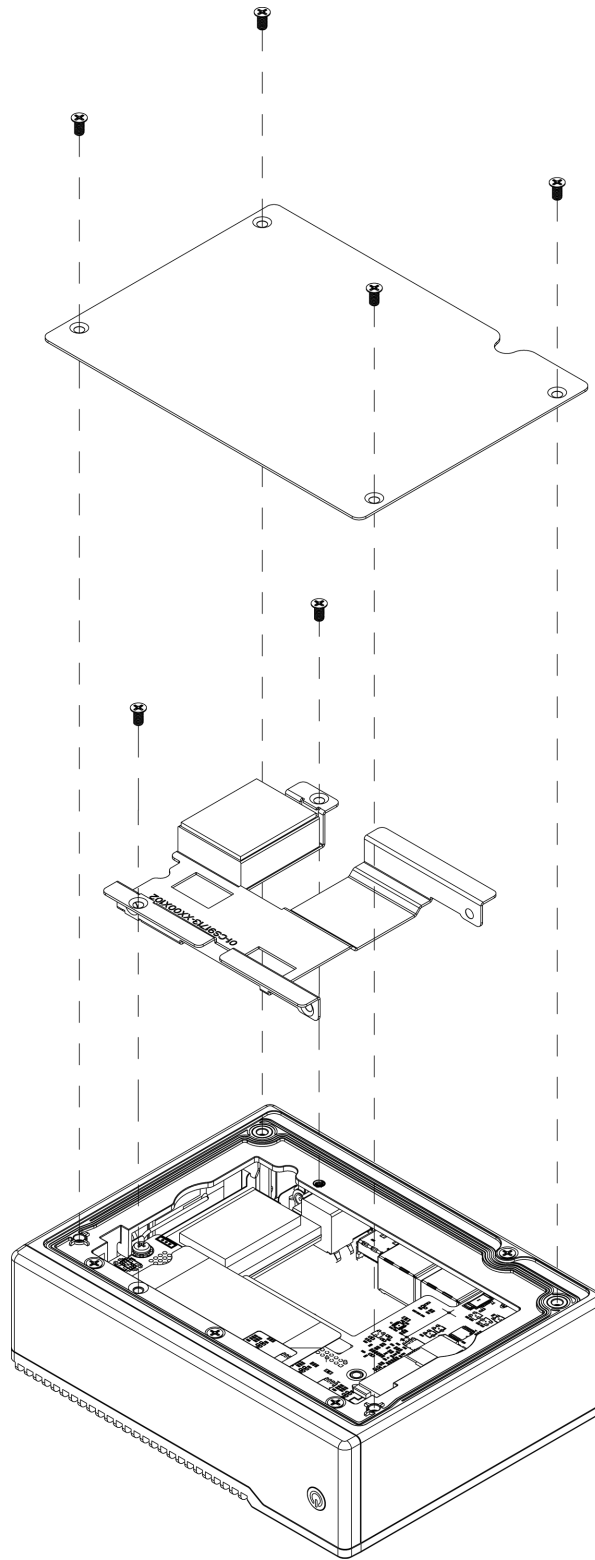


Figure 2-5. Installing M.2 SATA with thermal block/pads

Chapter 3:

Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components for the SYS-E50-14AM/-L/-N5 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.

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3.1 Power Adapter

The SYS-E50-14AM/-L/-N5 uses the following components for power:

Power Adapter Components	
Part Number	Description
MCP-250-10135-0N	Power Adapter, 40 W, 12 V, 3.33 A, AC to DC lockable
CBL-PWCD-0260-IS	Power Cord US Type, NEMA5-15P to IEC 60320 C13, 6 feet, 18 AWG, RoHS/REACH

Removing Power

1. Use the operating system to power down the server.
2. After the system has completely shut down, disconnect the power cords from the system.

3.2 Accessing the System

The SYS-E50-14AM/-L/-N5 server features removable top and bottom covers, enabling easy access to the inside of the server.

Removing the Chassis Covers

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

1. Power down the system as described in [Removing Power](#).
2. Remove the four screws that hold the top cover in place. These screws also hold the bottom cover in place.
3. Lift one or both covers off the chassis.

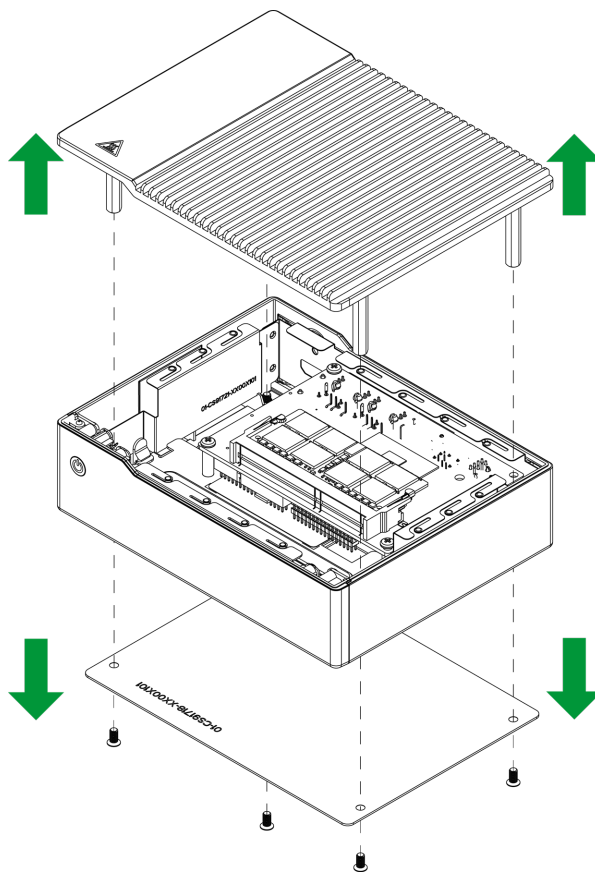


Figure 3-1. Removing the Chassis Covers

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 by its edges only. Do not touch its components, peripheral chips, memory modules, or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the 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. Do not install the onboard battery upside down to avoid possible explosion.

3.4 Memory Support and Installation

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

Note: Check the Supermicro website for recommended memory modules.

SODIMM Installation

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

1. Position the key of the SODIMM so it aligns with the receptive point on the slot.

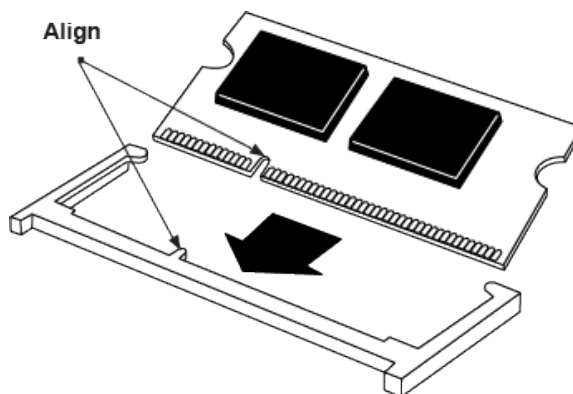


Figure 3-2. Insert the SODIMM

2. Insert the SODIMM vertically at about a 45 degree angle. Press down until the module locks into place.

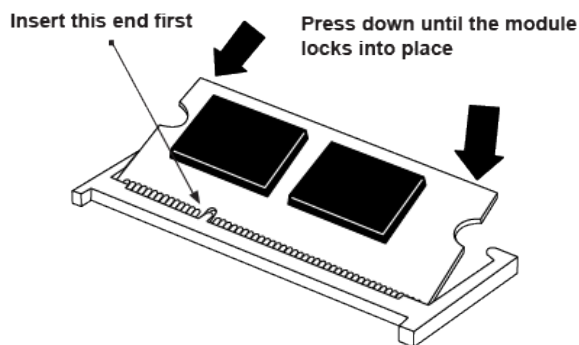


Figure 3-3. Insert at a 45 degree angle

3. The side clips will automatically secure the SODIMM, locking it into place.

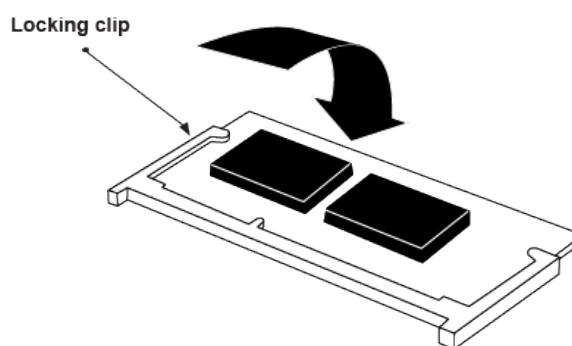


Figure 3-4. Secure the SODIMM

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

SODIMM Removal

Important: Do not use excessive force when pressing the release tabs on the ends of the DIMM socket to avoid causing any damage to the memory module or the DIMM socket. Handle memory modules with care. Carefully follow all the instructions given in "[Static-Sensitive Devices](#)" on page 36 to avoid ESD-related damages done to your memory modules or components.

Push the side clips at the end of the SODIMM slot to release the module. Pull the SODIMM up to remove it from the slot.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

3.5 Motherboard Battery Removal and Installation

Battery Removal

To remove the battery, follow the steps below:

1. Power off your system and unplug your power cable.
2. Remove the battery cable at the BT1 connector on the board.
3. 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.

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

Battery Installation

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

1. Connect the battery cable into the battery connector (BT1) and push it down until you hear a click to ensure that the cable is securely locked.
2. Use the foam tape on the back side of the battery to secure it to a flat surface on the bottom of the motherboard or a proper location in the system. Do not place the battery on the heatsink.



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 A4SAP-H motherboard manual.

Review the ["Standardized Warning Statements for AC Systems" on page 128](#) before installing or removing components.

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4.1 Power Connections

For information about the power connections of the SYS-E50-14AM/-L/-N5 server, refer to the following content.

12 VDC Jack Power Connector

JDC1 is the 12 VDC power connector on the A4SAP-H motherboard.

4.2 Headers and Connections

For information about the headers of the SYS-E50-14AM/-L/-N5 server, refer to the following content.

CMOS Battery

BT1 is a 2-pin header for an external battery. This connector is also used to clear the CMOS. To clear the CMOS, remove the battery, short pins 1–2 for more than 10 seconds and then install the battery.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

CMOS Battery	
Pin Definitions	
Pin#	Description
1	P3V_BATTERY
2	GND

COM Header

There is one COM header (JCOM1) on the A4SAP-H motherboard.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

COM Header			
Pin Definitions: 19 Total			
Pin#	RS232	RS422/485	RS485
1	SP_DCD1	TX-1	Data-1
2	SP_DSR1		
3	SP_RXD1	TX+1	Data+1
4	SP_RTS1		
5	SP_TXD1	RX+1	
6	SP_CTS1		
7	SP_DTR1	RX-1	
8	SP_R11		

COM Header			
Pin Definitions: 19 Total			
Pin#	RS232	RS422/485	RS485
9	GND		
10	No Connection		
11	SP_DCD2	TX-2	Data-2
12	SP_DSR2		
13	SP_RXD2	TX+2	Data+2
14	SP_DTS2		
15	SP_TXD2	RX+2	
16	SP_CTS2		
17	SP_DTR2	RX-2	
18	SP_RI2		
19	SP_GND		

Extended I/O Header

The extended I/O header at JEIO_1 on the A4SAP-H motherboard provides flexibility support for the following functions: DP/HDMI, one PCIe 3.0 x1, two USB 2.0, eSPI, SATA, SMBus, and Power, so that it allows you to make your own I/O module to fit different kinds of vertical market I/O demands.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

Extended I/O				
Pin Definitions: 60 Total				
Pin#	Definition		Pin#	Definition
1	No Connection		2	No Connection
3	No Connection		4	No Connection
5	GND		6	GND
7	PCIe_EIO_RX_DP1		8	PCIe_EIO_TX_DP1
9	PCIe_EIO_RX_DN1		10	PCIe_EIO_TX_DN1
11	GND		12	GND

Extended I/O				
Pin Definitions: 60 Total				
Pin#	Definition		Pin#	Definition
13	CLK_100M_EIO_DP		14	USB_P7_DP
15	CLK_100M_EIO_DN		16	USB_P7_DN
17	GND		18	USB_P8_DP
19	DDI1_TXP0		20	USB_P8_DN
21	DDI1_TXN0		22	GND
23	GND		24	DDI1_TXP3
25	DDI1_TXP1		26	DDI1_TXN3
27	DDI1_TXN1		28	GND
29	GND		30	DDI_HPDP
31	DDI1_TXP2		32	SOC_WAKE_EIO_N
33	DDI1_TXN2		34	DDI1_DDC_P1V8_DAT
35	GND		36	DDI1_DDC_P1V8_CLK
37	DDI1_AUXP		38	SOC_SMB_CLK
39	DDI1_AUXN		40	SOC_SMB_DAT
41	P5VSB		42	P3VSB
43	P5VSB		44	ESPI_CS#
45	P12VSB		46	ESPI_IO3
47	ESPI_CLK		48	ESPI_IO2
49	PLTRST#		50	ESPI_IO1
51	ESPI_ALERT0#		52	ESPI_IO0
53	P3V3		54	P5V
55	PS_ON_N		56	GND
57	EIO_SATA_TXP0		58	EIO_SATA_RXP0
59	EIO_SATA_TXN0		60	EIO_SATA_RXN0

Front Panel Audio Header

A 10-pin front panel audio header located at J3 on the A4SAP-H motherboard allows you to use the onboard sound for audio playback. Connect an audio cable to the header to use this feature.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

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	GND
7	Jack_Detect	8	Key
9	Line_2_Left	10	GND

General Purpose Header

The General Purpose Input/Output header (JGP1) is an 8-bit general purpose I/O expander on a pin header via the SMBus. The base address is 0xF040.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

GPIO Header			
Pin Definitions: 10 Total			
Pin#	Definition	Pin#	Definition
1	P3V3SB	2	GND
3	GP_P3V3_GP0	4	GP_P3V3_GP4
5	GP_P3V3_GP1	6	GP_P3V3_GP5
7	GP_P3V3_GP2	8	GP_P3V3_GP6
9	GP_P3V3_GP3	10	GP_P3V3_GP7

HDMI Port

One High Definition Multimedia Interface (HDMI) port is on the rear I/O panel. This connector is used to display both high definition and digital sound through an HDMI-capable display.

LVDS Connector

The Low Voltage Differential Signaling (LVDS) connector at LVDS1 is a high-speed digital interface that operates at low power. It is a type of connection that is used with a LVDS LCD panel. The connector combines LCD VCC power (pins 9–10), LVDS high speed digital

interface, backlight power +3.3 V (pin 7) and +12 V (pins 1–5), backlight enable (pin 15), and dimming control (pin 13). Select the correct LCD VCC power according to the LCD specification by JLCDPWR1 (short pins 1–3 for +3.3 V, short pins 3–5 for +5 V) before enabling the LVDS panel. To choose the LCD VCC power, short JLCDPWR1 pins 1–3 for +3.3 V or short pins 3–5 for +5 V. Refer to the table below for vendor part number, mating, and crimping contact connector information before making the LVDS/backlight cable.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

LVDS Connector			
Connector	Vendor	Manufacture P/N	Description
Onboard LVDS Connector	HIROSE	DF13E-40DP-1.25 V (52)	BOX HEADER, BOARD TO WIRE, 2X20, PITCH 1.25 MM, VERT, 1 A/PIN, WHITE, 0.2 UM GOLD, PA9T, MATING HEIGHT 5.8 MM
Mating Connector	HIROSE	DF13-40DS-1.25 C	Headers and Wire Housings 1.25 MM RECEPT HSNQ 40P DUAL ROW CRIMP
Crimping Contact Connector	HIROSE	DF13G-2630SCFA	Headers and Wire Housings SOCKET CONTACT/REEL AWG26–30

LVDS Connector			
Pin Defintions: 40 Total			
Pin#	Definition	Pin#	Definition
39	GND	40	GND
37	LVDSB D3N	38	LVDSB D3P
35	LVDSB CLKN	36	LVDSB CLKP
33	LVDSB D2N	34	LVDSB D2P
31	LVDSB D1N	32	LVDSB D1P
29	LVDSB D0N	30	LVDSB D0P
27	GND	28	GND
25	LVDSA D3N	26	LVDSA D3P
23	LVDSA CLKN	24	LVDSA CLKP
21	LVDSA D2N	22	LVDSA D2P
19	LVDSA D1N	20	LVDSA D1P
17	LVDSA D0N	18	LVDSA D0P

LVDS Connector			
Pin Definitions: 40 Total			
Pin#	Definition	Pin#	Definition
15	BKLTEN	16	GND
13	BKLTCLT	14	PVCCEN
11	DDC CLK	12	DDC DATA
9	LCDVCC	10	LCDVCC
7	+5 V	8	GND
5	+12 V	6	GND
3	+12 V	4	+12 V
1	+12 V	2	+12 V

M.2 Slots

Two M.2 slots are located JMP1 (M.2 B-Key) and JMD1 (M.2 E-Key) on the A4SAP-H motherboard. M.2 was formerly known as Next Generation Form Factor (NGFF) and serves to replace mini PCIe. M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency. The M.2 B-Key slot supports PCIe x1/SATA 3.0/USB 2.0/USB 3.2 devices in a 2242/3042 form factor. The M.2 E-Key slot supports PCIe x1/USB 2.0 devices in a 2230 form factor.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

Nano SIM Card Slot

The CN1 slot of the A4SAP-H motherboard supports a Nano SIM card.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

System Management Bus Header and SATA Power

A System Management Bus header for additional slave devices or sensors is located at JMBUS1 on the A4SAP-H motherboard. This header also serves as a +5 V/1 A SATA power box header.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

SMBus Header	
Pin Definitions: Four Total	
Pin #	Definition
1	SMB_CLK
2	SMB_DATA
3	GND
4	+5 V

USB Header

The A4SAP-H motherboard has one front-accessible USB 2.0 header at J6. The onboard header provides front-side access with a cable.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

USB 2.0 Header			
Pin Definitions: 10 Total			
Pin#	Definition	Pin#	Definition
1	+5 V	2	+5 V
3	USB_N	4	USB_N
5	USB_P	6	USB_P
7	GND	8	GND
9	Key	10	NC

USB 3.2 Port

There are two USB 3.2 ports in the rear I/O panel.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

Back Panel USB 3.2 Gen 1			
Pin Definitions: 18 Total			
Pin#	Definition	Pin#	Definition
A1	VBUS	B1	VBUS
A2	USB_N	B2	USB_N

Back Panel USB 3.2 Gen 1			
Pin Definitions: 18 Total			
Pin#	Definition	Pin#	Definition
A3	USB_P	B3	USB_P
A4	GND	B4	GND
A5	Stda_SSRX-	B5	Stda_SSRX-
A6	Stda_SSRX+	B6	Stda_SSRX+
A7	GND	B7	GND
A8	Stda_SSTX-	B8	Stda_SSTX-
A9	Stda_SSTX+	B9	Stda_SSTX+

32-Pin Connector A

The A4SAP-H motherboard combines JF1, JGP1 and J6 into a 32-pin, 2.0 mm pitch pin header, including the front panel (power/HDD LED, power/reset button), 8-bit GPIO, and two USB 2.0 connections. Refer to the table below for pin definitions and the female mating connector information. The distance between the board-to-board stack is 11 mm in height while using the male pin header (PINREX P/N:225-97-16GBEW) to stack onto the female mating connector (PINREX P/N: 620-92-16GB00).

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

32-Pin Connector A				
Connector	P/N	Vendor	Manufacture P/N	Description
Male Pin Header on A4SAP-H	HDR-0208L-0000-PRX	PINREX	225-97-16GBEW	CNT, PIN/HEADER, 2X16 PIN, PITCH 2 MM, VERT, 1 A/PIN, BLACK, GF, NY6T, SMD, CM (-30~75C), ROHS
Female Mating Connector	HDR-0210L-0000-PRX	PINREX	620-92-16GB00	CNT, PIN FEMALE HEADER, 2X16 PIN, PITCH 2 MM, VERT, 1 A/PIN, BLACK, GF, TL2.3 MM, NY6T, DIP, EX (-40~105C), ROHS

32-Pin Connector A						
Pin Definitions: 32 Total						
Function	Pin#	Silkscreen Pin#	Definition	Pin#	Silkscreen Pin#	Definition
Two USB 2.0 (J6: USB0/1)	1	1	P5V_DUAL_F	2	2	P5V_DUAL_F
	3	3	USBCON_N0	4	4	USBCON_N1
	5	5	USBCON_P0	6	6	USBCON_P1
	7	7	GND	8	8	GND
	9	9	N/A	10	10	N/A
N/A	11	N/A	N/A	12	N/A	N/A
8-bit GPIO (JGP1)	13	1	P3V3SB	14	2	GND
	15	3	GPIO_1	16	4	GPIO_5
	17	5	GPIO_2	18	6	GPIO_6
	19	7	GPIO_3	20	8	GPIO_7
	21	9	GPIO_4	22	10	GPIO_8
N/A	23	N/A	N/A	24	N/A	N/A
Front Panel (JF1)	25	1	Power Button	26	2	GND
	27	3	Reset Button	28	4	GND
	29	5	+3.3 V	30	6	SATA HDD LED
	31	7	+3.3 V Standby	32	8	PWR LED

34-Pin Connector B

The A4SAP-H motherboard combines JCOM1 and J3 into a 34-pin, 2.0 mm pitch pin header, including two RS-232/422/485 connections and an audio (Mic-in/Headphone-out) connection. Refer to the table below for pin definitions and the female mating connector information. The distance between board-to-board stack is 11 mm in height while using male pin header (PINREX P/N:225-97-17GBEW) to stack onto female mating connector (PINREX P/N:620-92-17GB00).

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

34-Pin Connector B				
Connector	P/N	Vendor	Manufacture P/N	Description
Male Pin Header on A4SAP-H	HDR-0209L-0000-PRX	PINREX	225-97-17GBEW	CNT, PIN/HEADER, 2X17 PIN, PITCH 2 MM, VERT, 1 A/PIN, BLACK, GF, NY6T, SMD, CM (-30~75C), ROHS
Female Mating Connector	HDR-0211L-0000-PRX	PINREX	620-92-17GB00	CNT, PIN FEMALE HEADER, 2X17 PIN, PITCH 2 MM, VERT, 1 A/PIN, BLACK, GF, TL2.3 MM, NY6T, DIP, EX (-40~105C), ROHS

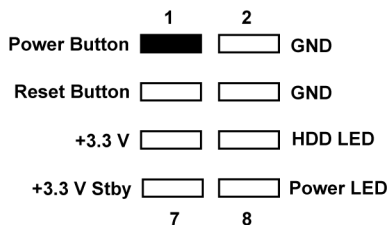
34-Pin Connector B						
Pin Definitions: 34 Total						
Function	Pin#	Silk screen Pin#	Definition	Pin#	Silk screen Pin#	Definition
AUDIO (J3: Audio FP)	1	10	LINE2_JD	2	9	LINE2_Left
	3	8	NC	4	7	Front AUDIO_LD
	5	6	MIC2_JD	6	5	LINE2_Right
	7	4	AUDIO_Detect	8	3	MIC_Right
	9	2	AUDIO_GND	10	1	MIC_Left
N/A	11	N/A	N/A	12	N/A	N/A
N/A	13	N/A	N/A	14	N/A	N/A

34-Pin Connector B						
Pin Definitions: 34 Total						
Function	Pin#	Silk screen Pin#	Definition	Pin#	Silk screen Pin#	Definition
Two RS-232/422/485 (JCOM1: COM1/COM2)	15	1	DCD, or one of the following: RS-485/422_COM1_TX- (Full Duplex) RS-485_COM1_Data- (Half Duplex)	16	2	DSR
	17	3	RXD, or one of the following: RS-485/422_COM1_TX- (Full Duplex) RS-485_COM1_Data- (Half Duplex)	18	4	RTS
	19	5	TXD, or: RS-485/422_COM1_RX+ (Full Duplex)	20	6	CTS
	21	7	DTR, or: RS-485/422_COM1_RX- (Full Duplex)	22	8	RI_N
	23	9	GND	24	10	N/A
	25	11	DCD, or one of the following: RS-485/422_COM2_TX- (Full Duplex) RS-485_COM2_Data- (Half Duplex)	26	12	DSR
	27	13	RXD, or one of the following: RS-485/422_COM2_TX+ (Full Duplex) RS-485_COM2_Data+ (Half Duplex)	28	14	RTS
	29	15	TXD, or: RS-485/422_COM2_RX+ (Full Duplex)	30	16	CTS
	31	17	DTR, or: RS-485/422_COM2_RX- (Full Duplex)	32	18	RI_N
	33	19	GND	34	20	N/A

Front Control Panel Header

JF1 on the A4SAP-H motherboard contains header pins for various buttons and indicators that are normally located on a control panel at the front of the chassis. These connectors are designed specifically for use with the Supermicro chassis. See the figure below for the descriptions of the front control panel buttons and LED indicators.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.



Power Button

The Power Button connection is located on pins 1 and 2 of JF1 on the A4SAP-H motherboard. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS). To turn off the power when the system is in suspend mode, press the button for four seconds or longer.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

Power Button	
Pin Definitions (JF1)	
Pin#	Definition
1	Signal
2	GND

Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1 on the A4SAP-H motherboard. Attach it to a hardware reset switch on the computer case to reset the system.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

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

HDD LED

The HDD LED connection is located on pins 5 and 6 of JF1 on the A4SAP-H motherboard.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

HDD LED	
Pin Definitions (JF1)	
Pin#	Definition
5	+3.3 V
6	HDD LED

Power LED

The Power LED connection is located on pins 7 and 8 of JF1 on the A4SAP-H motherboard.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

Power LED	
Pin Definitions (JF1)	
Pin#	Definition
7	+3.3 V Standby
8	PWR LED

4.3 I/O Ports

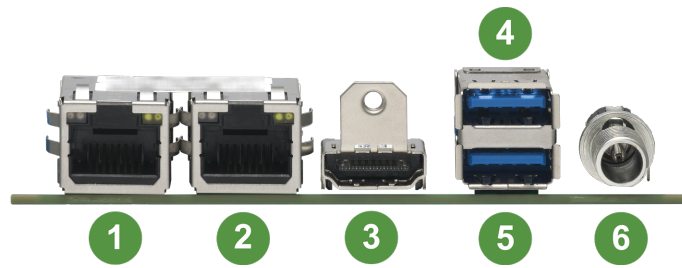


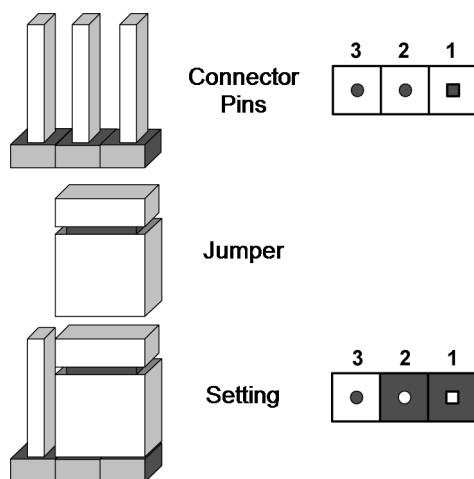
Figure 4-1. A4SAP-H I/O Ports

I/O Ports			
#	Description	#	Description
1	LAN1	4	USB2 (3.2)
2	LAN2	5	USB1 (3.2)
3	HDMI	6	DC Jack

4.4 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.



LVDS VCC Power Source Selection

Use the JLCDPWR1 jumper to select the power voltage for the LVDS panel. Make sure that the specifications of the cable are compatible with the panel to prevent damage. Set the jumper to pins 1–3 for +3.3 V or pins 3–5 for +5 V. You can also use this jumper to select the FORCE POWER On function when the AC power cord is plugged in. When enabling force power on and AC power recovery, the system will boot up automatically without pressing the power button.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

LVDS VCC Power Source Selection Jumper Settings	
Jumper Settings	Definition
Pins 1–3	+3.3 V (Default)
Pins 3–5	+5 V

FORCE POWER ON Jumper Settings	
Jumper Settings	Definition
Pins 2–4	FORCE POWER ON (Default) (when the AC power cord is plugged)
Pins 4–6	POWER BUTTON ON (when the AC power is plugged)

4.5 LED Indicators

For information about the LED indicators on the SYS-E50-14AM/-L/-N5 server, refer to the following content.

LAN Port LEDs

Two LAN ports (JLAN1, JLAN2) are located on the I/O panel of the A4SAP-H motherboard. Each LAN port has two LEDs. The green LED indicates activity, while the other Link LED may be green, yellow, or off to indicate the speed of the connection.

For a detailed diagram of the A4SAP-H motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 18.

LAN1/2 Link LED (Left) LED State	
LED Color	Definition
Solid Amber	1G
Solid Green	2.5G

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

Chapter 5:

Software

After the SYS-E50-14AM/-L/-N5 server has been installed, you can install the Operating System (OS), configure RAID settings, and install the drivers.

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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.

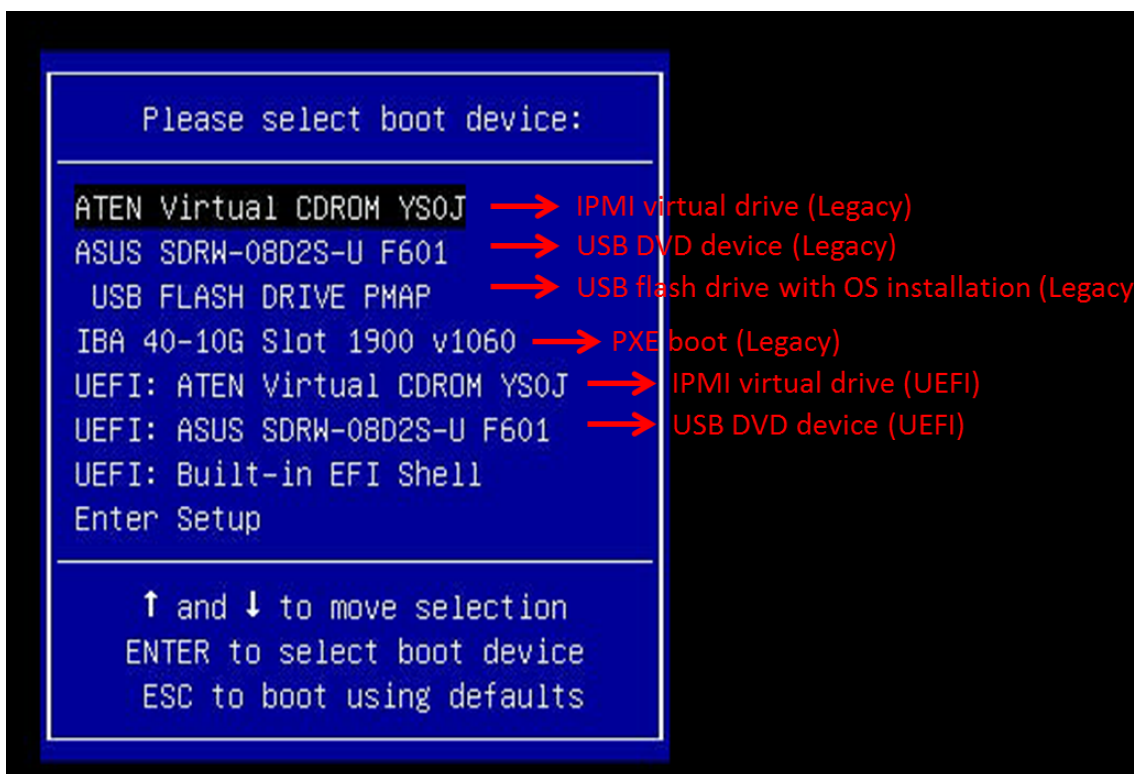


Figure 5-1. Select Boot Device

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.

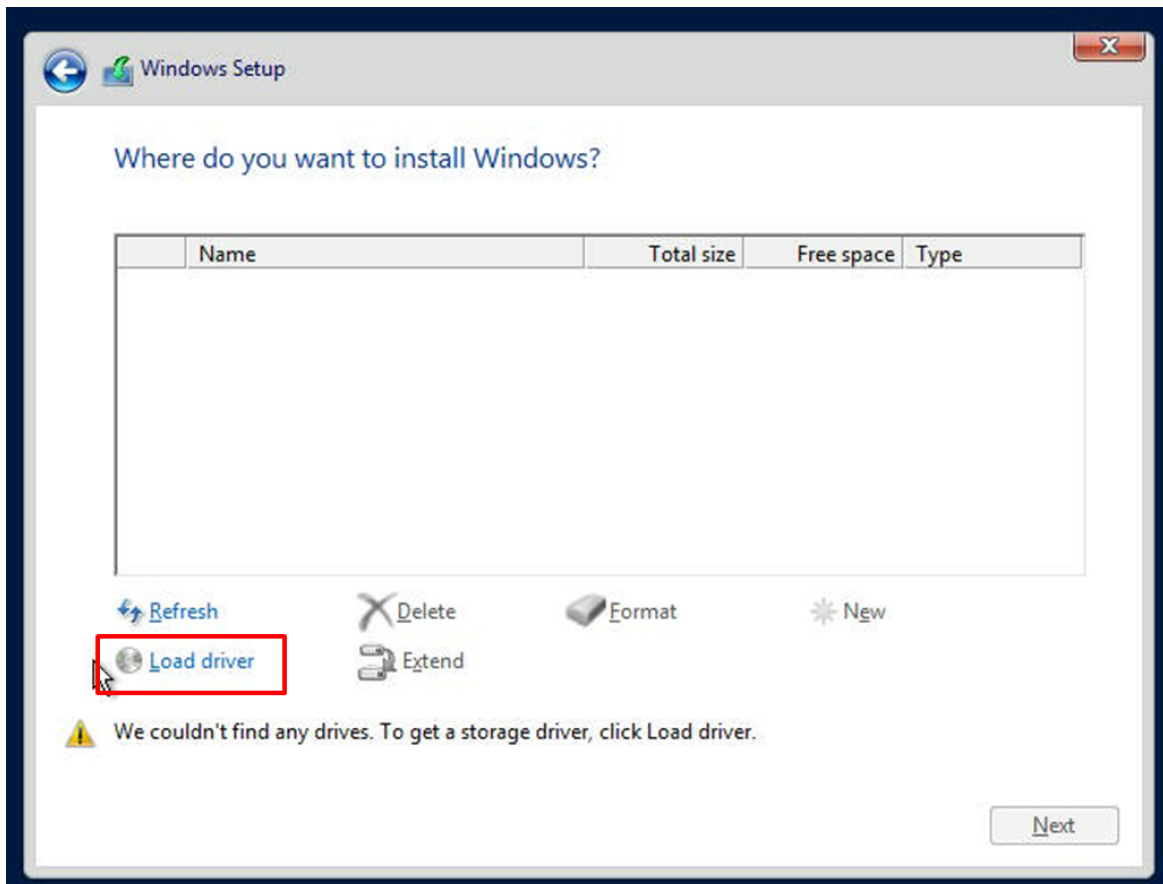


Figure 5-2. Load Driver Link

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.

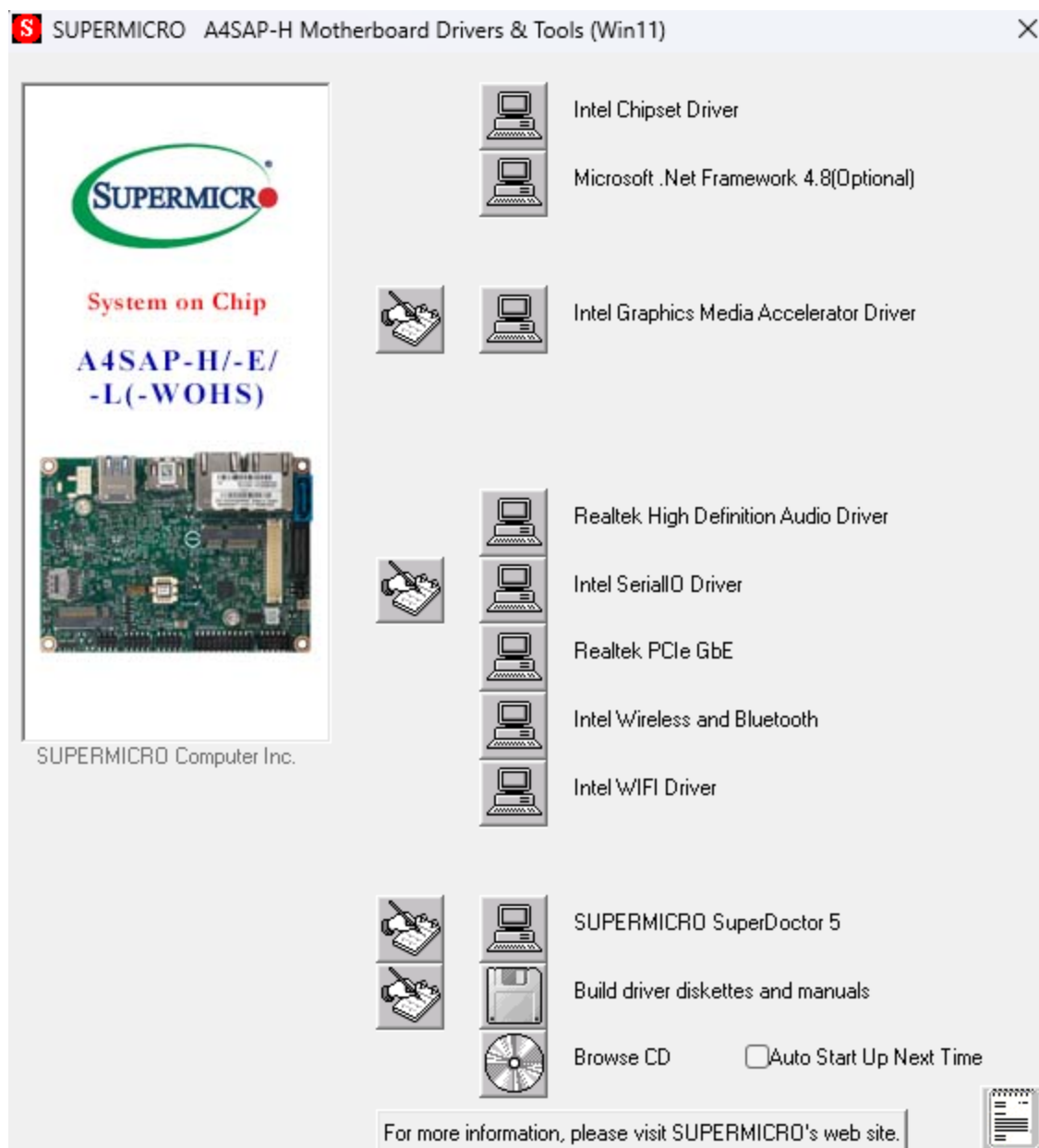


Figure 5-3. A4SAP-H Driver Installation Screenshot

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.

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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 SYS-E50-14AM/-L/-N5 System

- System specifications pages:
 - <https://www.supermicro.com/en/products/system/iot/fanless%20embedded/sys-e50-14am>
 - <https://www.supermicro.com/en/products/system/iot/fanless%20embedded/sys-e50-14am-l>
 - <https://www.supermicro.com/en/products/system/iot/fanless%20embedded/sys-e50-14am-n5>
- Motherboard page for links to the quick reference guide, user manual, validated storage drives, and more: <https://www.supermicro.com/en/products/motherboard/a4sap-h>

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/support/resources/mem.cfm>
- 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 73](#) 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.
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 33 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

- A. 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. 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.
 5. Proper software support: Make sure that the correct drivers are used.
- B. 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 A4SAP-H motherboard is used to clear CMOS, which will also clear any passwords. For information on clearing CMOS, refer to [CMOS Clear](#) 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](#).

6.5 Where to Get Replacement Components

If you need replacement parts for your SYS-E50-14AM/-L/-N5 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 alternation, 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 SYS-E50-14AM/-L/-N5 server.

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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), the BMC WebUI, 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.

Updating BIOS

It is recommended that you do not upgrade your BIOS if you are not experiencing any problems with your system. Updated BIOS files are located on our website at the following page:

https://www.supermicro.com/support/resources/bios_ipmi.php

Check our BIOS warning message and the information on how to update your BIOS on our website. Select your motherboard model and download the BIOS file to your computer. Also, check the current BIOS revision to make sure that it is newer than your BIOS before downloading.

Important: Do not shut down or reset the system while updating the BIOS to prevent possible system boot failure! Read the motherboard README file carefully before you perform the BIOS update.

Unzip the BIOS file onto a bootable USB device and then boot into the built-in UEFI Shell and type "flash.nsh <BIOS filename>" to start the BIOS update. The flash script will invoke the (EFI) tool automatically to perform the BIOS update. After uploading the firmware, the system will reboot to continue the process. The process will take 3–5 minutes.

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.

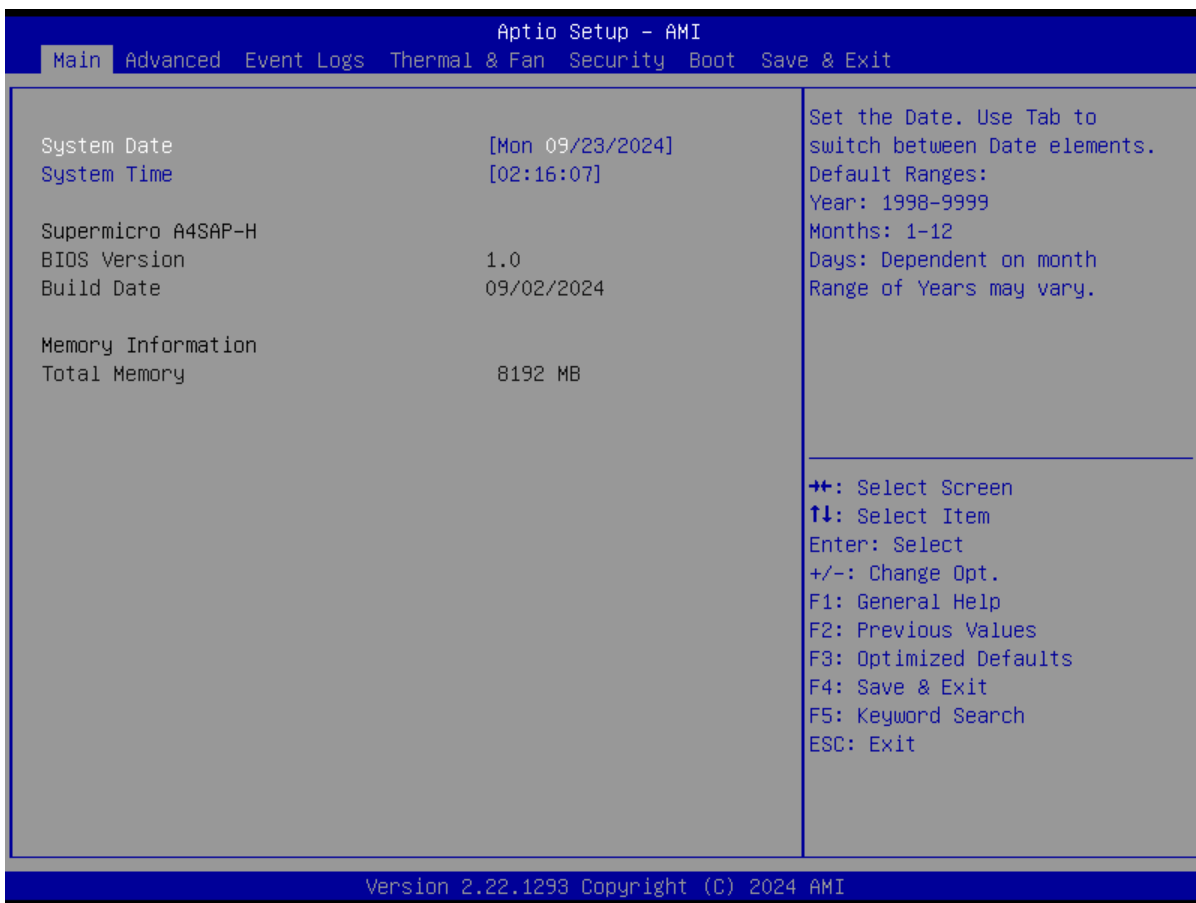


Figure 7-1. Main Setup

System Date/System Time

Use the two features 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 A4SAP-H

BIOS Version

This feature 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.

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 setting to the manufacture default settings.

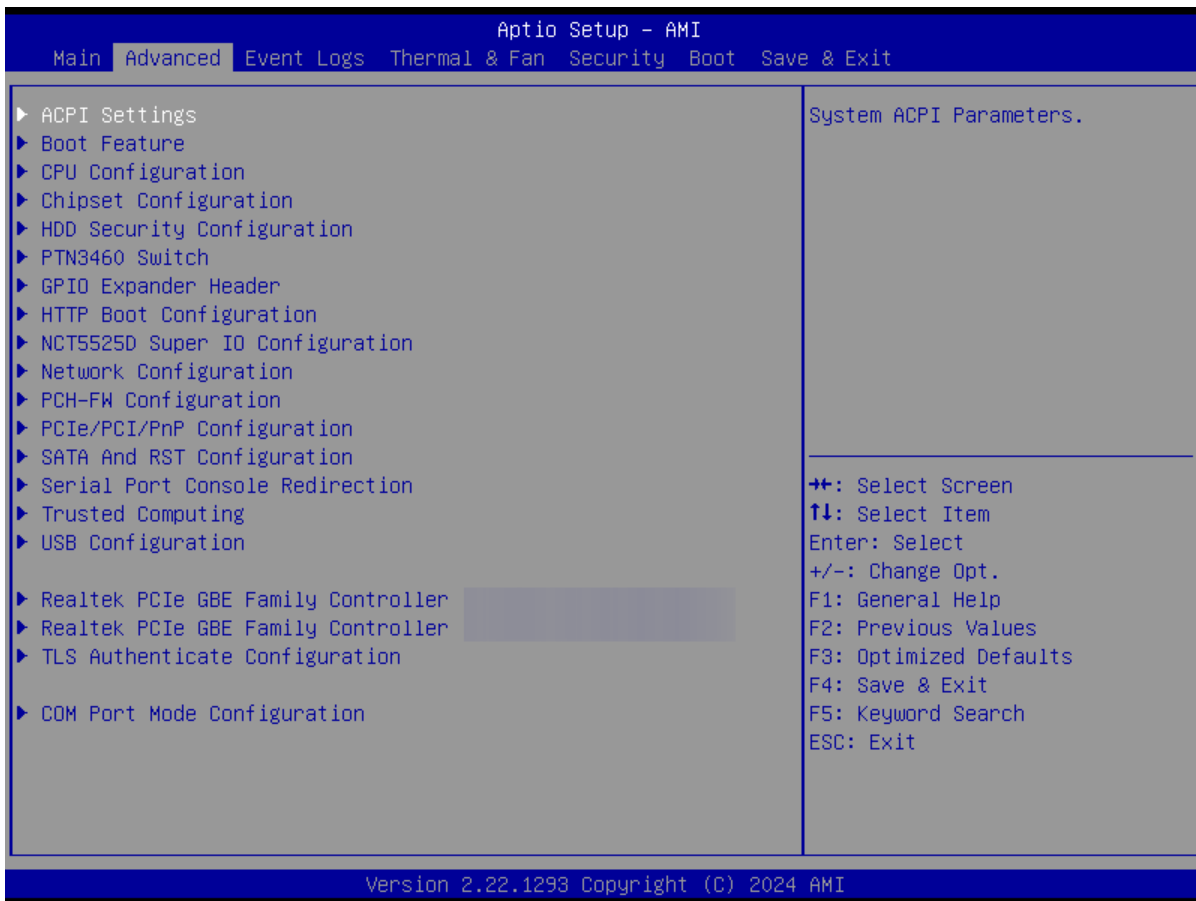


Figure 7-2. Advanced Setup Configurations

ACPI Settings Menu

▶ ACPI Settings

ACPI Sleep State

Use this feature to select the ACPI Sleep State that the system will enter into when the suspend button is activated. The options are Suspend Disabled and **S3 (Suspend to RAM)**.

WHEA Support

Select Enabled to support the Windows Hardware Error Architecture (WHEA) platform and provide a common infrastructure for the system to handle hardware errors within the Windows OS environment to reduce system crashes and to enhance system recovery and health monitoring. The options are Disabled and **Enabled**.

High Precision Event Timer

Select Enabled to activate the High Precision Event Timer (HPET) that produces periodic interrupts at a much higher frequency than a Real-time Clock (RTC) does in synchronizing multimedia streams, providing smooth playback and reducing the dependency on other timestamp calculation devices, such as an x86 RDTSC Instruction embedded in the CPU. The High Performance Event Timer is used to replace the 8254 Programmable Interval Timer. The options are Disabled and **Enabled**.

Native PCIe Enable

Enable this feature to grant control of PCI Express Native hot plug, PCI Express Power Management Events, and PCI Express Capability Structure Control. The options are Disabled and **Enabled**.

Native ASPM

Select Enabled for the operating system to control the ASPM, or Disabled for the BIOS to control the ASPM. The options are Auto, Enabled, and **Disabled**.

Smart Battery Support

Use this feature to enable or disable the BIOS Smart Battery polling. The options are **Disabled** and Enabled.

Wake System From S5

Use this feature to enable or disable the system wake on an alarm event. If enabled, the system will wake on the time specified. The options are **Disabled** and Enabled

Boot Feature Menu

► Boot Feature

Fast Boot

Enable this feature to reduce the time the computer takes to boot up. The computer will boot with a minimal set of required devices. This feature does not have an effect on BBS boot options in the Boot tab. The options are Disabled and **Enabled**.

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.

Bootup NumLock State

Use this feature to set the Power-on state for the <Numlock> 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 Watch Dog 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.

DeepSx Power Policies

Use this feature to configure the Advanced Configuration and Power Interface (ACPI) settings for the system. Enable S4 to use Hibernation mode (Suspend to Disk) so that all data stored in the main memory can be saved in a non-volatile memory area such as in a hard drive and then

power down the system. Enable S5 to power off the whole system except the power supply unit (PSU) and keep the power button alive so that you can wake up the system by using a USB keyboard or mouse. The options are **Disabled**, Enabled In S4-S5, and Enabled in S5.

CPU Configuration Menu

► CPU Configuration

Important: Setting the wrong values for the features included in the following sections may cause the system to malfunction.

The following processor information is displayed:

- Processor Model
- CPU Signature
- Microcode Patch
- Max CPU Speed
- Min CPU Speed
- CPU Speed
- Number of Performance-cores
- Number of Efficient-cores
- Hyper Threading Technology
- VMX
- SMX/TXT
- 64-bit
- EIST Technology
- CPU C3 state
- CPU C6 state
- CPU C7 state
- CPU C8 state
- CPU C9 state
- CPU C10 state
- Performance L1 Data Cache

- Performance L1 Instruction Cache
- Performance L2 Cache
- Performance L3 Cache
- Efficient L1 Data Cache
- Efficient L1 Instruction Cache
- Efficient L2 Cache
- Efficient L3 Cache

C6DRAM

Use this feature to enable or disable the moving of DRAM contents to PRM memory when the CPU is in the C6 state. The options are Disabled and **Enabled**.

Hardware Prefetcher

If this feature is set to Enabled, the hardware prefetcher will prefetch data from the main system memory to Level 2 cache to help expedite data transaction to enhance memory performance. The options are **Enabled** and Disabled.

Note: This feature is NOT available when "Workload Profile" is set to HPC, I/O, or Virtualization.

Adjacent Cache Line Prefetch

Select Enabled for the CPU to prefetch both cache lines for 128 bytes as comprised. Select Disabled for the CPU to prefetch both cache lines for 64 bytes. The options are **Enabled** and Disabled.

Note: This feature is NOT available when "Workload Profile" is set to HPC, I/O, or Virtualization.

Intel (VMX) Virtualization Technology

Select Enabled to enable the Intel Vanderpool Technology for Virtualization platform support, which allows multiple operating systems to run simultaneously on the same computer to maximize system resources for performance enhancement. The options are Disabled and **Enabled**. Changes take effect after you save settings and reboot the system.

Notes:

- This feature is NOT available when "TXT Support" is set to Enabled.
- This feature is NOT available when "Workload Profile" is set to Virtualization, Telco NFVI, Telco NFVI-FP, or Telco FlexRAN.

Active Efficient-cores

This feature determines how many efficient cores will be activated for each processor package. When all is selected, all cores in the processor will be activated. The options are **All**, 3, 2, 1, and 0.

Boot Performance Mode

This feature allows you to select the performance state that the BIOS will set before the operating system handoff. The options are **Max Non-Turbo Performance** and Turbo Performance.

Intel® SpeedStep™

Intel SpeedStep Technology allows the system to automatically adjust processor voltage and core frequency to reduce power consumption and heat dissipation. The options are Disabled and **Enabled**.

Intel® Speed Shift Technology

Use this feature to enable or disable Intel Speed Shift Technology support. When this feature is enabled, the Collaborative Processor Performance Control (CPPC) version 2 interface will be available to control CPU P-States. The options are Disabled and **Enabled**.

Turbo Mode (Available when "SpeedStep (P-States)" is set to Enabled and when "Workload Profile" is set to Disabled)

Select Enabled to allow the CPU to operate at the manufacturer-defined turbo speed by increasing CPU clock frequency. This feature is available when it is supported by the processors used in the system. The options are Disabled and **Enabled**.

Power Limit 1 Override

Select Enabled to support average power limit (PL1) override. The options are **Disabled** and Enabled.

Power Limit 1

Use this feature to configure the value for Power Limit 1. The value is in milliwatts, and the step size is 125 mW. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacture default setting. If the value is 0, the BIOS will set PL2 as 1.25* TDP.

Power Limit 1 Time Window

This feature determines how long the time window over which the TDP value is maintained. Use the number key on your keyboard to enter the value. The default setting is **8**. This value can be between 0–128.

Power Limit 2 Override

Select Enabled to support rapid power limit (PL2) override. The options are Disabled and **Enabled**.

Power Limit 2

Use this feature to configure the value for Power Limit 2. The value is in milliwatts and the step size is 125 mW. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacture default setting. If the value is 0, the BIOS will set PL2 as 1.25* TDP.

C-States

Use this feature to enable the C-State of the CPU. The options are Disabled and **Enabled**.

Enhanced C-States

Use this feature to enable the enhanced C-State of the CPU. The options are Disabled and **Enabled**.

C-State Auto Demotion

Use this feature to prevent unnecessary excursions into the C-states to improve latency. The options are Disabled and **C1**.

C-State Un-Demotion

Use this feature to prevent unnecessary excursions into the C-states to improve latency. The options are Disabled and **C1**.

Package C-State Un-Demotion

Use this feature to enable or disable the Package C-State un-demotion. The options are Disabled and **Enabled**.

Package C-State Demotion change

Use this feature to enable or disable the Package C-State demotion. The options are Disabled and **Enabled**.

C-State Pre-Wake

This feature allows you to enable or disable the C-State Pre-Wake. The options are Disabled and **Enabled**.

Package C-State Limit

Use this feature to set the Package C-State limit. The options are C0/C1, C2, C3, C6, C7, C7S, C8, C9, C10, Cpu Default, and **Auto**.

MonitorMWAIT

Select Enabled to support Monitor and Mwait, which are two instructions in Streaming SIMD Extension 3 (SSE3) to improve synchronization between multiple threads for CPU performance enhancement. The options are Disabled and **Enabled**.

Note: This feature is NOT available when "Workload Profile" is set to Telco NFVI, Telco NFVI-FP, or Telco FlexRAN.

Intel® TCC Mode

Use this feature to enable or disable the Intel Time Coordinated Computing (TCC) Mode. When enabled, this feature will modify the system settings to improve the real-time performance. The options are **Disabled** and Enabled.

Chipset Configuration Menu

► System Agent (SA) Configuration

Important: Setting the wrong values in this section may cause the system to malfunction.

System Agent (SA) Configuration

VT-d Supported

VT-d

Select Enabled to activate Intel Virtualization Technology support for Direct I/O VT-d by reporting the I/O device assignments to VMM through the DMAR ACPI Tables. This feature offers fully-protected I/O resource-sharing across the Intel platforms, providing the user with greater reliability, security and availability in networking and data-sharing. The options are **Enabled** and Disabled.

GNA Device (B0:D8:F0)

Use this feature to enable SA GNA device. The options are Enabled and **Disabled**.

Memory Configuration Menu

► Memory Configuration

This submenu is used to configure the Integrated Memory Controller (IMC) settings.

Enforce DDR Memory Frequency POR

Select Enforce POR to enforce Plan of Record (POR) restrictions for DDR memory frequency and voltage programming. The options are Disabled and **POR**.

Maximum Memory Frequency

Use this feature to set the maximum memory frequency for onboard memory modules. The options are **Auto**, 1600, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 3200, 3600, 4000, 4200, 4400, 4600, and 4800.

Max TOLUD

This feature sets the maximum TOLUD value, which specifies the "Top of Low Usable DRAM" memory space to be used by internal graphics devices, GTT Stolen Memory, and TSEG, respectively, if these devices are enabled. The options are **Dynamic**, 1 GB, 1.25 GB, 1.5 GB, 1.75 GB, 2 GB, 2.25 GB, 2.5 GB, 2.75 GB, 3 GB, 3.25 GB, and 3.5 GB.

Memory Scrambler

Use this feature to enable or disable memory scrambler support. The options are Disabled and **Enabled**.

Force ColdReset

Use this feature to enable or disable a cold boot during a MRC execution. The options are Enabled and **Disabled**.

Force Single Rank

Select enabled to use only Rank 0 in each DIMM. The options are **Disabled** and Enabled.

Memory Remap

Use this feature to enable or disable memory remap above 4 GB. The options are **Enabled** and Disabled.

MRC Fast Boot

Use this feature to enable or disable fast path through the memory reference code. The options are Disabled and **Enabled**.

In-Band ECC Support

Use this feature to enable or disable In-Band ECC. The options are **Disabled** and Enabled.

In-Band ECC Operation Mode (Available when In-Band ECC Support is Enabled)

Use this feature to select the In-Band ECC Operation Mode. The options are 0, 1, and **2**.

Graphics Configuration Menu

► Graphics Configuration

This submenu allows you to configure the graphics configuration settings.

Graphics Configuration

IGFX GOP Version

Graphics Turbo IMON Current

Use this feature to set the graphics turbo IMON value. The default is **31**.

Skip Scanning of External Gfx Card

If this feature is enabled, the system will not scan for an external graphics card on PEG and PCIe slots. The options are **Disabled** and Enabled.

Primary Display

Use this feature to select the primary video display. The options are **Auto**, IGFX, and PCH PCI.

Internal Graphics

Select Auto to keep an internal graphics device installed on an expansion slot supported by the CPU to be automatically enabled. The options are **Auto**, Disabled, and Enabled.

GTT Size

Use this feature to set the memory size to be used by the graphics translation table (GTT). The options are 2MB, 4MB, and **8MB**.

Aperture Size

Use this feature to set the Aperture size, which is the size of system memory reserved by the BIOS for graphics device use. The options are 128MB, **256MB**, 512MB, 1024MB, and 2048MB.

DVMT Pre-Allocated

Dynamic Video Memory Technology (DVMT) allows dynamic allocation of system memory to be used for video devices to ensure best use of available system memory based on the DVMT 5.0 platform. The options are 0M, 32M, 64M, 96M, 128M, 160M, 4M, 8M, 12M, 16M, 20M, 24M, 28M, 32M/F7, 36M, 40M, 44M, 48M, 52M, 56M, and **60M**.

PM Support

Enable this feature to activate Power Management BIOS support. The options are **Enabled** and Disabled.

PAVP Enable

Use this feature to enable or disable PAVP support. The options are Disabled and **Enabled**.

Cdynmax Clamping Enable

Enable this feature to activate Cdynmax Clamping. The options are Enabled and **Disabled**.

Graphics Clock Frequency

Use this feature to set the internal graphics clock frequency. The options are 192 Mhz, 307.2 Mhz, 556.8 Mhz, 652.8 MHz, and **Max CdClock freq based on Reference Clk**.

DMI/OPI Configuration Menu

► DMI/OPI Configuration

This submenu allows you to configure the DMI/OPI configuration settings.

DMI Gen3 ASPM

Use this feature to set the Active State Power Management (ASPM) state on the System Agent (SA) side of the DMI Link. The options are Disabled, Auto, ASPM L0s, **ASPM L1**, and ASPM L0sL1.

GT - Power Management Control

RC6(Render Standby)

Use this feature to enable render standby support. The options are Disabled and **Enabled**.

Maximum GT frequency

Use this feature to define the Maximum GT frequency. Choose between 33MHz (RPN) and 1200Mhz (RP0). Any value beyond this range will be clipped to its min/max supported by the CPU. The options are **Default Max Frequency**, 100Mhz, 150Mhz, 200Mhz, 250Mhz, 300Mhz, 350Mhz, 400Mhz, 450Mhz, 500Mhz, 550Mhz, 600Mhz, 650Mhz, 700Mhz, 750Mhz, 800Mhz, 850Mhz, 900Mhz, 950Mhz, 1000Mhz, 1050Mhz, 1100Mhz, 1150Mhz, and 1200Mhz.

Disable Turbo GT frequency

Use this feature to disable Turbo GT frequency. If set to Enabled, Turbo GT frequency becomes disabled. If set to Disabled, GT frequency limiters will be removed. The options are Enabled and **Disabled**.

PCH-IO Configuration

The following information is displayed.

- PCH SKU
- Stepping

► PCI Express Configuration

PCI Express Configuration

► PCIe EID

PCIe EIO ASPM

Use this feature to activate the Active State Power Management (ASPM) level for a PCIe device. Select Auto for the system BIOS to automatically set the ASPM level based on the system configuration. Select Disabled to disable ASPM support. The options are Disabled, L1, and Auto.

PCIe EIO Substates

Use this feature to set the PCI Express L1 Substates. The options are Disabled, L1.1, and L1.1 & L1.2.

PCIe EIO Speed

Use this feature to select the PCI Express port speed. The options are **Auto**, Gen1, Gen2, and Gen3.

PCIe EIO Peer Memory Write Enable

Use this feature to enable or disable Peer Memory Write. The options are **Disabled** and Enabled.

► PCIe M.2-E

PCIe M.2-E ASPM

Use this feature to activate the Active State Power Management (ASPM) level for a PCIe device. Select Auto for the system BIOS to automatically set the ASPM level based on the system configuration. Select Disabled to disable ASPM support. The options are Disabled, L1, and Auto.

PCIe M.2-E L1 Substates

Use this feature to set the PCI Express L1 Substates. The options are Disabled, L1.1, and L1.1 & L1.2.

PCIe M.2-E Speed

Use this feature to select the PCI Express port speed. The options are **Auto**, Gen1, Gen2, and Gen3.

PCIe M.2-E Peer Memory Write Enable

Use this feature to enable or disable Peer Memory Write. The options are **Disabled** and Enabled.

► PCIe M.2-B

PCIe M.2-B ASPM

Use this feature to activate the Active State Power Management (ASPM) level for a PCIe device. Select Auto for the system BIOS to automatically set the ASPM level based on the system configuration. Select Disabled to disable ASPM support. The options are Disabled, L1, and Auto.

PCIe M.2-B L1 Substates

Use this feature to set the PCI Express L1 Substates. The options are Disabled, L1.1, and L1.1 & L1.2.

PCIe M.2-B Speed

Use this feature to select the PCI Express port speed. The options are **Auto**, Gen1, Gen2, and Gen3.

PCIe M.2-B Peer Memory Write Enable

Use this feature to enable or disable Peer Memory Write. The options are **Disabled** and Enabled.

HDD Security Configuration

The settings in this submenu are configurable if media drives are detected.

PTN3460 Switch

LVDS Panel Support

Use this feature to select the supported IGFX graphics device output to the LVDS panel. The options are **Disabled** and Non-EDID Panel.

Panel select (Available when LVDS Panel Support is set to Non-EDID Panel)

Use this feature to select the panel resolution. The options are **Replaceable EDID in SPI ROM**, 800x 600, 1024x 768, 1280x1024, 1366x 768, 800x 480, 1920x1080, and OEM Define.

Dual/Single LVDS mode

Use this feature to select the LVDS bus mode. The options are **Disabled**, Single LVDS Bus mode, and Dual LVDS Bus mode.

Panel Channel Type

Use this feature to select the panel channel type. The options are **Disabled**, Odd Channel, Even Channel, and Both Channel.

Panel Color Depth

Use this feature to select the LFP panel color depth. The options are **Disabled**, VESA and JEIDA18 bpp, VESA 24 bpp, and JEIDA 24 bpp.

Backlight Brightness

Use this feature to select panel backlight brightness. The options are from 7% to **100%**.

GPIO Expander Header

GPIO Expander Header Control

Use this feature enable or disable the General Purpose I/O expander header. The options are **Disabled** and Enabled.

Pin 1 (Available when "GPIO Expander Header Control" is set to Enabled)

Use this feature to set the output for Pin 1 to low or high. The options are Output Low, Output High, and **Input**.

Pin 2 (Available when "GPIO Expander Header Control" is set to Enabled)

Use this feature to set the output for Pin 2 to low or high. The options are Output Low, Output High, and **Input**.

Pin 3 (Available when "GPIO Expander Header Control" is set to Enabled)

Use this feature to set the output for Pin 3 to low or high. The options are Output Low, Output High, and **Input**.

Pin 4 (Available when "GPIO Expander Header Control" is set to Enabled)

Use this feature to set the output for Pin 4 to low or high. The options are Output Low, Output High, and **Input**.

Pin 5 (Available when "GPIO Expander Header Control" is set to Enabled)

Use this feature to set the output for Pin 5 to low or high. The options are Output Low, **Output High**, and Input.

Pin 6 (Available when "GPIO Expander Header Control" is set to Enabled)

Use this feature to set the output for Pin 6 to low or high. The options are Output Low, **Output High**, and Input.

Pin 7 (Available when "GPIO Expander Header Control" is set to Enabled)

Use this feature to set the output for Pin 7 to low or high. The options are Output Low, **Output High**, and Input.

Pin 8 (Available when "GPIO Expander Header Control" is set to Enabled)

Use this feature to set the output for Pin 8 to low or high. The options are Output Low, **Output High**, and Input.

HTTP Boot Configuration Menu

► 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.

HTTP Boot Checks Hostname

Important: Disabling "HTTP 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. Please be sure to enter a boot description; otherwise, the boot option for the URI cannot be created.

Boot URI

Enter a Boot Uniform Resource Identifier (URI) with 128 characters or shorter. This Boot URI determines how IPv4 Boot Option and IPv6 Boot Option will be created.

Instance of Priority 2: (Available when your motherboard supports this feature)

This feature sets the rank target port. The default setting is **0**.

NCT55250 Super IO Configuration

NCT55250 Super IO Configuration

The following information is displayed.

- Super IO Chip

Serial Port 1 Configuration Menu

► Serial Port 1 Configuration

Serial Port 1

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

Device Settings (Available when "Serial Port 1" above is set to Enabled)

This feature shows the base I/O port address and the Interrupt Request address of serial port 1. The option is IO=3F8h; IRQ=4;.

Change Settings (Available when "Serial Port 1" above is set to Enabled)

Use this feature to specify the base I/O port address and the Interrupt Request address of serial port 1. Select Auto for the BIOS to automatically assign the base I/O and IRQ address to serial port 1. 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 2 Configuration Menu

► Serial Port 2 Configuration

Serial Port 2

Select Enabled to enable serial port 2. The options are Disabled and **Enabled**.

Device Settings (Available when "Serial Port 2" above is set to Enabled)

This feature shows the base I/O port address and the Interrupt Request address of serial port 2. The option is IO=2F8h; IRQ=3;.

Change Settings (Available when "Serial Port 2" above is set to Enabled)

Use this feature to specify the base I/O port address and the Interrupt Request address of serial port 2. Select Auto for the BIOS to automatically assign the base I/O and IRQ address to serial port 2. The options are **Auto**, (IO=2F8h; IRQ=3;), (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 3 Configuration Menu

► Serial Port 3 Configuration (not available on A4SAP-L)

Serial Port 3

Select Enabled to enable serial port 3. The options are Disabled and **Enabled**.

Device Settings (Available when "Serial Port 3" above is set to Enabled)

This feature shows the base I/O port address and the Interrupt Request address of serial port 3. The option is IO=3E8h; IRQ=6;.

Change Settings (Available when "Serial Port 3" above is set to Enabled)

Use this feature to specify the base I/O port address and the Interrupt Request address of serial port 3. Select Auto for the BIOS to automatically assign the base I/O and IRQ address to serial port 3. The options are **Auto**, (IO=2F8h; IRQ=3;), (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 4 Configuration Menu

► Serial Port 4 Configuration (not available on A4SAP-L)

Serial Port 4

Select Enabled to enable serial port 4. The options are Disabled and **Enabled**.

Device Settings (Available when "Serial Port 4" above is set to Enabled)

This feature shows the base I/O port address and the Interrupt Request address of serial port 4. The option is IO=2E8h; IRQ=7;.

Change Settings (Available when "Serial Port 4" above is set to Enabled)

Use this feature to specify the base I/O port address and the Interrupt Request address of serial port 4. Select Auto for the BIOS to automatically assign the base I/O and IRQ address to serial port 4. The options are **Auto**, (IO=2F8h; IRQ=3;), (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;).

Network Stack Configuration Menu

► 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 (Available when "Network Stack" is set to Enabled)

Select Enabled to enable IPv4 HTTP boot support. If this feature is disabled, it will not create the IPv4 HTTP boot option. 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 (Available when "Network Stack" is set to Enabled)

Select Enabled to enable IPv6 HTTP boot support. If this feature is disabled, it will not create the IPv6 HTTP boot option. 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**.

MAC:(MAC address)-IPv4 Network Configuration Menu**▶ MAC:(MAC address)-IPv4 Network Configuration****Configured**

Enable this feature to configure network addresses for DHCP, local IP address, local netmask, local gateway, and local DNS server. The options are **Disabled** and Enabled.

Enable DHCP (Available when "Configured" is set to Enabled)

Select Enabled to support Dynamic Host Configuration Protocol (DHCP), which allows the BIOS to search for a DHCP server attached to the network and request the next available IP address for this computer. The options are **Disabled** and Enabled.

Local IP Address (Available when "Configured" is set to Enabled and "Enable DHCP" is set to Disabled)

Use this feature to enter an IP address for the local machine.

Local NetMask (Available when "Configured" is set to Enabled and "Enable DHCP" is set to Disabled)

Use this feature to set the netmask for the local machine.

Local Gateway (Available when "Configured" is set to Enabled and "Enable DHCP" is set to Disabled)

Use this feature to set the gateway address for the local machine.

Local DNS Servers (Available when "Configured" is set to Enabled and "Enable DHCP" is set to Disabled)

Use this feature to set the Domain Name System (DNS) server address for the local machine.

Save Changes and Exit

Press <Enter> to save changes and exit.

MAC:(MAC address)-IPv6 Network Configuration Menu**▶ MAC:(MAC address)-IPv6 Network Configuration****▶ Enter Configuration Menu**

The following information is displayed.

- Interface Name
- Interface Type
- MAC address
- Host address
- Route Table
- Gateway addresses
- DNS addresses

Interface ID

Use this feature to change/enter the 64-bit alternative interface ID for the device. The string format is colon separated. The default setting is the MAC address above.

DAD Transmit Count

Use this feature to set the number of consecutive neighbor solicitation messages 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**.

► Advanced Configuration

Note: This submenu is available when "Policy" is set to manual.

New IPv6 Address: Use this feature to enter the IPv6 address for the local machine.

New Gateway Addresses: Use this feature to set the gateway address for the local machine.

New DNS Addresses: Use this feature to set the DNS server address for the local machine.

Commit Changes And Exit: Press <Enter> to save changes and exit.

Discard Changes And Exit: Press <Enter> to discard changes and exit.

Save Changes and Exit

Press <Enter> to save changes and exit.

PCH-FW Configuration Menu

The following information is displayed.

- ME Firmware Version
- ME Firmware Mode
- ME Firmware SKU

ME FW Image Re-Flash

Use this feature to update the Management Engine firmware. The options are **Disabled** and **Enabled**.

TPM Device Selection

Use this feature to select dTPM or PTT for the TPM device. dTPM is discrete Trusted Platform Module and PTT is Platform Trusted Technology. The options are **dTPM** and **PTT**.

PCIe/PCI/PnP Configuration Menu

Option ROM execution

Video

Use this feature to select the execution of the video OpROM. The options are Do Not Launch and **EFI**.

PCI PERR/SERR Support

Use this feature to enable or disable the runtime event for PCI errors. The options are **Disabled** and Enabled.

Above 4G MMIO BIOS Assignment (Available if the system supports 64-bit PCI decoding)

Select Enabled to decode a PCI device that supports 64-bit in the space above 4G Address. The options are **Enabled** and Disabled.

Re-Size BAR Support

Use this feature to enable the Resizable BAR support. Resizable BAR is a PCIe interface technology that allows the CPU to access to the entire frame buffer. With this technology, your system will be able to handle multiple CPU to GPU transfers simultaneously rather than queuing, which can improve the frame rate performance. The options are **Disabled** and Enabled.

SR-IOV Support

Use this feature to enable or disable Single Root IO Virtualization Support. The options are **Disabled** and Enabled.

BME DMA Mitigation

Enable this feature to help block DMA attacks. The options are **Disabled** and Enabled.

NVMe Firmware Source

The feature determines which type of NVMe firmware should be used in your system. The options are **Vendor Defined Firmware** and AMI Native Support.

Consistent Device Name Support

This feature controls the device naming for network devices and slots. The options are **Disabled** and Enabled.

SMBus/I2C Selection

Use this feature to select the SMBus or I2C on the PCIe bus. The options are **SMBus** and I2C.

PCIe/PCI/PnP Configuration**PCI / PCIX / PCIe Slot 1 OPROM**

Use this feature to enable or disable the PCI/PCIX/PCIe slot 1 OPROM option. The options are Disabled and **EFI**.

PCI / PCIX / PCIe Slot 2 OPROM

Use this feature to enable or disable the PCI/PCIX/PCIe slot 2 OPROM option. The options are Disabled and **EFI**.

PCI / PCIX / PCIe Slot 3 OPROM

Use this feature to enable or disable the PCI/PCIX/PCIe slot 3 OPROM option. The options are Disabled and **EFI**.

PCI / PCIX / PCIe Slot 4 OPROM

Use this feature to enable or disable the PCI/PCIX/PCIe slot 4 OPROM option. The options are Disabled and **EFI**.

PCI / PCIX / PCIe Slot 5 OPROM

Use this feature to enable or disable the PCI/PCIX/PCIe slot 5 OPROM option. The options are Disabled and **EFI**.

PCI / PCIX / PCIe Slot 6 OPROM

Use this feature to enable or disable the PCI/PCIX/PCIe slot 6 OPROM option. The options are Disabled and **EFI**.

PCI / PCIX / PCIe Slot 7 OPROM

Use this feature to enable or disable the PCI/PCIX/PCIe slot 7 OPROM option. The options are Disabled and **EFI**.

PCI / PCIX / PCIe Slot 8 OPROM

Use this feature to enable or disable the PCI/PCIX/PCIe slot 8 OPROM option. The options are Disabled and **EFI**.

PCI / PCIX / PCIe Slot 9 OPROM

Use this feature to enable or disable the PCI/PCIX/PCIe slot 9 OPROM option. The options are Disabled and **EFI**.

M.2-B OPROM

Use this feature to enable or disable the M.2-B OPROM option. The options are Disabled and **EFI**.

EIO OPROM

Use this feature to enable or disable the EIO OPROM option. The options are Disabled and **EFI**.

M.2-E OPROM

Use this feature to enable or disable the M.2-E OPROM option. The options are Disabled and **EFI**.

Onboard LAN1 Support

Use this feature to enable or disable LAN1. The options are Disabled and **Enabled**.

Onboard LAN2 Support

Use this feature to enable or disable LAN2. The options are Disabled and **Enabled**.

Onboard LAN1 Option ROM

Use this feature to select which firmware function to be loaded for LAN1 used for system boot. The options are Disabled and **EFI**.

Wake On LAN

Use this feature to enable or disable the wake on LAN function. The options are Disabled and **Enabled**.

SATA and RST Configuration Menu

SATA And RST Configuration**SATA Controller(s)**

Use this feature to enable or disable the onboard SATA controller supported by the Intel PCH chip. The options are **Enabled** and Disabled.

Storage Option ROM/UEFI Driver

Select UEFI to load the EFI driver for system boot. Select Legacy to load a legacy driver for system boot. The options are Do Not Launch and **EFI**.

Support Aggressive Link Power Management

When this feature is set to Enabled, the SATA AHCI controller manages the power usage of the SATA link. The controller will put the link in a low power mode during extended periods of I/O inactivity and will return the link to an active state when I/O activity resumes. The options are Disabled and **Enabled**.

M.2-M1 – M.2-B1

This feature displays the information detected on the installed SATA drive on the particular SATA port.

- Software Preserve Support

Hot Plug

Set this feature to Enable for hot plug support, which allows you to replace a SATA drive without shutting down the system. The options are **Disabled** and Enabled.

Spin Up Device

Set this feature to enable or disable the PCH to initialize the device. The options are **Disabled** and Enabled.

SATA Device Type

Use this feature to specify if the SATA port should be connected to a Solid State Drive or a Hard Disk Drive. The options are **Hard Disk Drive** and Solid State Drive.

Serial Port Console Redirection Menu

COM1

COM1 Console Redirection

Select Enabled to enable console redirection support for a serial port. The options are Enabled and **Disabled**.

► COM1 Console Redirection Settings

COM1 Console Redirection Settings

COM1 Console Redirection Settings (Available if "COM1 Console Redirection" is set to Enabled.)

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer.

COM1 Terminal Type

This feature allows you to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

COM1 Bits Per Second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600, and **115200** (bits per second).

COM1 Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 Bits and 8 Bits.

COM1 Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

COM1 Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are 1 and 2.

COM1 Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

COM1 VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

COM1 Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

COM1 Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

COM1 Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SC0, ESCN, and VT400.

COM1 Redirection After BIOS POST

Use this feature to enable or disable legacy console redirection after BIOS POST. When set to Bootloader, legacy console redirection is disabled before booting the OS. When set to Always Enable, legacy console redirection remains enabled when booting the OS. The options are **Always Enable** and BootLoader.

COM2

COM2 Console Redirection

Select Enabled to enable console redirection support for a serial port. The options are Enabled and **Disabled**.

► COM2 Console Redirection Settings

COM2 Console Redirection Settings

COM2 Console Redirection Settings (Available if "COM2 Console Redirection" is set to Enabled.)

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer.

COM2 Terminal Type

This feature allows you to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

COM2 Bits Per Second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600, and **115200** (bits per second).

COM2 Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 Bits and **8 Bits**.

COM2 Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want

to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

COM2 Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

COM2 Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

COM2 VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

COM2 Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

COM2 Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

COM2 Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SC0, ESCN, and VT400.

COM2 Redirection After BIOS POST

Use this feature to enable or disable legacy console redirection after BIOS POST. When set to Bootloader, legacy console redirection is disabled before booting the OS. When set to Always Enable, legacy console redirection remains enabled when booting the OS. The options are **Always Enable** and BootLoader.

COM3

COM3 Console Redirection

Select Enabled to enable console redirection support for a serial port. The options are Enabled and **Disabled**.

► Console Redirection Settings

COM3 Console Redirection Settings

COM3 Console Redirection Settings (Available if "COM1 Console Redirection" is set to Enabled.)

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer.

COM3 Terminal Type

This feature allows you to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

COM3 Bits Per Second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600, and **115200** (bits per second).

COM3 Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 Bits and **8 Bits**.

COM3 Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

COM3 Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and **2**.

COM3 Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

COM3 VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

COM3 Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

COM3 Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

COM3 Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SC0, ESCN, and VT400.

COM3 Redirection After BIOS POST

Use this feature to enable or disable legacy console redirection after BIOS POST. When set to Bootloader, legacy console redirection is disabled before booting the OS. When set to Always Enable, legacy console redirection remains enabled when booting the OS. The options are **Always Enable** and BootLoader.

COM4

COM4 Console Redirection

Select Enabled to enable console redirection support for a serial port. The options are Enabled and **Disabled**.

► COM4 Console Redirection Settings

COM4 Console Redirection Settings

COM4 Console Redirection Settings (Available if "COM1 Console Redirection" is set to Enabled.)

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer.

COM4 Terminal Type

This feature allows you to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key

support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

COM4 Bits Per Second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600, and **115200** (bits per second).

COM4 Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 Bits and **8 Bits**.

COM4 Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

COM4 Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

COM4 Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

COM4 VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

COM4 Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

COM4 Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

COM4 Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SC0, ESCN, and VT400.

COM4 Redirection After BIOS POST

Use this feature to enable or disable legacy console redirection after BIOS POST. When set to Bootloader, legacy console redirection is disabled before booting the OS. When set to Always Enable, legacy console redirection remains enabled when booting the OS. The options are **Always Enable** and BootLoader.

Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS)

Use the features below to configure Console Redirection settings to support Out-of-Band Serial Port management.

Console Redirection EMS

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

► Console Redirection Settings

Note: This submenu is available when "Console Redirection EMS" is set to Enabled.

Terminal Type

Use this feature to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII character set. Select VT100+ to add color and function key support. Select ANSI to use the extended ASCII character set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, VT100+, **VT-UTF8**, and ANSI.

Bits Per Second

This feature sets the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 57600, and **115200** (bits per second).

Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options

are **None**, Hardware RTS/CTS, and Software Xon/Xoff.

The following information is displayed.

- **Data Bits**
- **Parity**
- **Stop Bits**

Trusted Computing Menu

▶ Trusted Computing

When the TPM 2.0 (either onboard or external) is detected by your system, the following information is displayed.

- TPM 2.0 Device Found
- Firmware Version:
- Vendor:

Note: This submenu is available when the TPM 2.0 (either onboard or external) is detected by the BIOS.

Security Device Support

Select Enabled to enable BIOS support for onboard security devices, which are not displayed in the OS. If this feature is set to Enabled, TCG EFI protocol and INT1A interface will not be available. The options are Disabled and **Enabled**.

When "Security Device Support" is set to Enabled and the TPM 2.0 (either onboard or external) is detected by the BIOS, the following information is displayed.

- Active PCR banks
- Available PCR banks

* The following features are available when the TPM 2.0 (either onboard or external) is detected by the BIOS.

SHA-1 PCR Bank (Available when "Security Device Support" is set to Enabled)

Select Enabled to enable SHA-1 PCR Bank support to enhance system integrity and data security. The options are Disabled and **Enabled**.

SHA256 PCR Bank (Available when "Security Device Support" is set to Enabled)

Select Enabled to enable SHA256 PCR Bank support to enhance system integrity and data security. The options are Disabled and **Enabled**.

SHA384 PCR Bank (Available when "Security Device Support" is set to Enabled)

Select Enabled to enable SHA384 PCR Bank support to enhance system integrity and data security. The options are **Disabled** and Enabled.

Pending Operation (Available when "Security Device Support" is set to Enabled)

Use this feature to schedule a TPM-related operation to be performed by the security TPM (either onboard or external) at the next system boot to enhance system data integrity. The options are **None** and TPM Clear.

Note: If this feature is used, your system will reboot to carry out a pending TPM operation.

Platform Hierarchy (Available when "Security Device Support" is set to Enabled)

Select Enabled for TPM Platform Hierarchy support, which allows the manufacturer to utilize the cryptographic algorithm to define a constant key or a fixed set of keys to be used for initial system boot. These early boot codes are shipped with the platform and are included in the list of "public keys." During system boot, the platform firmware uses the trusted public keys to verify a digital signature in an attempt to manage and control the security of the platform firmware used in a host system via the TPM (either onboard or external). The options are Disabled and **Enabled**.

Storage Hierarchy (Available when "Security Device Support" is set to Enabled)

Select Enabled for TPM Storage Hierarchy support that is intended to be used for non-privacy-sensitive operations by a platform owner such as an IT professional or the end user. Storage Hierarchy has an owner policy and an authorization value, both of which can be set and are held constant (-rarely changed) through reboots. This hierarchy can be cleared or changed independently of the other hierarchies. The options are Disabled and **Enabled**.

Endorsement Hierarchy (Available when "Security Device Support" is set to Enabled)

Select Enabled for Endorsement Hierarchy support, which contains separate controls to address the user's privacy concerns because the primary keys in the hierarchy are certified by the TPM key or by a manufacturer with restrictions on how an authentic TPM (either onboard or external) that is attached to an authentic platform can be accessed and used. A primary key can be encrypted and certified with a certificate created by using TPM2_ActivateCredential, which allows the user to independently enable "flag, policy, and authorization values" without involving other hierarchies. A user with privacy concerns can disable the endorsement hierarchy while still using the storage hierarchy for TPM applications, permitting the platform software to use the TPM. The options are Disabled and **Enabled**.

PH Randomization

Select Enabled for Platform Hierarchy (PH) Randomization support, which is used only during the platform developmental stage. This feature cannot be enabled in the production platforms. The options are **Disabled** and Enabled.

USB Configuration Menu

The following information is displayed.

- USB Module Version
- USB Controllers:
- USB Devices:

XHCI Hand-off

This is a work-around solution for operating systems that do not support Extensible Host Controller Interface (XHCI) hand-off. The XHCI ownership change should be claimed by the XHCI driver. The settings are **Enabled** and Disabled.

USB Mass Storage Driver Support

Select Enabled for USB mass storage device support. The options are Disabled and **Enabled**.

USB S5 Wakeup Support

Use this feature to enable or disable USB S5 Wakeup support. The options are Disabled and **Enabled**.

Intel(R) Ethernet Controller Menu

► Intel(R) Ethernet Controller (I226-IT) - (XX:XX:XX:XX:XX:XX)

Notes:

- The Ethernet controller and MAC addresses shown above are based on your system features.

The following information is displayed.

- UEFI Driver
- Device Name
- Link Status
- MAC Address
- Link Auto-Negotiation Timeout

Realtek PCIe GBE Family Controller Menu

► Realtek PCIe GBE Family Controller - (XX:XX:XX:XX:XX:XX)

Notes:

- The Ethernet controller and MAC addresses shown above are based on your system features.

The following information is displayed.

- Driver Information
- Device Name
- Driver Version
- Driver Release Date
- Device Information
- Device Name
- PCI Slot
- MAC Address

TLS Authenticate Configuration Menu

► TLS Authenticate Configuration

This submenu allows you to configure Transport Layer Security (TLS) settings.

► Server CA Configuration

This feature allows you to configure the client certificate that is to be used by the server.

► Enroll Certification

This feature allows you to enroll the certificate in the system.

► Enroll Certification Using File

This feature allows you to enroll the security certificate in the system by using a file.

Certification GUID

Press <Enter> and input the certification Global Unique Identifier (GUID).

► 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**

This feature is used to delete the certificate if a certificate has been enrolled in the system.

▶ **Client Certification Configuration**

Driver Health Menu

▶ **Driver Health**

This feature displays the health information of the drivers installed in your system, including LAN controllers, as detected by the BIOS. Select one and press <Enter> to see the details.

Note: This section is provided for reference only, for the driver health status will differ depending on the drivers installed in your system. It's also based on your system configuration and the environment that your system is operating in.

COM Port Mode Configuration Menu

COM1/COM2 Mode Selection

COM1 Mode

Use this feature to select the serial mode standard. The options are **RS-232**, RS-485/422 Full Duplex, RS-485 Half Duplex.

COM2 Mode

Use this feature to select the serial mode standard. The options are **RS-232**, RS-485/422 Full Duplex, RS-485 Half Duplex.

7.4 Event Logs

Use this menu to configure Event Logs settings.

Note: After making any changes in this section, please be sure to reboot the system for the changes to take effect.



Figure 7-3. Event Logs

► Change SMBIOS Event Log Settings

Note: Reboot the system for the changes in this section to take effect.

Enabling/Disabling Options

SMBIOS Event Log

Select Enabled to enable System Management BIOS (SMBIOS) Event Logging during system boot. The options are Disabled and **Enabled**.

Erasing Settings

Erase Event Log (Available when "SMBIOS Event Log" is set to Enabled)

Select No to keep the event log without erasing it upon next system bootup. Select (Yes, Next reset) to erase the event log upon next system reboot. The options are **No**, (Yes, Next reset), and (Yes, Every reset).

When Log is Full (Available when "SMBIOS Event Log" is set to Enabled)

Select Erase Immediately to immediately erase all errors in the SMBIOS event log when the event log is full. Select Do Nothing for the system to do nothing when the SMBIOS event log is full. The options are **Do Nothing** and Erase Immediately.

SMBIOS Event Log Standard Settings

Log System Boot Event (Available when "SMBIOS Event Log" is set to Enabled)

Select Enabled to log system boot events. The options are Enabled and **Disabled**.

MECI (Available when "SMBIOS Event Log" is set to Enabled)

Enter the increment value for the multiple event counter. Enter a number between 1 and 255. The default setting is **1**. (MECI is the abbreviation for Multiple Event Count Increment.)

METW (Available when "SMBIOS Event Log" is set to Enabled)

Use this feature to determine how long (in minutes) should the multiple event counter wait before generating a new event log. Enter a number between 0 and 99. The default value is **60**. (METW is the abbreviation for Multiple Event Count Time Window.)

► View SMBIOS Event Log

Use this feature to view the event in the system event log. Select this feature and press <Enter> to view the status of an event in the log. The following information is displayed: DATE / TIME / ERROR CODE / SEVERITY.

7.5 Thermal & Fan

Use this menu to configure Fan settings.

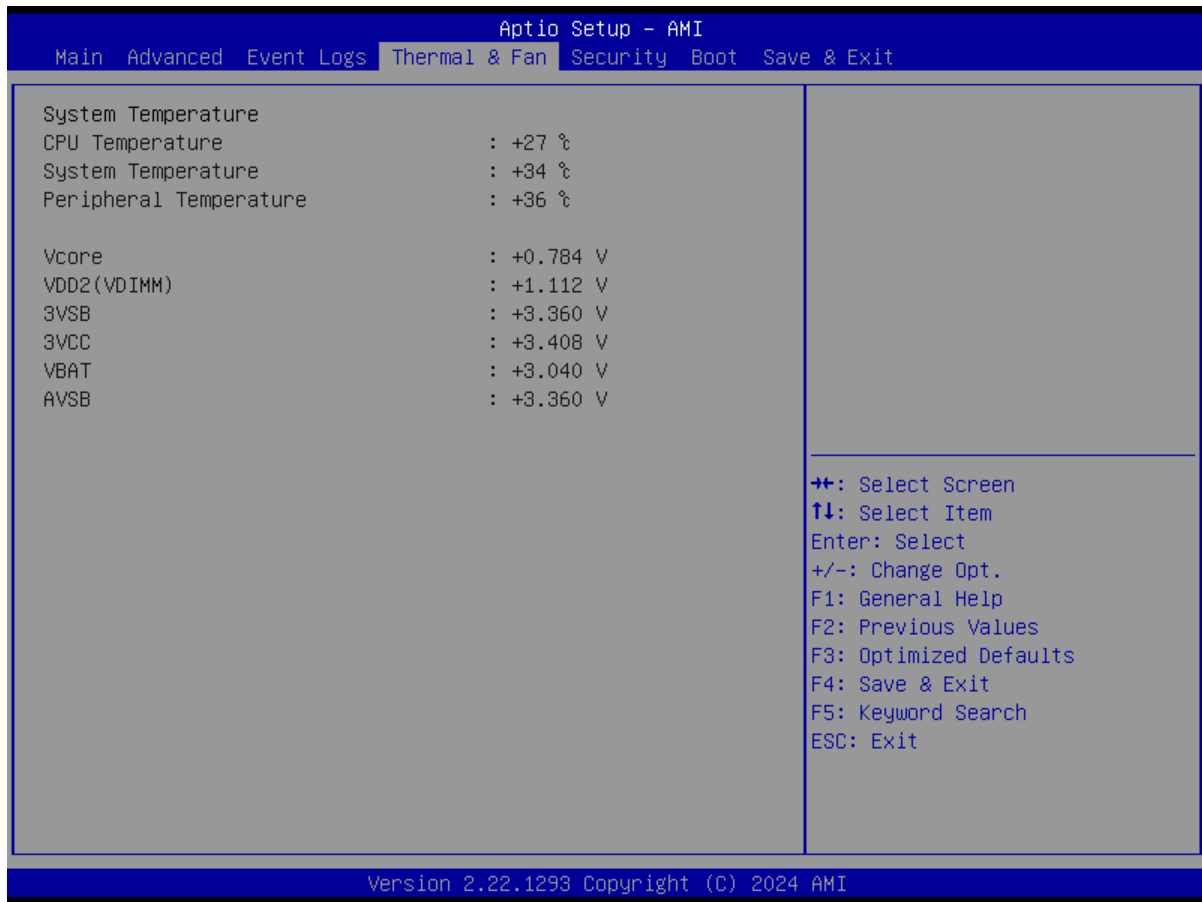


Figure 7-4. Thermal & Fan

The following information is displayed.

- System Temperature
- CPU Temperature
- System Temperature
- Peripheral Temperature
- P5VSB
- Vcore
- VDD2(VDIMM)
- 3VSB

- 3VCC
- VBAT
- ASVB

7.6 Security

Use this menu to configure the following security settings for the system.

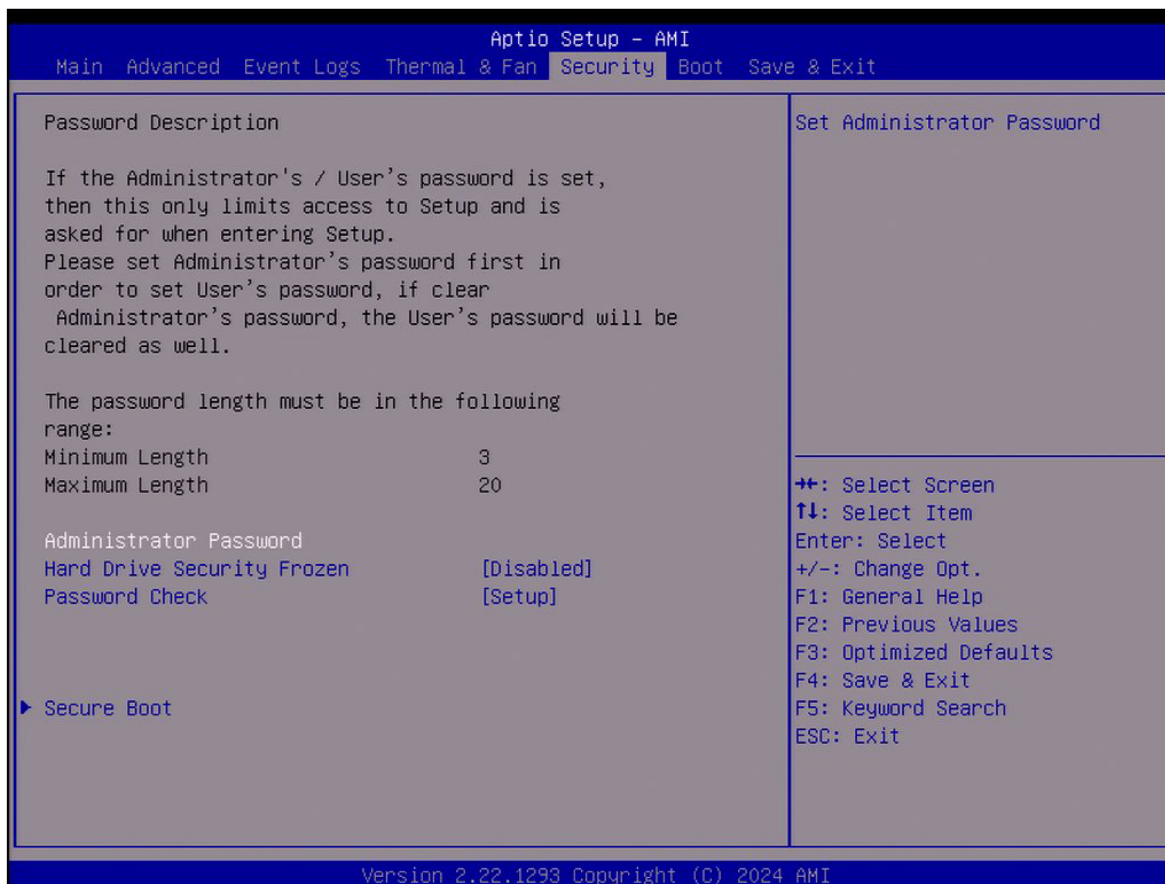


Figure 7-5. Security

Disable Block Sid and Freeze Lock (Available when your storage devices support TCG)

Select Enabled to allow SID authentication to be performed in TCG storage devices. The options are **Disabled** and Enabled.

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.

User Password (Available when "Administrator Password" has been set)

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

Hard Drive Security Frozen

Select Enabled to freeze the Lock Security feature for HDD to protect key data in hard drives from being altered. The options are **Disabled** and Enabled.

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.

7.7 Boot

Use this menu to configure Boot settings.

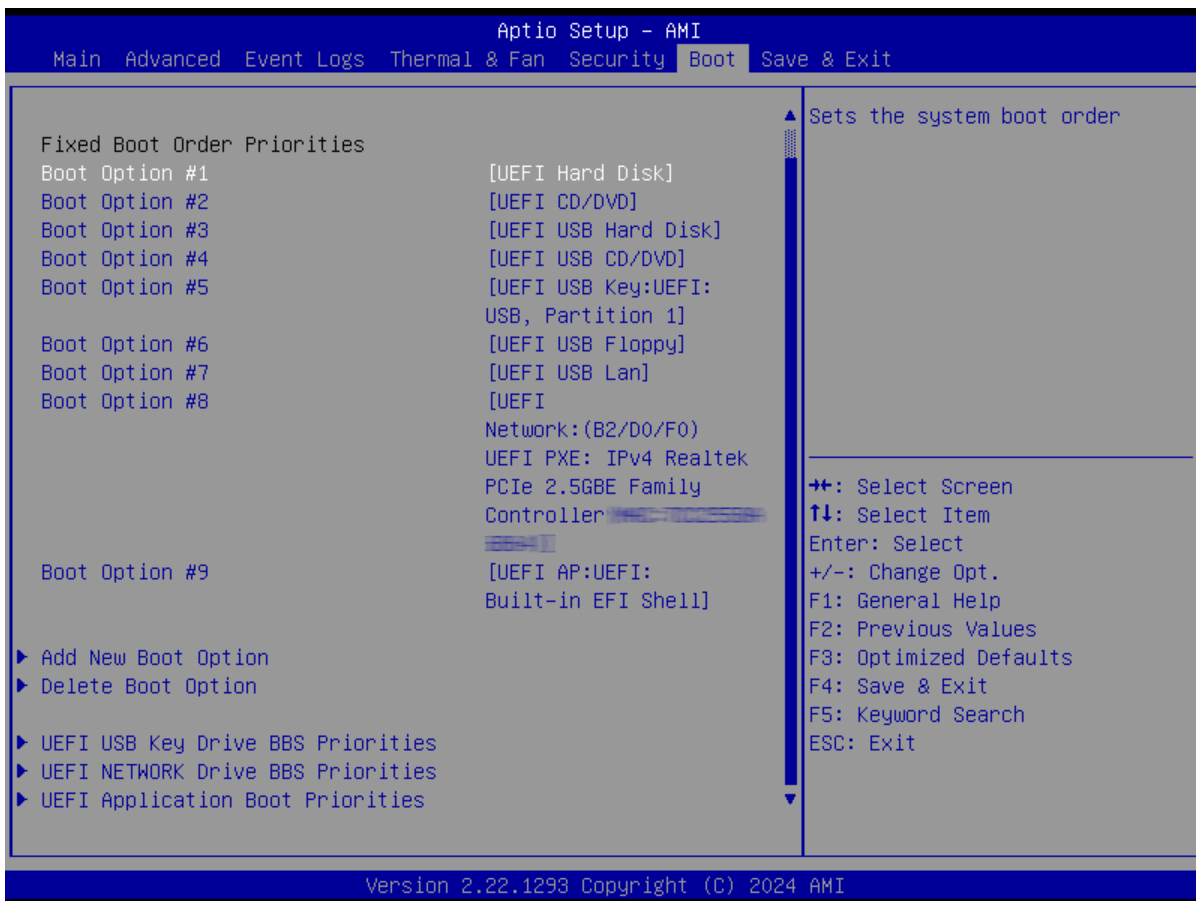


Figure 7-6. Boot

FIXED BOOT ORDER Priorities

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

- Boot Option #1 – Boot Option #9

► 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.

7.8 Save & Exit

Select Save & Exit from the BIOS Setup screen to configure the settings below.

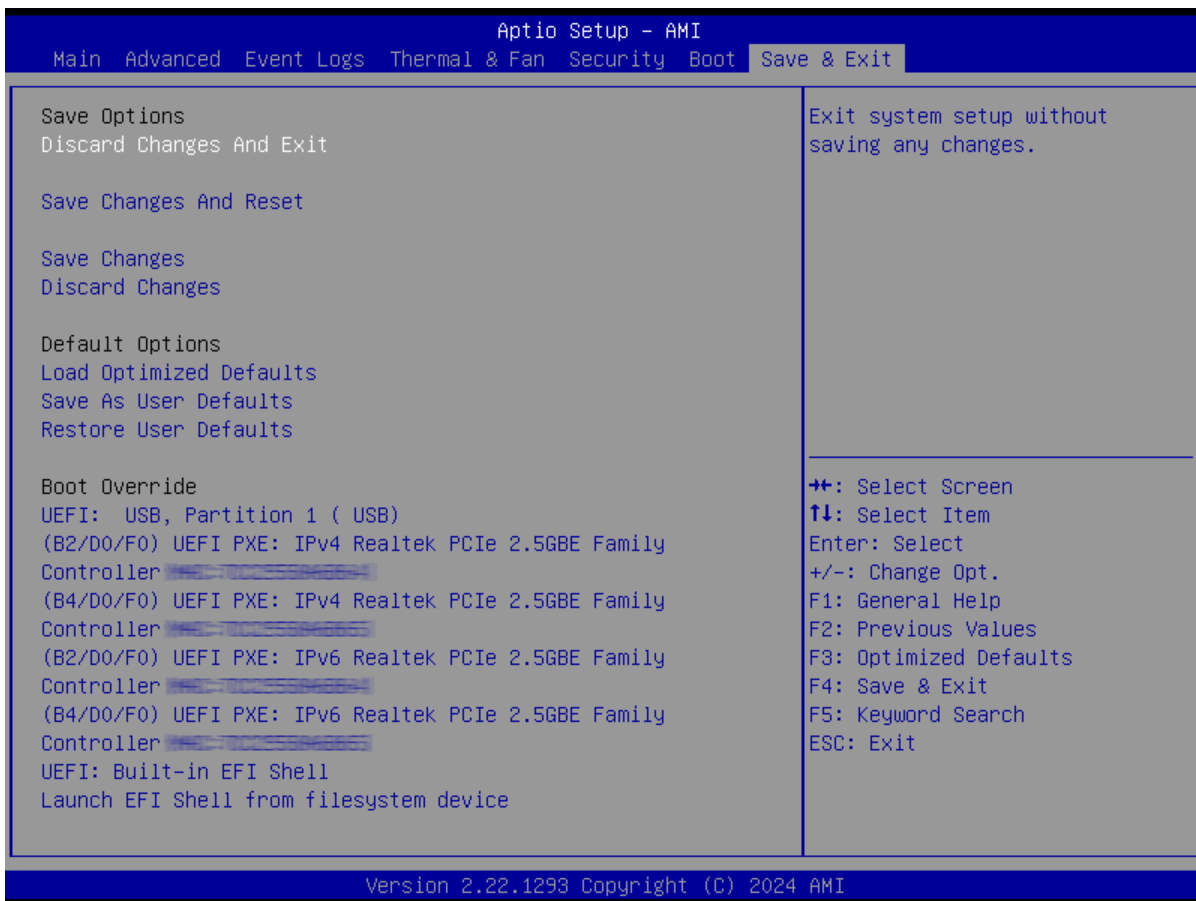


Figure 7-7. Save & Exit

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 computer.

Save Changes and Reset

On completing the system configuration changes, use this feature to exit the BIOS Setup utility and reboot the computer 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**Load 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: Please reboot the system for the changes to take effect, which ensures that this 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 retrieve 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.

Launch EFI Shell from filesystem device

Use this feature to launch the EFI shell application (Shell.efi) from one of the available filesystem devices. A filesystem is a virtual, logical, or physical system for organizing, managing, and accessing the files and directories on devices such as SSDs, HDDs, or other storage devices.

Appendix A:

BIOS Codes

For information about BIOS codes for the SYS-E50-14AM/-L/-N5 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 SYS-E50-14AM/-L/-N5 server.

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

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

Warning Definition



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

警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危險。

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

此警告符號代表危險。

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

Warnung

WICHTIGE SICHERHEITSHINWEISE

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

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

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

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

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

CONSERVEZ CES INFORMATIONS.

תקנון הצהרות אזהרה

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

الكافة حالة وكي أي تتسبب ف اصابة جسده هذا الزهر ع خطر! تحذّر.
قبل أي تعول على أي هعدات، كي على علن بالوخاظر ال اجوة عي النوانز
الكهربائ ة

وكي على دراة بالووارسات النقاء ة لو ع وقع أي حداثث
استخدم رقن الب إى الو صنص ف هاة كل تحذّر للعنثر تزجوتها

안전을 위한 주의사항

경고!

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

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

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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

BEWAAR DEZE INSTRUCTIES

Installation Instructions



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

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前,請先閱讀安裝說明。

Warnung

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

¡Advertencia!

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

Attention

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

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

Circuit Breaker



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

サーキット・ブレーカー

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי

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

هذا المنتج يعتمد على معدات الحماية مه الدوائر القصيرة التي تم تثبيتها في

المبنى

تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

경고!

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

Waarschuwing

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

Power Disconnection Warning

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

電源切断の警告

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

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前,必須將系統完全斷電,並移除電源線。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה מפני ניתוק חשמלי

אזהרה!

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים.

يجب فصل المنظمو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد انطاقت قيم

انصلل إلى انمناطق انداخييت نههيكم ننتبيج أو إزانت مكنناث الجهاز

경고!

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

Waarschuwing

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

Equipment Installation



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

機器の設置

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

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

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

Waarschuwing

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

Restricted Area



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

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

אזור עם גישה מוגבלת

אזהרה!

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

اتخصيص هذه انحدة نترك بها ف مناطق محظورة تم .

ممكن انصلل إن منطقت محظورة فقط من خلال استخدام أداة خاصت،

أو أوس هُت أخري نلاأما ققم ومفتاح

경고!

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

Waarschuwing

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

Battery Handling



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

電池の取り扱い

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

警告

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

警告

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

WARNUNG

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

ADVERTENCIA

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

ATTENTION

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

אזהרה!

קיימת סכנת פיצוץ אם הסוללה תוחלף בסוג שגוי. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת. סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر الانفجار إذا تم استبدال البطارية بنوع غير صحيح

استبدال البطارية

فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة

جخلص من البطاريات المسحمة وفقاً لتعليمات الشركة الصانعة

경고!

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

WAARSCHUWING

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

Redundant Power Supplies

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

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此装置连接的电源可能不只一个，必须切断所有电源才能停止对该装置的供电。

Warnung

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

¡Advertencia!

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

Attention

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

אם קיים יותר מספק אחד

אזהרה!

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

את היחידה.

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعزل الوحدة عن الكهرباء

경고!

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

Waarschuwing

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

Backplane Voltage



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

バックプレーンの電圧

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

修理する際には注意ください。

警告

当系统正在进行时,背板上有很危险的电压或能量,进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

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

¡Advertencia!

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

Attention

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

מתח בפנל האחורי

אזהרה!

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

העבודה.

هناك خطر من التيار الكهربائي أو الطاقة المخزنة على اللوحة

عندما يكون النظام يعمل كه حذرا عند خدمة هذا الجهاز

경고!

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

Waarschuwing

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

Comply with Local and National Electrical Codes



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

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

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

Attention

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

תיאום חוקי החשמל הארצי

אזהרה!

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والنظمية المتعلقة

بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

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

Product Disposal



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

製品の廃棄

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

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

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

¡Advertencia!

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

Attention

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

סילוק המוצר

אזהרה!

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

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

경고!

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

Waarschuwing

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

Fan Warning



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



ファンの警告

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

警告!

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

警告

危險的可移動性零件。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。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

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

Waarschuwing

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

Power Cable and AC Adapter



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

電源コードとACアダプター

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

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

AC ימאתמו םיילמשח םילבכ

הרהזא!

ךרוצל ומאתוה וא ושכרנ רשא AC םימאתמו םיקפס, םילבכב שמתשהל שי, רצומה תא םיניקתמ רשאכ לכב שומיש . עקתהו לבכה לש הנוכנ הדימ ללוכ, תוימוקמה תוחיטבה תושירדל ומאתוה רשאו, הנקתהה למשחה ירישכמב שומישה יקוחל סאתהב . ילמשח רצק וא הלקתל םורגל לולע, רחא גוסמ סאתמ וא לבכ לש דוק םהילע עיפומ רשאכ) CSA- ב וא UL - ב םיכסומה םילבכב שמתשהל רוסיא םייק, תוחיטבה יקוחו דבלב Supermicro י"ע סאתוה רשא רצומב קר אלא, רחא ילמשח רצומ לכ רובע (UL/CSA).

תאלבאקלא ׁארשב מץ וא ׁדדחמלא וא ׁרפוטמלא תאליסוטלא מאדחטסאב מץ, גתנמלא בייקרת דנע

כלז יפ אמב ׁתילחמלא ׁמאלסלא תאבלטמו נינאוצב מאז תלאלא עמ דדרתמלא ראיטלא תאלוחמו ׁתינאבר הכלא

קירח וא לטע יפ בייסטי דץ ברחא תאלוחמו תאלבאק יא מאדחטסא . מילסלא סבאקלאו לוטומלא מנע .

CSA וא UL לביץ נמ ׁדמטעמלא תאלבאקלא מאדחטסא תאדעמלאו ׁתינאבר הכלא ׁז הגאלל ׁמאלסלא נונאץ רזחכי

Supermicro לביץ נמ ׁדדחמלאו ׁתינעמלא תאגתנמלא רינע ברחא תאדעמ יא עמ (UL/CSA) ׁמאלע למחט יטלאו .

전원 케이블 및 AC 어댑터

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

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

Stroomkabel en AC-Adapter

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

Appendix C:

System Specifications

Processors

Single Intel® Processor N97 with four cores and supporting a Thermal Design Power (TDP) unit of up to 7 W.

Chipset

System on Chip

BIOS

256 Mb SPI AMI BIOS®

ACPI 6.2, Plug and Play (PnP), SPI dual/quad speed support, Real Time Clock (RTC) wakeup

Memory

One DIMM slot that supports up to 16 GB non-ECC DDR5 SODIMM at 4800 MT/s

Storage Drives

One internal fixed 2.5" SATA drive bay (SYS-E50-14AM and SYS-E50-14AM-N5 only)

One M.2 PCIe 3.0 x1 SATA slot (B-key 2242/3042)

Input/Output

For SYS-E50-14AM only:

Two RJ45 2.5 GbE LAN ports

Two USB 2.0 ports (front)

Two USB 3.2 Gen2 Type-A ports (rear)

Two HDMI 1.4 ports (rear)

Two COM ports (front)

One TPM onboard/port 80

For SYS-E50-14AM-L only:

Two RJ45 2.5 GbE LAN ports

Two USB 3.2 Gen2 Type-A ports (rear)

One HDMI 1.4 port (rear)

For SYS-E50-14AM-N5 only:

Three RJ45 1 GbE LAN ports (Intel® I210-IT)

Two RJ45 2.5 GbE LAN ports

Two USB 2.0 ports (front)

Two USB 3.2 Gen2 Type-A ports (rear)

Two HDMI 1.4 ports (rear)

One COM port (front)

One TPM onboard/port 80

PCI Expansion Slots**For SYS-E50-14AM and SYS-E50-14AM-N5 only:**

One M.2 PCIe 3.0 x1 slot (E-key 2230; USB 2.0)

One M.2 PCIe 3.0 x1 SATA slot (B-key 2242/3042; USB 3.0)

For SYS-E50-14AM-L only:

One M.2 PCIe 3.0 x1 slot (E-key 2230)

One M.2 PCIe 3.0 x1 SATA slot (B-key 2242/3042)

Motherboard

A4SAP-H: proprietary 3.9" x 2.8" (100 x 72 mm)

Chassis

CSE-E50/-L: fanless embedded 5.82" x 1.72" x 4.64" (148 x 44 x 118 mm) (WxHxD)

System Cooling

Fanless

Power Adapter

One lockable 40 W power adapter for 12 VDC

Operating Environment

Operating Temperature: 0°C to 45°C (32°F to 113°F) when using M.2 SATA

Operating Temperature: 0°C to 40°C (32°F to 104°F) when using SSD 2.5" SATA

Non-Operating Temperature: -30°C to 60°C (-22°F to 140°F)

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

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

Regulatory Compliance

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

Certified Safety Models

Compliant with UL or CSA: E50-40 or E50-A4A4

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>

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

BS/EN55032

BS/EN55035

CISPR 32

CISPR 35

BS/EN 61000-3-2

BS/EN 61000-3-3

BS/EN 61000-4-2

EN/BS 61000-4-3

EN/BS 61000-4-4

EN/BS 61000-4-5

EN/BS 61000-4-6

EN/BS 61000-4-8

EN/BS 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

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

取扱説明書に従って正しい取り扱いをしてください。

VCCI – B

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.