



Embedded Box PC®

SYS-E101-14AM-H

SYS-E101-14AM-E

USER'S MANUAL

Revision 1.0 (MNL-2845)

The information in this User's Manual has been carefully reviewed and is believed to be accurate. The vendor assumes no responsibility for any inaccuracies that may be contained in this document, and makes no commitment to update or to keep current the information in this manual, or to notify any person or organization of the updates. Note: For the most up-to-date version of this manual, see our website at <https://www.supermicro.com>.

Super Micro Computer, Inc. ("Supermicro") reserves the right to make changes to the product described in this manual at any time and without notice. This product, including software and documentation, is the property of Supermicro and/or its licensors, and is supplied only under a license. Any use or reproduction of this product is not allowed, except as expressly permitted by the terms of said license.

IN NO EVENT WILL Super Micro Computer, Inc. BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, SPECULATIVE OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OR INABILITY TO USE THIS PRODUCT OR DOCUMENTATION, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN PARTICULAR, SUPER MICRO COMPUTER, INC. SHALL NOT HAVE LIABILITY FOR ANY HARDWARE, SOFTWARE, OR DATA STORED OR USED WITH THE PRODUCT, INCLUDING THE COSTS OF REPAIRING, REPLACING, INTEGRATING, INSTALLING OR RECOVERING SUCH HARDWARE, SOFTWARE, OR DATA.

Any disputes arising between manufacturer and customer shall be governed by the laws of Santa Clara County in the State of California, USA. The State of California, County of Santa Clara shall be the exclusive venue for the resolution of any such disputes. Supermicro's total liability for all claims will not exceed the price paid for the hardware product.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class A or Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in industrial environment for Class A device or in residential environment for Class B device. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

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>".



WARNING: This product can expose you to chemicals including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to <https://www.P65Warnings.ca.gov>.



AVERTISSEMENT : Ce produit peut vous exposer à des agents chimiques, y compris le plomb, identifié par l'État de Californie comme pouvant causer le cancer, des malformations congénitales ou d'autres troubles de la reproduction. Pour de plus amples informations, prière de consulter <https://www.P65Warnings.ca.gov>.

The products sold by Supermicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices or other critical systems whose failure to perform be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supermicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend and hold Supermicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale.

Manual Revision 1.0

Release Date: December 31, 2025

Unless you request and receive written permission from Super Micro Computer, Inc., you may not copy any part of this document. Information in this document is subject to change without notice. Other products and companies referred to herein are trademarks or registered trademarks of their respective companies or mark holders.

Copyright © 2025 by Super Micro Computer, Inc.
All rights reserved.

Published in the United States of America

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-E101-14AM-H/E Embedded Box PC. 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 Embedded Box PC.

- 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 Embedded Box PC installation or to relay safety precautions.

Note: Additional information given to differentiate various models or to provide information for proper Embedded Box PC setup.

Contents

Contacting Supermicro	10
Chapter 1: Introduction	11
Overview	11
1.1 System Features	13
Front Features	13
Side Features	14
1.2 System Architecture	16
Motherboard Block Diagram	16
1.3 Motherboard Quick Reference	17
Motherboard Layout	17
Quick Reference Table	20
Chapter 2: Server Installation	23
2.1 Unpacking the System	24
2.2 Preparing for Setup	25
Choosing a Setup Location	25
Rack Precautions	25
System Precautions	25
Rack Mounting Considerations	26
Ambient Operating Temperature	27
Airflow	27
Mechanical Loading	27
Circuit Overloading	27
Reliable Ground	27
Installing Mounting Brackets	27
Chapter 3: Maintenance and Component Installation	29
3.1 Removing Power	30
3.2 Accessing the System	31
3.3 Static-Sensitive Devices	32
Precautions	32
3.4 Processor and Heatsink Installation	33
3.5 Memory Support and Installation	34

Memory Support	34
SO-DIMM Installation	34
SO-DIMM Removal	36
3.6 Motherboard Battery Removal and Installation	37
Battery Removal	37
Proper Battery Disposal	37
Battery Installation	37
Chapter 4: Motherboard Connections, Jumpers, and LEDs	39
Main Power Connector	40
4.1 Headers and Connections	41
CMOS Battery	41
COM Headers	41
Fan Header	43
Front Panel Audio Header	44
General Purpose I/O Header	44
Low Voltage Differential Signaling	45
M.2 Slots	46
Nano SIM Card Slot	50
SMBus Header	51
Speaker Header	51
USB Header	51
USB 3.2 Ports	52
Front Control Panel Header	52
Power Button	53
Reset Button	53
HDD LED	53
Power LED	54
4.2 Rear I/O Ports	55
4.3 Jumper Settings	56
LVDS Panel VCC Power	56
ME Manufacturing Mode	57
SIM Detect Option	57
Onboard TPM Enable/Disable	58
4.4 LED Indicators	59

Onboard Power LED	59
Chapter 5: Software	60
5.1 Microsoft Windows OS Installation	61
Installing the OS	61
5.2 BMC	63
BMC ADMIN User Password	63
Chapter 6: Troubleshooting and Support	64
6.1 Online Resources	65
Website	65
Direct Links for the SYS-E101-14AM-H/E System	65
Direct Links for General Support and Information	65
6.2 Baseboard Management Controller (BMC)	66
6.3 Troubleshooting Procedures	67
Before Power On	67
No Power	67
No Video	67
System Boot Failure	67
Memory Errors	68
Losing the System's Setup Configuration	68
If the System Becomes Unstable	68
6.4 CMOS Clear	70
6.5 Motherboard Battery	71
6.6 Where to Get Replacement Components	72
6.7 Technical Support Procedures	73
Returning Merchandise for Service	73
6.8 Feedback	75
Chapter 7: UEFI BIOS	76
7.1 Introduction	77
Updating BIOS	77
Starting the Setup Utility	77
7.2 Main Setup	79
7.3 Advanced Setup Configurations	82
ACPI Settings Menu	82
Boot Feature Menu	83

CPU Configuration Menu	85
Chipset Configuration Menu	89
Memory Configuration Menu	89
Graphics Configuration Menu	91
DMI/OPI Configuration Menu	92
GT - Power Management Control	92
HDD Security Configuration	94
PTN3460 Switch	94
GPIO Expander Header	95
HTTP Boot Configuration Menu	96
NCT6126 Super IO Configuration	97
Serial Port 1 Configuration Menu	97
Serial Port 2 Configuration Menu	97
Serial Port 3 Configuration Menu	97
Serial Port 4 Configuration Menu	98
Network Stack Configuration Menu	98
MAC:(MAC address)-IPv4 Network Configuration Menu	99
MAC:(MAC address)-IPv6 Network Configuration Menu	99
PCH-FW Configuration Menu	100
PCIe/PCI/PnP Configuration Menu	101
SATA and RST Configuration Menu	103
Serial Port Console Redirection Menu	104
Trusted Computing Menu	112
USB Configuration Menu	114
Intel(R) Ethernet Controller Menu	115
Intel(R) Ethernet Controller Menu	115
TLS Authenticate Configuration Menu	116
Driver Health Menu	116
COM Port Mode Configuration Menu	117
7.4 Event Logs	118
7.5 Thermal & Fan	120
7.6 Security	123
Supermicro Security Erase Configuration Menu	124
Secure Boot Menu	125

7.7 Boot	129
7.8 Save & Exit	131
Appendix A: BIOS Codes	133
BIOS Error POST (Beep) Codes	133
Additional BIOS POST Codes	133
Appendix B: Standardized Warning Statements for DC Systems	134
Warning Definition	134
Installation Instructions	136
Circuit Breaker	138
Power Disconnection Warning	139
Equipment Installation	141
Restricted Area	142
Battery Handling	144
Redundant Power Supplies	145
Backplane Voltage	147
Comply with Local and National Electrical Codes	148
Product Disposal	149
Fan Warning	151
Appendix C: System Specifications	153

Contacting Supermicro

Headquarters

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

Tel: +1 (408) 503-8000

Fax: +1 (408) 503-8008

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

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

Europe

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

Tel: +31 (0) 73-6400390

Fax: +31 (0) 73-6416525

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

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

Asia-Pacific

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

Tel: +886 (2) 8226-3990

Fax: +886 (2) 8226-3992

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

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

Chapter 1:

Introduction

This chapter provides a brief outline of the functions and features of the SYS-E101-14AM-H/E system. It is based on the A4SAN-H/E-WOHS motherboard and the CSE-E101-IA3 chassis.

Overview	11
1.1 System Features	13
Front Features	13
Side Features	14
1.2 System Architecture	16
Motherboard Block Diagram	16
1.3 Motherboard Quick Reference	17
Motherboard Layout	17
Quick Reference Table	20

Overview

This chapter provides a brief outline of the functions and features of the SuperServer SYS-E101-14AM-H/E. The following provides an overview of the system specifications and capabilities.

System Overview	
Motherboard	SYS-E101-14AM-H: A4SAN-H-WOHS SYS-E101-14AM-E: A4SAN-E-WOHS
Chassis	CSE-E101-IA3
Processor	SYS-E101-14AM-H: Intel® Atom® Processor x7835RE SYS-E101-14AM-E: Intel® Atom® Processor x7433RE
Memory	One DIMM slot Max Memory (1DPC): Up to 16 GB 4800 MT/s non-ECC DDR5 SO-DIMM
Drive Support	One M.2 B-Key 2242/2280 SATA SSD One M.2 M-key 2242/2280 SATA/NVMe SSD

System Overview	
Expansion Slots	One M.2 slot (E-key, 2230 default) One M.2 PCIe 3.0 x1 SATA slot (M-key 2242/2280) One M.2 PCIe 3.0 x1 SATA slot (B-key 2242/2280/3042/3052)
I/O Ports	LAN: Two RJ45 2.5 GbE LAN ports (Intel® I226) USB: Two USB 2.0 Type-A ports (rear), four USB 3.2 Gen2 Type-A ports (front) Video: Two HDMI 1.4 ports (front) Serial: Two COM RS232 ports (front), two COM RS232/RS422/RS485 ports (front)
System Cooling	N/A
Power	Two-pin terminal block, 9–36 VDC, 5-1.5 A power input
Form Factor	7.64 x 4.96 x 4.52 in. (194 x 126 x 115 mm) (WxDxH)

Notes:

- A Quick Reference Guide can be found on the following pages of the Supermicro website
SYS-E101-14AM-H:
<https://www.supermicro.com/en/products/system/embedded/fanless%20embedded/sys-e101-14am-h>
SYS-E101-14AM-E:
<https://www.supermicro.com/en/products/system/embedded/fanless%20embedded/sys-e101-14am-e>
- The following safety models associated with the SYS-E101-14AM-H/E have certified as compliant with UL or CSA: E101-IA3-60, E101-IA3-A6A4
- When shipped from Taiwan, end users cannot insert a SIM card to enable the wireless communication function of the SYS-E101-14AM-H/E. The system will not accept any SIM cards from any telecom operator, nor does it provide a built-in RF module.

1.1 System Features

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

Front Features

The CSE-E101 is a compact embedded 3.5" SBC chassis. See the illustration below for the features included on the front of the chassis.

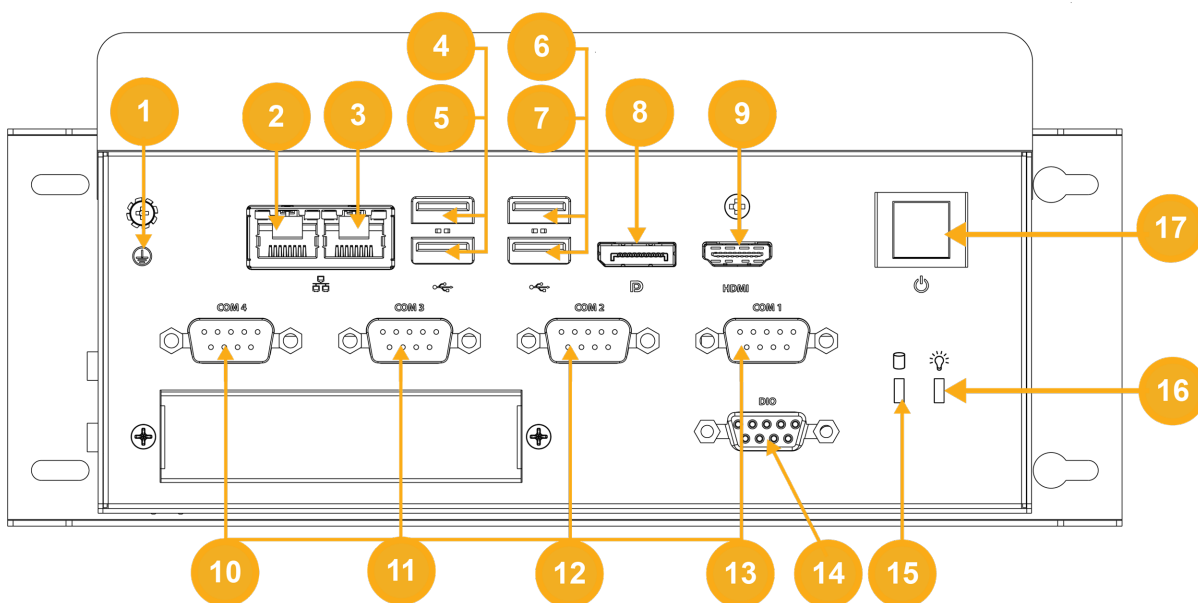


Figure 1-1. Front Chassis View

Item	Features	Description
1	Grounding Screw	Terminal for earth ground
2	LAN1	Gigabit LAN port
3	LAN2	Gigabit LAN port
4	USB1	USB 3.1 Gen 2 port
5	USB0	USB 3.1 Gen 2 port
6	USB2	USB 3.1 Gen 2 port
7	USB3	USB 3.1 Gen 2 port
8	DP++	Display port
9	HDMI Port	HDMI port
10	COM1	COM port
11	COM2	COM port

Item	Features	Description
12	COM3	COM port
13	COM4	COM port
14	DIO Port	Digital I/O port
15	Power LED	The Power LED indicates power is being supplied to the system (highlighted in green).
16	HDD LED	The HDD LED indicates data is being written to the storage drives (highlighted in orange).
17	Power Button	The main power switch applies or removes primary power from the power supply but maintains standby power.

Side Features

The chassis rear holds input/output ports, described in Chapter 3.

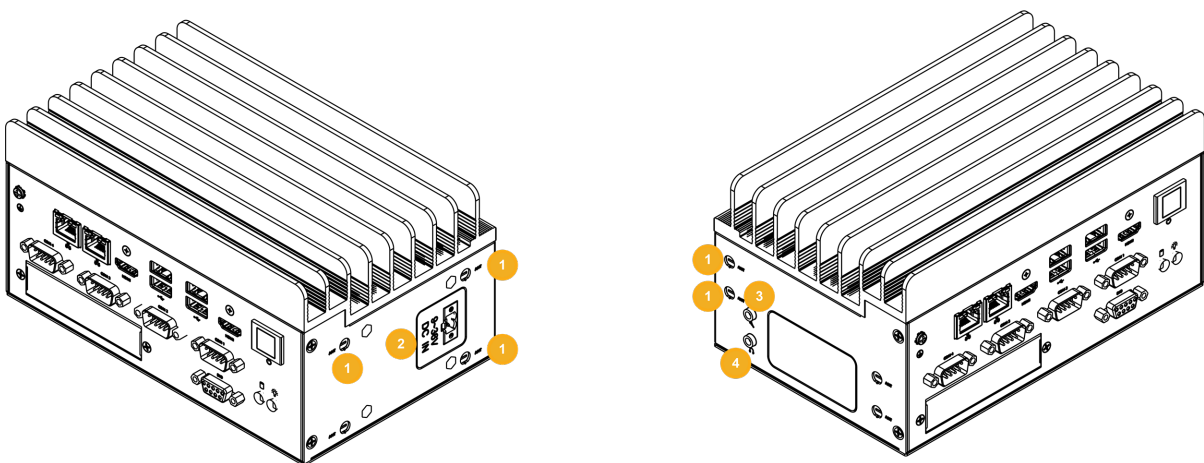


Figure 1-2. Side Chassis Views

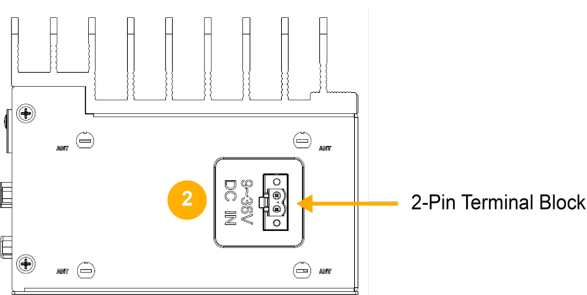


Figure 1-3. Side View Detail: 2-Pin Terminal Block

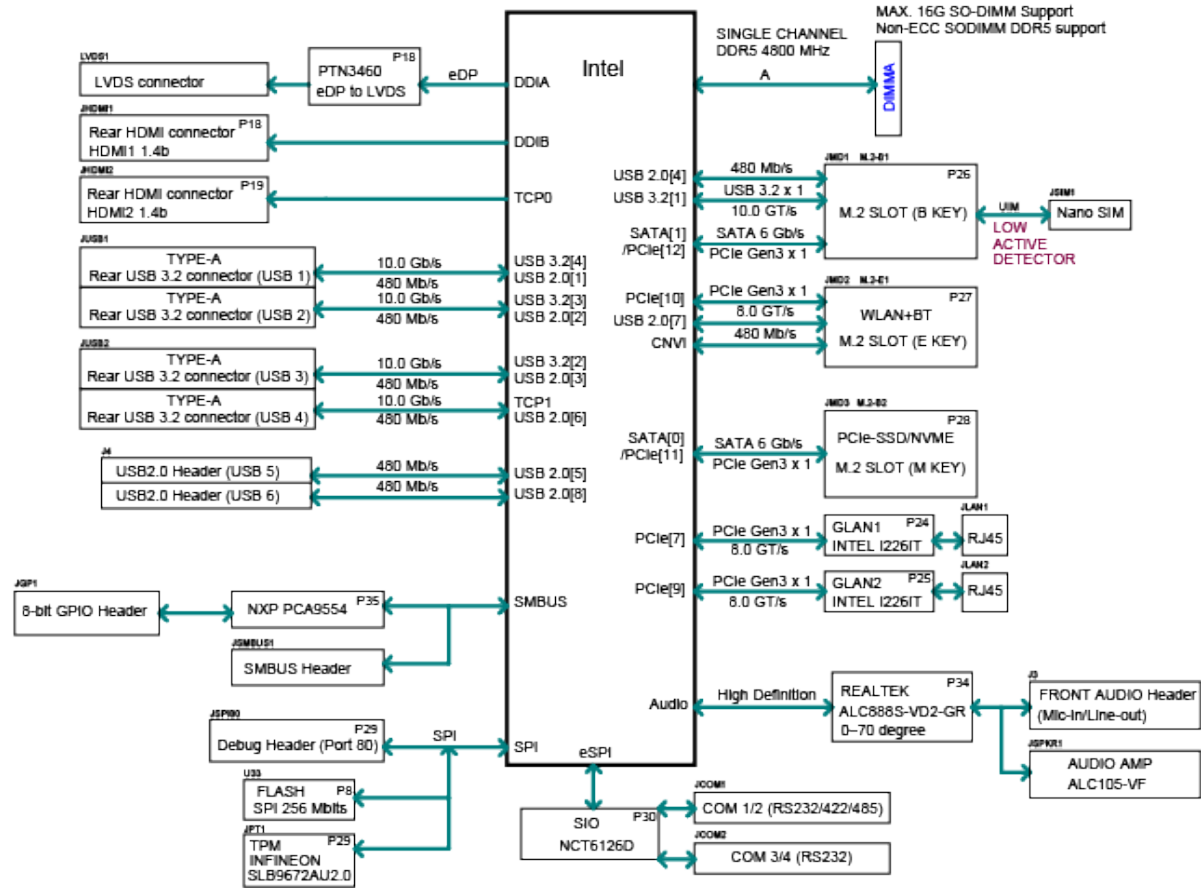
Side Chassis Features		
Item	Features	Description
1	Antenna	Antenna connections

Side Chassis Features		
Item	Features	Description
2	2-Pin Terminal Block	9–36 VDC, 5-1.5 A power input
3	MIC	Port for a 2.5-mm microphone cable
4	Headphone	Port for a 2.5-mm headphone cable

1.2 System Architecture

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

Motherboard Block Diagram



I/O PANEL LAYOUT

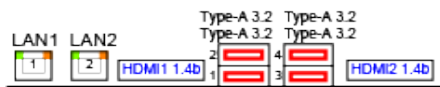


Figure 1-4. A4SAN-H/E-WOHS Motherboard Block Diagram

1.3 Motherboard Quick Reference

For details on the A4SAN-H/E-WOHS motherboard layout and other quick reference information, refer to the content below.

Motherboard Layout

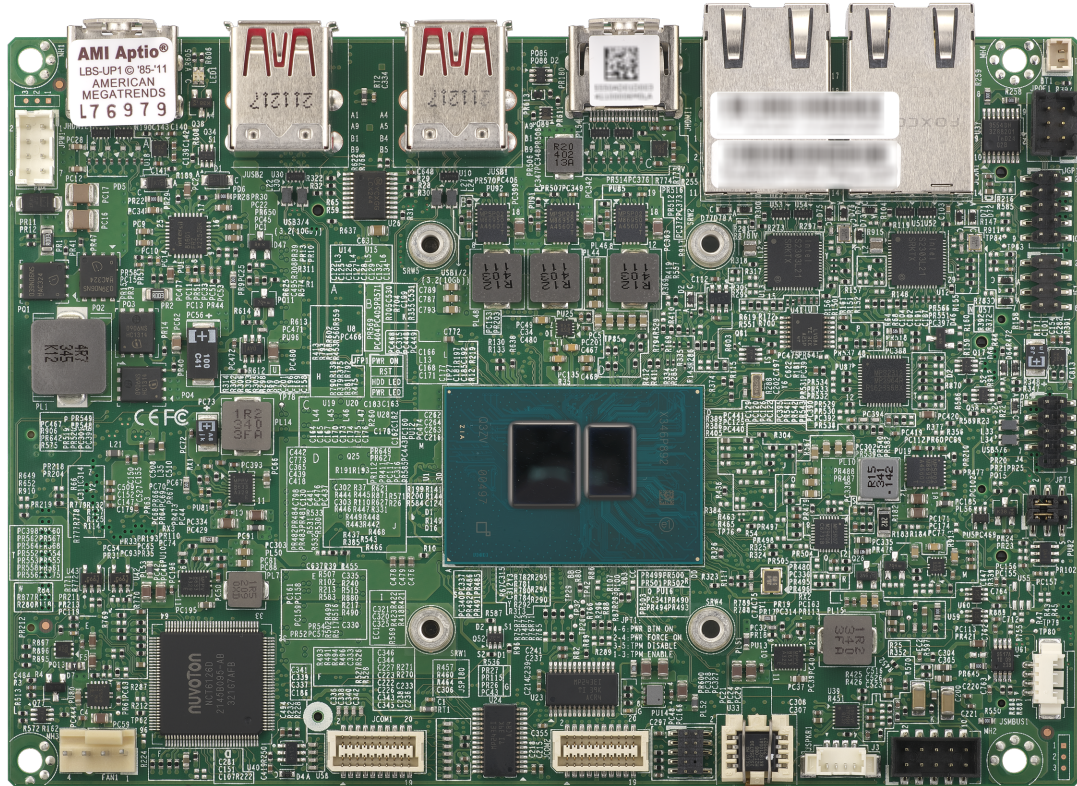


Figure 1-5. A4SAN-H/E-WOHS Motherboard Top Photo

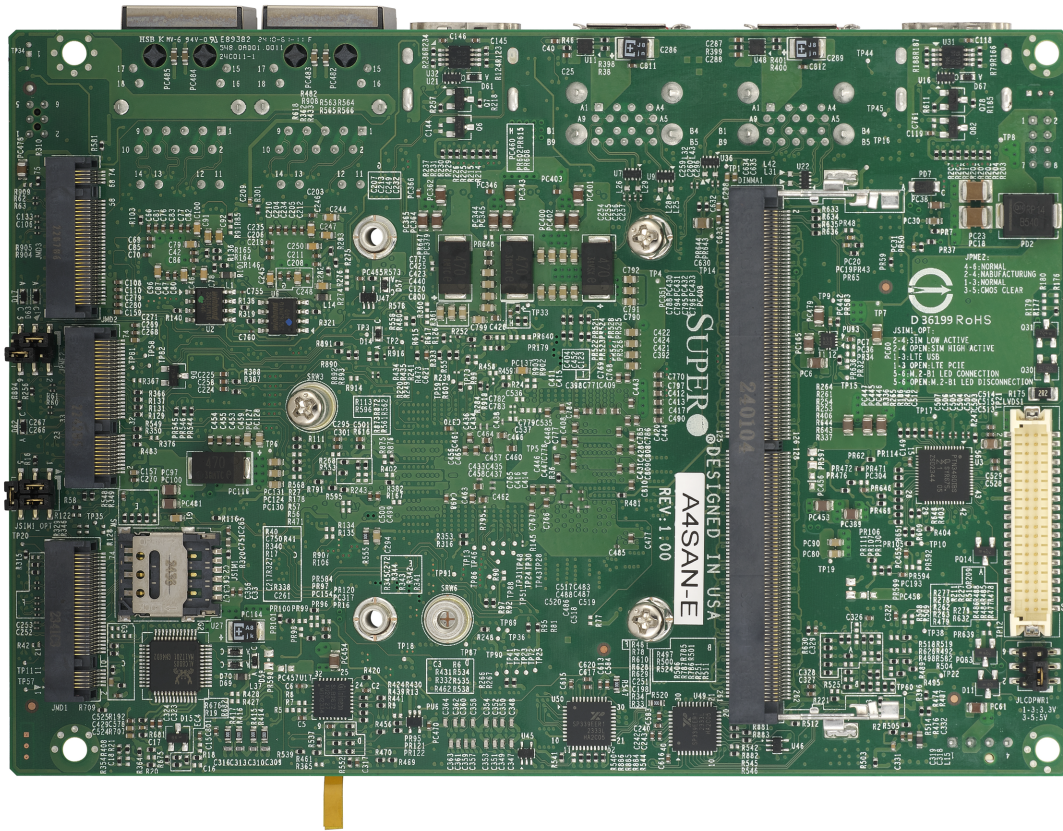


Figure 1-6. A4SANE-H/E-WOHS Motherboard Bottom Photo

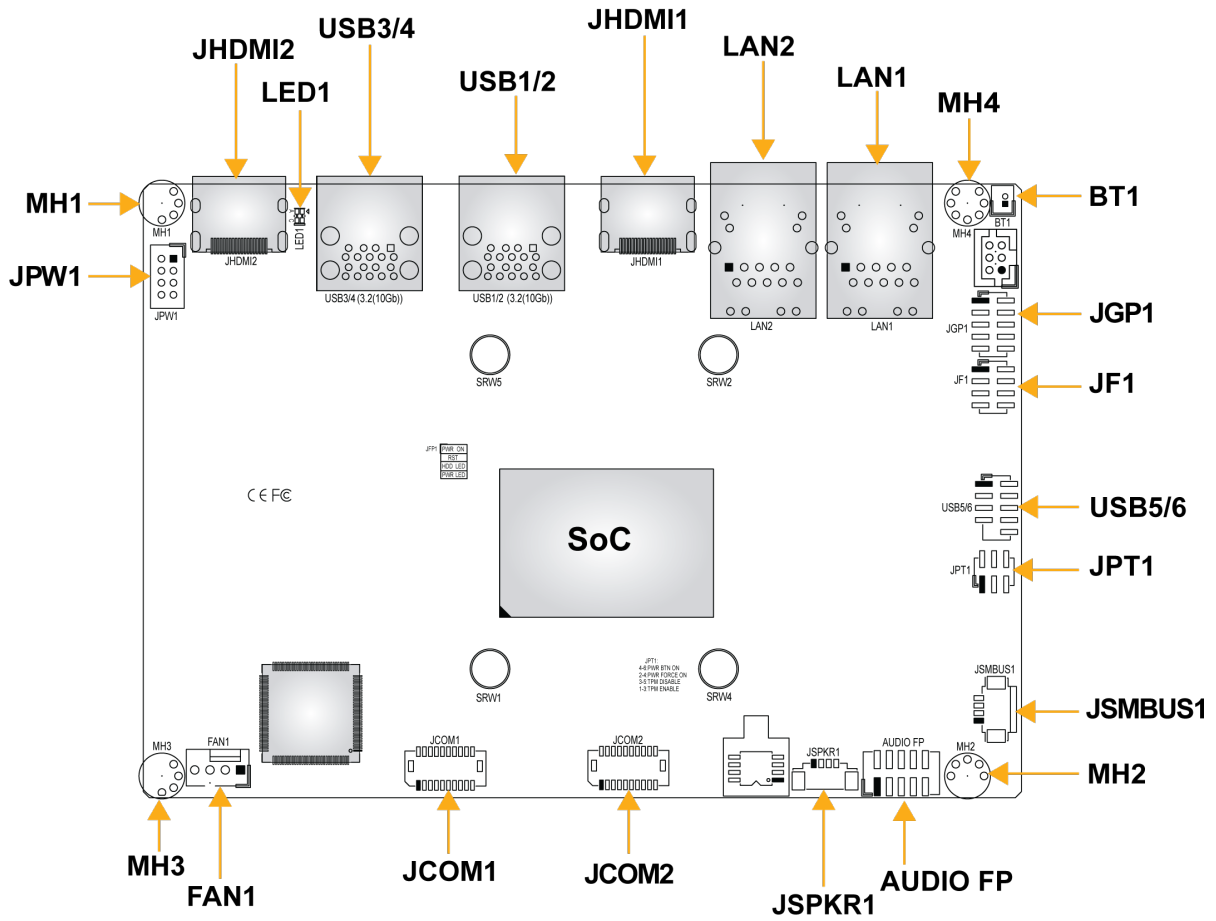


Figure 1-7. A4SAN-H/E-WOHS Motherboard Top Layout

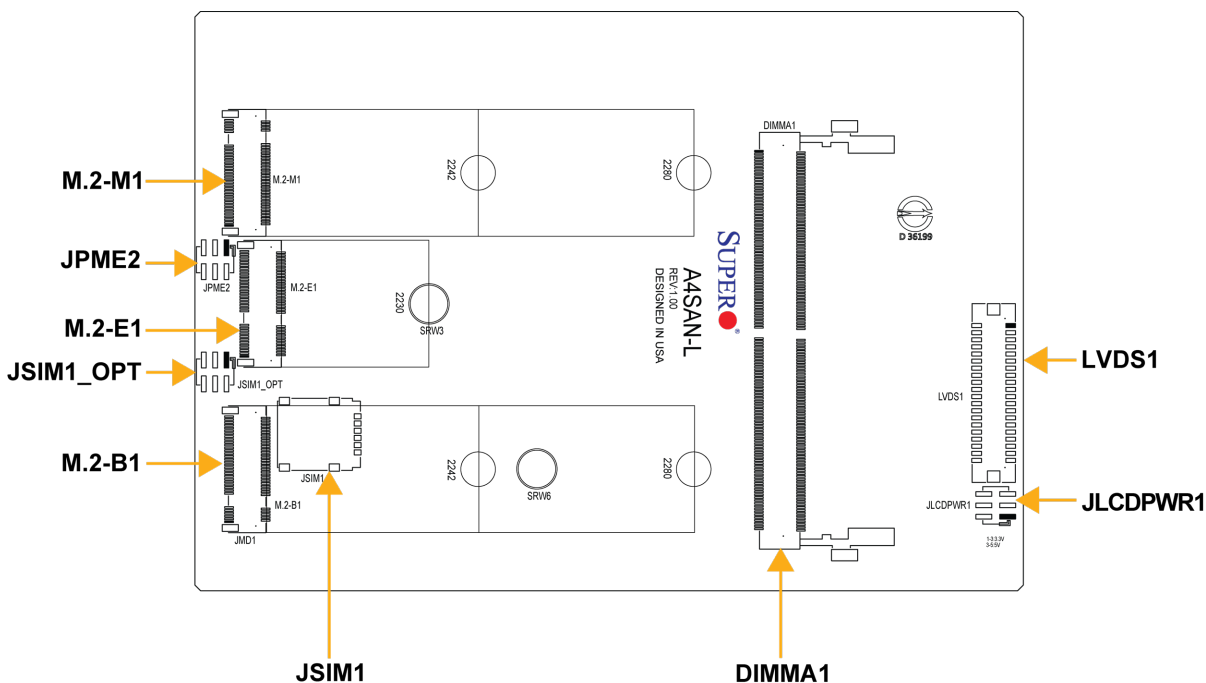


Figure 1-8. A4SAN-H/E-WOHS Motherboard Bottom Layout

Notes:

- For detailed information on jumpers, connectors, and LED indicators, see ["Maintenance and Component Installation"](#) on page 29.
- "■" indicates the location of pin 1.
- "MH" indicates the location of a mounting hole.
- Components not documented are for internal testing purposes only.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer. To avoid possible explosion, do not install the onboard battery upside down.

Quick Reference Table

Jumper	Description	Default Settings
JLCDPWR1	LVDS Panel VCC Power 3.3 V/5 V	Pins 1–3 (3.3 V)
JPME2	CMOS Clear ME Manufacturing Mode	Pins 1–3 (Normal) Pins 4–6 (Normal)
JPT1	Onboard TPM 2.0 Enable/Disable Force Power On	Pins 1–3 (Enabled) Pins 2–4 (Force Power On)

Jumper	Description	Default Settings
JSIM1_OPT	USB or PCIe Interface Optional SIM Detect M.2 B-Key Storage LED	Pins 1–3 Short (USB) Pins 2–4 Short (Low Active) Pins 5–6 Enable

Connector	Description
AUDIO FP	Front Panel Audio Header (Line-out, Mic-in)
BT1	CMOS Battery Header
FAN1	Fan Header
JCOM1, JCOM2	JCOM1: COM1/2 header for two RS232/422/485 JCOM2: COM3/4 header for two RS232
JHDMI1, JHDMI2	HDMI 1.4b Ports
JF1	Front Control Panel Header
JGP1	General Purpose I/O Header
JLAN1, JLAN2	2.5G LAN Ports
JPW1	9 V to 36 V Power-in Connector
JSIM1	Nano SIM Card Slot
JSMBUS1	SMBus/ I ² C Header
JSPKR1	Speaker-out with 3 W Amplifier
LVDS1	Low Voltage Differential Signaling Connector (LVDS)
M.2-B1	M.2 B-Key 2242/2280/3052 Slot with Nano SIM and 5G support (PCIe 3.0 x1/SATA 3.0/USB 3.0/USB 2.0)
M.2-E1	M.2 E-Key 2230 Slot (PCIe 3.0 x1/USB 2.0/CNVi)
M.2-M1	M.2 M-Key 2242/2280 Slot (SATA 3.0/PCIe 3.0 x1)
USB1/2, USB3/4	USB 3.2 (10 Gb/s) Type-A ports on the rear I/O ports
USB5/6	USB 2.0 Header

LED	Description	Status
LED1	Power LED	Green: System on Red: S5 or main power fail Off: System off

Chapter 2:

Server Installation

This chapter provides advice and instructions for mounting your Embedded Box PC in a server rack. If your Embedded Box PC is not already fully integrated with processors, system memory, etc., refer to "[Maintenance and Component Installation](#)" on [page 29](#) for details on installing those specific components.

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

2.1 Unpacking the System	24
2.2 Preparing for Setup	25
Choosing a Setup Location	25
Rack Precautions	25
System Precautions	25
Rack Mounting Considerations	26
Installing Mounting Brackets	27

2.1 Unpacking the System

Inspect the box the SYS-E101-14AM-H/E Embedded Box PC was shipped in and note if it was damaged in any way. If any equipment appears damaged, file a damage claim with the carrier who delivered it.

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

2.2 Preparing for Setup

The box in which the SYS-E101-14AM-H/E Embedded Box PC was shipped should include the rackmount hardware needed to install it into the rack. Read this section in its entirety before you begin the installation.

Choosing a Setup Location

- The Embedded Box PC should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave enough clearance in front of the rack so that you can open the front door completely (~25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.
- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).
- This product is not suitable for use with visual display workplace devices according to §2 of the German Ordinance for Work with Visual Display Units.

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.
- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a server or other component from the rack.
- You should extend only one server or component at a time. Extending two or more simultaneously may cause the rack to become unstable.

System Precautions

- Review the electrical and general safety precautions in [Standardized Warning Statements for AC Systems](#).
- Determine the placement of each component in the rack before you install the rails.
- Install the heaviest server components at the bottom of the rack first and then work your way up.

- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.
- Allow any drives and power supply modules to cool before touching them.
- When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

Rack Mounting Considerations



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



Avertissement!

Danger d'instabilité. Le rack peut basculer et provoquer des blessures corporelles graves.

Avant d'étendre le rack en position d'installation, lire les instructions d'installation. Ne pas charger l'équipement monté sur rail de glissière en position d'installation. Ne pas laisser l'équipement monté sur rail de glissière en position d'installation.

Important: To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- If this unit is the only unit in the rack, it should be mounted at the bottom of the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top, placing the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
- Slide rail mounted equipment is not to be used as a shelf or a workspace.
- Do not pick up the server with the front handles. They are designed to pull the system from a rack only.

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the room's ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

Installing Mounting Brackets

The CSE-E101-IA3chassis can be installed in an embedded environment with the mounting brackets and the mounting screws.

1. Turn the chassis over to the bottom side.
2. Decide whether the bracket mounting holes will face outwards or inwards.
3. The mounting bracket supports two screw alignments. Decide which screw holes will be used.
4. Align the screw holes on the mounting bracket with the screw holes on the chassis.
5. Install two screws.
6. Repeat on the other mounting bracket.

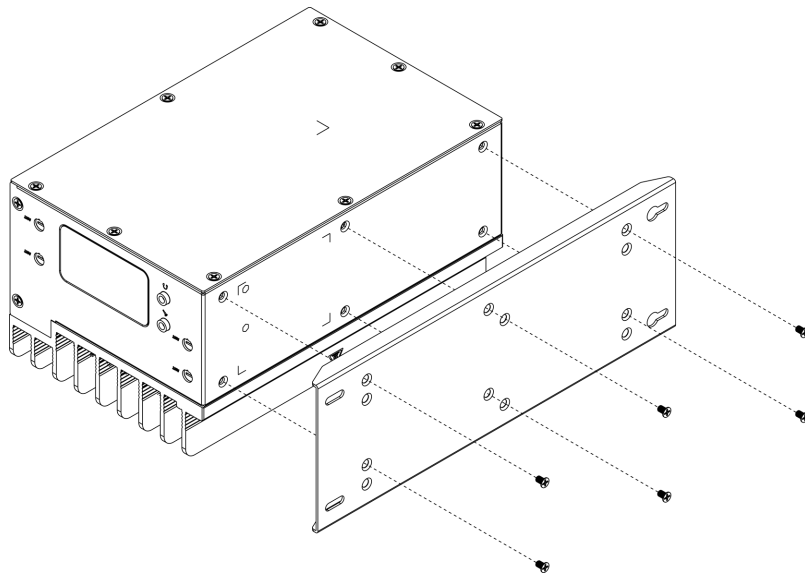


Figure 2-1. Installing Outward-Facing Mounting Brackets (Bottom View)

Chapter 3:

Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components for the SYS-E101-14AM-H/E Embedded Box PC. To prevent compatibility issues, only use components that match the specifications and/or part numbers given.

Installation or replacement of most components require that power first be removed from the system. Follow the procedures given in each section.

3.1 Removing Power	30
3.2 Accessing the System	31
3.3 Static-Sensitive Devices	32
Precautions	32
3.4 Processor and Heatsink Installation	33
3.5 Memory Support and Installation	34
Memory Support	34
SO-DIMM Installation	34
SO-DIMM Removal	36
3.6 Motherboard Battery Removal and Installation	37
Battery Removal	37
Proper Battery Disposal	37
Battery Installation	37

3.1 Removing Power

Before performing some setup or maintenance tasks, use the following procedure to ensure that power has been removed from the SYS-E101-14AM-H/E Embedded Box PC. This step is necessary when removing or installing non hot-swap components or when replacing a non-redundant power supply.

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

3.2 Accessing the System

The CSE-E101-IA3 features a removable bottom cover to access the inside of the chassis.

Removing the Bottom Cover

1. Remove power from the system as described in Section 3.1.
2. Remove the eight screws that hold the cover in place.
3. Lift the cover up and off the chassis.

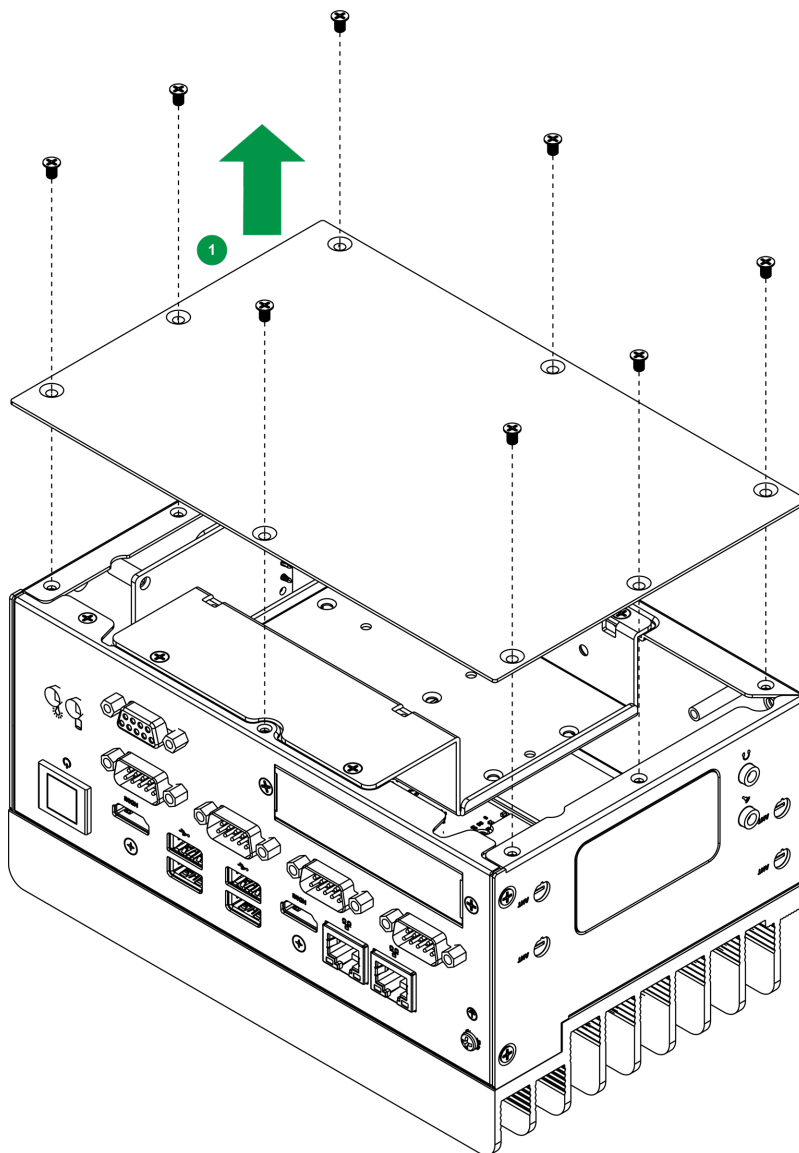


Figure 3-1. Removing the Chassis Cover

3.3 Static-Sensitive Devices

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

Precautions

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

3.4 Processor and Heatsink Installation

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

Notes:

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

3.5 Memory Support and Installation

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

Note: Check the Supermicro website for recommended memory modules.

Memory Support

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

The A4SAN-H/E-WOHS motherboard supports up to 16 GB of Non-ECC DDR5 SO-DIMM memory with speeds of up to 4800 MT/s in a single slot.

SO-DIMM Installation

1. Position the SO-DIMM module's bottom key so it aligns with the receptive point on the slot.

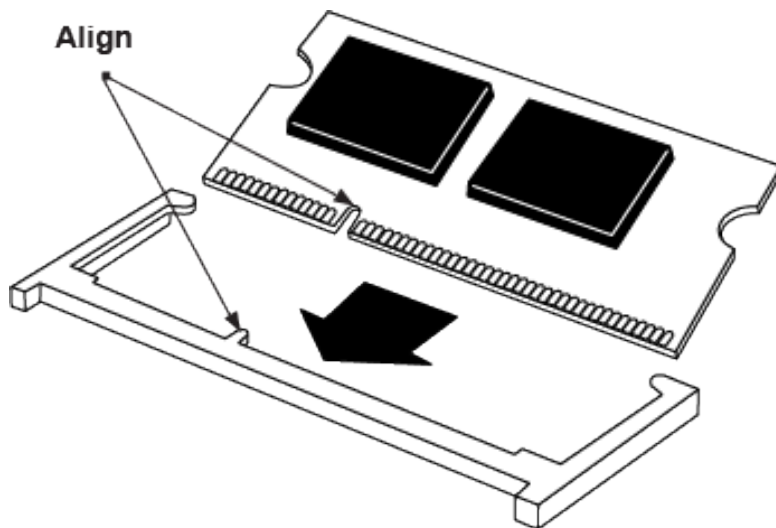


Figure 3-2. Inserting the SO-DIMM

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

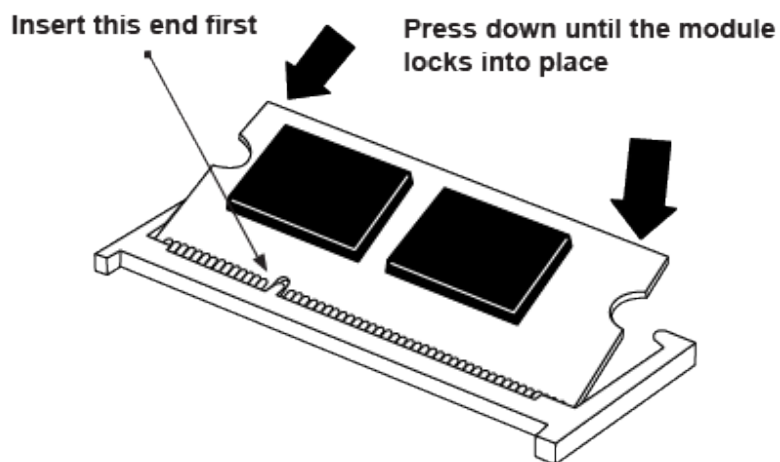


Figure 3-3. Inserting at a 45 Degree Angle

3. The side clips will automatically secure the SO-DIMM module, locking it into place.

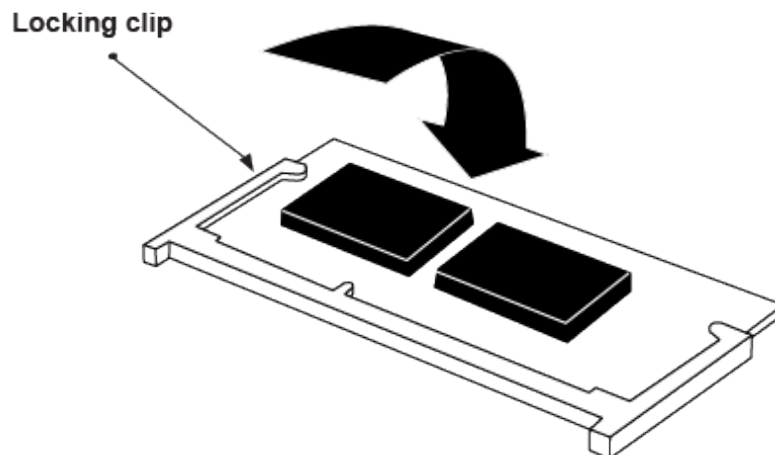


Figure 3-4. Securing the SO-DIMM

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference"](#) on page 17.

Important: To avoid causing any damage to the memory module or the DIMM socket, do not use excessive force when pressing the release tabs on the ends of the DIMM socket. Handle memory modules with care. To avoid ESD-related damage to your memory modules or components, carefully follow all the instructions given in ["Static-Sensitive Devices"](#) on page 32.

SO-DIMM Removal

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

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

3.6 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.

Battery Installation

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

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.

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.

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

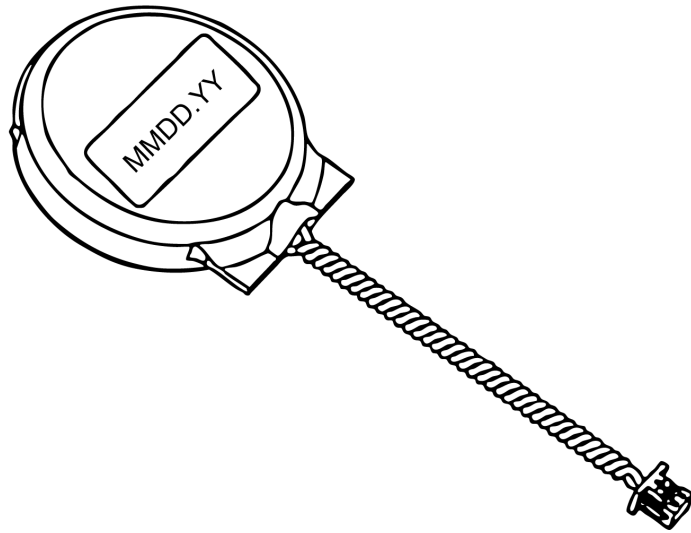


Figure 3-5. Battery

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 A4SAN-H/E-WOHS motherboard manual.

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

Main Power Connector	40
4.1 Headers and Connections	41
CMOS Battery	41
COM Headers	41
Fan Header	43
Front Panel Audio Header	44
General Purpose I/O Header	44
Low Voltage Differential Signaling	45
M.2 Slots	46
Nano SIM Card Slot	50
SMBus Header	51
Speaker Header	51
USB Header	51
USB 3.2 Ports	52
Front Control Panel Header	52
Power Button	53
Reset Button	53
HDD LED	53
Power LED	54
4.2 Rear I/O Ports	55
4.3 Jumper Settings	56
LVDS Panel VCC Power	56

ME Manufacturing Mode	57
SIM Detect Option	57
Onboard TPM Enable/Disable	58
4.4 LED Indicators	59
Onboard Power LED	59

Main Power Connector

JPW1 is the 9 V–36 V DC power connector that provides power to the motherboard.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 17.

8-pin 9 V–36 V Power	
Pin Definitions: Eight Total	
Pin#	Definition
1–4	+9 V–36 V
5–8	GND

4.1 Headers and Connections

For information about the headers on the A4SAN-H/E-WOHS motherboard, 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 A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

CMOS Battery	
Pin Definitions: Two Total	
Pin#	Description
1	P3V_BATTERY
2	GND

COM Headers

There are four COM ports: JCOM1 with support for two RS232/422/485 connections and JCOM2 with support for two RS232 connections. The manufacturer of the header is ACES Electronics, MPN 50419-02001. The mapping plug header for cable assembly is 50420-020KHK0-001. See the pin definition tables of the onboard headers and D-SUB of CBL-CDAT-0665. Refer to the corresponding table based on design requirements.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

COM Port Pin Definitions (JCOM1, JCOM2) Pin Definitions: 19 Total			
Pin#	RS232	RS422/485 Full Duplex	RS485 Half Duplex
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_RI1		
9	GND		
10	No Connection		
11	SP_DCD2	TX-2	Data-2
12	SP_DSR2		
13	SP_RXD2	TX+2	Data+2
14	SP_RTS2		
15	SP_TXD2	RX+2	
16	SP_CTS2		
17	SP_DTR2	RX-2	
18	SP_RI2		
19	SP_GND		

COM Port Pin Definitions (COM3/COM4) Pin Definitions: 20 Total	
Pin#	RS232
1	SP_DCD3
2	SP_DSR3
3	SP_RXD3
4	SP_RTS3
5	SP_TXD3
6	SP_CTS3
7	SP_DTR3
8	SP_RI3
9	GND
10	No Connection
11	SP_DCD4
12	SP_DSR4
13	SP_RXD4
14	SP_RTS4
15	SP_TXD4
16	SP_CTS4
17	SP_DTR4
18	SP_RI4
19	GND
20	No Connection

COM Port Pin Definitions (D-SUB from CBL-DAT-0665) Pin Definitions: 20 Total			
Pin#	RS232	RS422/485 Full Duplex	RS485 Half Duplex
1	SP_DCD1	TX-1	Data-1
2	SP_RXD1	TX+1	Data+1
3	SP_TXD1	RX+1	
4	SP_DTR1	RX-1	
5	GND		
6	SP_DSR1		
7	SP_RT1		
8	SP_CTS1		
9	SP_RI1		
10	No Connection		
11	SP_DCD2	TX-2	Data-2
12	SP_RXD2	TX+2	Data+2
13	SP_TXD2	RX+2	
14	SP_DTR2	RX-2	
15	GND		
16	SP_DSR2		
17	SP_RTS2		
18	SP_CTS2		
19	SP_RI2		
20	No Connection		

COM Port Pin Definitions (D-SUB from CBL-CDAT- 0665) Pin Definitions: 20 Total	
Pin#	RS232
1	SP_DCD3
2	SP_RXD3
3	SP_TXD3
4	SP_DTR3
5	GND
6	SP_DSR3
7	SP_RTS3
8	SP_CTS3
9	SP_RI3
10	No Connection
11	SP_DCD4
12	SP_RXD4
13	SP_TXD4
14	SP_DTR4
15	GND
16	SP_DSR4
17	SP_RTS4
18	SP_CTS4
19	SP_RI4
20	No Connection

Fan Header

The A4SAN-H-WOHS motherboard has one 4-pin fan header. Although pins 1-3 of the fan headers are backward compatible with the traditional 3-pin fans, we recommend you use 4-pin fans to take advantage of the fan speed control via Pulse Width Modulation through the thermal management. This allows the fan speeds to be automatically adjusted based on the motherboard temperature.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

4-pin Fan Header	
Pin Definitions: Four Total	
Pin#	Definition
1	GND (Black)
2	+12 V (Red)
3	Tachometer
4	PWM Control

Front Panel Audio Header

A 10-pin audio header located at AUDIO FP 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 A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

Front Panel Audio Header			
Pin Definitions: 10 Total			
Pin#	Definition	Pin#	Definition
1	MIC_Left	2	AUDIO_GND
3	MIC_Right	4	AUDIO_Detect
5	LINE2_Right	6	MIC2_JD
7	Front AUDIO_JD	8	NC
9	LINE2_Left	10	LINE2_JD

General Purpose I/O Header

JGP1 is a general purpose I/O expander on a pin header via the SMBus. Each pin can be configured to be an input pin or output pin in 2 mm pitch.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

General Purpose Header			
Pin Definitions: 10 Total			
Pin#	Definition	Pin#	Definition
1	3.3 V	2	GND
3	GP0	4	GP1
5	GP2	6	GP3
7	GP4	8	GP5
9	GP6	10	GP7

Low Voltage Differential Signaling

LVDS1 on the bottom side of the motherboard is the LVDS connector. Low-voltage differential signaling (LVDS) is a high-speed digital interface that operates at low power. It is a type of connection that is mostly used with monitors.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

LVDS Connector			
Pin Definitions: 40 Total			
Pin#	Description	Pin#	Description
1	12 V	2	12 V
3	12 V	4	12 V
5	12 V	6	GND
7	3.3/5 V	8	GND
9	LCDVCC	10	LCDVCC
11	DDC CLK	12	DDC DATA
13	BKLTCTL	14	PVCCEN
15	BKLTEN	16	GND
17	LVDSA D0N	18	LVDSA D0P
19	LVDSA D1N	20	LVDSA D1P
21	LVDSA D2N	22	LVDSA D2P
23	LVDSA CLKN	24	LVDSA CLKP
25	LVDSA D3N	26	LVDSA D3P
27	GND	28	GND

LVDS Connector			
Pin Definitions: 40 Total			
Pin#	Description	Pin#	Description
29	LVDSB D0N	30	LVDSB D0P
31	LVDSB D1N	32	LVDSB D1P
33	LVDSB D2N	34	LVDSB D2P
35	LVDSB CLKN	36	LVDSB CLKP
37	LVDSB D3N	38	LVDSB D3P
39	GND	40	GND

M.2 Slots

The motherboard has three M.2 slots (JMD1, JMD2, JMD3). 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 M-Key slot on the motherboard supports SATA 3.0/PCIe 3.0 Gen 3 x1 devices in a 2242/2280 form factor. The M.2 B-Key slot supports Nano SIM/5G/PCIe x1/SATA 3.0/USB 3.0/USB 2.0 devices in a 2242/2280/3052 form factor. The M.2 E-Key slot supports PCIe x1/ USB 2.0/CNVi devices in a 2230 form factor. For B-Key 3052 support, use an MCP-410-00021-0N bracket.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

M.2 B-Key			
Pin Definitions: 75 Total			
Pin#	Definition	Pin#	Definition
1	No Connection	2	+3.3 VSB
3	GND	4	+3.3 VSB
5	GND	6	FULL_CARD_POWER_OFF# (PU to P1V8SB only)
7	USB_D+	8	W_DISABLE1#(PU to +3.3 VSB only)
9	USB_D-	10	LED_N
11	GND	12	KEY B
13	KEY B	14	KEY B
15	KEY B	16	KEY B
17	KEY B	18	KEY B

M.2 B-Key			
Pin Definitions: 75 Total			
Pin#	Definition	Pin#	Definition
19	KEY B	20	PCIE_DIS
21	No Connection	22	VBUS_SENSE
23	WAKE_ON_WWAN#(PU to +1.8 VSB)	24	No Connection
25	No Connection	26	W_DISABLE2#(PU to +1.8 VSB only)
27	GND	28	No Connection
29	USB3.0-Rx-	30	UIM-RESET
31	USB3.0-Rx+	32	UIM-CLK
33	GND	34	UIM-DATA
35	USB3.0-Tx-	36	UIM-PWR
37	USB3.0-Tx+	38	No Connection
39	GND	40	No Connection
41	SATA-B+/PERn0	42	No Connection
43	SATA-B-/PERp0	44	Alert# (PU to +1.8 VSB only)
45	GND	46	No Connection
47	SATA-A-/PETn0	48	No Connection
49	SATA-A+/PETp0	50	PERST#
51	GND	52	CLKRED#
53	REFCLKn	54	PEWAKE#
55	REFCLKp	56	No Connection
57	GND	58	No Connection
59	No Connection	60	CNV_PA_BLANKING
61	No Connection	62	CNV_MFUART2_TXD
63	No Connection	64	CNV_MFUART2_RXD
65	No Connection	66	SIM_DETECT
67	RESET#	68	No Connection
69	No Connection	70	+3.3 VSB
71	GND	72	+3.3 VSB
73	GND	74	+3.3 VSB
75	No Connection		

M.2 E-Key			
Pin Definitions: 75 Total			
Pin#	Definition	Pin#	Definition
1	GND	2	+3.3 VSB
3	USB_D+	4	+3.3 VSB
5	USB_D-	6	No Connection
7	GND	8	CNV_BT_I2C_SCLK
9	CNV_WR_LANE1_DN	10	CNV_RF_RESET_N
11	CNV_WR_LANE1_DP	12	CNV_BT_I2S_SDO
13	GND	14	MODEM_CLKREQ
15	CNV_WR_LANE0_DN	16	No Connection
17	CNV_WR_LANE0_DP	18	GND
19	GND	20	UART_BT_WAKE_N
21	CNV_WR_CLK_DN	22	CNV_BRI_RSP
23	CNV_WR_CLK_DP	24	KEY E
25	KEY E	26	KEY E
27	KEY E	28	KEY E
29	KEY E	30	KEY E
31	KEY E	32	CNV_RGI_DT
33	GND	34	CNV_RGI_RSP
35	PETp0	36	CNV_BRI_DT
37	PETn0	38	CLINK_RST_N
39	GND	40	CLINK_DATA
41	PERp0	42	CLINK_CLK
43	PERn0	44	CNV_PA_BLANKING
45	GND	46	CNV_MFUART2_TXD
47	REFCLKp0	48	CNV_MFUART2_RXD
49	REFCLKn0	50	SUSCLK
51	GND	52	PERST0#
53	CLKREQ0#	54	BT_DISABLE2#
55	PEWAKE0#	56	WIFI_DISABLE2#

M.2 E-Key			
Pin Definitions: 75 Total			
Pin#	Definition	Pin#	Definition
57	GND	58	No Connection
59	CNV_WT_LANE1_DN	60	No Connection
61	CNV_WT_LANE1_DP	62	No Connection
63	GND	64	No Connection
65	CNV_WT_LANE0_DN	66	No Connection
67	CNV_WT_LANE0_DP	68	No Connection
69	GND	70	No Connection
71	CNV_WT_CLK_DN	72	+3.3 VSB
73	CNV_WT_CLK_DP	74	+3.3 VSB
75	GND		

M.2 M-Key			
Pin Definitions: 75 Total			
Pin#	Definition	Pin#	Definition
1	GND	2	P3V3
3	GND	4	P3V3
5	No Connection	6	No Connection
7	No Connection	8	No Connection
9	GND	10	LED_N
11	No Connection	12	P3V3
13	No Connection	14	P3V3
15	GND	16	P3V3
17	No Connection	18	P3V3
19	No Connection	20	No Connection
21	GND	22	No Connection
23	No Connection	24	No Connection
25	No Connection	26	No Connection
27	GND	28	No Connection
29	No Connection	30	No Connection

M.2 M-Key			
Pin Definitions: 75 Total			
Pin#	Definition	Pin#	Definition
31	No Connection	32	No Connection
33	GND	34	No Connection
35	No Connection	36	No Connection
37	No Connection	38	No Connection
39	GND	40	No Connection
41	SATA-B+/PERn0	42	No Connection
43	SATA-B-/PERp0	44	No Connection
45	GND	46	No Connection
47	SATA-A-/PETn0	48	No Connection
49	SATA-A+/PETp0	50	PERST#
51	GND	52	CLKREQ#
53	REFCLKn	54	No Connection
55	REFCLKp	56	No Connection
57	GND	58	No Connection
59	KEY M	60	KEY M
61	KEY M	62	KEY M
63	KEY M	64	KEY M
65	KEY M	66	KEY M
67	No Connection	68	SUSCLK
69	PEDET	70	P3V3
71	GND	72	P3V3
73	GND	74	P3V3
75	GND		

Nano SIM Card Slot

The JSIM1 slot supports a Nano SIM card.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

SMBus Header

A System Management Bus header for additional slave devices or sensors is located at JSMBUS1.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

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

Speaker Header

The speaker-out with a 3 W amplifier (JSPKR1) is used to amplify low-power electronic audio signals to a level that is high enough for current driving loudspeakers and headphones.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

Speaker Header	
Pin Definitions: Four Total	
Pin#	Definition
1	SPEAKER_LN_OUT
2	SPEAKER_LP_OUT
3	SPEAKER_RN_OUT
4	SPEAKER_RP_OUT

USB Header

The motherboard has one front-accessible USB 2.0 header (USB5/6). The onboard header provides front-side USB access with a cable.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

(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	No Connection

USB 3.2 Ports

There are four USB 3.2 (USB1/2, USB3/4) ports on the rear I/O ports.

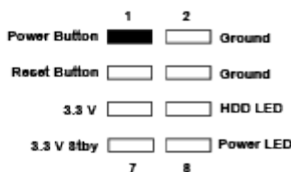
For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

USB1/2, USB3/4 (USB 3.2 Gen 1)			
Pin Definitions: 18 Total			
Pin#	Definition	Pin#	Definition
A1	VBUS	B1	VBUS
A2	D-	B2	D-
A3	D+	B3	D+
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+

Front Control Panel Header

JF1 on the A4SAN-H/E-WOHS 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 A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).



Power Button

The Power Button connection is located on pins 1 and 2 of JF1 on the A4SAN-H/E-WOHS 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.

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

Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1 on the A4SAN-H/E-WOHS motherboard. Attach it to a hardware reset switch on the computer case to reset the system.

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

HDD LED

The HDD LED connection is located on pins 5 and 6 of JF1 on the A4SAN-H/E-WOHS motherboard. Refer to the table below for pin definitions.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

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

Power LED

The Power LED connection is located at pins 7 and 8 of JF1. Refer to the table below for pin definitions.

Power LED	
Pin Definitions (JF1)	
Pin#	Definition
7	3.3 V Stby
8	Power LED

4.2 Rear I/O Ports

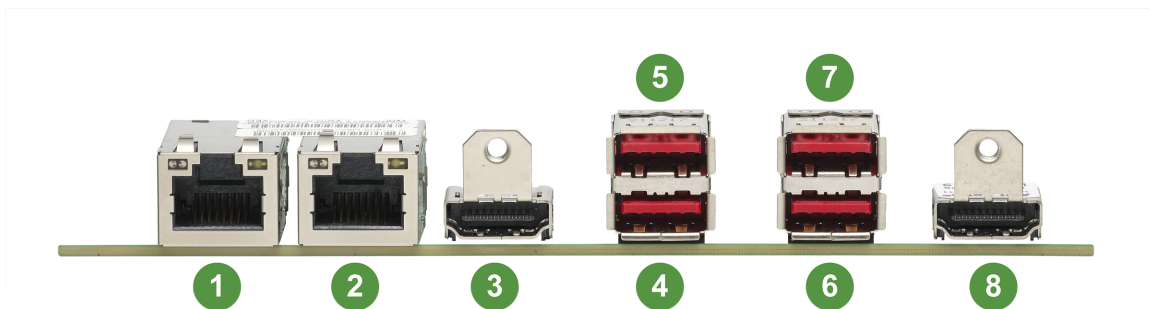


Figure 4-1. Rear I/O Ports

Rear I/O Ports			
#	Description	#	Description
1	LAN1	5	USB2 (3.2)
2	LAN2	6	USB3 (3.2)
3	JHDMI1	7	USB4 (3.2)
4	USB1 (3.2)	8	JHDMI2

4.3 Jumper Settings

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

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

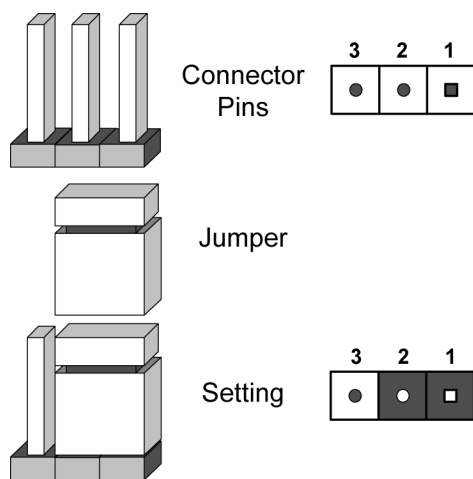


Figure 4-2. Jumping Connector Pins

LVDS Panel VCC Power

Use the JCLDPWR1 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.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference"](#) on page 17.

LVDS Voltage Selection	
Jumper Settings	
Jumper Setting	Definition
Pins 1–3	3.3 V (Default)
Pins 3–5	5 V

ME Manufacturing Mode

Close pins 2–4 of jumper JPME2 to bypass SPI flash security and force the system to operate in the manufacturing mode, which will allow the user to flash the system firmware from a host server for system setting modifications. Refer to the table below for jumper settings. The default setting is Normal.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 17.

ME Manufacturing Mode	
Jumper Settings	
Jumper Setting	Definition
Pins 2–4	Manufacturing Mode
Pins 4–6	Normal (Default)

SIM Detect Option

Pins 2 and 4 on the JSIM1_OPT jumper are for SIM card detection. Since each SIM card vendor sets a different condition for detection, check with the vendor for the correct detection type and set the JSIM1_OPT jumper before installing the SIM card. Pins 1 and 3 on the JSIM1_OPT jumper are for 5G/LTE USB/PCIe module detection. Check with the vendor for the correct detection type and set the JSIM1_OPT jumper before installing the module. Pins 5 and 6 on the JSIM1_OPT jumper are for enabling or disabling M.2 B-Key storage module LED signal to the front panel HDD LED. Disconnect pins 5 and 6 to disable the LED signal.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under "[Motherboard Quick Reference](#)" on page 17.

SIM Detect Option	
Jumper Settings	
Jumper Settings	Definition
Pins 1–3	USB (Default)
Pins 1–3 Open	PCIe Low Active
Pins 2–4	SIM Detect Low Active (Default)
Pins 2–4 Open	SIM Detect High Active
Pins 5–6	M.2 B-Key Storage LED Enabled (Default)
Pins 5–6 Open	M.2 B-Key Storage LED Disabled

Onboard TPM Enable/Disable

The JPT1 jumper has two functions. Use it to enable or disable the onboard TPM. It can also be used as a force power on feature.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

TPM Enable/Disable Jumper Settings		Force Power On Jumper Settings	
Jumper Setting	Definition	Jumper Setting	Definition
1-3	Enabled (Default)	2-4	Force Power On
3-5	Disabled	4-6	Power On by power button

4.4 LED Indicators

For information about the LED indicators on the SYS-E101-14AM-H/E Embedded Box PC, refer to the following content.

Onboard Power LED

The Onboard Power LED is located at LED1 on the A4SAN-H/E-WOHS motherboard. When this LED is on, the system is on. Be sure to turn off the system and unplug the power cord before removing or installing components.

For a detailed diagram of the A4SAN-H/E-WOHS motherboard, see the layout under ["Motherboard Quick Reference" on page 17](#).

Onboard Power LED Indicator	
LED Color	Definition
Green	System On
Red	S5 or Main Power Fail
Off	System Off (power cable not connected)

Chapter 5:

Software

After the SYS-E101-14AM-H/E Embedded Box PC has been installed, you can install the Operating System (OS), configure RAID settings, and install the drivers.

5.1 Microsoft Windows OS Installation	61
Installing the OS	61
5.2 BMC	63
BMC ADMIN User Password	63

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, or the BMC KVM console.
2. Retrieve the proper drivers. Go to the Supermicro web page for your motherboard and click on "Download the Latest Drivers and Utilities," select the proper driver, and copy it to a USB flash drive.
3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing <F11> during the system bootup.

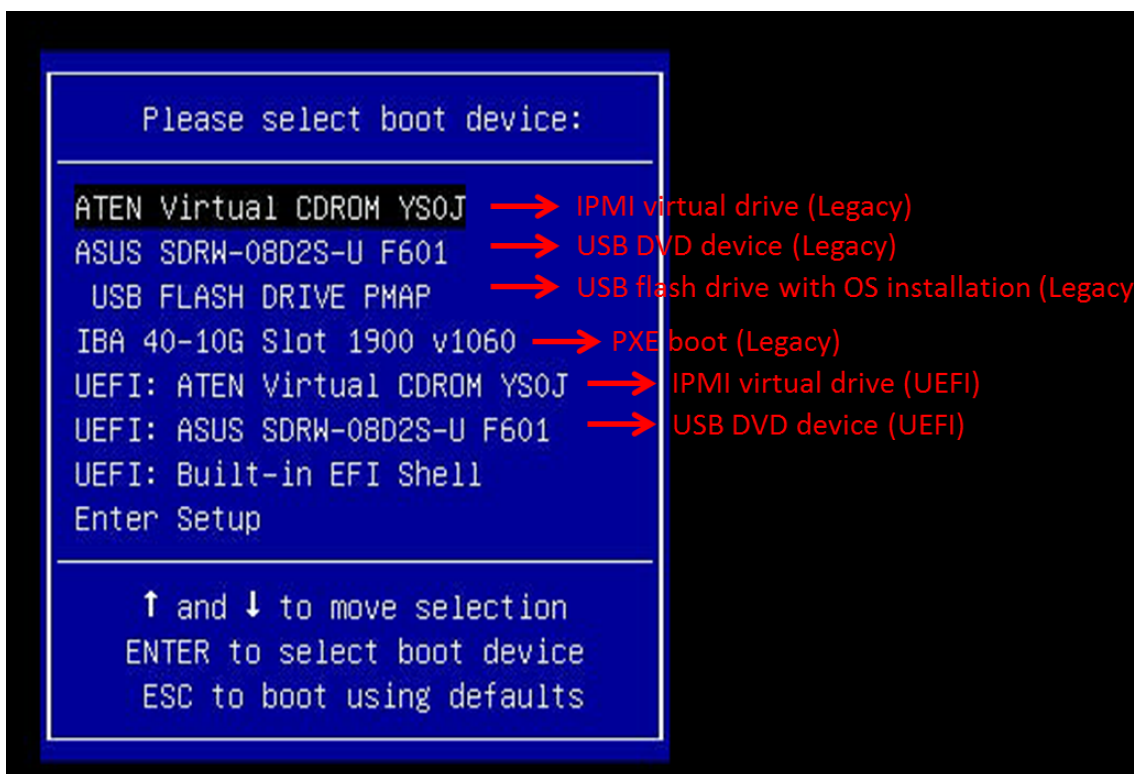


Figure 5-1. Selecting the Boot Device

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

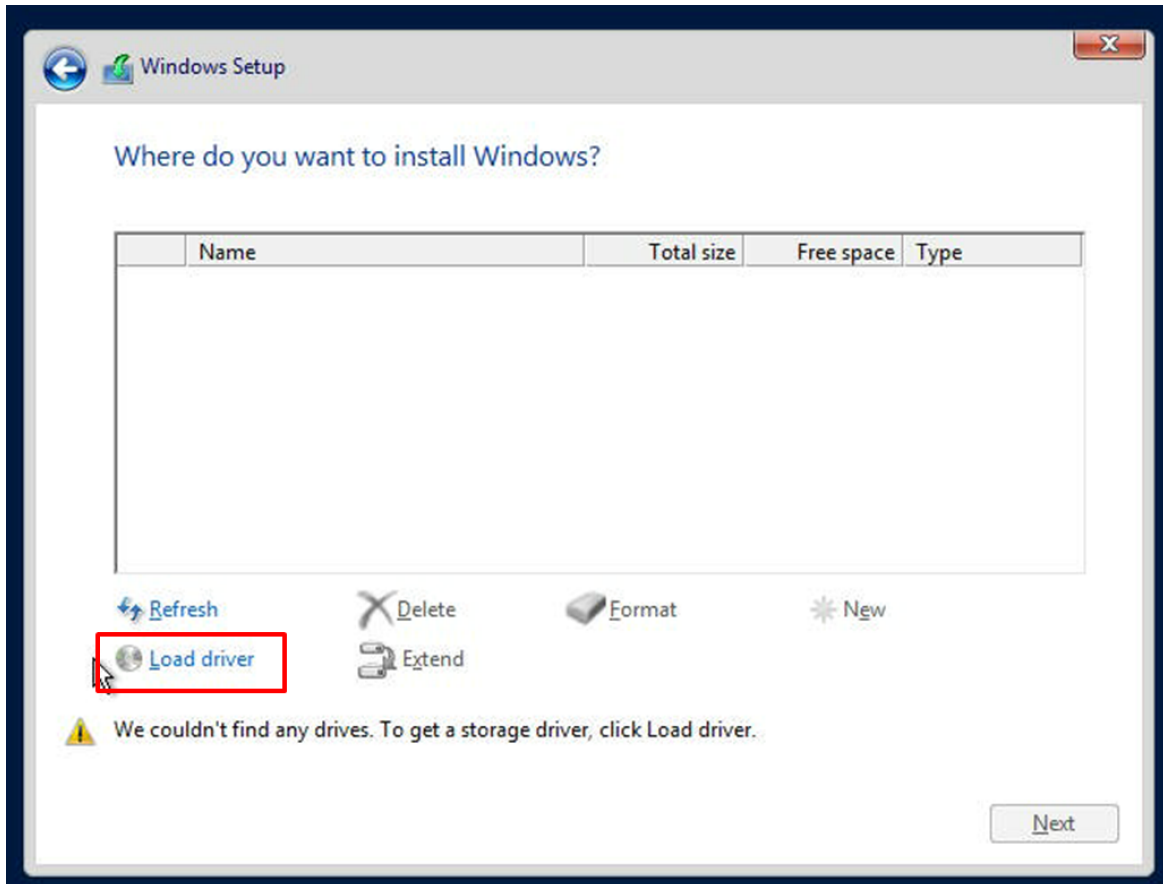


Figure 5-2. Loading the Driver Link

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

5. Once all devices are specified, continue with the installation.
6. After the Windows OS installation has completed, the system will automatically reboot multiple times for system updates.

5.2 BMC

The A4SAN-H/E-WOHS motherboard provides remote access, monitoring, and management through the baseboard management controller (BMC) and other management controllers distributed among different system modules. There are several BIOS settings that are related to BMC. For general documentation and information on BMC, visit our website at the following page:

<https://www.supermicro.com/en/solutions/management-software/bmc-resources>

BMC ADMIN User Password

For security, each system is assigned a unique default BMC password for the ADMIN user. The password can be found on a sticker on the motherboard and a sticker on the chassis, for Supermicro chassis. The sticker also displays the BMC MAC address. If necessary, the password can be reset using the Supermicro IPMICFG tool.



Figure 5-3. BMC Password Label

Chapter 6:

Troubleshooting and Support

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

6.1 Online Resources	65
6.2 Baseboard Management Controller (BMC)	66
6.3 Troubleshooting Procedures	67
Before Power On	67
No Power	67
No Video	67
System Boot Failure	67
Memory Errors	68
Losing the System's Setup Configuration	68
If the System Becomes Unstable	68
6.4 CMOS Clear	70
6.5 Motherboard Battery	71
6.6 Where to Get Replacement Components	72
6.7 Technical Support Procedures	73
Returning Merchandise for Service	73
6.8 Feedback	75

6.1 Online Resources

Website

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/BMC, drivers, etc.), FAQs, RMA, warranty, and other service extensions.

Direct Links for the SYS-E101-14AM-H/E System

- [SYS-E101-14AM-H product specifications page](#)
- [SYS-E101-14AM-E product specifications page](#)
- Motherboard pages for links to the Quick Reference Guide, User Manual, validated storage drives, etc.:
- SYS-E101-14AM-H: A4SAN-H-WOHS [product specification page](#)
- SYS-E101-14AM-E: A4SAN-E-WOHS [product specification page](#)

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 Baseboard Management Controller (BMC)

The SYS-E101-14AM-H/E Embedded Box PC supports the Baseboard Management Controller (BMC). BMC is used to provide remote access, monitoring, and management. There are several BIOS settings that are related to BMC.

For general documentation and information on BMC, visit our website at the following page:

<https://www.supermicro.com/en/solutions/management-software/bmc-resources>

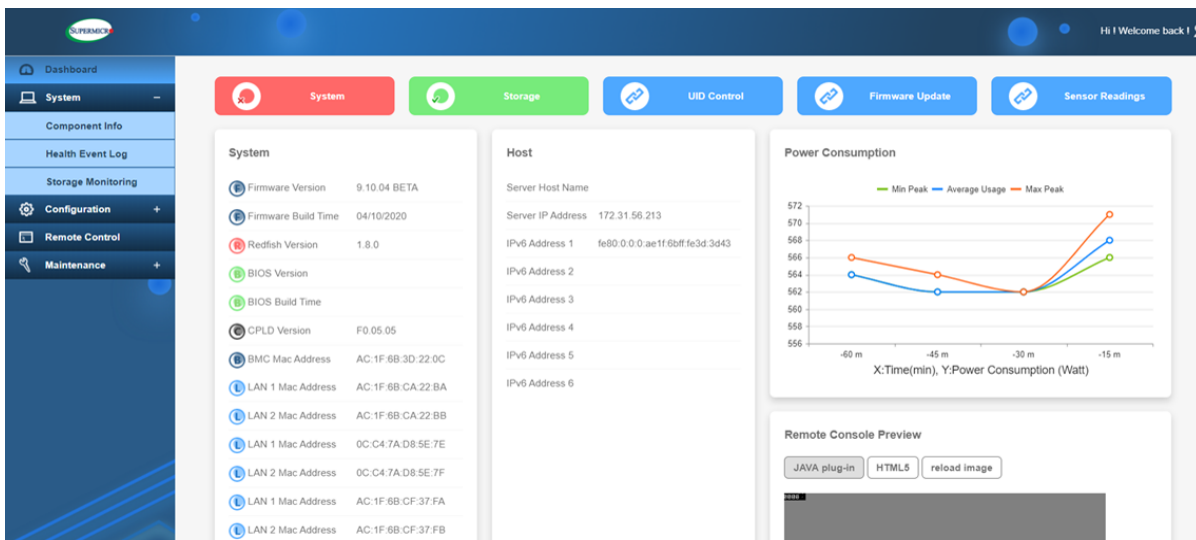


Figure 6-1. BMC Dashboard

6.3 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 and the BMC Heartbeat LED are on, and system fans are spinning.

2. Turn on the system with only one DIMM installed. If the system boots, check for bad DIMMs or slots by following the Memory Errors Troubleshooting procedure in this chapter.

Memory Errors

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

1. Make sure that the memory modules are compatible with the system and are properly installed. See "[Maintenance and Component Installation](#)" on [page 29](#) for installation instructions. (For memory compatibility, refer to the "Tested Memory List" link on the motherboard's product page to see a list of supported memory.)
2. Check if different speeds of DIMMs have been installed. It is strongly recommended that you use the same RAM type and speed for all DIMMs in the system.
3. Make sure that you are using the correct type of DIMMs recommended by the manufacturer.
4. Check for bad DIMMs or slots by swapping a single module among all memory slots and check the results.

Losing the System's Setup Configuration

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

If the System Becomes Unstable

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

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

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

3. Storage Drive support: Make sure that all storage drives work properly. Replace the failed storage drives with good ones.
4. System cooling: Check the system cooling to make sure that all processor/system fans, etc., work properly. Check the hardware monitoring settings in the BMC to make sure that the processor and system temperatures are within the normal range. Also, check the front panel Overheat LED and make sure that it is not on.
5. Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Refer to our website for more information on the minimum power requirements.
6. Proper software support: Make sure that the correct drivers are used.

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

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

6.4 CMOS Clear

JBT1 on the A4SAN-H/E-WOHS 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.

6.5 Motherboard Battery

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

6.6 Where to Get Replacement Components

If you need replacement parts for your SYS-E101-14AM-H/E Embedded Box PC, 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.

6.7 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" on page 67 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 Embedded Box PC 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 Embedded Box PC in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the Embedded Box PC securely, using packaging material to surround the Embedded Box PC 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.

6.8 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-E101-14AM-H/E Embedded Box PC.

7.1 Introduction	77
7.2 Main Setup	79
7.3 Advanced Setup Configurations	82
7.4 Event Logs	118
7.5 Thermal & Fan	120
7.6 Security	123
7.7 Boot	129
7.8 Save & Exit	131

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.

To update the BIOS under the UEFI Shell, unzip the BIOS file onto a bootable USB device and then boot into the built-in UEFI Shell. For motherboards with BMC support, type "flash.nsh <BIOS filename><BMC Username><BMC Password>" to start the BIOS update. The flash.nsh script will invoke the SAA (EFI) tool automatically to perform the BIOS update, beginning with uploading the BIOS image to BMC. After uploading the BIOS image, the system will reboot to continue the process. The BMC will take over and continue the BIOS update in the background. The process will take 3–5 minutes. Refer to the README file for more information.

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 A4SAN-H/E-WOHS

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 settings to the default manufacturing settings.

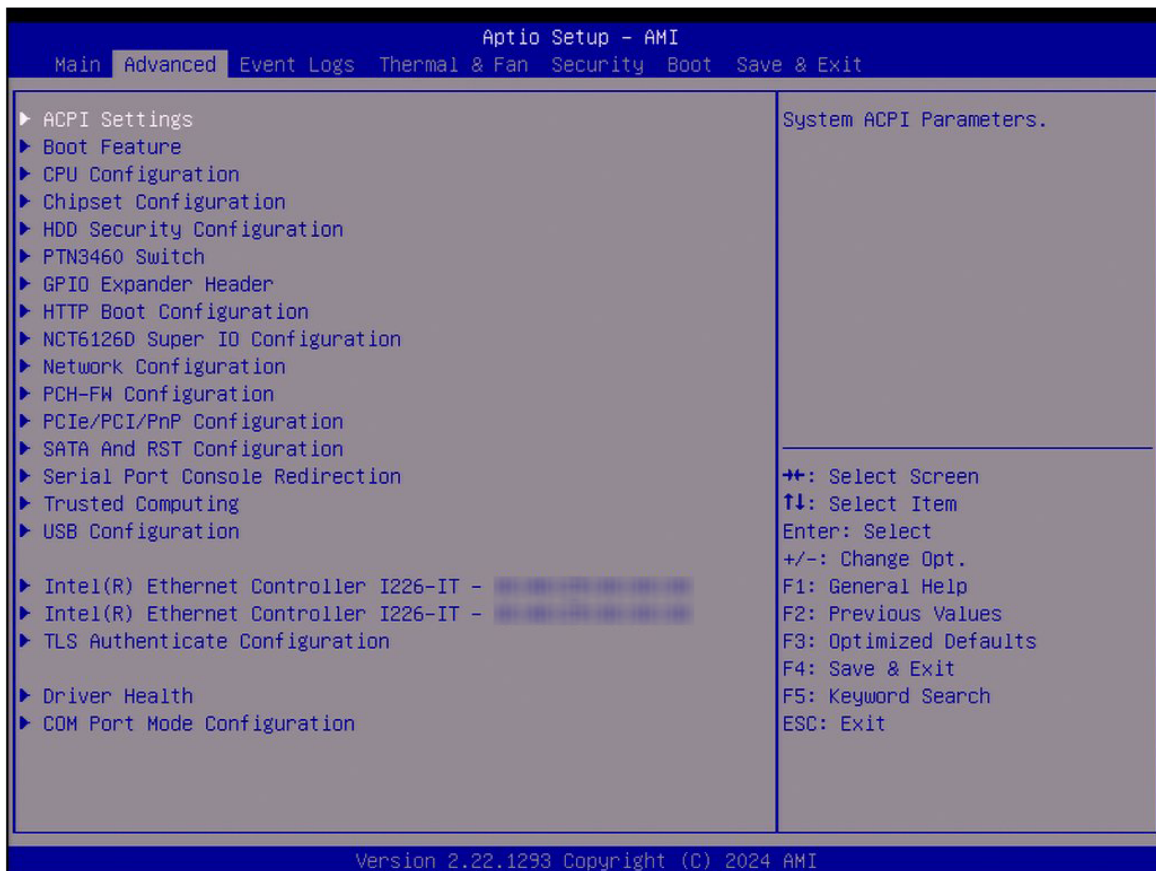


Figure 7-2. Advanced Setup Configurations

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 <Num Lock> key. The options are **On** and Off.

Wait For "F1" If Error

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

Re-try Boot

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

Power Configuration**Watch Dog Function**

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

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 in this section 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 the 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 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 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.

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

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**.

Notes:

- This feature is available when "SpeedStep (P-States)" is set to Enabled.
- This feature is available when "Workload Profile" is set to Disabled.

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 Auto 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

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**.

Monitor MWAIT

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 M.2-E1

PCIe M.2-E1 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-E1 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-E1 Speed

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

PCIe M.2-E1 Peer Memory Write Enable

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

► PCIe M.2-M1

PCIe M.2-M1 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-M1 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-M1 Speed

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

PCIe M.2-M1 Peer Memory Write Enable

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

► PCIe M.2-B1

PCIe M.2-B1 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-B1 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-B1 Speed

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

PCIe M.2-B1 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 **Use EDID in SPI ROM**, 800x 600, 1024x 768, 1280x1024, 1366x 768, 800x 480, 1900x1080, and OEM Define.

Single/Dual 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.

HTTPS Boot Checks Hostname

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

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

Priority of HTTP Boot

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

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

Select IPv4 or IPv6

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

Boot Description

Use this feature to enter a boot description, which cannot be longer than 75 characters. 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**.

NCT6126 Super IO Configuration

NCT6126D 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;.

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;.

Serial Port 3 Configuration Menu

▶ Serial Port 3 Configuration

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 2. The option is IO=3E8h; IRQ=6;.

Serial Port 4 Configuration Menu

► Serial Port 4 Configuration

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 2. The option is IO=2E8h; IRQ=7;.

Network Stack Configuration Menu

► Network Stack 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 that have been sent while performing duplicate address detection on a tentative address. The default setting is **1**.

Policy

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

► 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 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**.

PCIe M.2-E1 OPROM

Use this feature to enable or disable the PCIe M.2-E1 OPROM option. The options are Disabled and **EFI**.

PCIe M.2-M1 OPROM

Use this feature to enable or disable the PCIe M.2-M1 OPROM option. The options are Disabled and **EFI**.

PCIe M.2-B1 OPROM

Use this feature to enable or disable the PCIe M.2-M1 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.

Out-of-Band Mgmt Port

The feature selects a serial port in a client server to be used by the Microsoft Windows Emergency Management Services (EMS) to communicate with a remote host server. The options are **COM1** and SOL/COM2. Please note that the option of SOL/COM2 indicates a shared serial port. SOL is available with BMC support.

Terminal Type EMS

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 EMS

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 EMS

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 EMS**
- **Parity EMS**
- **Stop Bits EMS**

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

Note: 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.

Supermicro BIOS-Based TPM Provision Support

Set this feature to Enabled to unlock the TPM. Save settings and exit the BIOS Setup utility. The Non-volatile (NV) indexes can be deleted after the system reboot. 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 you system features.

The following information is displayed.

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

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 you system features.

The following information is displayed.

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

TLS Authenticate Configuration Menu

▶ TLS Authenticate Configuration

Use this submenu to configure Transport Layer Security (TLS) settings.

▶ Server CA Configuration

Use this feature to configure the client certificate that is to be used by the server.

▶ Enroll Certification

Use this feature to enroll the certificate in the system.

▶ Enroll Certification Using File

Use this feature to enroll the security certificate in the system by using a file.

▶ Commit Changes and Exit

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

▶ Discard Changes and Exit

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

▶ Delete Certification

Use this feature to delete the 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 events 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.

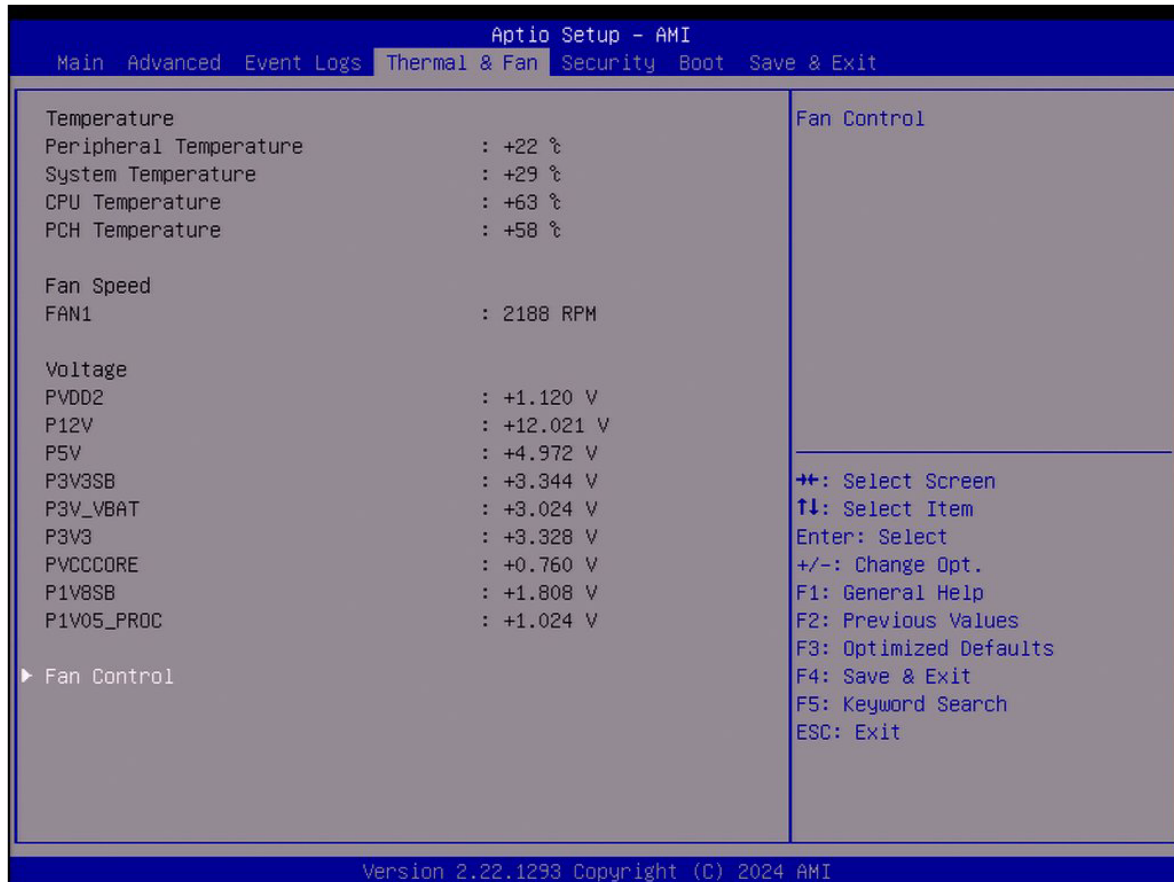


Figure 7-4. Thermal & Fan

The following information is displayed.

- Temperature
- Peripheral Temperature
- System Temperature
- CPU Temperature
- PCH Temperature
- Fan Speed
- FAN1
- Voltage

- PVDD2
- P12V
- P5V
- P3V3SB
- P3V_BAT
- P3V3
- PVCCCORE
- P1V8SB
- P1V05_PROC

► Fan Control

Fan Control Settings

Fan Speed Control Mode

Use this feature to select the fan speed control mode. The options are Quiet, **Stable**, Full Speed, and Customize.

FAN1 Control

FAN1 Reference sensor (Available when "Fan Speed Control Mode" is set to Customize)

This feature displays the FAN 1 reference sensor. The option is **PECIO**.

Temperature 1 (Available when "Fan Speed Control Mode" is set to Customize)

Use this feature to set the value for Temperature 1. The default selection is **20**.

PWM1 (Available when "Fan Speed Control Mode" is set to Customize)

Use this feature to set the value for PWM1. The default selection is **20**.

Temperature 2 (Available when "Fan Speed Control Mode" is set to Customize)

Use this feature to set the value for Temperature 2. The default selection is **100**.

PWM2 (Available when "Fan Speed Control Mode" is set to Customize)

Use this feature to set the value for PWM2. The default selection is **100**.

The following information is displayed:

- Temperature 3
- PWM3

- Temperature 4
- PWM4

7.6 Security

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

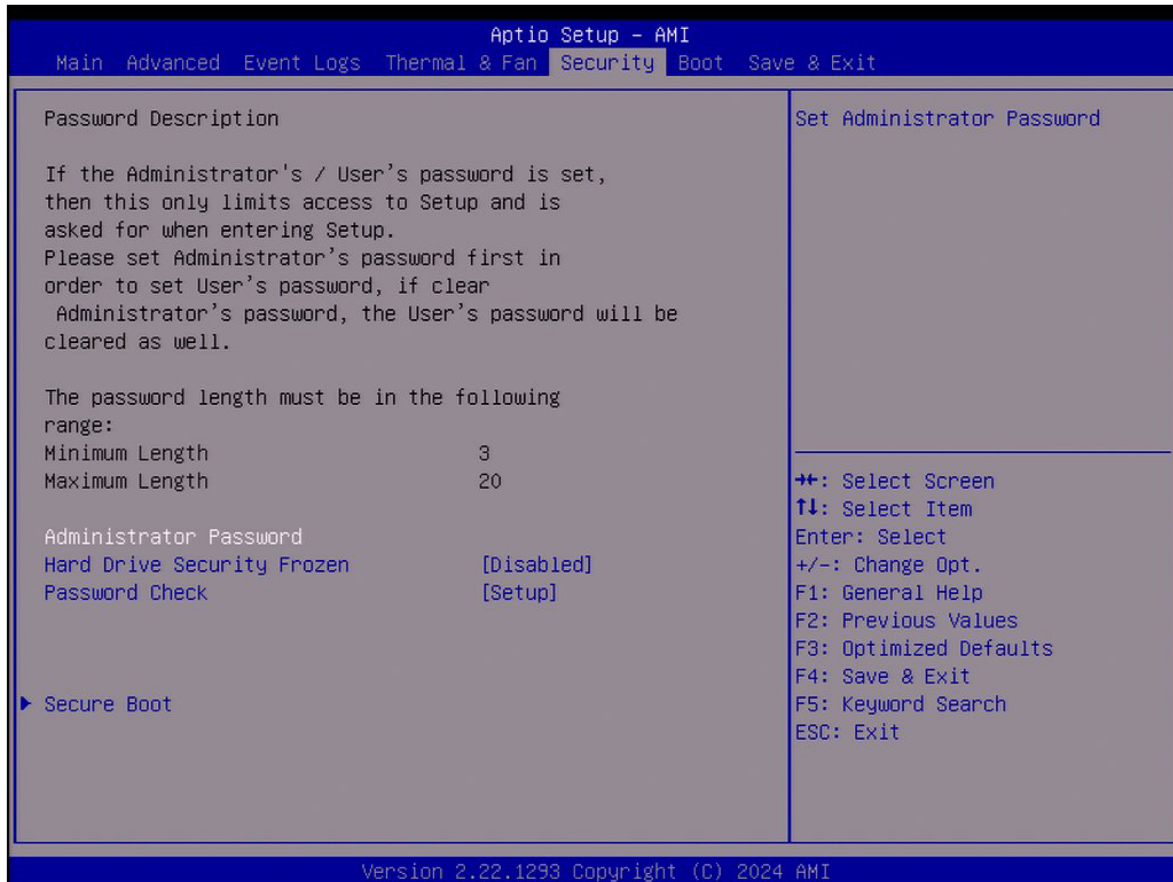


Figure 7-5. Security

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.

Supermicro Security Erase Configuration Menu

► Supermicro Security Erase Configuration

Use this submenu to configure the Supermicro-proprietary Security Erase settings. When this submenu is selected, the following information is displayed. Please note that the order of the following information may differ based on the storage devices being detected.

- HDD Name: This feature displays the model name of the storage device that is detected by the BIOS.
- HDD Serial Number: This feature displays the serial number of the storage device that is detected by the BIOS.
- Security Mode: This feature displays the security mode of the storage device that is detected by the BIOS.
- Estimated Time: This feature displays the estimate time needed to perform the selected Security Erase features.
- HDD User Pwd Status: This feature indicates if a password has been set as a storage device user password, which enables configuring Supermicro Security Erase settings on this storage device.
- TCG Device Type: This feature displays the TCG device type detected by the system.
- Admin Pwd Status: This feature indicates if a password has been set as a storage device administrator password, which enables configuring Supermicro Security Erase settings on this storage device.

Note: This submenu is available when any storage device is detected by the BIOS. For more information about this feature, refer to our website.

Security Function

Select Set Password to set a storage device user password to enable configuring the security settings on the storage device. Select Security Erase - Password to enter a storage device user password to enable erasing the password and the contents previously stored in the storage device. Select Security Erase - Without Password to use the manufacturer default password "1111111111" as the storage device user password and enable erasing the contents of the storage device by using this default password. The options are **Disabled**, Set Password, Change Password, Clear Password, Security Erase - Password, Security Erase - PSID, and Security Erase - Without Password.

Notes:

- The option of Security Erase - PSID is based on the storage device support. PSID is the abbreviation for Physical Security Identification.
- The options of Change Password and Clear Password are available when "Password" below has been set.
- The option of Set Password is NOT available when "Password" below has been set.

Password

Use this feature to set the storage device user password, which enables configuring the Supermicro Security Erase settings by using this user password.

New Password (Available when "Password" above has been set)

Use this feature to set the new user password for the storage device, which enables configuring the Supermicro Security Erase settings by using this new user password.

Secure Boot Menu

► Secure Boot

The following information is displayed:

- System Mode
- Secure Boot

Note: For detailed instructions on configuring Security Boot settings, refer to the Security Boot Configuration User's Guide at <https://www.supermicro.com/support/manuals>.

Secure Boot

Select Enabled to configure Secure Boot settings. The options are **Disabled** and Enabled.

Secure Boot Mode

Use this feature to select the desired secure boot mode for the system. The options are Standard and **Custom**.

▶ Enter Audit Mode

Select Ok to enter the Audit Mode workflow. It will result in erasing the Platform Key (PK) variables and resetting the system to the Setup/Audit Mode.

Note: This submenu is available when "Secure Boot Mode" is set to Custom.

▶ Key Management

The following information is displayed:

- Vendor Keys

Note: This submenu is available when "Secure Boot Mode" is set to Custom.

Provision Factory Defaults

Select Enabled to install the default secure boot keys when the system is in the Setup Mode. Changes take effect after you save settings and reboot the system. The options are **Disabled** and Enabled.

▶ Restore Factory Keys

Select Yes to restore manufacturer default keys to ensure system security. The options are **Yes** and No. Selecting Yes will reset the system to the User Mode.

Note: This submenu is available when any secure keys have been installed.

▶ Reset To Setup Mode

This feature resets the system to the Setup Mode. The options are **Yes** and No.

Note: This submenu is available when any secure keys have been installed.

▶ Enroll Efi Image

This feature allows the Efi image to run in the secure boot mode and enroll the SHA256 Hash certificate of a PE image into the Authorized Signature Database (DB).

▶ Export Secure Boot Variables

This feature exports the NVRAM contents of secure boot variables to a storage device. The options are **Yes** and **No**.

Note: This submenu is available when any secure keys have been installed.

Secure Boot variable / Size / Keys / Key Source

▶ Platform Key (PK)

Use this feature to enter and configure a set of values to be used as platform firmware keys for the system. These values also indicate the sizes, key numbers, and the sources of the authorized signatures. Select Update to update the platform key.

▶ Key Exchange Keys (KEK)

Use this feature to enter and configure a set of values to be used as Key Exchange Keys for the system. These values also indicate the sizes, key numbers, and the sources of the authorized signatures. Select Update to update the Key Exchange Keys. Select Append to append the Key Exchange Keys.

▶ Authorized Signatures (db)

Use this feature to enter and configure a set of values to be used as Authorized Signatures for the system. These values also indicate the sizes, key numbers, and sources of the authorized signatures. Select Update to update the Authorized Signatures. Select Append to append the new Authorized Signatures.

▶ Forbidden Signatures (dbx)

Use this feature to enter and configure a set of values to be used as Forbidden Signatures for the system. These values also indicate sizes, key numbers, and key sources of the forbidden signatures. Select Update to update the Forbidden Signatures. Select Append to append the Forbidden Signature.

► **Authorized TimeStamps (dbt)**

Use this feature to set and save the timestamps for the Authorized Signatures, which will indicate the time when these signatures are entered into the system. These values also indicate sizes, keys, and key sources of the authorized timestamps. Select Update to update the Authorized TimeStamps. Select Append to append the Authorized TimeStamps.

► **OsRecovery Signatures (dbr)**

Use this feature to set and save the Authorized Signatures used for OS recovery. Select Update to update the OsRecovery Signatures. These values also indicate sizes, keys, and key sources of the OsRecovery Signatures. Select Append to append the OsRecovery Signatures.

7.7 Boot

Use this menu to configure Boot settings.

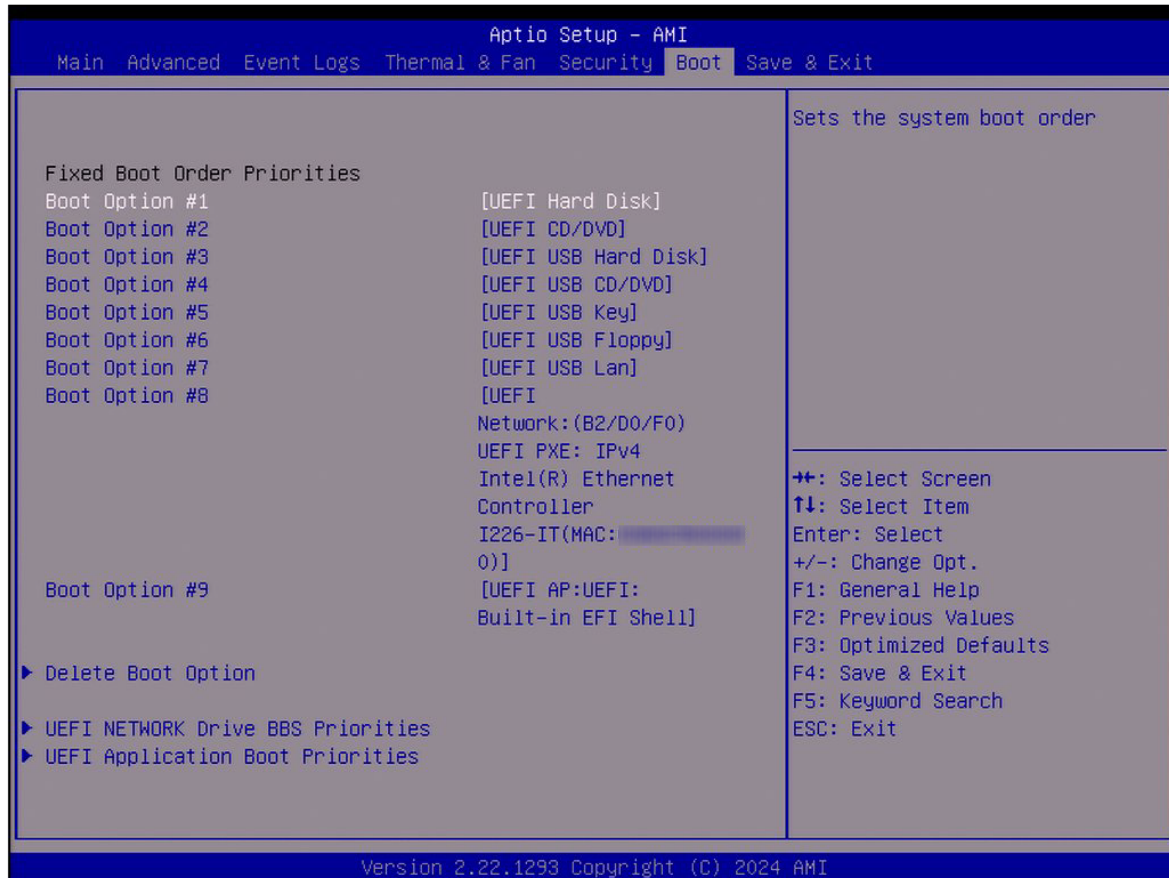


Figure 7-6. Boot

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.

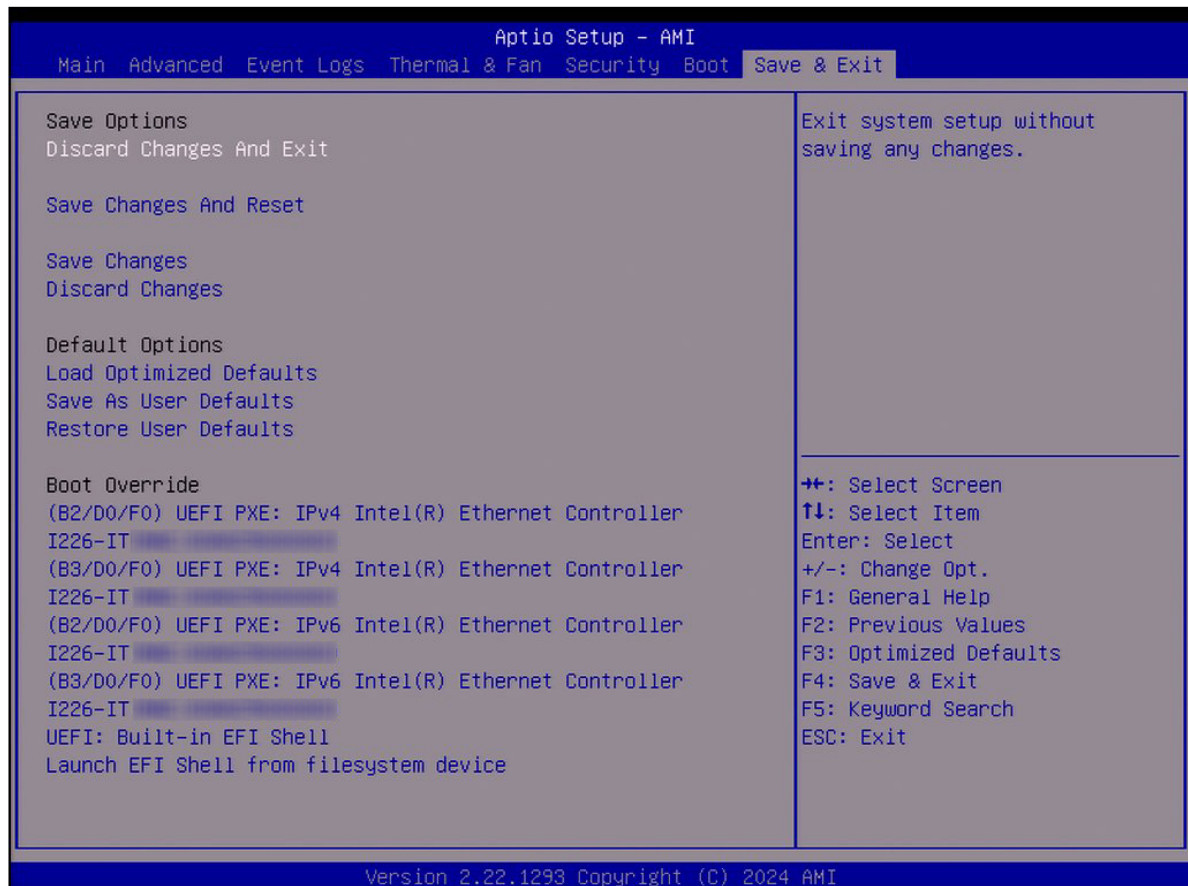


Figure 7-7. Save & Exit

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**Restore Optimized Defaults**

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

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

Save as User Defaults

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

Restore User Defaults

Select this feature and press <Enter> to 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-E101-14AM-H/E Embedded Box PC, 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 DC 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-E101-14AM-H/E Embedded Box PC.

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.

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。

此警告符号代表危险。

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。

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.

اِنَّكَ فِ حَالَةٍ وَّكِي اَي تَتَسَبَّبُ فِ اِصَابَةٍ جَسَدِيَّةٍ هَذَا الزَّهْرُ عِ خَطَرٍ اِتَّحَذِرْ.

قَبْلُ اَي تَعْمَلُ عَلٰى اَي هَعْدَاتٍ، كِي عَلٰى عِلْمٍ بِالْوَحَاظِرِ اَلْ اَجْوَةِ عِي النِّوَانِزِ

الكهزبائِ ةِ

وَكِي عَلٰى دِرَاةٍ بِالْوَوَارِسَاتِ النِّقَايِ ةِ لَوْ عِ وَقَعِ اَي حِنَاثِ

اِسْتِخْدَمِ رَقْنِ اَلْبِ اِي اَلْوَصْنِصِ فِ هَا ةِ كَلِّ تَحْذِرْ لِّلْعَثَرِ تَزْجُوْتَهَا

안전을 위한 주의사항

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.

警告!

システムを電源に接続する前に、設置手順書をお読み下さい。

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.

אזהרה!

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

تحذير!

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

경고!

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.

警告!

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。
保護装置の定格が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250 V、20 A。

警告!

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

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.

אזהרה!

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

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

تحذير!

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

المبنى

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

경고!

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

Power Disconnection Warning



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

警告!

システムコンポーネントの取り付けまたは取り外しのために、シャーシ内部にアクセスするには、

システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。

警告!

在你打开机箱并安装或移除内部器件前，必须将系统完全断电，并移除电源线。

警告!

在您打開機殼安裝或移除內部元件前、必須將系統完全斷電、並移除電源線。

Warnung!

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

¡Advertencia!

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

Attention!

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

אזהרה!

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

تحذير!

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

انصلل إلى انمناطق انداخهيت نههيكم ننتبجج أو إزانت مكننات 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.

警告!

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.

تحذير!

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).

警告!

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!

此裝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.

אזהרה!

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

تحذير!

اتخصيص هذه المنطقة نترك بها ف مناطق محظورة تم .
ممكن ان تصل إن منطقت محظورة فقط من خلال استخدام أداة خاصة،
أو أوس هُت أخري نلأأما قفم ومفتاح

경고!

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

Waarschuwing!

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

Battery Handling



Warning! There is 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.

警告!

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.

تحذير!

.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 المسحومة وفقا لعمليات 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.

警告!

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

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!

此裝置連接的電源可能不只一個、必須切斷所有電源才能停止對該裝置的供電。

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.

אזהרה!

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

تحذير!

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.

警告!

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、背板上有很危險的電壓或能量、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.

אזהרה!

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

تحذير!

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.

警告!

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.

אזהרה!

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تحذير!

تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والنابية 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.

警告!

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

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.

אזהרה!

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

تحذير!

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



警告!

警告！回轉部品に注意。運転中は回轉部(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、ファンがまだ回轉している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

警告!

警告！危險的可移動性零件。請務必與轉動的风扇叶片保持距离。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!

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.

Appendix C:

System Specifications

Processors

SYS-E101-14AM-H: Intel® Atom® Processor x7835RE

SYS-E101-14AM-E: Intel® Atom® Processor x7433RE

Chipset System

System on Chip

BIOS

AMI 256 MB SPI Flash EEPROM

Memory

One DIMM slot

Max Memory (1DPC): Up to 16 GB 4800 MT/s non-ECC DDR5 SO-DIMM

Storage Drives

One M.2 PCIe 3.0 x1 SATA slot (B-key 2242/2280)

One M.2 PCIe 3.0 x1 NVMe slot (M-key 2242/2280)

Expansion Slots

One M.2 slot (E-key, 2230 default)

One M.2 PCIe 3.0 x1 SATA slot (M-key 2242/2280)

One M.2 PCIe 3.0 x1 SATA slot (B-key 2242/2280/3042/3052)

Input/Output

LAN: Two RJ45 2.5 GbE LAN ports (Intel® I226)

USB: Two USB 2.0 Type-A ports (rear), four USB 3.2 Gen2 Type-A ports (front)

Video: Two HDMI 1.4 ports (front)

Serial: Two COM RS232 ports (front), two COM RS232/RS422/RS485 ports (front)

Motherboard

SYS-E101-14AM-H: A4SAN-H-WOHS

SYS-E101-14AM-E: A4SAN-E-WOHS

Chassis

CSE-E101-IA3 3.5" SBC Rackmount, 7.64 x 4.96 x 4.52 in. (194 x 126 x 115 mm) (WxDxH)

System Cooling

N/A

Power Supply

Two-pin terminal block, 9–36 VDC, 5–1.5 A power input

Operating Environment

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

Non-operating Temperature: -40° to 70° C (-40° to 158° F)

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

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

Regulatory Compliance

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

Certified Safety Models

Compliant with UL or CSA: E101-IA3-60; E101-IA3-A6A4

Applied Directives, Standards

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

Electromagnetic Compatibility Regulations 2016

FCC Part 15 Subpart B

ICES-003

VCCI-CISPR 32

AS/NZS CISPR 32

BS/EN 55032

BS/EN 55035

CISPR 32

CISPR 35

BS/EN 61000-3-2

BS/EN 61000-3-3

BS/EN 61000-4-2

BS/EN 61000-4-3

BS/EN 61000-4-4

BS/EN 61000-4-5

BS/EN 61000-4-6

BS/EN 61000-4-8

BS/EN 61000-4-11

Product Safety: 2014/35/EU (LVD Directive)

UL/CSA 62368-1 (USA and Canada)

Electrical Equipment (Safety) Regulations 2016

IEC/BS/EN 62368-1

Environment:

2011/65/EU (RoHS Directive)

EC 1907/2006 (REACH)

2012/19/EU (WEEE Directive)

California Proposition 65

Perchlorate Warning

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. Perchlorate Material-special handling may apply. See

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