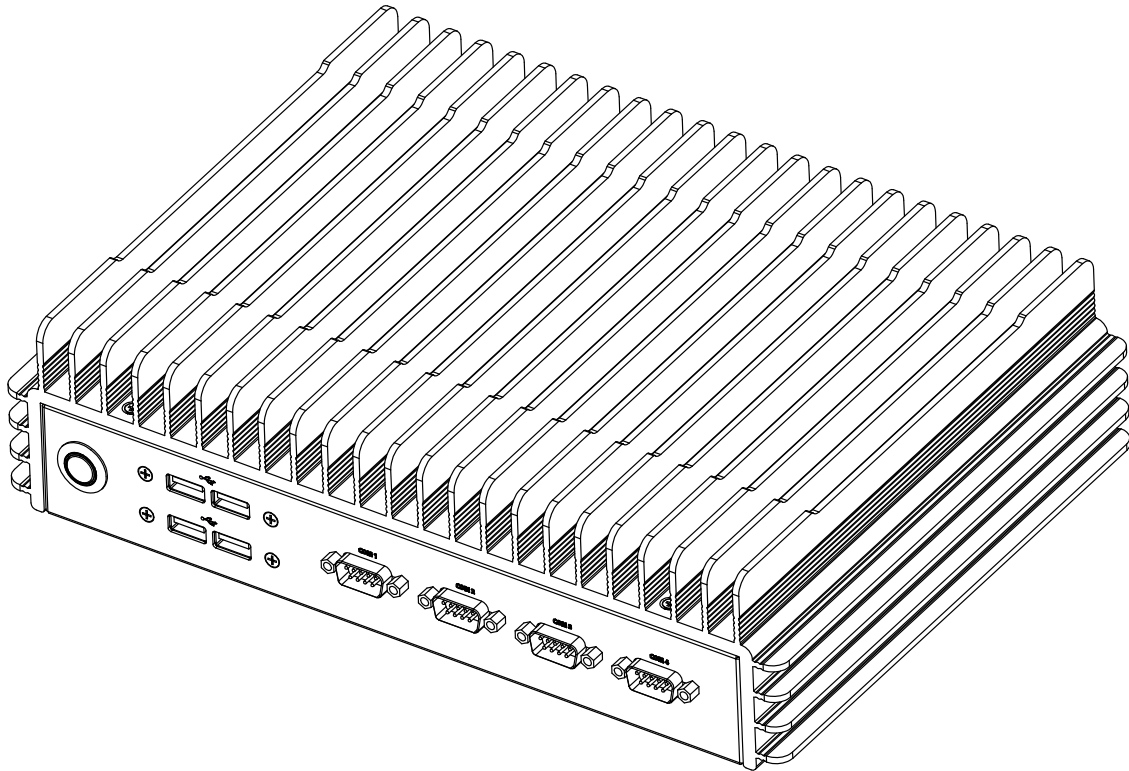




SUPERSERVER<sup>®</sup>  
SYS-E302-12E



USER'S MANUAL

Revision 1.0

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# Preface

## About this Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SuperServer SYS-E302-12E. Installation and maintenance should be performed by experienced technicians only.

## Notes

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

- Supermicro product manuals: <http://www.supermicro.com/support/manuals/>
- Product drivers and utilities: <https://www.supermicro.com/wdl/driver>
- Product safety info: [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm)

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

This manual may be periodically updated without notice. Please check the Supermicro website (<http://www.supermicro.com>) for possible updates to the manual revision level.

## Secure Data Deletion

A secure data deletion tool designed to fully erase all data from storage devices can be found on our website: [https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Lot9\\_Secure\\_Data\\_Deletion\\_Utility/](https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Lot9_Secure_Data_Deletion_Utility/)

## Warnings

Special attention should be given to the following symbols used in this manual.



**Warning!** Indicates hot surface may be encountered when performing a procedure.



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



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

# Contents

## **Chapter 1 Introduction**

|                              |    |
|------------------------------|----|
| 1.1 Overview.....            | 7  |
| 1.2 System Features .....    | 8  |
| 1.3 Chassis Features .....   | 9  |
| Front Features.....          | 9  |
| Rear Features .....          | 10 |
| Chassis Dimensions.....      | 11 |
| 1.4 Motherboard Layout ..... | 12 |
| Quick Reference Table.....   | 13 |
| System Block Diagram.....    | 15 |

## **Chapter 2 Server Installation**

|  |    |
|--|----|
| 2.1 Overview.....                      | 16 |
| 2.2 Preparing for Setup .....          | 16 |
| Choosing a Setup Location.....         | 16 |
| Rack Precautions .....                 | 16 |
| Server Precautions.....                | 17 |
| Rack Mounting Considerations .....     | 17 |
| Ambient Operating Temperature.....     | 17 |
| Airflow .....                          | 17 |
| Mechanical Loading.....                | 18 |
| Circuit Overloading .....              | 18 |
| Reliable Ground.....                   | 18 |
| Adding Components to your System ..... | 19 |
| 2.3 Mounting on a Wall .....           | 20 |

## **Chapter 3 Maintenance and Component Installation**

|                                       |    |
|---------------------------------------|----|
| 3.1 Removing Power .....              | 23 |
| 3.2 Accessing the System.....         | 24 |
| 3.3 Motherboard Components.....       | 25 |
| Memory Support.....                   | 25 |
| DIMM Module Population Sequence ..... | 26 |
| SO-DIMM Installation .....            | 27 |
| SO-DIMM Removal .....                 | 27 |
| Motherboard Battery .....             | 28 |

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|  |    |
|--|----|
| 3.4 Chassis Components .....                                     | 29 |
| Installing the Storage Drive.....                                | 29 |
| <b>Chapter 4 Motherboard Connections</b>                         |    |
| 4.1 Power Connections .....                                      | 32 |
| 4.2 Headers and Connectors .....                                 | 33 |
| 4.3 Rear I/O Ports .....   | 40 |
| 4.4 Front Control Panel.....                                     | 42 |
| 4.5 Jumpers.....   | 44 |
| Explanation of Jumpers.....                                      | 44 |
| 4.6 LED Indicators.....  | 47 |
| <b>Chapter 5 Software</b>  |    |
| 5.1 Microsoft Windows OS Installation.....                       | 48 |
| 5.2 Driver Installation.....                                     | 50 |
| 5.3 SuperDoctor® 5.....  | 51 |
| <b>Chapter 6 UEFI BIOS</b>                                       |    |
| 6.1 Introduction.....  | 52 |
| Starting the Setup Utility .....                                 | 52 |
| 6.2 Main Menu.....   | 53 |
| 6.3 Advanced Settings Menu .....                                 | 54 |
| 6.4 Security.....  | 78 |
| 6.5 Boot.....  | 83 |
| 6.6 Save & Exit.....   | 85 |
| <b>Appendix A BIOS Codes</b>                                     |    |
| <b>Appendix B Standardized Warning Statements for AC Systems</b> |    |
| <b>Appendix C UEFI BIOS Recovery</b>                             |    |
| <b>Appendix D System Specifications</b>                          |    |

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# Chapter 1

## Introduction

### 1.1 Overview

The SuperServer SYS-E302-12E is a compact, embedded system comprised of the CSE-E302iL2 chassis and the A3SEV-4C-LN4 single processor motherboard. Refer to our website for information on operating systems that have been certified for use with the system ([www.supermicro.com](http://www.supermicro.com)).

This chapter provides a brief outline of the functions and features. In addition to the motherboard and chassis, several important parts that are included with the system are listed below.

| Main Parts List                     |                  |            |
|-------------------------------------|------------------|------------|
| Description                         | Part Number      | Quantity   |
| 150W, 12V Lockable DC Power Adapter | MCP-250-10128-0N | 1          |
| Wall Mount Kit                      | MCP-290-30201-0B | (Optional) |
| Cable                               | CBL-0473L        | (Optional) |
| Cable                               | CBL-SAST-0886    | (Optional) |

**Note:** The following safety agency or regulatory models associated with the E302-12E have been certified as compliant with UL or CSA: E302-15, E302iL-A15A3.

## 1.2 System Features

The following table provides an overview of the main features of the SYS-E302-12E. Please refer to Appendix D for additional specifications.

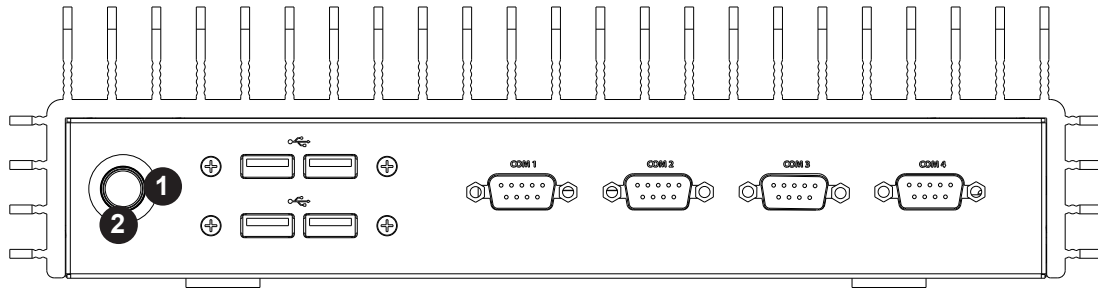
| <b>System Features</b>  |
|---|
| <b>Motherboard</b>  |
| A3SEV-4C-LN4-01   |
| <b>Chassis</b>  |
| CSE-E302iL2   |
| <b>CPU</b>  |
| Intel® Atom® x6425E 4C 12W  |
| <b>Chipset</b>  |
| System on Chip  |
| <b>BIOS</b>   |
| 256Mb SPI Flash with AMI BIOS®  |
| <b>Memory</b>   |
| Supports up to 32GB of in-band ECC SODIMM DDR4 with speeds of up to 3200MHz in two memory slots   |
| <b>Expansion Slots</b>  |
| One M.2 E-key (2230) (one PCIe 3.0/USB 2.0)<br>One M.2 B-key (3042/2280) (SATA3/two PCIe 3.0/USB 3.0)<br>One PCIe 3.0 x2 (in x8 slot)                               |
| <b>Storage Drives</b>   |
| Supports one 2.5" drive of 7mm height and one 2.5" drive of 15mm height   |
| <b>Power Supply</b>   |
| 150W 12V Lockable DC Power Adapter (Optional: 180W 12V Lockable DC Power Adapter)   |
| <b>Input/Output Ports</b>   |
| One HDMI 2.0b<br>One DP 1.4<br>One VGA<br>Two USB 3.1 Gen 2 (rear), two USB 2.0 (rear), and four USB 2.0 (front)<br>Four COM (RS-232/422/485)<br>Four RJ45 1GbE LAN |
| <b>Cooling</b>  |
| Fanless   |
| <b>Dimensions</b>   |
| 11.6" x 2.9" x 8.1" (W x H x D) (295 x 73 x 205mm)  |

## 1.3 Chassis Features

The CSE-E302iL2 is a compact embedded 1U chassis for Mini ITX and FlexATX motherboards.

### Front Features

The front of the chassis includes the control panel.



**Figure 1-1. Chassis Front and Control Panel**

| Control Panel Features |                     |   |
|------------------------|---------------------|---|
| Item                   | Features            | Description   |
| 1                      | Power button        | The main power switch applies or removes primary power from the power supply to the server but maintains standby power. To perform most maintenance tasks, unplug the system to remove all power. |
| 2                      | Power LED & HDD LED | Indicates power is being supplied to the system power supply units. This LED is illuminated when the system is operating normally. Indicates hard disk drive activity when flashing.              |

## Rear Features

The chassis rear holds input/output ports, described in Chapter 4.

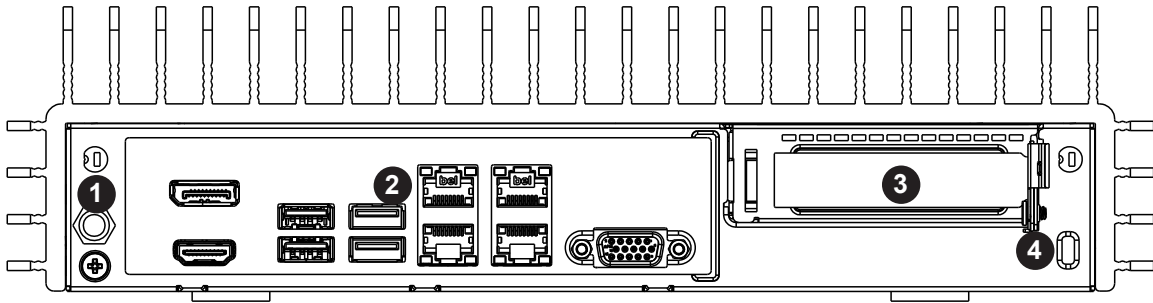


Figure 1-2. Rear Chassis View

| Rear Chassis Features |                 |   |
|-----------------------|-----------------|---|
| Item                  | Features        | Description   |
| 1                     | Power input     | The main power switch applies or removes primary power from the power supply to the server but maintains standby power. To perform most maintenance tasks, unplug the system to remove all power. |
| 2                     | I/O ports       | HDMI, DP, USB, LAN, VGA (described in Chapter 4).   |
| 3                     | PCI window      | Standard low-profile PCIe slot (optional: may add fan to front I/O plate).  |
| 4                     | K-slot for lock | Accepts a standard Kensington cable locking device (not included).  |

### Chassis Dimensions

The compact chassis measures 205 x 295.2mm from the top view and 275.2 x 73.3mm from the I/O view.

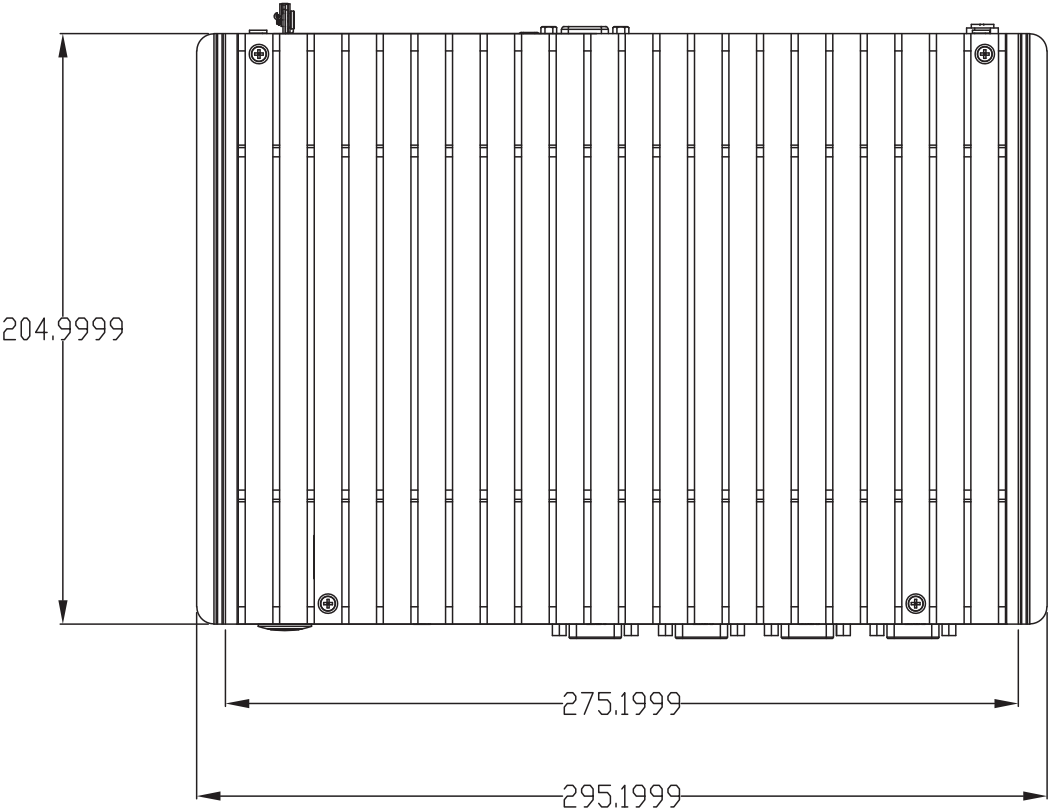


Figure 1-3. Chassis Dimensions (Top View)

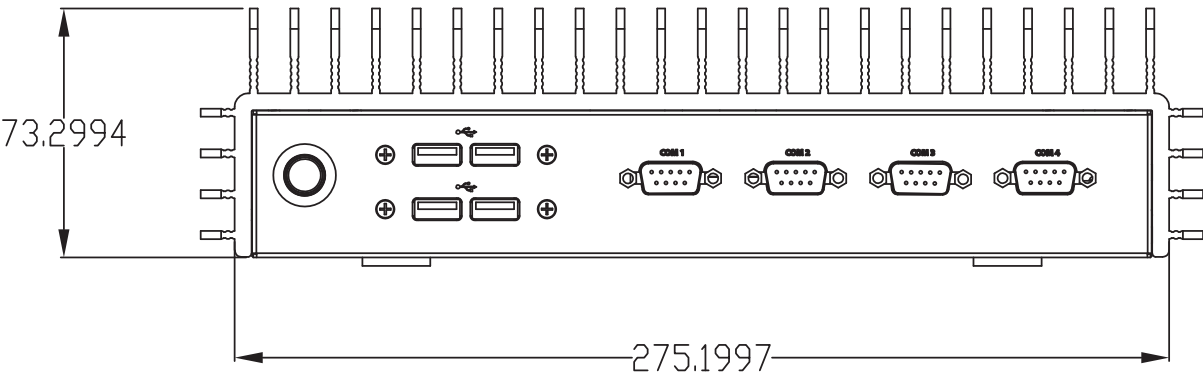


Figure 1-4. Chassis Dimensions (I/O View)

## 1.4 Motherboard Layout

Below is a layout of the A3SEV-4C-LN4 with jumper, connector, and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pin-out information, and jumper settings, refer to Chapter 4.

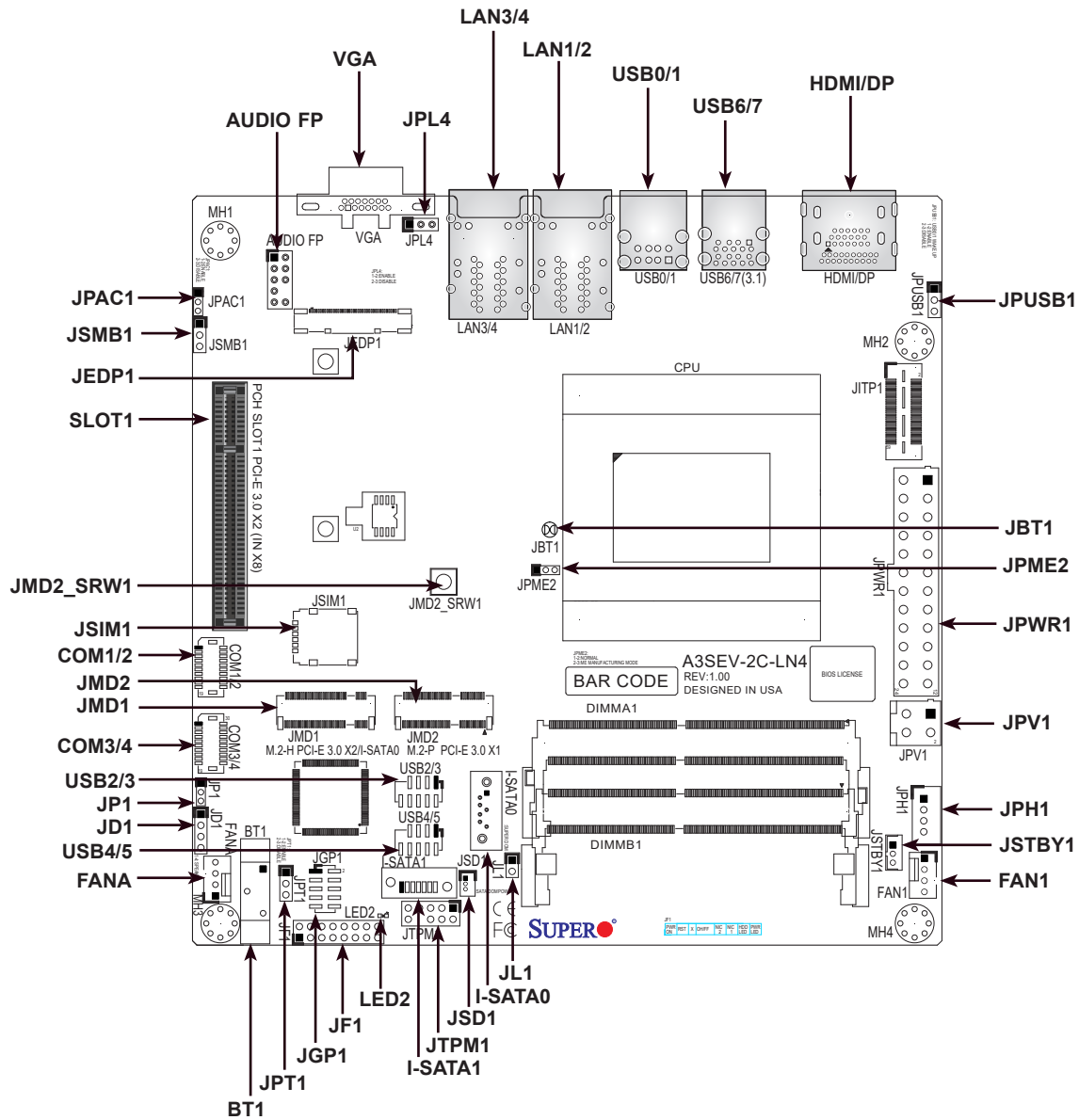


Figure 1-3. Motherboard Layout

**Notes:**

- "1" indicates the location of pin 1.
- Jumpers/LED indicators not indicated are used for testing only.

## Quick Reference Table

| Jumper | Description                | Default Setting        |
|--------|----------------------------|------------------------|
| JBT1   | CMOS Clear                 | Open: Normal           |
| JP1    | SIM Detection              | Pins 1-2 (High Active) |
| JPAC1  | Audio Enable/Disable       | Pins 1-2 (Enabled)     |
| JPL4   | LAN4 Enable/Disable        | Pins 1-2 (Enabled)     |
| JPME2  | ME Manufacturing Mode      | Pins 1-2 (Normal)      |
| JPT1   | Onboard TPM Enable/Disable | Pins 2-3 (Disabled)    |
| JPUSB1 | USB0/1 Wake Up             | Pins 1-2 (Enabled)     |

| LED  | Description | Status                |
|------|-------------|-----------------------|
| LED2 | Power LED   | Solid Green: Power On |

| Connector        | Description  |
|------------------|--|
| AUDIO FP         | Front Panel Audio Header   |
| BT1              | Onboard Battery  |
| COM1/2, COM3/4   | COM Headers  |
| FAN1, FANA       | System Fan Headers   |
| HDMI/DP          | High Definition Multimedia Interface/DisplayPort                             |
| I-SATA0, I-SATA1 | SATA 3.0 Port (I-SATA0: SuperDOM)  |
| JD1              | Speaker/Buzzer (Pins 1-4: Speaker)   |
| JEDP1            | Extended DisplayPort   |
| JF1              | Front Control Panel Header   |
| JGP1             | General Purpose I/O Header   |
| JL1              | Chassis Intrusion Header   |
| JMD1             | M.2 B-Key 2280/3042 (PCIe 3.0 x2/SATA/USB3.1) Slot<br>*SATA mux with I-SATA0 |
| JMD2             | M.2 E-Key 2230 (PCIe 3.0 x1/USB2.0) Slot                                     |
| JMD2_SRW1        | M.2 Mounting Screw   |
| JPH1             | 4-pin Power Connector (for HDD)  |
| JPV1             | 4-pin 12V DC Power Connector   |
| JPWR1            | 24-pin ATX Power Connector   |
| JSD1             | SATA DOM Power Connector   |
| JSIM1            | Nano SIM Card Slot   |
| JSMB1            | System Management Bus Header   |
| JSTBY1           | Standby Power Header   |
| JTPM1            | Trusted Platform Module (TPM)/Port80 Header                                  |
| LAN1/2, LAN3/4   | Gigabit Ethernet RJ45 Ports  |
| SLOT1            | PCH SLOT1 PCIe 3.0 x2 (in x8) Slot   |

| <b>Connector</b> | <b>Description</b>       |
|------------------|--------------------------|
| USB0/1           | Back Panel USB 2.0 Ports |
| USB2/3, USB4/5   | USB 2.0 Headers          |
| USB6/7           | Back Panel USB 3.1 Ports |
| VGA              | VGA Port                 |

## System Block Diagram

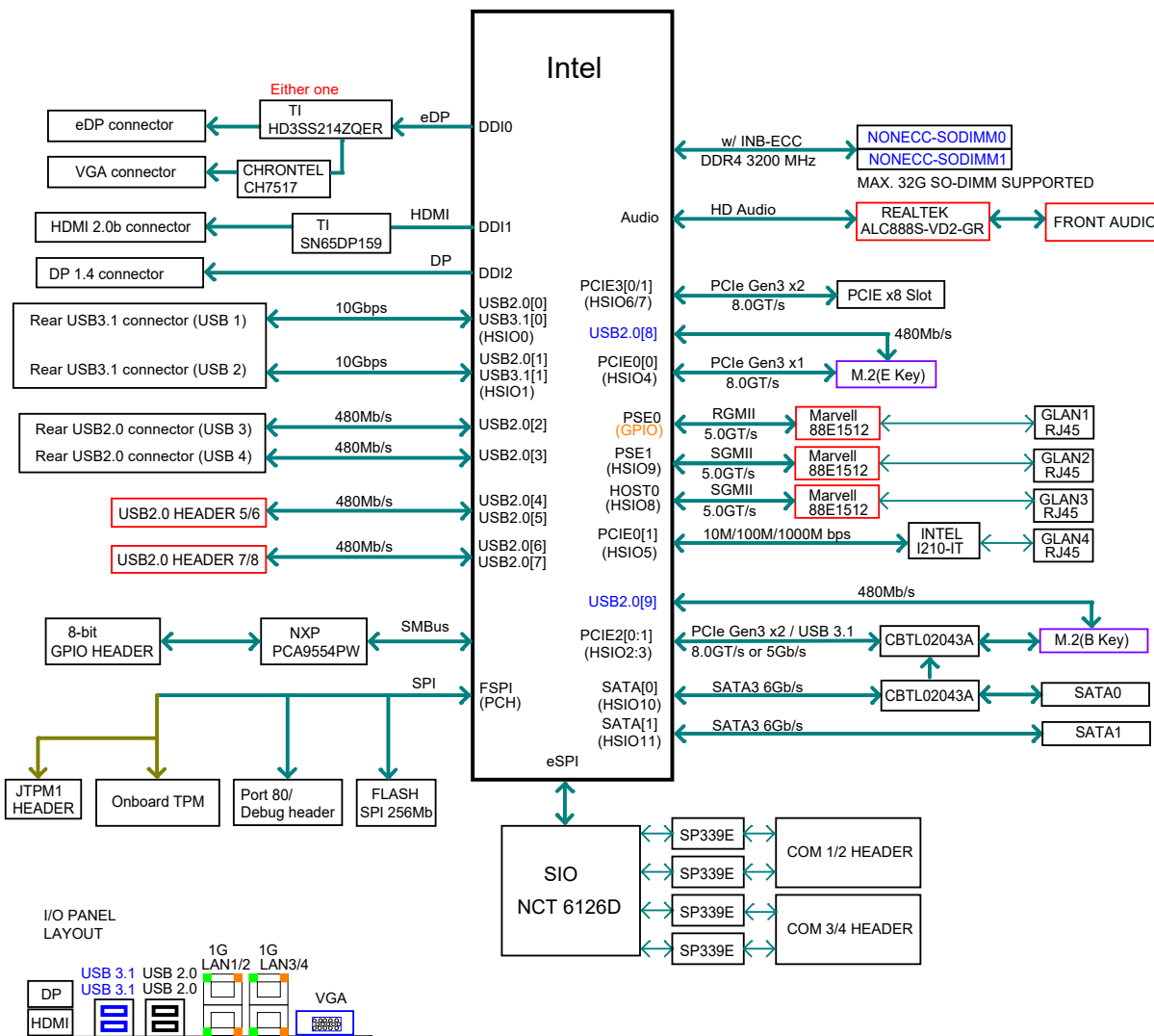


Figure 1-4. System Block Diagram

**Note:** This is a general block diagram and may not exactly represent the features on your motherboard. See the System Specifications appendix for the actual specifications of your motherboard.

# Chapter 2

## Server Installation

### 2.1 Overview

This chapter provides advice and instructions for mounting your system in a server rack. If your system is not already fully integrated with processors, system memory, etc., refer to Chapter 3 for details on installing those components.

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

### 2.2 Preparing for Setup

The box in which the system was shipped includes the screws needed to install the server into a rack. Read this section in its entirety before you begin the installation.

#### Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise, and electromagnetic fields are generated.
- Leave at least 25 inches of clearance in front of the rack so that you can open the front door completely. Leave approximately 30 inches of clearance behind 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

- Verify 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 multi-rack installations, the racks should be coupled together.
- Always verify that 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 might cause the rack to become unstable.

## **Server Precautions**

- Review the electrical and general safety precautions in Appendix B.
- 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. Subsequent components should be installed in decreasing order of weight with the lightest component at the top.
- 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 and panels closed to maintain proper cooling.

## **Rack Mounting Considerations**

### ***Ambient Operating Temperature***

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment might 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.).



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:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with 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.



Mounted equipment is not to be used as a shelf or a work space.



**Warning:** Do not pick up the server with the front handles. They are designed to pull the system from a rack only.

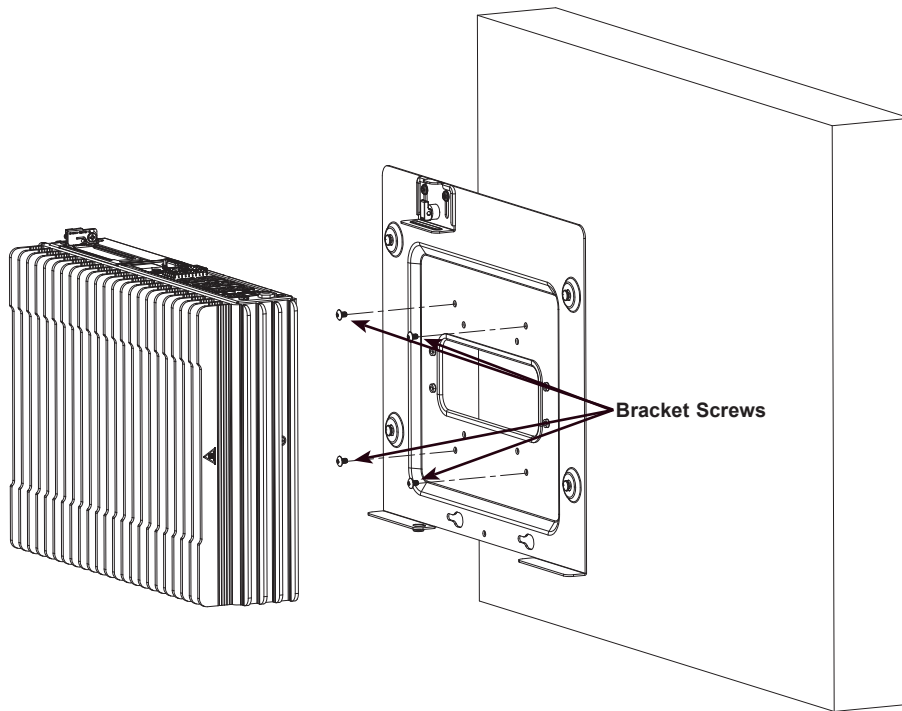
## Adding Components to your System

- **Memory:** If your system is not already fully integrated with system memory, refer to Chapter 3 for details on compatible types of memory and the installation procedure.
- **Drives and Storage:** To add storage capabilities to your server, see Chapter 3.
- **Input/Output:** See Chapter 4 for I/O ports and connect them, as needed.
- **Software:** See Chapter 5 for description and procedures for installing software, including drivers and monitoring programs.

## 2.3 Mounting on a Wall

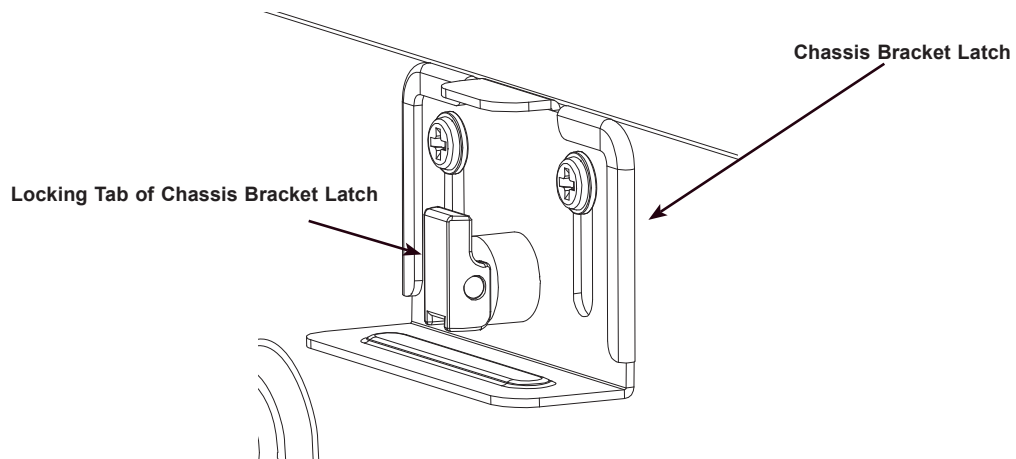
The chassis can be mounted on a wall using a bracket (optional, MCP-290-30201-0B).

1. Secure the bracket to the wall where you want the server to be mounted by using four screws through the holes around the center of the bracket, as shown below.



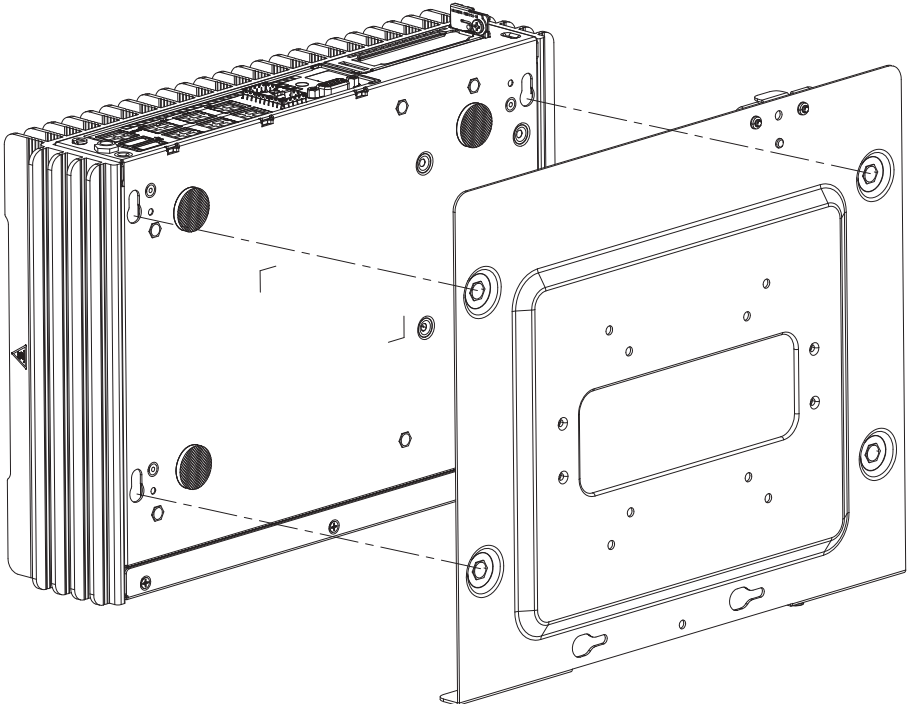
**Figure 2-1. Installing the Mounting Bracket**

2. Flip the tab of the latch on the top of the chassis bracket to unlock the latch, then slide the latch upward.



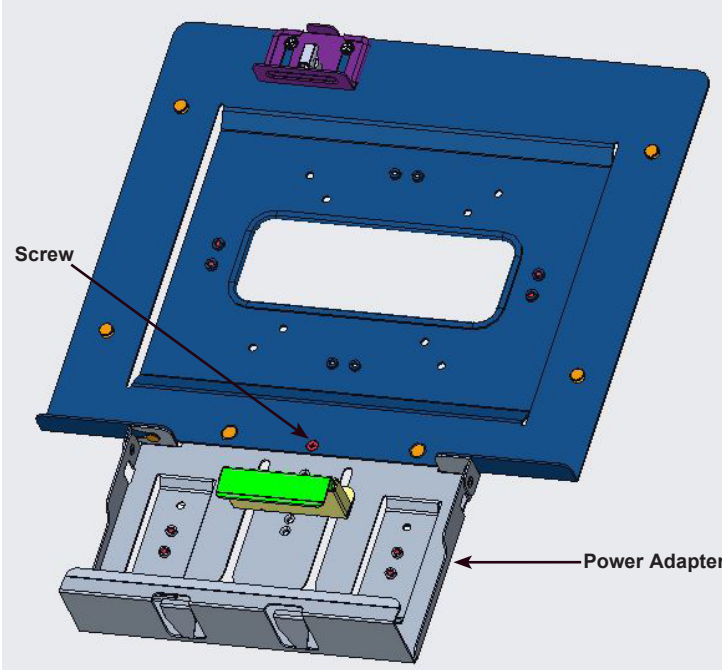
**Figure 2-2. Chassis Bracket Latch**

- 3. With the input/output ports facing up, hang the server on the mounting bracket by hooking the four keyholes on the bottom of the chassis on the four knobs of the bracket.



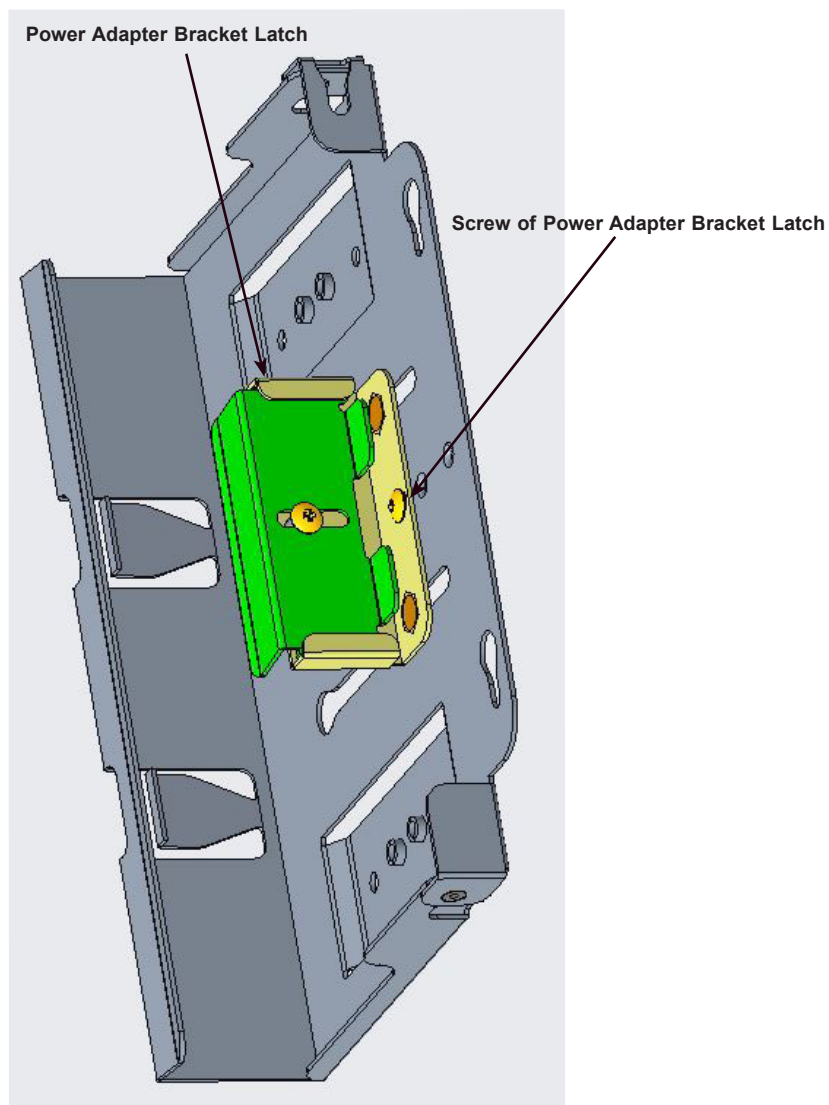
**Figure 2-3. Hanging Server on the Bracket**

- 4. Secure the chassis to the bracket by sliding the latch back down and flipping the tab to lock it in place.
- 5. An additional bracket for a power adapter can be attached to the bottom of the chassis bracket with a screw, as pictured below.



**Figure 2-4. Chassis Bracket with Power Adapter Bracket Attached**

6. The power adapter can be secured to this lower bracket by partially unscrewing its latch, sliding the latch upward, placing the power adapter in the bracket, lowering the latch, and tightening the screw to secure it in place.



**Figure 2-5. Power Adapter Bracket**

## Chapter 3

# Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components. To prevent compatibility issues, only use components that match the specifications and/or part numbers given.

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

### 3.1 Removing Power

Use the following procedure to ensure that power has been removed from the system. This step is necessary when removing or installing non hot-swap components or when replacing a non-redundant power supply.

1. Use the operating system to power down the system.
2. After the system has completely shut-down, disconnect the AC adapter power cord from the power source.
3. Disconnect the power cord from the chassis.



## 3.2 Accessing the System

The CSE-E302iL2 features a removable top cover to access the inside of the chassis.

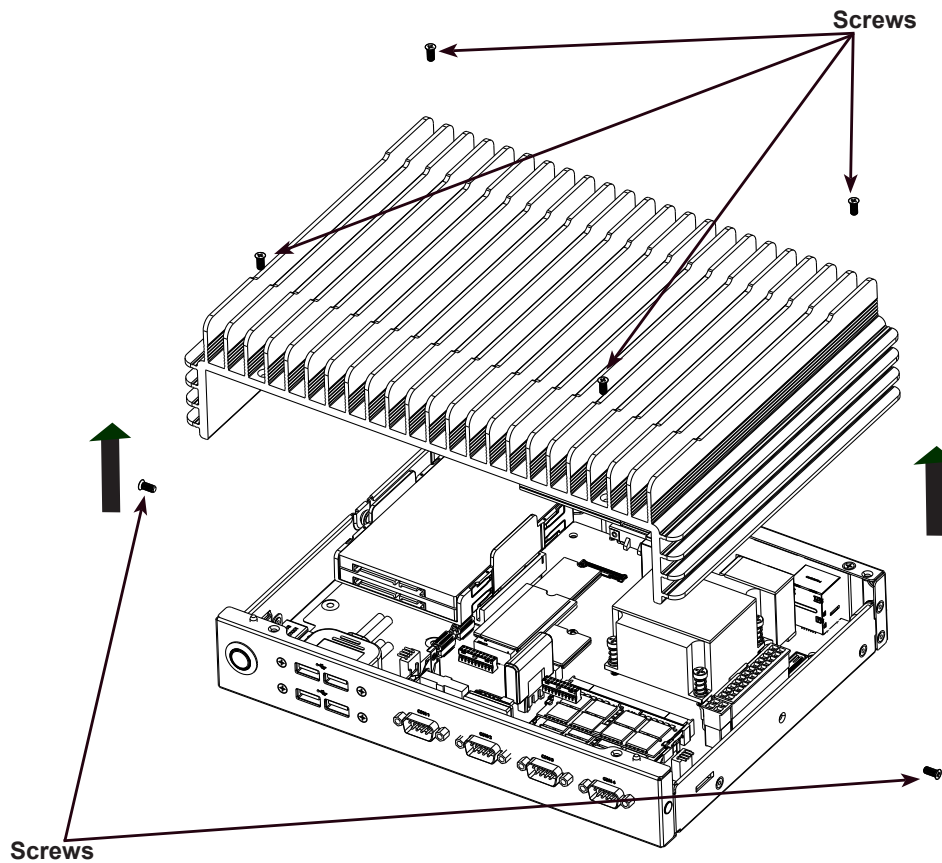


Figure 3-1. Removing the Chassis Cover

### *Removing the Top Cover*

1. Power down the system as described in section 3.1.
2. Remove the six screws that hold the cover in place.
3. Lift the cover up and off the chassis.

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

## 3.3 Motherboard Components

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

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

**Attention:** This system requires the installation of heat spreaders to the memory RAM.



### Memory Support

The A3SEV-4C-LN4 motherboard supports up to 32GB of DDR4 Non-ECC SO-DIMM with speeds of up to 3200MT/s in two slots. Populating these DIMM slots with memory modules of the same type and size will result in interleaved memory, which will improve memory performance.

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

## DIMM Module Population Sequence

When installing memory modules, the DIMM slots should be populated in the following order: DIMMB1, DIMMA1.

- For optimal performance, use DDR4 DIMM modules of the same type, size, and speed.
- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard will support a single LAN module. However for best performance, install DIMMs in both slots.

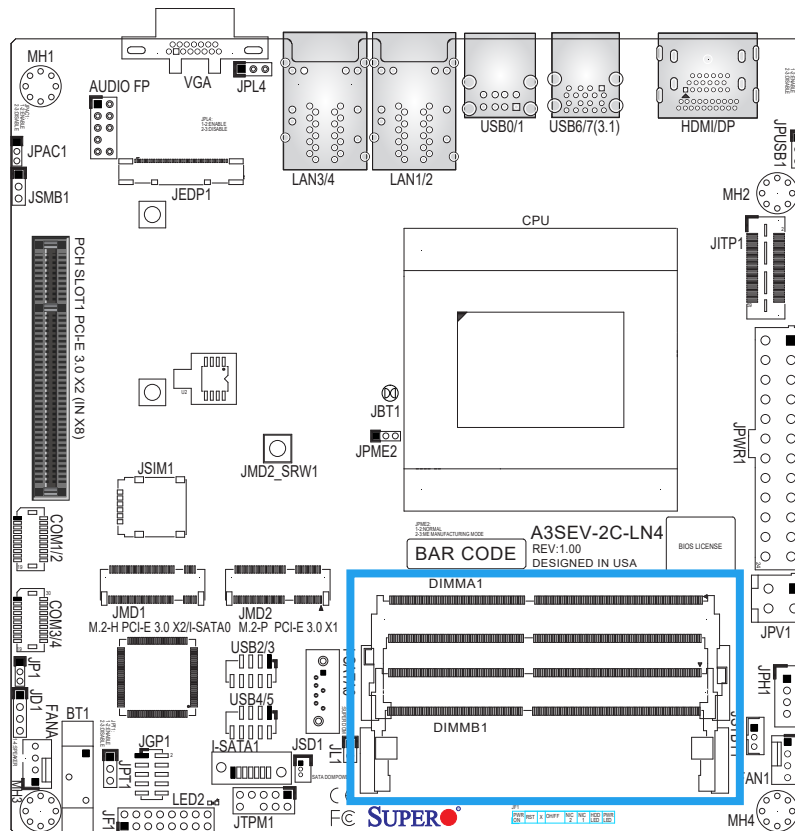
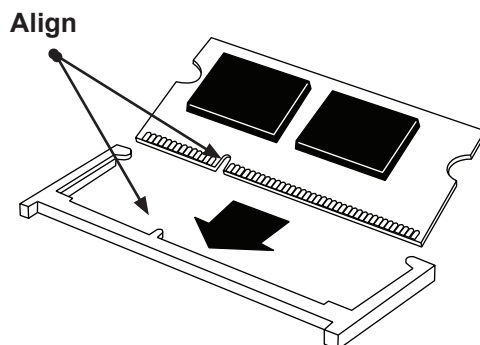


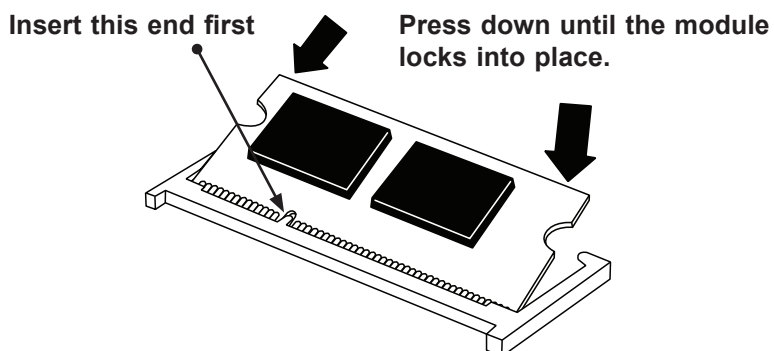
Figure 3-2. DIMM Slots

## SO-DIMM Installation

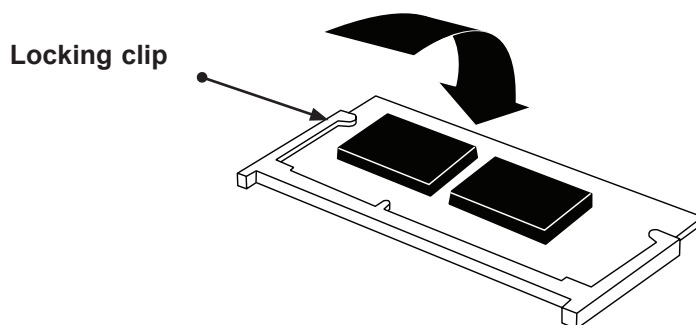
1. Position the SO-DIMM module's bottom key so it aligns with the receptive point on the slot.



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



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



## SO-DIMM Removal

1. 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.

## Motherboard Battery

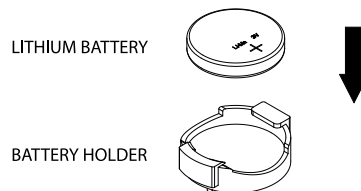
The motherboard uses non-volatile memory to retain system information when system power is removed. This memory is powered by a lithium battery residing on the motherboard.

### *Replacing the Battery*

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

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

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



**Figure 3-3. Installing the Onboard Battery**

**Warning:** There is a danger of explosion if the onboard battery is installed upside down (which reverses its polarities). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (CR2032).

## 3.4 Chassis Components

### Installing the Storage Drive

The CSE-E302iL2 can accommodate one fixed 2.5" storage drive of 7mm height and one 2.5" drive of 15mm height, installed to a mounting tray inside the chassis.

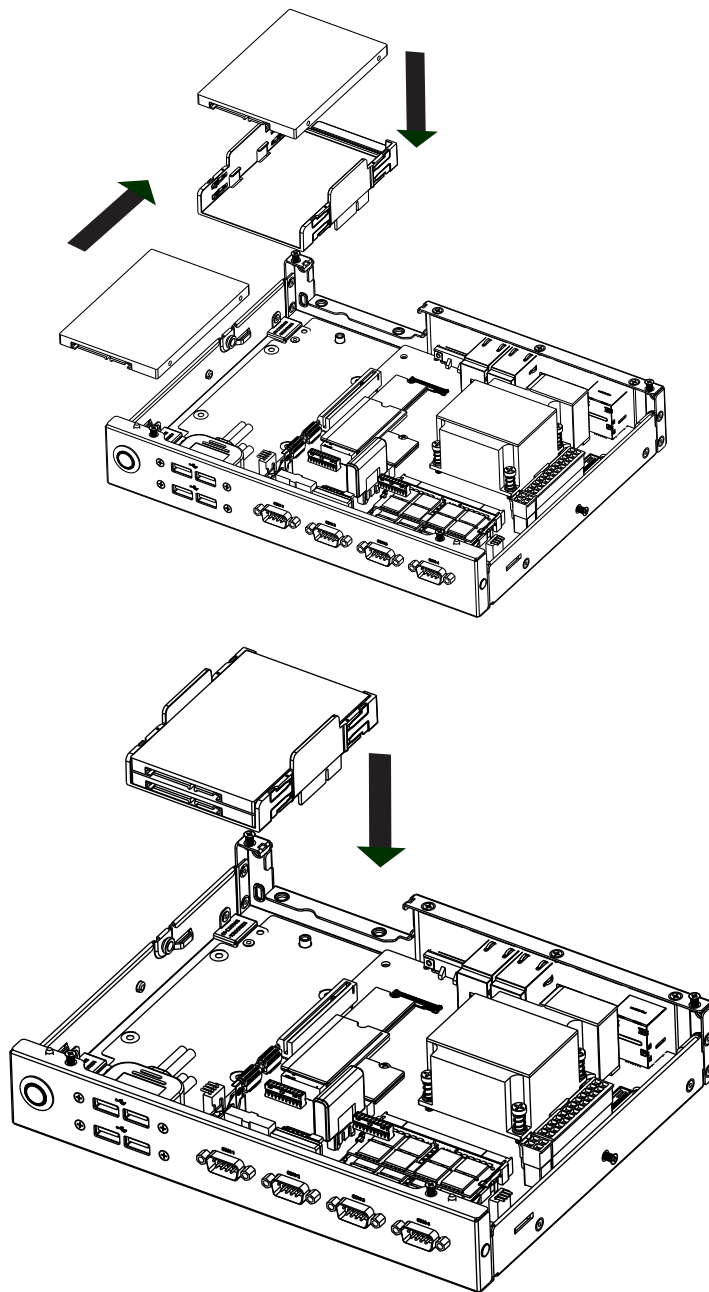
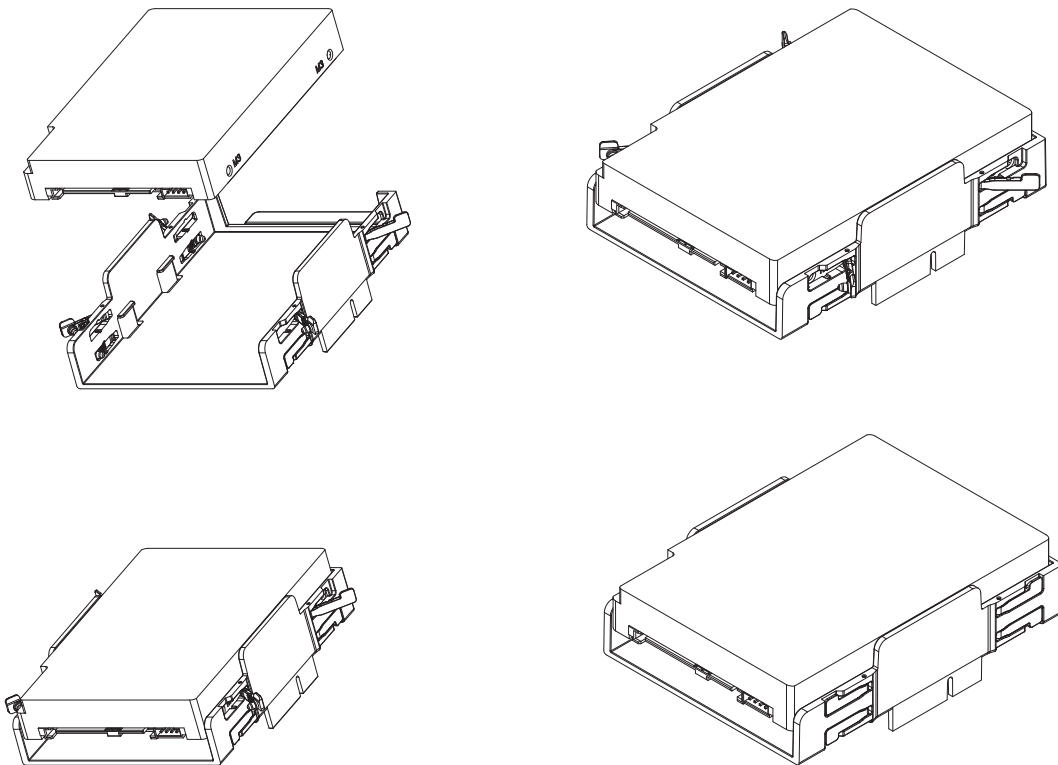


Figure 3-4. Preparing to Install the Hard Drive

### ***Installing the Hard Drive***

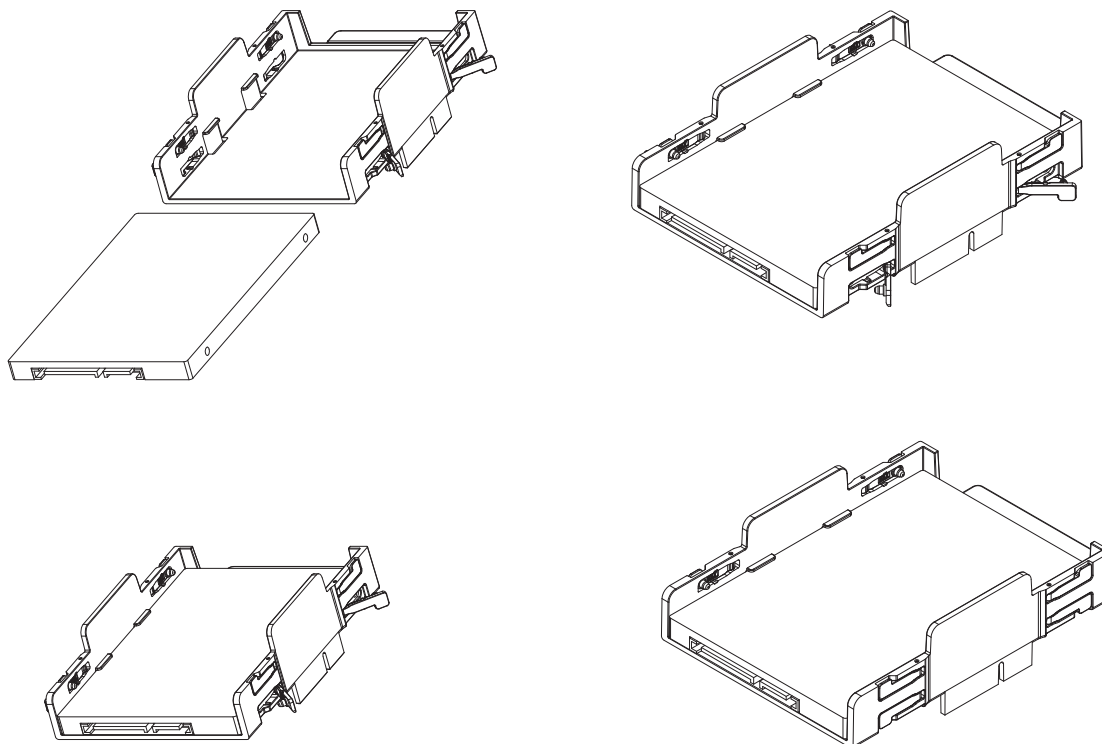
The motherboard should be installed before installing the drive(s).

1. Make sure there is no power to the system as described in section 3.1 and remove the chassis cover.
2. See section 3.2 for instructions on how to remove the top cover.
3. Lift the hard drive tray from the chassis as shown in Figure 3-4.



**Figure 3-5. Installing 15mm 2.5" Hard Drive**

4. Place one 15mm 2.5" drive directly into the tray and secure it to the tray with the standoff plugs on the sides of the tray.



**Figure 3-6. Installing 7mm 2.5" Hard Drives**

5. Optionally, for a 7mm 2.5" drive, slide it inside the tray first, then secure it to the drive tray with the standoff plugs as shown above.
6. Connect the drive data and power cables.
7. Secure the tray to the chassis by pushing the tray down into the slots.
8. Attach the cables to the appropriate motherboard connector(s).
9. Reinstall the chassis cover and power up the system.

## Chapter 4

# Motherboard Connections

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in Chapter 1.

Please review the Safety Precautions in Appendix B before installing or removing components.

### 4.1 Power Connections

Two power connections on the A3SEV-2C/4C-LN4 must be connected to the power supply. The wiring is included with the power supply.

- 24-pin Primary ATX Power (JPW1)
- 8-pin Processor Power (JPV1)
- HDD Power Connection (JPH1)

#### ATX Power Supply Connector

The 24-pin power supply connector (JPWR1) meets the ATX SSI EPS 24-pin specification.

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

#### Required Connection

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

### 4-pin 12V Power Connector

JPV1 is a 4-pin power input for alternative single power source for special enclosure when 24-pin ATX power is not in use. See the table below for pin definitions.

| 4-pin 12V Power Pin Definitions |            |
|---------------------------------|------------|
| Pin#                            | Definition |
| 1-2                             | Ground     |
| 3-4                             | +12V       |

### HDD Power Connector

The 4-pin HDD power connector JPH1 provides power to onboard HDD devices. See the table below for pin definitions.

| 4-pin HDD Power Pin Definitions |            |
|---------------------------------|------------|
| Pin#                            | Definition |
| 1                               | 12V        |
| 2                               | Ground     |
| 3                               | Ground     |
| 4                               | 5V         |

## 4.2 Headers and Connectors

### Fan Header

There are two 4-pin fan headers on the motherboard. Pins 1-3 are backward compatible with traditional 3-pin fans. The onboard fan speeds are controlled by Thermal Management (via Hardware Monitoring) in the BIOS. When using Thermal Management setting, please use all 3-pin fans or all 4-pin fans.

| Fan Header Pin Definitions |                |
|----------------------------|----------------|
| Pin#                       | Definition     |
| 1                          | Ground (Black) |
| 2                          | +12V (Red)     |
| 3                          | Tachometer     |
| 4                          | PWM Control    |

### Front Accessible Audio Header

A 10-pin audio header located AUDIO FP on the motherboard allows you to use the onboard sound for audio playback. Connect an audio cable to the this header to use this feature. See the table below for pin definitions.

| Audio Header<br>Pin Definitions |                |      |              |
|---------------------------------|----------------|------|--------------|
| 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     |

### System Management Bus Header

A System Management Bus header for additional slave devices or sensors is located at JSMB1 on the bottom side of the motherboard. See the table below for pin definitions.

| SMBus Header<br>Pin Definitions |            |
|---------------------------------|------------|
| Pin#                            | Definition |
| 1                               | SMB_DATA   |
| 2                               | GND        |
| 3                               | SMB_CLK    |

### COM Headers

The motherboard has two COM headers that provide four serial connections (COM1/2 and COM3/4). These headers support the RS-232/422/485 function. Please utilize Supermicro PN: CBL-CDAT-0685 to bridge out these serial connections.

| COM1/2 Header<br>Pin Definitions |            |      |            |
|----------------------------------|------------|------|------------|
| Pin#                             | Definition | Pin# | Definition |
| 1                                | DCD1       | 2    | DSR1       |
| 3                                | RXD1       | 4    | RTS1       |
| 5                                | TXD1       | 6    | CTS1       |
| 7                                | DTR1       | 8    | RI1_N      |
| 9                                | GND        | 10   | N/A        |
| 11                               | DCD2       | 12   | DSR2       |
| 13                               | RXD2       | 14   | RTS2       |
| 15                               | TXD2       | 16   | CTS2       |
| 17                               | DTR2       | 18   | RI2_N      |
| 19                               | GND        | 20   | N/A        |

| COM3/4 Header<br>Pin Definitions |            |      |            |
|----------------------------------|------------|------|------------|
| Pin#                             | Definition | Pin# | Definition |
| 1                                | DCD3       | 2    | DSR3       |
| 3                                | RXD3       | 4    | RTS3       |
| 5                                | TXD3       | 6    | CTS3       |
| 7                                | DTR3       | 8    | RI3_N      |
| 9                                | GND        | 10   | N/A        |
| 11                               | DCD4       | 12   | DSR4       |
| 13                               | RXD4       | 14   | RTS4       |
| 15                               | TXD4       | 16   | CTS4       |
| 17                               | DTR4       | 18   | RI4_N      |
| 19                               | GND        | 20   | N/A        |

### TPM/Port 80 Header

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

| Trusted Platform Module/Port80 Header<br>Pin Definitions |             |      |            |
|--|-------------|------|------------|
| Pin#   | Definition  | Pin# | Definition |
| 1  | 3.3V        | 2    | SPI_CS#    |
| 3  | RESET#      | 4    | SPI_MISO   |
| 5  | SPI_CLK#    | 6    | GND        |
| 7  | SPI_MOSI    | 8    | NC         |
| 9  | +3.3V Stdby | 10   | SPI_IRQ#   |

### General Purpose I/O Header

The JGP1 (General Purpose Input/Output) header 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 2.0mm pitch. The GPIO is controlled via the PCA9554APW 8-bit GPIO expansion from PCH SMBus. The base address is 0xEFA0. The expander slave address is 0x70 for WRITE and 0x71 for READ. See the table below for pin definitions.

| JGP1 Header<br>Pin Definitions |            |
|--------------------------------|------------|
| Pin#                           | Definition |
| 1                              | P3V3_DUAL  |
| 2                              | GND        |
| 3                              | JGP1_0     |
| 4                              | JGP1_4     |
| 5                              | JGP1_1     |
| 6                              | JGP1_5     |
| 7                              | JGP1_2     |
| 8                              | JGP1_6     |
| 9                              | JGP1_3     |
| 10                             | JGP1_7     |

### Standby Power

The Standby Power header is located at JSTBY1 on the motherboard. You must have a card with a Standby Power connector and a cable to use this feature. Refer to the table below for pin definitions.

| Standby Power<br>Pin Definitions |               |
|----------------------------------|---------------|
| Pin#                             | Definition    |
| 1                                | +5V Standby   |
| 2                                | Ground        |
| 3                                | No Connection |

### Disk-On-Module Power Connector

One power connector for SATA DOM (Disk-On-Module) devices is located at JSD1. Connect appropriate cables here to provide power support for your Serial Link DOM devices.

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

### Chassis Intrusion

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

| Chassis Intrusion Pin Definitions |                 |
|-----------------------------------|-----------------|
| Pin#                              | Definition      |
| 1                                 | Intrusion Input |
| 2                                 | Ground          |

### Speaker/Buzzer

On the JD1 header, pins 1-4 are for the external speaker. If you wish to use an external speaker, connect its cable to pins 1-4.

| Speaker/Buzzer Pin Definitions |            |
|--------------------------------|------------|
| Pin #                          | Definition |
| 1-4                            | Speaker    |

### I-SATA 3.0 Ports

The A3SEV-2C/4C-LN4 has two I-SATA 3.0 ports (I-SATA0 and I-SATA1). I-SATA0 can be used with Supermicro SuperDOMs that are yellow SATA DOM connectors with power pins built in, and do not require external power cables. Supermicro SuperDOMs are backward compatible with regular SATA HDDs or SATA DOMs that need external power cables.

### Nano SIM Slot

The JSIM1 slot supports a Nano SIM card. Please refer to jumper JP1 for additional settings.

## M.2 Slots

The motherboard has two M.2 slots (JMD1 and JMD2). 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. JMD1 supports a B-Key PCIe 3.0 x2/SATA/USB 3.0 device in the 2282/3042 form factors (SATA is shared with I-SATA0), whereas JMD2 supports an E-Key SATA/PCIe 3.0 x1/USB 2.0 device in the 2230 form factor. The JMD1 pin definition table is on this page and the JMD2 table is on the next page.

| M.2 Slot Pin Definitions (JMD1 B-Key) |                                |      |   |
|---------------------------------------|--------------------------------|------|---|
| Pin#                                  | Definition                     | Pin# | Definition                              |
| 1                                     | config3                        | 2    | P3V3_DUAL                               |
| 3                                     | GND                            | 4    | P3V3_DUAL                               |
| 5                                     | GND                            | 6    | FULL_CARD_POWER_OFF#(PU to P1V8SB only) |
| 7                                     | USB_D+                         | 8    | W_DISABLE1#(PU to P3V3SB only)          |
| 9                                     | USB_D-                         | 10   | NC                                      |
| 11                                    | GND                            | 12   |   |
| 13                                    |                                | 14   |   |
| 15                                    |                                | 16   |   |
| 17                                    |                                | 18   |   |
| 19                                    |                                | 20   | NC                                      |
| 21                                    | config0                        | 22   | NC                                      |
| 23                                    | WWAN_WAKE_N(PU to P1V8SB only) | 24   | NC                                      |
| 25                                    | NC                             | 26   | RF_KILL_GPS_1P8_N(PU to P1V8SB only)    |
| 27                                    | GND                            | 28   | NC                                      |
| 29                                    | PERN1                          | 30   | UIM_RESET                               |
| 31                                    | PERP1                          | 32   | UIM_CLK                                 |
| 33                                    | GND                            | 34   | UIM_DATA                                |
| 35                                    | PETN1                          | 36   | UIM_PWR                                 |
| 37                                    | PETP1                          | 38   | DEVSLP (reserved)                       |
| 39                                    | GND                            | 40   | SMB_CLK (reserved)                      |
| 41                                    | PERn0/SATA-B+                  | 42   | SMB_DATA (reserved)                     |
| 43                                    | PERp0/SATA-B-                  | 44   | ALERT(PU to P1V8SB only)                |
| 45                                    | GND                            | 46   | NC                                      |
| 47                                    | PETn0/SATA-A-                  | 48   | NC                                      |
| 49                                    | PETn0/SATA-A+                  | 50   | PERST (PLTRST)                          |
| 51                                    | GND                            | 52   | CLK_REQ_N                               |
| 53                                    | REFCLK-                        | 54   | PE_WAKE_N                               |
| 55                                    | REFCLK+                        | 56   | NC                                      |
| 57                                    | GND                            | 58   | NC                                      |
| 59                                    | NC                             | 60   | COEX3                                   |
| 61                                    | NC                             | 62   | COEX_TXD                                |
| 63                                    | NC                             | 64   | COEX_RXD                                |
| 65                                    | NC                             | 66   | SIM_DETECT                              |
| 67                                    | NC                             | 68   | SYSCLK (reserved)                       |
| 69                                    | config1                        | 70   | P3V3_DUAL                               |
| 71                                    | GND                            | 72   | P3V3_DUAL                               |
| 73                                    | GND                            | 74   | P3V3_DUAL                               |
| 75                                    | NC                             |      |   |

| M.2 Slot Pin Definitions (JMD2 E-Key) |                 |      |                    |
|---------------------------------------|-----------------|------|--------------------|
| Pin#                                  | Definition      | Pin# | Definition         |
| 1                                     | GND             | 2    | P3V3_DUAL          |
| 3                                     | USB_JMD2_DP     | 4    | P3V3_DUAL          |
| 5                                     | USB_JMD2_DN     | 6    |                    |
| 7                                     | GND             | 8    |                    |
| 9                                     |                 | 10   |                    |
| 11                                    |                 | 12   |                    |
| 13                                    |                 | 14   |                    |
| 15                                    |                 | 16   |                    |
| 17                                    |                 | 18   | GND                |
| 19                                    |                 | 20   | UART_BT_WAKE_R_N   |
| 21                                    |                 | 22   |                    |
| 23                                    |                 | 24   |                    |
| 25                                    |                 | 26   |                    |
| 27                                    |                 | 28   |                    |
| 29                                    |                 | 30   |                    |
| 31                                    |                 | 32   |                    |
| 33                                    | GND             | 34   |                    |
| 35                                    | PE_PCH_TX_C_P0  | 36   |                    |
| 37                                    | PE_PCH_TX_C_N0  | 38   |                    |
| 39                                    | GND             | 40   |                    |
| 41                                    | PE_M2E_RX_DP    | 42   |                    |
| 43                                    | PE_M2E_RX_DN    | 44   | M2E_WLAN_COEX3     |
| 45                                    | GND             | 46   | M2E_WLAN_COEX2     |
| 47                                    | CLK_100M_M2E_DP | 48   | M2E_WLAN_COEX1     |
| 49                                    | CLK_100M_M2E_DN | 50   | M2E_SUSCLK_R       |
| 51                                    | GND             | 52   | PLTRST_M2E_R       |
| 53                                    | CLKREQ_M2E_R_N  | 54   | M2E_W_DISABLE2_N_R |
| 55                                    | PE_WAKE_M2E_R_N | 56   | M2E_W_DISABLE1_N_R |
| 57                                    | GND             | 58   | M2E_I2C_DAT_R      |
| 59                                    |                 | 60   | M2E_I2C_CLK_R      |
| 61                                    |                 | 62   |                    |
| 63                                    | GND             | 64   |                    |
| 65                                    |                 | 66   |                    |
| 67                                    |                 | 68   |                    |
| 69                                    | GND             | 70   |                    |
| 71                                    |                 | 72   | P3V3_DUAL          |
| 73                                    |                 | 74   | P3V3_DUAL          |
| 75                                    | GND             |      |                    |

## Embedded DisplayPort

The eDP header is used to connect an embedded display LED or LCD Panel. eDP is a companion standard to the DisplayPort interface designed for embedded display applications, including notebook PCs, tablets, netbooks and all-in-one desktop PCs. Refer to the table below for pin definitions.

| eDP Header<br>Connector: DF80-40S-0.5V(51)<br>Pin Definitions |            |      |                 |
|---|------------|------|-----------------|
| Pin#  | Definition | Pin# | Definition      |
| 1   | P3V3_EDP   | 21   | eDP_TXN0        |
| 2   | P3V3_EDP   | 22   | eDP_TXP0        |
| 3   | P3V3_EDP   | 23   | GND             |
| 4   | P3V3_EDP   | 24   | eDP_AUXP        |
| 5   | P3V3_EDP   | 25   | eDP_AUXN        |
| 6   | GND        | 26   | NC              |
| 7   | GND        | 27   | P3V3            |
| 8   | GND        | 28   | NC              |
| 9   | GND        | 29   | P12V            |
| 10  | EDP_HPD    | 30   | NC              |
| 11  | GND        | 31   | GND             |
| 12  | eDP_TXN3   | 32   | P5V             |
| 13  | eDP_TXP3   | 33   | EDP_3P3_ BKLCTL |
| 14  | GND        | 34   | EDP_3P3_ BKLEN  |
| 15  | eDP_TXN2   | 35   | P12V            |
| 16  | eDP_TXP2   | 36   | P3V3            |
| 17  | GND        | 37   | GND             |
| 18  | eDP_TXN1   | 38   | SMB_CLK         |
| 19  | eDP_TXP1   | 39   | SMB_DATA        |
| 20  | GND        | 40   | NC              |

## 4.3 Rear I/O Ports

See Figure 4-1 below for the locations and descriptions of the various I/O ports on the rear of the motherboard.

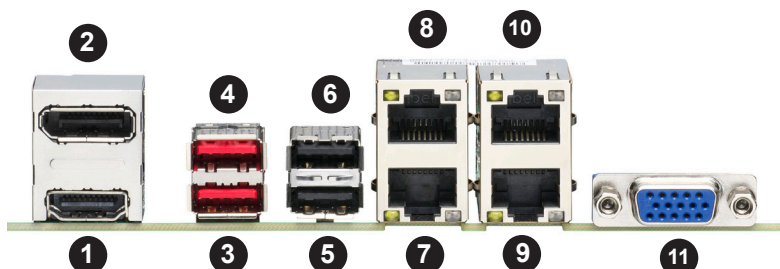


Figure 4-1. I/O Port Locations and Definitions

| Rear I/O Ports |             |      |             |      |             |
|----------------|-------------|------|-------------|------|-------------|
| Item           | Description | Item | Description | Item | Description |
| 1              | HDMI        | 5    | USB0 (2.0)  | 9    | LAN3        |
| 2              | DP          | 6    | USB1 (2.0)  | 10   | LAN4        |
| 3              | USB6 (3.1)  | 7    | LAN1        | 11   | VGA         |
| 4              | USB7 (3.1)  | 8    | LAN2        |      |             |

### VGA Port

A video (VGA) port is located on the I/O back panel. Refer to the board layout below for the location.

### HDMI

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

### DP (DisplayPort)

There is one DisplayPort on the I/O back panel. DisplayPort, developed by the VESA consortium, delivers digital display and fast refresh rate. It can connect to virtually any display using a DisplayPort adaptor for devices such as VGA, DVI, or HDMI.

## LAN Ports

There are four 1GbE LAN ports (LAN1 - LAN4) on the I/O back panel. These ports accept RJ45 type cables. Please refer to the LED Indicator section for LAN LED information. See the table below for pin definitions.

| LAN1/3 Port<br>Pin Definition |            |      |            |
|-------------------------------|------------|------|------------|
| Pin#                          | Definition | Pin# | Definition |
| A1                            | TD1+       | A11  | YEL-       |
| A2                            | TD1-       | A12  | YEL+       |
| A3                            | TD2+       | A13  | GRN-/ORG+  |
| A4                            | TD2-       | A14  | GRN+/ORG-  |
| A5                            | CT_VCC     | A15  |            |
| A6                            | CT_VCC     | A16  |            |
| A7                            | TD3+       | A17  |            |
| A8                            | TD3-       | A18  |            |
| A9                            | TD4+       | A19  |            |
| A10                           | TD4-       | A20  |            |

| LAN2/4 Port<br>Pin Definition |            |      |            |
|-------------------------------|------------|------|------------|
| Pin#                          | Definition | Pin# | Definition |
| B1                            | TD1+       | B11  | YEL-       |
| B2                            | TD1-       | B12  | YEL+       |
| B3                            | TD2+       | B13  | GRN-/ORG+  |
| B4                            | TD2-       | B14  | GRN+/ORG-  |
| B5                            | CT_VCC     | B15  |            |
| B6                            | CT_VCC     | B16  |            |
| B7                            | TD3+       | B17  |            |
| B8                            | TD3-       | B18  |            |
| B9                            | TD4+       | B19  |            |
| B10                           | TD4-       | B20  |            |

## Universal Serial Bus (USB) Ports

There are two USB 2.0 ports (USB0/1) and two USB 3.1 ports (USB6/7) on the I/O back panel. The motherboard also has two USB 2.0 headers (USB2/3 and USB4/5) that provide four USB connections. The onboard headers can be used to provide front side USB access with a cable.

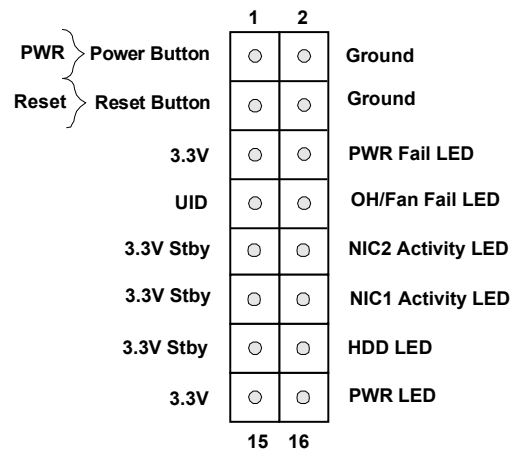
| Back Panel USB 3.1 (USB6/7)<br>Pin Definitions |              |      |              |
|--|--------------|------|--------------|
| Pin#   | Definition   | Pin# | Definition   |
| A1   | VBUS         | B1   | VBUS         |
| A2   | D1-N         | B2   | D2-N         |
| A3   | D1-P         | B3   | D2-P         |
| A4   | GND          | B4   | GND          |
| A5   | Stda_SSRX1-N | B5   | Stda_SSRX2-N |
| A6   | Stda_SSRX1-P | B6   | Stda_SSRX2-P |
| A7   | GND_DRAIN    | B7   | GND_DRAIN    |
| A8   | Stda_SSTX1-N | B8   | Stda_SSTX2-N |
| A9   | Stda_SSTX1-P | B9   | Stda_SSTX2-P |

| Back Panel USB 2.0 (USB0/1)<br>Header Pin Definitions |               |      |               |
|---|---------------|------|---------------|
| Pin#  | Definition    | Pin# | Definition    |
| 1   | P5VSB         | 7    | USB_CON_P2_DP |
| 2   | USB_CON_P3_DN | 8    | GND           |
| 3   | USB_CON_P3_DP | 9    | GND           |
| 4   | GND           | 10   | GND           |
| 5   | P5VSB         | 11   | GND           |
| 6   | USB_CON_P2_DN | 12   | GND           |

| Front Panel USB 2.0 (USB2/3, USB4/5)<br>Header Pin Definitions |            |      |            |
|--|------------|------|------------|
| Pin#   | Definition | Pin# | Definition |
| 1  | P5V_DUAL_F | 2    | P5V_DUAL_F |
| 3  | USBCON_N2  | 4    | USBCON_N3  |
| 5  | USBCON_P2  | 6    | USBCON_P3  |
| 7  | Ground     | 8    | Ground     |
| 9  | Key        | 10   | NC         |

## 4.4 Front Control Panel

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



### Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS - see Chapter 4). To turn off the power in the suspend mode, press the button for at least 4 seconds. See the table below for pin definitions.

| Power Button<br>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. Attach it to a hardware reset switch on the computer case to reset the system. See the table below for pin definitions.

| Reset Button<br>Pin Definitions (JF1) |            |
|---------------------------------------|------------|
| Pin#                                  | Definition |
| 3                                     | Reset      |
| 4                                     | Ground     |

### Overheat (OH)/Fan Fail

Connect an LED cable to pins 7 and 8 of the Front Control Panel to use the Overheat/Fan Fail LED connections. The LED on pin 8 provides warnings of overheating or fan failure. Refer to the tables below for pin definitions.

| OH/Fan Fail Indicator Status |            |
|------------------------------|------------|
| State                        | Definition |
| Off                          | Normal     |
| On                           | Overheat   |
| Flashing                     | Fan Fail   |

| OH/Fan Fail LED Pin Definitions (JF1) |                 |
|---------------------------------------|-----------------|
| Pin#                                  | Definition      |
| 7                                     | 3.3V            |
| 8                                     | OH/Fan Fail LED |

### NIC1/NIC2 (LAN1/LAN2)

The NIC (Network Interface Controller) LED connection for LAN port 1 is located on pins 11 and 12 of JF1, and LAN port 2 is on pins 9 and 10. Attach the NIC LED cables here to display network activity. Refer to the table below for pin definitions.

| NIC1/NIC2 LED Pin Definitions (JF1) |                |
|-------------------------------------|----------------|
| Pin#                                | Definition     |
| 9                                   | 3.3V Stby      |
| 10                                  | NIC 2 Link LED |
| 11                                  | 3.3V Stby      |
| 12                                  | NIC 1 Link LED |

### HDD LED

The HDD LED connection is located on pins 13 and 14 of JF1. Attach a cable to pin 14 to show hard drive activity status. Refer to the table below for pin definitions.

| HDD LED Pin Definitions (JF1) |            |
|-------------------------------|------------|
| Pins                          | Definition |
| 13                            | 3.3V       |
| 14                            | HDD Active |

### Power LED

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

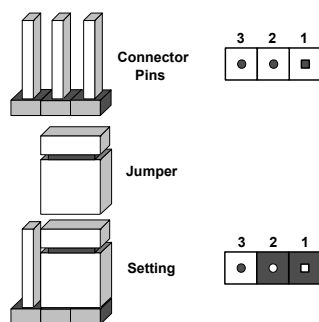
| Power LED Pin Definitions (JF1) |            |
|---------------------------------|------------|
| Pins                            | Definition |
| 15                              | 3.3 Stby   |
| 16                              | PWR LED    |

## 4.5 Jumpers

### *Explanation of Jumpers*

To modify the operation of the motherboard, jumpers are used to choose between optional settings. Jumpers create shorts between two pins to change the function associated with it. Pin 1 is identified with a square solder pad on the printed circuit board. See the motherboard layout page for jumper locations.

**Note:** On a two-pin jumper, "Closed" means the jumper is on both pins and "Open" indicates the jumper is either on only one pin or has been completely removed.



### **CMOS Clear**

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

#### **To Clear CMOS**

1. First power down the system and unplug the power cord(s).
2. Remove the cover of the chassis to access the motherboard.
3. Remove the onboard battery from the motherboard.
4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.
5. Remove the screwdriver (or shorting device).
6. Replace the cover, reconnect the power cord(s), and power on the system.

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

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



JBT1 contact pads

### Onboard TPM Enable/Disable

Use JPT1 to enable or disable support for the onboard TPM 2.0 module. See the table below for jumper settings.

| TPM Enable/Disable Jumper Settings |                   |
|------------------------------------|-------------------|
| Jumper Setting                     | Definition        |
| Pins 1-2                           | Enable            |
| Pins 2-3                           | Disable (Default) |

### Manufacturing Mode Select

Close JPME2 to bypass SPI flash security and force the system to use the Manufacturing Mode, which will allow you to flash the system firmware from a host server to modify system settings. See the table below for jumper settings.

| Manufacturing Mode Jumper Settings |                    |
|------------------------------------|--------------------|
| Jumper Setting                     | Definition         |
| Pins 1-2                           | Normal (Default)   |
| Pins 2-3                           | Manufacturing Mode |

### LAN4 Port Enable/Disable

Use JPL4 to enable or disable LAN4 port. The default setting is Enabled.

| LAN4 Port Enable/Disable Jumper Settings |                   |
|--|-------------------|
| Jumper Setting                           | Definition        |
| Pins 1-2                                 | Enabled (Default) |
| Pins 2-3                                 | Disabled          |

### Audio Enable/Disable

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

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

## USB Wake Up

Use the JPUSB1 jumper to enable system wake up via a USB device. This jumper allows you to wake up the system by pressing a key on the USB keyboard or by clicking the USB mouse. The JPUSB1 jumper is used together with the USB Wake Up function in the BIOS. Enable both the jumper and the BIOS setting to activate this function. When the USB Wake Up function is enabled, it will be active on all USB ports. Refer to the table below for jumper settings.

| USB Wake Up Jumper Settings |                   |
|-----------------------------|-------------------|
| Jumper Setting              | Definition        |
| Pins 1-2                    | Enabled (Default) |
| Pins 2-3                    | Disabled          |

## SIM Detection

Use the JP1 jumper to set the detection type for the wireless WAN module in use. Since each WAN module vendor has a different type of detection, check with your respective vendor for the correct type.

| SIM Detection Jumper Settings |                   |
|-------------------------------|-------------------|
| Jumper Setting                | Definition        |
| Pins 1-2                      | Enabled (Default) |
| Pins 2-3                      | Disabled          |

## 4.6 LED Indicators

### LAN LEDs

Four LAN ports are located on the I/O back panel of the motherboard. Each Ethernet LAN port has two LEDs. The green LED indicates activity, while the other Link LED may be green, amber, or off to indicate the speed of the connection.

| LAN1/2/3 LED<br>(Connection Speed Indicator) |            |
|--|------------|
| LED Color                                    | Definition |
| Yellow                                       | Active     |
| Orange                                       | 1G         |

| LAN4 LED<br>(Connection Speed Indicator) |            |
|--|------------|
| LED Color                                | Definition |
| Yellow                                   | Active     |
| Orange                                   | 1G         |
| Green                                    | 100M       |

### Power LED

LED2 is an onboard Power LED. When this LED is lit, it means power is present on the motherboard. In suspend mode, this LED will blink on and off. Turn off the system and unplug the power cord before removing or installing components.

| Onboard Power LED Indicator |   |
|-----------------------------|---|
| LED Color                   | Definition                                |
| Off                         | System Off<br>(power cable not connected) |
| Green                       | System On                                 |

# Chapter 5

## Software

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

### 5.1 Microsoft Windows OS Installation

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

#### *Installing the OS*

1. Create a method to access the MS Windows installation ISO file. That might be a DVD, perhaps using an external USB/SATA DVD drive, or a USB flash drive, or the IPMI KVM console.
2. Retrieve the proper RST/RSTe driver. Go to the Supermicro web page for your motherboard and click on "Download the Latest Drivers and Utilities", select the proper driver, and copy it to a USB flash drive.
3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **F11** during the system startup.

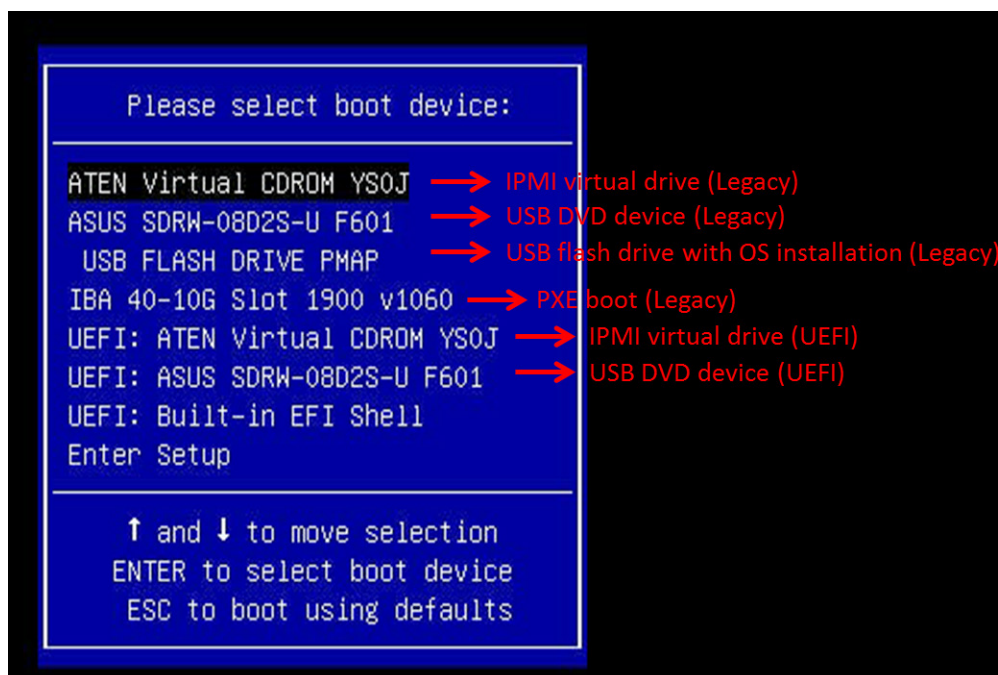
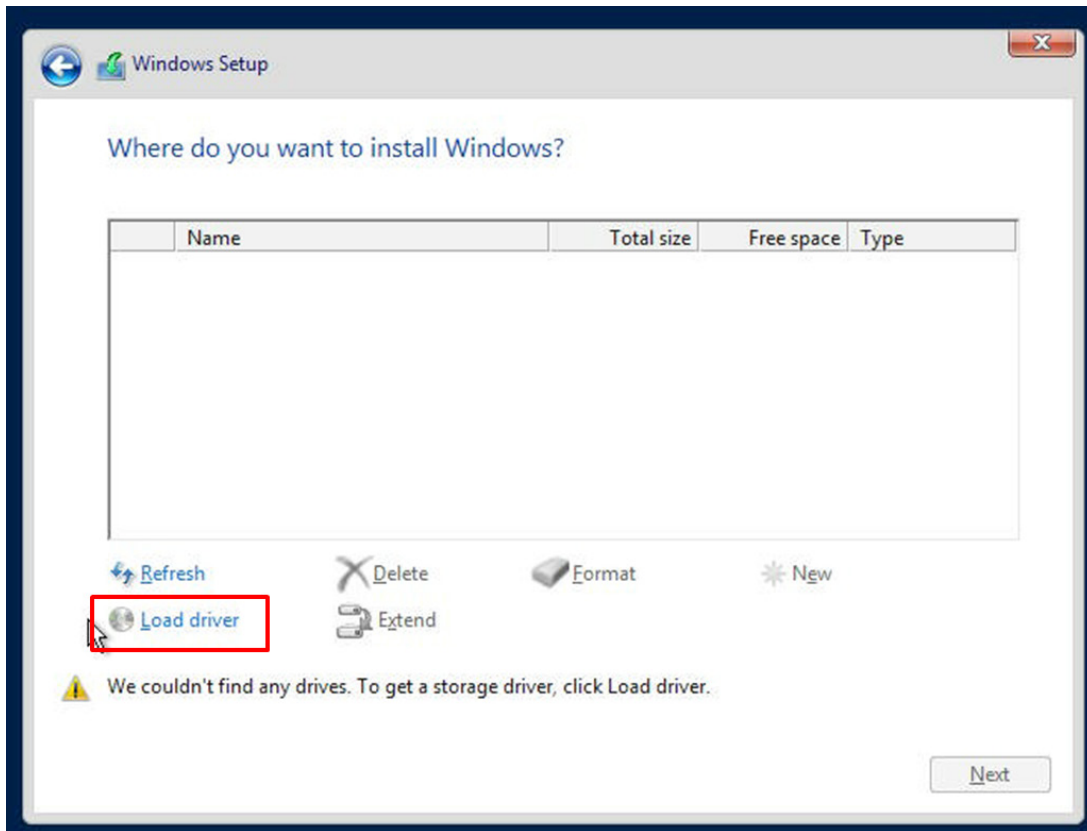


Figure 5-1. Select Boot Device

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



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

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

- For RAID, choose the SATA/sSATA RAID driver indicated then choose the storage drive on which you want to install it.
  - For non-RAID, choose the SATA/sSATA AHCI driver indicated then choose the storage drive on which you want to install it.
5. Once all devices are specified, continue with the installation.
  6. After the Windows OS installation has completed, the system will automatically reboot multiple times.

## 5.2 Driver Installation

The Supermicro website that contains drivers and utilities for your system is at <https://www.supermicro.com/wdl/driver/>. Some of these must be installed, such as the chipset driver.

After accessing the website, go into the CDR\_Images (in the parent directory of the above link) and locate the ISO file for your motherboard. Download this file to create a DVD of the drivers and utilities it contains. (You may also use a utility to extract the ISO file if preferred.)

After creating a CD/DVD with the ISO files, insert the disk into the CD/DVD drive on your system and the display shown in Figure B-1 should appear.

Another option is to go to the Supermicro website at <http://www.supermicro.com/products/>. Find the product page for your motherboard here, where you may download individual drivers and utilities to your hard drive or a USB flash drive and install from there.

**Note:** To install the Windows OS, please refer to the instructions posted on our website at <http://www.supermicro.com/support/manuals/>.



**Figure 5-3. Driver & Tool Installation Screen**

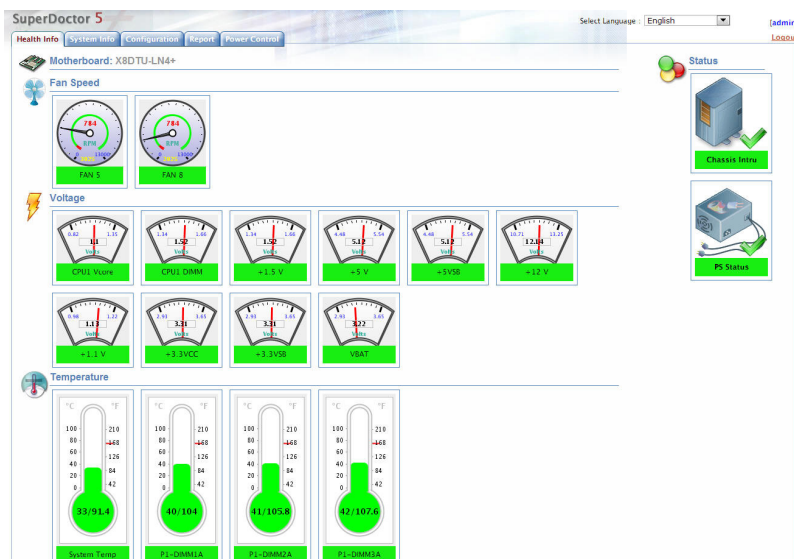
**Note:** Click the icons showing a hand writing on the paper to view the readme files for each item. Click a computer icon to the right of an item to install an item (from top to bottom) one at a time. After installing each item, you must reboot the system before proceeding with the next item on the list. The bottom icon with a CD on it allows you to view the entire contents of the CD.

**Note 2:** When making a storage driver disk by booting into a driver CD, please set the SATA Configuration to "Compatible Mode" and configure SATA as IDE in the BIOS Setup. After making the driver disk, be sure to change the SATA settings back to your original settings.

## 5.3 SuperDoctor® 5

The Supermicro SuperDoctor 5 is a hardware monitoring program that functions in a command-line or web-based interface in Windows and Linux operating systems. The program monitors system health information, such as CPU temperature, system voltages, system power consumption, and fan speed, and provides alerts via email or the Simple Network Management Protocol (SNMP).

SuperDoctor 5 comes in local and remote management versions and can be used with Nagios to maximize your system monitoring needs. With the SuperDoctor 5 Management Server (SSM Server), you can remotely control the power status and reset chassis intrusion for multiple systems with SuperDoctor 5 or IPMI. SD5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.



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

**Note:** The SuperDoctor 5 program and user's manual can be downloaded from the Supermicro website at [http://www.supermicro.com/products/nfo/sms\\_sd5.cfm](http://www.supermicro.com/products/nfo/sms_sd5.cfm).

## Chapter 6

# UEFI BIOS

### 6.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for the A3SEV-4C-LN4 motherboard. The BIOS is stored on a chip and can be easily upgraded using a flash program.

**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. Please refer to the Manual Download area of our website for any changes to BIOS that may not be reflected in this manual.

#### Starting the Setup Utility

To enter the BIOS Setup Utility, hit 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 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 an option 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 will 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>, <Enter>, <ESC>, <Arrow> keys, etc.) can be used at any time during the setup navigation process.

## 6.2 Main Menu

When you first enter the AMI BIOS setup utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab on the top of the screen. The Main BIOS setup screen is shown below.



### System Date/System Time

Use this option 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 A3SEV

#### BIOS Version

#### Build Date

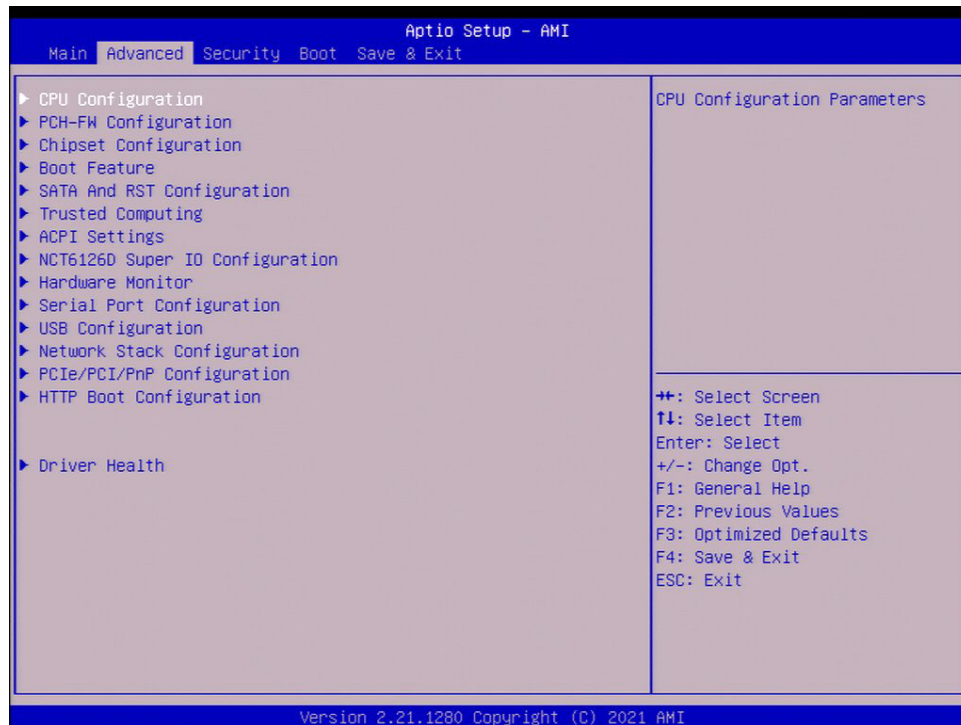
### Memory Information

**Total Memory:** This feature displays the total size of memory available in the system.

**Memory Speed:** This feature displays the memory speed.

## 6.3 Advanced Settings Menu

Use this menu to configure Advanced settings.



**Warning:** Take caution when changing the Advanced settings. An incorrect value, a very high DRAM frequency, or an incorrect BIOS timing setting may cause the system to malfunction. When this occurs, restore the setting to the manufacture default setting.

### ▶ CPU Configuration

The following CPU information will be displayed:

- Type
- ID
- Microcode Patch Speed
- L1 Data Cache
- L1 Instruction Cache
- L2 Cache
- L3 Cache
- L4 Cache
- VMX

- SMX/TXT

### **CPU Flex Ratio Override**

Use this feature to enable or disable CPU Flex Ratio Programming. The options are **Disabled** and **Enabled**.

*If the feature above is set to Enable, the next feature is available for configuration:*

### **CPU Flex Ratio Setting**

Use this feature to set the non-turbo mode processor core ratio multiplier. The default value is **20**.

### **Hardware Prefetcher**

If set to **Enable**, the hardware prefetcher prefetches streams of data and instructions from the main memory to the L2 cache to improve CPU performance. The options are **Disabled** and **Enabled**.

### **Adjacent Cache Line Prefetch**

The CPU prefetches the cache line for 64 bytes if this feature is set to **Disabled**. The CPU prefetches both cache lines for 128 bytes as comprised if this feature is set to **Enable**. The options are **Disabled** and **Enabled**.

### **Intel (VMX) Virtualization Technology**

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

### **Active Processor Cores**

Use this feature to determine how many CPU cores will be activated for each CPU. The options are **All**, 1, 2, and 3.

### **BIST**

Use this feature to enable or disable the built-in self test on reset. The options are **Disabled** and **Enabled**.

### **AP Threads Idle Manner**

Select **enabled** to activate AP Threads Idle Manner. The options are **HALT Loop**, **MWAIT Loop**, and **RUN Loop**.

### **MachineCheck**

Select **enabled** to activate Machine Check. The options are **Disabled** and **Enabled**.

### **MonitorMwait**

Select **Enabled** to enable the Monitor/Mwait instructions. The Monitor instructions monitor a region of memory for writes, and MWait instructions instruct the CPU to stop until the monitored region begins to write. The options are **Disabled** and **Enabled**.

## ► PCH-FW Configuration

The following firmware information will display:

- ME Firmware Version
- ME Firmware Mode
- ME Firmware SKU
- ME Firmware Status 1
- ME Firmware Status 2

### Me FW Image Re-Flash

Use this feature to enable or disable the ME firmware image reflash function. The options are **Disabled** and Enabled.

## ► Chipset Configuration

**Warning:** Setting the wrong values in the following sections may cause the system to malfunction.

## ► System Agent (SA) Configuration

System Agent (SA) Configuration

- VT-d

## ► Memory Configuration

- Memory Configuration
- Memory RC Version
- Memory Frequency
- Memory Timings (tCL-tRCD-TRP-tRAS)

### Maximum Memory Frequency

Use this feature to set the maximum memory frequency for onboard memory modules. The options are **Auto**, 1067, 1200, 1333, 1400, 1600, 1800, 1867, 2000, 2133, 2200, 2400, 2600, 2667, 2800, 2933, and 3000.

**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, and 2.5 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 4GB. 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**.

**► Graphics Configuration****Graphics Configuration**

- IGFX VBIOS Version
- IGFX GOP Version

**Skip Scanning of External Gfx Card**

If set to 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, PEG, and 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**.

### **DVMT Total Gfx Mem**

Use this feature to set the total memory size to be used by internal graphics devices based on the DVMT 5.0 platform. The options are 128MB, **256MB**, and MAX.

### **PM Support**

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

### **PAVP Enable**

Protected Audio Video Path (PAVP) decodes Intel integrated graphics encrypted video. The options are **Enabled** and Disabled.

### **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 172.8 Mhz, 307.2 Mhz, 556.8 Mhz, 652.8 MHz and **Max CdClock freq based on Reference Clk**.

### **Skip Full CD Clock Init**

Use this feature to enable skipping of the full CD initialization. If set to Disabled, the full CD clock will initialize. The options are Enabled and **Disabled**.

### **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 you with greater reliability, security and availability in networking and data-sharing. The options are Disabled and **Enabled**.

### **X2APIC Opt Out**

Use this feature to enable or disable X2APIC\_OPT\_OUT bit. The options are **Enabled** and Disabled.

### **GNA Device**

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

## **► PCH-IO Configuration**

- PCH-IO Configuration
- PCH SKU Name
- Stepping

## **► PCI Express Configuration**

### **DMI Link ASPM Control**

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

### **Peer Memory Write Enable**

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

### **► M.2-P PCI-E 3.0 X1**

#### **PCI Express Root Port 2**

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

#### **ASPM 1**

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, L0s, L1, L0sL1, and **Auto**.

#### **L1 SubStates**

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

#### **PCIe Speed**

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

## ► M.2-H PCI-E 3.0 X2

### PCI Express Root Port 4

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

### ASPM 3

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, L0s, L1, L0sL1, and **Auto**.

### L1 SubStates

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

### PCIe Speed

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

## ► CPU SLOT7 PCI-E 3.0 X2 (IN X8)

### PCI Express Root Port 7

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

### ASPM 6

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, L0s, L1, L0sL1, and **Auto**.

### L1 SubStates

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

### PCIe Speed

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

### PCIe PLL SSC

Use this feature to enable or disable PCIe PLL SSC. The options are **Enabled** and Disabled.

## ► Boot Feature

### Quiet Boot

Use this feature to select the screen to display between POST messages or the OEM logo at 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**.

**Bootup NumLock State**

This feature selects the Power-on state for the Num Lock key. The options are **Off** and On.

**Wait For "F1" If Error**

This feature forces the system to wait until the F1 key is pressed if an error occurs. The options are Disabled and **Enabled**.

**Power Configuration****AC Loss Policy Depend On**

Use this feature to set the power state after a power outage. Select Power 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 for you 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 the you press the power button. The options are **Instant Off** and 4 Seconds Override.

**Boot eDP/VGA Select**

Use this feature to select eDP or VGA as the display output. The options are eDP and **VGA**.

**Watch Dog Function**

If this feature is enabled, the Watch Dog timer will reboot system when it is inactive for more than five minutes. The options are **Disabled** and Enabled.

**► SATA and RST Configuration****SATA Controller(s)**

This feature enables or disables the onboard SATA controller supported by the Intel PCH chip. The options are **Enabled** and Disabled.

**SATA Mode Selection**

Use this feature to select the SATA mode. The default is **AHCI**.

**SATA0 - SATA2****Hot Plug**

This feature designates the SATA port specified for hot plugging. Set this feature to Enabled for hot-plugging support, which allows you to replace a SATA disk drive without shutting down the system. The options are Enabled and **Disabled**.

### Spin Up Device

When the value of an edge detect or the value of an image binary (pixel) of a device is from 0 to 1, select Enabled to allow the PCH to start a COMRESET initialization sequence on this device. The options are Enabled and **Disabled**.

### 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.

## ► Trusted Computing

The motherboard supports TPM 2.0. The following Trusted Platform Module (TPM) information will display if a TPM 2.0 module is detected:

- Vendor Name
- Firmware Version

### Security Device Support

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

***\*If Security Device Support is set to Enabled, the following features are available for configuration:***

The following Platform Configuration Register information will be displayed:

#### **Active PCR banks**

#### **Available PCR banks**

### SHA-1 PCR Bank

Use this feature to disable or enable the SHA-1 Platform Configuration Register (PCR) bank for the installed TPM device. The options are **Disabled** and Enabled.

### SHA256 PCR Bank

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

### Pending Operation

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

### **Platform Hierarchy**

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

### **Storage Hierarchy**

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

### **Endorsement Hierarchy**

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

### **TPM2.0 UEFI Spec Version**

Use this feature to select the Trusted Computing Group (TCG) specification version. Version TCG\_1\_2 is compatible with Windows 8 and 10. Version TCG\_2 is compatible with Windows 10 or later. The options are TCG\_1\_2 and **TCG\_2**.

### **Physical Presence Spec Version**

Use this feature to select the Physical Presence Interface version. This interface uses the ACPI and allows the operating system and BIOS to work together to provide a platform for users to administer the TPM. The options are 1.2 and **1.3**.

### **TPM 2.0 InterfaceType**

This feature displays the TPM interface type.

## **▶ACPI Settings**

### **ACPI Sleep State**

Use this feature to select which sleep state mode the system will enter when the Suspend button is pressed. The options are Suspend Disabled and **S3 (Suspend to RAM)**.

## **▶NCT6126D Super IO Configuration**

### **Super IO Chip NCT6126D**

#### **▶Serial Port 1 Configuration**

##### **Serial Port 1**

Select Enabled to enable the specified onboard serial port. The options are Disabled and **Enabled**.

##### **Serial Port Type**

Use this feature to select the serial port type. The options are **RS-232**, RS-485, and RS-422.

### Device Settings

This feature displays the base I/O port address and the Interrupt Request address of the serial port.

### Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 1. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address to a serial port specified. The options are **Auto**, (IO=3F8h; IRQ=4), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

### ► Serial Port 2 Configuration

#### Serial Port 2

Select Enabled to enable the specified onboard serial port. The options are Disabled and **Enabled**.

#### Serial Port Type

Use this feature to select the serial port type. The options are **RS-232**, RS-485, and RS-422.

### Device Settings

This feature displays the base I/O port address and the Interrupt Request address of the serial port.

### Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 2. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address to a serial port specified. The options are **Auto**, (IO=2F8h; IRQ=3), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

### ► Serial Port 3 Configuration

#### Serial Port 3

Select Enabled to enable the specified onboard serial port. The options are Disabled and **Enabled**.

#### Serial Port Type

Use this feature to select the serial port type. The options are **RS-232**, RS-485, and RS-422.

### Device Settings

This feature displays the base I/O port address and the Interrupt Request address of the serial port.

### Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 2. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address to a serial port specified. The options are **Auto**, (IO=3E8h; IRQ=7), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=220h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=228h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

### ► Serial Port 4 Configuration

#### Serial Port 4

Select Enabled to enable the specified onboard serial port. The options are Disabled and **Enabled**.

#### Serial Port Type

Use this feature to select the serial port type. The options are **RS-232**, RS-485, and RS-422.

#### Device Settings

This feature displays the base I/O port address and the Interrupt Request address of the serial port.

### Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 2. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address to a serial port specified. The options are **Auto**, (IO=2E8h; IRQ=7), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=220h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=228h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

### ► Hardware Monitor

- System Health

#### Fan Speed Control Mode

Use this feature to select the fan speed control mode. The options are **Standard** and Full Speed.

- CPU Temperature
- Front T-sensor
- Fan1 Speed
- FanA Speed
- PVDDQ
- P12V

- P5V
- VCPU (PVCCIN)
- 3.3VCC
- VSB
- VBAT

## ► Serial Port Console Redirection

### COM1 Console Redirection

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

*\*If COM1 Console Redirection is set to Enabled, the following features are available for configuration:*

### ► COM1 Console Redirection Settings

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer. The options are Enabled and **Disabled**.

### 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 and 8.

### 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.

### COM2 Console Redirection

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

***\*If COM2 Console Redirection is set to Enabled, the following features are available for configuration:***

## ► COM2 Console Redirection Settings

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer. The options are Enabled and **Disabled**.

### COM2 Terminal Type

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

### 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 and 8.

### 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 Function Keys and KeyPad settings for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SCO, ESCN, and VT400.

**►COM3 Console Redirection Settings**

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer. The options are Enabled and **Disabled**.

**COM3 Terminal Type**

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

**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 and **8**.

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

## ► COM4 Console Redirection Settings

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer. The options are Enabled and **Disabled**.

### COM4 Terminal Type

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

### 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 and 8.

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

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

The submenu allows you to configure Console Redirection settings to support Out-of-Band Serial Port management.

## **EMS (Emergency Management Services) Console Redirection**

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

*\*If EMS is set to Enabled, the following features are available for configuration:*

### **► EMS Console Redirection Settings**

This feature allows you to specify how the host computer will exchange data with the client computer, which is the remote computer.

#### **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**, COM2, COM3, and COM4.

#### **Terminal Type**

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

#### **Bits per second**

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

#### **Flow Control**

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

#### **Data Bits**

#### **Parity**

#### **Stop Bits**

## ►USB Configuration

### 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**.

## ►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

Select Enabled to enable IPv4 PXE boot support. The options are Disabled and **Enabled**.

### IPv4 HTTP Support

Select Enabled to enable IPv4 HTTP boot support. The options are **Disabled** and Enabled.

### IPv6 PXE Support

Select Enabled to enable IPv6 PXE boot support. The options are Disabled and **Enabled**.

### IPv6 HTTP Support

Select Enabled to enable IPv6 HTTP boot support. The options are **Disabled** and Enabled.

### PXE Boot Wait Time

Use this option to specify the wait time to press the ESC key to abort the PXE boot. Press "+" or "-" on your keyboard to change the value. The default setting is **0**.

### Media Detect Count

Use this option to specify the number of times media is checked. Press "+" or "-" on your keyboard to change the value. The default setting is **1**.

## ►Intel(R) I210 Gigabit Network Configuration - 3C:EC:EF:31:2F:67

### ►NIC Configuration

#### Link Speed

Use this feature to specify the port speed used for the selected boot protocol. The options are **Auto Negotiated**, 10 Mbps Half, 10 Mbps Full, 100 Mbps Half, and 100 Mbps Full.

### Wake On LAN

Select Enabled for wake on LAN support, which allows the system to wake up when an onboard LAN device receives an incoming signal. The options are Disabled and **Enabled**.

### Blink LEDs

Use this feature to identify the physical network port by blinking the associated LED. Use the keyboard to select a value.

### UEFI Driver

#### Adapter PBA

#### Device Name

#### Chip Type

#### PCI Device ID

#### PCI Address

#### Link Status

#### MAC Address

#### Virtual MAC Address

- ▶ **MAC:3CECEF312F67-IPv4 Network Configuration**
- ▶ **MAC:FFFFFFFFFFFF-IPv4 Network Configuration**
- ▶ **MAC:FFFFFFFFFFFF-IPv4 Network Configuration**
- ▶ **MAC:000000000000-IPv4 Network Configuration**

### Configured

Use this feature to indicate whether the network address is configured successfully or not. The options are **Disabled** and Enabled.

### Save Changes and Exit

Select this feature to save the changes for the features above and exit.

- ▶ **MAC:3CECEF312F67-IPv6 Network Configuration**
- ▶ **MAC:FFFFFFFFFFFF-IPv6 Network Configuration**
- ▶ **MAC:FFFFFFFFFFFF-IPv6 Network Configuration**
- ▶ **MAC:000000000000-IPv6 Network Configuration**

## ► Enter Configuration Menu

**Interface Name**

**Interface Type**

**MAC Address**

**Host addresses**

**Route Table**

**Gateway addresses**

**DNS addresses**

**Interface ID**

Use this feature to set the 64-bit alternative interface ID for the device.

**DAD Transmit Count**

If this set feature is set to 0, the Duplication Address Detection is not performed. Set the value to a preferred selection.

**Policy**

Use this feature to set the policy to automatic or manual. The options are **automatic** and **manual**.

**Save Changes and Exit**

Select this feature to save the changes for the features above and exit.

## ► PCIe/PCI/PnP Configuration

**Above 4GB MMIO BIOS assignment**

Use this feature to enable or disable above 4GB Memory Mapped IO BIOS assignment. This feature is automatically enabled when the Aperture size is set to 2048MB. The options are **Enabled** and **Disabled**.

**NVMe Firmware Source**

Use this feature to select the NVMe firmware source. 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**.

**PCIe/PCI/PnP Configuration**

### **PCI / PCIX / PCIe Slot 1 OPROM**

Use this feature to select which firmware type to be loaded for the add-on card in this slot. The options are Disabled and **EFI**.

### **PCI / PCIX / PCIe Slot 2 OPROM**

Use this feature to select which firmware type to be loaded for the add-on card in this slot. The options are Disabled and **EFI**.

### **PCI / PCIX / PCIe Slot 3 OPROM**

Use this feature to select which firmware type to be loaded for the add-on card in this slot. The options are Disabled and **EFI**.

### **Onboard LAN1 Option ROM**

Use this feature to select which firmware type to be loaded for the add-on card in this slot. The options are Disabled and **EFI**.

## **► HTTP Boot Configuration**

### **HTTP Boot Configuration**

#### **HTTP Boot Policy**

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

#### **Priority of HTTP Boot:**

#### **Instance of Priority 1:**

Use this feature to set the rank target port. The default value is **1**.

#### **Select IPv4 or IPv6**

Use this feature to select which LAN port to boot from. The options are **IPv4** and IPv6.

#### **Boot Description**

Use the feature to create a boot description. The description cannot be more than 75 characters.

#### **Boot URI**

Highlight the feature and press enter to create a boot URI.

## ▶ Driver Health

This feature provides the health status for the network drivers and controllers.

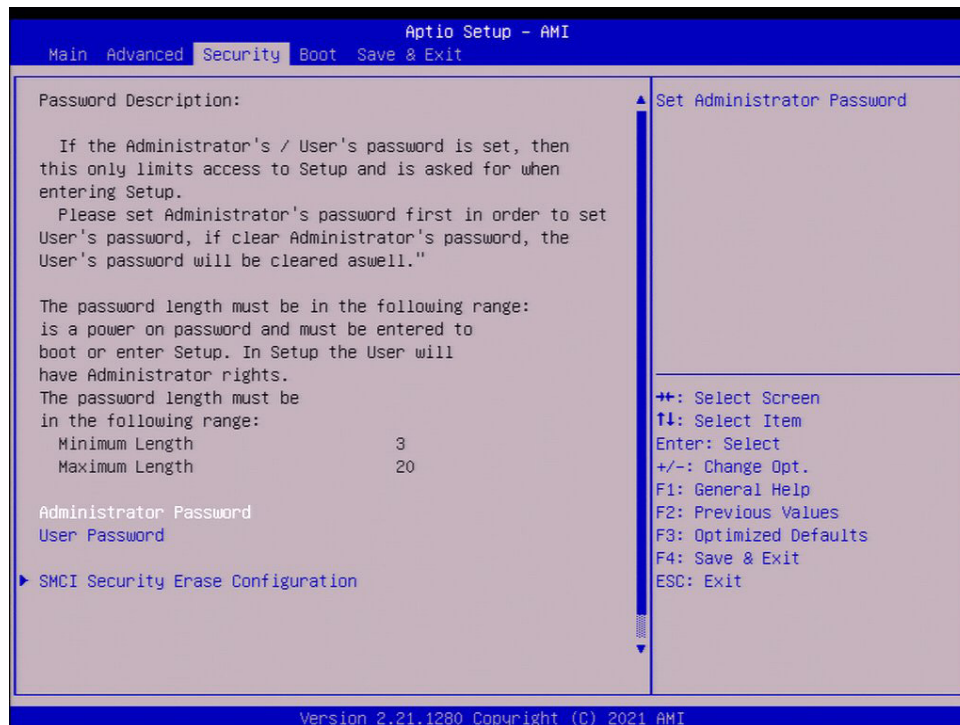
### ▶ Intel(R) PRO/1000 6.7.05 PCI-E

Controller 6F9AAE18 Child 0

Intel(R) I210 Gigabit Network Connection

## 6.4 Security

Use this menu to configure Security settings.



### Administrator Password

Press Enter to create a new administrator password. The length of the password must be from three to 20 characters long.

### User Password

Press Enter to create a new user password. The length of the password must be from three to 20 characters long.

### ► SMCI Security Erase Configuration

This submenu becomes configurable when a storage device has been detected. The options are Enabled and **Disabled**.

**HDD Name**

**HDD Serial Number**

**Security Mode**

**Estimated Time**

**HDD UserPwD Status**

### Security Function

Use this feature to set Security Function. The options are **Disable**, Set Password, Security Erase - Password, and Security Erase - Without Password.

### Password

Enter a numeric value to set the password.

### HDD Security Configuration

Information is displayed when a storage device has been detected. A submenu also becomes available to set a password for the storage device.

### Lockdown Mode

This feature is grayed out when the DCMS Key is not installed.

## ► Secure Boot

### Secure Boot

Select Enable for secure boot support to ensure system security at bootup. The options are Disabled and **Enabled**.

### Secure Boot Mode

This feature allows you to select the desired secure boot mode for the system. The options are **Standard** and Custom.

*\*If Secure Boot Mode is set to Custom, Key Management features are available for configuration.*

## ► Key Management

This submenu allows you to configure the following Key Management settings.

### Factory Key Provision

Select Enabled to install the default Secure Boot keys set by the manufacturer. The options are **Disabled** and Enabled.

*\*If the feature above is set to Enabled, the next four features are available for configuration:*

## ► Restore Factory Keys

Force System to User Mode. Install factory default Secure Boot key databases.

## ► Reset to Setup Mode

This feature deletes all Secure Boot key databases from NVRAM.

### ▶ **Export Secure Boot variables**

This feature allows you to copy NVRAM content of Secure boot variables to files in a root folder on a file system device.

### ▶ **Enroll EFI Image**

This feature allows the image to run in Secure Boot Mode. Enroll SHA256 Hash Certificate of the image into the Authorized Signature Database.

### **Device Guard Ready**

### ▶ **Remove 'UEFI CA' from DB**

This feature allows you to decide if all secure boot variables should be saved.

### ▶ **Restore DB defaults**

Select Yes to restore the DB defaults.

### ▶ **Platform Key (PK)**

#### **Details**

Select this feature to view the details of the Platform Key.

#### **Export**

Select Yes to export a PK from a file on an external media.

#### **Update**

Select Yes to load a factory default PK or No to load from a file on an external media.

#### **Delete**

Select Ok to remove the PK and then the system will reset to Setup/Audit Mode.

### ▶ **Key Exchange Keys (KEK)**

#### **Details**

Select this feature to view the details of the Key Exchange Key.

#### **Export**

Select Yes to export a KEK from a file on an external media.

#### **Update**

Select Yes to load a factory default KEK or No to load from a file on an external media.

**Append**

Select Yes to add the KEK from the manufacturer's defaults list to the existing KEK. Select No to load the KEK from a file. The options are Yes and No.

**Delete**

Select Ok to remove the KEK and then the system will reset to Setup/Audit Mode.

**▶ Authorized Signatures****Details**

Select this feature to view the details of the db.

**Export**

Select Yes to export a db from a file on an external media.

**Update**

Select Yes to load a factory default db or No to load from a file on an external media.

**Append**

Select Yes to add the db from the manufacturer's defaults list to the existing db. Select No to load the db from a file. The options are Yes and No.

**Delete**

Select Ok to remove the db and then the system will reset to Setup/Audit Mode.

**▶ Forbidden Signatures****Details**

Select this feature to view the details of the dbx.

**Export**

Select Yes to export a dbx from a file on an external media.

**Update**

Select Yes to load a factory default dbx or No to load from a file on an external media.

**Append**

Select Yes to add the dbx from the manufacturer's defaults list to the existing dbx. Select No to load the dbx from a file. The options are Yes and No.

**▶ Authorized TimeStamps****Details**

Select this feature to view the details of the dbt.

### **Export**

Select Yes to export a dbt from a file on an external media.

### **Update**

Select Yes to load a factory default dbt or No to load from a file on an external media.

### **Append**

Select Yes to add the dbt from the manufacturer's defaults list to the existing dbt. Select No to load the dbt from a file. The options are Yes and No.

### **► OsRecovery Signature**

#### **Details**

Select this feature to view the details of the dbr.

#### **Export**

Select Yes to export a dbr from a file on an external media.

#### **Update**

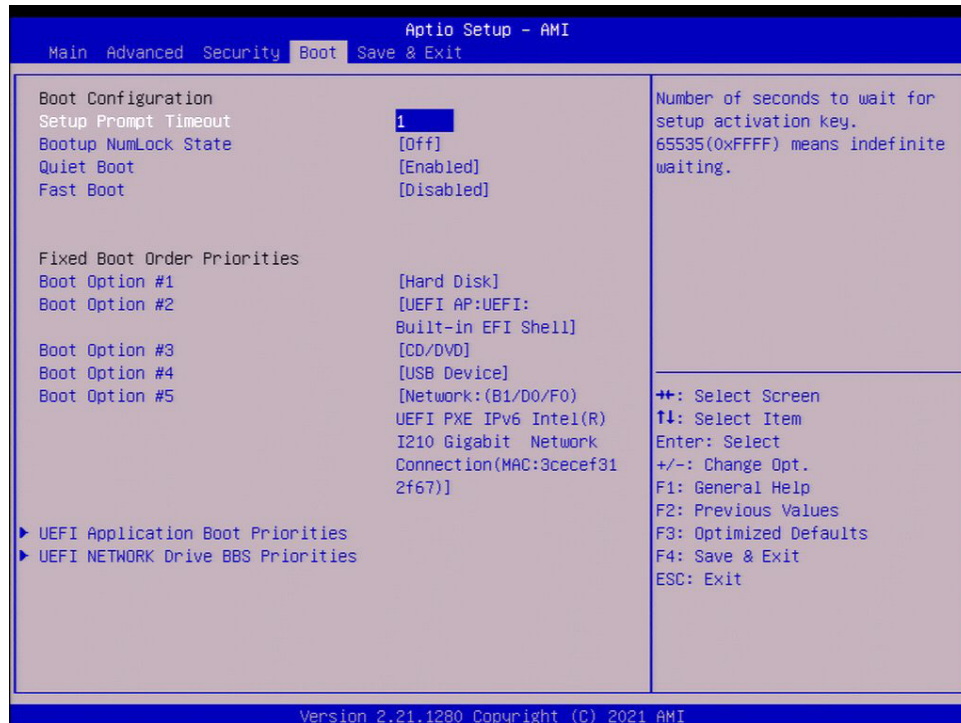
Select Yes to load a factory default dbr or No to load from a file on an external media.

#### **Append**

Select Yes to add the dbr from the manufacturer's defaults list to the existing dbr. Select No to load the dbr from a file. The options are Yes and No.

## 6.5 Boot

Use this menu to configure Boot settings:



### Setup Prompt Timeout

Use this feature to select the number of seconds to wait for the setup activation key. The default is 1.

### Fixed Boot Order Priorities

This option prioritizes the order of bootable devices that the system can boot from. Press <Enter> on each entry from top to bottom to select devices.

- Boot Option #1
- Boot Option #2
- Boot Option #3
- Boot Option #4
- Boot Option #5
- Boot Option #6
- Boot Option #7
- Boot Option #8
- Boot Option #9

### ► Add New Boot Option

This feature allows you to add a new boot option to the boot priority features for your system.

#### **Add Boot Option**

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

### ► Delete Boot Option

This feature allows you 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 Hard Disk Drive BBS Priorities

This feature allows you to specify which UEFI devices are bootable.

- Boot Option #1

### ► UEFI Application Boot Priorities

This feature allows you to specify which UEFI devices are bootable.

- Boot Option #1

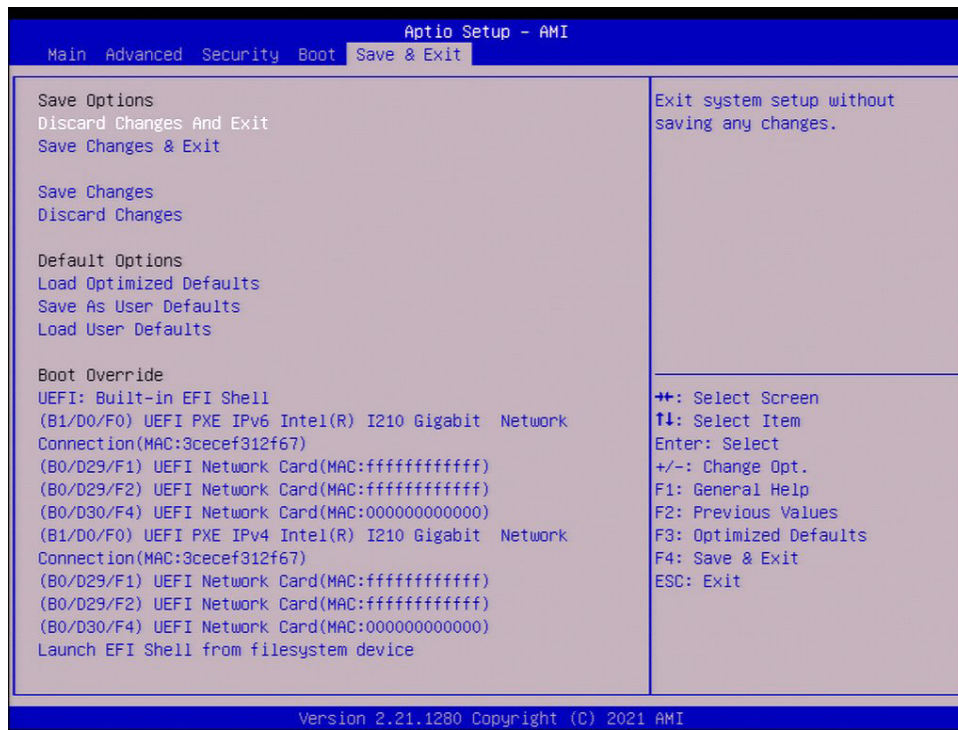
### ► UEFI USB Key Drive BBS Priorities

This feature sets the system boot order of detected devices.

- Boot Option #1 - Boot Option #8

## 6.6 Save & Exit

Use this menu to save settings and exit the BIOS.



### Save Options

#### Discard Changes and Exit

Select this option to quit the BIOS Setup without making any permanent changes to the system configuration and reboot the computer. Select Discard Changes and Exit from the Exit menu and press <Enter>.

#### Save Changes and Reset

When you have completed the system configuration changes, select this option to save all changes made and reset the system.

#### Save Changes

When you have completed the system configuration changes, select this option to save all changes made. This will not reboot the system.

#### Discard Changes

Select this option and press <Enter> to discard all the changes and return to the AMI BIOS Utility Program.

#### Default Options

### **Load Optimized Defaults**

To set this feature, select Restore Defaults from the Exit menu and press <Enter>. These are factory settings designed for maximum system performance but not for maximum stability.

### **Save as User Defaults**

To set this feature, select Save as User Defaults from the Exit menu and press <Enter>. This enables you to save any changes to the BIOS setup for future use.

### **Load User Defaults**

To set this feature, select Restore User Defaults from the Exit menu and press <Enter>. Use this feature to retrieve user-defined settings that were saved previously.

### **Boot Override**

This feature allows you to override the Boot Option Priorities sequence in the Boot menu, and immediately boot the system with another specified device. This is a one-time override.

### **UEFI: Built-in EFI Shell**

**(B1/D0/F0) UEFI PXE IPv6 Intel(R) I210 Gigabit Network Connection(MAC:3cecef312f67)**

**(B0/D29/F1) UEFI Network Card(MAC:fffffffffff)**

**(B0/D29/F2) UEFI Network Card(MAC:fffffffffff)**

**(B1/D30/F4) UEFI Network Card(MAC:000000000000)**

**(B1/D0/F0) UEFI PXE IPv4 Intel(R) I210 Gigabit Network Connection(MAC:3cecef312f67)**

**(B0/D29/F1) UEFI Network Card(MAC:fffffffffff)**

**(B0/D29/F2) UEFI Network Card(MAC:fffffffffff)**

**(B0/D30/F4) UEFI Network Card(MAC:000000000000)**

**Launch EFI Shell from filesystem device**

# Appendix A

## BIOS Codes

### A.1 BIOS Error POST (Beep) Codes

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

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

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

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

| BIOS 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 long, 2 short        | Display memory read/write error | Video adapter missing or with faulty memory  |
| 1 long continuous      | System OH                       | System overheat condition                    |

### A.2 Additional BIOS POST Codes

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

When BIOS performs the Power On Self Test, it writes checkpoint codes to I/O port 0080h. If the computer cannot complete the boot process, a diagnostic card can be attached to the computer to read I/O port 0080h.

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

## Appendix B

# Standardized Warning Statements for AC Systems

### B.1 About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our website at [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm).

#### Warning Definition



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

#### 警告の定義

この警告サインは危険を意味します。

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

此警告符号代表危險。

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

此警告符號代表危險。

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

## Warnung

## WICHTIGE SICHERHEITSHINWEISE

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

BEWAHREN SIE DIESE HINWEISE GUT AUF.

## INSTRUCCIONES IMPORTANTES DE SEGURIDAD

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

GUARDE ESTAS INSTRUCCIONES.

## IMPORTANTES INFORMATIONS DE SÉCURITÉ

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

CONSERVEZ CES INFORMATIONS.

תקנון הזהרות אזהרה

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

اَكْ ف حالة وُكِي اَي تتسبب ف اصابة جسدهُ هذا الزهز عُ خطر! تحذُرُ .  
قبل اَي تعول على اَي هعدات، كي على علن بالوخاطز ال اُجوة عي الذوائر  
الكهزبائِة  
وكي على دراةُ بالووارسات النقاائِة لو عُ وقع اَي حادث  
استخدم رِقن الب اِي الو صُص ف هاةُ كل تحذُرُ للعشر تزجوتها

안전을 위한 주의사항

경고!

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

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

## BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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

BEWAAR DEZE INSTRUCTIES

## Installation Instructions



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

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

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

¡Advertencia!

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

Attention

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

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقرأ إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

## Circuit Breaker



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

サーキット・ブレーカー

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

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

### Warnung

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

### ¡Advertencia!

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

### Attention

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

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-250VDC, 20A

هذا المنتج يعتمد على معدات الحماية مه الدوائر القصيرة التي تم تثبيتها في المبنى  
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

### 경고!

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

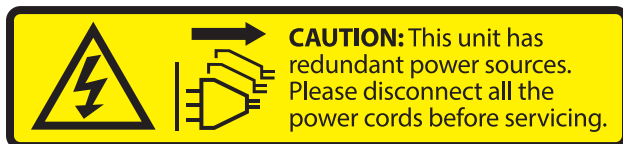
### Waarschuwing

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

## Power Disconnection Warning



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



### 電源切断の警告

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

### 警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

### 警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

### Warnung

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

### ¡Advertencia!

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

### Attention

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

אזהרה מפני ניתוק חשמלי

אזהרה!

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

يجب فسم انظاو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد انطاقت قيم

انصل إلى امنطاقت انداخهيت نههيكم نتشيج أو إزانت مكناث الجهاز

경고!

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

Waarschuwing

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

## Equipment Installation



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

機器の設置

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

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

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

Waarschuwing

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

## Restricted Area



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

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

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

警告

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

警告

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

### Warnung

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

### ¡Advertencia!

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

### Attention

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

אזור עם גישה מוגבלת

אזהרה!

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

تخصيص هذه انحدة نترك بُها ف مناطق محظورة تم .  
،مکن انصلل إن منطقت محظورة فقط من خلال استخداو أداة خاصت  
أو أ وس هُت أخري نلالأمما ققم ومفتاح

### 경고!

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

### Waarschuwing

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

## Battery Handling



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

### 電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

### 警告

電池更換不當會有爆炸危險。請只使用同類電池或制造商推薦的功能相當的電池更換原有電池。請按製造商的說明處理廢舊電池。

### 警告

電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

### Warnung

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

### Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

### ¡Advertencia!

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

אזהרה!

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת. סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة اسحبذال البطارية بطريقة غير صحيحة فعليل  
اسحبذال البطارية  
فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة  
جخلص من البطاريات المسحمة وفقا لعمليات الشركة الصانعة

경고!

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

Waarschuwing

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

## Redundant Power Supplies



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

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此装置连接的电源可能不只一个，必须切断所有电源才能停止对该装置的供电。

Warnung

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

¡Advertencia!

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

Attention

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

אם קיים יותר מספק אחד

אזהרה!

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

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

경고!

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

Waarschuwing

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

## Backplane Voltage



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

### バックプレーンの電圧

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

修理する際には注意ください。

### 警告

当系統正在进行時，背板上有很危险的电压或能量，进行维修时务必小心。

### 警告

當系統正在進行時，背板上危險的電壓或能量，進行維修時務必小心。

### Warnung

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

### ¡Advertencia!

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

### Attention

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

מתח בפנל האחורי

אזהרה!

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

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

경고!

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

Waarschuwing

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

## Comply with Local and National Electrical Codes



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

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

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

Attention

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

תיאום חוקי החשמל הארצי

אזהרה!

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقوايه المحلية والبطية المتعلقة

بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

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

## Product Disposal



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

製品の廃棄

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

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

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

¡Advertencia!

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

## Attention

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

סילוק המוצר

אזהרה!

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

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

## 경고!

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

## Waarschuwing

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

## Hot Swap Fan Warning



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

## ファン・ホットスワップの警告

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

## 警告!

警告! 危險的可移動性零件。請務必與轉動的風扇葉片保持距離。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

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### Warnung

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

### ¡Advertencia!

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

### Attention

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

### אזהרה!

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

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

### 경고!

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

### Waarschuwing

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

## Power Cable and AC Adapter



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

### 電源コードとACアダプター

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

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

### 警告

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

### 警告

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

### Warnung

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

### ¡Advertencia!

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

### Attention

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

AC כבלים חשמליים ומתאמי

אזהרה!

אשר נרכשו או הותאמו לצורך ההתקנה, ואשר הותאמו לדרישות AC כאשר מתקינים את המוצר, יש להשתמש בכבלים, ספקים ומתאמים הבטיחות המקומיות, כולל מידה נכונה של הכבל והתקע. שימוש בכל כבל או מתאם מסוג אחר, עלול לגרום לתקלה או קצר חשמלי. בהתאם כאשר מופיע עליהם קוד) UL-CSA או ב UL - לחוקי השימוש במכשירי החשמל וחוקי הבטיחות, קיים איסור להשתמש בכבלים המוסמכים ב Supermicro עבור כל מוצר חשמלי אחר, אלא רק במוצר אשר הותאם ע"י (UL/CSA) של

עند تركيب المنتج، قم باستخدام التوصيلات المتوفرة أو المحددة أو قم بشراء الكابلات الكهربائية ومحوّلات التيار المتردد مع الالتزام بقوانين ومتطلبات السلامة المحلية بما في ذلك حجم الموصل والقابس السليم. استخدام أي كابلات ومحوّلات أخرى قد يتسبب في عطل أو حريق. يحظر قانون السلامة للأجهزة الكهربائية والمعدات استخدام الكابلات المعتمدة Supermicro مع أي معدات أخرى غير المنتجات المعينة والمحددة من قبل (UL/CSA) والتي تحمل علامة CSA أو UL من قبل

### 전원 케이블 및 AC 어댑터

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

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

### Stroomkabel en AC-Adapter

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

## Appendix C

### UEFI BIOS Recovery

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

#### C.1 Overview

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

#### C.2 Recovering the UEFI BIOS Image

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

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

**Note 2:** When the BIOS boot block crashes, you will need to follow the procedures to make a Returned Merchandise Authorization (RMA) request. (For a RMA request, please see section 3.5 for more information). Also, you may use the Supermicro Update Manager (SUM) Out-of-Band (OOB) ([https://www.supermicro.com.tw/products/nfo/SMS\\_SUM.cfm](https://www.supermicro.com.tw/products/nfo/SMS_SUM.cfm)) to reflash the BIOS.

#### C.3 Recovering the BIOS Block with a USB Device

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

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

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

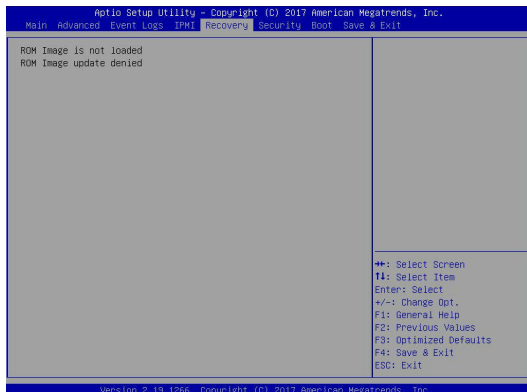
1. Using a different machine, copy the "Super.ROM" binary image file into the disc Root "\\" directory of a USB device or a writable CD/DVD.

**Note:** If you cannot locate the "Super.ROM" file in your driver disk, visit our website at [www.supermicro.com](http://www.supermicro.com) to download the BIOS image into a USB flash device and rename it "Super.ROM" for BIOS recovery use.

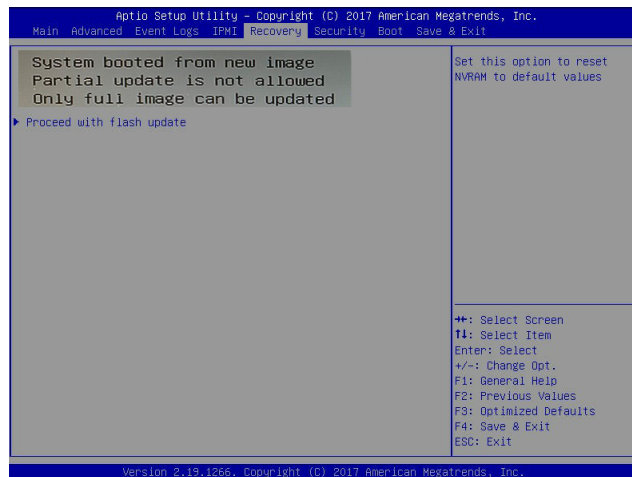
2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and power on the system



**Note:** On the other hand, if the following screen displays, please load the "Super.ROM" file to the root folder and connect this folder to the system. (You can do so by inserting a USB device that contains the new "Super.ROM" image to your machine for BIOS recovery.)



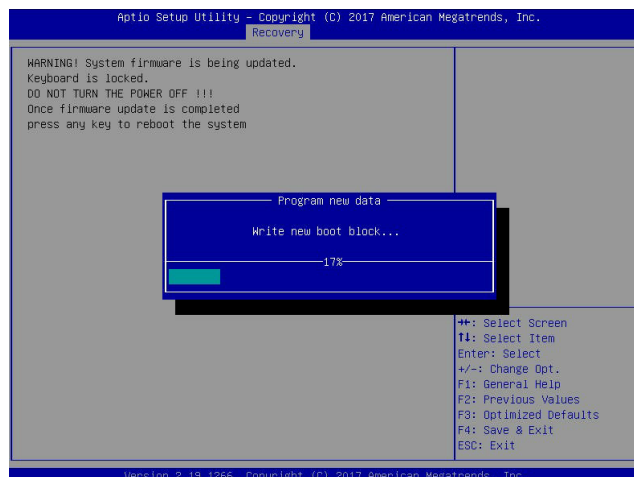
1. After locating the new BIOS binary image, the system will enter the BIOS Recovery menu as shown below.



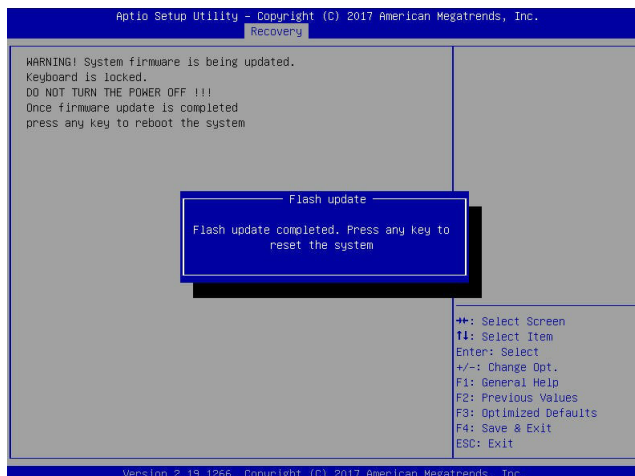
**Note:** At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.

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

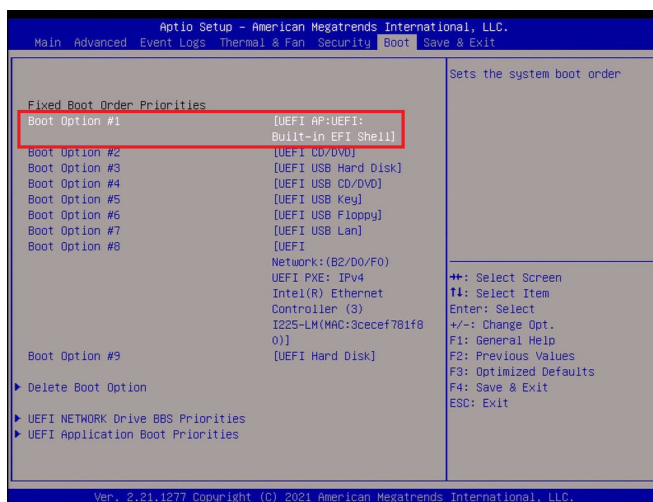
**Note:** Do not interrupt the BIOS flashing process until it has completed.



1. After the BIOS recovery process is completed, press any key to reboot the system.



2. Using a different system, extract the BIOS package into a USB flash drive.
3. Press <Del> continuously during system boot to enter the BIOS setup utility. From the top of the tool bar, click on Boot and press <Enter> to enter the submenu. From the submenu list, select Boot Option #1 as shown below. Then, boot Option #1 to [UEFI AP:UEFI: Built-in EFI Shell]. Press <F4> to save the settings and exit the BIOS setup utility.



1. When the UEFI Shell prompt appears, type `fs#` to change the device directory path. Go to the directory that contains the BIOS package you extracted earlier from Step 7. Enter `flash.nsh BIOSname.###` at the prompt to start the BIOS update process.

```

UEFI Interactive Shell v2.1
EDK II
UEFI v2.50 (American Megatrends, 0x0005000C)
Mapping table
  FS0: Alias(s):HD0F0B:BLK1:
        PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x3791072,0x800,0x1
DR959C)
  BLK0: Alias(s):
        PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)
Press F8 in 1 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:\> cd \AFUDOS
FS0:\AFUDOS> cd SNIJPM2_03162017
FS0:\AFUDOS\SNIJPM2_03162017> flash.nsh X110PU7_314
    
```



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

```

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

Done.
*****
* Program BIOS and ME (including FDT) regions...
*****
| AMT Firmware Update Utility v5.09.01.1917
| Copyright (C)2017 American Megatrends Inc. All Rights Reserved.
|-----|
CPUID = 50652

Reading flash ..... done
- ME Data Size checking - ok
- FFS checksums ..... ok
- Check RomLayout ..... Ok
Erasing Boot Block ..... done
Updating Boot Block ..... done
Verifying Boot Block ..... done
Erasing Main Block ..... 0x00132000 (0x)
    
```

2. The screen above indicates that the BIOS update process is completed. When you see the screen above, unplug the AC power cable from the power supply, clear CMOS, and plug the AC power cable in the power supply again to power on the system.

```

Verifying NDB Block ..... done
- Update success for FDR
- Update success for IE
- Successful Update Recovery Loader to OPRx11
- Successful Update MFSB11
- Successful Update FPR11
- Successful Update MFS, IVB1 and IVB211
- Successful Update FLOG and UTDK11
- ME Entire Image update success !!
WARNING : System must power-off to have the changes take effect!
Moving FS0:\AFUDOS\SNIJPM2_03162017\Fdtv64.efi -> FS0:\AFUDOS\SNIJPM2_03162017\F
dt1.smc
- [ok]
Moving FS0:\AFUDOS\SNIJPM2_03162017\Fuef1x64.efi -> FS0:\AFUDOS\SNIJPM2_0316201
7\Fuef1.smc
- [ok]
*****
* Please ignore this 'Shell: Cannot read from file - Device Error'
* warning message due to it does not impact flashing process.
*****
Deleting "FS0:\uef1.smc"
Delete successful.
FS0:\>
    
```

3. Press `<Del>` continuously to enter the BIOS setup utility.
4. Press `<F3>` to load the default settings.
5. After loading the default settings, press `<F4>` to save the settings and exit the BIOS setup utility.

# Appendix D

## System Specifications

### Processors

Single Intel Atom x6425E 4C 12W

**Note:** Please refer to the motherboard specifications pages on our website for updates to supported processors.

### BIOS

256Mb SPI Flash with AMI BIOS®

### Memory

Supports up to 32GB of ECC SODIMM DDR4 with speeds of up to 3200MHz in two memory slots

### SATA Controller

SoC controller for two SATA 3.0 ports

### Drive Bay

Supports one 2.5" drive of 7mm height and one 2.5" drive of 15mm height

### Expansion Slots

One M.2 E-key (2230) (one PCIe 3.0/USB 2.0)

One M.2 B-key (3042/2280) (SATA3/two PCIe 3.0/USB 3.0)

Two PCIe 3.0 x2 (in x8 slot)

### Motherboard

A3SEV-4C-LN4

Dimensions: Mini-ITX form factor (6.7" x 6.7") (170.18mm x 170.18mm)

### Chassis

CSE-E302iL2

Dimensions: 11.6" x 2.9" x 8.1" (W x H x D) (295 x 73 x 205mm)

### System Cooling

Fanless

### Power Supply

150W 12V Lockable DC Power Adapter (Optional: 180W 12V Lockable DC Power Adapter)

### Weight

Gross Weight: 7.5lbs (3.4kg)

Net Weight: 3.45lbs (1.56kg)

### Operating Environment

Operating Temperature: -20°C to 60°C (-4°F to 140°F)

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

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

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

### Certified Safety Models

Compliant with UL or CSA: E302-15 and E302iL-A15A3.

### Regulatory Compliance

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

### Applied Directives, Standards

EMC/EMI: 2014/30/EU (EMC Directive)  
Electromagnetic Compatibility Regulations 2016  
FCC Part 15 Subpart B Class A  
ICES-003  
VCCI-CISPR 32  
AS/NZS CISPR 32  
EN/BS 55032  
EN/BS 55035  
CISPR 32  
CISPR 35  
EN/BS 61000-3-2  
EN/BS 61000-3-3  
EN/BS 61000-4-2  
EN/BS 61000-4-3  
EN/BS 61000-4-4  
EN/BS 61000-4-5  
EN/BS 61000-4-6  
EN/BS 61000-4-8  
EN/BS 61000-4-11

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

Environment: 2011/65/EU (RoHS Directive)  
EC 1907/2006 (REACH)  
2012/19/EU (WEEE Directive)  
California Proposition 65

### Perchlorate Warning

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate)"

この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

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