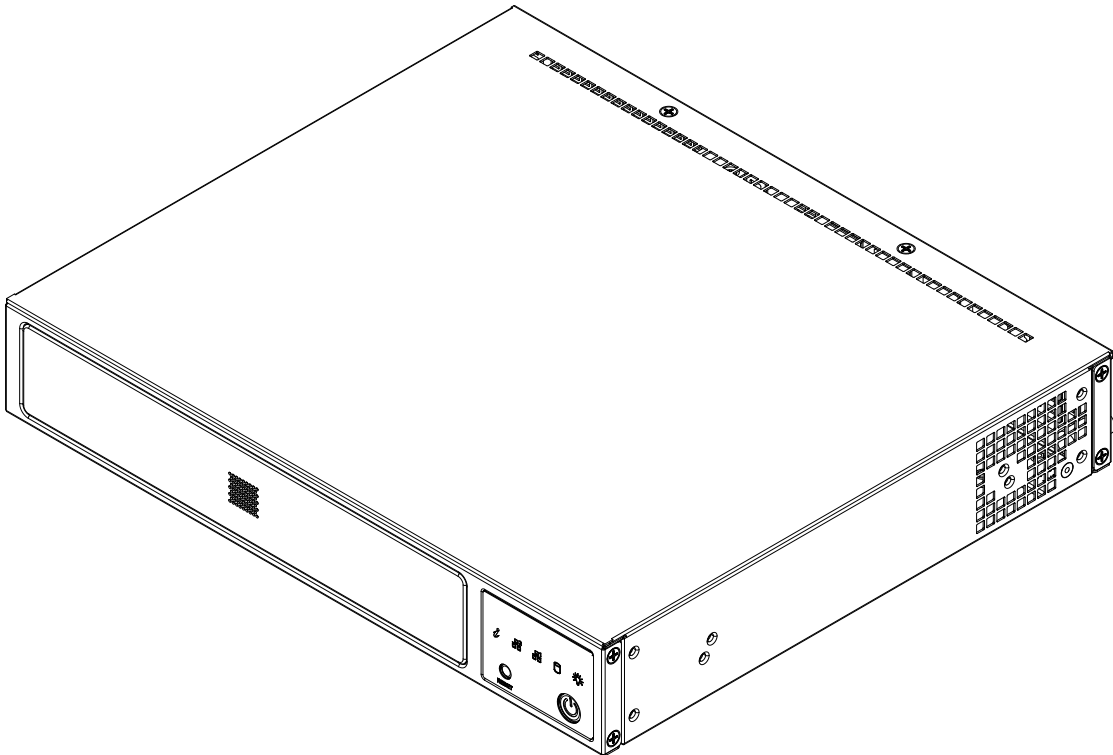




SUPERSERVER<sup>®</sup>  
E300-9C



USER'S MANUAL

Revision 1.0

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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 E300-9C. 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/wftp/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.

## Warnings

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



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



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

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# Chapter 1

## Introduction

### 1.1 Overview

The SuperServer E300-9C is a compact, embedded system comprised of the CSE-E300 chassis and the X11SCV-Q single processor motherboard. Refer to our website for information on operating systems that have been certified for use with the system ([www.supernmicro.com](http://www.supernmicro.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 DC power supply	MCP-250-10127-0N	1
Fans	FAN-0065L4	2

## 1.2 System Features

The following table provides an overview of the main features of the E300-9C. Please refer to Appendix C for additional specifications.

<b>System Features</b>
<b>Motherboard</b>
X11SCV-Q
<b>Chassis</b>
CSE-E300, Compact Embedded Mini-ITX Box
<b>CPU</b>
Intel, 8th Gen Core i3/i5/i7 Processor in an LGA 1151 Socket
<b>Chipset</b>
Intel® Q370
<b>Memory</b>
Two DDR4 DIMM sockets; supports up to 32GB DDR4 non-ECC SO-DIMM; Memory Type 2666/2400MHz; DIMM size 4GB, 8GB, 16GB
<b>Expansion Slots</b>
One PCI-E 3.0 x16 slot One M.2 E key PCI-E 3.0 x1 support 2230 Wi-fi module One M.2 M key PCI-E 3.0 x4 support 2242/2280 storage
<b>Storage Drives</b>
Two fixed 2.5" hard drive bays with bracket for 9.5mm thickness HDD (when AOC area is not occupied)
<b>Power</b>
One external 150W DC power adapter
<b>Input/Output Ports</b>
LAN: Two RJ45 Gb Ethernet ports USB: Four USB 3.1 ports (2 type A and 2 type C) Display: One DisplayPort, one Embedded DisplayPort, one HDMI 2.0 port, one DVI-D port, and three independent displays Audio: Line Out/Mic In ports Serial ATA: Five SATA 3.0 ports via PCH DOM: SuperDOM (Disk on Module) power connector COM: Six COM ports TPM: One 2.0 header and chip

**Note:** Table is continued on the next page.



<b>System Features</b>
<b>Cooling</b>
Two 4cm chassis fans: 1x fan to cool add-on card area, plus an active CPU heatsink
<b>Front Panel</b>
Power button; power LED
<b>Dimensions</b>
Width 10" (254mm), Height 1.7" (43mm), Depth 8.9" (226mm)

## 1.3 Chassis Features

The CSE-E300 is a compact embedded 1U chassis.

### Front Features

The front of the chassis includes the control panel.

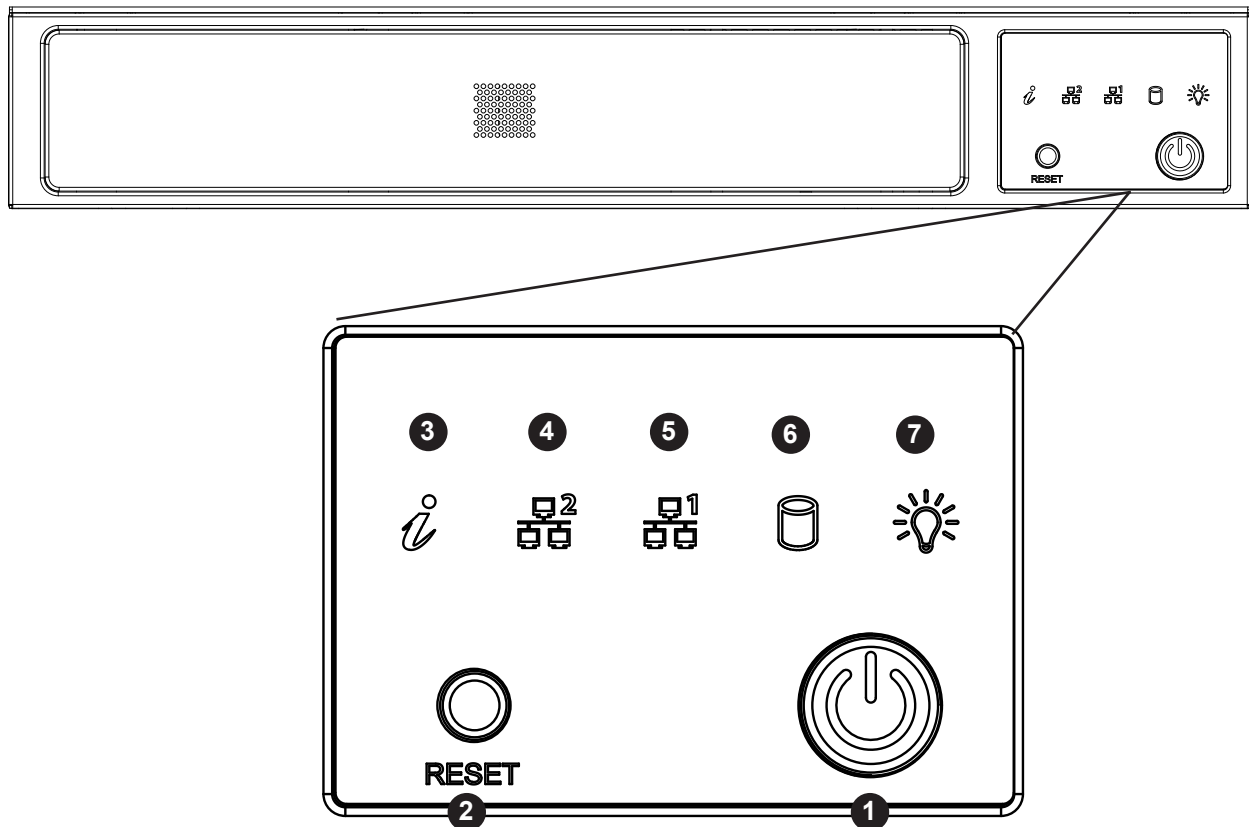


Figure 1-1. Chassis Front and Control Panel

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	Reset button	Resets the system.
3	Information LED	Alerts operator to several states, as noted in the following table.
4 and 5	NIC LED	Indicates network activity on the LAN when flashing.
6	HDD LED	Indicates hard disk drive activity when flashing.
7	Power LED	Indicates power is being supplied to the system power supply units. This LED is illuminated when the system is operating normally.

Information LED	
Status	Description
Continuously on and red	An overheat condition has occurred. (This may be caused by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for a non-operational power supply.
Solid blue	Local UID has been activated. Use this function to locate the server in a rack mount environment.
Blinking blue	Remote UID is on. Use this function to identify the server from a remote location.

## Rear Features

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

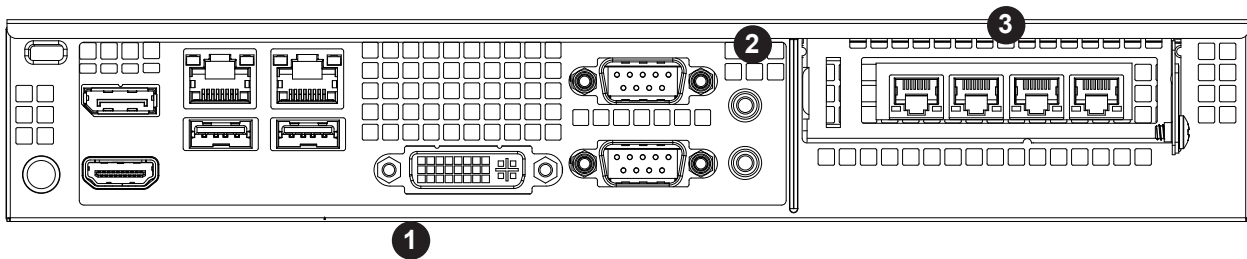


Figure 1-2. Rear Chassis View

Rear Chassis Features		
Item	Features	Description
1	I/O Ports	DP, HDMI, LAN, USB, DVI-D, COM, Line Out/Mic In (further described in Chapter 3)
2	AOM Window	Reserved for RJ45 console redirection cable
3	PCI Bay	Bay for low-profile PCI-E add-on card

## 1.4 Motherboard Layout

Below is a layout of the X11SCV-Q 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 3.

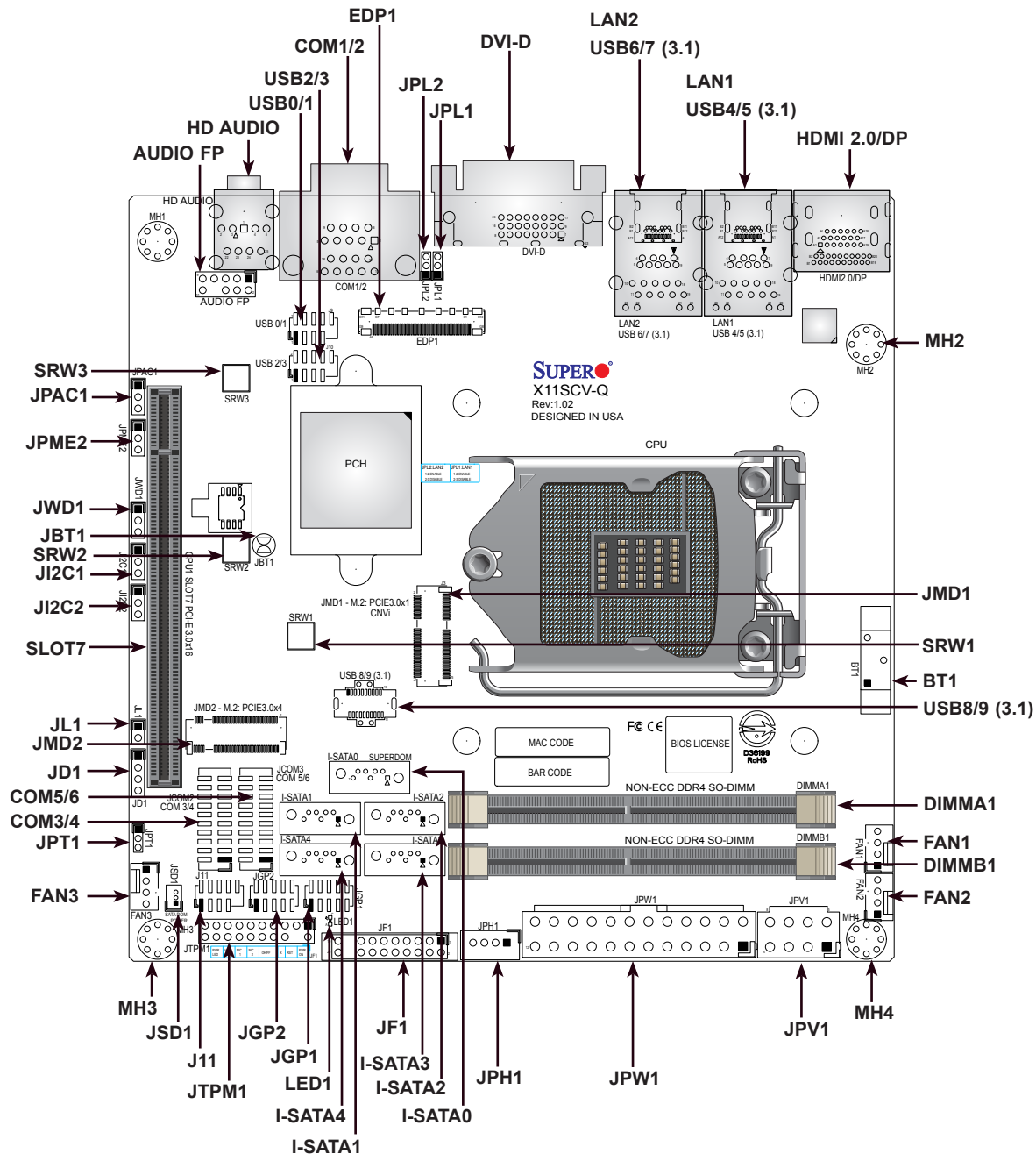


Figure 1-3. Motherboard Layout

**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)
JI2C1, JI2C2	PCI-E Slot SMBus (Data/Clock)	Pins 2-3 (Disabled)
JPAC1	Audio Enable	Pins 1-2 (Enable)
JPL1, JPL2	LAN1, LAN2 Enable/Disable	Pins 1-2 (Enable)
JPME2	Manufacturing Mode	Pins 1-2 (Normal)
JPT1	TPM Enable/Disable	Pins 1-2 (Enable)
JWD1	Watch Dog Timer	Pins 1-2 (Reset)

Connector	Description
AUDIO FP	Front Panel Audio Header
BT1	Onboard CMOS battery socket
COM1/2	COM1 and COM2 Ports (back panel)
COM3/4	COM3 and COM4 Headers
COM5/6	COM5 and COM6 Headers
DVI-D	Digital Visual Interface Port (digital only)
EDP1	Embedded DisplayPort
FAN1 - FAN3	CPU/System Fan Headers (FAN1: CPU Fan)
HD AUDIO	High Definition Audio Ports (back panel)
HDMI 2.0/DP	High Definition Multimedia Interface/DisplayPort
I-SATA0 - I-SATA4	SATA 3.0 Ports
J11	PS2 Keyboard and Mouse Header
JD1	Speaker/Buzzer (Pins 1-4: Speaker)
JF1	Front Control Panel Header
JGP1, JGP2	General Purpose I/O Headers
JL1	Chassis Intrusion Header
JMD1	M.2 PCI-E 3.0 x1 CNVi Slot (E Key 2230)
JMD2	M.2 PCI-E 3.0 x4 Slot (M Key 2242/2280)
JPH1	4-pin Power Connector for HDD
JPW1	24-pin ATX Power Connector
JPV1	12V 8-pin DC Power Connector (Required to provide extra power to the CPU, or as alternative power for a special enclosure when the 24-pin ATX power is not in use)
JSD1	SATA DOM Power Connector
JTPM1	Trusted Platform Module (TPM)/Port 80 Connector
LAN1, LAN2	GbE LAN Ports
SLOT7	CPU PCI-E 3.0 x16 Slot

**Note:** Table is continued on the next page.

<b>Connector</b>	<b>Description</b>
SRW1 - SRW3	M.2 Mounting Screws
USB0/1, USB2/3	Front Accessible USB 2.0 Ports
USB4/5, USB6/7	Back Panel USB 3.1 Ports
USB8/9	Front Accessible USB Header (Two USB 3.1 Type A)

<b>LED</b>	<b>Description</b>	<b>Status</b>
LED1	Power LED	Solid Green: Power On

## System Block Diagram

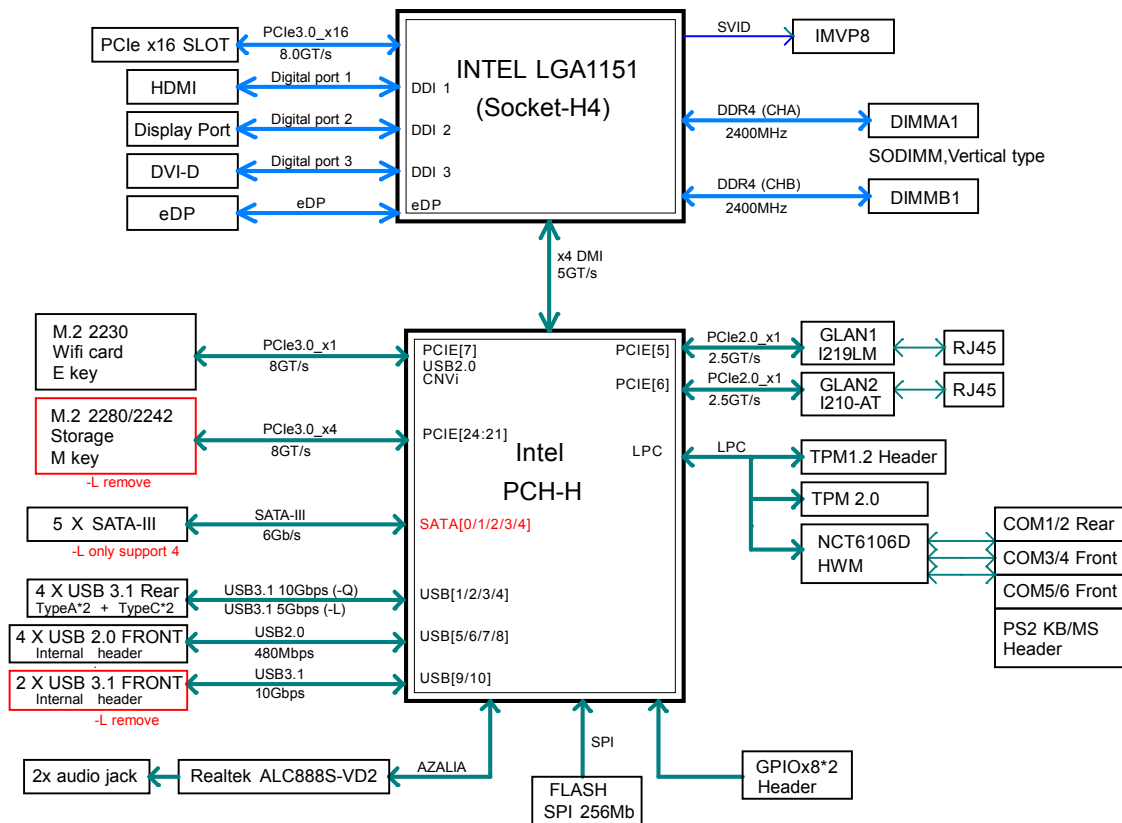


Figure 1-4. System Block Diagram

**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.

## 1.5 Server Installation and Setup

The server is shipped with the onboard processor and the motherboard installed in the chassis. Several steps are necessary to begin using your server. You must add memory, mount the hard disk drive, and mount the system in place.

### Unpacking the System

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

### Warnings and Precautions

- 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.
- Review the electrical and general safety precautions in Appendix B.

### Adding Components to your System

- **Memory:** If your system is not already fully integrated with system memory, refer to Chapter 2 for details on compatible types of memory and the installation procedure.
- **Drives and Storage:** To add storage capabilities to your server, see Chapter 2.
- **Input/Output:** See Chapter 3 for I/O ports and connect them as needed.
- **Software:** See Chapter 4 for description and procedures for installing software, including drivers and monitoring programs.



## Installing Rack Mounting Brackets

The chassis can be mounted in a rack using two rack brackets and a two-part power adapter shelf bracket (optional, MCP-290-30002-0B).

1. Attach the rack brackets using three screws through the holes in each bracket to secure the bracket to the chassis.
2. Install the handles, using two screws through the bracket and into each handle.
3. If you are using the optional power adapter bracket, install the power adapter on its bracket. Place it as shown, then add the retention bracket using two screws.
4. Mount the power adapter bracket assembly on the right side of the chassis using three screws.

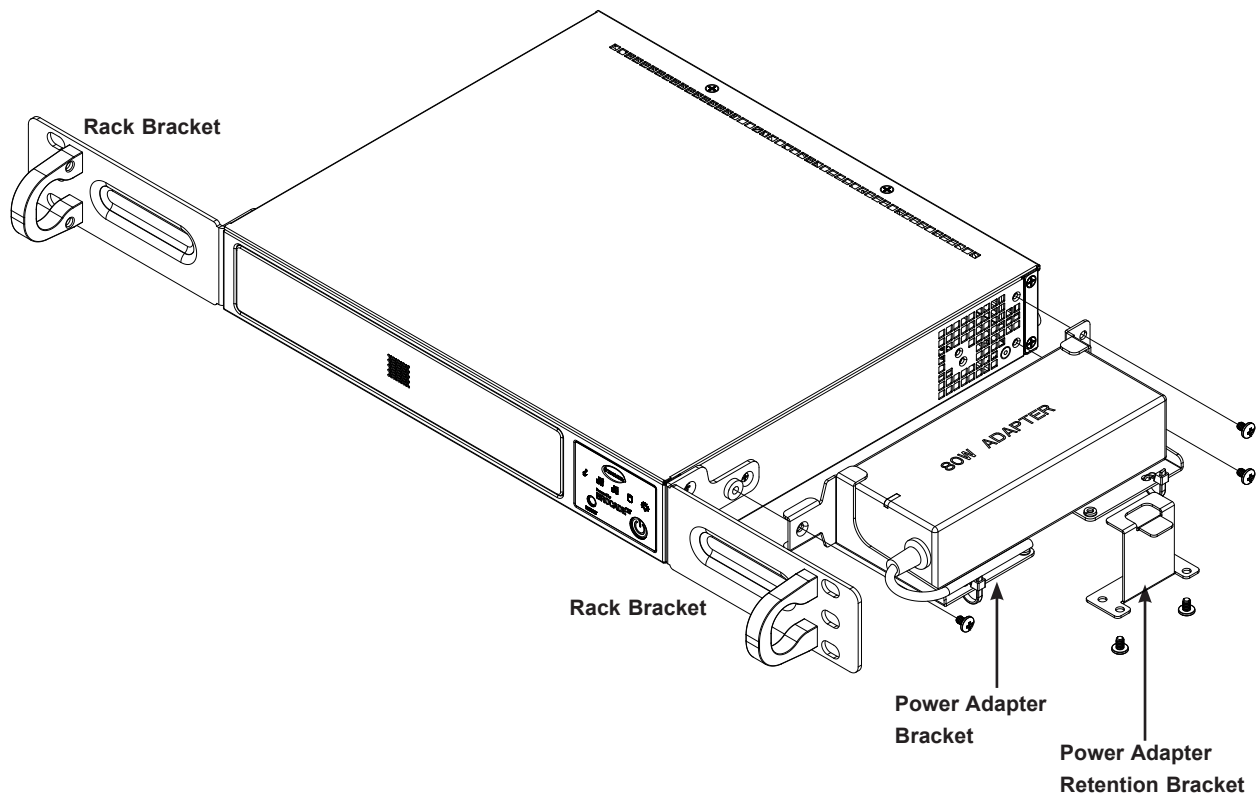


Figure 1-5. Installing Rack Mounting Brackets

## Chapter 2

### 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.

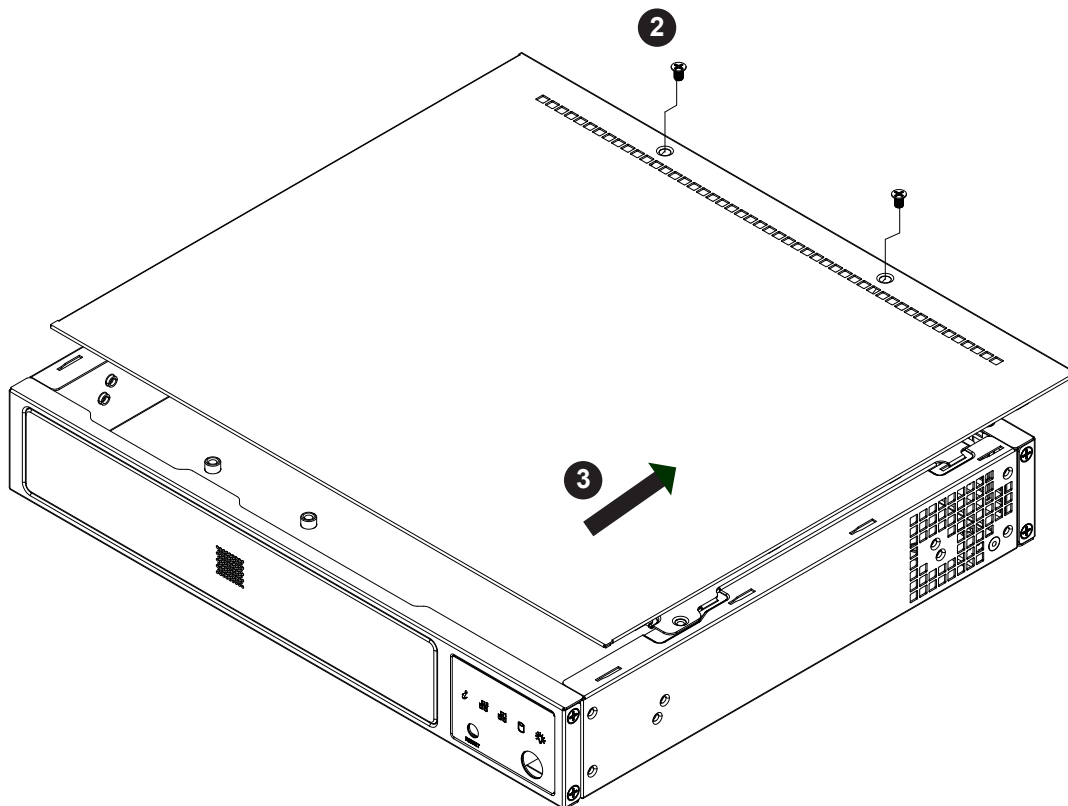
#### 2.1 Removing Power

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.

## 2.2 Accessing the System

The CSE-E300 features a removable top cover to access the inside of the chassis.



**Figure 2-1. Removing the Chassis Cover**

### ***Removing the Top Cover***

1. Power down the system as described in section 2.1.
2. Remove the two screws that hold the cover in place.
3. Slide the cover sideways as illustrated above to release the front and rear cover hooks from the chassis.
4. 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.

## 2.3 Motherboard Components

### Processor

The E300-9C features an embedded Intel, 8th Gen Core i3/i5/i7 processor.

### Memory Support

The X11SCV-Q motherboard supports up to 32GB of DDR4 non-ECC SO-DIMM with 2666/2400MHz memory in two memory slots. Populating these DIMM slots with a pair of memory modules of the same type, speed, and size will result in interleaved memory, which improves performance.

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

### *Memory Population Guidelines*

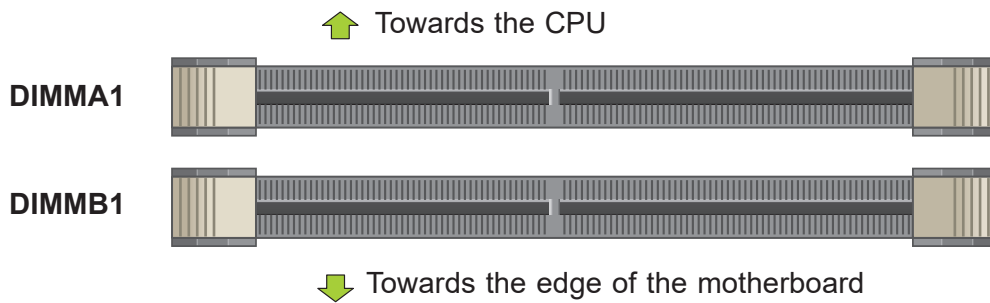
For optimal memory performance, follow the table below when populating memory.

<b>Recommended Population (Balanced)</b>		
<b>DIMMA1</b>	<b>DIMMB1</b>	<b>Total System Memory</b>
4GB		4GB
4GB	4GB	8GB
8GB		8GB
8GB	8GB	16GB
16GB		16GB
16GB	16GB	32GB

## Installing Memory

When installing memory modules, insert the desired number of DIMM modules into the memory slots, starting with DIMMA1 and then DIMMB1. For optimal performance, use memory modules of the same size, type, and speed.

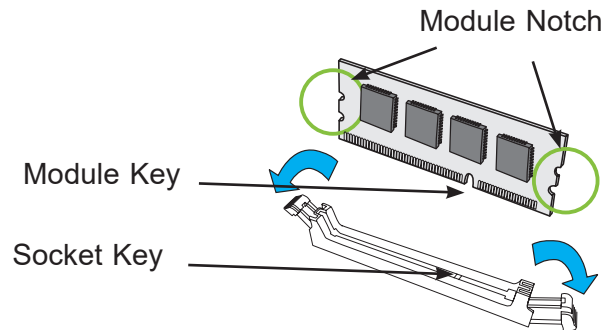
**Caution:** Exercise extreme care when installing or removing DIMM modules to prevent damage.



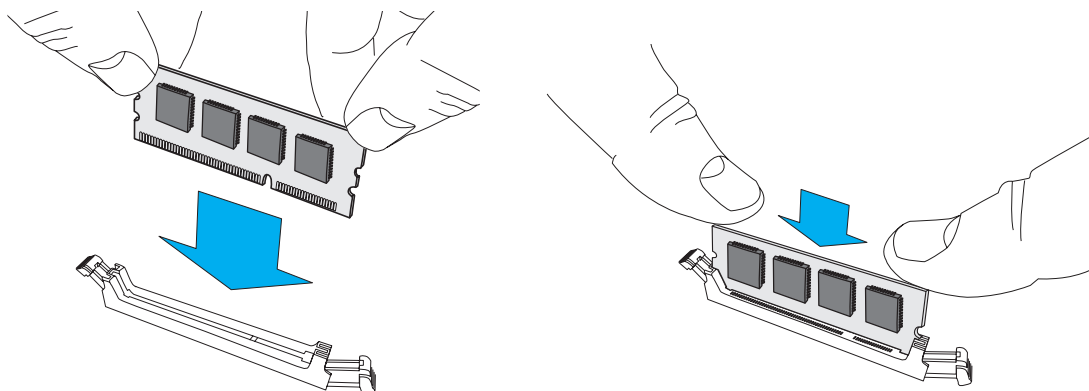
### Installing Memory

Begin by removing power from the system as described in Section 2.1.

1. Install the desired number of SO-DIMMs into the memory slots, starting with DIMMA1 and then DIMMB1.



2. Align the key on the bottom of the SO-DIMM module against the receptive point on the memory slot. Take note of the notches on the side of the DIMM module and of the locking clips on the socket to avoid causing damage.



3. Press the SO-DIMM module straight down into the socket with both hands until it is securely seated in the socket. The side clips will automatically lock the module into place.

To remove a DIMM, push the side clips away from the module to release it from the socket.

## Solid State Storage

This motherboard supports one internally mounted solid state storage card on an M.2 slot supporting PCI-E 3.0 x4, for NVMe storage of 2242/2280 length.

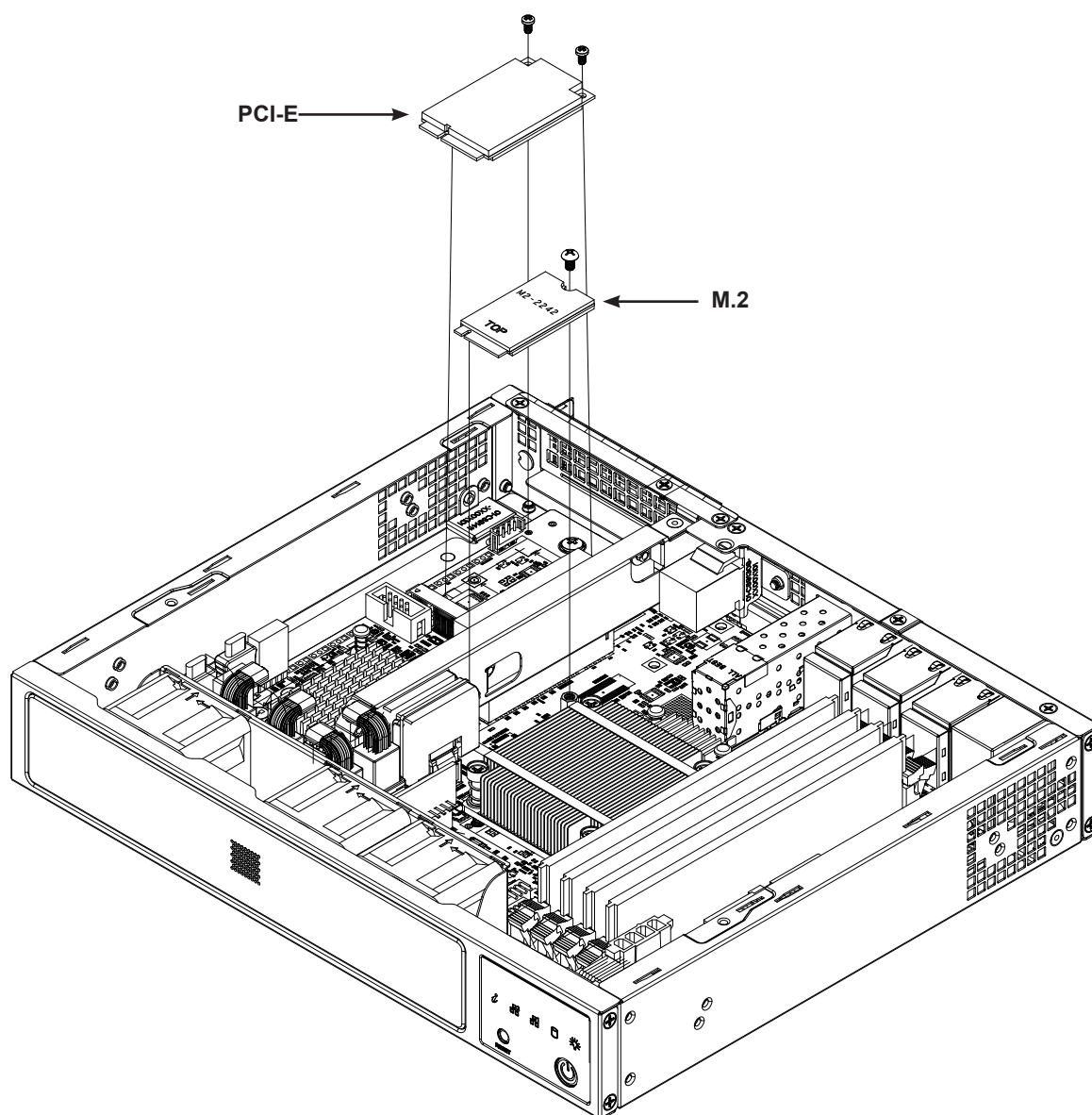


Figure 2-2. Installing a PCI-E Card and an M.2 Card

## **M.2**

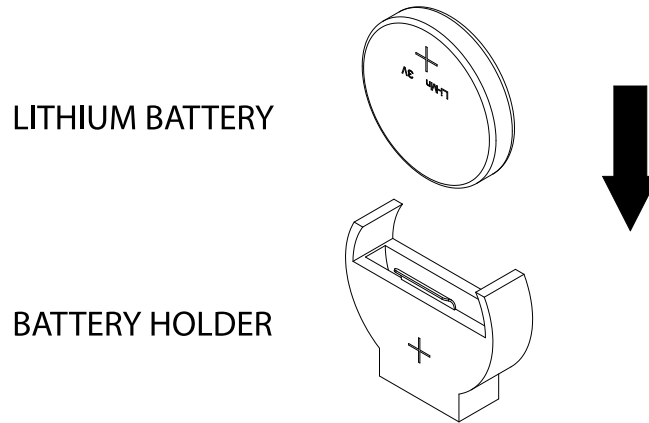
M.2 is formerly known as Next Generation Form Factor (NGFF). The X11SCV-Q deploys an M key (2242/2280) dedicated for SSD devices with the ultimate performance capability in a PCI Express 3.0 x4 (NVMe storage supporting 2242/2280 length) and an M.2 E key that supports 2230 length.

### ***Installing the M.2 Card***

1. Access the motherboard and locate the **M.2** connector (Figure 1-3, JMD2: M2).
2. Gently insert the M.2 card into the connector.
3. Use a screw to secure the M.2 card to the M2\_SRW1 or M2\_SRW2 standoff.

## 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.



**Figure 2-3. Installing the Onboard Battery**

### *Replacing the Battery*

1. Remove power from the system as described in section 2.1.
2. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.
3. 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 of your local hazardous waste management agency to dispose of your used battery properly.

**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).



## 2.4 Chassis Components

### Installing the Storage Drive

The CSE-E300 can accommodate two fixed 2.5" storage drives, or one if the add-on card area is occupied. If two drives are used, one drive should be placed on top of the other where the add-on card can otherwise be installed. One is installed to a mounting tray inside the chassis and the other is installed with a bracket.

**Note:** Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro website at <http://www.supermicro.com/products/nfo/storage.cfm>.

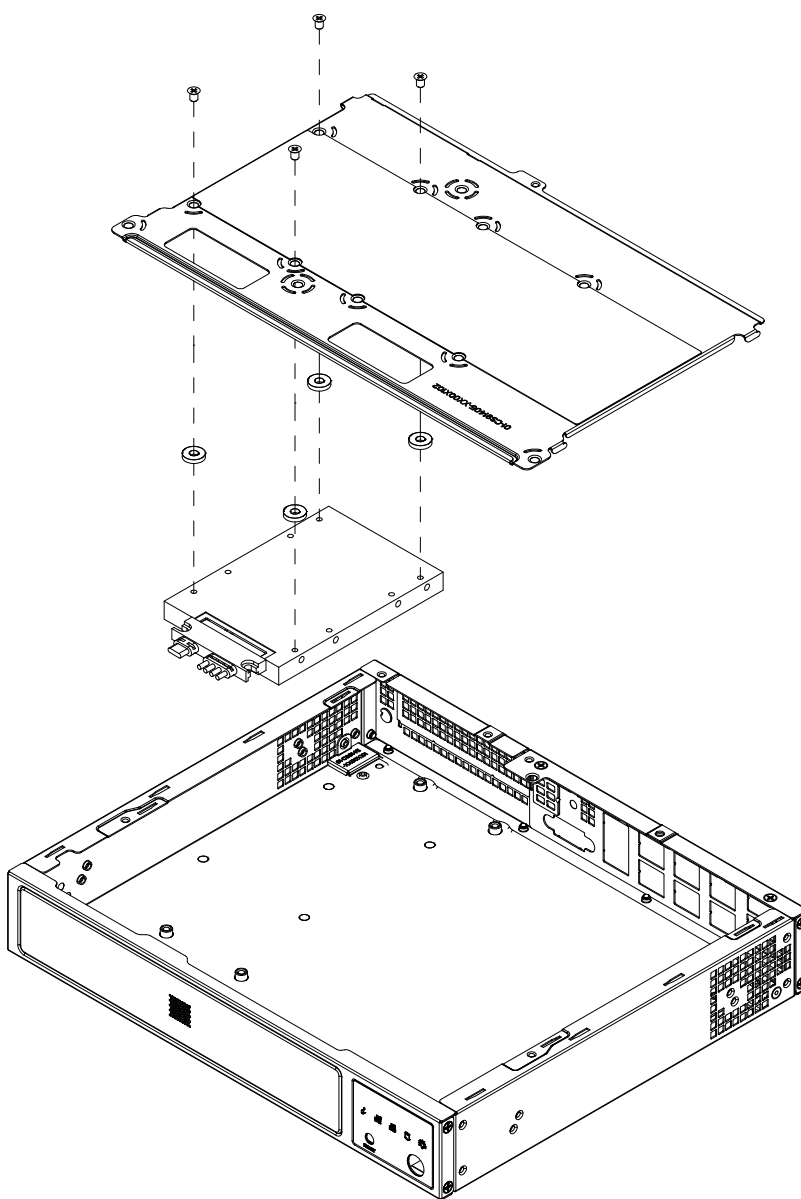


Figure 2-4. Installing the Hard Drive

### ***Installing the Hard Drives***

The motherboard should be installed before installing the drive.

1. Make sure there is no power to the system as described in section 2.1 and remove the chassis cover.
2. Remove the screws securing the hard drive tray to the support bracket and set them aside for later use. Lift the tray out.
3. Place the drive into the tray and secure it to the tray with the screws provided with the drive.
4. Return the drive tray assembly into the chassis, aligning the tabs of the tray with the slots in the chassis. Secure the tray to the chassis support bracket with the screws previously set aside.
5. Attach the SATA cable from the drive to the SATA port on the motherboard. This cable carries both the SATA signal and the SATA power.
6. Reinstall the chassis cover and power up the system.

## Installing the Riser Card

The system can support one PCI-E x16 expansion card by means of an optional riser card. The riser card is inserted in the expansion slot on the motherboard. Installation of the riser card and riser card bracket is pictured below.

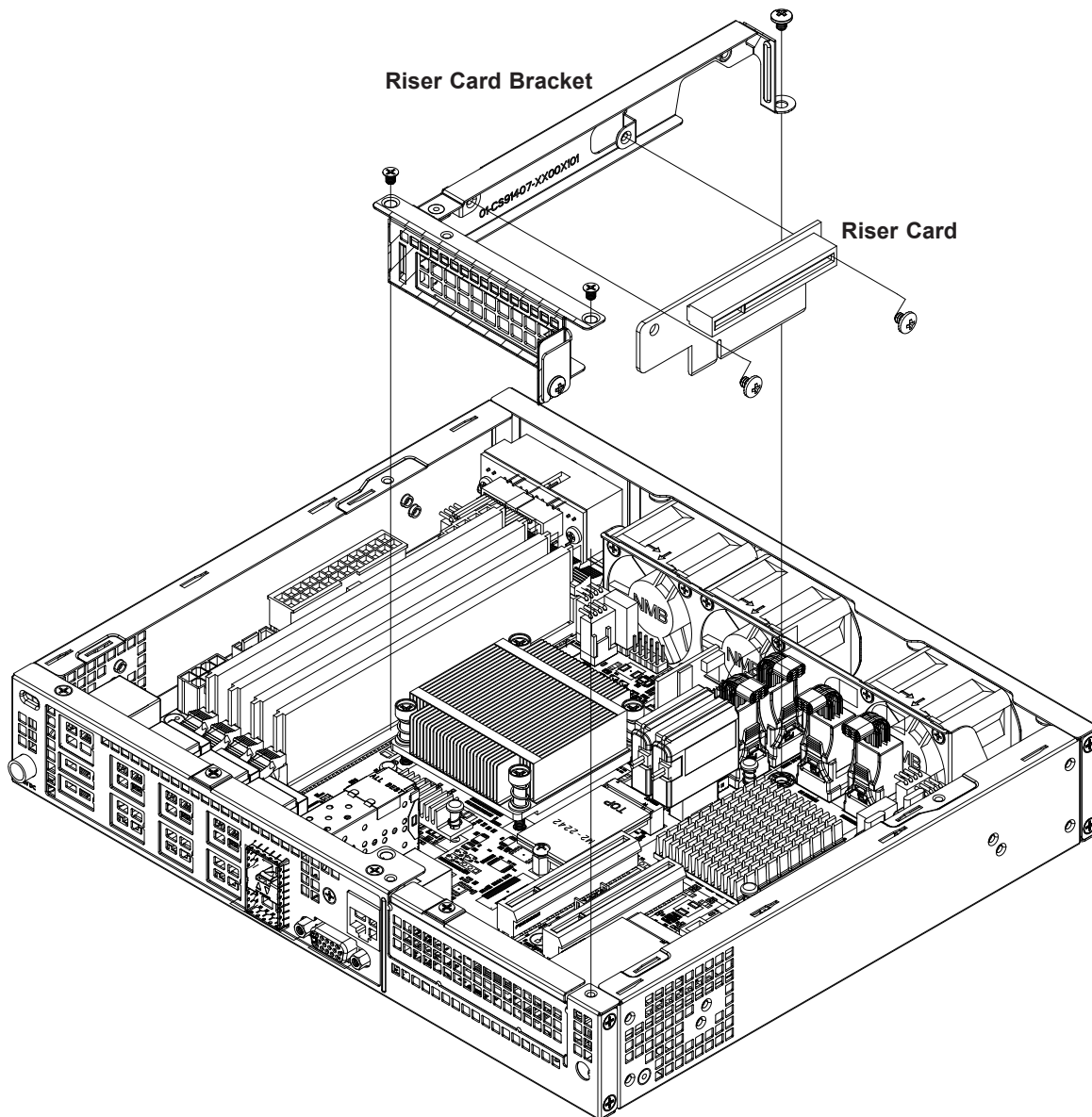


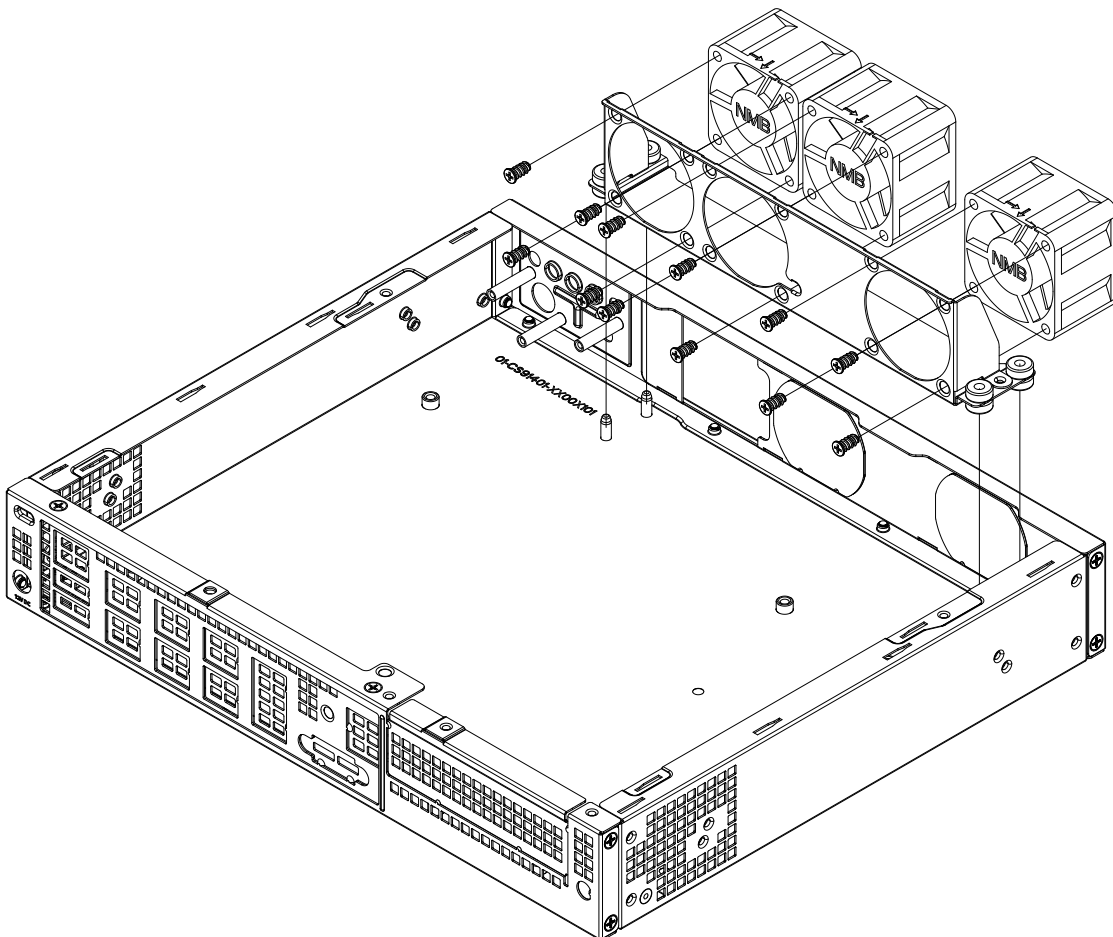
Figure 2-5. Installing the Riser Card

## System Cooling

The CSE-E300 includes two replaceable 4cm fans.

### *Replacing the System Fan*

1. Power down the system as described in section 2.1 and remove the AC power cord and the chassis cover.
2. Remove the wiring of the failed fan from the motherboard.
3. Remove the screws securing the fan to the chassis wall and save them.
4. Lift the fan out of the chassis.
5. Align the replacement fan with the holes in the wall of the chassis.
6. Secure the fan to the chassis wall using the screws previously set aside.
7. Reconnect the fan wiring to motherboard.
8. Reinstall the chassis top cover, reconnect the AC power cord, and power up the system.



**Figure 2-6. System Fans**

# Chapter 3

## Motherboard Connections

This section describes the connections on the X11SCV-Q 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.

### 3.1 Power Connections

#### Main ATX Power Supply Connector

The primary power supply connector (JPW1) meets the ATX SSI EPS 24-pin specification. JPV1 is the 12V DC power connector that provides alternative power for special enclosure when the 24-pin ATX power is not in use. JPH1 is a 4-pin HDD power connector that provides power to onboard HDD devices.

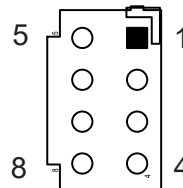
ATX Power 24-pin Connector Pin Definitions			
Pin#	Definition	Pin#	Definition
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	COM	3	COM
16	PS_ON	4	+5V
17	COM	5	COM
18	COM	6	+5V
19	COM	7	COM
20	Res (NC)	8	PWR_OK
21	+5V	9	5VSB
22	+5V	10	+12V
23	+5V	11	+12V
24	COM	12	+3.3V

Required Connection



JPH1

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



JPV1

+12V 8-pin Power Pin Definitions	
Pin#	Definition
1-4	Ground
5-8	+12V

## 3.2 Headers and Connectors

### TPM Header

The JTPM1 header is used to connect a Trusted Platform Module (TPM)/Port 80, which is available from a third-party vendor. A TPM/Port 80 connector is a security device that supports encryption and authentication in hard drives. It allows the motherboard to deny access if the TPM associated with the hard drive is not installed in the system. See the layout below for the location of the TPM header.

Trusted Platform Module Header 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	
9	+3.3V Stby	10	SPI_IRQ#

### Speaker/Buzzer

On the JD1 header, pins 1-4 are for the external speaker.

Speaker Pin Definitions	
Pin#	Definition
1-4	External Speaker

### Disk On Module Power Connector

The Disk On Module (DOM) power connector at JSD1 provides 5V power to a solid-state DOM storage device connected to the I-SATA0 port. Refer to the table below for pin definitions.

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



DOM Power Pin Layout

### Front Accessible Audio Header

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

Audio Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Mic_2_Left	2	Audio_Ground
3	Mic_2_Right	4	Audio_Detect
5	Line_2_Right	6	Mic_2_JD
7	Jack_Detect	8	Key
9	Line_2_Left	10	Line_2_JD

### Chassis Intrusion

A Chassis Intrusion header is located at JL1 on the motherboard. Attach the appropriate cable from the chassis to the header to inform you when the chassis is opened.

Chassis Intrusion Pin Definitions	
Pins	Definition
1	Intrusion Input
2	Ground

### COM Ports and Headers

The motherboard has two COM ports on the I/O back panel and three COM headers (COM1/2, COM3/4, COM5/6) that provide five serial connections. COM1/2 support RS-232/422/485 by default and COM3-6 support RS-232 only.

COM Header (COM1, COM2) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GrND	10	N/A

COM Header (COM3/4, COM5/6) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	DCD4	2	DSR4
3	RXD4	4	RTS4
5	TXD4	6	CTS4
7	DTR4	8	RI4_N
9	GND	10	N/A
11	DCD3	12	DSR3
13	RXD3	14	RTS3
15	TXD3	16	CTS3
17	DTR3	18	RI3_N
19	GND	20	N/A

## Fan Headers

There are three 4-pin fan headers on the motherboard. Although these are 4-pin fan headers, pins 1-3 are backward-compatible with traditional 3-pin fans. The onboard fan speeds are controlled by the Thermal Management (via Hardware Monitoring) in the BIOS. When using the 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

## General Purpose I/O Header

The JGP1 and JGP2 (General Purpose Input/Output) headers are general purpose I/O expanders on a pin header via the SMBus. Refer to the tables below for pin definitions.

JGP1 Header Pin Definitions		
Pin#	Definition	PCH Definition
1	3.3V	3.3V
2	Ground	Ground
3	GP0	GPP_K20
4	GP1	GPP_K4
5	GP2	GPP_K21
6	GP3	GPP_K5
7	GP4	GPP_K23
8	GP5	GPP_K6
9	GP6	GPP_K3
10	GP7	GPP_K7

JGP2 Header Pin Definitions		
Pin#	Definition	PCH Definition
1	3.3V	3.3V
2	Ground	Ground
3	GP0	GPP_K8
4	GP1	GPP_K12
5	GP2	GPP_K9
6	GP3	GPP_K13
7	GP4	GPP_K10
8	GP5	GPP_K14
9	GP6	GPP_K11
10	GP7	GPP_K15

## PS2 Keyboard and Mouse Header

Connect a 10-pin PS2 adapter to this internal header to provide external PS2 ports for either keyboards or mice.

PS2 Keyboard and Mouse Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5V	2	+5V
3	KB_DATA	4	MS_DATA
5	GND	6	GND
7	KB_CLK	8	MS_CLK
9	Key	10	GND



## 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.



Figure 3-1. JF1: Control Panel Pins

### Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS; see Chapter 5). To turn off the power in the suspend mode, press the button for at least 4 seconds. Refer to the table below for pin definitions.

Power Button Pin Definitions (JF1)	
Pins	Definition
1	Signal
2	Ground

### Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1. Attach it to a hardware reset switch on the computer case to reset the system. Refer to the table below for pin definitions.

Reset Button Pin Definitions (JF1)	
Pins	Definition
3	Reset
4	Ground

### Overheat (OH)/Fan Fail

Connect an LED cable to OH/Fan Fail connections on pins 7 and 8 of JF1 to provide warnings for chassis overheat/fan failure. Refer to the table below for pin definitions.

OH/Fan Fail Indicator Pin Definitions	
Pins	Definition
Off	Normal
On	Overheat
Flashing	Fan Fail

OH/Fan Fail LED Pin Definitions (JF1)	
Pins	Definition
7	Vcc/Blue UID LED
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 the LED connection for LAN Port 2 is on pins 9 and 10. Attach NIC LED cables to NIC1 and NIC2 LED indicators to display network activities. Refer to the table below for pin definitions.

LAN1/LAN2 LED Pin Definitions (JF1)	
Pins	Definition
9/11	+3.3V Stby
10/12	NIC Activity LED

### HDD LED

The HDD LED connection is located on pins 13 and 14 of JF1. Attach a cable here to indicate the status of HDD-related activities, including IDE and SATA activities. Refer to the table below for pin definitions.

HDD LED Pin Definitions (JF1)	
Pins	Definition
13	+3.3V
14	HDD LED

### 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	3.3V Stby
16	PWR LED

**NMI Button**

The Non-Maskable Interrupt Button header is located on pins 19 and 20 of JF1. Refer to the table below for pin definitions.

<b>NMI Button Pin Definitions (JF1)</b>	
<b>Pins</b>	<b>Definition</b>
19	Control
20	Ground

### 3.3 Ports

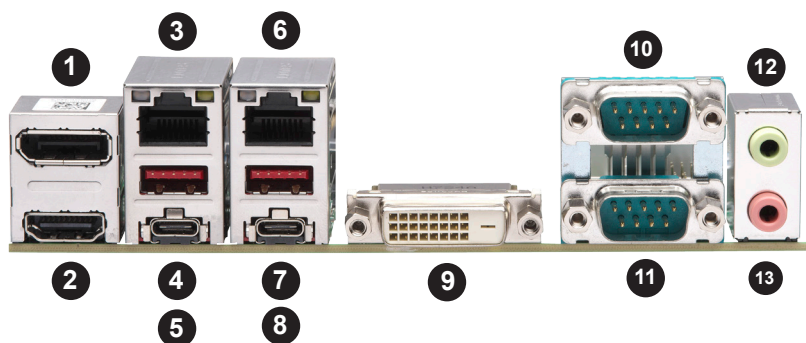


Figure 3-2. Rear Input/Output Ports

#	Description	#	Description	#	Description
1.	DP Port	6.	LAN2	11.	COM1
2.	HDMI Port	7.	USB7 (3.1 Type A)	12.	Line Out
3.	LAN1	8.	USB6 (3.1 Type C)	13.	Mic In
4.	USB5 (3.1 Type A)	9.	DVI-D		
5.	USB4 (3.1 Type C)	10.	COM2		

#### HDMI Port

One HDMI 2.0 (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). This port provides Intel HD Graphics digital output with resolution up to 4096x2160 at 60Hz Refresh Rate with HDR.

#### DP Port

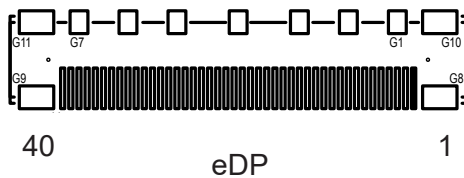
DisplayPort, developed by the VESA consortium, delivers digital display and fast refresh rate. It can connect to virtually any display device using a DisplayPort adapter for devices such as VGA, DVI, or HDMI. This port provides Intel HD Graphics digital output with resolution up to 4096x2304 at 60Hz Refresh Rate.

#### DVI-D Port

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

## 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. The X11SCV-Q supports 3.3V eDP LED or LCD panel only. The X11SCV-Q supports eDP standard version 1.4. Refer to the table below for pin definitions.



eDP Header Connector: DF80-40S-0.5V(51) 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	NC
19	eDP_TXP1	39	NC
20	GND	40	NC

## LAN Ports

There are two 1GbE LAN ports (LAN1 and LAN2) on the I/O back panel. These ports accept RJ45 type cables. Refer to the table below for the pin definitions.

LAN Port Pin Definition			
Pin#	Definition	Pin#	Definition
1	TX_D1+	5	BI_D3-
2	TX_D1-	6	RX_D2-
3	RX_D2+	7	BI_D4+
4	BI_D3+	8	BI_D4-

### High Definition Audio Ports

The green jack on the I/O back panel audio port is the Line Out connection and the pink jack is the Mic In connection.

HD Audio Pin Definitions	
Color	Definition
Green	Line Out
Pink	Mic In



### Universal Serial Bus (USB) Header

There are four USB 3.1 ports (USB0/1, USB2/3) on the I/O back panel to provide two USB 3.1 Type A and two USB 3.1 Type C access connections with a cable (not included).

Front Panel USB (3.1) Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	GND	11	GND
2	TX1+	12	TX2-
3	TX1-	13	TX2+
4	GND	14	GND
5	RX1+	15	RX2-
6	RX1-	16	RX2+
7	GND	17	GND
8	D1+	18	D2+
9	D1-	19	D2-
10	VBUS1	20	VBUS2

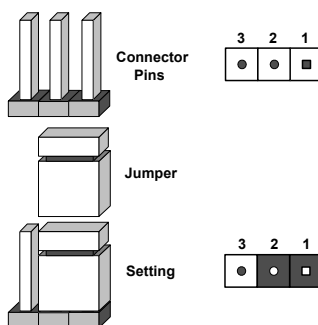
Back Panel USB (3.1) Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	GND	11	GND
2	TX1+	12	TX2-
3	TX1-	13	TX2+
4	GND	14	GND
5	RX1+	15	RX2-
6	RX1-	16	RX2+
7	GND	17	GND
8	D1+	18	D2+
9	D1-	19	D2-
10	VBUS1	20	VBUS2

## 3.4 Jumpers

### Explanation of Jumpers

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


**Note:** On 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.  JBT1 contact pads
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.

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

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

### Onboard Audio Enable

JPAC1 allows you 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

### ME Manufacturing Mode

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

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

### LAN Port Enable/Disable

Use JPL1 to enable or disable LAN1, and JPL2 to enable or disable LAN2. The default setting is Enabled.

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

### TPM Enable

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

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



**Watch Dog**

JWD1 controls the Watch Dog function. Watch Dog is a monitor that can reboot the system when a software application hangs. Jumping pins 1-2 will cause Watch Dog to reset the system if an application hangs. Jumping pins 2-3 will generate a non-maskable interrupt signal for the application that hangs. Watch Dog must also be enabled in BIOS. The default setting is Reset.

**Note:** When Watch Dog is enabled, the user needs to write their own application software to disable it.

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

## 3.5 LED Indicators

### Power LED

LED1 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. Be sure to turn off the system and unplug the power cord(s) before removing or installing components.

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

## 3.6 SATA Connections

### I-SATA 3.0 Ports

The X11SCV-Q has five I-SATA 3.0 ports (I-SATA0 - I-SATA4). 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. All these SATA ports provide serial-link signal connections, which are faster than the connections of Parallel ATA.

### M.2 Slot

There is one M.2 PCI-E 3.0 x4 slot that supports M Key 2242/2280 and one M.2 PCI-E x1 CNVi slot that supports E Key 2230. M.2 is formerly known as Next Generation Form Factor (NGFF) and designed for internal mounting devices.

# Chapter 4

## Software

This section describes the installation of drivers and management programs for the system.

### 4.1 Driver Installation

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

After accessing the website, go into 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 DVD with the ISO files, insert the disk into the DVD drive on your system and the display shown in Figure 4-1 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 4-1. Driver & Tool Installation Screen

**Note:** Click the icons showing a hand writing on 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 the bottom) one at a time. After installing each item, you must re-boot the system before proceeding to the next item on the list. The bottom icon with a DVD on it allows you to view the entire contents of the DVD.

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

## 4.2 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 Simple Network Management Protocol (SNMP).

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

**Note:** The default User Name and Password for SuperDoctor 5 is ADMIN / ADMIN.



Figure 4-2. SuperDoctor 5 Interface Display Screen (Health Information)

# Chapter 5

## UEFI BIOS

### 5.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for the X11SCV-Q 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 the BIOS that may not be reflected in this manual.

#### Starting BIOS 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.

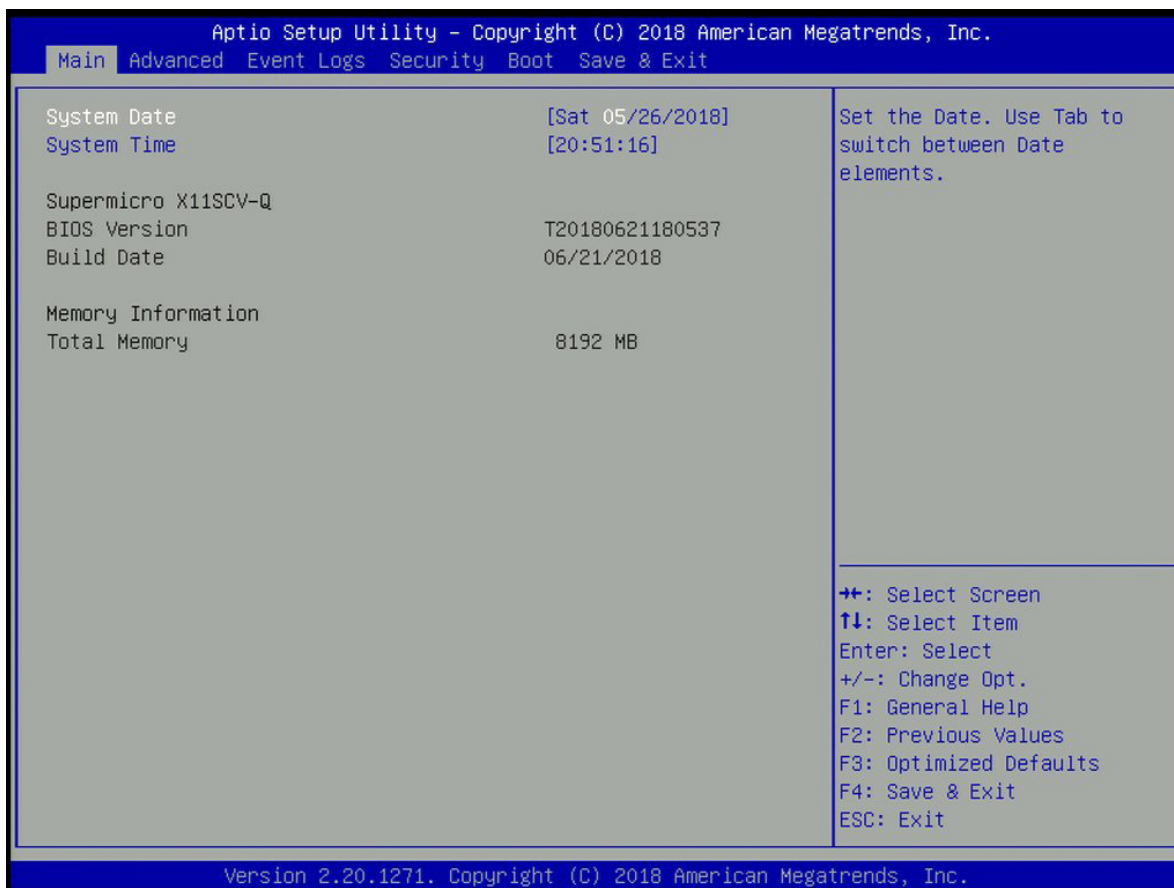
The Main BIOS screen has two main frames. The left frame displays all the options that can be configured. "Grayed-out" options cannot be configured. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is 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>, <Enter>, <ESC>, <Arrow> keys, etc.) can be used at any time during the setup navigation process.

## 5.2 Main Page

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 and the following features will be displayed:



### **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. The date's default value is the BIOS build date after RTC reset.

### **Supermicro X11SCV-Q**

#### **BIOS Version**

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

#### **Build Date**

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

#### **Memory Information**

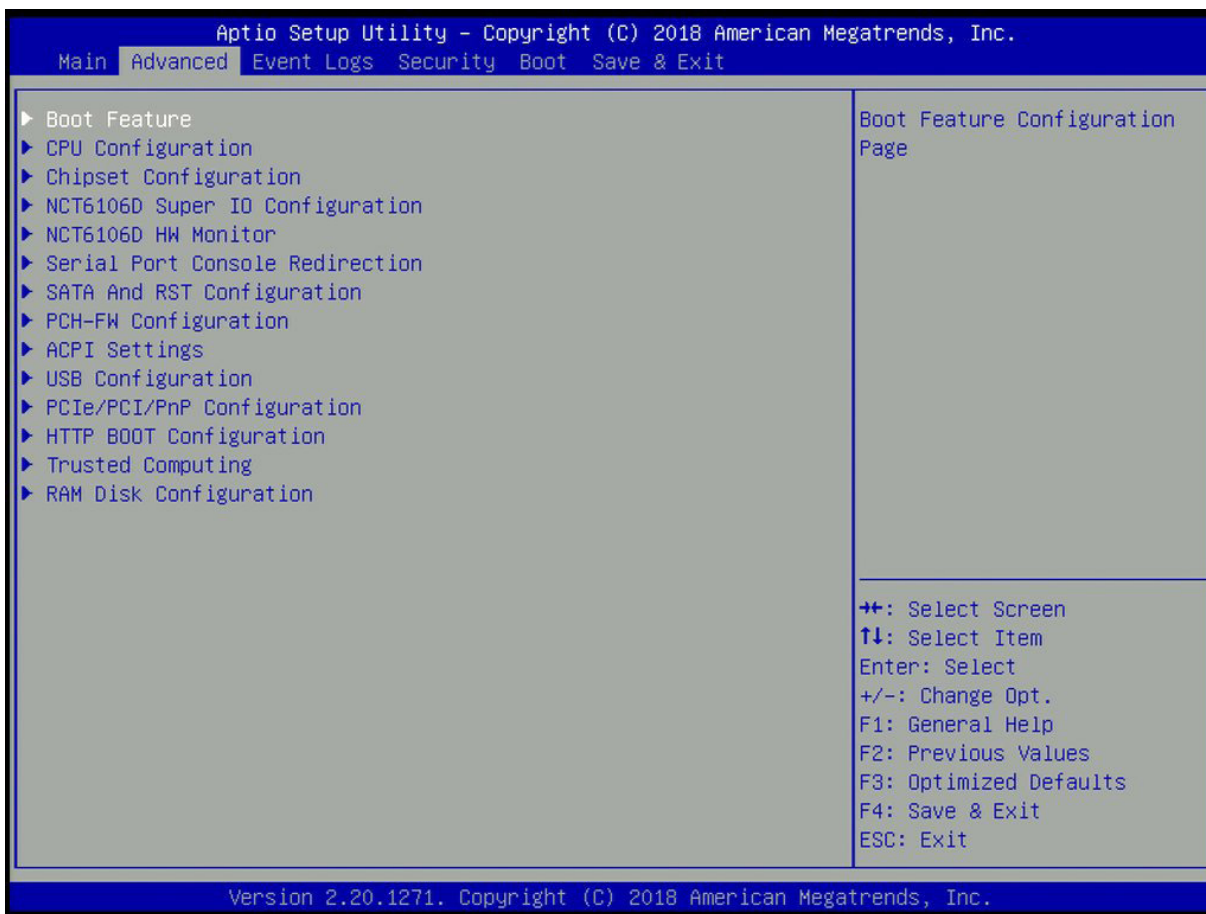
##### **Total Memory**

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



## 5.3 Advanced Setup Configurations

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 to default manufacturer settings.

### ► Boot Feature

#### Fast Boot

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

#### Quiet Boot

Use this feature to select the screen 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**

Use this feature to set the Power-on state for the NumLock key. The options are Off and **On**.

### **Option ROM Messages**

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

### **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**.

### **Re-try Boot**

If this feature is enabled, the BIOS will automatically reboot the system from a specified boot device after its initial boot failure. The options are **Disabled**, Legacy Boot, and EFI Boot.

### **Watch Dog Function**

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

### **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 the user 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 user presses the power button. The options are **Instant Off** and 4 Seconds Override.

### **DeepSx Power Policies**

Use this feature to configure the Advanced Configuration and Power Interface (ACPI) settings for the system. Enable S5 to power off the whole system except the power supply unit (PSU) and keep the power button alive so that the user can wake up the system by using an USB keyboard or mouse. The options are **Disabled** and Enabled in S4-S5.

### **Install Windows 7 USB Support**

Enable this feature to use the USB keyboard and mouse during the Windows 7 installation, since the native XHCI driver support is unavailable. Use a SATA optical drive as a USB drive, as USB CD/DVD drives are not supported. Disable this feature after the XHCI driver has been installed in Windows. The options are **Disabled** and Enabled.

## ► CPU Configuration

The following CPU information will display:

- Processor type
- CPU Signature
- Microcode Patch
- Max CPU Speed
- Min CPU Speed
- CPU Speed
- Processor Cores
- Hyper Threading Technology
- VMX
- SMX/TXT
- 64-bit
- EIST Technology
- CPU C3 state
- CPU C6 state
- CPU C7 state
- CPU C8 state
- CPU C9 state
- CPU C10 state
- L1 Data Cache
- L1 Instruction Cache
- L2 Cache
- L3 Cache
- L4 Cache

### **C6DRAM**

Select Enabled to activate moving the DRAM contents to PRM memory when the CPU is in the C6 state. The options are Disabled and **Enabled**.

### **Hardware Prefetcher**

If set to Enable, the hardware prefetcher will prefetch 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 Enabled. The options are Disabled and **Enabled**.

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

Use this feature to enable the Vanderpool Technology. This technology allows the system to run several operating systems simultaneously. The options are Disabled and **Enabled**.

### **Active Processor Cores**

This feature determines how many CPU cores will be activated for each CPU. When all is selected, all cores in the CPU will be activated. The options are **All** and 1, 2, 3, 4, and 5.

### **AES**

Select Enabled for Intel CPU Advanced Encryption Standard (AES) instructions support to enhance data integrity . The options are Disabled and **Enabled**.

### **Boot Performance Mode**

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

### **Intel® SpeedStep™**

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

### **Intel® Speed Shift Technology**

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

### **Turbo Mode**

Select Enable for processor cores to run faster than the frequency specified by the manufacturer. The options are Disable and **Enable**.

**Package Power Limit MSR Lock**

Select Enabled to lock the package power limit for the model-specific registers. The options are **Disabled** and Enabled.

**Power Limit 1 Override**

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

**Power Limit 1**

Use this feature to configure the value for Power Limit 1. The value is in milli watts and the step size is 125mW. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacture default setting. If the value is 0, the BIOS will set PL1 as 1.25\* TDP. This feature is hidden when Power Limit 1 Override is Disabled.

**Power Limit 2 Override**

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

**Power Limit 2**

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

**1-Core Ratio Limit Override**

This increases (multiplies) 1 clock speed in the CPU core in relation to the bus speed when one CPU core is active. Press "+" or "-" on your keyboard to change the value. Enter **32** to use the manufacture default setting. The default value is **0**.

**2-Core Ratio Limit Override**

This increases (multiplies) 2 clock speeds in the CPU core in relation to the bus speed when two CPU cores are active. Press "+" or "-" on your keyboard to change the value. Enter **32** to use the manufacture default setting. The default value is **0**.

**3-Core Ratio Limit Override**

This increases (multiplies) 3 clock speeds in the CPU core in relation to the bus speed when three CPU cores are active. Press "+" or "-" on your keyboard to change the value. Enter **32** to use the manufacture default setting. The default value is **0**.

**4-Core Ratio Limit Override**

This increases (multiplies) 4 clock speeds in the CPU core in relation to the bus speed when four CPU cores are active. Press "+" or "-" on your keyboard to change the value. Enter **32** to use the manufacture default setting. The default value is **0**.

**C states**

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

### **Enhanced C-states**

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

### **C-State Auto Demotion**

Use this feature to prevent unnecessary excursions into the C-states to improve latency. The options are Disabled, C1, C3, and **C1 and C3**.

### **C-State Un-demotion**

This feature allows the user to enable or disable the un-demotion of C-State. The options are Disabled, C1, C3, and **C1 and C3**.

### **Package C-State Demotion**

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

### **Package C-State Un-demotion**

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

### **CState Pre-Wake**

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

### **Package C State Limit**

Use this feature to set the Package C-State limit. The options are C0/C1, C2, C3, C6, C7, C7s, C8, C9, C10, Cpu Default, and **Auto**.

## **► Chipset Configuration**

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

### **► System Agent (SA) Configuration**

The following information will display:

- SA PCIe Code Version
- VT-d: Supported

### **► Memory Configuration**

#### **Memory Configuration**

- Memory RC Version

- Memory Frequency
- Memory Timing (tCL-tRCD-tRP-tRAS)
- DIMMA1
- DIMMA2
- DIMMB1
- DIMMB2

### **Maximum Memory Frequency**

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

### **Max TOLUD**

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

### **Memory Scrambler**

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

### **MRC Fast Boot**

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

### **REFRESH\_2X\_MODE**

Use this feature to select the refresh mode. The options are **Disabled**, 1-Enabled for WARM or HOT, and 2-Enabled HOT only.

## **►Graphics Configuration**

### **Graphics Configuration**

**IGFX VBIOS Version 1013**

**IGFX GOP Version N/A**

### **Primary Display**

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

### Primary PEG

Use this feature to select which graphics device should be the primary PEG. The default is **CPU SLOT7 PCI-E 3.0 X16**.

### Primary PCIE

Use this feature to select which device will be the primary PCI-E graphics display. The options are **Auto** and PCH SOLT7 PCI-E 3.0 X16.

### 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**, Disable, and Enable.

### 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 the best use of available system memory based on the DVMT 5.0 platform. The options are 0M, **32M**, 64M, 4M, 8M, 12M, 16M, 20M, 24M, 28M, 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.

### VDD Enable

Enabling this feature will force VDD in the BIOS. The options are **Enable** and Disable.

### PM Support

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

### PAVP Enable

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

### Cdynmax Clamping Enable

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

### Graphics Clock Frequency

Use this feature to set the internal graphics clock frequency. The options are 337.5 Mhz, 450 Mhz, 540 Mhz, and **675 Mhz**.



### **Skip CD Clock Init in S3 resume**

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

## **► DMI/OPI Configuration**

### **DMI X4 Gen3**

#### **DMI Link ASPM Control**

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

#### **DMI Extended Sync Control**

Use this feature to enable or disable the DMI extended synchronization. The options are Enable and **Disable**.

#### **DMI De-emphasis Control**

Use this feature to configure the De-emphasis control on DMI. The options are -6 dB and **-3.5 dB**.

## **► PEG Port Configuration**

### **CPU1 SLOT7 PCI-E 3.0 X16 OPROM**

#### **SLOT7 Enable Root Port**

Use this feature to enable or disable the PCI Express Graphics (PEG) device in the port specified by the user. The options are Disable, Enable, and **Auto**.

#### **SLOT7 Max Link Speed**

Use this feature to select PCI-E support for the device installed on SLOT7. The options are **Auto**, Gen 1, Gen 2, and Gen 3.

#### **SLOT7 Power Limit Value**

Use this feature to set the upper limit on the power supplied by the PCI-E slot. Press "+" or "-" on your keyboard to change this value. The default setting is **75**.

#### **SLOT7 Slot Power Limit Scale**

Use this feature to select the scale used for the slot power limit value. The options are **1.0x**, 0.1x, 0.01x, and 0.001x.

### **Program PCIe ASPM After OpROM**

PCIe ASPM, the Active State Power Management for PCI-Express slots, is a power management protocol used to manage power consumption of serial link devices installed on PCI-E slots during a prolonged off-peak time. If this feature is set to Enabled, PCI-E ASPM will be programmed after OPROM. If set to Disabled, the PCI-E ASPM will be programmed before OPROM. The options are **Disabled** and Enabled.

## ►GT - Power Management Control

### RC6 (Render Standby)

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

### Maximum GT frequency

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

### Disable Turbo GT frequency

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

## VT-d

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

## SW Guard Extensions (SGX)

Select Enabled to activate the Software Guard Extensions (SGX). The options are Disabled, Enabled, and **Software Controlled**.

## Select Owner EPOCH input type

There are three Owner EPOCH modes (each EPOCH is 64 bit). The options are **Select Owner EPOCH input type**, Change to New Random Owner EPOCHs, and Manual User Defined Owner EPOCHs.

## PRMRR Size

This feature appears if SW Guard Extensions is set to Enabled. This BIOS must reserve a contiguous region of Processor Reserved Memory (PRM) in the Processor Reserved Memory Range Register (PRMRR). The options are 32MB, 64MB, and **128MB**.

## GNA Device (B0:D8:F0)

Use this feature to enable SA GNA device. The options are **Enable** and Disable.

## X2APIC Opt Out

The feature "VT-D" must be enabled for this feature to be configurable. Use this feature to enable or disable X2APIC Opt Out. The options are Enable and **Disable**.

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## ► PCH-IO Configuration

### PCH-IO Configuration

PCH SKU Name Q370

Stepping B0

## ► PCI Express Configuration

### DMI Link ASPM Control

Use this feature to set the ASPM (Active State Power Management) 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**.

## ► PCI Express Root Port 1 - PCI Express Root Port 24

### ASPM 0

Use this feature to activate the Active State Power Management (ASPM) level for a PCI-E 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**.

### PTM

Use this feature to enable or disable Precision Time Measurement. The options are Disabled and **Enabled**.

### DPC

Use this feature to enable or disable Downstream Port Containment. The options are Disabled and **Enabled**.

### EDPC

Use this feature to enable or disable rootport extensions for Downstream Port Containment. The options are Disabled and **Enabled**.

### PCIe Speed

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

## ►NCT6106D Super IO Configuration

### NCT6106D Super IO Configuration

#### Super IO Chip NCT6106D

### ►Serial Port 1 Configuration

#### Serial Port 1

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

#### Device Settings

This feature displays the status of a serial port specified by the user.

#### Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of a serial port specified by the user. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address. 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;).

#### COM1 Serial Port Type

Use this feature to select the COM1 port type. The options are **RS232**, RS422, and RS485.

### ►Serial Port 2 Configuration

#### Serial Port 2

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

#### Device Settings

This feature displays the status of a serial port specified by the user.

#### Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of a serial port specified by the user. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address. 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;).

## COM2 Serial Port Type

Use this feature to select the COM2 port type. The options are **RS232**, RS422, and RS485.

### ► Serial Port 3 Configuration

#### Serial Port 3

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

#### Device Settings

This feature displays the status of a serial port specified by the user.

#### Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of a serial port specified by the user. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address. 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 selected onboard serial port. The options are Disabled and **Enabled**.

#### Device Settings

This feature displays the status of a serial port specified by the user.

#### Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of a serial port specified by the user. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address. 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;).

### ► Serial Port 5 Configuration

#### Serial Port 5

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

#### Device Settings

This feature displays the status of a serial port specified by the user.

### **Change Settings**

This feature specifies the base I/O port address and the Interrupt Request address of a serial port specified by the user. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address. The options are **Auto**, (IO=228h; 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 6 Configuration**

#### **Serial Port 6**

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

#### **Device Settings**

This feature displays the status of a serial port specified by the user.

### **Change Settings**

This feature specifies the base I/O port address and the Interrupt Request address of a serial port specified by the user. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address. The options are **Auto**, (IO=220h; 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;).

### **► NCT6106D HW Monitor**

#### **► System Health**

##### **Fan Speed Control Mode**

Use this feature to set the fan speed control mode. The options are Standard, PUE, and Full Speed.

- CPU Temperature
- System Temperature
- Peripheral Temperature
- PCH Temperature
- Fan1 Speed
- Fan2 Speed
- Fan3 Speed

- CPUVCORE
- 12V
- VDIMM
- VDIMM
- 5Vcc
- 3.3Vcc
- VBAT

## ►Serial Port Console Redirection

### COM1 - COM6

#### Console Redirection

Select Enabled to enable COM ports 1-4 for Console Redirection, which will allow a client machine to be connected to a host machine at a remote site for networking. The options are **Disabled** and Enabled.

***\*If the feature above is set to Enabled, the following features will become available for configuration:***

#### ►Console Redirection Settings

##### Terminal Type

This feature allows the user 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

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).

##### Data Bits

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

### 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.

### 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**.

### 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.

### VT-UTF8 Combo Key Support

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

### 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.

### Resolution 100x31

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

### Legacy OS Redirection Resolution

Use this feature to select the number of rows and columns used in Console Redirection for legacy OS support. The options are 80x24 and **80x25**.

### 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.

### Redirection After BIOS POST

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



## AMT SOL

### AMT SOL Console Redirection

This port is disabled.

### Legacy Console Redirection

#### Redirection COM Port

Use this feature to select a COM port to display redirection of Legacy OS and Legacy OPRM messages. The options are **COM1**, COM2, COM3, COM4, COM5, and COM6.

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

### Console Redirection

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

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

### ► Console Redirection Settings

#### 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, COM4, COM5, and COM6.

#### 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**

## **► 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**

Select AHCI to configure a SATA drive specified by the user as an AHCI drive. Select RAID to configure a SATA drive specified by the user as a RAID drive. The options are **AHCI** and RAID.

### **Aggressive LPM Support**

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

### **Storage Option ROM/UEFI Driver**

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

### **Serial ATA Port 0-4**

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

- Model number of drive and capacity
- Software Preserve Support

### **Serial ATA Port 0-4 Hot Plug**

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

**Serial ATA Port 0-4 Spin Up Device**

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

**Serial ATA Port 0-4 SATA Device Type**

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

**►PCH-FW Configuration****ME Firmware Version****ME Firmware Mode: Normal Mode****ME Firmware SKU: Corporate SKU****ME FW Image Re-Flash**

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

**Manageability Features State**

Enable this feature to allow system administrators to configure the ME BIOS extension (MEBx) configuration settings. The options are **Disabled** and **Enabled**.

**AMT BIOS Features**

Disable this feature to deny access to the MEBx setup. The options are **Disabled** and **Enabled**.

*\*If the feature "AMT BIOS Features" is set to **Enabled**, the **AMT Configuration** submenu will be available for configuration:*

**►AMT Configuration****ASF support**

Use this feature to enable or disable Alert Standard Format support. This feature sends an alert about a potential issue when the operating system is in a sleep state. The options are **Disabled** and **Enabled**.

**USB Provisioning of AMT**

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

## ► CIRCA Configuration

### Activate Remote Assistance Process

Use this feature to activate Remote Assistance. Enabling this feature will also trigger the CIRCA boot. The options are **Disabled** and Enabled.

***\*If the feature "Activate Remote Assistance Process" above is set to Enabled, the feature below will be available for configuration:***

### CIRCA Timeout

Use this feature to set the timeout value for MPS connection. Use **0** for the default timeout value of 60 seconds.

## ► ASF Configuration

### PET Progress

Use this feature to enable or disable PET Events Progress to receive PET Events alerts. The options are Disabled and **Enabled**.

### WatchDog

Select Enabled to allow AMT to reset or power down the system if the operating system or BIOS hangs or crashes. The options are **Disabled** and Enabled.

### OS Timer / BIOS Timer

These options appear if WatchDog (above) is enabled. This is a timed delay in seconds, before a system power down or reset after a BIOS or operating system failure is detected. Enter the value in seconds.

### ASF Sensors Table

Enable this feature for the ASF Sensor Table to be added into the ASF! ACPI table. The options are **Disabled** and Enabled.

## ► Secure Erase Configuration

### Secure Erase mode

Select Real to securely erase a solid state drive. The options are **Simulated** and Real.

### Force Secure Erase

Select Enabled to force a secure erase of the solid state drive on the next boot. The options are **Disabled** and Enabled.

## ► OEM Flags Settings

### MEBx hotkey Pressed

Use this feature to specify whether the MEBx hotkey should be enabled during the system boot. The options are **Disabled** and Enabled.

### MEBx Selection Screen

Use this feature to select the type of MEBx selection screen. Press 1 to enter the ME Configuration screen and 2 to initiate a remote connection. Network access must be activated for a remote connection. The options are **Disabled** and Enabled.

### Hide Unconfigure ME Confirmation Prompt

Use this feature to hide the unconfigure ME confirmation prompt . The options are **Disabled** and Enabled.

### MEBx OEM Debug Menu Enable

Use this feature to enable or disable the OEM debug menu in MEBx. The options are **Disabled** and Enabled.

### Unconfigure ME

Use this feature to reset the MEBx password to default. The options are **Disabled** and Enabled.

## ► MEBx Resolution Settings

### Non-UI Mode Resolution

Use this feature to specify the resolution for the non-UI text mode. The options are **Auto**, 80x25, and 100x31.

### UI Mode Resolution

Use this feature to specify the resolution for the UI text mode. The options are **Auto**, 80x25, and 100x31.

### Graphics Mode Resolution

Use this feature to specify the resolution for the graphics mode. The options are **Auto**, 640x480, 800x600, and 1024x768.

## ► ACPI Settings

### ACPI Sleep State

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

### **WHEA Support**

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

### **High Precision Event Timer**

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

### **Native PCIE Enable**

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

### **Native ASPM**

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

## **► USB Configuration**

### **USB Configuration**

**USB Module Version: 21**

**USB Controllers: 1 XHCI**

**USB Devices: 1 Keyboard**

### **Legacy USB Support**

Select Enabled to support onboard legacy USB devices. Select Auto to disable legacy support if there are no legacy USB devices present. Select Disable to have all USB devices available for EFI applications only. The options are **Enabled**, Disabled, and Auto.

### **XHCI Hand-off**

This is a work-around solution for operating systems that do not support XHCI (Extensible Host Controller Interface) 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**.

**Port 60/64 Emulation**

Select Enabled for I/O port 60h/64h emulation support, which, in turn, will provide complete legacy USB keyboard support for the operating systems that do not support legacy USB devices. The options are Disabled and **Enabled**.

**►PCIe/PCI/PnP Configuration****Option ROM execution****Video**

Use this feature to select the execution of the video OpROM. The options are Do not launch, UEFI, and **Legacy**.

**PCI PERR/SERR Support**

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

**Above 4G MMIO BIOS Assignment**

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

**BME DMA Mitigation**

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

**PCIe/PCI/PnP Configuration****CPU SLOT7 PCI-E 3.0 X16 OPROM**

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

**M.2:PCIE3.0x4 OPROM/M.2:PCIE3.0x1 CNVI OPROM**

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

**Onboard LAN Option ROM Type**

Use this feature to select which firmware is to be loaded for onboard LAN devices. The options are **Legacy** and EFI. Select Legacy to display and configure the Onboard LAN1 ~ LAN8 Option ROM features.

**Onboard LAN1 Option ROM**

Use this feature to select which firmware function is to be loaded for LAN Port1 used for system boot. The options are Disabled and **PXE**.

### Onboard LAN2 Option ROM

Use this feature to select which firmware function is to be loaded for LAN Port2 used for system boot. The options are **Disabled**, PXE, and iSCSI.

### Network Stack

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

***\*If the feature above is set to Enabled, the features below will be available for configuration:***

#### 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.

### IPSEC Certificate

The feature appears if Network Stack is enabled. Internet Protocol Security (IPSEC) offers a secure connection for remote computers using a secure tunnel. The options are **Enabled** and Disabled.

### PXE boot wait time

Use this feature 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 will be checked. Press "+" or "-" on your keyboard to change the value. The default setting is **1**.

## ► HTTP BOOT Configuration

### HTTP BOOT Configuration

#### Http Boot One Time

Use this feature to create the HTTP boot option. The options are **Disabled** and Enable.

#### Input the description

Highlight the feature and press <Enter> to create a description.



## Boot URI

Highlight the feature and press <Enter> to create a boot URI.

## ►Trusted Computing

*\*The features in the Trusted Computing section on this page are displayed if a TPM 1.2 module is detected:*

### Configuration

#### Security Device Support

If this feature and the TPM jumper on the motherboard are both set to Enabled, onboard security devices will be enabled for 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**.

#### TPM State

Select Enabled to use TPM (Trusted Platform Module) settings to enhance system data security. Please reboot your system for any change on the TPM state to take effect. 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. Your system will reboot to carry out a pending TPM operation. The options are **None** and TPM Clear.

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

#### Device Select

Use this feature to select the TPM version. TPM 1.2 will restrict support to TPM 1.2 devices. TPM 2.0 will restrict support to TPM 2.0 devices. Select Auto to enable support for both versions. The default setting is **Auto**.

#### Current Status Information

This feature displays the status of the TPM support on this motherboard.

- TPM Enabled Status
- TPM Active Status
- TPM Owner Status

#### TXT Support

Intel TXT (Trusted Execution Technology) helps protect against software-based attacks and ensures protection, confidentiality, and integrity of data stored or created on the system. Use this feature to enable or disable TXT Support. The options are **Disabled** and Enabled.

*\*The features in the Trusted Computing section on this page and the next are displayed if a TPM 2.0 module is detected:*

#### **TPM20 Device Found**

#### **Firmware Version**

**Vendor: IFX**

#### **Security Device Support**

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

The following TPM information will be displayed:

- Active PCR banks
- Available PCR banks

*\*If the feature "Security Device Support" is enabled, the following features are available for configuration:*

#### **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. Your system will reboot to carry out a pending TPM operation. 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 specify the TPM UEFI spec version. TCG 1.2 has support for Windows® 2012, Windows 8, and Windows 10. TCG 2 has support for Windows 10 or later. The options are TCG\_1\_2 and **TCG\_2**.

**Physical Presence Spec Version**

Use this feature to select the PPI spec version. The options are 1.2 and **1.3**.

**TPM2.0 Interface Type**

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

**Device Select**

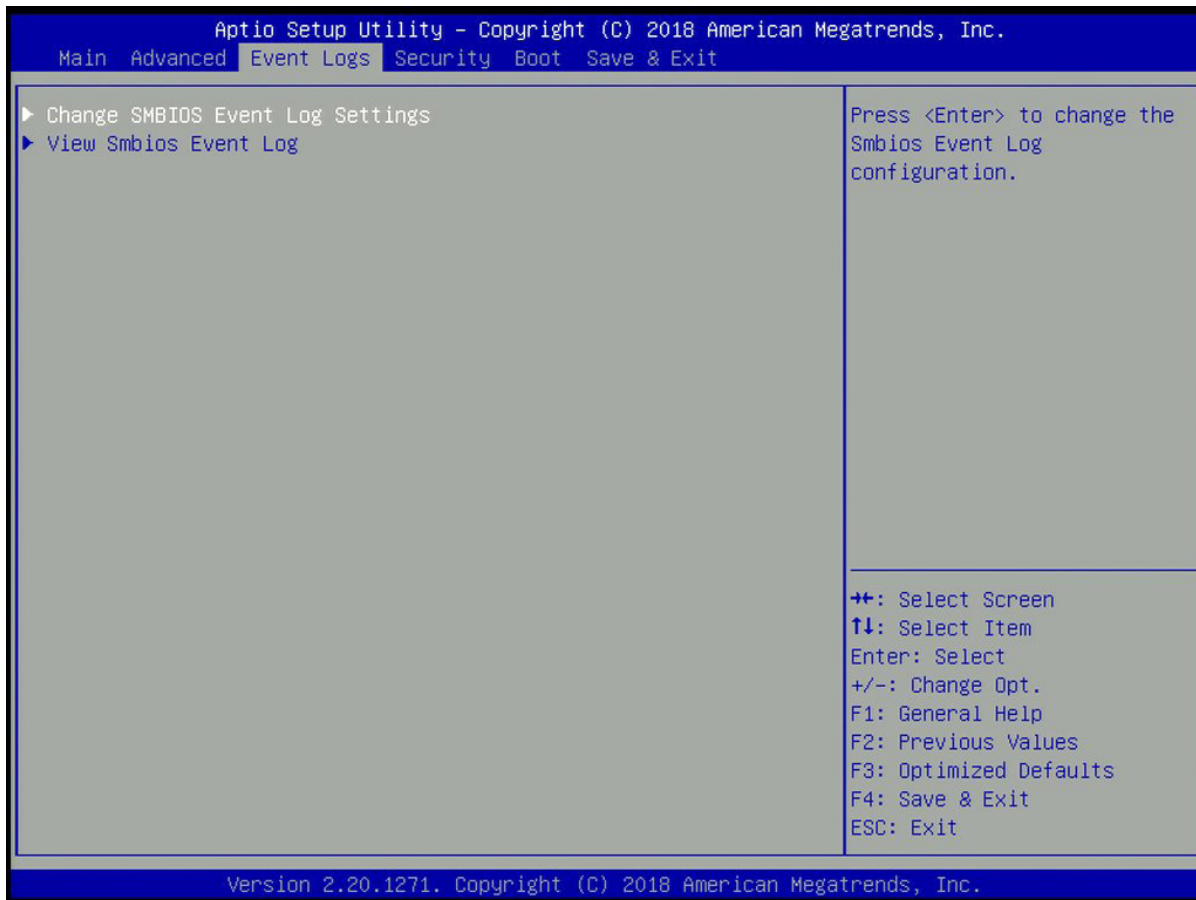
Use this feature to select the TPM version. TPM 1.2 will restrict support to TPM 1.2 devices. TPM 2.0 will restrict support to TPM 2.0 devices. Select Auto to enable support for both versions. The options are TPM 1.2, TPM 2.0, and **Auto**.

**TXT Support**

Intel TXT (Trusted Execution Technology) helps protect against software-based attacks and ensures protection, confidentiality, and integrity of data stored or created on the system. Use this feature to enable or disable TXT Support. The options are **Disabled** and Enabled.

## 5.4 Event Logs

Use this menu to configure event log settings.



### ► Change SMBIOS Event Log Settings

#### Enabling/Disabling Options

##### SMBIOS Event Log

Change this feature to enable or disable all features of the SMBIOS Event Logging during system boot. The options are Disabled and **Enabled**.

#### Erasing Settings

##### Erase Event Log

Select Enabled to erase all error events in the SMBIOS (System Management BIOS) log before event logging is initialized at bootup. The options are **No**, "Yes, Next reset," and "Yes, Every reset."

##### When Log is Full

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

## **SMBIOS Event Log Standard Settings**

### **Log System Boot Event**

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

### **MECI (Multiple Event Count Increment)**

Enter the increment value for the multiple event counter. Enter a number from 1 to 255. The default setting is **1**.

### **METW (Multiple Event Count Time Window)**

This feature is used to determine how long (in minutes) the multiple event counter should wait before generating a new event log. Enter a number from 0 to 99. The default setting is **60**.

**Note:** Please reboot the system for the changes to take effect.

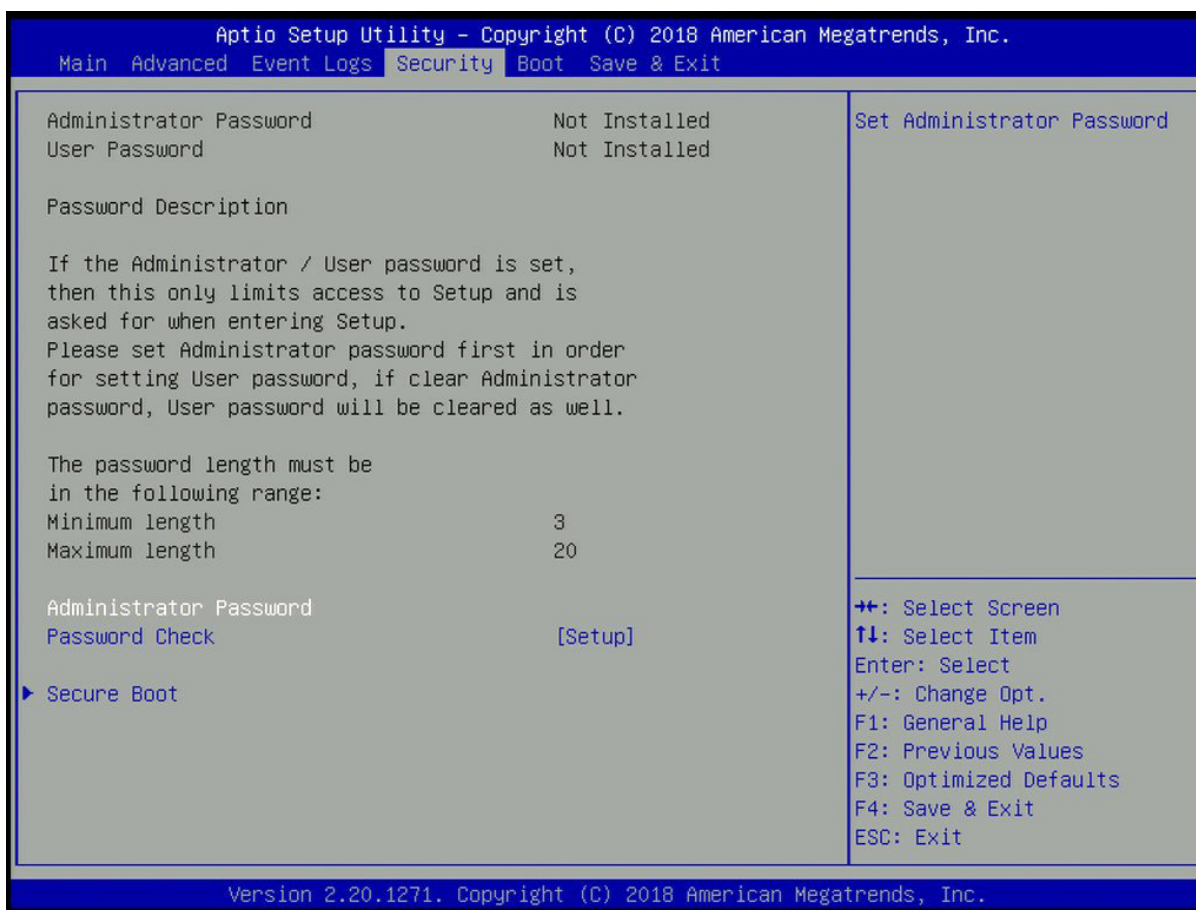
### **►View Smbios Event Log**

This feature allows the user to view the event in the SMBIOS event log. The following categories are displayed:

**DATE/TIME/ERROR CODE/SEVERITY**

## 5.5 Security

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



### Administrator Password

Use this feature to set the administrator password, which is required to enter the BIOS setup utility. The length of the password should be from three characters to 20 characters long.

### Password Check

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

### ► Secure Boot

#### System Mode

#### Attempt 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 the user to select the desired secure boot mode for the system. The options are Standard and **Customized**.

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

### CSM Support

This feature is for manufacturing debugging purposes.

#### ▶ Install Factory Default Keys

Select Yes to install all factory keys to the default settings. The options are Yes and No.

#### ▶ Key Management

##### Vendor Keys

#### Provision Factory Default keys

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:***

#### ▶ Install Factory Default Keys

Select Yes to install all factory keys to the default settings. The options are Yes and No.

#### ▶ Reset to Setup Mode

Select Yes to delete all Secure Boot key databases and force the system to Setup Mode. The options are Yes and No.

#### ▶ Save all Secure Boot variables

Use this feature to copy the NVRAM contents of the secure boot variables to a file.

#### ▶ Enroll Efi Image

This feature allows the image to run in Secure Boot mode.

##### Device Guard Ready

#### ▶ Remove 'UEFI CA' from DB

Use this feature to remove the Microsoft UEFI CA certificate from the database. The options are Yes and No.

#### ▶ Restore DB defaults

Select Yes to restore all DBs to the default settings. The options are Yes and No.

**Secure Boot variable | Size | Keys# | Key Source**

▶ **Platform Key (PK)**

**Update**

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

▶ **Key Exchange Keys**

**Update**

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

▶ **Authorized Signatures**

**Update**

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

▶ **Forbidden Signatures**

**Update**

Select Yes to load a factory default dbx or No to load from a file on 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**

**Update**

Select Yes to load a factory default dbt or No to load from a file on 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 Signatures**

**Update**

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

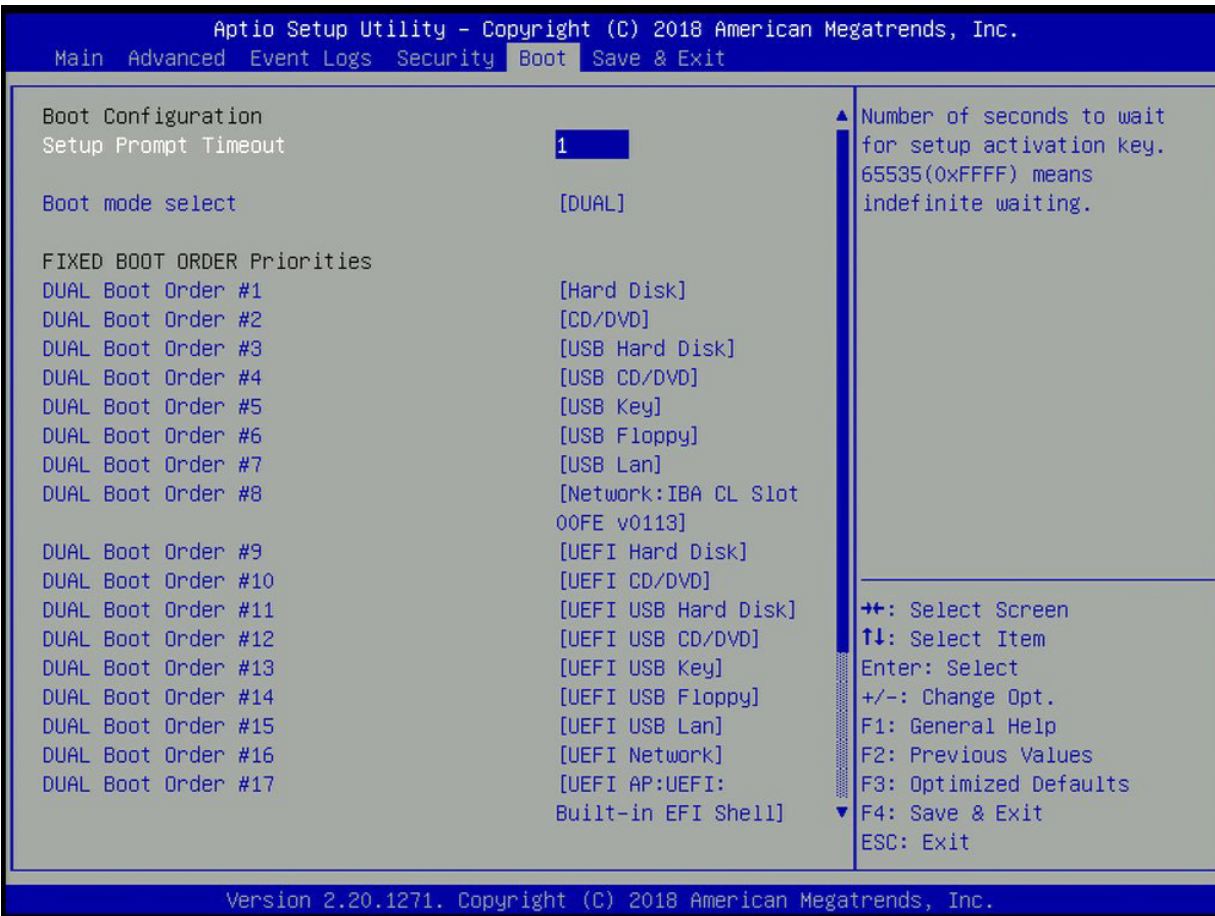


**Append**

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.

## 5.6 Boot Settings

Use this menu to configure boot settings:



### Setup Prompt Timeout

Use this feature to specify the length of time (the number of seconds) for the BIOS to wait before rebooting the system when the setup activation key is pressed. Enter the value of 65535 (0xFFFF) for the BIOS to wait indefinitely. The default setting is **1**.

### Boot mode select

Use this feature to select the boot mode. The options are LEGACY, UEFI, and **DUAL**.

### Fixed BOOT ORDER Priorities

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

- LEGACY/UEFI/DUAL Boot Order #1
- LEGACY/UEFI/DUAL Boot Order #2
- LEGACY/UEFI/DUAL Boot Order #3
- LEGACY/UEFI/DUAL Boot Order #4
- LEGACY/UEFI/DUAL Boot Order #5

- LEGACY/UEFI/DUAL Boot Order #6
- LEGACY/UEFI/DUAL Boot Order #7
- LEGACY/UEFI/DUAL Boot Order #8
- LEGACY/UEFI/DUAL Boot Order #9
- LEGACY/UEFI/DUAL Boot Order #10
- LEGACY/UEFI/DUAL Boot Order #11
- LEGACY/UEFI/DUAL Boot Order #12
- LEGACY/UEFI/DUAL Boot Order #13
- LEGACY/UEFI/DUAL Boot Order #14
- LEGACY/UEFI/DUAL Boot Order #15
- LEGACY/UEFI/DUAL Boot Order #16
- LEGACY/UEFI/DUAL Boot Order #17

▶ **Delete Boot Option**

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

▶ **Delete Driver Option**

Use this feature to remove an EFI driver option from the driver order.

▶ **UEFI Application Boot Priorities**

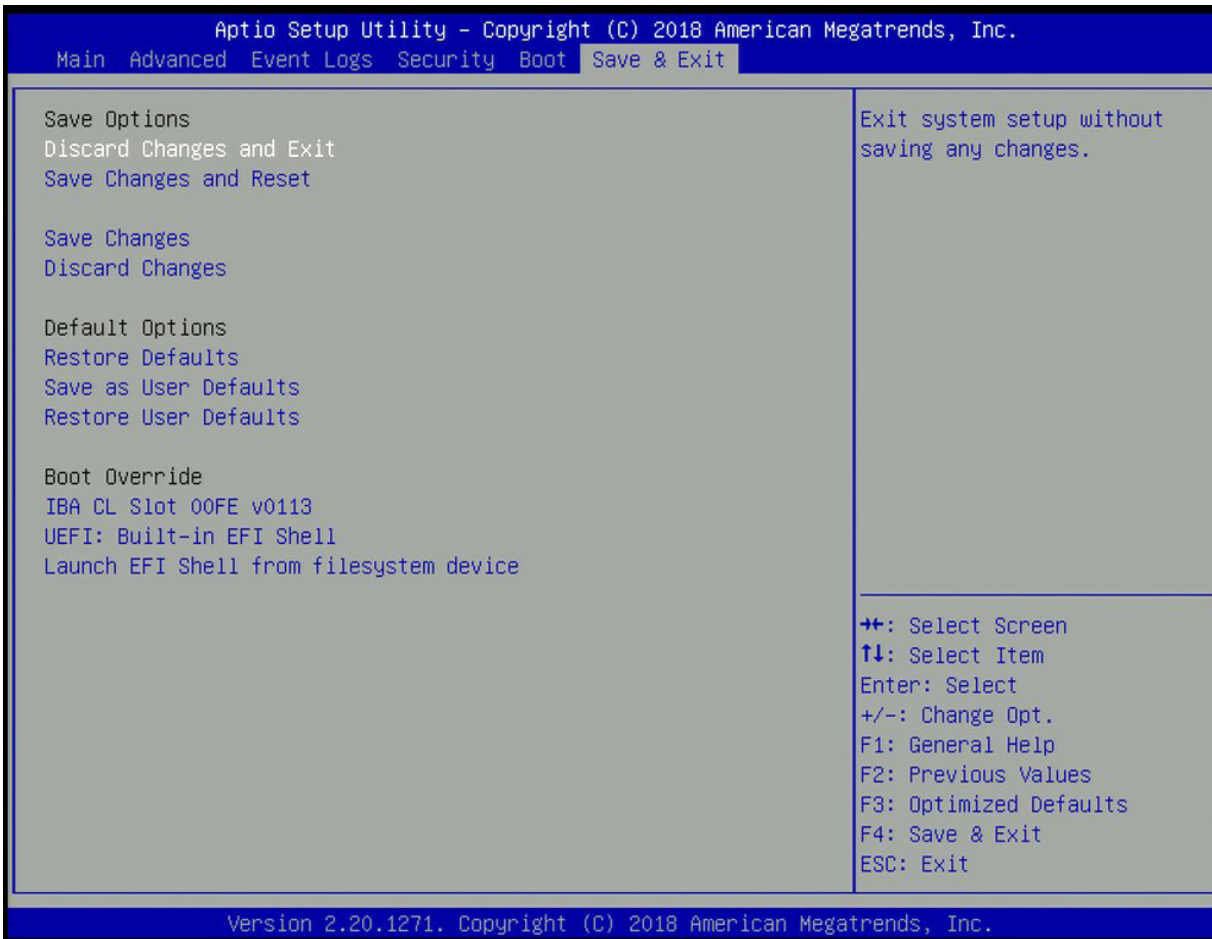
- Boot Option # - This feature sets the system boot order of detected devices. The options are **[the list of detected boot device(s)]** and Disabled.

▶ **NETWORK Drive BBS Priorities**

- Boot Option # - This feature sets the system boot order of detected devices. The options are **[the list of detected boot device(s)]** and Disabled.

## 5.7 Save & Exit

Use this menu to configure save and exit settings.



### 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 reset (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****Restore Defaults**

To set this feature, select Restore Optimized Defaults 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 the user to save any changes to the BIOS setup for future use.

**Restore 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**

Other boot options are listed in this section. The system will boot to the selected boot option.

**IBA GE Slot 00FE v0113****UEFI: Built-in EFI Shell****Launch EFI Shell from filesystem device**

## Appendix A

### BIOS Error Codes

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

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

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

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

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

BIOS 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 (Supermicro p/n AOM-SPI80-V).

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。

您目前所處的工作環境可能讓您受傷。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.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

## Circuit Breaker



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

サーキット・ブレーカー

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

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

### Warnung

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

### ¡Advertencia!

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

### Attention

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

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

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

### 경고!

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

### Waarschuwing

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

## Power Disconnection Warning



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

### 電源切斷の警告

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斷され、電源コードは電源モジュールから取り外す必要があります。

### 警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

### 警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

### Warnung

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

### ¡Advertencia!

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

### Attention

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

אזהרה מפני ניתוק חשמלי

אזהרה!

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

يجب فصل انظاؤ من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد  
انطاقت قيم  
انصل إلى امناطق 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  
す。

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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 .  
،مكن اننصل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت  
أو أ وس هُت أخري نلالأمما ققم ومفتاح

### 경고!

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

### Waarschuwing

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

## Battery Handling



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

### 電池の取り扱い

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

### 警告

電池更換不當會有爆炸危險。請只使用同類電池或制造商推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 المسحعملة وفقا لعمليات الشركة الصانعة

경고!

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

Waarschuwing

Er is 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

当システム正在进行時、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

警告

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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/CSEマークがコードに表記)を Supermicro が指定する製品以外に使用することを禁止しています。

### 警告

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

### 警告

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

### Warnung

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



### ¡Advertencia!

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

### Attention

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

AC ימאתמו מיילמשח מילבכ

!הרהזא

ךרוצל ומאתוה וא ושכרנ רשא AC מימאתמו מיקפס, מילבכב שמתשהל שי, רצומה תא מיניקתמ רשאכ לכב שומיש . עקתהו לבכה לש הנוכח הדימ ללוכ, תוימוקמה תוחיטבה תושירדל ומאתוה רשאו, הנקתהה למשחה ירישכמב שומישה יקוחל מאתהב. ילמשח רצק וא הלקתל מורגל לולע, רחא גוסמ מאתמ וא לבכ לש דוק מהילע עיפומ רשאכ) UL-ב או CSA-ב -ב מיכמומה מילבכב שמתשהל רוסיא מייק, תוחיטבה יקוחו דבלב Supermicro י"ע מאתוה רשא רצומב קר אלא, רחא ילמשח רצומ לכ רובע (UL/CSA)

תאלבאלא אארשב מץ וא אדדחמלא וא ארפוטמלא תאליטוטלא מאדחטסאב מץ, אגתנמלא בייקרת דנע לכלז יפ אמב אילחמלא אלאסלא תאבלטתמו נינאווקב מאזתלאלא אמ דדרתמלא ראיטלא תאלוחמו אילברמלא קיירח וא לטע יפ בבסטטי דץ ירשא תאלוחמו תאלבאלא יא מאדחטסא. מילסלא סבאלאו ולסומלא מץ ח CSA וא UL לביק נמ אדמאמלא תאלבאלא מאדחטסא תאדמלא אילברמלא אזהאלל אלאסלא נונאק רזחי Supermicro לביק נמ אדדחמלא אילברמלא תאגתנמלא רייג ירשא תאדמא יא אמ (UL/CSA) אלאמלא למהת יתלאו

### 전원 케이블 및 AC 어댑터

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

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

### Stroomkabel en AC-Adapter

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

# Appendix C

## System Specifications

### Processors

Single Intel, 8th Gen Core i3/i5/i7 Processor in an LGA 1151 Socket

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

### Chipset

Intel Q370 Express Chipset

### BIOS

256Mb SPI AMI BIOS® SM Flash UEFI BIOS

### Memory

Two DDR4 DIMM sockets; supports up to 32GB DDR4 non-ECC SO-DIMM; Memory Type 2666/2400MHz; DIMM size 4GB, 8GB, 16GB

### SATA Controller

Five SATA 3.0 (6Gbps) ports via PCH

### Drive Bays

Two (1 when add-on card area is occupied) fixed 2.5" hard drive bays, one with bracket, one on base mount

### Expansion Slots

One PCI-E 3.0 x16

One M.2 E key slot support 2230 Wi-fi module

One M.2 M key PCI-E x4 support 2242/2280 storage

One DOM power connector

### Motherboard

X11SCV-Q; Mini-ITX form factor 6.7" x 6.7" (17.15cm x 17.15cm)

### Chassis

CSE-E300; Mini-ITX, Width 10" (254mm), Height 1.7" (43mm), Depth 8.9" (226mm)

### System Cooling

CPU Active Cooler; one 4cm high performance system fan plus one 4cm fan for cooling add-on card area

### Power Supply

150W DC Power Adapter

12V DC Power Input

### Weight

Gross Weight: 7.5 lbs (3.4 kg)

Net Weight: 3.45 lbs (1.56 kg)

### Operating Environment

Operating Temperature: 0°C to 60°C (32°F to 140°F)

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

Operating Relative Humidity: 10% to 85% (non-condensing)

Non-operating Relative Humidity: 10% to 95% (non-condensing)

## Regulatory Compliance

Electromagnetic Emissions: FCC Class B, EN 55032 Class B, EN 61000-3-2/3-3, CISPR 32 Class B

Electromagnetic Immunity: EN 55024/CISPR 24, (EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11)

Safety: CSA/EN/IEC/UL 60950-1 Compliant, UL or CSA Listed (USA and Canada), CE Marking (Europe)

Other: VCCI-CISPR 32 and AS/NZS CISPR 32

Environmental: Directive 2011/65/EU and Directive 2012/19/EU

## 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)"

# Appendix D

## 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.

### D.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.

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

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

**Note 2:** When the BIOS recovery block crashes, you will need to follow the procedures to make a Returned Merchandise Authorization (RMA) request. Also, you may use the Supermicro Update Manager (SUM) Out-of-Band (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.

## D.3 Recovering the Main BIOS Block with a USB Device

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

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

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

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

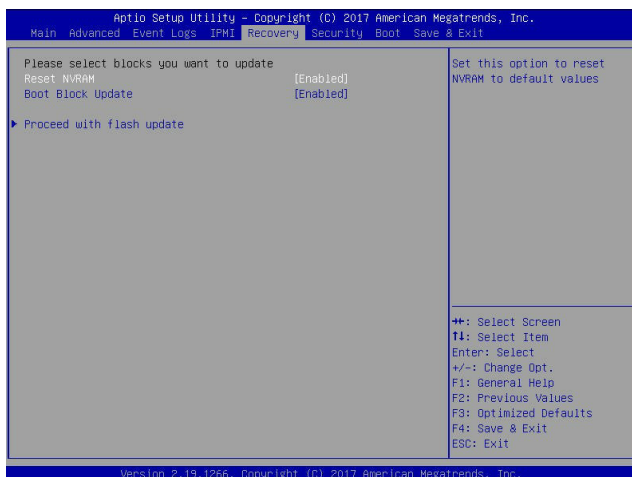
**Note 1:** If you cannot locate the "Super.ROM" file in your drive disk, visit our website at [www.supermicro.com](http://www.supermicro.com) to download the BIOS package. Extract the BIOS binary image into a USB flash device and rename it "Super.ROM" for the BIOS recovery use.

**Note 2:** Before recovering the main BIOS image, confirm that the "Super.ROM" binary image file you download is the same version or a close version meant for your motherboard.

2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and reset the system when the following screen appears.



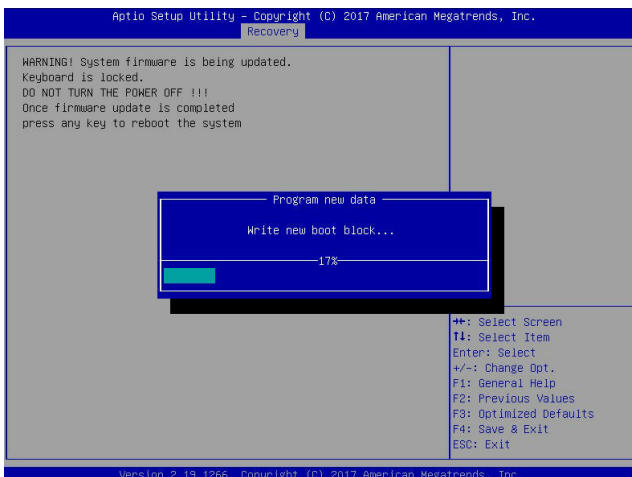
3. After locating the healthy BIOS binary image, the system will enter the BIOS Recovery menu as shown below.



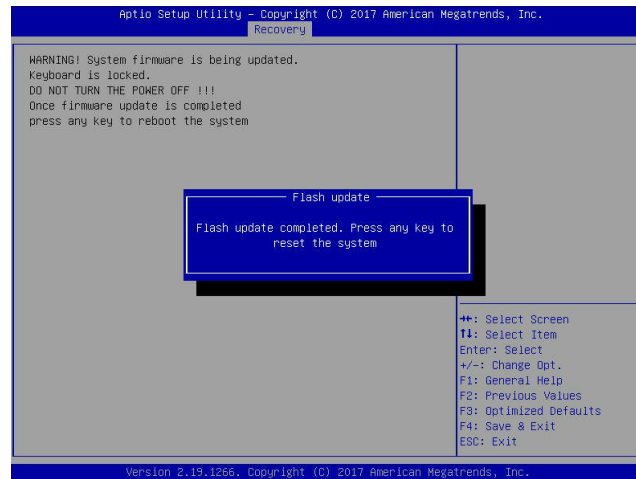
**Note:** At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.

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

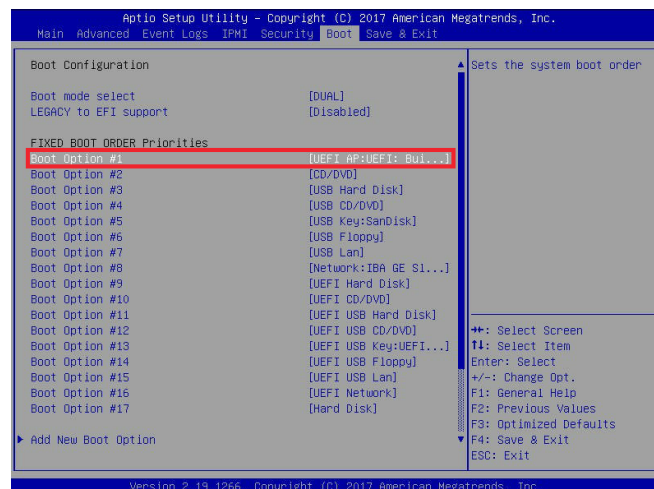
**Note:** Do not interrupt the BIOS flashing process until it has completed.



- After the BIOS recovery process is complete, press any key to reboot the system.



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





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

```

UEFI Interactive Shell v2.1
EDK II
UEFI v2.50 (American Megatrends, 0x0005000C)
Mapping Table
FS0: Alias(s):HD0:0B:BLK1:
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x37901D72,0x800,0x1
DR9592)
      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: fs#
FS0:\> cd \AFUDOS
FS0:\AFUDOS> cd \SNIPME2_03162017
FS0:\AFUDOS\SNIPME2_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)

```

9. The screen above indicates that the BIOS update process is complete. 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\SNIPME2_03162017\Fdtv64.efi -> FS0:\AFUDOS\SNIPME2_03162017\F
dt1.smc
- [ok]
Moving FS0:\AFUDOS\SNIPME2_03162017\Fuef1x64.efi -> FS0:\AFUDOS\SNIPME2_0316201
7\Fuef1.smc
- [ok]
*****
* Please ignore this 'Shell: Cannot read from file - Device Error'
* warning message due to it does not impact flashing process.
*****
Deleting " "
Delete successful.
FS0:\>

```

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