X11SCE-F

USER'S MANUAL

Revision 1.0

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Manual Revision 1.0

Release Date: January 23, 2019

Preface

About This Manual

This manual is written for system integrators, IT technicians, and knowledgeable end users. It provides information for the installation and use of the X11SCE-F motherboard.

About This Motherboard

The Super X11SCE-F motherboard supports an Intel® Xeon E-2100 series, 8th Generation Core i3, Pentium, and Celeron processor in an LGA1151 socket. The X11SCE-F provides maximum performance and is designed for 3U 12-node Micro Cloud servers with up to four 2.5 or two 3.5 inch HDD per node. Built with the Intel PCH C246 (products formerly Coffee Lake), this motherboard supports 4-DIMM DDR4 ECC unbuffered (UDIMM) memory (2-DIMM per channel) with speeds of up to 2666MHz and a capacity of up to 128GB. It features PCI-Express 3.0 slots, SATA 3.0 and one M.2 connector for NVMe PCI-E x4 SSD or SATA3 SSD in M-Key 2280 or 22110 form factor. The X11SCE-F is optimized for high-performance computing, supporting many onboard features that address the needs of next generation server applications. Please note that this motherboard is intended to be installed and serviced by professional technicians only. For processor/memory updates, please refer to our website at http://www.supermicro.com/products/.

Manual Organization

Chapter 1 describes the features, specifications and performance of the motherboard, and provides detailed information on the C246 chipset.

Chapter 2 provides hardware installation instructions. Read this chapter when installing the processor, memory modules, and other hardware components into the system.

If you encounter any problems, see **Chapter 3**, which describes troubleshooting procedures for video, memory, and system setup stored in the CMOS.

Chapter 4 includes an introduction to the BIOS, and provides detailed information on running the CMOS Setup utility.

Appendix A lists software program installation instructions**.**

Appendix B lists standardized warning statements in various languages**.**

Appendix C provides UEFI BIOS Recovery instructions**.**

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Appendix A Software Installation

Appendix B Standardized Warning Statements

Appendix C UEFI BIOS Recovery

Chapter 1

Introduction

Congratulations on purchasing your computer motherboard from an industry leader. Supermicro motherboards are designed to provide you with the highest standards in quality and performance.

In addition to the motherboard, several important parts that are included with your shipment are listed below. If anything listed is damaged or missing, please contact your retailer.

1.1 Checklist

Main Parts List		
Description	Part Number	Quantity
Supermicro Motherboard	X11SCE-F	1

Important Links

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

- If you have any questions, please contact our support team at: support@supermicro.com

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

Figure 1-1. X11SCE-F Motherboard Image
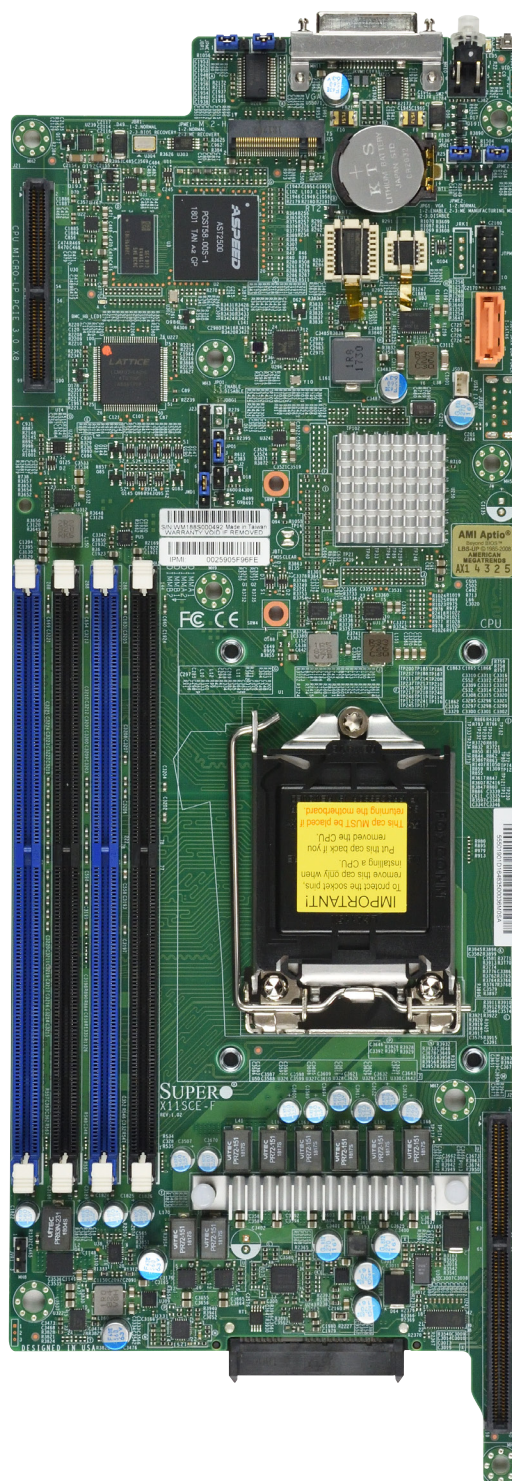
✎ **Note:** All graphics shown in this manual were based upon the latest PCB revision available at the time of publication of the manual. The motherboard you received may or may not look exactly the same as the graphics shown in this manual.

Figure 1-2. X11SCE-F Motherboard Layout
(not drawn to scale)

Top View   Bottom View
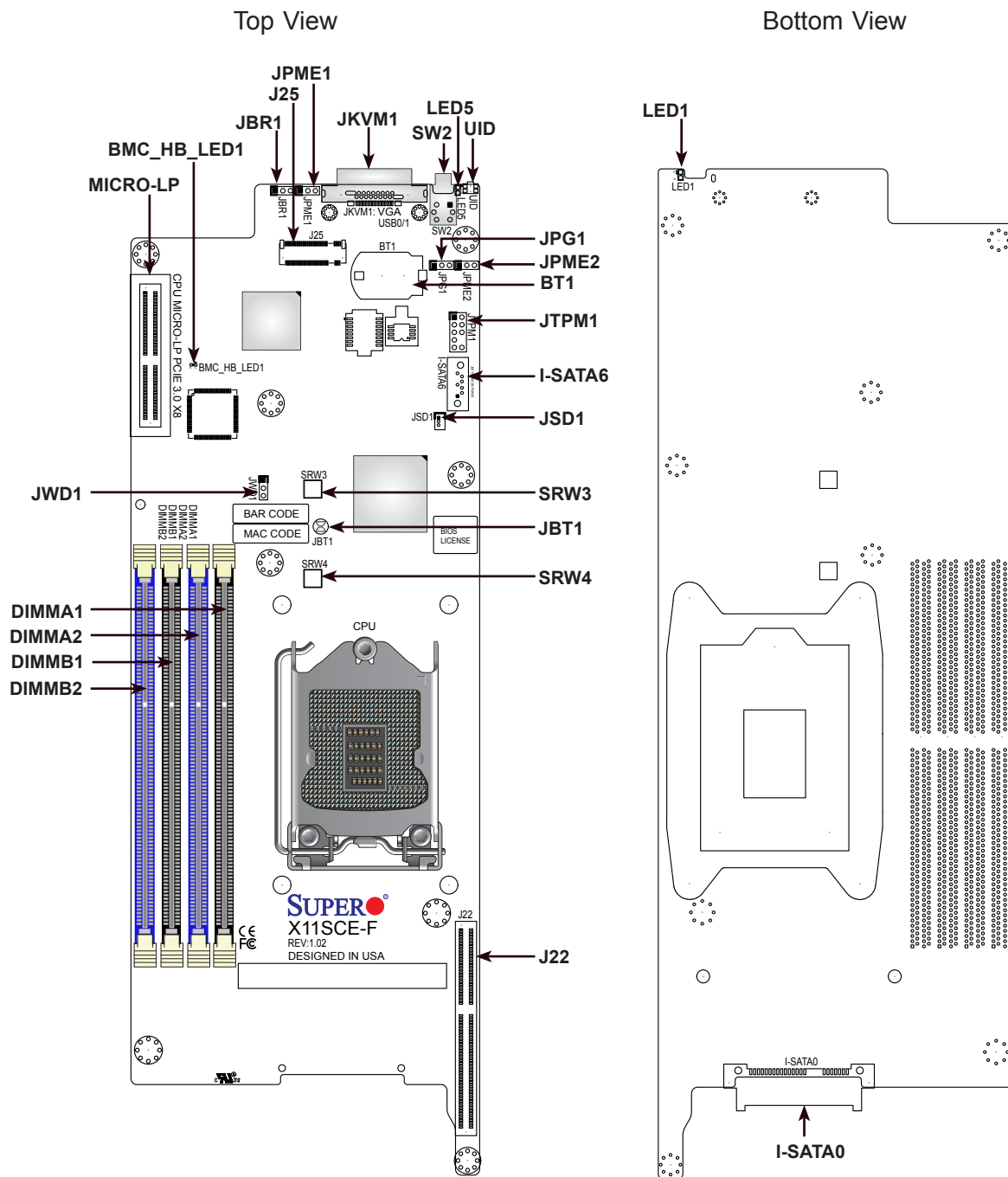
Notes:

- See Chapter 2 for detailed information on jumpers and I/O ports. Jumpers/components/ LED indicators not indicated are used for internal testing only.

- "■" indicates the location of Pin 1.

- Use only the correct type of onboard CMOS battery as specified by the manufacturer. Do not install the onboard battery upside down to avoid possible explosion.

Quick Reference Table

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JPG1	VGA Enable	Pins 1-2 (Enable)
JPME1	ME Recovery	Pins 1-2 (Normal)
JPME2	Manufacturing Mode	Pins 1-2 (Normal)
JWD1	Watch Dog Timer	Pins 1-2 (Normal)

Connector	Description
BT1	Onboard CMOS battery socket
I-SATA6, I-SATA0	SATA 3.0 Ports (I-SATA6 is on the topside of the motherboard, while I-SATA0 is on the bottom) Five SATA 3.0 ports via the backplane, one SATA 3.0 port via the right angle receptor connector
J22	Connector for AOM-BPN-MC12S Backplane
J25	M.2 PCI-E 3.0 x4 slot (M-Key 2280/22110 with SATA3 support)
JKVM1	KVM Connector for VGA, 2 USB 2.0 and COM Ports
JSD1	SATA DOM Power Connector
JTPM1	Trusted Platform Module (TPM)/Port 80 connector
MICRO-LP	CPU MICRO-LP PCI-E 3.0 x8 Slot
SRW3, SRW4	M.2 Holding Screws
SW2	Power Button
UID	Unit Identifier Switch

LED	Description	Status
BMC_HB_LED1	BMC Heartbeat LED	Blinking Green: BMC normal
LED1	UID LED	Solid Blue: Unit Identified
LED5	Fan Fail/Overheat LED	Solid Red: Overheating Blinking Red: Fan Failure or Power Failure

Motherboard Features

Motherboard Features
CPU
• Supports an Intel Xeon E-2100 series, 8th Gen Core i3, Pentium, Celeron processors in an LGA1151 socket.
Memory
• Supports up to 128GB of ECC Very Low Profile (VLP) DIMM with speeds of up to 2666MHz in four slots
DIMM Size
• Up to 32GB at 1.2V
Note 1: Refer to the motherboard product page for the list of supported memory.
Chipset
• Intel C246
Expansion Slots
• One (1) Micro LP PCI-E 3.0 x8 slot • One (1) M.2 PCI-E 3.0 x4 slot with SATA3 support, M-Key 2280/22110 • Two (2) NVMe U.2 PCI-E x4 slots via the backplane
BaseBoard Management Controller (BMC)
• ASpeed AST 2500
Graphics
• Graphics controller via AST 2500 BMC
I/O Devices

I/O Devices	
• COM Port	• One (1) COM port via the KVM connector
• SATA 3.0	• Five (5) SATA 3.0 ports via the backplane (RAID 0, 1, 5, 10 support) • One (1) SATA 3.0 via the right angle receptable connector • One (1) SATA with DOM power recpetable connector

Peripheral Devices
• Two (2) USB 2.0 ports via the KVM connector (USB0/1)
BIOS
• 256Mb SPI AMI BIOS® SM Flash UEFI BIOS • ACPI 6.1, UEFI 2.7, SMBIOS 2.8/3.2, PCI F/W 3.1, Plug-and-Play (PnP), RTC wakeup

Motherboard Features
Power Management
• Power button override mechanism • Intel Intelligent Power Node Manager (available when the Supermicro Power Manager [SPM] is installed and a special power supply is used) • Management Engine (ME)
System Health Monitoring
• Onboard voltage monitoring for +1.8V, +3.3V, +3.3V standby, +5V, +5V standby, +/-12V, VBAT, HT, Memory, PCH Temp., System Temp., Memory Temp. • CPU switching phase voltage regulator • CPU System LED and control • CPU Thermal Trip support • CPU Thermal Design Power (TDP)
System Management
• Trusted Platform Module (TPM) support • PECI (Platform Environment Control Interface) 3.1 support • UID (Unit Identification)/Remote UID • System resource alert via SuperDoctor® 5 • Watch Dog, NMI
LED Indicators
• CPU/System Overheat • UID/remote UID • Fan Failed
Dimensions
• 4.6" (L) x 13.08" (W) (116.84 mm x 332.23 mm)

Note 1: The CPU maximum thermal design power (TDP) is subject to chassis and heatsink cooling restrictions. For proper thermal management, please check the chassis and heatsink specifications for proper CPU TDP sizing.

Note 2: For IPMI configuration instructions, please refer to the Embedded IPMI Configuration User's Guide available at http://www.supermicro.com/support/manuals/.

Note 3: It is strongly recommended that you change BMC log-in information upon initial system power-on. The manufacture default username is ADMIN and the password is ADMIN. For proper BMC configuration, please refer to https://www.supermicro.com/products/nfo/IPMI.cfm.

Figure 1-3.
C246 System Block Diagram
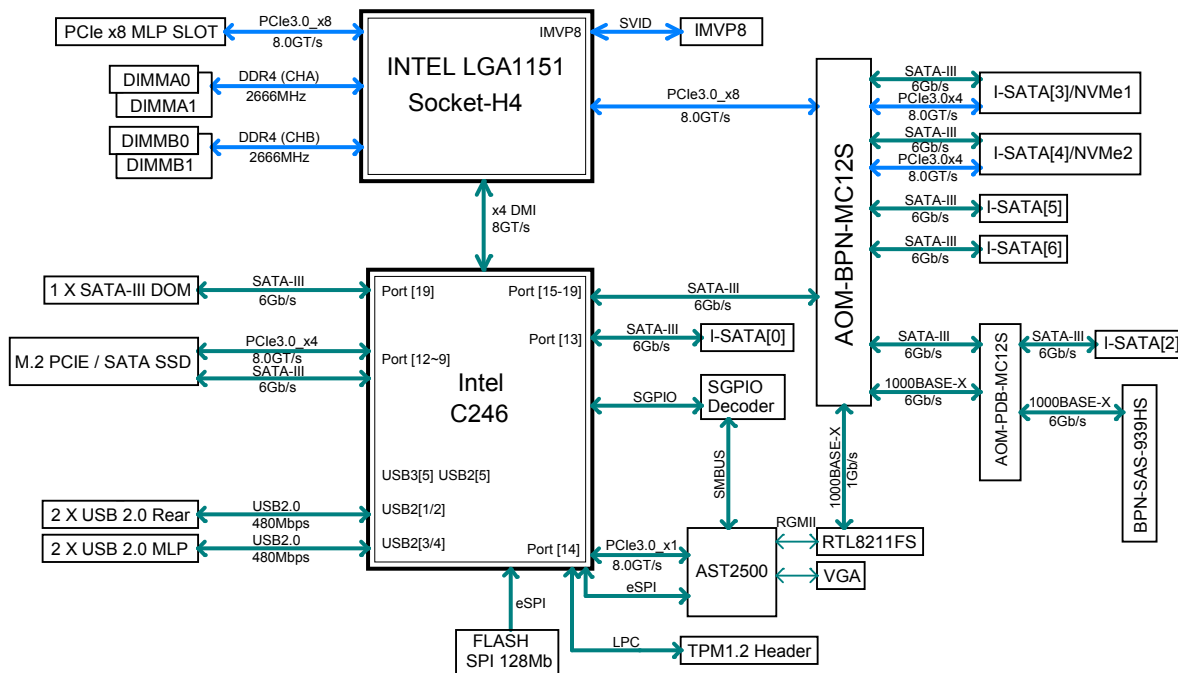
✎ **Note:** This is a general block diagram and may not exactly represent the features on your motherboard. See the previous pages for the actual specifications of your motherboard.

1.2 Processor and Chipset Overview

Built upon the functionality and capability of the Intel Xeon E-2100 series, 8th Generation Core i3, Pentium, Celeron processor, and the C246 chipset, this motherboard provides superb system performance, efficient power management, and a set of features based on cutting edge technology to address the needs of next-generation computer users. This motherboard is optimized 12-node Micro Cloud servers with up to four 2.5 inch HDD per node.

The Intel Xeon E-2100 series, 8th Gen Core i3, Pentium, Celeron processor, and the C246 chipset support the following features:

- Xeon E-2100 processor supports up to 3.8 GHz base frequency with Intel Turbo Boost Technology 2.0 frequency up to 4.7 GHz

- Up to 12MB Intel Smart Cache, 6 Core and 12 Threads

- Intel Virtualization Technology (Intel VT) and Trusted Execution Technology (Intel TXT)

- Intel Streaming SIMD Extensions 4.2 (Intel SSE4.2), Intel AVX2, and Advanced Encryption Standard New Instructions (Intel AES-NI)

- Intel 64 Architecture, Execute Disable Bit, Turbo Boost Technology 2.0, Hyper-Threading Technology (Intel HT Technology)

- ECC memory 2 channel of DDR4 up to 128GB 2666MHz with two DIMM per channel

- Intel Server Platform Services (Intel SPS): Designed for managing rack-mount servers, with a suite of tools to control and monitor power, thermal, and resource utilization

- PCI Express 3.0, SATA 3.0, DMI – Up to four lanes, Gen 3

- Intel Rapid Storage Technology enterprise (Intel RSTe)

1.3 Special Features

This section describes the health monitoring features of the X11SCE-F motherboard. The motherboard has an onboard ASpeed 2500 Baseboard Management Controller (BMC) that supports system health monitoring.

Recovery from AC Power Loss

The Basic I/O System (BIOS) provides a setting that determines how the system will respond when AC power is lost and then restored to the system. You can choose for the system to remain powered off (in which case you must press the power switch to turn it back on), or for it to automatically return to the power-on state. See the Advanced BIOS Setup section for this setting. The default setting is Last State.

1.4 System Health Monitoring

This section describes the health monitoring features of the X11SCE-F motherboard. The motherboard has an onboard Baseboard Management Controller (BMC) chip that supports system health monitoring. Once a voltage becomes unstable, a warning is given or an error message is sent to the screen. The user can adjust the voltage thresholds to define the sensitivity of the voltage monitor.

Onboard Voltage Monitors

The onboard voltage monitor will continuously scan crucial voltage levels. Once a voltage becomes unstable, it will give a warning or send an error message to the screen. The user can adjust the voltage thresholds to define the sensitivity of the voltage monitor. Real time readings of these voltage levels are all displayed in the BIOS.

Fan Status Monitor with Firmware Control

The system health monitor embedded in the BMC chip can check the RPM status of the cooling fans. The CPU and chassis fans are controlled via IPMI.

Environmental Temperature Control

System Health sensors in the BMC monitor the temperatures and voltage settings of onboard processors and the system in real time via the IPMI interface. Whenever the temperature of the CPU or the system exceeds a user-defined threshold, system/CPU cooling fans will be turned on to prevent the CPU or the system from overheating.

Note: To avoid possible system overheating, please provide adequate airflow to your system.

System Resource Alert

This feature is available when used with SuperDoctor 5®. SuperDoctor 5 is used to notify the user of certain system events. For example, you can configure SuperDoctor 5 to provide you with warnings when the system temperature, CPU temperatures, voltages and fan speeds go beyond a predefined range.

1.5 ACPI Features

ACPI stands for Advanced Configuration and Power Interface. The ACPI specification defines a flexible and abstract hardware interface that provides a standard way to integrate power management features throughout a computer system including its hardware, operating system and application software. This enables the system to automatically turn on and off peripherals such as network cards, hard disk drives and printers.

In addition to enabling operating system-directed power management, ACPI also provides a generic system event mechanism for Plug and Play and an operating system-independent interface for configuration control. ACPI leverages the Plug and Play BIOS data structures while providing a processor architecture-independent implementation that is compatible with Windows 10 and Windows 2012 operating systems.

1.6 Power Supply

As with all computer products, a stable power source is necessary for proper and reliable operation. It is even more important for processors that have high CPU clock rates. In areas where noisy power transmission is present, you may choose to install a line filter to shield the computer from noise. It is recommended that you also install a power surge protector to help avoid problems caused by power surges.

1.7 Super I/O

The Super I/O (ASpeed AST2500 chip) provides a high-speed, 16550 compatible serial communication port (UART), which supports serial infrared communication. The UART includes send/receive FIFO, a programmable baud rate generator, complete modem control capability, and a processor interrupt system. The UART provides legacy speed with baud rate of up to 115.2 Kbps as well as an advanced speed with baud rates of 250 K, 500 K, or 1 Mb/s, supporting higher speed modems.

The Super I/O provides functions that comply with ACPI (Advanced Configuration and Power Interface), which includes support of legacy and ACPI power management through a SMI or SCI function pin. It also features auto power management to reduce power consumption.

1.8 Advanced Power Management

The following new advanced power management features are supported by the motherboard.

Intel® Intelligent Power Node Manager (IPNM)

Available when the Supermicro Power Manager (SPM) is installed, Intel's Intelligent Power Node Manager (IPNM) provides your system with real-time thermal control and power management for maximum energy efficiency. Although IPNM Specification Version 2.0/3.0 is supported by the BMC (Baseboard Management Controller), your system must also have IPNM-compatible Management Engine (ME) firmware installed to use this feature.

Note: Support for IPNM 2.0/3.0 support is dependent on the power supply used in the system.

Management Engine (ME)

The Management Engine, which is an ARC controller embedded in the IOH (I/O Hub), provides Server Platform Services (SPS) to your system. The services provided by SPS are different from those provided by the ME on client platforms.

Chapter 2

Installation

2.1 Static-Sensitive Devices

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

Precautions

- Use a grounded wrist strap designed to prevent static discharge.

- Touch a grounded metal object before removing the board from the antistatic bag.

- Handle the board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.

- When handling chips or modules, avoid touching their pins.

- Put the motherboard and peripherals back into their antistatic bags when not in use.

- For grounding purposes, make sure that your chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.

- Use only the correct type of CMOS onboard battery as specified by the manufacturer. Do not install the CMOS battery upside down, which may result in a possible explosion.

Unpacking

The motherboard is shipped in antistatic packaging to avoid static damage. When unpacking the motherboard, make sure that the person handling it is static protected.

2.2 Motherboard Installation

All motherboards have standard mounting holes to fit different types of chassis. Make sure that the locations of all the mounting holes for both the motherboard and the chassis match. Although a chassis may have both plastic and metal mounting fasteners, metal ones are highly recommended because they ground the motherboard to the chassis. Make sure that the metal standoffs click in or are screwed in tightly.
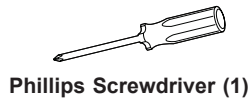
Phillips Screwdriver (1)

Phillips Screws (8)

Standoffs (8)
Only if Needed

Tools Needed
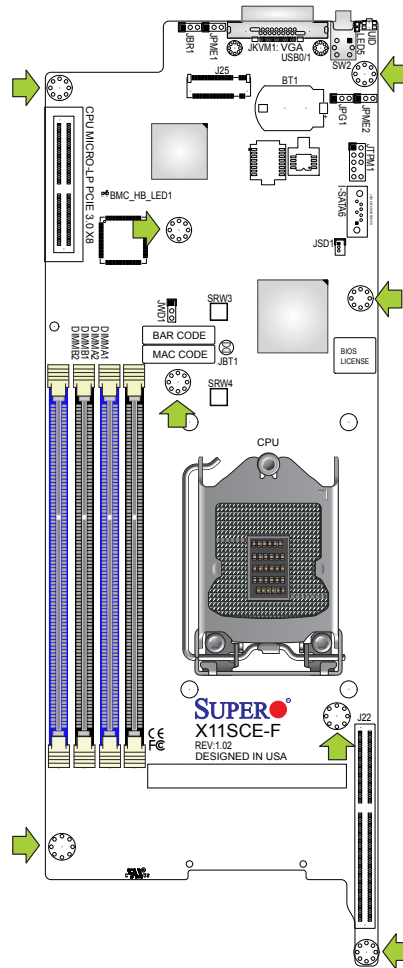
Location of Mounting Holes

Notes: 1) To avoid damaging the motherboard and its components, please do not use a force greater than 8 lb/inch on each mounting screw during motherboard installation. 2) Some components are very close to the mounting holes. Please take precautionary measures to avoid damaging these components when installing the motherboard to the chassis.

Installing the Motherboard into the Mounting Tray

1. Locate the mounting holes on the motherboard and the mounting tray. See the previous page for the location.

2. Install the standoffs on the mounting tray. Align the mounting holes on the motherboard against the mounting holes on the tray.
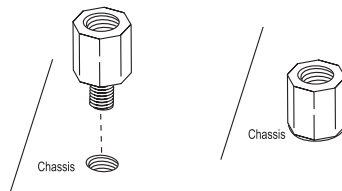
Chassis

Chassis

3. Using a Phillips screwdriver, insert and tighten Phillips head #6 screws into the mounting holes on the motherboard and their matching holes on the tray.

Motherboard

Motherboard
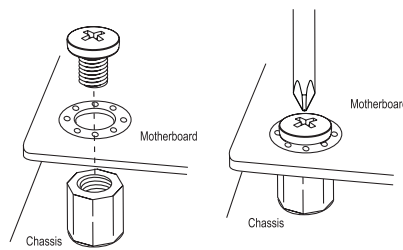
Chassis

Chassis

Note: Images displayed in this manual are for illustration only. Your chassis or components may look different from those shown.

Installing the Motherboard into the Microblade Chassis

1. When the motherboard is securely installed on the mounting tray, push the tray into the Microblade chassis as shown below.
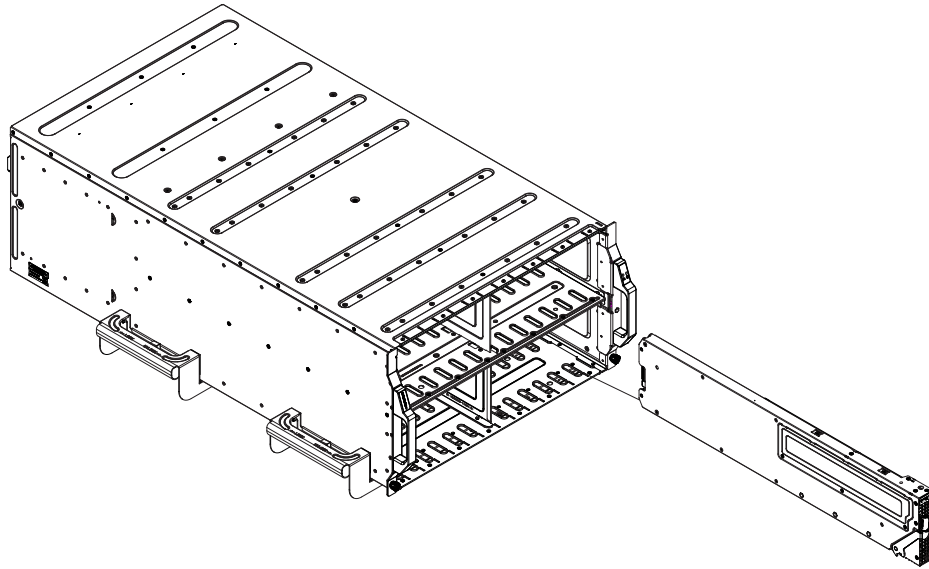
2. Once the mounting tray is pushed into the chassis, the connectors on the motherboard's edge will make contact with the chassis backplane, which provides the connections to the chassis power, network, and other I/O devices.

2.3 Processor and Heatsink Installation

Warning: When handling the processor package, avoid placing direct pressure on the label area of the fan.

Important

- Always connect the power cord last, and always remove it before adding, removing or changing any hardware components. Make sure that you install the processor into the CPU socket before you install the CPU heatsink.

- If you buy a CPU separately, make sure that you use an Intel-certified multi-directional heatsink only.

- Make sure to install the motherboard into the chassis before you install the CPU heatsink.

- When receiving a motherboard without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.

- Refer to the Supermicro website for updates on CPU support.

Installing the LGA1151 Processor

1. Press the load lever down to release the load plate from its locking position.
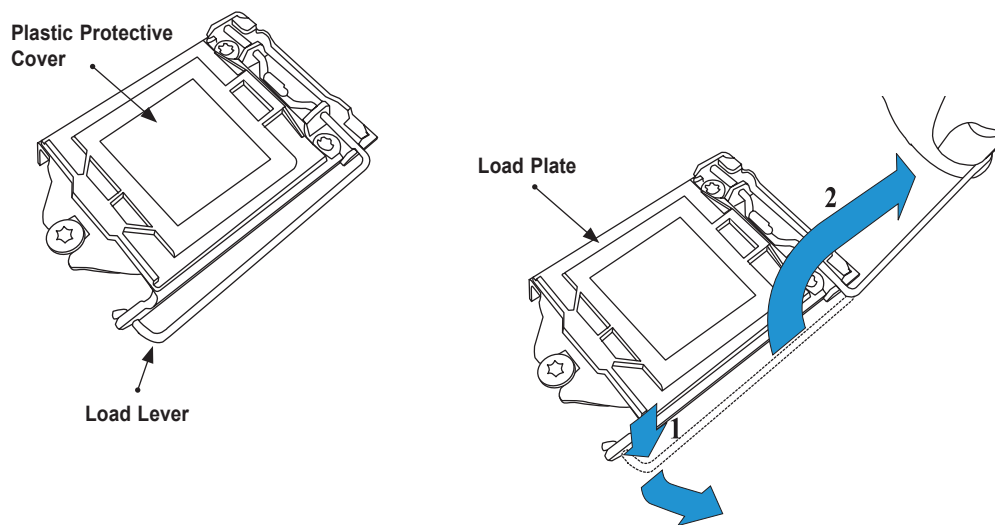
2. Gently lift the load lever to open the load plate. Remove the plastic protective cover. Do not touch the CPU socket contacts.
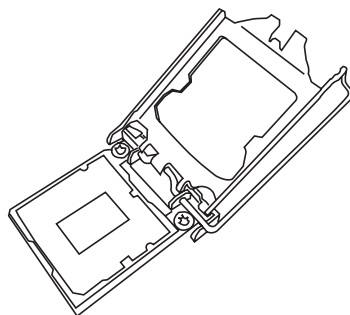
3. Locate the triangle on the CPU and CPU socket, which indicates the location of Pin 1. Holding the CPU by the edges with your thumb and index finger, align the triangle on the CPU with the triangle on the socket. The CPU keys (the semi-circle cutouts) may also be aligned against the socket keys as a guide.
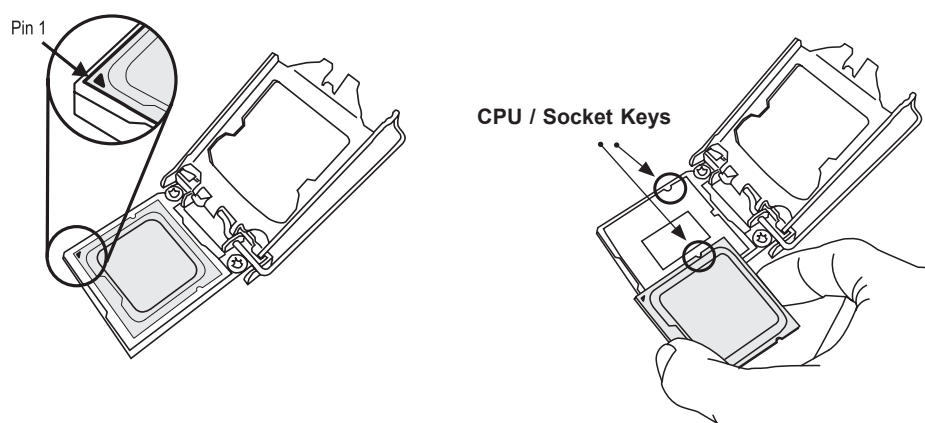
4. Carefully lower the CPU straight down into the socket. Do not drop the CPU on the socket, or move it horizontally or vertically to avoid damaging the CPU or socket. Inspect the four corners of the CPU to make sure that the CPU is properly installed.
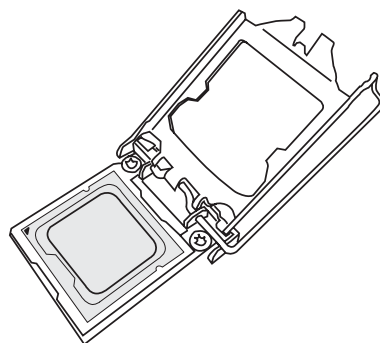
5. Close the load plate, then gently push down the load lever into its locking position.

CPU properly installed

Load lever locked into place
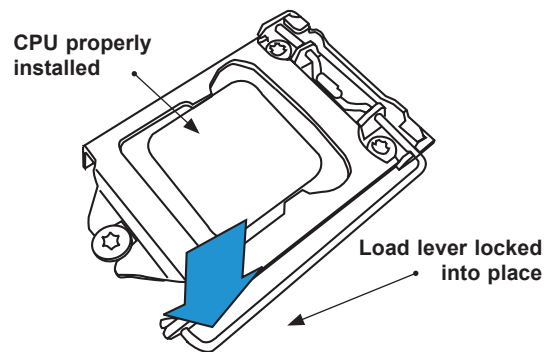
Note: You can only install the CPU in one direction. Make sure it is properly inserted into the socket before closing the load plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the load plate again and double-check that the CPU is properly aligned.

Installing a Passive CPU Heatsink

1. Do not apply thermal grease to the heatsink or the CPU; the required amount has already been applied.

2. Align the four holes of the heatsink with the four mounting holes on the motherboard.

3. With a Phillips screwdriver, gradually tighten screws #1, #2, then #3, #4 to assure even pressure. The order of the screws is shown below. To avoid damaging the processor or socket, do not use a force greater than 12 lbf-in when tighthening the screw.

4. Examine all corners to ensure the heatsink is firmly attached to the motherboard.

Recommended Supermicro heatsink: SNK-P0047PSR

Screw#4

Screw#1

Screw#2

Screw#3

Motherboard

Mounting Holes

Heatsink Bracket
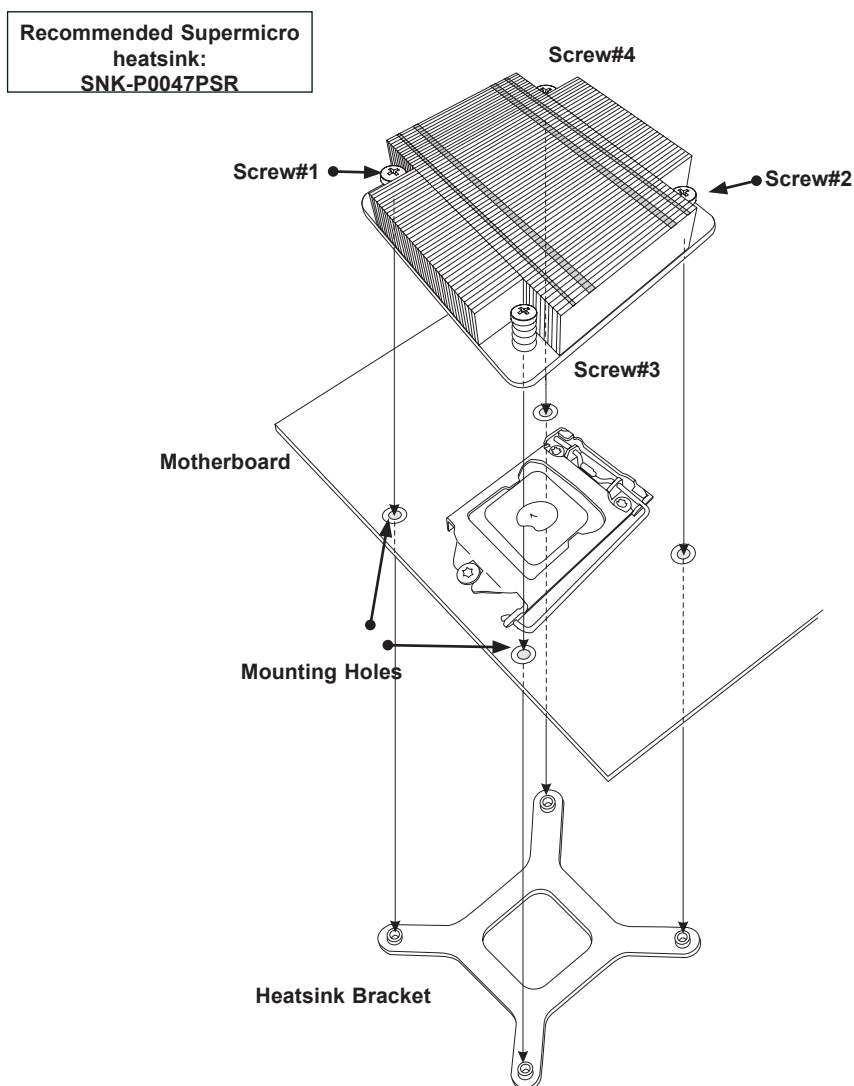
Removing the Heatsink

Note: We do not recommend that the CPU or heatsink be removed. However, if you do need to remove the heatsink, please follow the instructions below to remove the heatsink and prevent damage done to the CPU or other components.

1. Unplug the power connector from the power supply.

2. Unscrew the heatsink screws in the sequence shown below.

3. Gently lift the heatsink up and remove it from the CPU.
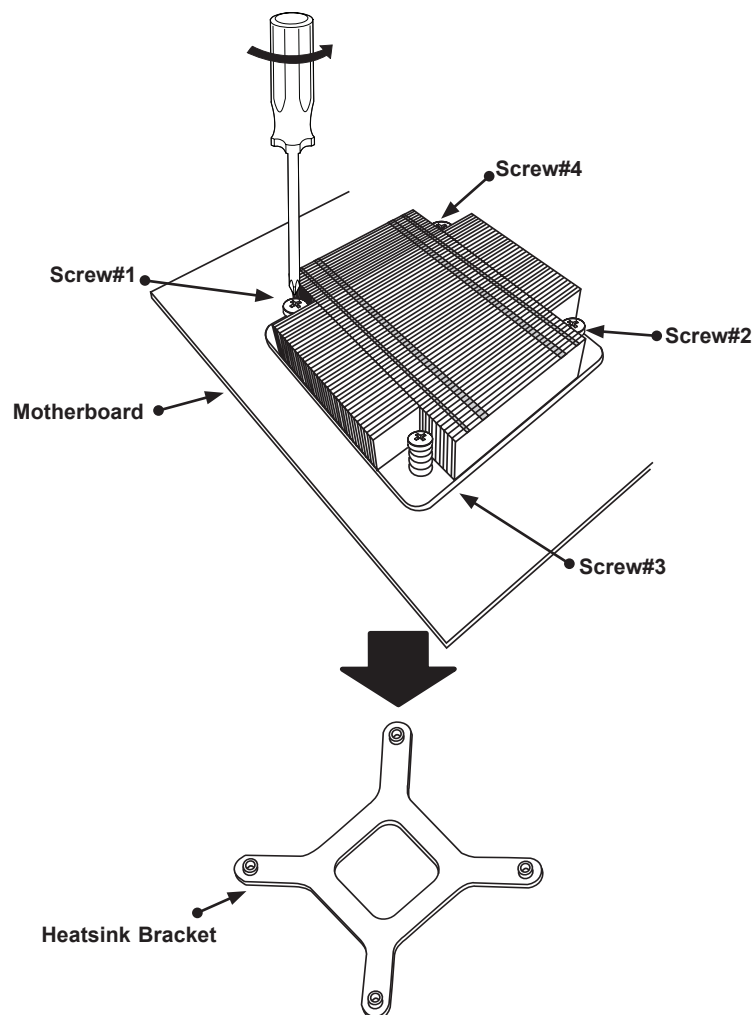
2.4 Memory Support and Installation

Memory Support

The motherboard supports up to 128GB of ECC Very Low Profile (VLP) DIMM with speeds of up to 2666MHz in four slots. Populating the DIMM slots with pairs of memory modules of the same type, speed and size will result in interleaved memory, which improves performance.

DIMM Population Requirements

For optimal memory performance, follow the tables below when populating memory modules.

Recommended Population (Balanced)				
DIMMA1	DIMMB1	DIMMA2	DIMMB2	Total System Memory
		4GB	4GB	8GB
4GB	4GB	4GB	4GB	16GB
		8GB	8GB	16GB
8GB	8GB	8GB	8GB	32GB
		16GB	16GB	32GB
16GB	16GB	16GB	16GB	64GB
		32GB	32GB	64GB
32GB	32GB	32GB	32GB	128GB

DIMM Installation

1. Insert DIMM modules in the following order: DIMMB2, DIMMA2, then DIMMB1, DIMMA1. For optimal performance, use memory modules of the same type and speed.

2. Push the release tabs outwards on both ends of the DIMM slot to unlock it.

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

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

5. Press both ends of the module straight down into the slot until the module snaps into place.

6. Press the release tabs to the lock positions to secure the DIMM module into the slot.
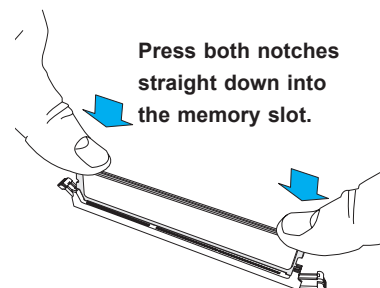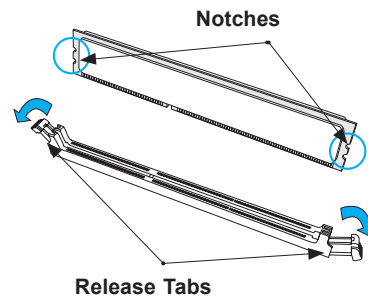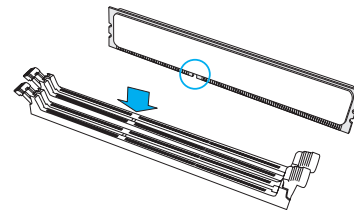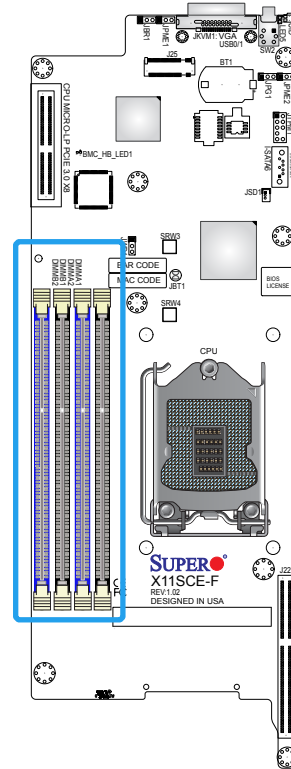
DIMM Removal

Reverse the steps above to remove the DIMM modules from the motherboard.

Notches

Release Tabs

Press both notches straight down into the memory slot.

2.5 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. Go to the following link for more information on the TPM: http://www.supermicro.com/manuals/other/TPM.pdf.

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#

1. TPM/Port 80 Header
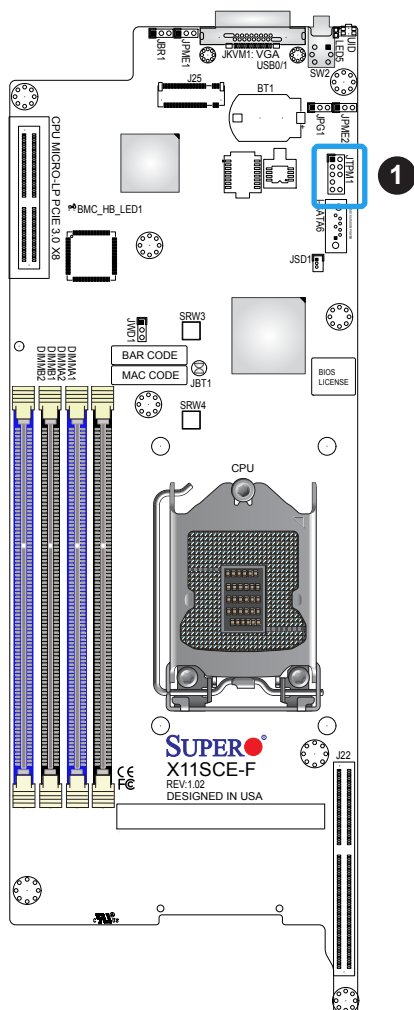
KVM Connector

The JKVM1 connector is an acronym for Keyboard, Video, and Mouse. The connector supports a set of keyboard, monitor, and mouse to control multiple computers. It also provides a VGA connection, serial port connection, and two USB 2.0 connections (USB0/1).
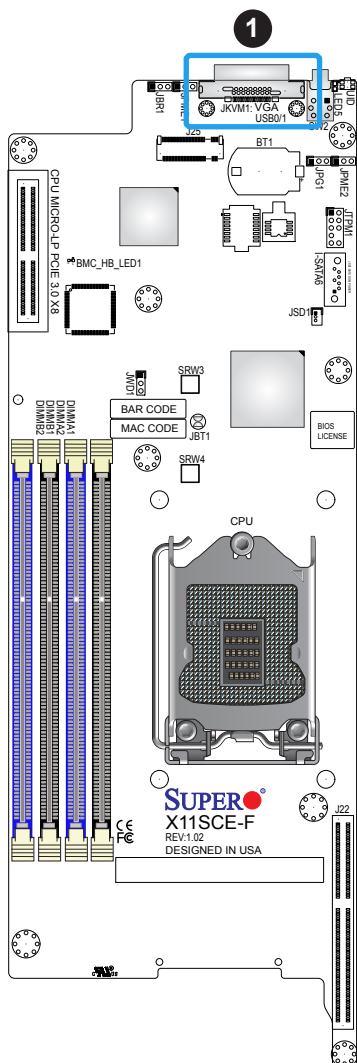
1. KVM Connector

Backplane Connector

The backplane connector at J22 provides four SATA 3.0 connections or two NVMe PCI-E 3.0 x4 connections.

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
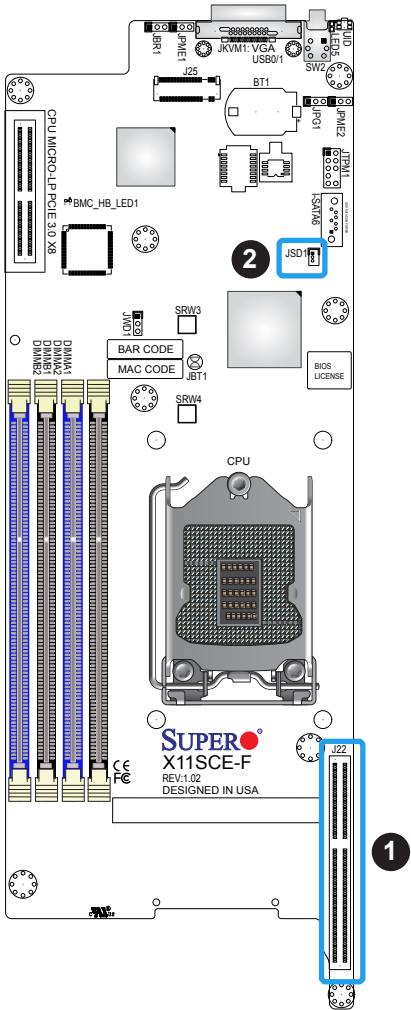
1. Backplane Connector
2. DOM Power Connector

I-SATA 3.0 Ports

The X11SCE-F has two I-SATA 3.0 ports via the backplane (I-SATA0), one via the right angle receptor connector. These SATA ports are supported by the C246 chipset. I-SATA6 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.

M.2 Slots

There is one M.2 slot at J25. M.2 is formerly known as Next Generation Form Factor (NGFF). They are designed for internal mounting devices and provide M Key 2280//22110 support dedicated for SSD devices.

Top View   Bottom View

1. I-SATA0

2. I-SATA6

3. M.2 Slot
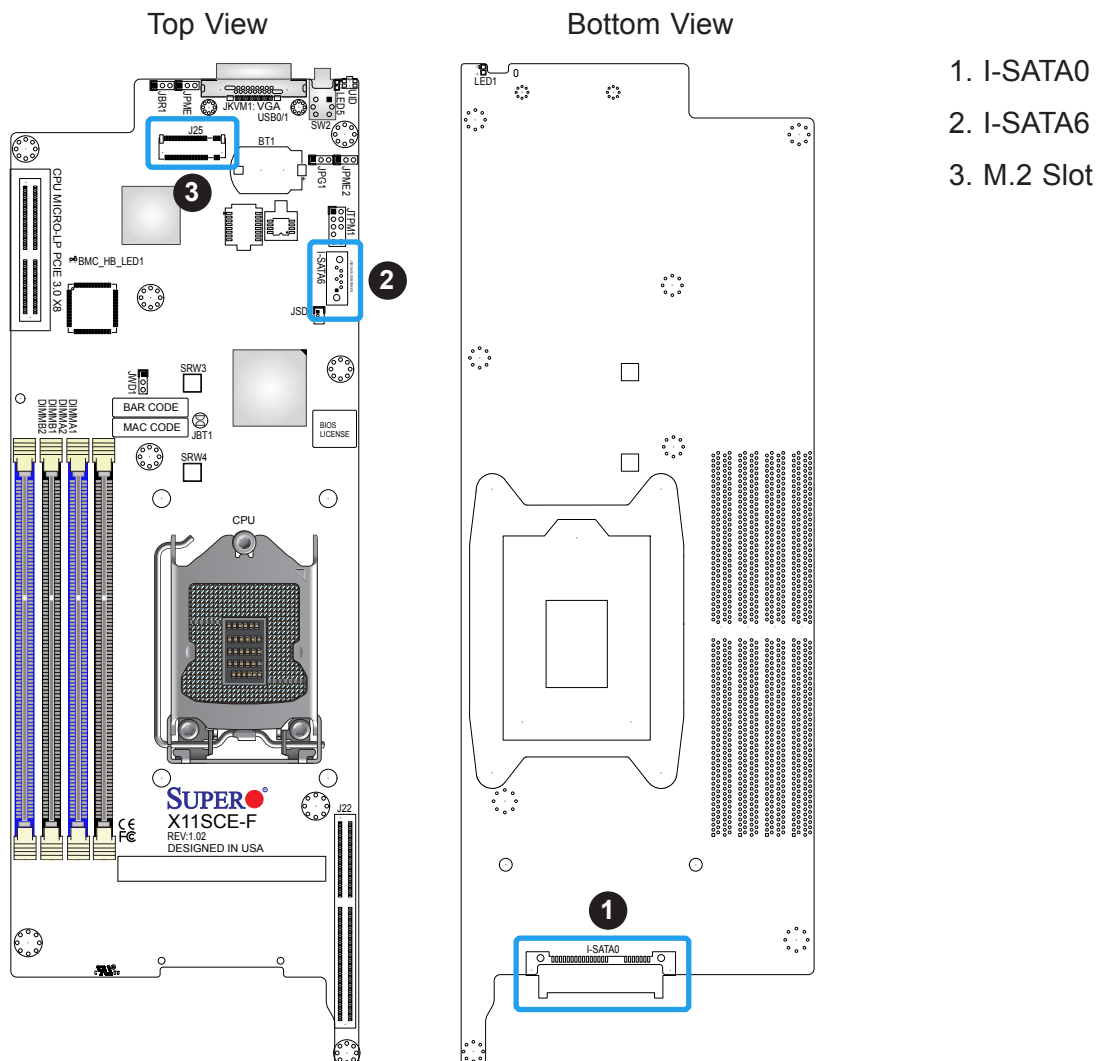
Power Button

Press the button at SW2 to power on the motherboard. This button can also power off the motherboard instantly or in four seconds. The settings for this button can be configured with the Power Button Function feature in the BIOS.
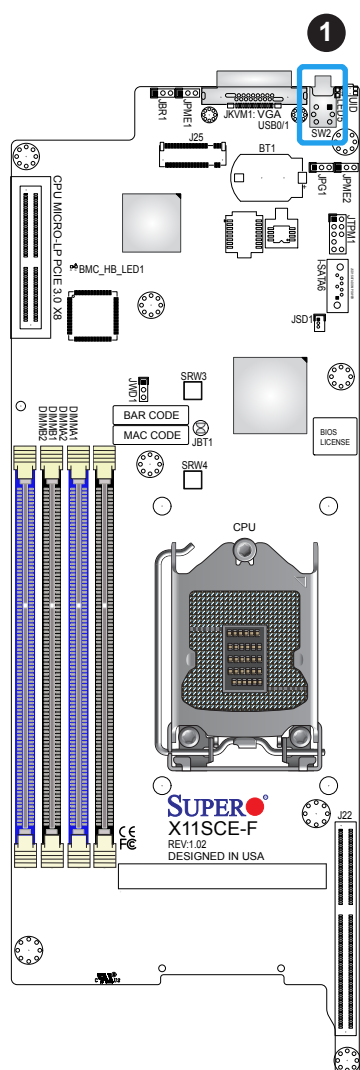
1. Power Button

Unit Identifier Switch/UID LED Indicator

A Unit Identifier (UID) switch and an LED indicator are located on the motherboard. The UID switch is located at UID, on the back panel. The UID LED (LED5) is located next to the UID switch. When you press the UID button, the UID LED will be turned on. Press the switch again to turn off the LED indicator. The UID Indicator provides easy identification of a system unit that may be in need of service.

Note: UID can also be triggered via IPMI on the motherboard. For more information on IPMI, please refer to the IPMI User's Guide posted on our website at http://www.supermicro.com/support/manuals/.

UID LED Pin Definitions	
Color	Status
Blue: On	Unit Identified

UID Switch Pin Definitions	
Pin#	Definition
1	Ground
2	Ground
3	Button In
4	Button In

1. UID Switch
2. UID LED
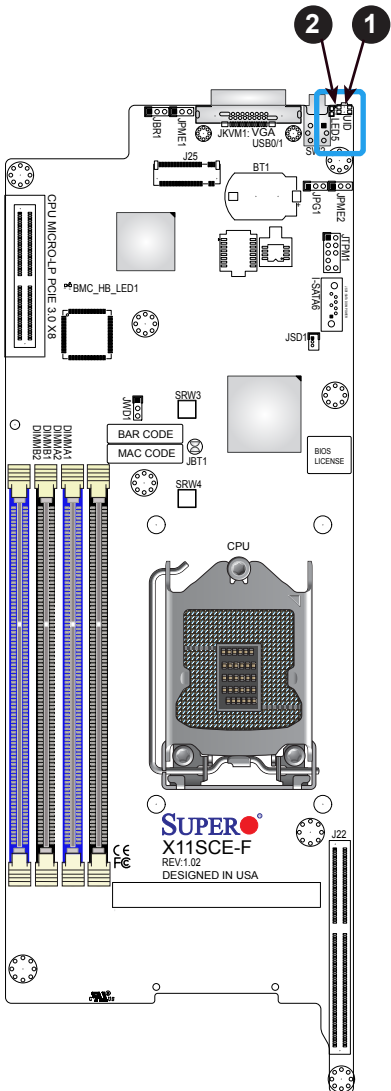
2.6 Jumper Settings

How Jumpers Work

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 at right for an example of jumping pins 1 and 2. Refer to the motherboard layout page for jumper locations.

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

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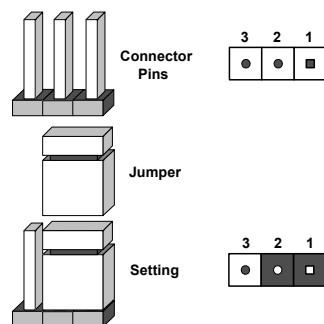
JBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.

To Clear CMOS

1. First power down the system and unplug the power cord(s).

2. Remove the cover of the chassis to access the motherboard.

3. Remove the onboard battery from the motherboard.

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

5. Remove the screwdriver (or shorting device).

6. Replace the cover, reconnect the power cord(s), and power on the system.

Note: Clearing CMOS will also clear all passwords.

JBT1 contact pads

1. Clear CMOS

Management Engine (ME) Recovery

Use jumper JPME1 to select ME Firmware Recovery mode, which will limit resource allocation for essential system operation only in order to maintain normal power operation and management. In the single operation mode, online upgrade will be available via Recovery mode. Refer to the table below for jumper settings.

ME Recovery Mode Jumper Settings	
Jumper Setting	**Definition**
Pins 1-2	Normal
Pins 2-3	ME Recovery

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
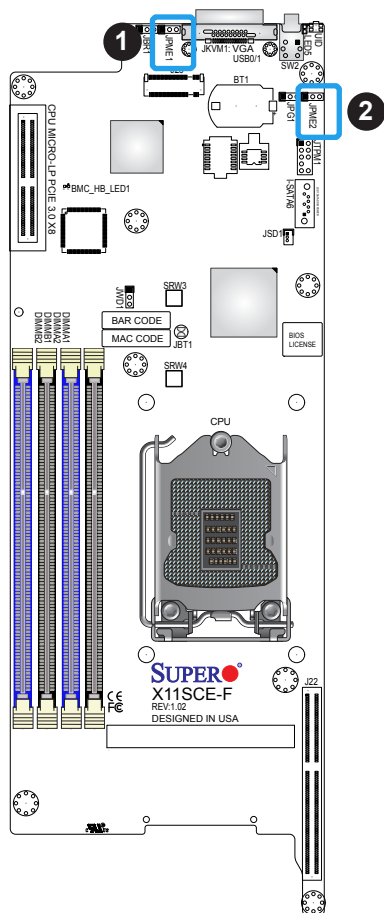
1. ME Recovery
2. Manufacturing Mode

VGA Enable/Disable

Use jumper JPG1 to enable or disable the VGA port using the onboard graphics controller.

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

1. VGA Enable/Disable
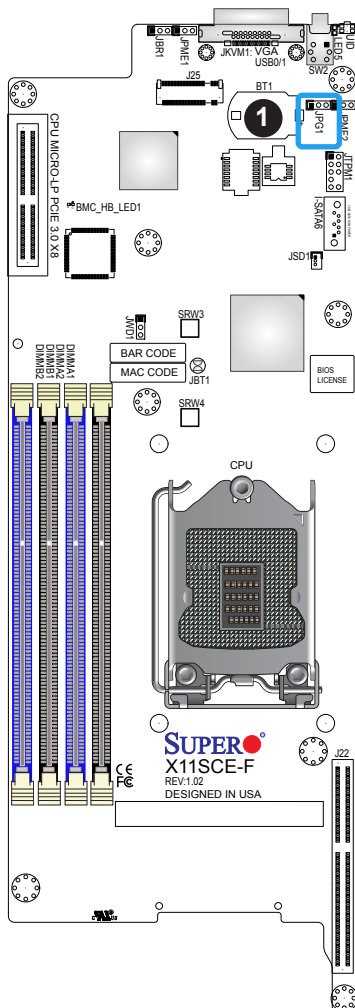
Watch Dog

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, users need 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
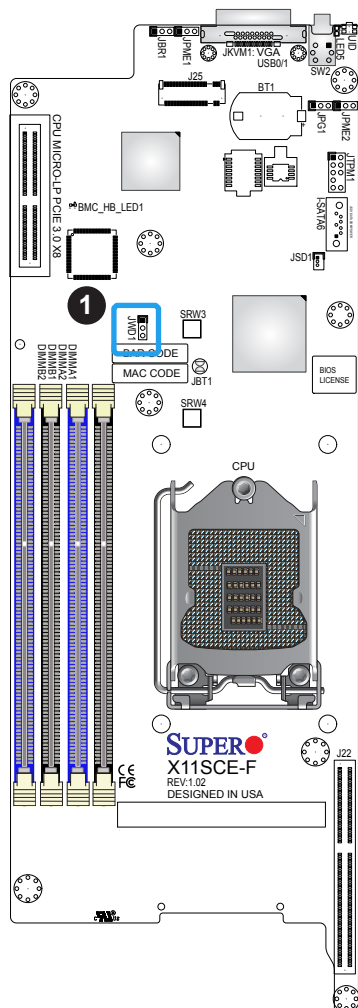
1. Watch Dog Timer

2.7 LED Indicators

BMC Heartbeat LED

BMC_HB_LED1 is the BMC heartbeat LED. When the LED is blinking green, BMC is functioning normally.

BMC LED Indicator	
LED Color	**Definition**
Blinking Green	BMC Normal

Overheat/Fan Fail LED

An Overheat and Fan Fail LED is located at LED5. Refer to the table below for the LED status.

Overheat/Fan Fail LED Indicator	
LED Color	**Definition**
Solid	Overheat
Blinking	Fan Failure or Power Failure
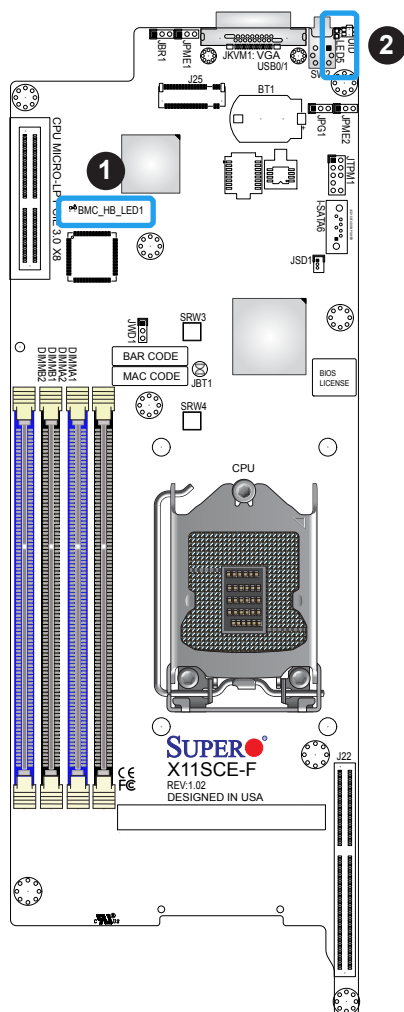
1. BMC Heartbeat LED

2. Overheat/Fan Failure/Power Failure LED

Chapter 3

Troubleshooting

3.1 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the 'Technical Support Procedures' and/or 'Returning Merchandise for Service' section(s) in this chapter. <u>Always disconnect the AC power cord before adding, changing or installing any non hot-swap hardware components</u>.

Before Power On

1. Check that the power LED on the motherboard is on.

2. Make sure that the power connector is connected to your power supply.

3. Make sure that no short circuits exist between the motherboard and chassis.

4. Disconnect all cables from the motherboard, including those for the keyboard and mouse.

5. Remove all add-on cards.

6. Install a CPU, a heatsink, and connect the internal speaker and the power LED to the motherboard. Check all jumper settings as well. (Make sure that the heatsink is fully seated.)

7. Use the correct type of onboard CMOS battery as recommended by the manufacturer. To avoid possible explosion, do not install the CMOS battery upside down.

No Power

1. Make sure that no short circuits exist between the motherboard and the chassis.

2. Verify that all jumpers are set to their default positions.

3. Check that the 115V/230V switch on the power supply is properly set.

4. Turn the power switch on and off to test the system.

5. The battery on your motherboard may be old. Check to verify that it still supplies ~3VDC. If it does not, replace it with a new one.

Memory Errors

1. Make sure that the DIMM modules are properly and fully installed.

2. Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See Section 2.4 for memory details.

3. Check for bad DIMM modules or slots by swapping modules between slots and noting the results.

4. Check the power supply voltage 115V/230V switch.

Losing the System's Setup Configuration

1. Make sure that you are using a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information. Refer to Section 1.6 for details on recommended power supplies.

2. The battery on your motherboard may be old. Check to verify that it still supplies ~3VDC. If it does not, replace it with a new one.

3. If the above steps do not fix the setup configuration problem, contact your vendor for repairs.

When the System Becomes Unstable

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

1. CPU/BIOS support: Make sure that your CPU is supported and that you have the latest BIOS installed in your system.

2. Memory support: Make sure that the memory modules are supported by testing the modules using memtest86 or a similar utility.

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

3. HDD support: Make sure that all hard disk drives (HDDs) work properly. Replace the bad HDDs with good ones.

4. System cooling: Check the system cooling to make sure that all heatsink fans and CPU/system fans, etc., work properly. Check the hardware monitoring settings in the IPMI to make sure that the CPU and system temperatures are within the normal range. Also check the front panel Overheat LED and make sure that it is not on.

5. Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Please refer to our website for more information on the minimum power requirements.

6. Proper software support: Make sure that the correct drivers are used.

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

1. Source of installation: Make sure that the devices used for installation are working properly, including boot devices such as CD.

2. Cable connection: Check to make sure that all cables are connected and working properly.

3. Using the minimum configuration for troubleshooting: Remove all unnecessary components (starting with add-on cards first), and use the minimum configuration (but with a CPU and a memory module installed) to identify the trouble areas. Refer to the steps listed in Section A above for proper troubleshooting procedures.

4. Identifying bad components by isolating them: If necessary, remove a component in question from the chassis, and test it in isolation to make sure that it works properly. Replace a bad component with a good one.

5. Check and change one component at a time instead of changing several items at the same time. This will help isolate and identify the problem.

6. To find out if a component is good, swap this component with a new one to see if the system will work properly. If so, then the old component is bad. You can also install the component in question in another system. If the new system works, the component is good and the old system has problems.

3.2 Technical Support Procedures

Before contacting Technical Support, please take the following steps. Also, note that as a motherboard manufacturer, we do not sell directly to end-users, so it is best to first check with your distributor or reseller for troubleshooting services. They should know of any possible problem(s) with the specific system configuration that was sold to you.

1. Please review the 'Troubleshooting Procedures' and 'Frequently Asked Questions' (FAQs) sections in this chapter or see the FAQs on our website before contacting Technical Support.

2. BIOS upgrades can be downloaded from our website. **Note:** Not all BIOS can be flashed depending on the modifications to the boot block code.

3. If you still cannot resolve the problem, include the following information when contacting us for technical support:

- Motherboard model and PCB revision number

- BIOS release date/version (this can be seen on the initial display when your system first boots up)

- System configuration

An example of a Technical Support form is posted on our website.

Distributors: For immediate assistance, please have your account number ready when contacting our technical support department by e-mail.

3.3 Frequently Asked Questions

Question: What type of memory does my motherboard support?

Answer: The X11SCE-F motherboard supports up to 128GB of ECC Very Low Profile (VLP) DIMM with speeds of up to 2666MHz in four slots. See Section 2.4 for details on installing memory.

Question: How do I update my BIOS?

Answer: It is recommended that you **do not** upgrade your BIOS if you are not experiencing any problems with your system. Updated BIOS files are located on our website at http://www.supermicro.com/ResourceApps/BIOS_IPMI_Intel.html. Please check our BIOS warning message and the information on how to update your BIOS on our website. Select your motherboard model and download the BIOS file to your computer. Also, check the current BIOS revision to make sure that it is newer than your BIOS before downloading. You can choose from the zip file and the .exe file. If you choose the zip BIOS file, please unzip the BIOS file onto a bootable USB device. Run the NSH file using the format FLASH.NSH filename.rom from your bootable USB device to flash the BIOS. Then, your system will automatically reboot.

Question: Why can't I turn off the power using the momentary power on/off switch?

Answer: The instant power off function is controlled in BIOS by the Power Button Mode setting. When the On/Off feature is enabled, the motherboard will have instant off capabilities as long as the BIOS has control of the system. When the Standby or Suspend feature is enabled or when the BIOS is not in control such as during memory count (the first screen that appears when the system is turned on), the momentary on/off switch must be held for more than four seconds to shut down the system. This feature is required to implement the ACPI features on the motherboard.

3.4 Battery Removal and Installation

Battery Removal

To remove the onboard battery, follow the steps below:

1. Power off your system and unplug your power cable.

2. Using a tool such as a pen or a small screwdriver, push the battery lock outwards to unlock it. Once unlocked, the battery will pop out from the holder.

3. Remove the battery.

Proper Battery Disposal

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

Battery Installation

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

2. Identify the battery's polarity. The positive (+) side should be facing up.

3. Insert the battery into the battery holder and push it down until you hear a click to ensure that the battery is securely locked.

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

LITHIUM BATTERY

BATTERY HOLDER

OR

LITHIUM BATTERY

BATTERY HOLDER
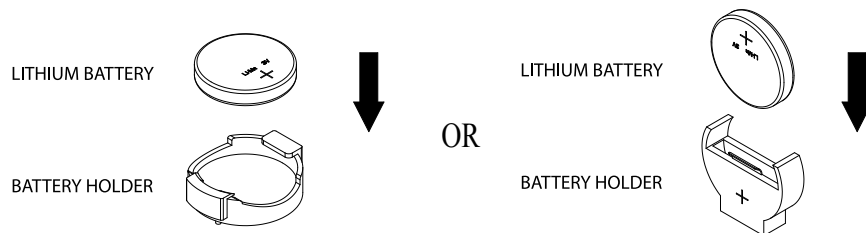
3.5 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online at

http://www.supermicro.com/RmaForm/.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Chapter 4

UEFI BIOS

4.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for the X11SCE-F 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 the Setup Utility

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

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

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

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

4.2 Main Setup

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:

```
              Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
    Main  Advanced  Event Logs  IPMI  Security  Boot  Save & Exit

                                                            Set the Date. Use Tab to
    System Date                        [Fri 01/18/2019]     switch between Date
    System Time                        [01:38:02]           elements.
                                                            Default Ranges:
    Supermicro X11SCE-F                                      Year: 2005-2099
    BIOS Version                       1.0a                  Months: 1-12
    Build Date                         12/14/2018            Days: dependent on month
    CPLD Version                       04.B0.08

    Memory Information
    Total Memory                       8192 MB




                                                            →←: Select Screen
                                                            ↑↓: Select Item
                                                            Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit

              Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.
```

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 X11SCE-F

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.

CPLD Version

This feature displays the CPLD version.

Memory Information

Total Memory

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

4.3 Advanced

Use this menu to configure advanced settings.

```
           Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
      Main  Advanced  Event Logs  IPMI  Security  Boot  Save & Exit

    ▶ Boot Feature                                    Boot Feature Configuration
    ▶ CPU Configuration                               Page
    ▶ Chipset Configuration
    ▶ Super IO Configuration
    ▶ Serial Port Console Redirection
    ▶ SATA And RSTe Configuration
    ▶ PCH-FW Configuration
    ▶ ACPI Settings
    ▶ USB Configuration
    ▶ PCIe/PCI/PnP Configuration
    ▶ Trusted Computing
    ▶ HTTP BOOT Configuration

    ▶ iSCSI Configuration
    ▶ TLS Authenticate Configuration

                                                      ➔←: Select Screen
                                                      ↑↓: Select Item
                                                      Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit

           Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.
```

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.

▶CPU Configuration

The following CPU information will display:

- Processor type

- CPU Signature

- Microcode Revision

- CPU Speed

- L1 Data Cache

- L1 Instruction Cache

- L2 Cache

- L3 Cache

- L4 Cache

- VMX

- SMX/TXT

CPU Flex Ratio Override

Select Enabled to activate CPU Flex Ratio programming. The flex ratio should be under the CPU's max ratio. The options are **Disabled** and Enabled.

If the feature above is set to Enabled, "CPU Flex Ratio Setting" will become available for configuration:

CPU Flex Ratio Settings

When CPU Flex Ratio override is enabled, this feature sets the value for the CPU Flex Ratio. The value must be between the maximum efficiency ratio and maximum non-turbo ratio. The default value is dependent on the CPU.

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.

Hyper-Threading (Available if supported by the CPU)

Select Enabled to support Intel Hyper-threading Technology to enhance CPU performance. The options are Disable and **Enable**.

BIST

Use this feature to enable the Built-in Self Test (BIST) at system reset or reboot. The options are **Disabled** and Enabled.

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.

Always Turbo Mode

Enable this feature for the system to always run in turbo mode. The options are **Disabled** and Enabled.

Turbo Mode (Available if supported by the CPU)

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

Monitor/Mwait

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

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**.

ACPI T-States

Use this feature to enable or disable ACPI T-States. The options are **Disabled** and Enabled.

▶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

▶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 Disabled and **Enabled**.

Fast Boot

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

REFRESH_2X_MODE (Available if supported by the CPU)

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

ECC Support (Available if supported by the CPU)

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

▶**DMI/OPI Configuration**

The following DMI information will display:

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 Disabled, L0s, **L1**, and L0sL1.

DMI Extended Sync Control

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

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**

PEG Port Configuration

PEG 0:1:0/PEG 0:1:1/PEG 0:1:2

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 Disabled, Enabled, and **Auto**.

Max Link Speed

Use this feature to select speed for the device installed in the specified port. The options are **Auto**, Gen 1, Gen 2, and Gen 3.

Max Link Width

Use this feature to select the PEG link for the specified port. The options are **Auto**, Force X1, Force X2, Force X4, and Force X8.

ASPM (Available if a graphics card is detected)

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, **Auto**, ASPM L0S, ASPM L1, and ASPM L0sL1.

*If the feature above is set to ASPM L0S, the feature below will become available for configuration:

ASPM L0S (Available if a graphics card is detected)

Use this feature to enable the PCI-E ASPM L0S. The options are Root Port Only, End-point Port Only, and **Both Root and Endpoint Ports**.

De-emphasis Control (Available if a graphics card is detected)

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

PEG0/1/2 Slot Power Limit Value

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

PEG0/1/2 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.

PEG0/1/2 Physical Slot Number

Use this feature to set the physical slot number attached to this port. The values are 0 - 8191.

PEG0/1/2 Max Payload Size

Use this feature to select the PEG0 maximum payload size. The options are **Auto**, 128 TLP, and 256 TLP.

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 ASMP will be programmed after OPROM. If set to Disabled, the PCI-E ASPM will be programmed before OPROM. The options are **Disabled** and Enabled.

Internal Graphics

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

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 Disabled and **Enabled**.

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 **No Change in EPOCHs**, 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 Porcessor 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 **Enabled** and Disabled.

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 Enabled and **Disabled**.

▶PCH-IO Configuration

PCH-IO Configuration

Port 61h bit-4 Emulation

Select Enabled to enable the emulation of Port 61h bit-4 toggling in SMM (System Management Mode). The options are Disabled and **Enabled**.

PCIe PLL SSC

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

▶Super IO Configuration

Super IO Configuration

Super IO Chip AST2500

▶Serial Port 1 Configuration

Serial Port

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=2F8h; IRQ=4;), (IO=3E8h; IRQ=4;), and (IO=2E8h; IRQ=4;).

▶Serial Port 2 Configuration

Serial Port

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=3;), (IO=2F8h; IRQ=3;), (IO=3E8h; IRQ=3;), and (IO=2E8h; IRQ=3;).

▶Serial Port Console Redirection

COM1

Console Redirection

Select Enabled to enable COM1 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

COM1

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 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.

COM1

Console Redirection

Select Enabled to enable COM1 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

COM1

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 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.

 Legacy Console Redirection

▶**Legacy Console Redirection Settings**

Legacy Redirection COM Port

Use this feature to select a COM port to display redirection of Legacy OS and Legacy OPROM messages. The options are **COM1** and COM1.

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**.

Redirection After Post

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

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

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

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

Out-of-Band Mgmt Port

The feature selects a serial port in a client server to be used by the Microsoft Windows Emergency Management Services (EMS) to communicate with a remote host server. The options are **COM1** and COM1.

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 RSTe 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.

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

SATA Interrupt Selection

Use this feature to select which interrupt will be available to the operating system. The options are Msix, **Msi**, and Legacy.

SATA Frozen

Use this feature to enable the HDD Security Frozen Mode. The options are Enabled and **Disabled**.

Aggressive LPM Support

When this feature is set to Enable, 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 0~7

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 0~7 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 0~7 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 0~7 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

PCH-FW Configuration

- Operational Firmware Version

- Backup Firmware Version

- Recovery Firmware Version

- ME Firmware Features

- ME Firmware Status #1

- ME Firmware Status #2

- Current State

- Error Code

▶ACPI Settings

WHEA Support

This feature Enables the Windows Hardware Error Architecture (WHEA) support for the Windows 2008 (or a later version) operating system. The options are Disabled and **Enabled**.

High Precision Event Timer

Select Enabled to activate the High Performance 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 native control of hot plug, Power Management Events, PCI-E Advanced Error Reporting, PCI-E Capability Structure Control, and Latency Tolerance Reporting Control. The options are Disabled and **Enabled**.

Native ASPM

Select Enabled for the operating system to control the Active State Power Management (ASPM). Select Disabled for the BIOS to control the ASPM. The options are Auto, **Enabled**, and Disabled**.**

▶USB Configuration

USB Configuration

- USB Module Version

- USB Controllers:

- USB Devices:

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 workaround 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

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.

VGA Priority

Use this feature to select VGA priority when multiple VGA devices are detected. Select Onboard to give priority to your onboard video device. Select Offboard to give priority to your graphics card. The options are **Onboard** and Offboard.

NVMe Firmware Source

Use this feature to select the NVMe firmware to support booting. The options are **Vendor Defined Firmware** and AMI Native Support. The default option, Vendor Defined Firmware, is pre-installed on the drive and may resolve errata or enable innovative functions for the drive. The other option, AMI Native Support, is offered by the BIOS with a generic method.

PCIe/PCI/PnP Configuration

CPU MICRO-LP PCI-E 3.0 X8 OPROM

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

M.2 PCI-E 3.0 X4 OPROM

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

▶Trusted Computing

*This motherboard supports TPM 1.2 and 2.0. The following Trusted Platform Module (TPM) information will display if a TPM 2.0 module is detected:

- Firmware Version

- Vendor

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**.

- Active PCR Bank

- Available PCR Bank

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

SHA-1 PCR Bank (Available if Security Device Support is Enabled and Save & Exit and if a TPM 2.0 module is detected)

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 (Available if Security Device Support is Enabled and Save & Exit and if a TPM 2.0 module is detected)

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**.

TPM State

This feature changes the TPM State. The options are **Disabled** and Enabled. Select an option and restart the system to change the TPM State. This feature is available if a TPM 2.0 module is detected.

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.**

PH Randomization

Use this feature to disable or enable Platform Hiearchy (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 for TPM 2.0 devices. Select Auto to enable support for both versions. The options are TPM 1.2, TPM 2.0, **Auto**.

SMCI BIOS-Based TPM Provision Support

Use this feature to enable the Supermicro TPM Provision support. The options are **Disabled** and Enabled.

TXT Support

Intel Trusted Execution Technology (TXT) 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 Suppport. This feature is available if a TPM 2.0 module is detected. The options are **Disabled** and Enabled.

▶HTTP BOOT Configuration

HTTP BOOT Configuration

Http Boot One Time

After creating and saving a HTTP boot option, enable this feature to have the system auto boot into the newly created HTTP boot option the next time the system is powered on. The options are **Disabled** and Enabled.

Input the description

Use this feature to input the HTTP boot option description.

Boot URI

Use this feature to input the URi address for HTTP Boot feature.

▶iSCSi Configuration

iSCSI Initiator Name

This feature allows the user to enter the unique name of the iSCSI Initiator in IQN format. Once the name of the iSCSI Initiator is entered into the system, configure the proper settings for the following items.

▶Add an Attempt

▶Delete Attempts

▶Change Attempt Order

▶TLS Authentication Configuration

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

▶Server CA Configuration

▶Enroll Certification

Enroll Certification Using File

Use this feature to enroll certification from a file.

Certification GUID

Use this feature to input the certification GUID.

Commit Changes and Exit

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

Discard Changes and Exit

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

▶Delete Certification

Use this feature to delete certification.

4.4 Event Logs

Use this menu to configure event log settings.

```
         Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc.
    Main  Advanced  Event Logs  IPMI  Security  Boot  Save & Exit

 ▶ Change SMBIOS Event Log Settings              Press <Enter> to change the
 ▶ View SMBIOS Event Log                         SMBIOS Event Log
                                                 configuration.












                                                 ⟷: Select Screen
                                                 ↑↓: Select Item
                                                 Enter: Select
                                                 +/-: Change Opt.
                                                 F1: General Help
                                                 F2: Previous Values
                                                 F3: Optimized Defaults
                                                 F4: Save & Exit
                                                 ESC: Exit

         Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.
```

▶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 an 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 between 1 to 255. The default setting is **1**.

METW (Multiple Event Count Time Window)

This feature is used to determine how long (in minutes) should the multiple event counter wait before generating a new event log. Enter a number between 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

4.5 IPMI

Use this menu to configure Intelligent Platform Management Interface (IPMI) settings.

```
               Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
        Main  Advanced  Event Logs  IPMI  Security  Boot  Save & Exit

    BMC Firmware Revision              1.14                    Configure BMC network
    IPMI STATUS                        Working                 parameters

  ▶ System Event Log
  ▶ BMC Network Configuration



                                                               →←: Select Screen
                                                               ↑↓: Select Item
                                                               Enter: Select
                                                               +/-: Change Opt.
                                                               F1: General Help
                                                               F2: Previous Values
                                                               F3: Optimized Defaults
                                                               F4: Save & Exit
                                                               ESC: Exit

               Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.
```

BMC Firmware Revision

This feature indicates the IPMI firmware revision in your system.

IPMI STATUS

This feature indicates the status of the IPMI firmware installed in your system.

▶System Event Log

Enabling/Disabling Options

SEL Components

Select Enabled for all system event logging at bootup. The options are Disabled and **Enabled**.

Erasing Settings

Erase SEL

Select Yes, On next reset to erase all system event logs upon next system reboot. Select Yes, On every reset to erase all system event logs upon each system reboot. Select No to keep all system event logs after each system reboot. The options are **No,** Yes, On next reset, and Yes, On every reset.

When SEL is Full

This feature allows the user to determine what the BIOS should do when the system event log is full. Select Erase Immediately to erase all events in the log when the system event log is full. The options are **Do Nothing** and Erase Immediately.

Note: After making changes on a setting, reboot the system for the changes to take effect.

▶BMC Network Configuration

BMC network configuration

Configure IPV4 support

IPMI LAN Selection

This feature displays the IPMI LAN setting. The default setting is **Failover**.

IPMI Network Link Status

This feature displays the IPMI Network Link status. The default setting is **Dedicated LAN**.

Update IPMI LAN Configuration

Select Yes for the BIOS to implement all IP/MAC address changes at the next system boot. The options are **No** and Yes.

If the feature above is set to Yes, the Configuration Address Source and VLAN features are available for configuration:

Configuration Address Source

Use this feature to select the source of the IP address for this computer. If Static is selected, you will need to know the IP address of this computer and enter it to the system manually in the field. If DHCP is selected, the BIOS will search for a DHCP (Dynamic Host Configuration Protocol) server in the network that it is attached to and request the next available IP address for this computer. The options are **DHCP** and Static.

If the feature above is set to Static, the Station IP Address/Subnet Mask/Gateway IP Address features are available for configuration:

Station IP Address

This feature displays the Station IP address for this computer. This should be in decimal and in dotted quad form (i.e., 192.168.10.253).

Subnet Mask

This feature displays the sub-network that this computer belongs to. The value of each three-digit number separated by dots should not exceed 255.

Station MAC Address

This feature displays the Station MAC address for this computer. Mac addresses are 6 two-digit hexadecimal numbers.

Gateway IP Address

This feature displays the Gateway IP address for this computer. This should be in decimal and in dotted quad form (i.e., 192.168.10.253).

VLAN

This feature is configurable if the Update IPMI LAN Configuration feature is set to Yes. Use this feature to enable or disable the IPMI VLAN function. The options are **Disable** and Enable.

*If the feature above is set to Enable, the VLAN ID feature below is available for configuration:

VLAN ID

Use this feature to select a value for VLAN ID.

Configure IPV6 support

IPV6 Support

Use this feature to enable IPV6 support. The options are **Enabled** and Disabled.

Configuration Address Source

Use this feature to select the source of the IP address for this computer. If Static is selected, you will need to know the IP address of this computer and enter it into the system manually in the field. If DHCP is selected, the BIOS will search for a DHCP (Dynamic Host Configuration Protocol) server in the network that is attached to and request the next available IP address for this computer. The options are Static and **DHCP**.

*If the feature above is set to Static, the Station IP Address/Prefix Length/IPV6 Router1 IP Address features are available for configuration:

Station IPV6 Address

Use this feature to enter the IPV6 address.

Prefix Length

Use this feature to change the prefix length.

IPV6 Router1 IP Address

Use this feature to change the IPV6 Router1 IP address.

4.6 Security

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

```
              Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
        Main  Advanced  Event Logs  IPMI  Security  Boot  Save & Exit

  Password Description                                     Setup: Check password while
                                                          invoking setup. Always:
  If the Administrator / User password is set, then this only   Check password while
  limits access to Setup and is asked for when entering Setup.  invoking setup as well as
  Please set Administrator password first in order for setting  on each boot.
  User password, if clear Administrator password, User password
  will be cleared as well.
  The password length must be in the following range:
  Minimum length                          3
  Maximum length                          20

  Password Check                       [Setup]
  Administrator Password

▶ Secure Boot
                                                          ↔: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

              Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.
```

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.

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 3 to 20 characters long.

▶Secure Boot

- System Mode

- Vendor Keys

- Secure Boot

Secure Boot

Select Enable for secure boot support to ensure system security at boot up. 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 **Custom**.

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

CSM Support

This feature is for manufacturing debugging purposes. The options are Disabled and **Enabled**.

▶Key Management

Vendor Keys

▶Restore Factory Keys

Select Yes to restore 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.

▶Export 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

▶Platform Key (PK)

This feature allows the user to configure the settings of the platform keys.

Update

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

▶**Key Exchange Keys**

Update

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

Append

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

▶**Authorized Signatures**

Update

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

Append

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

▶**Forbidden Signatures**

Update

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

Append

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

▶**Authorized TimeStamps**

Update

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

Append

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

▶**OsRecovery Signatures**

Update

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

Append

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

4.7 Boot

Use this menu to configure boot settings.

```
            Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
      Main  Advanced  Event Logs  IPMI  Security  Boot  Save & Exit

   Boot Configuration                                    ▲ Number of seconds to wait
   Setup Prompt Timeout                    1               for setup activation key.
                                                           65535(0xFFFF) means
   Boot mode select                        [DUAL]          indefinite waiting.

   FIXED BOOT ORDER Priorities
   DUAL Boot Option #1                     [Hard Disk]
   DUAL Boot Option #2                     [CD/DVD]
   DUAL Boot Option #3                     [USB Hard Disk]
   DUAL Boot Option #4                     [USB CD/DVD]
   DUAL Boot Option #5                     [USB Key]
   DUAL Boot Option #6                     [USB Floppy]
   DUAL Boot Option #7                     [USB Lan]
   DUAL Boot Option #8                     [Network:IBA GE Slot
                                           0100 v1381]
   DUAL Boot Option #9                     [UEFI Hard Disk]
   DUAL Boot Option #10                    [UEFI CD/DVD]
   DUAL Boot Option #11                    [UEFI USB Hard Disk]   →←: Select Screen
   DUAL Boot Option #12                    [UEFI USB CD/DVD]      ↑↓: Select Item
   DUAL Boot Option #13                    [UEFI USB Key]         Enter: Select
   DUAL Boot Option #14                    [UEFI USB Floppy]      +/-: Change Opt.
   DUAL Boot Option #15                    [UEFI USB Lan]         F1: General Help
   DUAL Boot Option #16                    [UEFI Network]         F2: Previous Values
   DUAL Boot Option #17                    [UEFI AP:UEFI:         F3: Optimized Defaults
                                           Built-in EFI Shell] ▼ F4: Save & Exit
                                                                 ESC: Exit

            Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.
```

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 that the system can

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**

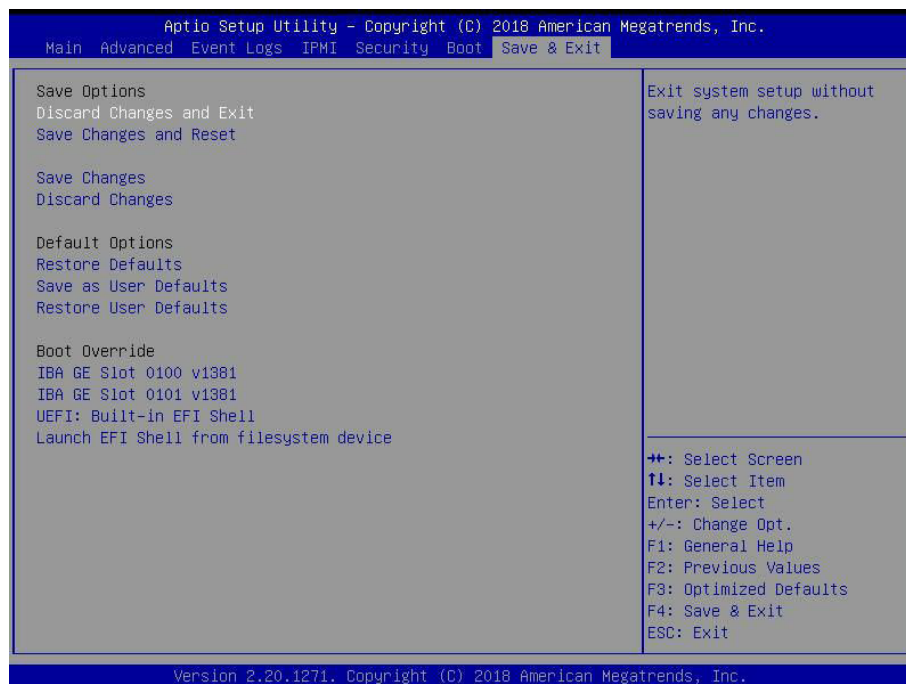- Boot Option # - This feature sets the system boot order of detected devices. The options are **[the list of detected boot device(s)]** and Disabled.

4.8 Save & Exit

Use this menu to configure save and exit settings.

```
              Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
       Main  Advanced  Event Logs  IPMI  Security  Boot  Save & Exit

   Save Options                                          Exit system setup without
   Discard Changes and Exit                              saving any changes.
   Save Changes and Reset

   Save Changes
   Discard Changes

   Default Options
   Restore Defaults
   Save as User Defaults
   Restore User Defaults

   Boot Override
   IBA GE Slot 0100 v1381
   IBA GE Slot 0101 v1381
   UEFI: Built-in EFI Shell
   Launch EFI Shell from filesystem device
                                                         ↔: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit

              Version 2.20.1271. Copyright (C) 2018 American Megatrends, Inc.
```

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

Software Installation

A.1 Installing Software Programs

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 the CDR_Images (in the parent directory of the above link) and locate the ISO file for your motherboard. Download this file to create a DVD of the drivers and utilities it contains. (You may also use a utility to extract the ISO file if preferred.)

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

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

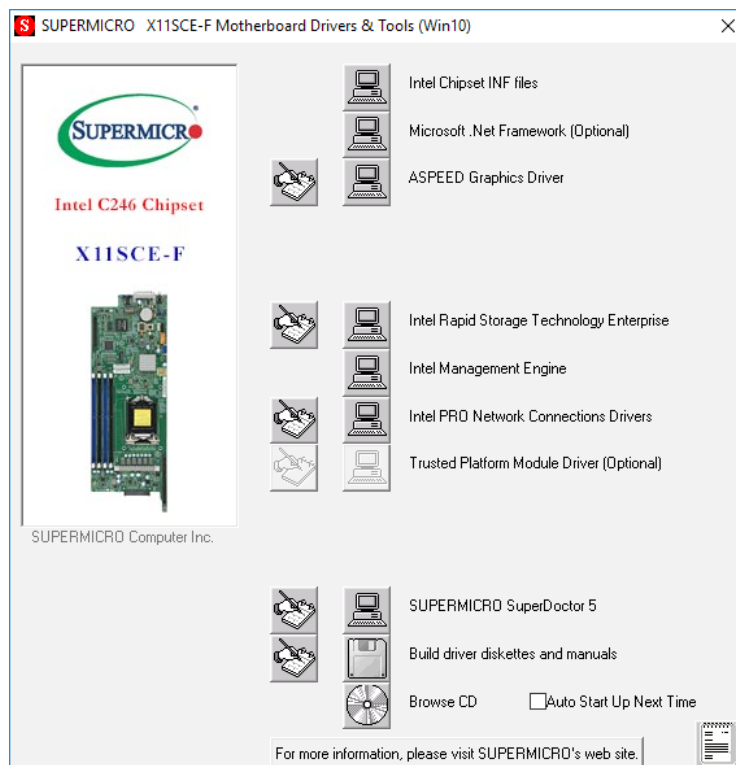**Note:** To install the Windows operating system, please refer to the instructions posted on our website at http://www.supermicro.com/support/manuals/.

Figure A-1. Driver/Tool Installation Display Screen

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

A.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, 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 or IPMI. SD5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

Note: The default Username and Password for SuperDoctor 5 is ADMIN / ADMIN.
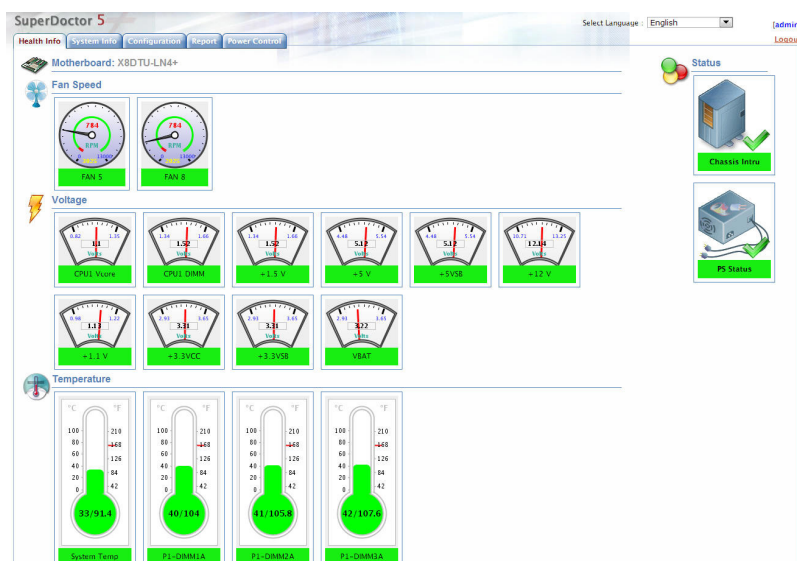
Figure A-2. SuperDoctor 5 Interface Display Screen (Health Information)

Note: The SuperDoctor 5 program and user's manual can be downloaded from the Supermicro website at http://www.supermicro.com/products/nfo/sms_sd5.cfm.

Appendix B

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 section in its entirety before installing or configuring components.

These warnings may also be found on our website at http://www.supermicro.com/about/policies/safety_information.cfm.

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

电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

警告

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 النع أو ما يعادلها مما أوصث به الشرمة المصنعة
جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة 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 ontploffingsgevaar 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.

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 الطنية 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.

Appendix C

UEFI BIOS Recovery

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

C.1 Overview

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

C.2 Recovering the UEFI BIOS Image

A UEFI BIOS flash chip consists of a recovery BIOS block and a main BIOS block (a main BIOS image). The 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. (For a RMA request, please see section 3.5 for more information). Also, you may use the Supermicro Update Manager (SUM) Out-of-Band (OOB) (https://www.supermicro.com.tw/products/nfo/SMS_SUM.cfm) to reflash the BIOS.

C.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 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 (or one similar to it) displays.

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

```
                  Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
    Main  Advanced  Event Logs  IPMI  Recovery  Security  Boot  Save & Exit

   Please select blocks you want to update               Set this option to reset
   Reset NVRAM                        [Enabled]           NVRAM to default values
   Boot Block Update                  [Enabled]

 ▶ Proceed with flash update




                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

              Version 2.19.1266. Copyright (C) 2017 American Megatrends, Inc.
```

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_.

```
                  Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
                                       Recovery

   WARNING! System firmware is being updated.
   Keyboard is locked.
   DO NOT TURN THE POWER OFF !!!
   Once firmware update is completed
   press any key to reboot the system



                     ┌──────────── Program new data ────────────┐
                     │           Write new boot block...        │
                     │                                          │
                     │─────────────────17%────────────────────│
                     │ ████████                                 │
                     └──────────────────────────────────────────┘

                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

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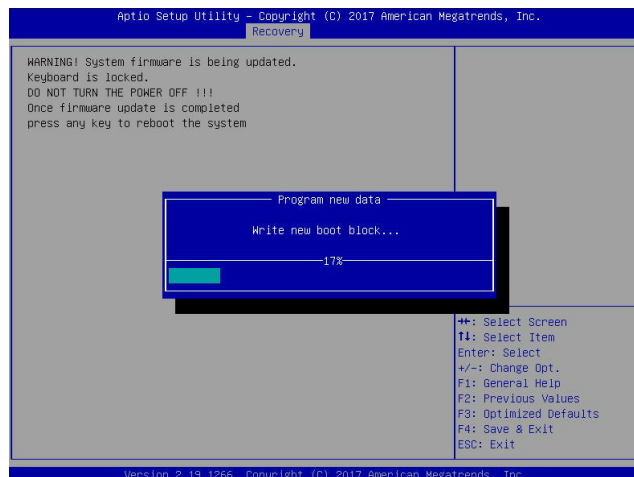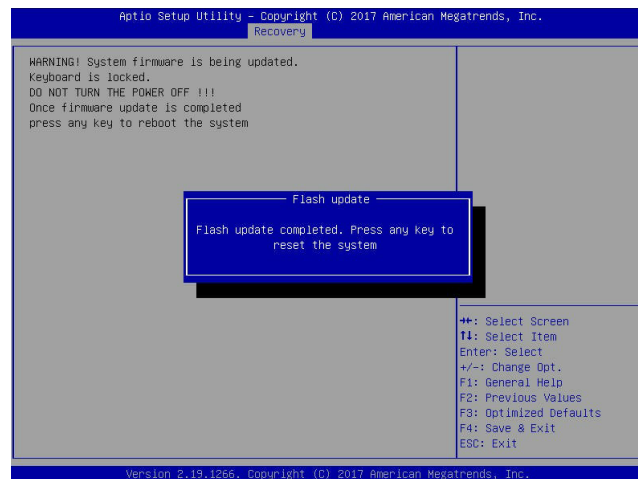
5. After the BIOS recovery process is complete, press any key to reboot the system.

6. Using a different system, extract the BIOS package into a USB flash drive.

7. 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.
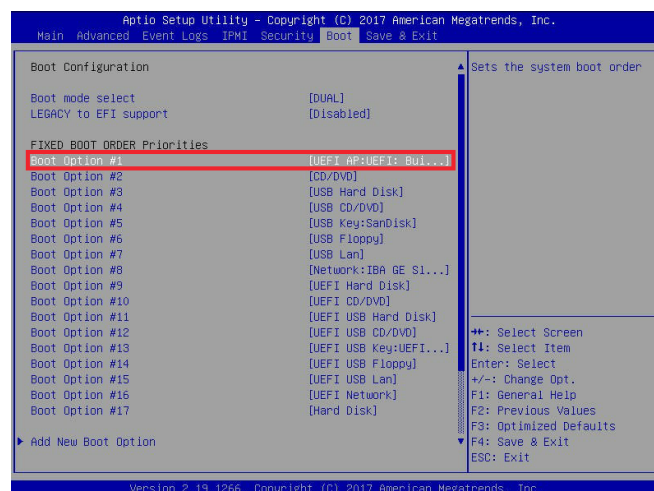
8. When the UEFI Shell prompt appears, type fs# to change the device directory path. Go to the directory that contains the BIOS package you extracted earlier from Step 6. Enter flash.nsh BIOSname.### at the prompt to start the BIOS update process.

```
UEFI Interactive Shell v2.1
EDK II
UEFI v2.50 (American Megatrends, 0x0005000C)
Mapping table
        FS0: Alias(s):HD0r0b::BLK1:
                PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x37901D72,0x800,0x1
CA3592)
        BLK0: Alias(s):
                PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)
Press ESC in 1 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:\> cd AFUDOS
FS0:\AFUDOS\> cd SWJPME2_03162017
FS0:\AFUDOS\SWJPME2_03162017\> flash.nsh X11DPU7.314_
```

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

```
Done.
[ Access Cmos Port Ex ]
<Read>
Index 0x51: 0x18

Done.
********************************************************************************
*
* Program BIOS and ME (including FDT) regions...
*
********************************************************************************
+------------------------------------------------------------------------+
|              AMI Firmware Update Utility v5.09.01.1317                 |
|       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 (0%)
```

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 NCB Block ......... done
- Update success for FDR
- Update success for IE. -
- Successful Update Recovery Loader to OPRx!!
- Successful Update MFSB!!-
- Successful Update FTPR!!-
- Successful Update MFS, IVB1 and IVB2!!
- Successful Update FLOG and UTOK!!
- ME Entire Image update success !!
WARNING : System must power-off to have the changes take effect!
Moving FS0:\AFUDOS\SWJPME2_03162017\fdtx64.efi -> FS0:\AFUDOS\SWJPME2_03162017\f
dt.smc
- [ok]
Moving FS0:\AFUDOS\SWJPME2_03162017\afuefix64.efi -> FS0:\AFUDOS\SWJPME2_0316201
7\afuefi.smc
- [ok]
********************************************************************************
*
* Please ignore this 'Shell: Cannot read from file - Device Error'
* warning message due to it does not impact flashing process.
*
********************************************************************************
Deleting 'FS0:\startup.nsh'
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.