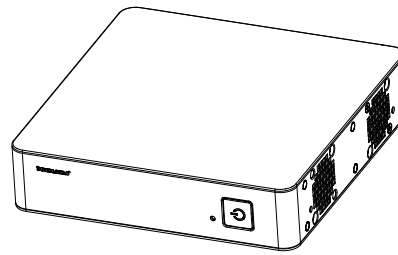
SUPERO®

# SuperServer®

# E200-8B



# USER'S MANUAL

Revision 1.0

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Manual Revision 1.0
Release Date: January 12, 2015

# Preface

## About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the server. Installation and maintainance should be performed by experienced technicians only.

Please refer to the server specifications page on our Web site for updates on supported memory, processors and operating systems (www.supermicro.com).

# Contents

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# Notes

# Chapter 1

# Introduction

## 1-1 Overview

The SuperServer E200-8B is a compact, embedded system comprised of the SC101S chassis and the X10SBA single processor motherboard. Refer to our website for information on operating systems that have been certified for use with the system (www.supermicro.com).

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

- Supermicro product manuals: http://www.supermicro.com/support/manuals/
- Product drivers and utilities: ftp://ftp.supermicro.com
- Product safety info: http://super-dev/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.

## 1-2 Motherboard Features

The server is built around the X10SBA, a single processor motherboard based on the Intel Celeron J1900 System-on-Chip (SoC). Below are the main features. Refer to Figure 1-1 for a block diagram of the system.

### Processors

The X10SBA supports a single Intel J1900 64-bit, 22 nm low-power quad-processor with Intel Silvermont microarchitecture 22nm System-on-Chip.

### Memory

The board has two SO-DIMM sockets that can support up to a total of 8GB of low-voltage, Non-ECC DDR3-1333 SO-DIMM memory. See Chapter 5 for details.

### Serial ATA

The system supports one SATA drive, either SATA 2.0 (3Gbps) from Intel SoC SATA 3.0 (6Gbps) from Marvell 88SE9230.

There is also a slot for one mSATA 2.0 card.

### I/O Ports

The rear I/O ports include one HDMI port, one eDP (Display Port) port, one USB 3.0 port, one USB 2.0 port, two LAN ports and a VGA port.

## 1-3 Server Chassis Features

The SC101S is a mini-ITX chassis. The following list the main features of the chassis.

### System Power

Power is supplied through a 60W power adapter, plugged into a standard 110V AC power outlet.

### Hard Disk Drive

One 2.5" internal drive is supported by the system. It is designed for a 9.5 mm thickness HDD.

### Front Panel Control

The main power button on front of the chassis includes an LED status indicator.

### Cooling

The chassis includes one 4-cm fan.

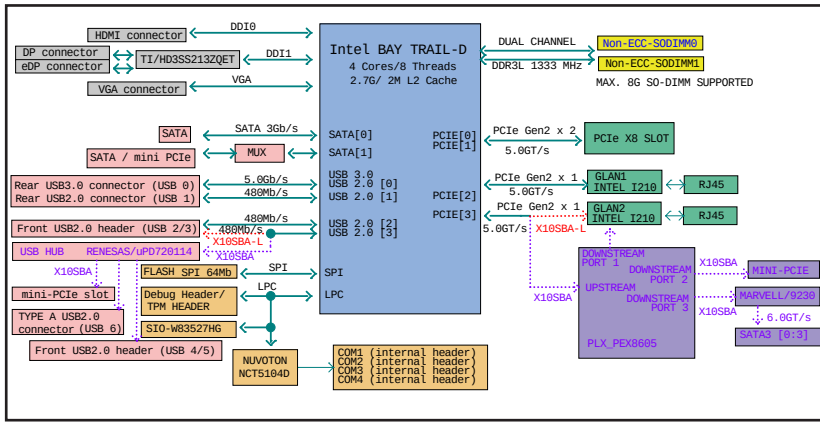



**Figure 1-1. System Block Diagram**

Note: This is a general block diagram. Please see Chapter 5 for details.

## 1-4 Server Installation and Setup

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

### Unpacking the System

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

### Warnings and Precautions

- This product is not suitable for use with visual display work place devices acccording to §2 of the the German Ordinance for Work with Visual Display Units.
- Review the electrical and general safety precautions in Chapter 4.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.

### Adding Components to your System

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

## 1-5 System Interface

The front of the chassis includes a power on/off push-button, including an LED status light, and a reset button.

### Power

The main power button is used to apply or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug the system before servicing.

This button features an LED that indicates hard drive activity as follows:

- Blue – Power on
- White – HDD activity

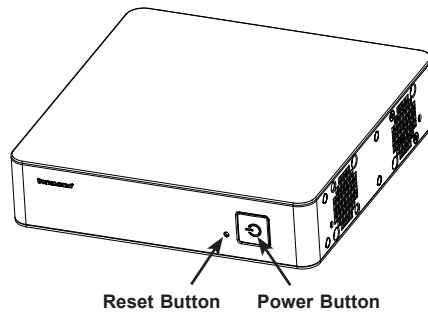



**Figure 2-1. Power Button/LED Location**

### Reset

The reset button is located next to the power button.

## Notes

# Chapter 2

# Advanced Motherboard Setup

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

Please review the Safety Precautions in Chapter 4 before installing or removing components.

## 2-1 Handling the Motherboard

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to any printed circuit boards (PCBs), it is important to handle them very carefully (see previous chapter). To prevent the motherboard from bending, keep one hand under the center of the board to support it when handling. The following measures are generally sufficient to protect your equipment from electric static discharge.

### Precautions

- Use a grounded wrist strap designed to prevent ESD.
- Touch a grounded metal object before removing boards from antistatic bags.
- Handle a 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, add-on cards and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.

### Unpacking

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

## 2-2 Onboard Processor

The E200-8B features an embedded Intel Celeron J1900 processor.

## 2-3 Installing Memory

### Memory Support

The X10SBA motherboard supports up to a total of 8GB of low-voltage, Non-ECC DDR3-1333 SO-DIMM memory in two low-profile slots. Check the Supermicro website for a list of memory modules that have been validated.

***Installing the Memory DIMMs***

Insert one or two SO-DIMMs into the memory slots, starting with JDIMM1 then JDIMM2. See instructions on the next page.

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

### Memory Population Guidelines

Please follow the table below when populating the DIMM slots.

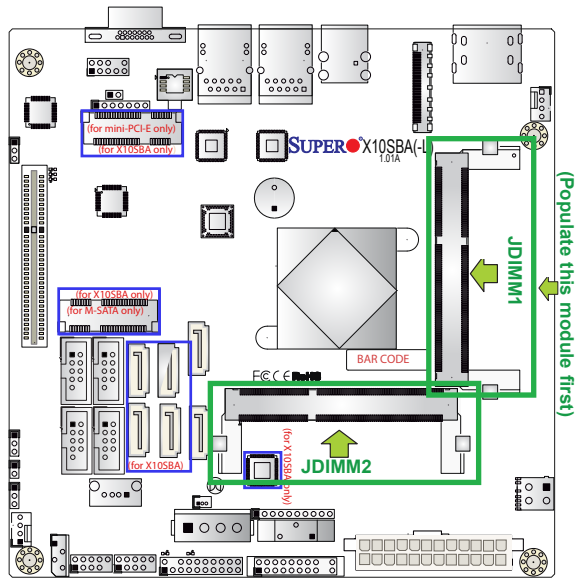
| Unbuffered DDR3L Non-ECC SO-DIMM Memory | | | | |
|---|---|---|---|---|
| DIMM Slots per Channel | DIMMs Populated per Channel | DIMM Type | POR Speeds | Memory Population Sequence |
| 2 | 1 | Unbuffered DDR3 SO-DIMM | Up to 1333 | JDIMM1, JDIMM2 (2 DIMMs) |

**Note:** Be sure to use memory modules of the same type, speed and frequency.

**Note:** Due to memory allocation to system devices, the amount of memory that remains available for operational use will be reduced when 4 GB of RAM is used. The reduction in memory availability is disproportional. See the following table for details.

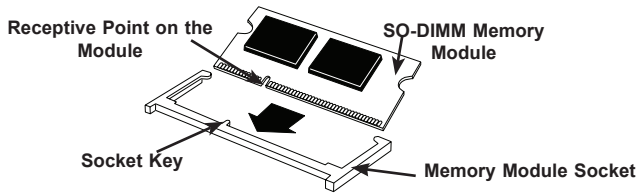
| Possible System Memory Allocation & Availability | | |
|---|---|---|
| System Device | Size | Physical Memory Remaining (-Available) (4 GB Total System Memory) |
| Firmware Hub flash memory (System BIOS) | 1 MB | 3.99 |
| Local APIC | 4 KB | 3.99 |
| Area Reserved for the chipset | 2 MB | 3.99 |
| I/O APIC (4 Kbytes) | 4 KB | 3.99 |
| PCI Enumeration Area 1 | 256 MB | 3.76 |
| PCI Express (256 MB) | 256 MB | 3.51 |
| PCI Enumeration Area 2 (if needed) -Aligned on 256-MB boundary- | 512 MB | 3.01 |
| VGA Memory | 16 MB | 2.85 |
| TSEG | 1 MB | 2.84 |
| Memory available to OS and other applications | | 2.84 |

**Figure 2-2. Memory Slots on the Motherboard**

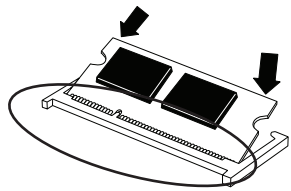


## Installing a SO-DIMM Module

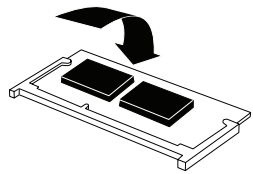
1. Align the receptive point on the bottom of the SO-DIMM module against the key on the memory socket. Note the notches on the side of the SO-DIMM module and those on the socket to avoid causing damage.




2. Line up the bottom of the SO-DIMM memory module with the edge of the horizontal socket.

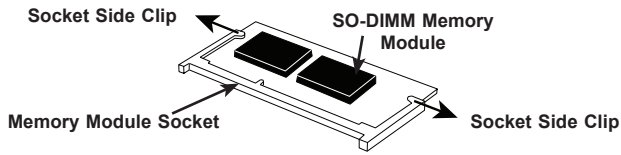


3. Once they are lined up, push the memory module into the memory socket until the module is securely seated in the socket.

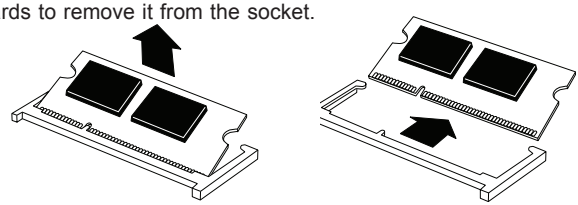


## Removing a SO-DIMM Module

1. Use your thumbs to gently push the side clips on both ends of the socket away from the SO-DIMM module to release it from the locked position.




2. Once the memory module is loosened from the socket, pull it upwards and outwards to remove it from the socket.



## 2-4 Connecting Cables

As an embedded system, there are a limited number of cables in the E200-8B.

### Data Cables

The cables used to transfer data from the peripheral devices have been carefully routed to prevent them from blocking the flow of cooling air that moves through the system from front to back.

If you need to disconnect any cables, take care to keep them routed as they were originally when reconnecting them. Also, make sure the red wires connect to the pin 1 locations. **Important!** Make sure the the cables do not come into contact with the fans.

### Connecting the Power Button

JF1 contains header pins for various front control panel connectors. Rather than a control panel, this server has a power control button with an LED display.

The front control panel cable has a single connector to the control panel in the SC101S chassis and splits into eight wires to the control panel header on the motherboard.

## 2-5 Rear I/O Ports

The figure below describes the rear I/O ports on the system.

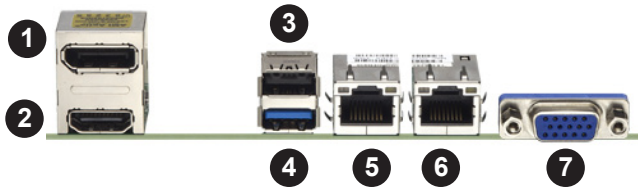



**Figure 2-3. Rear I/O Ports**

| Rear I/O Port Locations | | | |
|---|---|---|---|
| 1 | Display Port | 5 | LAN1 Port |
| 2 | HDMI Port | 6 | LAN2 Port |
| 3 | USB1 Port (USB 2.0) | 7 | VGA Port |
| 4 | USB0 (USB 3.0) | | |

## 2-6 Motherboard Details

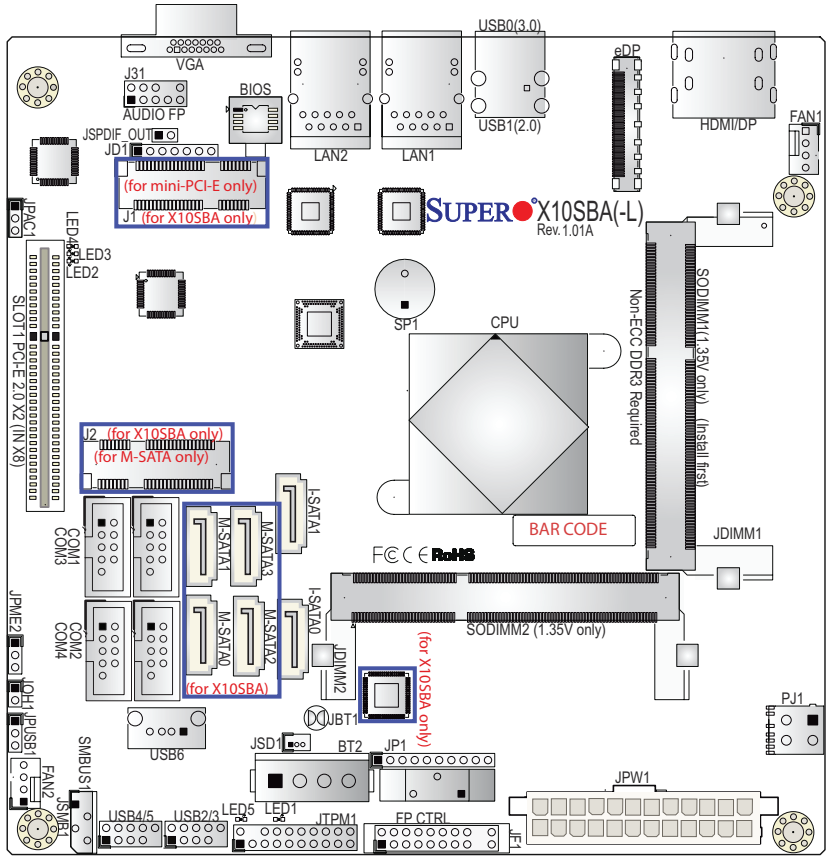



**Figure 2-4. Motherboard Layout**

**Notes**

- "■" indicates the location of "Pin 1".
- Jumpers not indicated are for test purposes only.

### X10SBA Quick Reference

| Jumper | Description | Default |
|---|---|---|
| JBT1 | CMOS Clear | Open: Normal |
| JPAC1 | Audio Enable/Disable | Pins 1-2 (Enabled) |
| JPME2 | Manufacturer Mode Select | Pins 1-2 (Normal) |
| JPUSB1 | USB Wake-Up Enable/Disable | Pins 1-2 (Enabled) |

| Connector | Description |
|---|---|
| Audio FP | Front Panel Audio Header |
| COM1-COM4 | COM1/COM2/COM3/COM4 Headers |
| eDP | Embedded DisplayPort (J5) |
| Fan1/Fan2 | System/CPU Fan Headers |
| HDMI/DP | HDMI/DisplayPorts |
| J1 | mini-PCI-E Slot for a mini-PCI-E Card |
| J2 | mSATA Slot MUX with I-SATA-1 (Available only when I-SATA1 is not in use. J2 and I-SATA1 cannot be used together.) |
| J4 (Slot 1) | PCI-E 2.0 x 2 (in x8 slot) |
| JD1 | Power LED/Speaker Header |
| JF1 | Front Panel Control Header |
| JOH1 | Overheat LED Indicator Header |
| JP1 | General Purpose I/O Header |
| JPW1 | 24-pin ATX Main Power Connector (Optional Power Source) |
| JSD1 | SATA DOM (Device On Module) Power Connector |
| JSPDIF_OUT | S/PDIF (Audio Output Header |
| JTPM1 | Trusted Platform Module/Port 80 Connector |
| LAN1/LAN2 | Gigabit Ethernet (RJ45) Ports (LAN1/2) |
| PJ1 | 4-pin 12V Power Connector (Optional Power Source) |
| (I-)SATA0/1 | (Intel) Serial ATA (SATA 2.0) Ports 0/1 (Optional Power Source) (J2 and I-SATA1 cannot be used together.) |
| (M-)SATA0-3 | Marvell 88SE9230 Serial ATA (SATA 3.0) Ports 0-3 |
| SMBUS1 | 4-Pin External System Management Bus $I^2C$ Header (JSMB1) |
| SP1 | Internal Speaker/Buzzer |
| USB 0 | USB 3.0 Port 1 |
| USB 1 | USB 2.0 Port 2 |
| USB 2/3 | Front Accessible USB 2.0 Connections: USB 2, USB 3 (USB 3 not available on the X10SBA) |
| USB 4/5 | Front Accessible USB 2.0 Connections: USB 4/5 |
| USB 6 | Type A USB 2.0 Connector: USB 6 |
| VGA | Backpanel VGA Port |

| LED | Description | Color/State | Status |
|---|---|---|---|
| LED1 | Main Power LED | Green: On | Power On |
| LED5 | Standby Power LED | Green: On | AC On |

## 2-7 Connector Definitions

Note: some of the connectors on the motherboard are not described here as they are not needed in the E200-8B configuration, such as the ATX power connector.

**Universal Serial Bus (USB)**

One Universal Serial Bus 2.0 port (USB0) and one USB 3.0 port (USB1) are located on the I/O backpanel. Three USB 2.0 connections (USB 2/3, USB 4/5) are located on the motherboard for front USB 2.0 access. In addition, a Type A USB connector (USB 6) is also located on the X10SBA to provide USB 2.0 front support. See the tables for pin definitions.

**Back Panel USB0 (2.0), Type A USB 6 Pin Definitions**

| Pin# | Definition | Pin# | Definition |
|---|---|---|---|
| 1 | +5V | 5 | +5V |
| 2 | USB_PN1 | 6 | USB_PN0 |
| 3 | USB_PP1 | 7 | USB_PP0 |
| 4 | Ground | 8 | Ground |

**Front Panel USB2/3 (2.0), USB 4/5 Pin Definitions**

| Pin # | Definition | Pin # | Definition |
|---|---|---|---|
| | USB #2,4 | | USB #1,3 |
| 1 | +5V | 2 | +5V |
| 3 | USB_PN2 | 4 | USB_PN3 |
| 5 | USB_PP2 | 6 | USB_PP3 |
| 7 | Ground | 8 | Ground |
| 9 | Key | 10 | Ground |

**Back Panel USB1 (3.0) Pin Definitions**

| Pin# | Pin# | Signal Name | Description |
|---|---|---|---|
| 1 | 19 | VBUS | Power |
| 2 | 18 | IntA_SSRX- | SuperSpeed Rx- |
| 3 | 17 | IntA_SSRX+ | SuperSpeed Rx+ |
| 4 | 16 | Ground | Ground |
| 5 | 15 | IntA_SSTX- | SuperSpeed Tx- |
| 6 | 14 | IntA_SSTX+ | SuperSpeed Tx+ |
| 7 | 13 | GND | Ground |
| 8 | 12 | IntA_D- | USB2 D- |
| 9 | 11 | IntA_D+ | USB2 D+ |

**HDMI Port**

One HDMI (High-Definition Multimedia Interface) Port is located on the I/O backpanel. This connector is used to display both high definition video and digital sound through an HDMI-capable display, using the same (HDMI) cable. The motherboard supports HDMI Specification version 1.4a.

**DP (Display Port)**

DisplayPort, develped by the VESA consortium, delivers digital display and fast refresh rate. It can connect to virtually any display device using a DisplayPort adapter for devices such as VGA, DVI or HDMI. The motherboard supports DisplayPort standard version 1.2a.

**LAN Ports (LAN1/LAN2)**

Two gigabit LAN ports are located on the I/O back panel. These ports accept RJ45 type cables and are used to connect the system to a network.

## Front Control Panel

The pinouts of the JFI (control panel) connector are shown below. Only one of these (those for the power button) are used on the E200-8B.

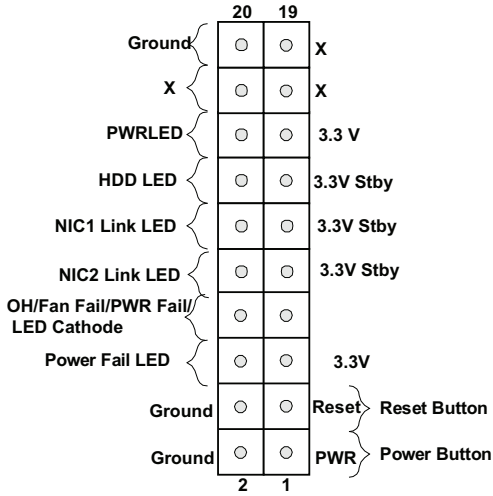



**Figure 2-5. Control Panel Header Pins**

### Power Button

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

| Power Button Pin Definitions (JF1) | |
|---|---|
| Pin# | Definition |
| 1 | Signal |
| 2 | +3V Standby |

### DOM PWR Connector

The SATA Disk-On-Module (DOM) power connector, located at JSD1, provides power to a solid state DOM storage device connected to one of the SATA ports. See the table on the right for pin definitions.

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

### Fan Headers (Fan 1/Fan 2)

The X10SBA has two fan headers (Fan 1/Fan 2). These are 4-pin fan headers. Although pins 1-3 of the fan headers are backward compatible with the traditional 3-pin fans, we recommend the use 4-pin fans to take advantage of the fan speed control. This allows the fan speeds to be automatically adjusted based on the motherboard temperature. Refer to the table on the right for pin definitions.

**Fan Header Pin Definitions**

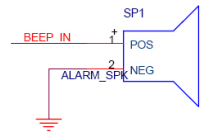
| Pin# | Definition |
|---|---|
| 1 | Ground (Black) |
| 2 | 2.5A/+12V (Red) |
| 3 | Tachometer |
| 4 | PWM_Control |

**Internal Buzzer Pin Definition**

| Pin# | Definitions | |
|---|---|---|
| Pin 1 | Pos. (+) | Beep In |
| Pin 2 | Neg. (-) | Alarm Speaker |

### Internal Speaker/Buzzer (SP1)

The internal speaker on SP1 can be used to provide audible indications for various beep codes.




### Power LED/Speaker

Pins 1-3 of JD1 are used for power LED indication, and pins 4-7 are for the speaker. See the tables on the right for pin definitions. Please note that the speaker connector pins (4-7) are used with an external speaker. If you wish to use the onboard speaker, you should close pins 6-7 with a cap.

**PWR LED Connector Pin Definitions**

| Pin Setting | Definition |
|---|---|
| Pin 1 | Anode (+) |
| Pin2 | Cathode (-) |
| Pin3 | NA |

**Speaker Connector Pin Settings**

| Pin Setting | Definition |
|---|---|
| Pins 4-7 | External Speaker |
| Pins 6-7 | Internal Speaker |

**TPM Header (JTPM1)**

This header is used to connect a Trusted Platform Module (TPM), available from a third-party vendor. A TPM is a security device that allows encryption and authentication of hard drives. It enables the motherboard to deny access if the TPM associated with the hard drive is not installed in the system.

**Trusted Platform Module Header Pin Definitions**

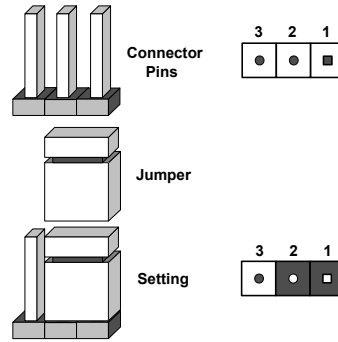
| Pin # | Definition | Pin # | Definition |
|---|---|---|---|
| 1 | LCLK | 2 | GND |
| 3 | LFRAME | 4 | No Pin |
| 5 | LRESET | 6 | VCC5 |
| 7 | LAD3 | 8 | LAD2 |
| 9 | VCC3 | 10 | LAD1 |
| 11 | LAD0 | 12 | GND |
| 13 | RSV0 | 14 | RSV1 |
| 15 | SB3V | 16 | SERIRQ |
| 17 | GND | 18 | CLKRUN |
| 19 | LPCPD | 20 | RSV2 |

# 2-8 Jumper Settings

## Explanation of Jumpers

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

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




## CMOS Clear

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

***To clear CMOS***

1. First power down the system and unplug the power cord(s).
2. With the power disconnected, short the CMOS pads with a metal object such as a small screwdriver.
3. Remove the screwdriver (or shorting device).
4. Reconnect the power cord(s) and power on the system.

**Note:** Do not use the PW_ON connector to clear CMOS.

### Audio Enable/Disable

JPAC1 allows you to enable or disable the onboard audio support. The default position is on pins 1 and 2 to enable onboard audio connections. See the table on the right for jumper settings.

| Audio Enable/Disable Jumper Settings | |
|---|---|
| Both Jumpers | Definition |
| Pins 1-2 | Enabled |
| Pins 2-3 | Disabled |

### Manufacturer Mode Select

Close pins 2 and 3 of jumper JPME2 to bypass SPI flash security and force the system to operate in the Manufacturer Mode, allowing the user to flash the system firmware from a host server for system setting modifications. See the table on the right for jumper settings.

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

### USB Wake-Up

Use the jumper JPUSB1 to "wake-up" your system by pressing a key on a USB keyboard or clicking the USB mouse connected to the onboard USB ports. JPUSB1 is used together with a USB Wake-Up feature in the BIOS. Enable this jumper and the "USB Wake-Up" support in the BIOS to wake up your system via USB devices.

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

## 2-9 Onboard Indicators

### LAN 1/LAN 2 LEDs

Two LAN ports (LAN 1/LAN 2) are located on the I/O backpanel. Each Ethernet LAN port has two LEDs. The yellow LED indicates activity, while the Link LED may be green, amber, or off to indicate the speed of the connection. See the tables at right for more information.

| GLAN 1/2 Activity Indicator LED Settings | | |
|---|---|---|
| Color | Status | Definition |
| Yellow | Flashing | Active |

| GLAN Ports 1/2 Link Indicator LED Settings | |
|---|---|
| LED Color | Definition |
| Off | No Connection/10 Mbps |
| Amber | 1 Gbps |
| Green | 100 Mbps |

### Main Power LED

A Main Power LED is located at LED1 on the motherboard. When this LED is on, the system power is on. Be sure to turn off the system power and unplug the power cord before removing or installing components. See the table on the right for more information.

| Main PWR LED Indicator LED Settings | |
|---|---|
| LED Color | Definition |
| Off | System Off (PWR cable not connected) |
| Green | System Power On |
| Green: Flashing Quickly | ACPI S1 State |

### Standby Power LED

The 5V Standby Power LED is located at LED5 on the motherboard. When this LED is on, the standby power is connected. Be sure to unplug the power cable before removing or installing components. See the table in the right for more information.

| Standby PWR LED Indicator LED Settings | |
|---|---|
| LED Color | Definition |
| Off | 5V Standby Power Off (PWR cable not connected) |
| Green | Standby PWR Cable Connected |

## 2-10 Serial ATA Connectors

The system supports one internal hard disk drive.

## 2-11 Installing Software

The Supermicro ftp site contains drivers and utilities for your system at ftp://ftp.supermicro.com. Some of these must be installed, such as the chipset driver.

After accessing the ftp site, go into the CDR_Images directory and locate the ISO file for your serverboard. Download this file to create a CD/DVD of the drivers and utilities it contains. (You may also use a utility to extract the ISO file if preferred.)

Another option is to go to the Supermicro Website at http://www.supermicro.com/products/. Find the product page for your serverboard here, where you may download individual drivers and utilities.

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


**Figure 2-5. Driver/Tool Installation Display Screen**

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

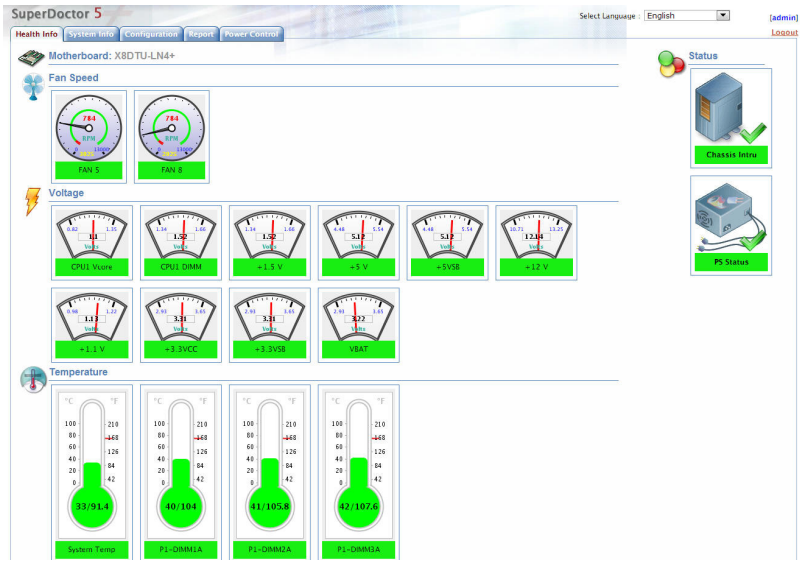
### SuperDoctor® 5

The Supermicro SuperDoctor 5 is a 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 User Name and Password for SuperDoctor 5 is ADMIN/ADMIN.

**Figure 2-6. SuperDoctor 5 Interface Display Screen (Health Information)**

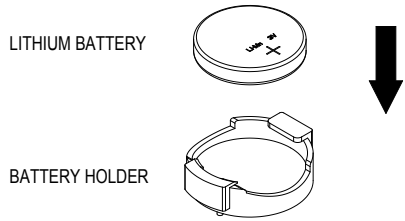



**Note:** The SuperDoctor 5 program and User's Manual can be downloaded from the Supermicro web site at http://www.supermicro.com/products/nfo/sms_sd5.cfm.

## 2-12 Onboard Battery

**Caution**: There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarites (see Figure 2-9). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (CR2032). Dispose of used batteries according to the manufacturer's instructions.

**Figure 2-7. Installing the Onboard Battery**




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.

# Chapter 3

# Chassis Components Setup

This chapter covers the steps required to install or replace components in the chassis. The only tool required is a Phillips screwdriver.

Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 4 and the warning/ precautions in the setup instructions

## 3-1 Removing Power

Before performing most setup or maintenance tasks, use the following procedure to ensure that power has been disconnected from the system.

1. Use the operating system to power down the system, following the on-screen prompts.

2. After the system has completely shut down, remove the AC power cord from the back of the chassis.

3. Remove the AC power cord from the power strip or wall outlet.

## 3-2 Installing Mounting Brackets

The chassis includes mounting brackets that allow it to be mounted in any convenient space in the work environment.

Decide on a suitable location for the server. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. Placed it near a grounded power outlet.

***Intsalling Mounting Brackets***

1. Power down the system as described in section 3-1.
2. Align the holes in the mounting bracket with those on both sides of the chassis as shown below.
3. Secure the mounting bracket to the chassis with four screws.

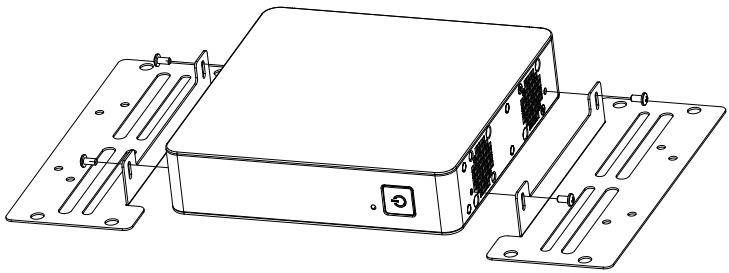


**Figure 3-1. Installing Mounting Brackets**

## 3-3 Removing the Chassis Cover

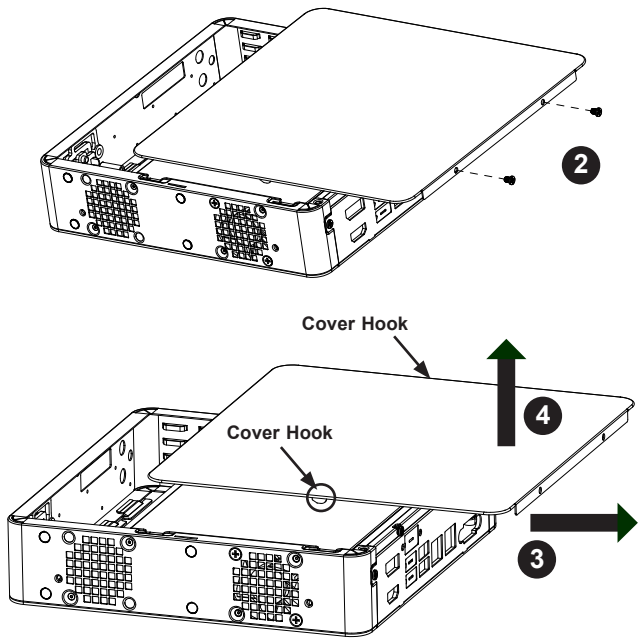



**Figure 3-2. Removing the Chassis Cover**

1. Power down the system as described in section 3-1.
2. Remove the two side screws that hold the chassis cover in place and set these aside for later use.
3. Slide the cover sideways as illlustrated above to release the front and rear cover hooks from the chassis.
4. Lift the cover up and off the chassis.

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

## 3-4 Installing the Hard Drive

The SC101S can accommodate a single fixed 2.5" hard drive of 9.5 mm thickness. It is installed to a mounting tray inside the chassis.

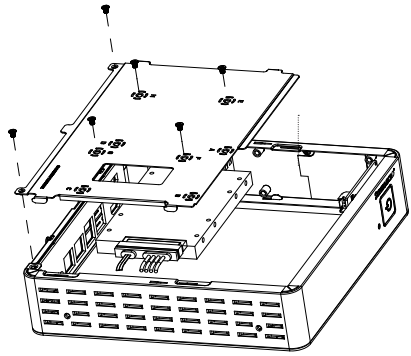


**Figure 3-3. Installing the Hard Drive**

***Installing the Hard Drive***

The motherboard should be installed before installing the hard drive.

1. Make sure there is no power to the system as described in section 3-1 and remove the chassis cover.

2. Remove the two screws securing the hard drive tray to the support bracket and set them aside for later use. Lift the tray out.

3. Place the hard drive into the tray and secure it to the tray with the screws provided with hard drive.

4. Return the hard drive tray assembly into the chassis, aligning the tabs of the tray with the slots in the chassis. Secure the tray to the chassis support bracket with the screws previously set aside.

5. Attach the cable SATA connector and to the motherboard connector. This cable carries both the SATA sginal and the SATA power.

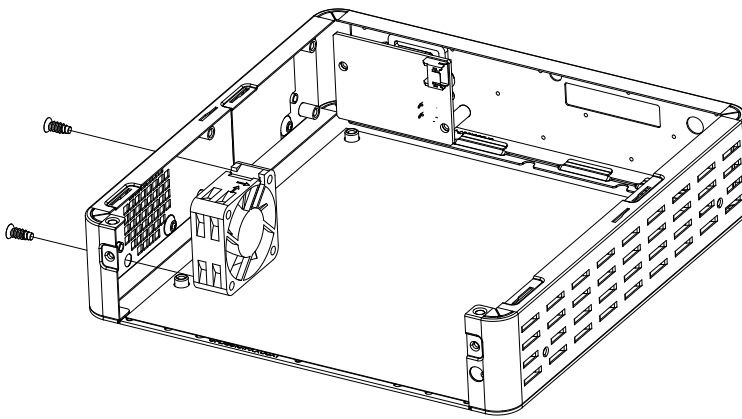
6. Reinstall the chassis cover and power up the system.

## 3-5 Replacing the System Fan

The SC101S includes one 4-cm system fan that provides cooling for the chassis.

1. Power down the system as described in section 3-1 and remove the AC power cord and the chassis cover.
2. Remove the failed fan power cable from motherboard.
3. Remove the screws securing the fan to the chassis wall and set these aside for later use.
4. Lift the fan out of the chassis.
5. Align the replacement fan with the holes in the wall of the chassis.
6. Secure the fan to the chassis wall using the screws previously set aside.
7. Reconnect the fan cable to motherboard.
8. Reinstall the chassis top cover.
9. Reconnect the AC power cord and power up the system.

**Figure 3-4. System Fan**



## Notes

# Chapter 4

# Standardized Warning Statements for AC Systems

## About Standardized Warning Statements

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

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis. Some warnings may not apply for your system.

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

### Warning Definition

**Warning!**

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

**警告の定義**

**この警告サインは危険を意味します。**

**人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、**

**電気回路に含まれる危険性に**注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

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

此警告符號代表危險。

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

Warnung

WICHTIGE SICHERHEITSHINWEISE

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

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

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

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

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

CONSERVEZ CES INFORMATIONS.

**תקנון הצהרות אזהרה**

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

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

تحذير! هذا الرمز يعني خطر انك في حالة يمكن أن تتسبب في اصابة جسدية .
قبل أن تعمل على أي معدات،كن على علم بالمخاطر الناجمة عن الدوائر
الكهربائية
وكن على دراية بالممارسات الوقائية لمنع وقوع أي حوادث
استخدم رقم البيان المنصوص في نهاية كل تحذير للعثور ترجمتها

안전을 위한 주의사항

경고!

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

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를

참조하십시오

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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

BEWAAR DEZE INSTRUCTIES

## Installation Instructions

**Warning!**

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

設置手順書

**システムを電源に接続する前に、設置手順書をお読み下さい。**

警告
将此系统连接电源前,请先阅读安装说明。

警告
將系統與電源連接前，請先閱讀安裝說明。

Warnung

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

¡Advertencia!

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

Attention

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

**יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.**

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

## Circuit Breaker

**Warning!**

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

**サーキット・ブレーカー**

**この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。**

**保護装置の定格が250 V、20 Aを超えないことを確認下さい。**

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

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

Warnung

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

¡Advertencia!

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

Attention

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

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

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

경고!

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

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 220V, 20A.

## Power Disconnection Warning

**Warning!**

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

**電源切断の警告**

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

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

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

¡Advertencia!

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

Attention

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

**אזהרה !**

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

يجب فصل النظام من جميع مصادر الطاقة وإزالة سلك الكهرباء من وحدة امداد الطاقة قبل
الوصول إلى المناطق الداخلية للهيكل لتثبيت أو إزالة مكونات الجهاز

경고!

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

Waarschuwing

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

## Equipment Installation

**Warning!**

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

**機器の設置**

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

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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

¡Advertencia!

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

Attention

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

**אזהרה !**

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

يجب أن يسمح فقط للموظفين المؤهلين والمدربين لتركيب واستبدال أو خدمة هذا الجهاز

경고!

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

Waarschuwing

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

## Restricted Area

**Warning!**

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

**アクセス制限区域**

**このユニットは、アクセス制限区域に設置されることを想定しています。**

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

**אזור עם גישה מוגבלת**

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

تم تخصيص هذه الوحدة لتركيبها في مناطق محظورة .
يمكن الوصول إلى منطقة محظورة فقط من خلال استخدام أداة خاصة،
قفل ومفتاح أو أي وسيلة أخرى للالأمان

경고!

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

Waarschuwing

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

## Battery Handling

**Warning!**

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

**電池の取り扱い**

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

警告
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 استبدال البطارية بطريقة غير صحيحة فعليك استبدال البطارية
فقط بنفس النوع أو ما يعادلها كما أوصت به الشركة المصنعة
تخلص من البطاريات المستعملة وفقا لتعليمات الشركة الصانعة

경고!

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

Waarschuwing

Er is 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.

## Redundant Power Supplies

**Note**: Does not apply to this E200-8B server.

**Warning!**

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

**冗長電源装置**
**このユニットは複数の電源装置が接続されている場合があります。**
**ユニットの電源を切るためには、すべての接続を取り外さなければなりません。**

警告
此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告
此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

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

¡Advertencia!

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

Attention

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

**אם קיים יותר מספק אחד**

**אזהרה !**
**ליחדה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן את היחידה.**

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة.
يجب إزالة كافة الاتصالات لعزل الوحدة عن الكهرباء

경고!

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

Waarschuwing

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

## **Backplane Voltage** (if applicable to your system)

**Warning!**

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

**バックプレーンの電圧**
**システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。**
**修理する際には注意ください。**

警告
当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告
當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

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

¡Advertencia!

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

Attention

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

**מתח בפנל האחורי**

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

هناك خطر من التيار الكهربائي أوالطاقة الموجودة على اللوحة
عندما يكون النظام يعمل كن حذرا عند خدمة هذا الجهاز

경고!

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

Waarschuwing

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

## Comply with Local and National Electrical Codes

**Warning!**

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

**地方および国の電気規格に準拠**
**機器の取り付けはその地方および国の電気規格に準拠する必要があります。**

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

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

Attention

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

**תיאום חוקי החשמל הארצי**

**אזהרה !**
**התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.**

تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والوطنية المتعلقة بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

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

## Product Disposal

**Warning!**

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

**製品の廃棄**

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

警告
本产品的废弃处理应根据所有国家的法律和规章进行。

警告
本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

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

¡Advertencia!

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

Attention

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

**סילוק המוצר**

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

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

경고!

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

Waarschuwing

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

## **Hot Swap Fan Warning** (if applicable to your system)

**Warning!**

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

**ファン・ホットスワップの警告**

**シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。**

警告
当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

警告
當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

Warnung

Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

¡Advertencia!

Los ventiladores podran dar vuelta cuando usted quite ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

**אזהרה !**
**כאשר מסירים את חלקי המאוורר מהמארז, יתכן והמאוררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר**

من الممكن أن المراوح لا تزال تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع ومفكات البراغي
وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

경고!

섀시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조림품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

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

## Power Cable and AC Adapter

**Warning!**

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

**電源コードとACアダプター**

**製品を設置する場合、提供または指定された接続ケーブル、電源コードとACアダプターを使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSEマークがコードに表記)を Supermicroが指定する製品以外に使用することを禁止しています。**

警告

安装此产品时,请使用本身提供的或指定的连接线,电源线和电源适配器.使用其它线材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告

安裝此產品時,請使用本身提供的或指定的連接線,電源線和電源適配器.使用其它線材或適配器可能會引起故障或火災。除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止使用未經UL或CSA認證的線材。(線材上會顯示UL/CSA符號)。

Warnung

Bei der Installation des Produkts, die zur Verfügung gestellten oder benannt Anschlusskabel, Stromkabel und Netzteile. Verwendung anderer Kabel und Adapter kann zu einer Fehlfunktion oder ein Brand entstehen. Elektrische Geräte und Material Safety Law verbietet die Verwendung von UL-oder CSA-zertifizierte Kabel, UL oder CSA auf der Code für alle anderen elektrischen Geräte als Produkte von Supermicro nur bezeichnet gezeigt haben.

¡Advertencia!

Al instalar el producto, utilice los cables de conexión previstos o designados, los cables y adaptadores de CA. La utilización de otros cables y adaptadores podría ocasionar un mal funcionamiento o un incendio. Aparatos Eléctricos y la Ley de Seguridad del Material prohíbe el uso de UL o CSA cables certificados que tienen UL o CSA se muestra en el código de otros dispositivos eléctricos que los productos designados por Supermicro solamente.

Attention

Lors de l'installation du produit, utilisez les bables de connection fournis ou désigné. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et de loi sur la sécurité Matériel interdit l'utilisation de UL ou CSA câbles certifiés qui ont UL ou CSA indiqué sur le code pour tous les autres appareils électriques que les produits désignés par Supermicro seulement.

**חשמליים ומתאמי AC**

**אזהרה !**

**כאשר מתקינים את המוצר, יש להשתמש בכבלים, ספקים ומתאמים AC אשר נועדו וסופקו לשם כך. שימוש בכל כבל או מתאם אחר יכול לגרום לתקלה או קצר חשמלי. על פי חוקי שימוש במכשירי חשמל וחוקי בטיחות, קיים איסור להשתמש בכבלים המוסמכים ב- UL או ב- CSA (כשאר מופיע עליהם קוד של UL/CSA) עבור כל מוצר חשמלי אחר שלא צוין על ידי סופרמיקרו בלבד.**

عند تركيب الجهاز يجب استخدام كابلات التوصيل،والكابلات الكهربائية ومحولات التيار المتردد
التي . أن استخدام أي كابلات ومحولات أخرى يتسبب في حدوث عطل أو حريق.
تم توفيرها لك مع المنتج
الأجهزة الكهربائية ومواد قانون السلامة يحظر استخدام الكابلات CSA أو UL معتمدة من قبل
لأي أجهزة كهربائية أخرى غير المنتجات المعينة من قبل Supermicro
(التي تحمل علامة UL/CSA)

경고!

제품을 설치할 때에는 제공되거나 지정된 연결케이블과 전원케이블, AC어댑터를 사용해야 합니다. 그 밖의 다른 케이블들이나 어댑터들은 고장 또는 화재의 원인이 될 수 있습니다. 전기용품안전법 (Electrical Appliance and Material Safety Law)은 슈퍼마이크로에서 지정한 제품들 외에는 그 밖의 다른 전기 장치들을 위한 UL또는 CSA에서 인증한 케이블(전선 위에 UL/CSA가 표시)들의 사용을 금지합니다.

Waarschuwing

Bij het installeren van het product, gebruik de meegeleverde of aangewezen kabels, stroomkabels en adapters. Het gebruik van andere kabels en adapters kan leiden tot een storing of een brand. Elektrisch apparaat en veiligheidsinformatiebladen wet verbiedt het gebruik van UL of CSA gecertificeerde kabels die UL of CSA die op de code voor andere elektrische apparaten dan de producten die door Supermicro alleen.

## Notes

# Chapter 5

# BIOS

## 5-1 Introduction

This chapter describes the AMI BIOS setup utility for the X10SBA (-F). The ROM BIOS is stored in a Flash EEPROM and can be easily updated. This chapter describes the basic navigation of the AMI BIOS setup utility screens.

**Note:** For AMI BIOS recovery, please refer to the UEFI BIOS Recovery Instructions in Appendix C.

### Starting BIOS Setup Utility

To enter the AMI BIOS setup utility screens, press the <Delete> key while the system is booting up.

**Note**: In most cases, the <Delete> key is used to invoke the AMI 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 AMI BIOS setup menu screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured. Options in blue can be configured by the user. 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**: the AMI BIOS has default text messages built in. Supermicro retains the option to include, omit, or change any of these text messages.)

The AMI BIOS setup utility uses a key-based navigation system called "hot keys." Most of the AMI BIOS setup utility "hot keys" can be used at any time during the setup navigation process. These keys include <F1>, <F4>, <Enter>, <Esc>, arrow keys, etc.

**Note**: Options printed in **Bold** are default settings.

### How To Change the Configuration Data

The configuration data that determines the system parameters may be changed by entering the AMI BIOS setup utility. This setup utility can be accessed by pressing <Del> at the appropriate time during system boot.

### How to Start the Setup Utility

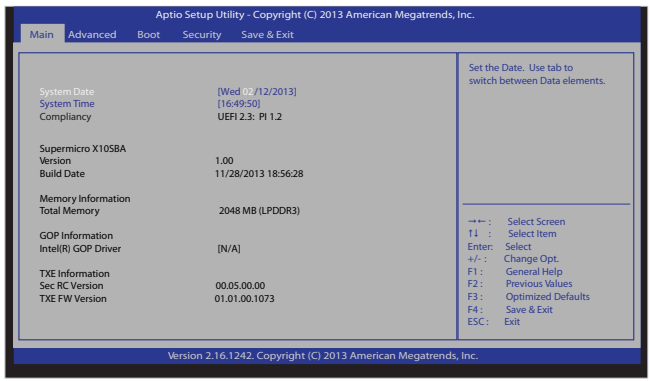
Normally, the only visible Power-On Self-Test (POST) routine is the memory test. As the memory is being tested, press the <Delete> key to enter the main menu of the AMI BIOS setup utility. From the main menu, you can access the other setup screens. An AMI BIOS identification string is displayed at the left bottom corner of the screen, below the copyright message.

**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 have to update the BIOS, do not shut down or reset the system while the BIOS is updating. This is to avoid possible boot failure.

## 5-2 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.

The following Main menu items will be displayed:



**System Date/System Time**

Use this option to change the system date and time. Highlight *System Date* or *System Time* using the arrow keys. Enter new values using the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in Day 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.

**Compliancy:** This item displays compliancy information.

The following BIOS items will also be displayed:

**Supermicro X10SBA**

**Version**

**Build Date**

**Memory Information**

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

**GOP Information**

**Intel® GOP Driver:** This displays the information of Intel Graphics onboard driver.

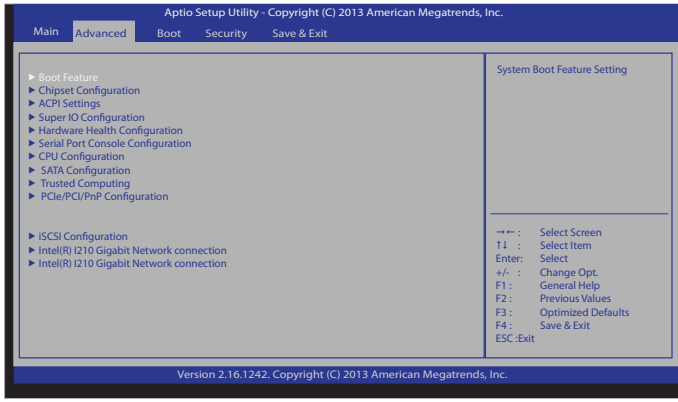
**TXE Information**

**Sec RC Version**

**TXE FW Version**

## 5-3 Advanced Setup Configurations

Use the arrow keys to select Advanced Setup and press <Enter> to access the submenu items:




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

### ▶Boot Feature

#### Quiet Boot

This feature selects 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 **Enabled** and Disabled.

#### AddOn ROM Display Mode

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

#### Bootup Num-Lock

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

**Wait For 'F1' If Error**

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

**Interrupt 19 Capture**

Interrupt 19 is the software interrupt that handles the boot disk function. When this item is set to Enabled, the ROM BIOS of the host adaptors will "capture" Interrupt 19 at bootup and allow the drives that are attached to these host adaptors to function as bootable disks. If this item is set to Disabled, the ROM BIOS of the host adaptors will not capture Interrupt 19, and the drives attached to these adaptors will not function as bootable devices. The options are **Enabled** and Disabled.

**Re-try Boot**

If this item 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.

## Power Configuration

**Watch Dog Function**

If enabled, the Watch Dog timer will allow the system to reboot when it is inactive for more than 5 minutes. The options are Enabled and **Disabled.**

**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 4 seconds or longer. Select Instant Off to instantly power off the system as soon as the user presses the power button. The options are 4 Seconds Override and **Instant Off.**

**Restore on AC Power Loss**

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 Power-On, Stay-Off and **Last State**.

**EuP Support**

Select Enable for EuP Option support to enhance power performance. The options are Enabled and **Disabled.**

## ▶Chipset Configuration

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

## ▶North Bridge

The following North Bridge information will be displayed:

## ▶Graphics Configuration

This item displays the following graphics information:

**GOP Configuration**

**GOP Driver**

Select Enabled to enable GOP driver and to load the VBIOS. The options are **Enabled** and Disabled.

**Graphics Configuration**

**Integrated Graphics Device**

Select Enabled to support integrated graphics devices. The options are **Enabled** and Disabled.

**IGD (Integrated Graphics Device) Turbo Enable**

Select Enabled to enable the turbo mode support for integrated graphics devices. The options are **Enabled** and Disabled.

**Primary Display**

Use this feature to select the graphics device to be used as the primary display. The options are **Onboard** and offboard.

**GFX Boost**

Select Enabled to boost graphics performance. The options are **Disabled,** and Enabled.

**DVMT (Dynamic Video Memory Technology) Pre-Allocated**

Dynamic Video Memory Technology (DVMT) allows dynamic allocation of system memory to be used for video devices to ensure best utilization of available system memory based on the DVMT 5.0 platform. The options are **64M**, 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M, 416M, 448M, 480M, and 512M.

**DVMT Total Gfx Mem**

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

**Aperture Size**

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

**GTT Size**

Use this feature to set the memory size to be used by the graphics translation table (GTT). The options are 1MB and **2MB.**

**Spread Spectrum Clock**

If this feature is set to Enabled, the BIOS will monitor the level of electromagnetic interference caused by the components and will attempt to reduce the interference whenever needed. The options are Enabled and **Disabled**.

**Memory Information**

The information of the following items will display:

- Total Memory
- Memory Frequency
- Memory SODIMM1
- Memory SODIMM2

## ▶South Bridge

The following South Bridge information will be displayed:

## ▶Azalia HD Audio

**Audio Configuration**

**Audio Controller**

Select Enabled to enable the Azalia Audio Controller. The settings are **Enabled** and Disabled.

**Azalia HDMI Codec**

Select Enabled to enable the internal HDMI CODEC (Coder-Decoder) for Azalia. The settings are **Enabled** and Disabled.

## ▶USB Configuration

**Legacy USB Support**

This feature enables support for legacy USB devices. Select Auto to disable legacy support if USB devices are not present. Select Disable to have USB devices available only for EFI applications. The options are **Enabled,** Disabled and Auto.

**USB 3.0 Support**

Select Enabled for USB 3.0 support. The options are Disabled and **Enabled**.

**XHCI Hand-Off**

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

**EHCI Hand-Off**

This item is for operating systems that do not support Enhanced Host Controller Interface (EHCI) hand-off. When this item is enabled, EHCI ownership change will be claimed by the EHCI 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**

This feature enables or disables I/O port 60h/64h emulation support. This should be enabled for complete USB keyboard legacy support for the operating systems that do not support Legacy USB devices. The options are Disabled and **Enabled**.

**XHCI Mode**

Select Enabled to support the operation mode for the XHCI (Extensible Host Controller Interface) controller. The options are Enabled and **Disabled**.

**USB Port 0**

Select Enabled for USB Port 0 support. The options are **Enabled** and Disabled.

**USB Port 1**

Select Enabled for USB Port 1 support. The options are **Enabled** and Disabled.

**USB Port 2**

Select Enabled for USB Port 2 support. The options are **Enabled** and Disabled.

**USB Port 3**

Select Enabled for USB Port 3 support. The options are **Enabled** and Disabled.

## ▶PCI Express Configuration

This item displays the information of onboard PCI-E slots.

**PCI Express Port 0**

This item enables or disables the PCI Express Port 0 on the motherboard. The options are **Enabled** and Disabled.

**Speed**

This feature allows the user to set the PCIe port speed. The options are Auto, **Gen 2** and Gen 1.

**High Precision Timer**

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

**BIOS Read/Write Protection**

If this feature is set to Enabled, BIOS Read/Write Protection will be enabled in the BIOS SPI region which will not allow any data to be read from or written into the SPI region to ensure data integrity in this region. The options are Enabled and **Disabled**.

## ▶ACPI Settings

**ACPI Sleep State**

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

**High Precision Timer**

Select Enabled to activate the High Precision Event Timer (HPET) that produces periodic interrupts at a much higher frequency than a Real-time Clock (RTC) does

in synchronizing multimedia streams, providing smooth playback and reducing the dependency on other timestamp calculation devices, such as an x86 RDTSC Instruction embedded in the CPU. The High Performance Event Timer is used to replace the 8254 Programmable Interval Timer. The options are **Enabled** and Disabled.

**Boot Timer with HPET Timer (High Precision Event Timer)**

Select Enabled to allow the Boot Timer to take the input from the High Precision Time into calculation when calculating time events for the system. The options are Enabled and **Disabled**.

## ▶Super IO Configuration

**Super IO Chip NCT5104DSEC**

### ▶Serial Port 1 Configuration/Serial Port 2 Configuration/Serial Port 3 Configuration//Serial Port 4 Configuration

**Serial Port**

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

**Device Settings**

This item displays the base I/O port address and the Interrupt Request address 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 Serial Port 1, Serial Port 2, Serial Port 3, or Serial Port 4. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address to a serial port specified.

The options for Serial Port 1 are **Auto**, (IO=3F8h; IRQ=4), (IO=3F0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=3E0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), and (IO=3D0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12).

The options for Serial Port 2 are **Auto**, (IO=2F8h; IRQ=4), (IO=3F0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=3E0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), and (IO=3D0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12).

The options for Serial Port 3 are **Auto**, (IO=3E0h; IRQ=4), (IO=3F0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=3E0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), and (IO=3D0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12).

The options for Serial Port 4 are **Auto**, (IO=2E0h; IRQ=4), (IO=3F0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=3E0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), and (IO=3D0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12).

## ▶Hardware Health Configuration

**PC Health Status**

**Fan Speed Control Mode**

This feature allows the user to decide how the system controls the speeds of the onboard fans. The CPU temperature and the fan speed are correlative. When the CPU on-die temperature increases, the fan speed will also increase for effective system cooling. Select "Full Speed" to allow the onboard fans to run at full speed (of 100% Pulse Width Modulation Duty Cycle) for maximum cooling. This setting is recommended for special system configuration or debugging. Select "Standard" for the onboard fans to run at 50% of the Initial PWM Cycle in order to balance the needs between system cooling and power saving. This setting is recommended for regular systems with normal hardware configurations. The options are Full Speed (@100% of PWM Cycle), **Standard** (@50% of PWM Cycle), Heavy I/O, and PUE (Power Usage Efficiency).

The following items will be displayed:

- Peripheral Temperature
- Fan 1 Speed
- Fan 2 Speed
- 3VCC
- AVCC
- VSB3v
- VBAT

## ▶Serial Port Console Redirection

**COM0**

Use this feature to enable console redirection for the COM0 port. The options are **Enabled** and Disabled.

## ▶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.

**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 ANSI, VT100, **VT100+**, and VT-UTF8.

**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**

This feature allows the user 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 **Enabled** and Disabled**.**

**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, SC0, ESCN, and VT400.

**Redirection After BIOS Post**

Use this feature to enable or disable Legacy Console Redirection after BIOS POST. When this item is set to Bootloader, Legacy Console Redirection is disabled before booting the OS. When set to Always Enable, Legacy Console Redirection remains enabled when booting the OS. The options are **Always Enable** and Bootloader.

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

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

**Console Redirection (for EMS)**

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

## ▶Console Redirection Settings (for EMS)

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 Management Port**

The feature selects a serial port used by the Microsoft Windows Emergency Management Services (EMS) to communicate with a remote server. The default setting is **COM0**.

**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 ANSI, VT100, VT100+, and **VT-UTF8**.

**Bits Per Second**

This item 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**

This feature allows the user 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**

The status of each item above is displayed.

## ▶CPU Configuration

## ▶Socket 0 CPU Configuration

The following CPU information will be displayed:

- Type of CPU
- CPU Signature
- Microcode Patch
- Max (Maximum) CPU Speed
- Min (Minimum) CPU Speed
- Processor Cores
- Intel HT(Hyper-Threading) Technology
- Intel VT-x (Virtualization) Technology
- L1 Data Cache
- L1 Code Cache
- L2 Cache
- L3 Cache

**64-bit**: This item indicates whether 64-bit is supported by the processor.

**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. (Please refer to Intel's web site for more information.) The options are **All**, and 1.

**Limit CPUID Maximum**

Select Enabled to set the maximum CPU ID value and to boot a legacy OS that cannot support processors with extended CPUID functions. The options are Enabled and **Disabled** (for the Windows OS).

**Execute Disable Bit (Available if supported by the OS & the CPU)**

Set to Enabled to enable the Execute Disable Bit to allow the processor to designate areas in the system memory where an application code can execute and where it

cannot, thus preventing a worm or a virus from flooding illegal codes to overwhelm the processor or damage the system during an attack. The default is **Enabled**. (Refer to Intel and Microsoft Web Sites for more information.)

**Hardware Prefetcher (Available when supported by the CPU)**

If set to Enabled, 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 (Available when supported by the CPU)**

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

**Note**: If there is any change to this setting, you will need to power off and reboot the system for the change to take effect. Please refer to Intel's web site for detailed information.

**Intel® Virtualization Technology (Available when supported by the CPU)**

Select Enabled to use the Intel Virtualization Technology to allow one platform to run multiple operating systems and applications in independent partitions, creating multiple "virtual" systems in one physical computer. The options are **Enabled** and Disabled.

**Power Technology**

This feature allows the user to configure power management settings. The options are Disabled, **Energy Efficiency**, and Custom.

## ▶SATA Configuration

When this submenu is selected, the AMI BIOS automatically detects the presence of the SATA Devices and displays the following items:

**Serial-ATA (SATA)**

Select Enabled to enable onboard SATA support. The options are **Enabled** and Disabled.

**SATA Test Mode Selection**

Select Enabled to support SATA Test Mode Selection. The options are Enabled, and **Disabled**.

**SATA Mode (Available when the item: Serial-ATA is enabled)**

This item selects the mode for the installed SATA drives. The options are IDE Mode, and **AHCI Mode**.

If the item above -SATA Mode Select is set to AHCI, the following items are displayed:

**Serial-ATA Port 0/ Serial-ATA Port 1**

Select Enabled to enable a SATA port specified by the user. The options are **Enabled** and Disabled.

If the item above - SATA Mode Select is set to IDE, the following items are displayed:

**Serial-ATA Port 0/ Serial-ATA Port 1**

Select Enabled to enable a SATA port specified by the user. The options are **Enabled** and Disabled.

## ▶Trusted Computing (Available when a TPM device is detected by the BIOS)

**Configuration**

**Security Device Support**

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

**TPM State**

Select Enabled to use TPM (Trusted Platform Module) settings to enhance system data security. Please reboot your system for any change on the TPM state to take effect. The options are Disabled and **Enabled**.

**Pending Operation**

Use this item to schedule a TPM-related operation to be performed by a security device for system data integrity. You system will reboot to carry out a pending TPM operation. The options are **None**, Enable Take Ownership, Disable Take Ownership, and TPM Clear.

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

**Current Status Information**

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

## ▶PCIe/PCI/PnP Configuration

This feature allows the user to set the PCI/PnP configurations for the following items:

**VGA Palette Snoop**

Select Enabled to support VGA palette register snooping which will allow the PCI cards that do not contain their own VGA color palette to examine the video cards palette and mimic it for proper color display. The options are **Disabled** and Enabled.

**Above 4G Decoding**

Select Enabled for 64-bit devices to be decoded above the 4GB address space If 64bit PCI decoding is supported by the system. The options are **Disabled** and Enabled.

**Marvell SATA Controller**

Select Enabled to support the onboard Marvell SATA controller to use PEX8605 Port 3. The options are **Enabled** and Disabled.

**Onboard LAN1/Onboard LAN2**

Select Enabled to enable a LAN port specified by the user. The options are **Enabled** and Disabled.

**Option ROM Execution Policy**

**Video OPROM**

This feature controls how the system executes UEFI (Unified Extensible Firmware Interface), and Legacy Video OPROM. Select Legacy Only to boot the system using a legacy video device installed on the motherboard. The options are Do Not Launch, UEFI Only and **Legacy Only**.

**Storage OPROM**

This feature controls how the system executes UEFI (Unified Extensible Firmware Interface), and Legacy Storage OPROM. Select Legacy Only to boot the system using a legacy storage device installed on the motherboard. The options are Do Not Launch, UEFI Only and **Legacy Only**.

**Other PCI Device ROM**

This feature selects a PCI device OPROM to launch for system boot if this device is not a network, mass storage, or video device. The options are UEFI Only and **Legacy Only**.

**Slot1 PCI-E 2.0 x2 (in x8) OPROM**

Use this feature to enable or disable PCI-Express slot Option ROM support to boot the computer using a device installed on the slot specified by the user. The options are Disabled, **Legacy**, EFI, and EFI and Legacy.

**Onboard LAN1 Option ROM/Onboard LAN2 Option ROM**

Select iSCSI to use the iSCSI Option ROM to boot the computer using an iSCSI device installed in a LAN port specified. Select PXE (Preboot Execution Environment) to boot the computer using a PXE device installed in a LAN port specified. Select Disabled to prevent system boot using a device installed in a LAN port. The options for Onboard LAN1 Option ROM are Disabled, **PXE** and iSCSI. The options for Onboard LAN2 Option ROM are **Disabled**, and PXE.

**Network Stack**

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

**Ipv4 PXE Support (Available when Network Stack is set to Enabled)**

Select Enabled to enable Ipv4 PXE (Preboot Execution Environment) for boot support. If this feature is set to Disabled, Ipv4 PXE boot option will not be supported. The options are **Enabled** and Disabled.

## ▶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

## ▶Intel®I210 Gigabit Network Connection--00:25:90:90..

**PORT CONFIGURATION MENU**

## ▶NIC Configuration

**Link Speed**

This feature allows the user to set the Network Interface Connection speed for a LAN port specified by the user. The options are **Auto Negotiated**, 10 Mbps Half, 10 Mbps Full, 100 Mbps Half, and 10 Mbps Full.

**Wake On LAN**

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

**Blink LEDs**

This feature indicates the LAN ports that are connected to the network using blinking LED indicators.

**PORT CONFIGURATION INFORMATION**

The following port configuration information will be displayed:

UEFI Driver:

Adapter PBA:

Chip Type:

PCI Device ID:

Bus: Device: Function:

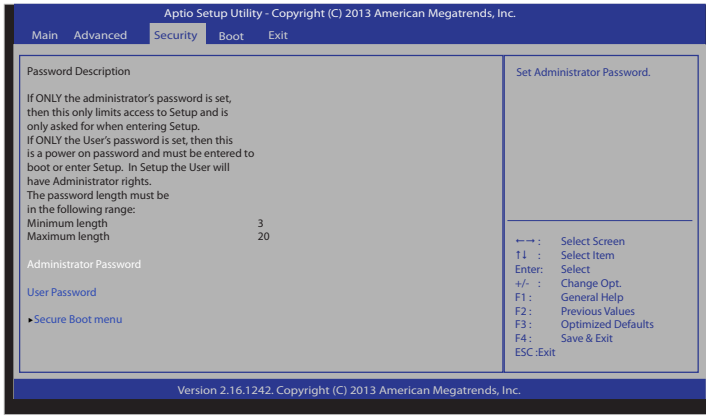
Link Status

MAC Address:

Virtual MAC Address:

## 5-4 Security Settings

This menu allows the user to configure the following security settings for the system.




### Administrator Password

Use this feature to set the administrator password which is required to enter the BIOS setup utility. The length of the password should be from 3 characters to 20 characters long.

### User Password

Use this feature to set a user password which is required to log into the system and to enter the BIOS setup utility. The length of the password should be from 3 characters to 20 characters long.

### ▶Secure Boot Menu

### Secure Boot

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

### Secure Boot Mode

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

**▶Key Management**

**Default Keys Provision**

Select Enable to install all manufacture defaults for the following system security settings. The options are **Disabled** and Enabled.

**▶Delete All Secure Boot Variables**

This feature allows the user to delete all secure boot settings previous stored in the system.

**▶Save All Secure Boot Variables**

This feature allows the user to save the secure boot settings specified by the user.

**Enroll All Factory Default Keys**

This feature allows the user to store security-related boot data in a file of the same named in the system root folder of your computer.

**Platform Key (PK)**

**▶Delete PK**

Select <Yes> to confirm deletion of the Platform Key (PK) from the NVRAM (Non-Volatile RAM).

**▶Set New Key**

Select <Yes> to load the manufacture_default platform keys for your system. Select No to load the default settings from other sources.

**Key Exchange Key (KEK)**

**▶Delete KEK (Key Exchange Key)**

Select <Yes> to confirm deletion of the KEK from the NVRAM (Non-Volatile RAM)..

**▶Set New KEK (Key Exchange Key)**

Select <Yes> to confirm that a new KEK will be set in the NVRAM (Non-Volatile RAM)..

**▶Append KEK (Key Exchange Key)**

Select <Yes> to load the new KEK from the manufacture defaults. Select <No> to load the new KEK from other sources.

**Authorized Signatures**

**▶Delete DB (DataBase)**

Select <Yes> to confirm deletion of a database from the NVRAM (Non-Volatile RAM).

**▶Set New DB (DataBase)**

Select <Yes> to confirm that a new database will be set in the NVRAM (Non-Volatile RAM).

**▶Append DB (DataBase)**

Select <Yes> to load the new database from the manufacture defaults. Select <No> to load the new database from other sources

**Authorized TimeStamps**

**▶Delete DBT (DataBase Timer)**

Select <Yes> to confirm deletion of the database timer from the NVRAM (Non-Volatile RAM).

**▶Set New DBT (DataBase Timer)**

Select <Yes> to confirm that the new database timer will be set in the NVRAM (Non-Volatile RAM).

**▶Append DBT (DataBase Timer)**

Select <Yes> to load the new database timer from the manufacture defaults. Select <No> to load the new database timer from other sources

**Forbidden Signatures**

**▶Delete DBX**

Select <Yes> to confirm deletion of the DBX files from the Non-Volatile RAM (NVRAM).

**▶Set New DBX**

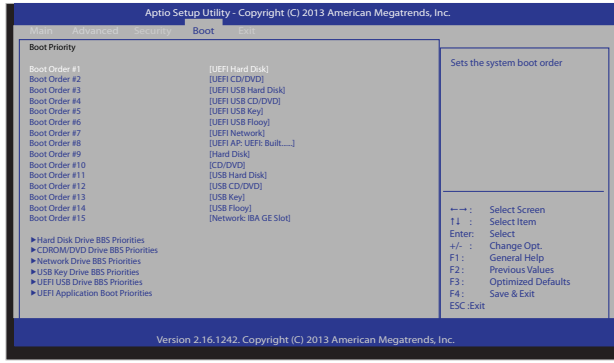
Select <Yes> to confirm that the new DBX files will be downloaded to the Non-Volatile RAM (NVRAM).

**▶Append DBX (DataBase Timer)**

Select <Yes> to load the new DBX files from the manufacture defaults. Select <No> to load the new DBX files from other sources.

## 5-5 Boot Settings

Use this feature to configure Boot Settings:




**Set Boot Priority**

This option prioritizes the order of bootable devices that the system to boot from. Press [ENTER] on each entry from top to bottom to select devices.

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

**▶Hard Disk Drive BBS Priorities**

- Boot Order #1

**▶CDROM/DVD Drive BBS Priorities**

- Boot Order #1

**▶Network Drive BBS Priorities**

- Boot Order #1

**▶USB Key Drive BBS Priorities**

- Boot Order #1

**▶UEFI USB Key Drive BBS Priorities**

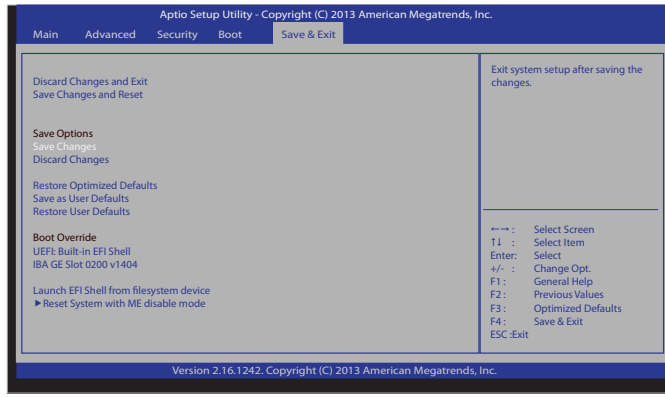
- Boot Order #1

**▶UEFI Application Boot Priorities**

- Boot Order #1

## 5-6 Save & Exit

Select the Exit tab from the BIOS setup utility screen to enter the Exit BIOS Setup screen.




### 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 leave the BIOS setup utility and reboot the computer for the new system configuration parameters can take effect. Select Save Changes and Exit from the Exit menu and press <Enter>.

### Save Options

### 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.

### Restore Defaults

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

**Save As User Defaults**

To set this feature, select Save as User Defaults from the Exit menu and press <Enter>. This enables 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**

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

**UEFI: Built-in EFI Shell**

**IBA GE Slot 0200 v1404**

**Launch EFI Shell from filesystem device**

Select this item and press <Enter> launch EFI Shell for your computer.

**Reset System with ME Disable Mode**

Select this item and press <Enter> to reset your system when your system is in Manufacture (ME) Disabled mode.

# Appendix A

# BIOS Error Beep Codes

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

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

**Fatal errors** will not allow the system to continue to bootup. If a fatal error occurs, you should consult with your system manufacturer for possible repairs.

These fatal errors are usually communicated through a series of audible beeps. The numbers on the fatal error list correspond to the number of beeps for the corresponding error.

| BIOS Error Beep Codes | | |
|---|---|---|
| **Beep Code/LED** | **Error Message** | **Description** |
| 1 beep | Refresh | Circuits have been reset. (Ready to power up) |
| 5 short beeps + 1 long beep | Memory error | No memory detected in the system |
| 5 beeps | Display memory read/write error | Video adapter missing or with faulty memory |
| OH LED On | System OH | System Overheat |

# Notes

# Appendix B

# System Specifications

### Processors

One Intel Celeron J1900 SoC (System on a Chip) 64-bit, 22 nm low-power quad-processor.

### BIOS

16MB SPI Flash EEPROM with AMI® BIOS

### Memory Capacity

Two sockets that can support up to 8GB of low-voltage, Non-ECC DDR3-1333 SO-DIMM memory.

**Note:** Check the Supermicro website (www.supermicro.com) for the latest memory support information.

### SATA

One SATA drive, 3.0 (mSATA) or SATA 2.0, plus one SATA DOM slot

### Motherboard

X10SBA, Mini ITX form factor

Dimensions: 6.70" x 6.70" (170.18 mm x 170.18 mm)

### Chassis

SC101S, Mini ITX form factor
Dimensions: (WxHxD) 7.68 x 1.7 x 7.68 in. (195 x 43 x 195 mm)

### Weight

Gross: 5.75 lbs. (2.6 kg.)

### System Cooling

One 4-cm system fan

### Power Supply

60W power adapter to supply system power from standard 110V wall outlet

### Operating Environment

Operating Temperature: 0º to 40º C (32º to 104º F)

Non-operating Temperature: -20º to 60º C (-40º to 140º F)

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

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

### Regulatory Compliance

### Regulatory Compliance

Electromagnetic Emissions: FCC Class B, EN 55022 Class B, EN 61000-3-2/3-3, CISPR 22 Class B

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

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

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

**(continued from front)**