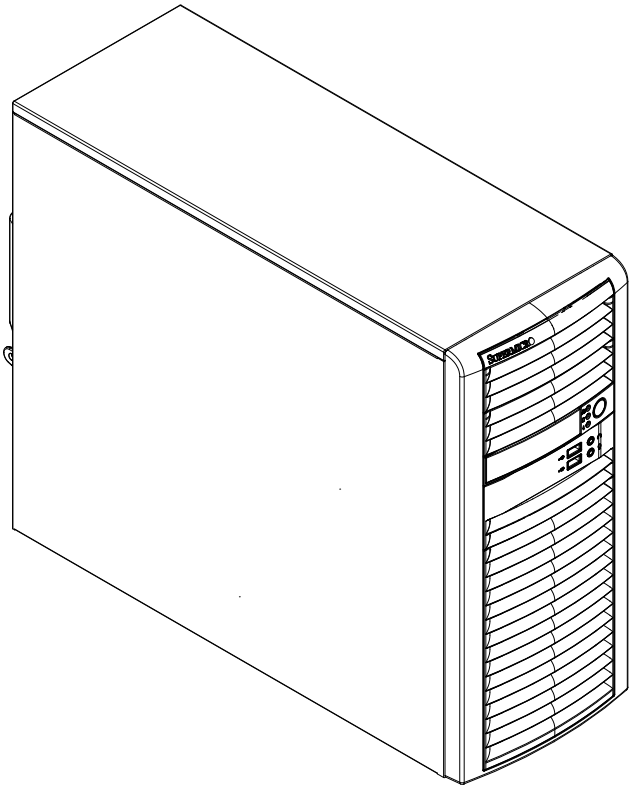
SuperWorkstation
5039A-I



USER'S MANUAL

Revision 1.0

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

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

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

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

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

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

WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

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

Manual Revision 1.0

Release Date: December 19, 2017

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

Copyright © 2017 by Super Micro Computer, Inc.
All rights reserved.
Printed in the United States of America

Preface

About this Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the 5039A-I server. Installation and maintenance should be performed by experienced technicians only.

Refer to the specifications page on our website for updates on supported memory, processors and operating systems (http://www.supermicro.com).

Notes

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

- Supermicro product manuals: http://www.supermicro.com/support/manuals/
- Product drivers and utilities: ftp://ftp.supermicro.com
- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm

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

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

Warnings

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

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

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

Contents

Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc. 980 Rock Ave. San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information) support@supermicro.com (Technical Support)
Website:	www.supermicro.com

Europe

Address:	Super Micro Computer B.V. Het Sterrenbeeld 28, 5215 ML 's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	sales@supermicro.nl (General Information) support@supermicro.nl (Technical Support) rma@supermicro.nl (Customer Support)
Website:	www.supermicro.nl

Asia-Pacific

Address:	Super Micro Computer, Inc. 3F, No. 150, Jian 1st Rd. Zhonghe Dist., New Taipei City 235 Taiwan (R.O.C)
Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3992
Email:	support@supermicro.com.tw
Website:	www.supermicro.com.tw

Chapter 1

Introduction

1.1 Overview

The SuperWorkstation 5039A-I is a single processor workstation in the SC732D3-903B chassis with an X11SRA motherboard. It is useful for small/medium businesses, professional video editing, or 3D modeling.

In addition to the motherboard and chassis, several included parts are listed below.

Main Parts List		
Description	**Part Number**	**Quantity**
Power supply	PWS-903-PQ	1
Fans	FAN-0124L4 FAN-0077L4	1 standard 1 optional
(*Optional*) Active CPU heatsink	SNK-P0050AP4	1
(*Optional*) 2.5" to 3.5" SSD/HDD adapter tray	MCP-220-73102-0N	1
(*Optional*) 2.5" HDD cage (4x Internal 2.5" HDD)	MCP-220-73201-0N	1
(*Optional*) 5.25" HH 24X DVD-RW SATA DRIVE PBF	DVM-LITE-DVDRW24-HBT	1

1.2 Unpacking the System

Inspect the box in which the server was shipped and note if it was damaged. If any equipment appears damaged, file a damage claim with the carrier who delivered it.

1.3 System Features

The following table provides you with an overview of the main features of the 5039A-I. Refer to Appendix C for additional specifications.

System Features
Motherboard
X11SRA
Chassis
SC732D3-903B
CPU
Supports Intel Xeon W-21xx series in Socket R4 (LGA 2066)
Memory
Supports eight DIMM slots for up to 256 GB of RDIMM or 512 GB of LRDIMM ECC/Non-ECC DDR4 memory, one or two DIMMs per channel (DPC) with speeds of up to 2666 MHz
Chipset
Intel C422 PCH series
Expansion Slots
Three PCI Express 3.0 x16 One PCI Express 3.0 x4
Storage Drives
Supports: Internal fixed drives, four 3.5" (with optional cage, MCP-220-73201-0N) Two U.2 (PCIe x4) (with optional cables, CBL-SAST-0957) Two M.2 (M-key 2280/22110, PCIe 3.0 x4)
Power
Single 900 W module, 80 Plus Gold level
Cooling
One 120-mm PWM rear fan; one optional front fan, 120x38mm 4000 RPM high performance
Form Factor
Mid-size tower; (WxHxD) 7.6 x 16.7 x 20.7 in. (193 x 424 x 525 mm)
Input/Output
Network: One 5 Gb and one 1 Gb LAN ports USB: Two USB 3.1 type C, four USB 3.0 type A, two USB 2.0 COM: One Keyboard/mouse: PS/2 Drive bays: two 5.25" peripheral drive bays, one card reader module

1.4 Chassis Features

The SC732D3-903B is a mid-tower chassis.

Control Panel

The chassis front features a control panel to monitor functions and power off and on the system.

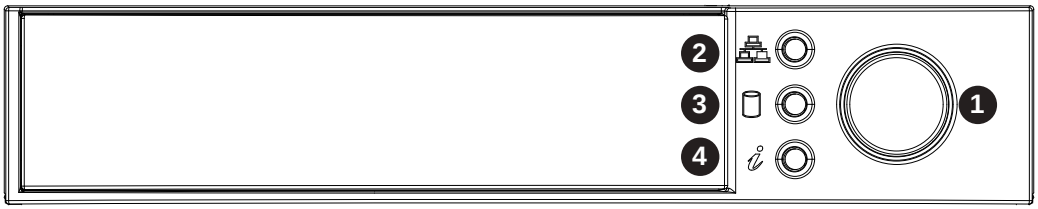


Figure 1-1. Control Panel View

Control Panel Features		
Item	**Feature**	**Description**
1	Power button	Turns primary power on or off to the server from the power supply, but maintains standby power
2	NIC LED	Indicates network activity on the LAN port when flashing.
3	HDD LED	Indicates activity on the hard drive when flashing.
4	Information LED	See table below

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

Front Features

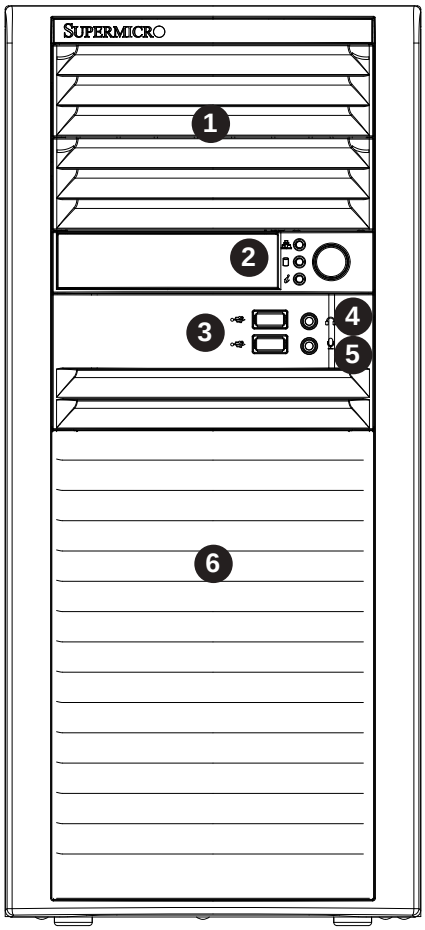


Figure 1-2. Chassis Front View

Front Chassis Features		
Item	**Feature**	**Description**
1	Optional Drive Area	Supports two optional peripheral 5.25" drives (such as a DVD)
2	Control Panel	Front control panel (see preceding page)
3	USB 3.0 Ports	Two USB 3.0 ports (USB10/11, Type A)
4	Line Out	Headphone jack
5	Mic	Microphone jack
6	Internal Drives (behind bezel)	Supports four 3.5" fixed internal storage drives

Rear Features

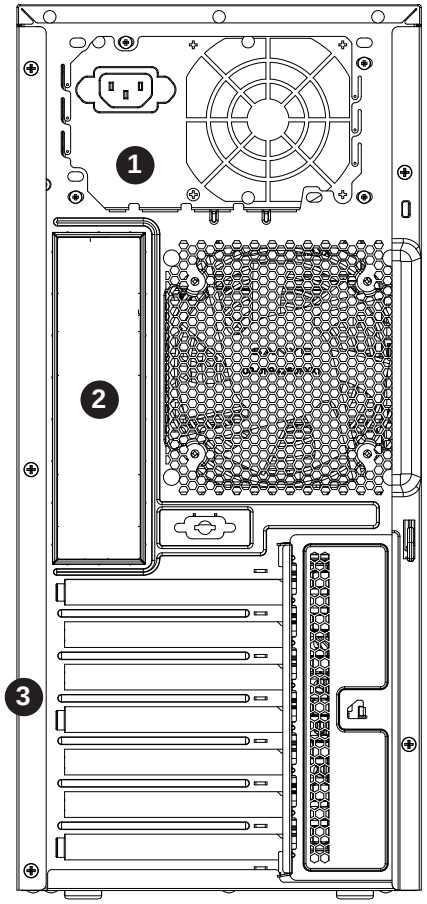


Figure 1-3. Chassis Rear View

Rear Chassis Features		
Item	**Feature**	**Description**
1	Power Supply	Fixed module
2	I/O Backpanel	Rear input/output ports (see Section 4.2)
3	PCIe Slots	Supports four full-height, full-length PCIe expansion cards

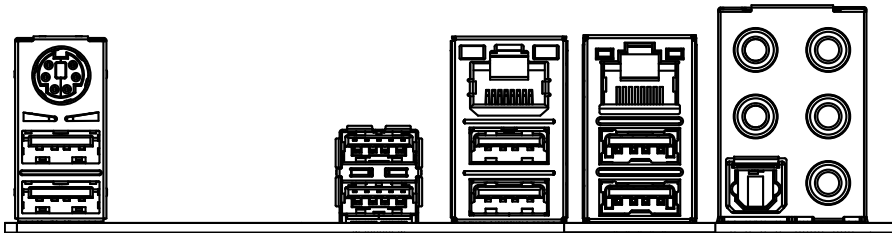


Figure 1-4. Input/Output Ports

1.5 Motherboard Layout

Below is a layout of the X11SRA motherboard with jumper, connector and LED locations. See the table on the following page for brief descriptions. For detailed descriptions, pinout information and jumper settings, refer to Chapter 4.

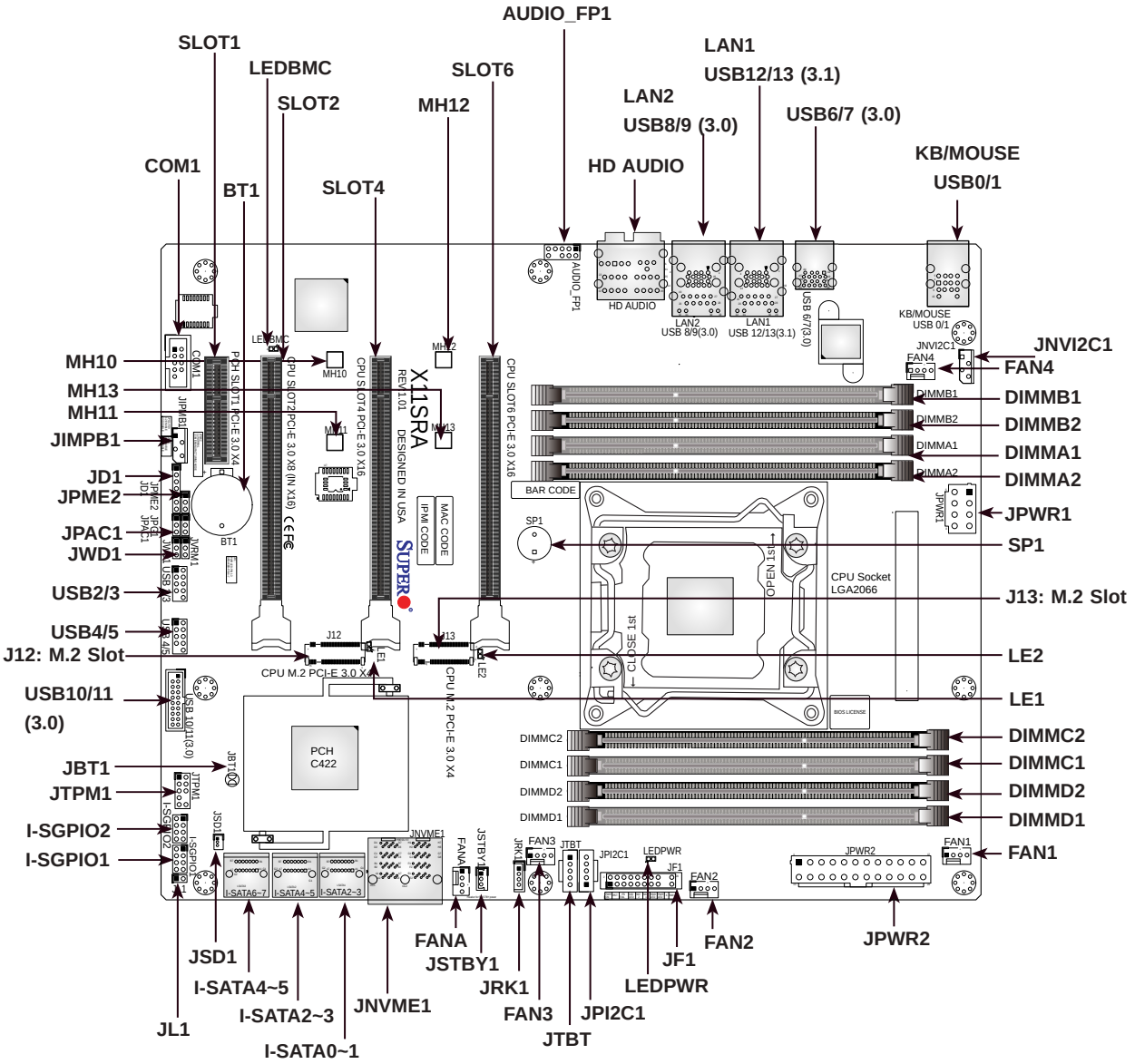


Figure 1-5. Motherboard Layout

Notes:

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

Quick Reference

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open: Normal, Closed: Clear CMOS
JPAC1	Audio Enable	Pins 1-2 (Enabled)
JPME2	Manufacturing Mode Select	Pins 1-2 (Normal)

Connector	Description
AUDIO_FP1	Front Panel Audio Header
BT1	Onboard Battery
COM1	COM Header
FAN1 ~ FAN4, FANA	System/CPU Fan Headers
HD AUDIO	High Definition Audio Header
I-SATA2/3, I-SATA4/5, I-SATA6/7	SATA 3.0 Connectors
I-SGPIO 1/2	Serial Link General Purpose I/O Headers
J12	M.2 PCIe 3.0 X4 Slot
J13	M.2 PCIe 3.0 X4 Slot
JD1	Speaker/Power LED Indicator (Pins 1-3: Power LED, Pins 4-7: Speaker)
JF1	Front Control Panel Header
JIPMB1	System Management Bus Header (for IPMI only)
JL1	Chassis Intrusion Header
JNVME1	NVMe (supports two connections for U.2 SSDs)
JNVI2C1	NVMe I2C Header
JPI2C1	Power I2C System Management Bus (Power SMB) Header (X11SRA-F/-RF only)
JPWR1	+12V 8-pin CPU Power Connector (Required)
JPWR2	24-pin ATX Main Power Connector (Required)
JRK1	Intel RAID Key Header
JSD1	SATA Disk On Module (DOM) Power Connector
JSTBY1	Standby Power Header
JTBT	Thunderbolt Header
JTPM1	Trusted Platform Module (TPM)/Port 80 Connector
LAN1/LAN2	5/1 Gigabit (RJ45) LAN Ports
MH10 ~ MH13	M.2 Holding Screws
SLOT1	PCIe 3.0 x4 PCH Slot
SLOT2	PCIe 3.0 x8 (IN x16) CPU Slot
SLOT4	PCIe 3.0 x16 CPU Slot
SLOT6	PCIe 3.0 x16 CPU Slot
SP1	Internal Speaker/Buzzer
USB0/1	Back Panel USB 2.0 Ports
USB2/3, USB4/5	Front Accessible USB 2.0 Headers
USB6/7, USB8/9	Back Panel USB 3.0 Ports
USB10/11	Front Accessible USB 3.0 Type A Header
USB12/13	Back Panel USB 3.1 Ports

LED	Description	Status
LE1	M.2 Status LED	Blinking Green: Read/Write
LE2	M.2 Status LED	Blinking Green: Read/Write
LEDPWR	Power LED	Solid Green: Power On

Motherboard Block Diagram

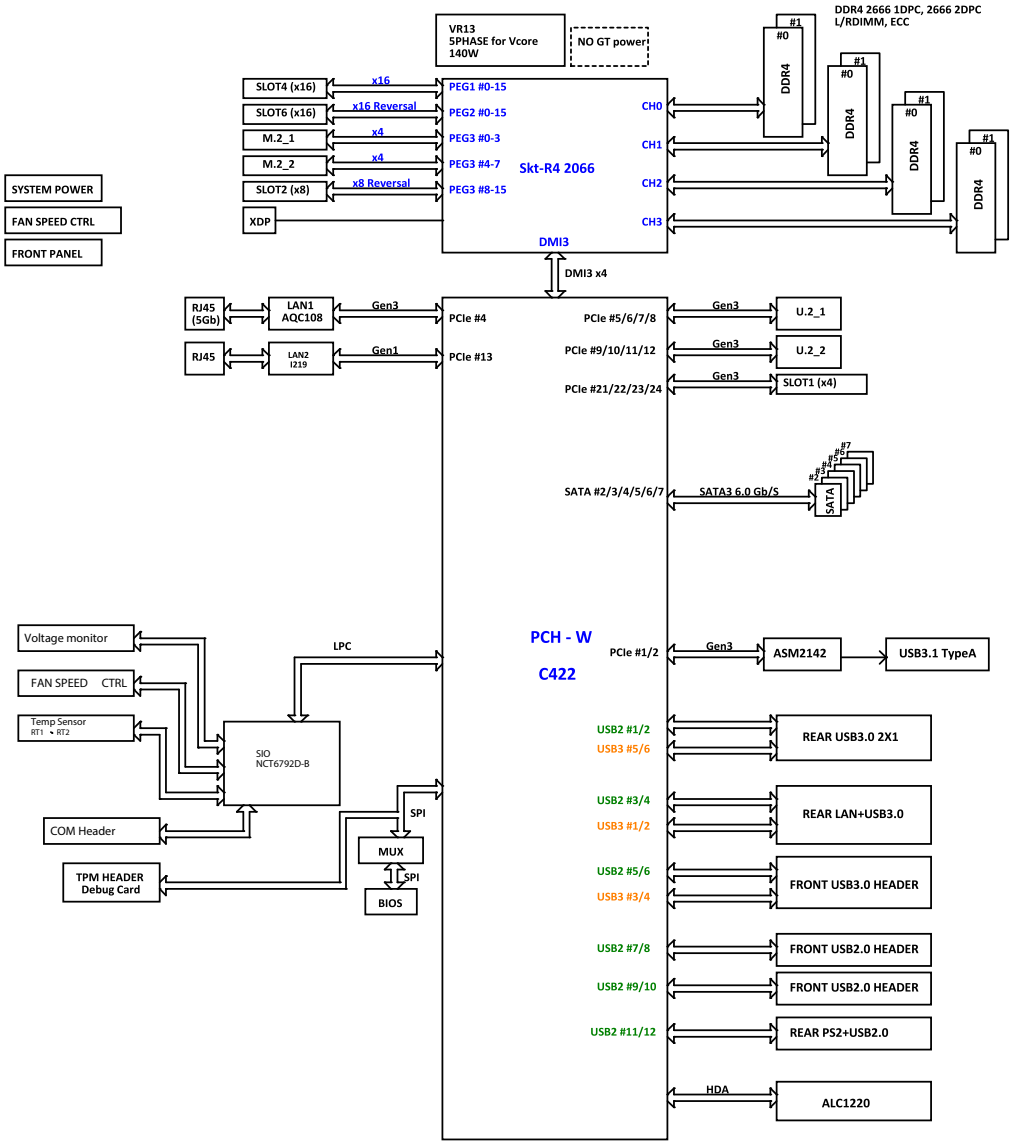


Figure 1-6. Intel C422 PCH series Chipset: Block Diagram

Note: This is a general block diagram and may not exactly represent the features on your motherboard.

Chapter 2

Workstation Setup

2.1 Overview

This chapter provides advice setting up your system. If your system is not already fully integrated with processors, system memory etc., refer to Chapter 3 for details on installing those specific components.

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

2.2 Preparing for Setup

Please read this section in its entirety before you begin the installation.

Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave enough clearance in front and back of the system to allow sufficient airflow and access when servicing.
- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).
- This product is not suitable for use with visual display workplace devices acccording to §2 of the German Ordinance for Work with Visual Display Units.

General Precautions

- Review the electrical and general safety precautions in Appendix B.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.
- Allow any drives and power supply modules to cool before touching them.

Chapter 3

Maintenance and Component Installation

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

Installation or replacement of most components require that power first be removed from the system.

3.1 Removing Power

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

1. Use the operating system to power down the system.
2. After the system has completely shut-down, disconnect the AC power cords from the power strip or outlet.
3. Disconnect the power cords from the power supply modules.

3.2 Accessing the System

The SC732 chassis features two removable side covers, allowing access to the interior.

Removing the Side Covers

1. Remove the two screws securing the left side cover to the chassis.
2. Slide the left cover toward the rear of the chassis.
3. Lift the left cover from the chassis.
4. Remove the three screws securing the right side cover to the chassis.
5. Slide the right cover toward the rear of the chassis
6. Lift the right cover from 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 for proper airflow and to prevent overheating.

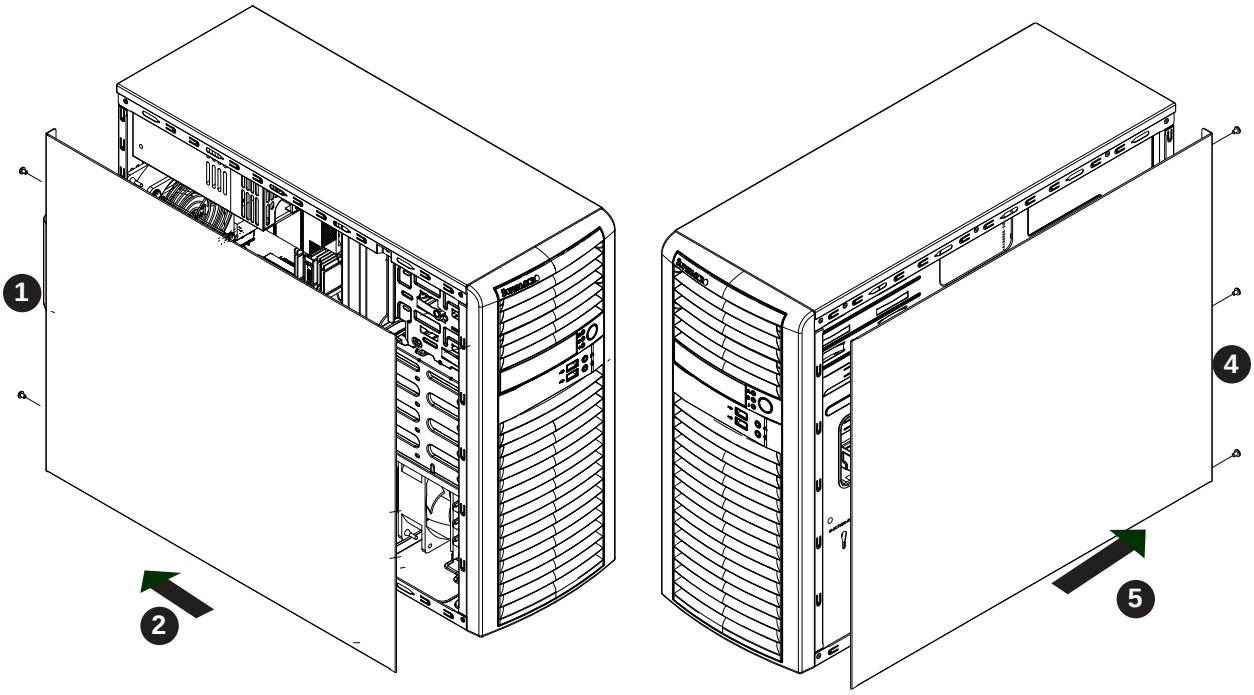


Figure 3-1. Removing the Chassis Covers

3.3 Motherboard Components

Processor and Heatsink Installation

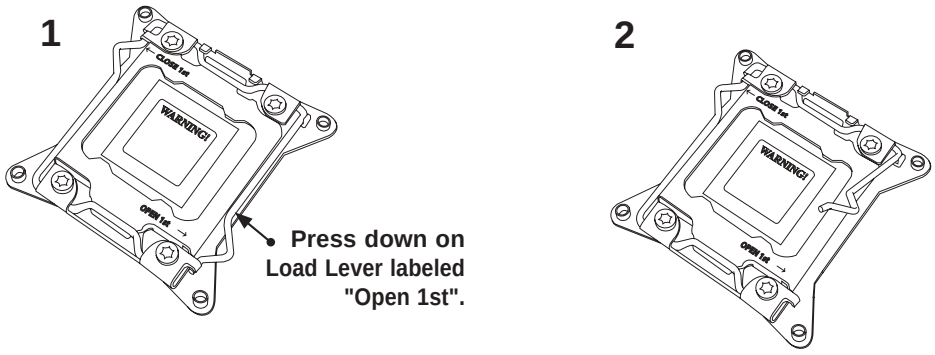
Follow the procedures in this section to install a processor (CPU) and heatsink onto the motherboard mounted in the chassis.

Notes:

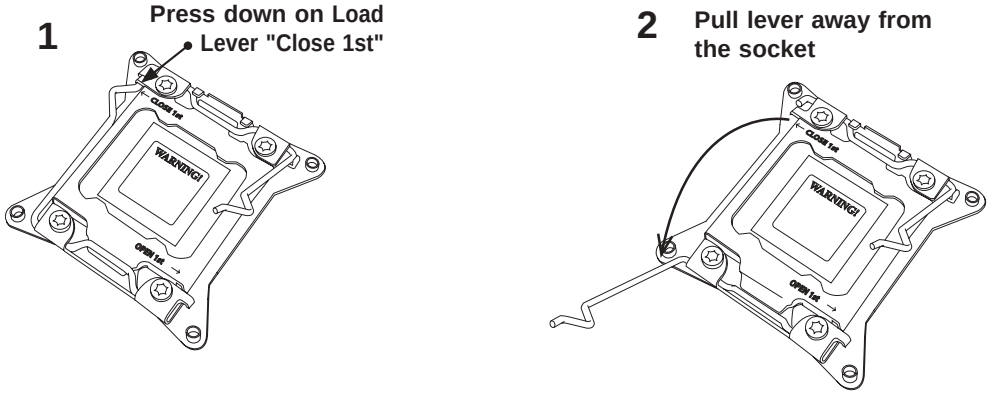
- When receiving a motherboard without a processor pre-installed, make sure that the plastic protective socket cover is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.
- Use an Intel-certified multi-directional heatsink.
- Refer to the Supermicro website for updates on CPU support.

Installing the Processor

1. Remove power from the system as described in Section 3.1.
2. There are two load levers on the LGA2066 socket. To open the socket cover, press and release the load lever labeled "Open 1st".

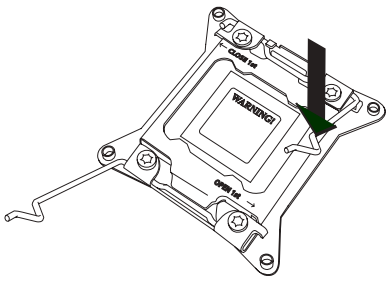


3. Press the second load lever labeled "Close 1st" to release the load plate that covers the socket from its locking position.

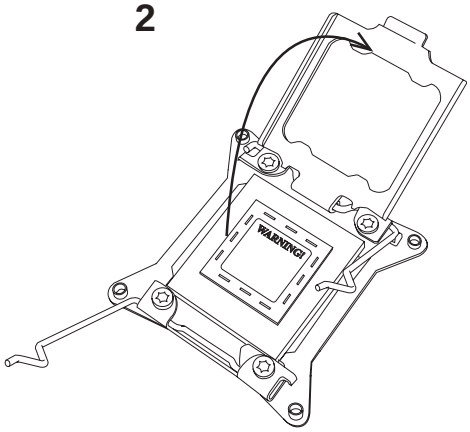


4. Lift the load plate to open it completely. If necessary, gently push down on the "Open 1st" lever to open the load plate.

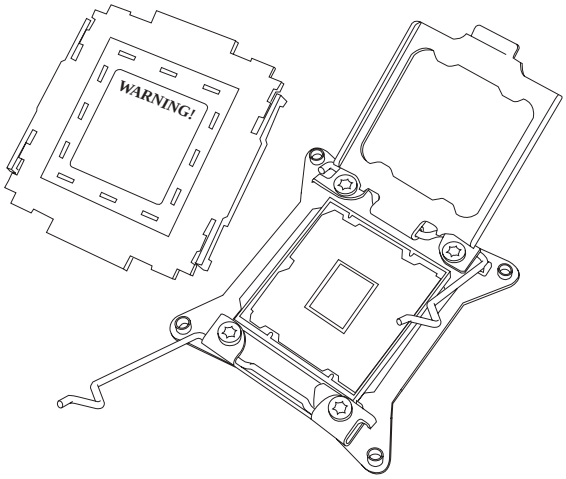
1 **If needed, gently push down to pop the load plate open.**



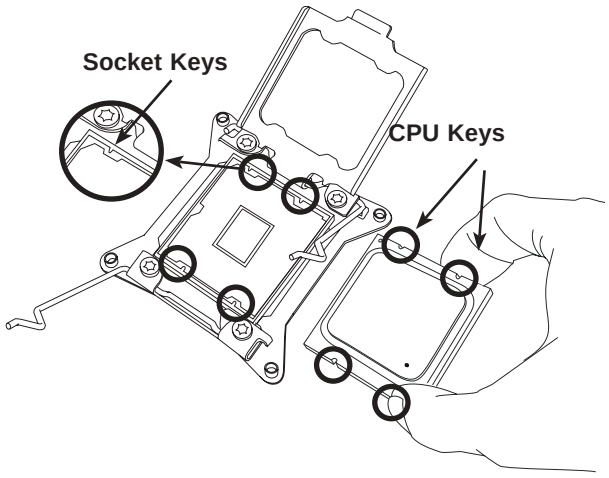
2



5. Remove the plastic cap labeled WARNING from the socket

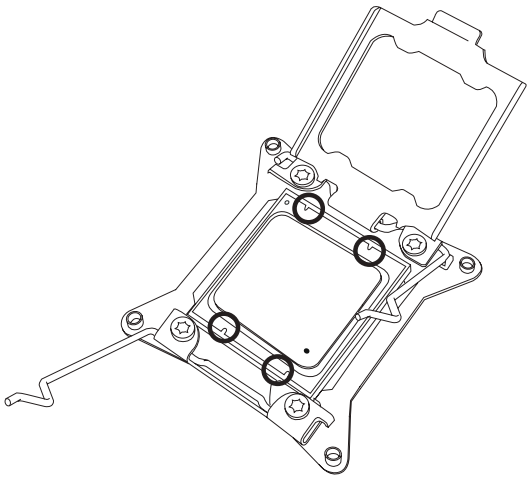


6. Use your thumb and index finger to hold the CPU on its edges. Align the CPU keys, which are semi-circle cutouts, against the socket keys.



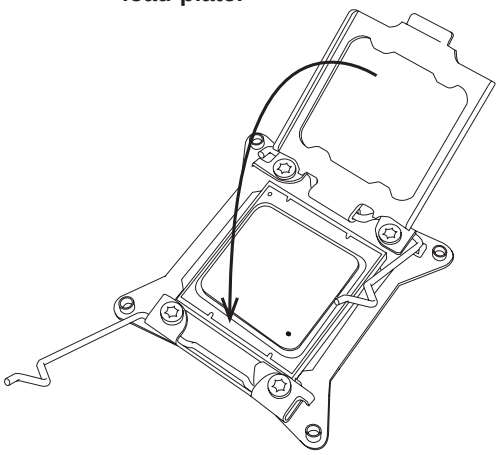
7. Once they are aligned, carefully lower the CPU straight down into the socket. To avoid damaging the CPU or socket, do not drop the CPU onto the socket, move it horizontally or vertically, or rub it against the socket pins.

8. With the CPU in the socket, inspect the four corners of the CPU to make sure that it is properly installed.

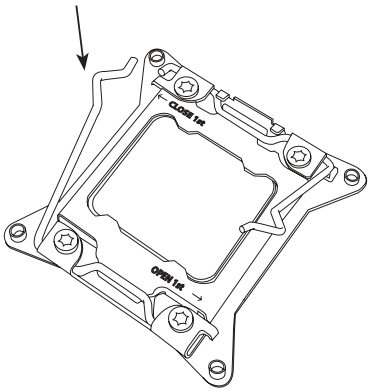


9. Close the load plate with the CPU inside the socket. Lock the "Close 1st" lever first, then lock the "Open 1st" lever second. Gently push the load levers down to the lever locks.

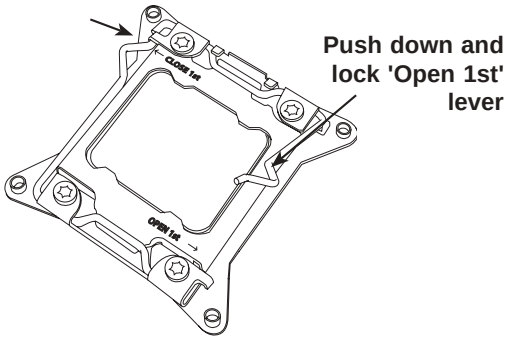
1 **Gently close the load plate.**



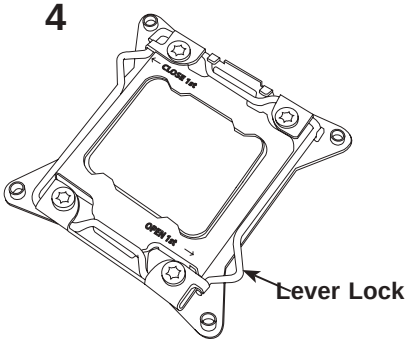
2 **Push down and lock 'Close 1st' lever.**



3



4



Installing the CPU Heatsink

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

1. Remove the power cord from the system.
2. Place the heatsink on top of the CPU so that the four mounting screws on the heatsink are aligned with holes on the socket.
3. Tighten the screws in the order noted below, evenly and gradually. Do not over-tighten.

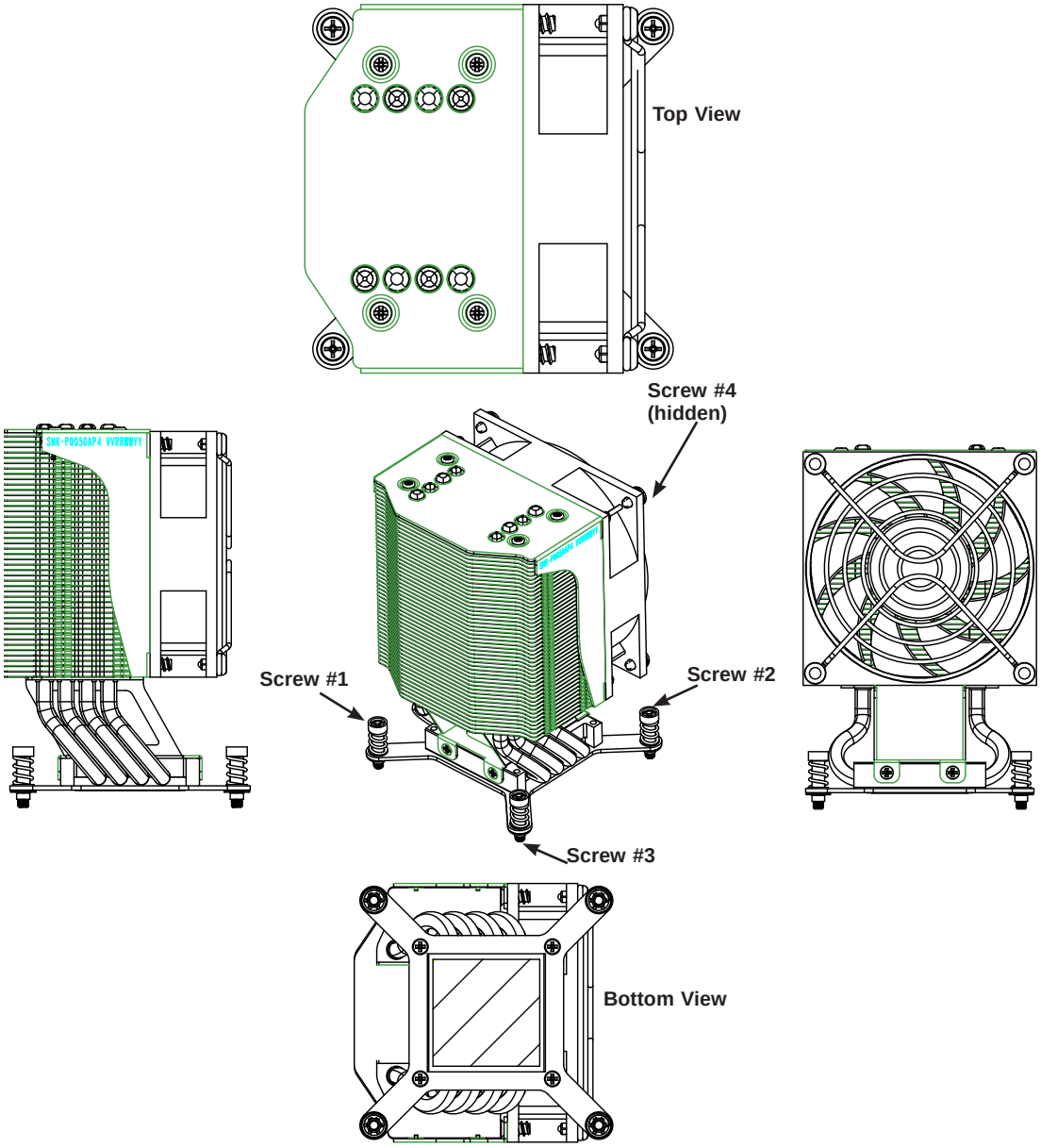


Figure 3-2. CPU Heatsink

Note: Drawings in this manual are for reference only. They might look different from the components in your system.

Removing the Heatsink

Note: We do not recommend that the CPU or the heatsink be removed. However, if you must remove the heatsink, follow the instructions below to avoid damage.

1. Remove power from the system as described in Section 3.1.
2. Loosen the screws evenly and gradually in the order above.
3. Gently wriggle the heatsink to loosen and remove it. Do not use excessive force.

Memory

Memory Support

The X11SRA motherboard supports up to 256 GB of RDIMM or 512 GB of LRDIMM ECC/ Non-ECC DDR4 memory with speeds of up to 2666 MHz in eight memory slots. Populating the DIMM slots in a 2DPC (two DIMMs per channel) configuration with pairs of memory modules of the same type, speed and size will result in interleaved memory, which improves performance. Mixed DIMM speeds can be installed, however, all DIMMs will run at the speed of the slowest DIMM.

Check the Supermicro website for possible updates to memory support (www.supermicro.com).

DIMM Module Population Configuration

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

Memory Population (Balanced)								
DIMMA1	**DIMMB1**	**DIMMC1**	**DIMMD1**	**DIMMA2**	**DIMMB2**	**DIMMC2**	**DIMMD2**	**Total System Memory**
4GB	4GB							8GB
4GB	4GB	4GB	4GB					16GB
4GB	4GB	4GB	4GB	4GB	4GB	4GB	4GB	32GB
8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	64GB
32GB	32GB	32GB	32GB					128GB
32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	256GB
64GB	64GB	64GB		64GB	64GB	64GB		384GB
64GB	64GB	64GB	64GB	64GB	64GB	64GB	64GB	512GB

Memory Module Installation

When installing memory modules, the DIMM slots should be populated in the following order: DIMMA1, DIMMB1, DIMMC1, DIMMD1, then DIMMA2, DIMMB2, DIMMC2, DIMMD2. The blue slots must be populated first.

Note: The motherboard supports installing an odd number of DIMM modules (1, 3, etc.). However, installing modules in pairs provides best memory performance.

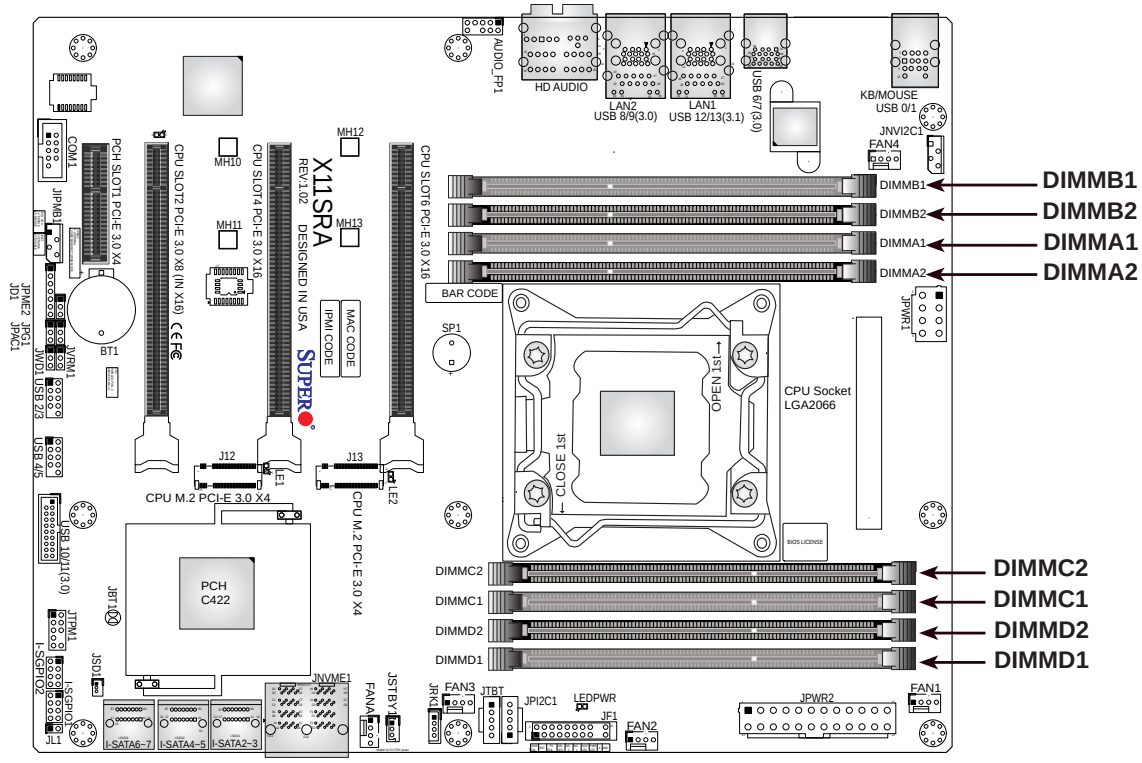
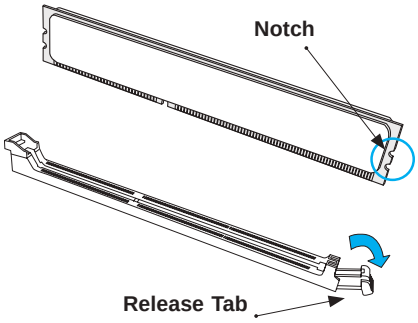


Figure 3-3. Memory Locations

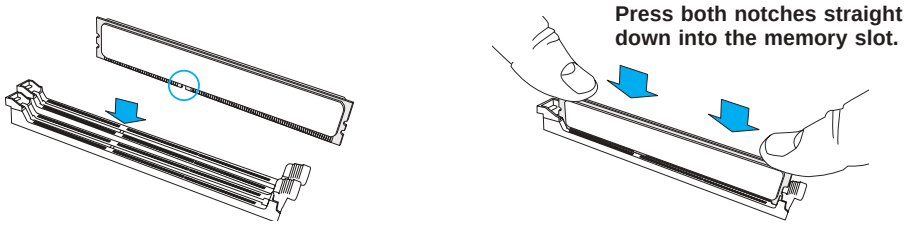
Caution: Exercise caution when installing or removing memory modules to prevent damage to the DIMMs or slots.

Installing Memory

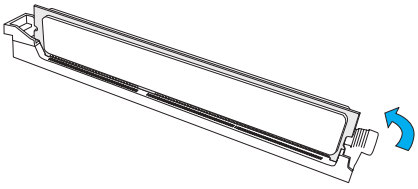
1. Remove power from the system as described in Section 3.1.
2. Starting with the slot in the order described previously, push the release tab outward to unlock it.



3. Align the key of the DIMM with the receptive point on the memory slot and with your thumbs on both ends of the module, press it straight down into the slot until the module snaps into place.



4. Press the release tab to the locked position to secure the DIMM module into the slot.



5. Repeat the procedure for the remaining DIMM modules in the order detailed in the previous section.

To remove a DIMM module, unlock the release tabs then pull the module from the slot.

Motherboard Battery

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

Replacing the Battery

1. Remove power from the system as described in section 3.1 and remove the node from the chassis.
2. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.
3. To insert a new battery, slide one edge under the lip of the holder with the positive (+) side facing up. Then push the other side down until the clamp snaps over it.

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

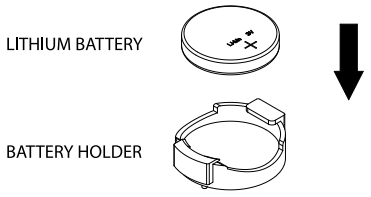


Figure 3-4. Installing the Onboard Battery

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

3.4 Chassis Components

Storage Drives

Primary data storage capability is provided by up to four 3.5" drives that can be installed in the chassis. To replace or install them, the drive cage must be rotated.

Rotating the Drive Cage

1. Remove power from the system as described in section 3.1 and remove the chassis cover.
2. Lift the release tab (A) as shown below.
3. Rotate the drive cage outward.

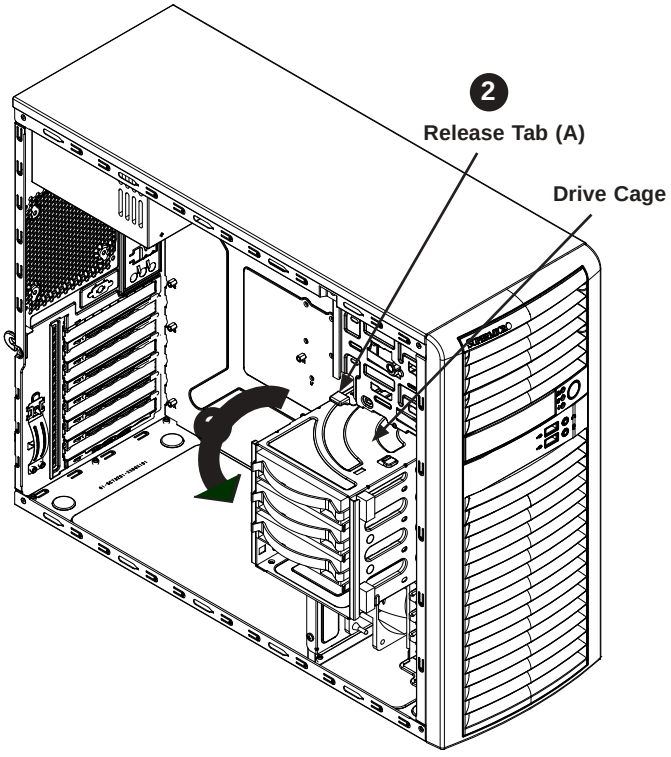


Figure 3-5. Rotating the Drive Cage

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

Installing a 3.5" Storage Drive

1. If you are replacing a drive, unplug the power and data cables.
2. Press the release tab on the side of the drive carrier and slide the carrier out of the drive cage.
3. If you are replacing a drive, remove the drive from the carrier by pulling the sides of the carrier outwards.

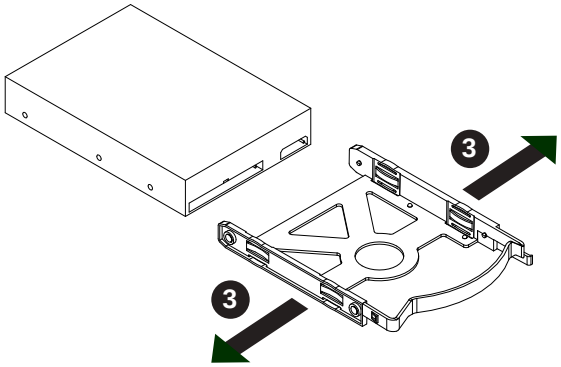


Figure 3-6. Removing a Drive from the Carrier

4. Insert a new drive into a drive carrier by snapping it in.
5. Slide the drive assembly into the drive cage until it clicks into a locked position.

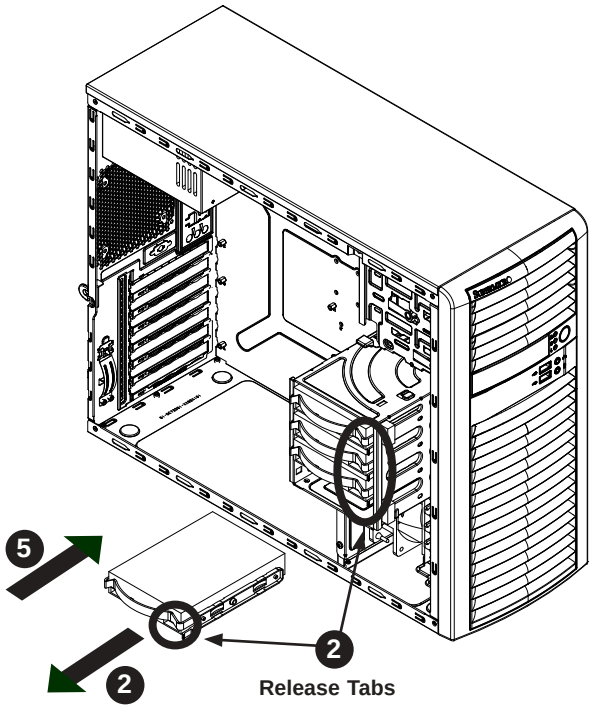


Figure 3-7. Installing Drives in the Primary Drive Cage

6. Connect the power and data cables to the hard drive.
7. Rotate the hard drive cage 90 degrees inward, returning it to the closed, operational position in the chassis.

Adding 2.5" Storage Drives

Up to four 2.5" drives may be installed into the chassis using an optional drive cage (p/n MCP-220-73201-0N).

Installing 2.5" Drives

1. Remove power from the system as described in section 3.1 and remove the chassis cover.
2. Loosen the thumb screw securing the drive cage to the chassis.
3. Slide the drive cage out of the chassis. If you are replacing a drive, unplug the power and data cables.

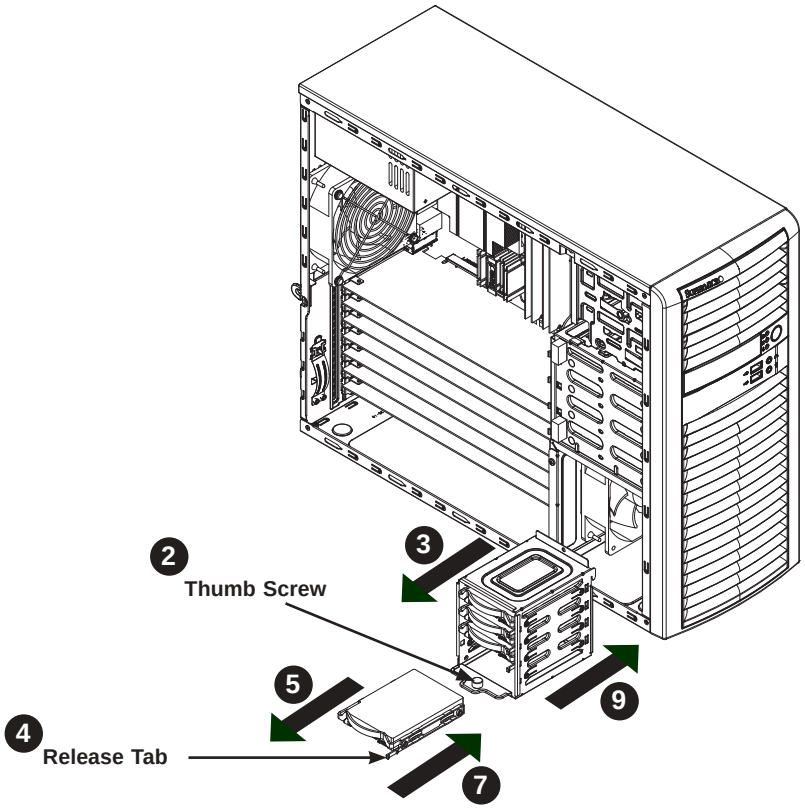


Figure 3-8. Installing a 2.5" Drive in the Optional Cage

4. Press the release tab on the side of the drive carrier and slide the carrier out of the drive cage.
5. If you are replacing a drive, remove the drive from the carrier by pulling the sides of the carrier outwards.
6. Insert a new drive into a drive carrier by snapping it in.
7. Slide the drive assembly into the drive cage until it clicks into a locked position.
8. Connect the power and data cables to the hard drive.
9. Slide the drive cage into of the chassis and tighten the thumb screw.

U.2 SSD Storage

Two U.2 solid state storage drives are supported. The drives can be mounted in the primary 3.5" storage drive cage using an adapter (MCP-220-73102-0N) or in the optional 2.5" cage (MCP-220-73201-0N).

An optional cable (CBL-SAST-0957) is required for each port. It plugs into the JNVME1 connector on the motherboard. See the following figure for that location.

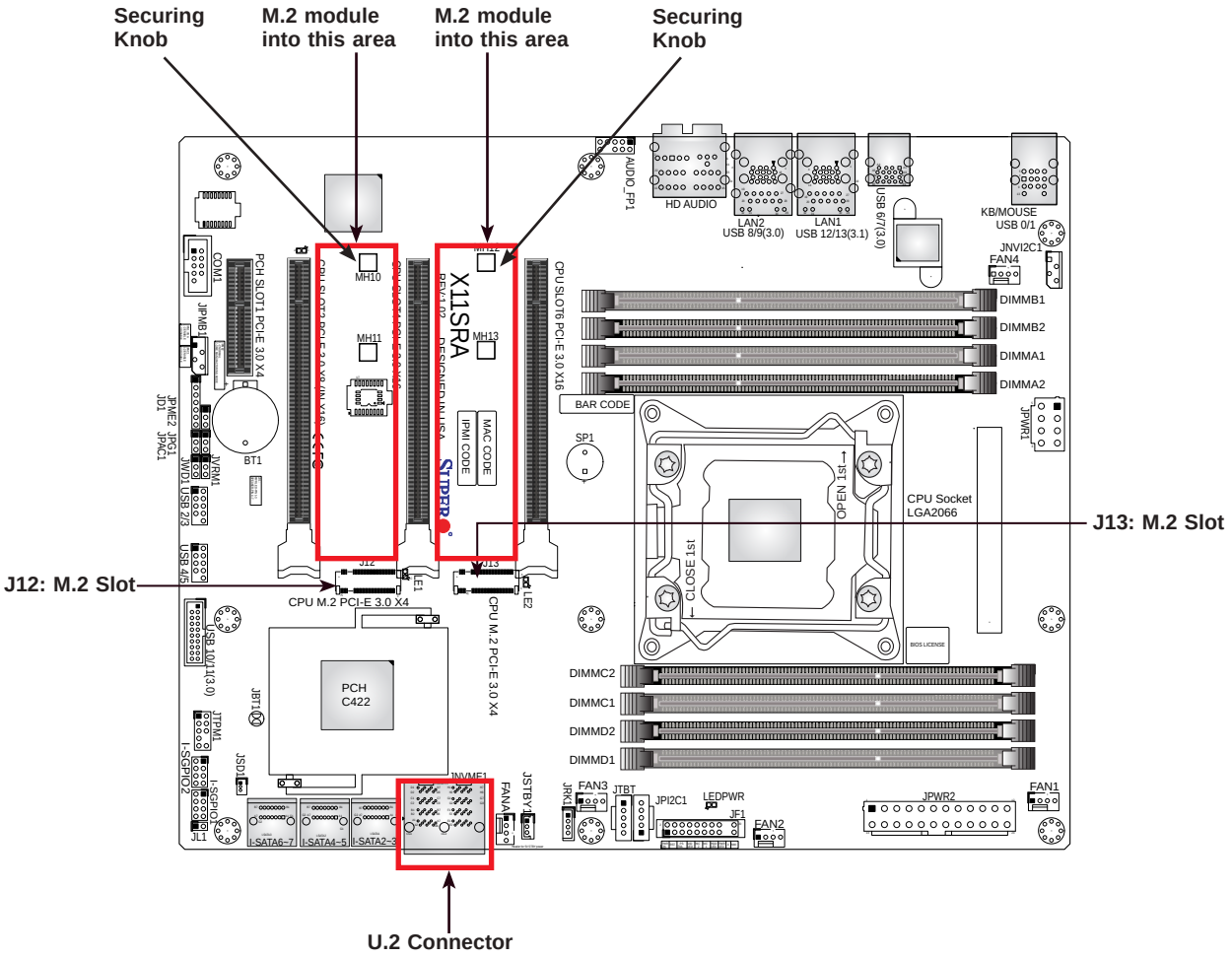


Figure 3-9. Locations of M.2 and U.2 Storage

Adding an M.2 Storage Card

One or two M.2 SSD cards may be installed on the motherboard. Supported card form factors are 2280 or 22110. There is a standoff for each length.

1. Remove power from the system as described in section 3.1 and remove the chassis cover.

2. Find and pull out the plastic securing knob in one of the M.2 standoffs.

3. Holding the M.2 card nearly horizontal, insert it into the slot on the motherboard and lower the semi-circular notch onto the standoff.

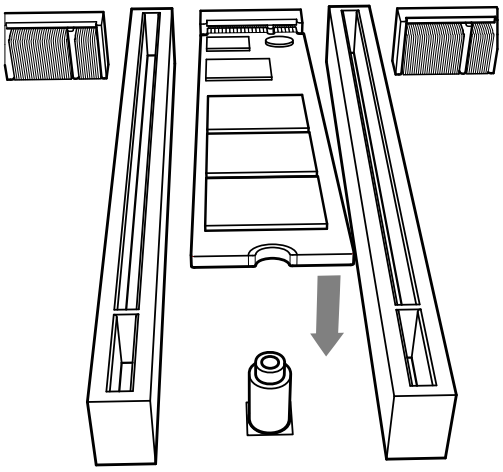


Figure 3-10. Installing an M.2 Storage Module

4. Insert the plastic securing knob into the standoff.

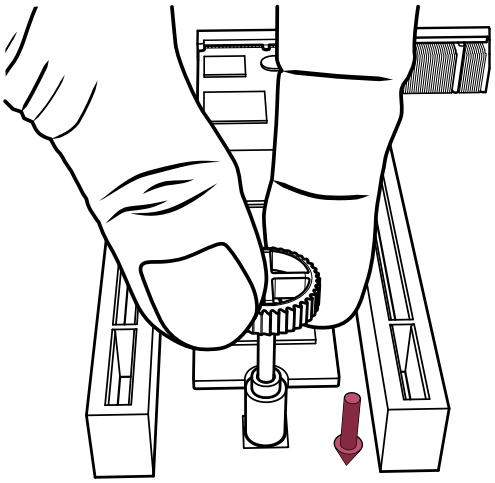


Figure 3-11. Securing the M.2 Storage Module

Note: You might experience temporary M.2 speed throttling when it reaches its thermal threshold, which depends on the specifications of your device. Please note that this is a normal phenomenon and should not crash or damage your system. You may use an optional high RPM fan, FAN-0077L4, to increase airflow inside the chassis.

Installing an Optional Device

The system supports a 3.5" optional device, such as an all-in-one card reader.

Installing a 3.5" Device

1. Remove power from the system as described in section 3.1.
2. Remove the front bezel from the chassis by lifting it upwards from the bottom, and pulling off the front of the chassis.
3. Remove the cover plate from the bezel.
4. Install the bracket rail (A) onto one side of the device, by inserting the pins of the bracket into the mounting holes on the sides of the device.
5. Slide the device into the chassis.

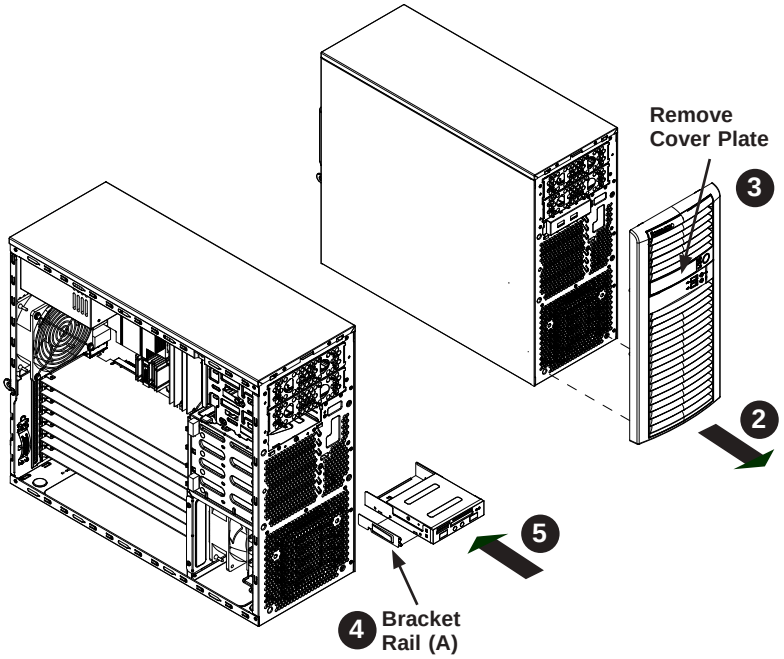


Figure 3-12. Installing a 3.5" Device

System Cooling

Rear Fan

The system includes a super quiet system exhaust fan that provides cooling. No tools or screws are required for installation. If the power supply fan fails, the power supply itself must be replaced.

Installing the Rear Fan

1. Remove power from the system as described in section 3.1, and remove the left chassis cover.
2. Insert the four rubber pins into the four mounting holes surrounding the fan grill on the rear of the chassis.
3. Pull the rubber pins through the mounting holes of the fan to secure the fan to the chassis.
4. Connect the fan cable to the serverboard.

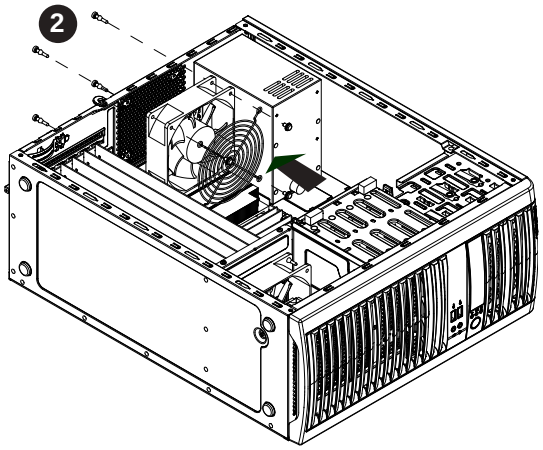


Figure 3-13. Replacing the System Fan

Optional Front Fan

1. Remove power from the system as described in section 3.1, and remove the left chassis cover.
2. Insert four rubber pins through the fan bracket and into the mounting holes in the fan.
3. Pull the rubber pins through the mounting holes of the fan to secure the fan to the bracket.
4. Lower the fan into the chassis, aligning the tabs on the bottom of the bracket with tabs in the chassis, and the holes at the top of the bracket with the screw holes in the chassis.
5. Secure the fan to the chassis using the two screws.
6. Connect the fan cable to the motherboard.

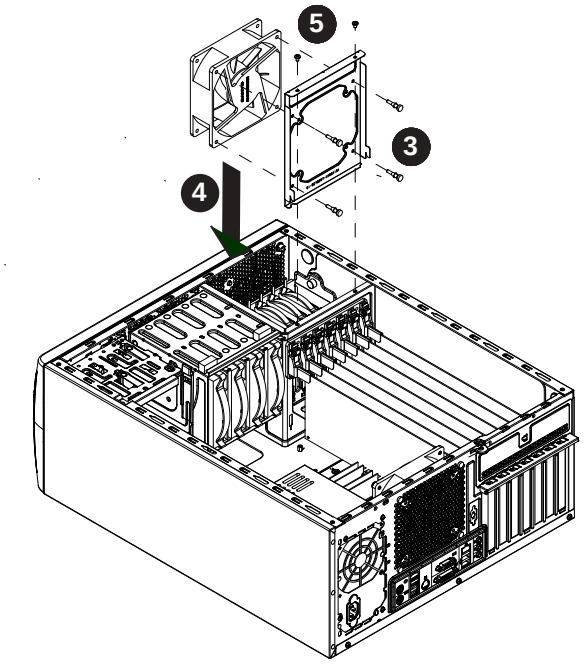


Figure 3-14. Installing the Optional Front Fan

Power Supply

The power supply is auto-switching capable. This feature enables it to automatically sense the input voltage and operate at a 100-120v or 180-240v. An amber light is illuminated on the power supply when the power is switched off. An illuminated green light indicates that the power supply is operating.

Changing the Power Supply

1. Remove power from the system as described in section 3.1, and remove the left chassis cover.
2. Disconnect the cables from the motherboard to the power supply.
3. Remove the screws securing the power supply to the chassis, which are located on the rear of the chassis. Save the screws for later use.
4. Lift the power supply out of the chassis.
5. Replace the failed power supply with an identical power supply model.
6. Secure the new power supply using the screws previously saved.
7. Plug the AC power cord back into the module and power-up the system.

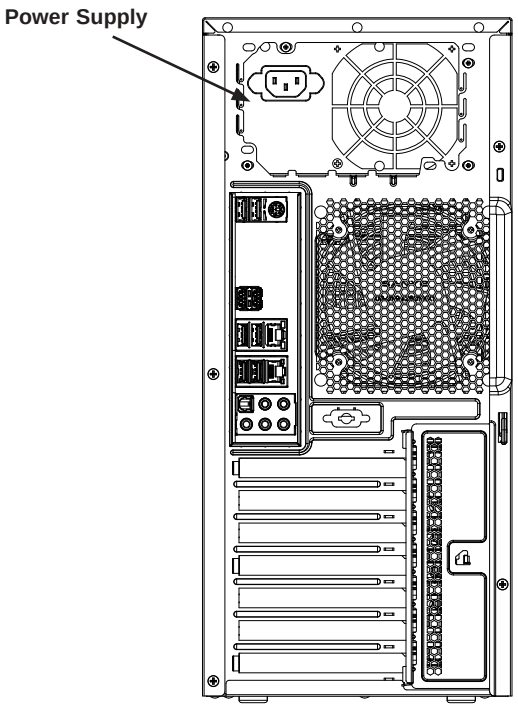


Figure 3-15. Replacing a Power Supply Module

Chapter 4

Motherboard Connections

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

Please review the safety precautions in Appendix B before installing or removing components.

4.1 Headers and Connectors

Power Connectors

Main ATX Power Supply Connector

The primary power supply connector (JPWR2) meets the ATX SSI EPS 12V specification. You must also connect the 8-pin (JPWR1) processor power connector to your power supply.

Secondary Power Connector

JPWR1 must also be connected to the power supply. This connector is used to power the processor.

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

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

4.2 Input/Output Ports and Interface Buttons

The rear of system offers these input/output ports.

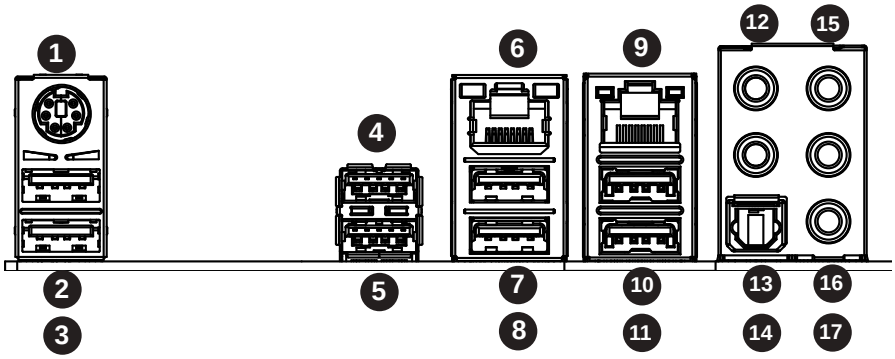


Figure 4-1. Rear I/O Ports

Rear I/O Ports							
#	**Description**	#	**Description**	#	**Description**	#	**Description**
1.	PS2 KB/Mouse	6.	LAN1	10.	USB9 (3.0)	14	S/PDIF Out
2.	USB1 (2.0)	7.	USB13 (3.1)	11.	USB8 (3.0)	15.	Line In
3.	USB0 (2.0)	8.	USB12 (3.1)	12.	CEN/LFE Out	16.	Line Out
4.	USB7 (3.0)	9.	LAN2	13.	Surround Out	17.	Mic In
5.	USB6 (3.0)						

LAN Ports

The system offers one 5G Ethernet port (LAN1) and one 1G Ethernet port (LAN2).

CEN/LFE Out and Surround Out

This motherboard features a 7.1+2 Channel High Definition Audio (HDA) codec that provides 10 DAC channels. The HD Audio connections simultaneously supports multiple-streaming 7.1 sound playback with two channels of independent stereo output through the front panel stereo out for front, rear, center and subwoofer speakers. To enable this function, download the advanced software for this motherboard.

CEN/LFE is the audio output for the center channel and low frequency channel.

S/PDIF Out

This is a fibre optic audio output for a TOSLINK connector and cable.

4.3 Headers and Connectors

Fan Headers

The motherboard has five fan headers (FAN1–FAN4, FANA). All of these 4-pin fan headers are backwards-compatible with the traditional 3-pin fans. However, fan speed control is available for 4-pin fans only by Thermal Management via the IPMI 2.0 interface.

Fan Header Pin Definitions

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

Speaker/Buzzer Header

On the JD1 header, pins 1-4 are for the speaker and pins 3-4 are for the buzzer. If you wish to use an external speaker, connect its cable to pins 1-4.

Speaker Connector Pin Definitions

Pin Setting	Definition
Pins 1-4	Speaker
Pins 3-4	Buzzer

Chassis Intrusion

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

Chassis Intrusion Pin Definitions

Pin#	Definition
1	Intrusion Input
2	Ground

Internal Speaker/Buzzer

The Internal Speaker (SP1) can be used to provide audible notifications using various beep codes. Refer to the table below for pin definitions.

Internal Buzzer Pin Definitions

Pin#		Definition
1	Pos (+)	DC 5V
2	Neg (-)	Signal In

SGPIO Headers

Two I-SGPIO (Serial Link General Purpose Input/Output) headers are located on the motherboard. They support the onboard I-SATA 3.0 ports.

I-SGPIO 1/2	
I-SGPIO1	I-SATA 3.0 Ports 2-3
I-SGPIO2	I-SATA 3.0 Ports 4-7

SGPIO Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	NC	2	NC
3	GND	4	Data
5	Load	6	GND
7	Clock	8	NC

NC = No Connection

Serial Ports

One COM connection (COM1) is located on the motherboard. Refer to the table below for pin definitions.

Standby Power

The +5V Standby Power header is located at JSTBY1 on the motherboard. You must have a card with a Standby Power connector and a cable to use this feature.

Standby Power Pin Definitions	
Pin#	Definition
1	+5V Standby
2	Ground
3	NC

Disk On Module Power Connector

One power connector for a SATA DOM (Disk On Module) device is located at JSD1. Connect the appropriate cable here to provide power support for your Serial Link DOM device.

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

Intel RAID Key Header

The JRK1 header supports VMD used in creating optional advanced NVMe RAID configurations.

Intel RAID Key Pin Definitions

Pin#	Definition
1	Ground
2	+3.3 V Standby
3	Ground
4	PCH RAID key

Front Accessible Audio Header

A 10-pin audio header (AUDIO_FP1) allows you to use the onboard sound for audio playback. Connect an audio cable to this header to use this feature.

Audio Header Pin Definitions

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

TPM Header

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

Trusted Platform Module Header Pin Definitions

Pin#	Definition	Pin#	Definition
1	+3.3V	2	SPI_CS#
3	RESET#	4	SPI_MISO
5	SPI_CLK	6	GND
7	SPI_MOSI	8	
9	+3.3V Stby	10	SPI_IRQ#

Power SMB (I²C) Header

The Power System Management Bus (I²C) connector (JPI²C1) monitors the power supply, fan, and system temperatures.

Power SMB Header Pin Definitions

Pin#	Definition
1	Clock
2	Data
3	PMBUS_Alert
4	Ground
5	+3.3V

Thunderbolt Header

This motherboard supports one Thunderbolt header (JTBT) on the back panel. A Thunderbolt header is a hardware interface that allows peripherals to be connected to the motherboard at transfer speeds of up to 10Gbit/s. This port combines a PCIe and a DisplayPort into one serial signal.

SATA Ports

Six SATA 3.0 connectors, supported by the Intel Intel C422 PCH series PCH chipset, are located on the motherboard. These SATA ports support RAID 0, 1, 5, and 10. SATA ports provide serial-link signal connections, which are faster than the connections of Parallel ATA.

M.2 Connection

The motherboard contains two M.2 NGFF socket 3 connectors at J12 and J13. M.2 was formerly Next Generation Form Factor (NGFF) and serves to replace mini PCI-E. M.2 allows for a greater variety of card sizes, increased functionality, and spatial efficiency. The M.2 socket 3 supports 3.0 x4 (32 Gb/s) card in 2280 and 22110 form factors.

U.2 NVMe Connector

JNVME1 provides two ports for U.2 Non-volatile Memory Express (NVMe) solid state devices (SSDs) for storage. U.2, formerly SFF-8639, uses high speed PCI-E for low data latency and high performance. It requires an optional cable, CBL-SAST-0957, for each port.

Control Panel

JF1 contains header pins for various control panel connections. See the figure below for the pin locations and definitions of the control panel buttons and LED indicators.

All JF1 wires have been bundled into a single cable to simplify this connection. Make sure the red wire plugs into pin 1 as marked on the motherboard. The other end connects to the control panel PCB board.

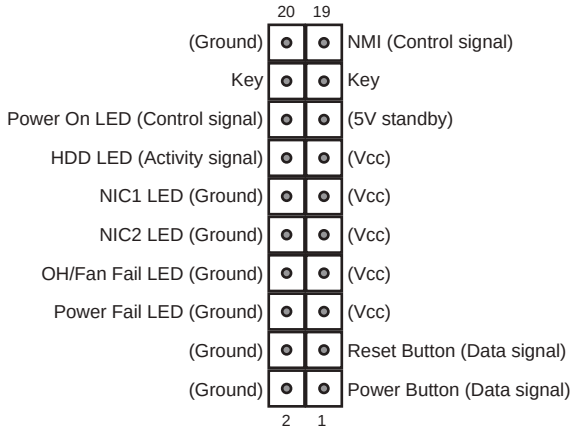


Figure 4-2. JF1 Control Panel Pins

Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS - see Chapter 6). To turn off the power when the system is in suspend mode, press the button for 4 seconds or longer.

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

Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1. Attach it to a hardware reset switch on the computer case.

Reset Button Pin Definitions (JF1)	
Pin#	**Definition**
3	Reset
4	Ground

Power Fail LED

The Power Fail LED connection is located on pins 5 and 6 of JF1.

Power Fail LED Pin Definitions (JF1)	
Pin#	**Definition**
5	3.3V
6	PWR Supply Fail

Overheat (OH)/Fan Fail

Connect an LED cable to pins 7 and 8 of JF1 to use the Overheat/Fan Fail LED connections. The LED on pin 8 provides warnings of overheat or fan failure.

OH/Fan Fail Indicator Status	
Status	**Definition**
Off	Normal
On	Overheat
Flashing	Fan Fail

OH/Fan Fail LED Pin Definitions (JF1)	
Pin#	**Definition**
7	Blue LED
8	OH/Fan Fail LED

NIC1/NIC2 (LAN1/LAN2)

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

LAN1/LAN2 LED Pin Definitions (JF1)	
Pin#	**Definition**
9	NIC2 Activity LED
10	NIC2 Link LED
11	NIC1 Activity LED
12	NIC1 Link LED

HDD LED/UID Switch

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

HDD LED Pin Definitions (JF1)	
Pin#	**Definition**
13	3.3V Standby/UID Switch
14	HDD Active

Power LED

The Power LED connection is located on pins 15 and 16 of JF1.

Power LED Pin Definitions (JF1)	
Pin#	**Definition**
15	3.3V
16	Power LED

NMI Button

The non-maskable interrupt button header is located on pins 19 and 20 of JF1.

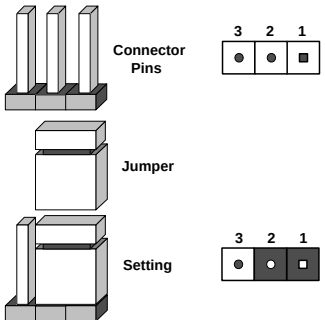
NMI Button Pin Definitions (JF1)	
Pin#	**Definition**
19	Control
20	Ground

4.4 Jumpers

Explanation of Jumpers

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

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



CMOS Clear

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

To Clear CMOS

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

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.


JBT1 contact pads

Manufacturer Mode Select

Close pin 2 and pin 3 of jumper JPME2 to bypass SPI flash security and force the system to operate in the manufacturer mode, which will allow the user to flash the system firmware from a host server for system setting modifications. The default setting is Normal.

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

Audio Enable

Use JPAC1 to enable or disable the onboard audio support.

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

4.5 LED Indicators

LAN LEDs

The LAN ports are located on the I/O back panel on the motherboard. Each Ethernet LAN port has two LEDs. The yellow LED indicates activity. Link LED, located on the left side of the LAN port, may be green, amber or off indicating the speed of the connection.

LAN1 Link Indicator LED Settings	
LED Color	**Definition**
Off	No Connection, 10 or 100 Mbps
Green	5 Gbps
Amber	1 Gbps

LAN2 Link Indicator LED Settings	
LED Color	**Definition**
Off	No Connection or 10 Mbps
Green	100 Mbps
Amber	1 Gbps

Onboard Power LED

The Onboard Power LED is located at LEDPWR on the motherboard. When this LED is on, the system is on.

M.2 LED

There are two M.2 LEDs (LE1 and LE2) on the motherboard. LE1 is next to the M.2 connector at J12, and LE2 is next to the M.2 connector at J13. When the LED is blinking, the M.2 device is working.

Chapter 5

Software

After the hardware has been installed, you should install the Operating System (OS), configure RAID settings and install the drivers. Necessary drivers and utilities may be found at ftp://ftp.supermicro.com/driver.

5.1 OS Installation

You must first configure RAID settings (if using RAID) before you install the Windows OS and the software drivers. To configure RAID settings, please refer to the RAID Configuration User Guides posted on our website at www.supermicro.com/support/manuals.

Installing the Windows OS for a RAID System

1. Insert Microsoft's Windows Setup DVD in the DVD drive and the system will start booting up from the DVD.
2. Insert the USB stick containing Windows drivers to a USB port on the system.
   Note: for older legacy OS's, please use a method to slipstream the drivers.
3. Select the partition on the drive in which to install Windows.
4. Browse the USB folder for the proper driver files.
5. Choose the RAID driver indicated in the Windows OS Setup screen, then choose the hard drive in which you want to install it.
6. Once all devices are specified, continue with the installation.
7. After the Windows OS installation is completed, the system will automatically reboot.

Installing Windows to a Non-RAID System

1. Insert Microsoft's Windows OS Setup DVD in the DVD-ROM drive and the system will start booting up from the DVD.
2. Continue with the installation. The Windows OS Setup screen will display.
3. From the Windows OS Setup screen, press the <Enter> key. The OS Setup will automatically load all device files and then continue with the Windows installation.
4. After the installation has completed, the system will automatically reboot.

5.2 Driver Installation

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 motherboard. Download this file to create a DVD of the drivers and utilities it contains. (You may also use a utility to extract the ISO file if preferred.)

After creating a DVD with the ISO files, insert the disk into the DVD drive on your system and the display shown in Figure 5-1 should appear.

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

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

Figure 5-1. Driver & Tool Installation 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.

5.3 SuperDoctor® 5

The Supermicro SuperDoctor 5 is a program that functions in a command-line or web-based interface for Windows and Linux operating systems. The program monitors such system health information 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. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

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

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

Chapter 6

BIOS

6.1 Introduction

This chapter describes the AMI BIOS setup utility for the X11SRA and provides the instructions on navigating the setup screens. The BIOS is stored in a Flash EEPROM and can be updated.

Note: Due to periodic changes to the BIOS, some settings may have been added or deleted since this manual was published.

Starting BIOS Setup Utility

To enter the AMI BIOS setup utility screens, press the <Delete> key while the system is booting up. (There are a few cases when other keys are used, such as <F1>, <F2>, etc.)

The BIOS screens have three main frames. The large left frame displays options can be configured by the user. These are blue. When an option is selected, it is highlighted in white. Settings printed in **Bold** are the default values.

In the left frame, a " ▶" indicates a submenu. Highlighting such an item and pressing the <Enter> key opens the list of settings in that submenu.

The upper right frame displays helpful information for the user. The AMI BIOS has default informational messages built in. The manufacturer retains the option to include, omit, or change any of these informational messages.

The lower right frame lists navigational methods. The AMI BIOS setup utility uses a key-based navigation system called *hot keys*. Most of these hot keys can be used at any time during setup navigation. These keys include <F3>, <F4>, <Enter>, <ESC>, arrow keys, etc.

Some system parameters may be changed.

6.2 Main Setup

When running the AMI BIOS setup utility, it starts with the Main screen. You can always return to it by selecting the Main tab on the top of the screen.

The Main tab page allows you to set the date and time, and it displays system information.

System Date/System Time

Use this option to change the system date and time. Highlight *System Date* or *System Time* using the arrow keys. Enter new values using the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in MM/DD/YYYY format. The time is entered in HH:MM:SS format.

Note: The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00. The date's default value is 01/01/2016 after RTC reset.

Supermicro X11SRA (Motherboard model)

BIOS Version

Build Date (of the BIOS)

Memory Information

Total Memory (for the system)

6.3 Advanced Setup Configurations

Use the arrow keys to select the Advanced tab and press <Enter> to access the submenu items.

Caution: Take caution when changing the Advanced settings. An incorrect value, a very high DRAM frequency, or an incorrect DRAM timing setting may make the system unstable. If this occurs, revert to the manufacture default settings.

▶PCH-FW Configuration

This menu shows the following information:

- ME Firmware Version
- ME Firmware Mode
- ME Firmware SKU
- ME File System Integrity Value
- ME Firmware Status 1
- ME Firmware Status 2
- Me FW Image Re-Flash

Use this feature to update the Management Engine firmware from an image in a USB flash drive attached to a USB port. The options are **Disabled** and Enabled.

• Manageability Features State

This feature allows the user to enable and disable Manageability Features support in FW. To disable support platform, the system must be in an unprovisioned state first. The options are **Enabled** and Disabled.

• AMT BIOS Features

This feature allows the user to enable and disable AMT BIOS feature. The user will not be able to access MEBx Setup when this feature is disabled. The options are Enabled and **Disabled.** Note that this option does not disable Manageability Features in FW.

• AMT Configuration

▶CPU Configuration

CPU Configuration

The following CPU information will be displayed:

- Processor BSP Revision
- Processor ID
- Processor Frequency
- Processor Max Ratio
- Processor Min Ratio
- Microcode Revision
- L1 Cache RAM
- L2 Cache RAM
- L3 Cache RAM
- Processor 0 Version

Hyper-threading (ALL)

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

MAX CPUID Value Limit

This feature allows the user to set the maximum CPU ID value. Enable this function to boot the legacy operating systems that cannot support processors with extended CPUID functions. The options are Enabled and **Disabled** (for the Windows OS.)

Execute Disable Bit

Set to Enabled for Execute Disable Bit support which will 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 damaging the system during a virus attack. The options are Disabled and **Enabled**. (Refer to Intel and Microsoft websites for more information.)

Enable Intel TXT

Select Enabled to enable Intel Trusted Execution Technology (TXT) support to enhance system security and data integrity. The options are Disabled and Enabled.

Intel (VMX) Virtualization Technology

Select Enable to use Intel Virtualization Technology so that I/O device assignments will be reported directly to the VMM (Virtual Memory Management) through the DMAR ACPI Tables. This feature offers fully-protected I/O resource-sharing across the Intel platforms, providing the user with greater reliability, security and availability in networking and data-sharing. The options are Disabled and **Enabled**.

PPIN Control

Select Unlock/Enable to use the Protected-Processor Inventory Number (PPIN) in the system. The options are **Unlock/Enable** and Unlock/Disable.

Hardware Prefetcher

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 Prefetch

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

DCU Streamer Prefetcher

If this item is set to Enable, the DCU (Data Cache Unit) streamer prefetcher will prefetch data streams from the cache memory to the DCU (Data Cache Unit) to speed up data accessing and processing for CPU performance enhancement. The options are Disable and **Enable**.

DCU IP Prefetcher

If this item is set to Enable, the IP prefetcher in the DCU (Data Cache Unit) will prefetch IP addresses to improve network connectivity and system performance. The options are **Enable** and Disable.

LLC Prefetcher

If this feature is set to Enable, LLC (hardware cache) prefetching on all threads will be supported. The options are **Disable** and Enable.

DCU Mode

Set the data-prefecting mode for the DCU (Data Cache Unit). The options are **32KB 8way without ECC** and 16KB 4 way with ECC.

Extended APIC

Based on the Intel Hyper-Threading technology, each logical processor (thread) is assigned 256 APIC IDs (APIDs) in 8-bit bandwidth. When this feature is set to Enable, the APIC ID will be expanded from 8 bits to 16 bits to provide 512 APIDs to each thread to enhance CPU performance. The options are **Disable** and Enable.

AES-NI

Select Enable to use the Intel Advanced Encryption Standard (AES) New Instructions (NI) to ensure data security. The options are **Enable** and Disable.

APIC Physical Mode

This feature allows the user to enable and disable APIC physical destination mode. The options are Enable and **Disable**.

▶Advanced Power Management Configuration

▶CPU P State Control

CPU P State Control

SpeedStep (PStates)

EIST (Enhanced Intel SpeedStep Technology) allows the system to automatically adjust processor voltage and core frequency in an effort to reduce power consumption and heat dissipation. Please refer to Intel's website for detailed information. The options are Disable and Enable.

EIST PSD Function (Available when SpeedStep is set to Enable)

Use this feature to configure the processor's P-State coordination settings. During a P-State, the voltage and frequency of the processor will be reduced when it is in operation. This makes the processor more energy efficient, resulting in further energy gains. The options are HW_ALL, SW_ALL and SW-ANY

Turbo Mode

Select Enabled for processor cores to run faster than the frequency specified by the manufacturer. The options are Disabled and Enabled.

▶Hardware PM (Power Management) State Control

Hardware P-States

If this feature is set to Disable, hardware will choose a P-state setting for the system based on an OS request. If this feature is set to Native Mode, hardware will choose a P-state setting based on OS guidance. If this feature is set to Native Mode with No Legacy Support, hardware will choose a P-state setting independently without OS guidance. The options are Disable, Native Mode, Out of Band Mode, and Native Mode with No Legacy Support. Package Power Limit MSR Lock Select Enabled to lock the package power limit for the model specific registers. The options are Disabled and Enabled.

▶CPU C State Control

Autonomous Core C-State

Select Enable to support Autonomous Core C-State control which will allow the processor core to control its C-State setting automatically and independently. The options are Enable and **Disable**.

CPU C6 Report

Select Enable to allow the BIOS to report the CPU C6 state (ACPI C3) to the operating system. During the CPU C6 state, power to all caches is turned off. The options are **Auto**, Enable, and Disable.

Enhanced Halt State (C1E)

Select Enable to enable "Enhanced Halt State" support, which will significantly reduce the CPU's power consumption by minimizing CPU's clock cycles and reduce voltage during a "Halt State." The options are Disable and **Enable**.

▶Package C State Control

Package C State

Use this feature to set the limit on the C-State package register. The options are C0/1 state, C2 state, C6 (non-Retention) state, C6 (Retention) state, No Limit, and **Auto**.

▶Chipset Configuration

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

▶North Bridge

This feature allows the user to configure the settings for the Intel North Bridge.

▶Memory Configuration

Integrated Memory Controller (iMC)

Enforce POR

Select POR to enforce POR restrictions for DDR4 memory frequency and voltage programming. The options are **Auto**, POR and Disable.

Memory Frequency

Use this feature to set the maximum memory frequency for onboard memory modules. The options are **Auto**, 1000, 1200, 1333, 1400, 1600, 1800,1866. 2000, and 2133.

Custom Refresh Enable

This feature enables a custom memory refresh rate. The options are **Disable** and Enable.

MC BGF threshold

Enter a value for the HA to MC BGF threshold, which is used for scheduling MC request in bypass conditions. The default is **0**.

DLL Reset Test

Enter a value for the amount of loops to execute RMT for during DLL reset tests.The default is **0**.

▶Memory Topology

This item displays the information of onboard memory modules as detected by the BIOS.

- P1 DIMMA1
- P1 DIMMB1
- P2 DIMMA1
- P2 DIMMB1

▶Memory RAS (Reliability_Availability_Serviceability) Configuration

Use this submenu to configure the following Memory RAS settings.

Static Virtual Lockstep Mode

Select Enable to support Static Virtual Lockstep mode to enhance memory performance. The options are Enable and **Disable**.

Mirror Mode

Select Enable to set all 1LM/2LM memory installed in the system on the mirror mode, which will create a duplicate copy of data stored in the memory to increase memory security, but it will reduce the memory capacity into half. The options are Mirror Mode 1LM, Mirror Mode 2LM, and **Disable**.

ADDDC (Adaptive Double Device Data Correction) Sparing

Select Enable for ADDDC sparing support to enhance memory performance. The options are Enable and **Disable**.

Patrol Scrub

Patrol Scrubbing is a process that allows the CPU to correct correctable memory errors detected in a memory module and send the corrections to the requestor (the original source). When this item is set to Enable, the IO hub will read and write back one cache line every 16K cycles if there is no delay caused by internal processing. By using this method, roughly 64 GB of memory behind the IO hub will be scrubbed every day. The options are **Enable** and Disable.

Patrol Scrub Interval

Use this item to specify the number of hours (between 0 to 24) required for the system to complete a full patrol scrubbing. Enter 0 for patrol scrubbing to be performed automatically. The default setting is **24**.

Note: This item is hidden when Patrol Scrub item is set to Disable.

Patrol Scrub Address Mode

This feature controls which address mode Patrol Scrub uses. The options are Reverse Address and **System Physical Address**.

▶IIO Configuration

IIO Configuration

EV DFX (Device Function On-Hide) Features

When this feature is set to Enable, the EV_DFX Lock Bits that are located in a processor will always remain clear during electric tuning. The options are **Disable** and Enable.

Isoc Mode

Select Enable to enable Isochronous support to meet QoS (Quality of Service) requirements. This feature is especially important for Virtualization Technology. The options are Disable, Enable, and **Auto**.

▶CPU1 Configuration

IOU0 (IIO PCIe Br1)

This item configures the PCI-E Bifuraction setting for a PCI-E port specified by the user. The options are x4x4x4x4, x4x4x8, x8x4x4, x8x8, x16, and **Auto**.

IOU1 (IIO PCIe Br2)

This item configures the PCI-E Bifuraction setting for a PCI-E port specified by the user. The options are x4x4x4x4, x4x4x8, x8x4x4, x8x8, x16, and **Auto**.

IOU2 (IIO PCIe Br3)

This item configures the PCI-E Bifuraction setting for a PCI-E port specified by the user. The options are x4x4x4x4, x4x4x8, x8x4x4, x8x8, x16, and **Auto**.

▶CPU SLOT6PCI-E 3.0 x16/ CPU M.2 PCI-E 3.0 x4/CPU M.2 PCI-E 3.0 x4/ CPU SLOT6 PCI-E 3.0 x8(IN x16)

Link Speed

This item configures the link speed of a PCI-E port specified by the user. The options are **Auto**, Gen 1 (Generation 1) (2.5 GT/s), Gen 2 (Generation 2) (5 GT/s), and Gen 3 (Generation 3) (8 GT/s)

PCI-E Port Max (Maximum) Payload Size

Select Auto for the system BIOS to automatically set the maximum payload value for a PCI-E device specified by to user to enhance system performance. The options are **Auto**, 128B, and 256B.

▶IOAT Configuration

Disable TPH (TLP Processing Hint)

TPH is used for data-tagging with a destination ID and a few important attributes. It can send critical data to a particular cache without writing through to memory. Select No in this item for TLP Processing Hint support, which will allow a "TPL request" to provide "hints" to help optimize the processing of each transaction occurred in the target memory space. The options are Yes and **No**.

Prioritize TPH (TLP Processing Hint)

Select Yes to prioritize the TPL requests that will allow the "hints" to be sent to help facilitate and optimize the processing of certain transactions in the system memory. The options are Enable and **Disable**.

Relaxed Ordering

Select Enable to enable Relaxed Ordering support which will allow certain transactions to violate the strict-ordering rules of PCI and to be completed prior to other transactions that have already been enqueued. The options are **Disable** and Enable.

▶Intel VT for Directed I/O (VT-d)

Intel VT for Directed I/O (VT-d)

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

Interrupt Remapping

Select Enable for Interrupt Remapping support to enhance system performance. The options are **Enable** and Disable.

PassThrough DMA

Select Enable for the Non-Iscoh VT-d engine to pass through DMA (Direct Memory Access) to enhance system performance. The options are **Enable** and Disable.

ATS

Select Enable to enable ATS (Address Translation Services) support for the Non-Iscoh VT-d engine to enhance system performance. The options are **Enable** and Disable.

Posted Interrupt

Select Enable to support VT_D Posted Interrupt which will allow external interrupts to be sent directly from a direct-assigned device to a client machine in non-root mode

to improve virtualization efficiency by simplifying interrupt migration and lessening the need of physical interrupts. The options are **Enable** and Disable.

Coherency Support (Non-Isoch)

Select Enable for the Non-Iscoh VT-d engine to pass through DMA (Direct Memory Access) to enhance system performance. The options are **Enable** and Disable.

▶Intel VMD Technology

▶Intel VMD for Volume Management Device on CPU

VMD Config for PStack0

Intel VMD for Volume Management

Select Enable to use the Intel Volume Management Device Technology for this stack. The options are **Disable** and Enable.

VMD Config for PStack2

Intel VMD for Volume Management

Select Enable to use the Intel Volume Management Device Technology for this stack. The options are **Disable** and Enable.

PCI-E Completion Timeout Disable

Select Enable to enable PCI-E Completion Timeout support for electric tuning. The options are Yes, **No**, and Per-Port.

▶South Bridge

The following South Bridge information will display:

- USB Module Version
- USB Devices

Legacy USB Support

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

XHCI Hand-Off

This is a 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 options are **Enabled** and Disabled.

Port 60/64 Emulation

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

RSA Support

This feature allows the user to enable and disable Intel Rack Scale Architecture support. The options are Enabled and **Disabled**.

▶SATA And RST Configuration

SATA Controller(s)

This item enables or disables the onboard SATA controller supported by the Intel PCH chip. The options are **Enable** and Disable.

Configure SATA as

Use this feature to select the mode for the installed SATA drives. The options are **AHCI** and RAID. Select AHCI to configure a SATA drive specified by the user as an AHCI drive. Select RAID to configure a SATA drive specified by the user as a RAID drive.

Note: This item is hidden when the SATA Controller item is set to Disabled.

Aggressive Link Power Management

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

Storage Option ROM/UEFI Driver

This feature controls the execution of UEFI and Legacy OpROM. The optionsare Disabled, UEFI, and **Legacy**.

Serial ATA Port 0~7:

Software Preserve

This feature displays the software information for the detected device.

Hot Plug

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

Spin Up Device

When this feature is disabled, all drives will spin up at boot. When it is enabled, it will perform Staggered Spin Up on any drive this feature is activated. The options are Enabled and **Disabled**.

SATA Device Type

Use this feature to identify the type of HDD that is connected to the STATA port. The options are **Hard Disk Drive** and Solid State Drive.

▶ACPI Settings

Use this feature to configure Advanced Configuration and Power Interface (ACPI) power management settings for your system.

WHEA Support

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

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.

Native PCIE Enable

This feature enables Native PCIE control.The options are **Enabled** and Disabled.

Native ASPM

This feature selects what controls ASPM. The options are Disabled (BIOS controlled), Enabled (operating system controlled), and **Auto**.

NUMA Support (Available when the OS supports this feature)

Select Enabled to enable Non-Uniform Memory Access support to enhance system performance. The options are **Enabled** and Disabled.

▶Boot Feature

Boot Feature

Fast Boot

When this feature is enabled, a minimal set of devices required to launch during system bootup is initialized. The options are **Disabled** and Enabled.

Quiet Boot

Use this feature to select the screen display between POST messages or the OEM logo at bootup. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are Unchecked and **Checked**.

Bootup Num-Lock

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

Option ROM Messages

This feature controls the display mode for Option ROM. The options are **Force BIOS** or Keep Current.

INT19 (Interrupt 19) Trap Response

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

Port 61h Bit-4 Emulation

This feature enables port 61h bit-4 toggling in SMM. The options are **Disabled** and Enabled.

Wait for "F1" If Error

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

Re-try Boot

When EFI Boot is selected, the system BIOS will automatically reboot the system from an EFI boot device after its initial boot failure. Select Legacy Boot, to allow the BIOS to automatically reboot the system from a Legacy boot device after its initial boot failure. The options are **Disabled**, Legacy Boot, and EFI Boot.

Watch Dog Function

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

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 **Instant Off** and 4 Seconds Override.

AC Loss Policy Depend on

Use this feature to set the power state after a power outage. Select Power Off for the system power to remain off after a power loss. Select Power On for the system power to be turned on after a power loss. Select Last State to allow the system to resume its last power state before a power loss. The options are Stay Off, Power On, and **Last State**.

EuP Support

EuP, or Energy Using Product, is a European energy-saving specification that sets a standard on the maximum total power consumption on electrical products. The options are **Unchecked** and Checked.

▶NCT6792D Super IO Configuration

NCT6792D Super IO Configuration

Super IO Chip - NCT6792D

▶Serial Port 1 Configuration

Serial Port 1

This feature enables the Serial Port 1 (COM1). The options are **Unchecked** or Checked.

Current Limit Override - The current limit override is shown.

Device Setting - IO=3F8h; IRQ=4;

Change Settings

This feature controls the Super IO device settings. The options are **Auto**, [IO=3F8h; IRQ=4;], [IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;], [IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;], [IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;], [IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;].

▶AST2500SEC Super IO Configuration

Super IO Chip - AST2500SEC

▶SOL Configuration

Serial Port

Select "checked" to enable the onboard serial port specified by the user.

Device Settings

This item displays the base I/O port address and the Interrupt Request address of a serial port specified by the user.

Note: This item is hidden when Serial Port 1 is set to Disabled.

Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 1. Select **Auto** for 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=2E8h; IRQ=7), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12); (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2F0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=2E0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

▶Serial Port Console Redirection

COM1

COM1 Console Redirection

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

**If the item "COM1 Console Redirection" is set to Enabled, the following items will become available for user's configuration:*

▶Console Redirection Settings

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

Terminal Type

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

Bits Per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600 and **115200** (bits per second).

Data Bits

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

Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

Flow Control

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

VT-UTF8 Combo Key Support

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

Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

Resolution 100x31

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

Legacy OS Redirection Resolution

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

Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SC0, ESCN, and VT400.

Redirection After BIOS POST

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

Legacy Serial Redirection Port

Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages. The options are SOL and **COM1**.

▶PCIe/PCI/PnP Configuration

Option ROM execution

SR-IOV Support (Available if the system supports Single-Root Virtualization)

Select Enabled for Single-Root IO Virtualization support. The options are Enabled and **Disabled.**

MMCFG Size

This feature determines the lowest MMCFG (Memory-Mapped Configuration) base assigned to PCI devices. The options are 64M, 128M, **256M**. 512M, 1G, and 2G.

MMIOHBase

Use this item to select the base memory size according to memory-address mapping for the IO hub. The base memory size must be between 4032G to 4078G. The options are **56T**, 40T, 24T, 16T, 4T, and 1T.

MMIO High Granularity Size

Use this item to select the high memory size according to memory-address mapping for the IO hub. The options are 1G, 4G, 16G, 64G, **256G**, and 1024G.

Above 4G Decoding (Available if the system supports 64-bit PCI decoding)

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

Onboard Video Option ROM

Use this item to select the Onboard Video Option ROM type. The options are Disabled, **Legacy**, and EFI.

PCH Slot1: PCI-E 3.0 X4 OPROM

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

CPU Slot 2 PCI-E x8(IN x16) OPROM

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

CPU Slot 4 PCI-E x16 OPROM

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

CPU Slot 6 PCI-E x16 OPROM

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

Onboard LAN Option ROM Type

Select Enabled to enable Option ROM support to boot the computer using a network device specified by the user. The options are **Legacy** and UEFI.

Onboard Lan Support 1/2

This feature allows the user to enable and disable onboard LAN1/2 controller. The default of Onboard Lan1/2 Support is **Enabled**.

Onboard LAN1 Option ROM
Onboard LAN2 Option ROM

Use the above four items to select the type of device installed in a LAN port specified by the user for system boot. The default setting for Onboard LAN1 Option ROM is **PXE**, the Onboard LAN2 Option ROM is **Disabled**.

Network Stack

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

If the item "Network Stack" is set to Enabled, the four items below will be displayed:

IPv4 PXE Support

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

Ipv4 HTTP Support

This feature allows the user to enable and disable Ipv4 HTTP boot support. If disabled, Ipv4 HTTP boot support will not be available. The options are **Disabled** and Enabled.

IPv6 PXE Support

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

Ipv6 HTTP Support

This feature allows the user to enable and disable Ipv6 HTTP boot support. If disabled, Ipv6 HTTP boot support will not be available. The options are **Disabled** and Enabled.

PXE boot wait time

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

Media detect count

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

6.4 Event Logs

Use this tab page to configure Event Log settings.

▶Change SMBIOS Event Log Settings

Enabling/Disabling Options

SMBIOS Event Log

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

Erasing Settings

Erase Event Log

If No is selected, data stored in the event log will not be erased. Select Yes, Next Reset, data in the event log will be erased upon next system reboot. Select Yes, Every Reset, data in the event log will be erased upon every system reboot. The options are **No**, (Yes, Next reset), and (Yes, Every reset).

When Log is Full

Select Erase Immediately for all messages to be automatically erased from the event log when the event log memory is full. The options are **Do Nothing** and Erase Immediately.

SMBIOS Event Log Standard Settings

Log System Boot Event

This option toggles the System Boot Event logging to enabled or disabled. The options are Enabled and **Disabled**.

MECI

The Multiple Event Count Increment (MECI) counter counts the number of occurences that a duplicate event must happen before the MECI counter is incremented. This is a numeric value. The default value is **1**.

METW

The Multiple Event Time Window (METW) defines number of minutes must pass between duplicate log events before MECI is incremented. This is in minutes, from 0 to 99. The default value is **60**.

Note: All values changed here do not take effect until computer is restarted.

▶View SMBIOS Event Log

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

DATE/TIME/ERROR CODE/SEVERITY

6.5 Security

Use this tab page to configure Security settings.

Administrator Password

Press Enter to create a new, or change an existing Administrator password.

Minimum Length - 3

Maximum - 20

Password Check

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

▶Secure Boot

System Mode - Setup

Vendor Keys - Not Modified

Secure Boot Enable - The options are Enabled and **Disabled**.

When a Platform Key(PK) is enrolled, this feature may be enabled.

Secure Boot Mode

Use this item to select the secure boot mode. The options are Standard and **Custom**.

CSM Support

Select Enabled to support the EFI Compatibility Support Module (CSM), which provides compatibility support for traditional legacy BIOS for system boot. The options are Disabled and **Enabled**.

*If the item "Secure Boot Mode" is set to Custom, the following item will become available for user's configuration:

▶Reset to Setup Mode

This feature deletes the contents of all UEFI Secure Boot key databases. This will result in entering Setup Mode.

▶Restore Factory Keys

This feature resets the content of all UEFI Secure Boot key databases to factory defaults.

▶Key Management

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

Provision Factory Default Keys

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

▶Restore Factory Keys

Press "yes" to install default keys..

▶Enroll Efi Image

Secure Boot variable: Size/Key#/Key Source

▶Platform Key (PK)

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

▶Key Exchange Keys---Please confirm

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

Append Key

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

▶Authorized Signatures

Set New Key

Select Yes to load the database from the manufacturer's defaults. Select No to load the DB from a file. The options are Yes and No.

Append Key

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

▶Forbidden Signatures

Set New Key

Select Yes to load the DBX from the manufacturer's defaults. Select No to load the DBX from a file. The options are Yes and No.

Append Key

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

▶Authorized TimeStamps

Set New Key

Select Yes to load the DBT from the manufacturer's defaults. Select No to load the DBT from a file. The options are Yes and No.

Append Key

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

▶OsRecovery Signatures

Set New Key

Select Yes to load the DBR from the manufacturer's defaults. Select No to load the DBR from a file. The options are Yes and No.

Append Key

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

6.6 Boot

Use this tab page to configure Boot Settings.

Boot Configuration

Setup Prompt Timeout

Enter the wait time in seconds to wait for the setup activation key. Enter 65535 for indefinite wait time. The default is 1.

Boot mode select

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

FIXED BOOT ORDER Priorities

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

The options are Hard Dish, CD/DVD, USB Hard Disk, USB CD/DVD, USB Key, USb Floppy, USB Lan, Network, and Disabled.

▶Delete Driver Option

▶NETWORK Drive BBS Priorities

This feature allows the user to specify which UEFI network drive devices are boot devices.

Boot Option #1

▶Save Changes and Reset

This feature resets the system after saving changes.

▶Discard Changes and Reset

This feature resets the system without saving changes.

▶Save Changes

This feature saves changes, but does not reset the system.

▶Discard Changes

This feature discards changes, but does not reset the system.

▶Restore Defaults

This feature restores defaults to all setup options.

▶Save as User Defaults

This feature saves all changes made so far and makes them the new defaults.

▶Restore User Defaults

This feature restores all setup options to the user defaults.

6.7 Save & Exit

Use this tab page to configure Save & Exit settings.

Save Options

▶Discard Changes and Exit

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

▶Save Changes and Reset

When you have completed the system configuration changes, select this option to leave the BIOS setup utility and reboot the computer,which will allow the new system configuration parameters to take effect. Select Save Changes and Exit from the Exit menu and press <Enter>.

▶Save Changes

After completing the system configuration changes, select this option to save the changes you have made. This will not reset (reboot) the system.

▶Discard Changes

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

Default Options

▶Restore Defaults

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

▶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 priorities sequence in the Boot menu, and immediately boot the system with a device specified by the user instead of the one specified in the boot list. This is a one-time override.

▶Launch EFI Shell from filesystem device.

Attempts to Launch EFI Shell application (Shell.efi) from one of the available file system devices.

Appendix A

BIOS Error Codes

A-1 BIOS Error Beep (POST) Codes

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

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

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

These fatal errors are usually communicated through a series of audible beeps. The numbers on the fatal error list (on the following page) correspond to the number of beeps for the corresponding error. All errors listed, with the exception of Beep Code 8, are fatal errors.

BIOS Error Beep (POST) Codes		
Beep Code	**Error Message**	**Description**
1 short	Refresh	Circuits have been reset (Ready to power up)
5 short, 1 long	Memory error	No memory detected in system
5 long, 2 short	Display memory read/write error	Video adapter missing or with faulty memory
1 long continuous	System OH	System overheat condition

A-2 Additional BIOS POST Codes

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

When BIOS performs the Power On Self Test, it writes checkpoint codes to I/O port 0080h. If the computer cannot complete the boot process, a diagnostic card can be attached to the computer to read I/O port 0080h (Supermicro p/n AOC-LPC80-20).

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

Appendix B

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.

These warnings may also be found on our website 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.

ا كً ف حالة وٌكي أى تتسبب ف اصابة جسد ةٌ هذا الزهز عٌ خطز !تحذ زٌ .
قبل أى تعول على أي هعذات،كي على علن بالوخاطز ال ٱجوة عي الذوائز
الكهزبائ ةٍ
وكي على درا ةٌ بالووارسات البقائ ةٍ لو عٌ وقع أي حادث
استخذم رقن الب اٍى الو صٌص ف هًا ةٌ كل تحذ زٌ للعشر تزجوتها

안전을 위한 주의사항

경고!

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

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

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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

BEWAAR DEZE INSTRUCTIES

Installation Instructions

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

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

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

¡Advertencia!

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

Attention

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

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

Circuit Breaker

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

サーキット・ブレーカー

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

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

هذا المنتج يعتمد على معداث الحمايت مه الدوائرالقصيرة 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 250V, 20A.

Power Disconnection Warning

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

電源切断の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシ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 מפני ניתוק חשמלי

!אזהרה

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק

.לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים

يجب فصم انتظاو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد
انطاقت قبم
انصل إنى اثماطق انداخهيت نههيكم نتثبيج أو إزانت مكناث 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.

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

경고!

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

Waarschuwing

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

Restricted Area

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

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

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

警告

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

警告

此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.)

تخصيص هذه انحذة نترك بُها ف مناطق محظورة تم .
،مَكن انصبل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت
أو أ وس هُت أخري نلالأمما قفم ومفتاح

경고!

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

Waarschuwing

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

Battery Handling

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

電池の取り扱い

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

警告

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

警告

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

Warnung

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

Attention

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

¡Advertencia!

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

אזהרה!

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

هناك خطر من انفجار في حالة اسحبذال البطارية بطريقة غير صحيحة فعليل
اسحبذال البطارية
فقط بنفس النبع أو ما يعادلها مما أوصث به الشرمة المصنعة
جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة الصانعة

경고!

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

Waarschuwing

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

Redundant Power Supplies

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

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

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

警告
此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 لعسل الوحدة عن الكهرباء

경고!

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

Waarschuwing

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

Backplane Voltage

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

バックプレーンの電圧

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

修理する際には注意ください。

警告

当系统正在进行时，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 مه التيار الكهزبائي أوالطاقة المجبدة على اللحة
عندما يكن النظام يعمل كه حذرا عند خدمة هذا الجهاس

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

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

Comply with Local and National Electrical Codes

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

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告
设备安装必须符合本地与本国电气法规。

警告
設備安裝必須符合本地與本國電氣法規。

Warnung
Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!
La 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 للقاويه المحلية والبطية المتعلقة
بالكهرباء

경고!
현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

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

Product Disposal

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

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

警告
本产品的废弃处理应根据所有国家的法律和规章进行。

警告
本產品的廢棄處理應根據所有國家的法律和規章進行。

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

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

Attention

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

סילוק המוצר

אזהרה!

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

التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القانين واللائح البطنية عند

경고!

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

Waarschuwing

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

Hot Swap Fan Warning

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

ファン・ホットスワップの警告

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

警告!

警告！危险的可移动性零件。请务必与转动的风扇叶片保持距离。 当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

警告

危險的可移動性零件。請務必與轉動的風扇葉片保持距離。 當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

Warnung

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

¡Advertencia!

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

Attention

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

אזהרה!

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

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

경고!

움직이는 위험한 부품. 회전하는 송풍 날개에 접근하지 마세요. 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

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

Power Cable and AC Adapter

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

電源コードとACアダプター

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

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

םילבכ םיילמשח ימאתמו AC

!הרהזא

ךרוצל ומאתוה וא ושכרנ רשא AC םימאתמו םיקפס ,םילבכב שמתשהל שי ,רצומה תא םיניקתמ רשאכ
לכב שומיש . עקתהו לבכה לש הנוכנ הדימ ללוכ ,תוימוקמה תוחיטבה תושירדל ומאתוה רשאו ,הנקתהה
למשחה ירישכמב שומישה יקוחל םאתהב .ילמשח רצק וא הלקתל םורגל לולע ,רחא גוסמ םאתמ וא לבכ
לש דוק םהילע עיפומ רשאכ) CSA-ב וא UL -ב םיכמסומה םילבכב שמתשהל רוסיא םייק ,תוחיטבה יקוחו
.דבלב Supermicro י"ע םאתוה רשא רצומב קר אלא ,רחא ילמשח רצומ לכ רובע UL/CSA)

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

전원 케이블 및 AC 어댑터

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

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

Stroomkabel en AC-Adapter

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

Appendix C

System Specifications

Processor

Supports single Intel Xeon W-21xx series processor in a Socket R4 (LGA 2066)
Note: Refer to the motherboard specifications pages on our website for updates to supported processors.

Chipset

Intel C422 PCH series

BIOS

256 Mb AMI BIOS SPI Flash BIOS

Memory

Supports eight DIMM slots for up to 256 GB of RDIMM or 512 GB of LRDIMM ECC/Non-ECC DDR4 memory, one or two DIMMs per channel (DPC) with speeds of up to 2666 MHz
DIMM sizes: 4GB, 8GB, 16GB, 32GB, and 64GB

Storage Drives

Supports: Internal fixed drives, four 3.5"
Two U.2 (PCIe x4)
Two M.2 (M-key 2280/22110, PCIe 3.0 x4)

PCI Expansion Slots

Three PCI-Express 3.0 x16 slots
One PCI-Express 3.0 x8 slots

Motherboard

X11SRA; ATX form factor,12" x 9.6", (30.5cm x 24.4cm)

Chassis

SC732D3-903B; Mid-size tower (4U), (WxHxD) 7.6 x 16.7 x 20.7 in. (193 x 424 x 525 mm)

System Cooling

One 12-cm PWM rear fan; one optional front fan; one CPU heatsink

Power Supply

900 W, 80Plus Gold level
Model: PWS-903-PQ
AC Input: 100-240 V, 50-60 Hz, Rated Input Current: 6-10 Amps
Rated DC Output Power:
+12 V, 25 Amps
+5 V standby , 3 Amps
+5 V, 25 Amps
+3 V, 25 Amps

Operating Environment

Operating Temperature: 10º to 35º C (50º to 95º F)
Non-operating Temperature: -40º to 60º C (-40º to 140º F)
Operating Relative Humidity: 20% to 95% (non-condensing)
Non-operating Relative Humidity: 5% to 95% (non-condensing)

Regulatory Compliance

Electromagnetic Emissions: FCC Part 15 Subpart B Class B, EN 55032 Class B, EN 61000-3-2/3-3, AS/NZS CISPR32
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) VCCI 32
Safety: CSA/EN/IEC/UL 60950-1 Compliant, UL or CSA Listed (USA and Canada), CE Marking (Europe)

Perchlorate Warning

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

Appendix D

UEFI BIOS Recovery

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

D.1 Overview

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

D.2 Recovering the UEFI BIOS Image

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

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

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

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

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

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

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

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

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

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

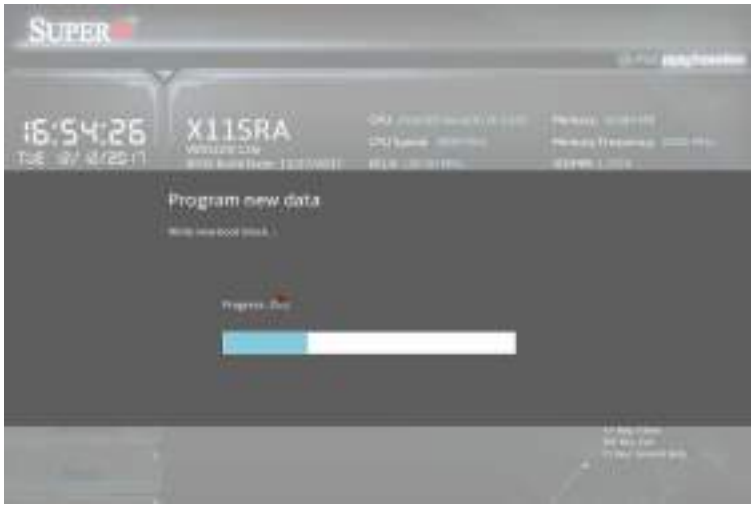
2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and reset the system when the following screen appears.

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

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

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

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



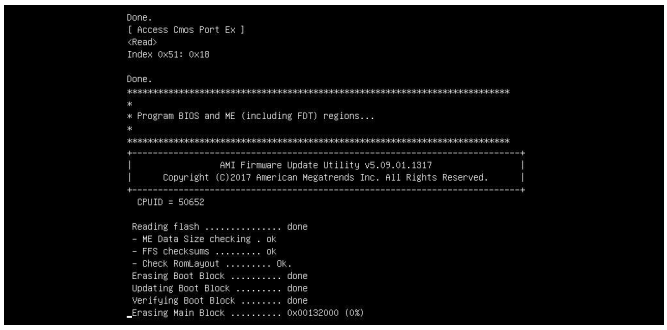
5. After the BIOS recovery process is complete, press any key to reboot the system.

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

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

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

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



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

10. Press <Del> continuously to enter the BIOS Setup utility.

11. Press <F3> to load the default settings.

12. After loading the default settings, press <F4> to save the settings and exit the BIOS Setup utility.

Appendix E

Chinese BSMI-RoHS

限用物質含有情況標示聲明書

Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱：工作站/ Workstation 型號（型式）: SYS-5039A-I（系列型號：732-9（本型式係MB X11SRA之機種））

Equipment name Type designation （Type）

單元 （Unit）	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead （Pb）	汞 Mercury （Hg）	鎘 Cadmium （Cd）	六價鉻 Hexavalent chromium （Cr^{+6}）	多溴聯苯 Polybrominated biphenyls （PBB）	多溴二苯醚 Polybrominated diphenyl ethers （PBDE）
機殼 （Chassis）	○	○	○	○	○	○
機殼風扇 （Chassis Fan）	－	○	○	○	○	○
線材 （Cable）	○	○	○	○	○	○
主機板 （Motherboard）	－	○	○	○	○	○
電源供應器 （Power Supply）	－	○	○	○	○	○
硬碟 （Hard Disk）	－	○	○	○	○	○
附加卡 （Add-on Card	－	○	○	○	○	○

備考1.〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

Note 1. “Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考2.〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2. “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3.〝－〞係指該項限用物質為排除項目。

Note 3. The “–” indicates that the restricted substance corresponds to the exemption.