SUPERMICRO®

SUPERSERVER®
SYS-510T-WTR
SYS-510T-WTR-EU

USER'S MANUAL

Revision 1.0b

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Manual Revision 1.0b

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Preface

About this Manual

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

Please refer to the SYS-510T-WTR/WTR-EU server 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: https://www.supermicro.com/wdl/driver

- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm

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Secure Data Deletion

A secure data deletion tool designed to fully erase all data from storage devices can be found on our website: https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Log9_Secure_Data_Deletion_Utility/

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

Chapter 3 Maintenance and Component Installation

Chapter 4 Motherboard Connections

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Chapter 1

Introduction

1.1 Overview

This chapter provides a brief outline of the functions and features of the SuperServer® SYS-510T-WTR/WTR-EU.

The following provides an overview of the specifications and capabilities.

System Overview	
Motherboard	X12STW-TF
Chassis	SYS-510T-WTR: CSE-815TQC4-R504WBP7 SYS-510T-WTR-EU: CSE-815TS-R000WNBP7-1
Processor Support	Single Intel® Xeon® E-2300, 10th Generation Pentium in an LGA1200 (H5) socket
Memory	Four DIMM slots, up to 128GB 4x 32GB DRAM, ECC DDR4 UDIMM with speeds up to 3200MHz
Drive Support	Four 3.5" hot-swap SATA/SAS/NVMe hybrid drive bays One M.2 PCIe 3.0 x4 One M.2 PCIe 4.0 x4 (Xeon® CPU require) Two 2.5" peripheral drive bays
Expansion Slots	One PCIe 4.0 x16 FHFL or two PCIe 4.0 x8 FHFL auto-switching One PCIe 3.0 x4 (in x8) LP
I/O Ports	Eight SATA (6Gbps) port(s) Two RJ45 10GbE LAN ports One RJ45 dedicated IPMI LAN port Five USB 3.2 Gen1 ports (2 headers; 2 rear, 1 Type A) Four USB 2.0 ports (2 headers; 1 rear) One VGA port(1 rear) Two COM ports (1 header; 1 rear) Two SuperDOM (Disk on Module) port with built-in power
System Cooling	Four 40x40x56mm PWM counter-rotation heavy duty fans with optimal fan speed control Two AOC cooling fans (optional) One air shroud One CPU heatsink
Power	SYS-510T-WTR: Two 500W redundant power supplies with PMbus (Platinum Level) SYS-510T-WTR-EU: Two 600W redundant power supplies with PMbus (Titanium Level)
Form Factor	1U Rackmount 1.7 x 17.2 x 25.6in. / 43 x 437 x 650mm (HxWxD)

Notes: A Quick Reference Guide can be found on the product page of the Supermicro® website.

The following safety models associated with the SYS-510T-WTR/WTR-EU have been certified as compliant with UL or CSA: 815-5, 815-R5X12, 815TS-R5X12.

1.2 System Features

The following views of the system display the main features. Refer to Appendix B for additional specifications.

Front View

Service/Asset Tag with BMC Password

Control Panel

Figure 1-1. Front View

System Features: Front	
Feature	**Description**
Control Panel	One control panel (see Control Panel for details)
Asset Tag	Service/Asset Tag with BMC Password Reset

Logical Storage Drive Numbers	
Item	**Description**
0 – **3**	Four hot-swap 3.5" SATA/SAS*/NVMe* drive bays

*NVMe, or SAS support requires additional parts in optional parts list.

Control Panel
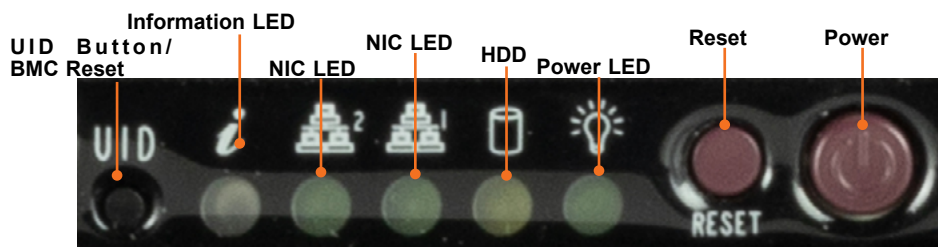
Figure 1-2. Control Panel

Control Panel Features	
Feature	**Description**
UID button/ BMC reset	The unit identification (UID) button turns on or off the blue light function of the Information LED. This button can also be used to reset the BMC.
Information LED	Alerts operator to several states, as noted in the table below.
NIC LED	Indicates network activity on LANs when flashing.
HDD	Indicates activity on the storage drives when flashing.
Power LED	Steady on – Power on Blinking at 4Hz – Checking BIOS/BMC integrity Blinking at 4Hz and "i" LED is blue – BIOS firmware updating Two blinks at 4Hz, one pause 2hz and "i" LED blue – BMC firmware updating Blinking at 1Hz and "i" LED red – Fault detected
Reset	This button is used to reset the server.
Power button	The main power switch applies or removes primary power from the power supply to the server but maintains standby power. Hold for four seconds to force a shut-down.

Information LED	
Color, Status	**Description**
Red, solid	An overheat condition has occurred.
Red, blinking at 1Hz	Fan failure, check for an inoperative fan.
Red, blinking at 0.25Hz	Power failure, check for a non-operational power supply.
Red, solid, with Power LED blinking green	Fault detected
Blue and red, blinking at 10 Hz	Recovery mode
Blue, solid	UID has been activated locally to locate the server in a rack environment.
Blue, blinking at 1Hz	UID has been activated using the BMC to locate the server in a rack environment.
Blue, blinking at 2Hz	BMC is resetting
Blue, blinking at 4Hz	BMC is setting factory defaults
Blue, blinking at 10Hz with Power LED blinking green	BMC/BIOS firmware is updating

Rear View
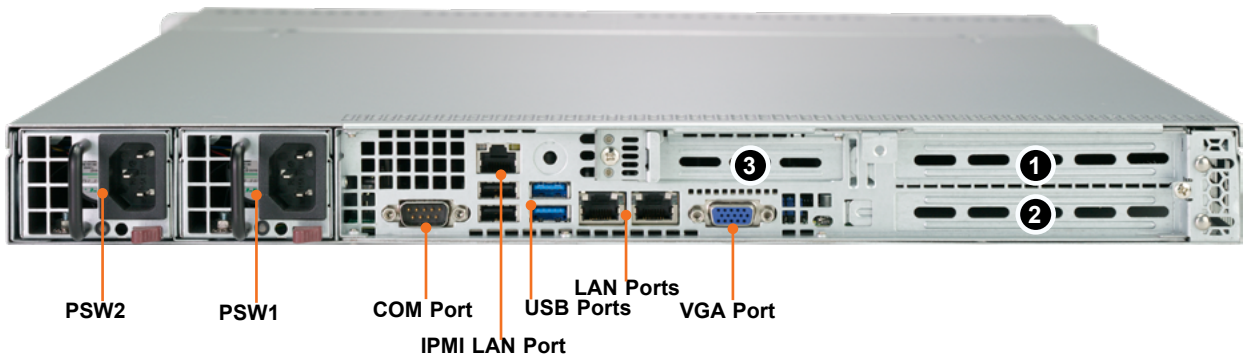
Figure 1-3. System: Rear View

System Features: Rear	
Feature	**Description**
Power Supplies	Two redundant power supply modules, PWS1 on the right, PWS2 on the left
COM Port	One COM port
IPMI LAN Port	One RJ45 dedicated IPMI LAN port
USB	Two USB 3.2 Gen 1 ports Two USB 2.0 ports
LAN Ports	Two RJ45 10GbE LAN ports
VGA Port	One VGA port
❶	PCIe 4.0 x16 or x8 (auto switch) FHFL auto-switching
❷	PCIe 4.0 x0 or x8 (auto switch) FHFL auto-switching
❸	PCIe 3.0 x4 (in x8) LP

Power Supply Indicators		
Power Supply Condition	**Green LED**	**Amber LED**
No AC Power to Power Supply	OFF	OFF
Power Supply critical events causing a shutdown/ failure/ OCP/ OVP/ Fan Fail/ OTP/ UVP	OFF	Amber LED
Power Supply Warning Events Where the power supply continues to operate; High temperature; Over voltage; under voltage, etc.	OFF	1Hz Blink Amber
AC present only 12VSB ON (PS OFF)	1Hz Blink Green	OFF
Output ON and OK	Green	OFF
AC cord unplugged and in redundant mode	OFF	Amber

1.3 System Architecture

This section covers the locations of the system's electrical components, a system block diagram, and a motherboard layout with the connectors and jumpers called out.

Main Components
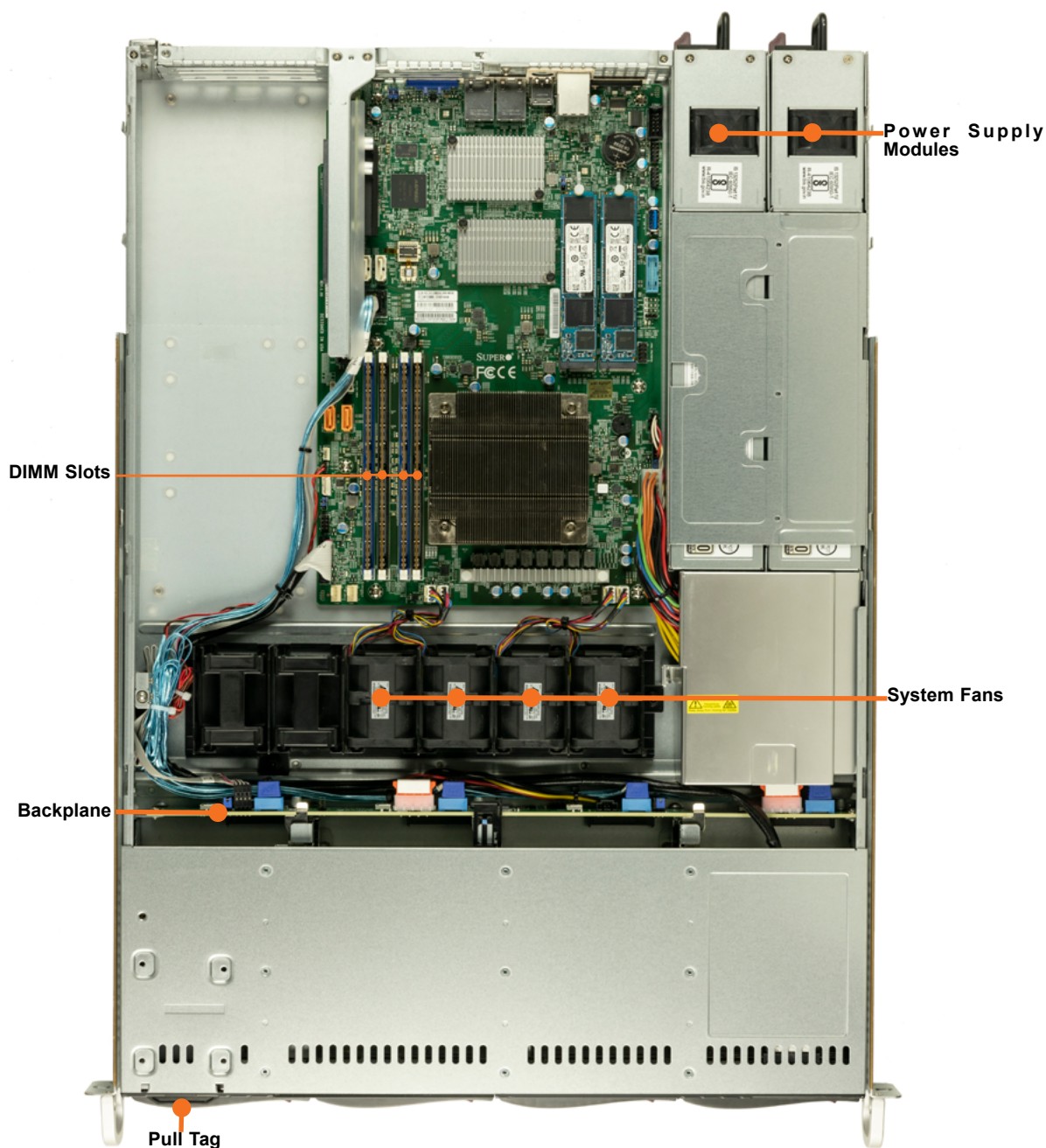
Figure 1-4. Main Component Locations

System Features: Top	
Feature	**Description**
Power Supply	Dual redundant modules, PWS-504P-1R2
DIMM slots	Four DIMM memory slots
Processors	Single Intel® Xeon® E-2300, 10th Generation Pentium in an LGA1200 (H5) socket with heatsinks, SNK-P0049P
System Fans	Four 4-cm counter-rotating PWM fans
Pull Tag	Pull tag with serial number / BMC ADMIN password
Backplane	Four SAS3/SATA3/NVMe storage device backplane, BPN-SAS3-815TQ-N4

System Block Diagram

The block diagram below shows the connections and relationships between the subsystems and major components of the overall system.
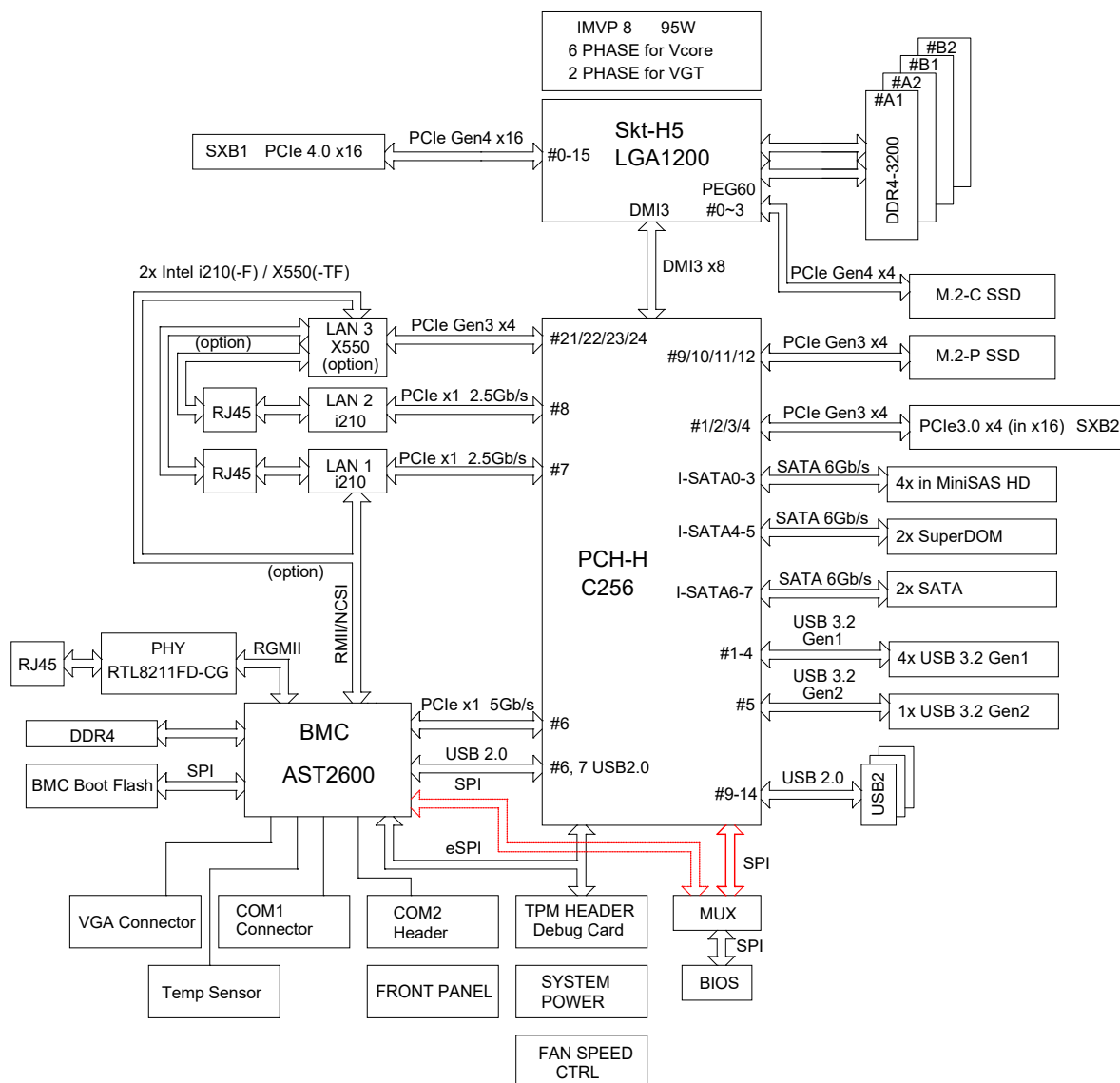
Figure 1-5. System Block Diagram

1.4 Motherboard Layout

Below is a layout of the X12STW-TF motherboard with jumper, connector, and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information, and jumper settings, refer to Chapter 4 or the Motherboard Manual.

Figure 1-6. Motherboard Layout

Quick Reference Table

Jumper	Description	Default Setting
JBT1	CMOS clear	Open (Normal)
low	JSEN1/JIPMB1	Pins 1-2 (JSEN1) Pins 2-3 (JIPMB1)
JPG1	VGA Enable/Disable	Pins 1-2 (Enabled)
JPL1	LAN1 Enable/Disable (LAN I210)	Pins 1-2 (Enabled)
JPL2	LAN2 Enable/Disable (LAN I210)	Pins 1-2 (Enabled)
JPME2	Manufacturing mode select	Pins 1-2 (Normal)
JPTG1	LAN X550 Enable/Disable	Pins 1-2 (Enabled)
JWD1	Watch dog timer	Pins 1-2 (Reset)

LED	Description	Status
LE6	Power ready LED	Solid Amber: Standby Solid Red: Power Failed Solid Green: Power On
LE2401	Unit Identifier (UID) LED	Solid Blue: Unit Identified
LEDEC1	Embedded Controller (EC) heartbeat LED	Blinking Green: EC Normal
LEDM1	BMC heartbeat	Blinking Green: BMC Normal
LEDPWR	Onboard power LED	Solid Green: Power On

Connector	Description
BMC_LAN	Dedicated BMC LAN port
BT1	Onboard battery
FAN1 - FAN6	System fan headers (FAN1: CPU fan)
I-SATA4 - I-SATA7	Intel PCH SATA 3.0 ports
I-SGPIO2	Serial link general purpose I/O header
JCOM1, JCOM2	COM port, COM header
JD1	Speaker/Power LED header (Pins 1-4: Power LED, Pins 4-7: Speaker)
JF1	Front control panel header
JL1	Chassis intrusion header
JLAN1, JLAN2	1G (-F), 10G (-TF) LAN ports
JPI^{2}C1	Power System Management Bus (SMB) I^{2}C header
JPWR1	24-pin ATX power connector
JPWR2	8-pin power connector
JSATA1	Intel PCH SATA 3.0 port (I-SATA0-3)
JSD1, JSD2	SATA DOM power connectors
JSEN1/JIPMB1	System inlet temperature sensor/system management bus header (for IPMI only)
JSTBY1	Standby power header

Connector	Description
JSXB1A, JSXB1B, JSXB1C	SMC-Proprietary WIO_L (Left) PCIe 4.0 x16 add-on card slots
JSXB2	SMC-Proprietary WIO_R (Right) PCIe 3.0 x4 add-on card slot
JTPM1	Trusted Platform Module (TPM) header
JUIDB1	Unit Identifier (UID) button
JVGA	VGA connector
M.2-C	M.2 PCIe 4.0 x4 slot (2280/22110)
M.2-P	M.2 PCIe 3.0 x4 slot (2280/22110)
SP1	Internal speaker/buzzer
SRW4 - SRW7	M.2 holding screws
USB0/1	Back panel USB 2.0 ports
USB2/3, USB4/5	Front accessible USB 2.0 headers
USB6/7	Back panel USB 3.2 Gen 1 ports
USB8	USB 3.2 Gen 2 Type-A header
USB9/10	Front accessible USB 3.2 Gen 1 header

Chapter 2

Server Installation

2.1 Overview

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

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

Decide on a suitable location for the rack unit that will hold the server. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise, and electromagnetic fields are generated. It will also require a grounded AC power outlet nearby. Be sure to read the precautions and considerations noted or in Appendix A.

2.3 Preparing for Setup

The box in which the system was shipped should include the rackmount hardware needed to install it into the rack. 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 of the rack so that you can open the front door completely (~25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.

- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).

• This product is not suitable for use with visual display workplace devices according to §2 of the German Ordinance for Work with Visual Display Units.

Rack Precautions

• Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.

• In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.

• Always make sure the rack is stable before extending a server or other component from the rack.

• You should extend only one server or component at a time - extending two or more simultaneously may cause the rack to become unstable.

Server Precautions

• Review the electrical and general safety precautions in Appendix A.

• Determine the placement of each component in the rack *before* you install the rails.

• Install the heaviest server components at the bottom of the rack first and then work your way up.

• Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.

• Allow any drives and power supply modules to cool before touching them.

• When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

Rack Mounting Considerations

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the room's ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.

- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

- Slide rail mounted equipment is not to be used as a shelf or a workspace.

Slide rail mounted equipment is not to be used as a shelf or a workspace.

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

2.4 Installing the Rails

There are a variety of rack units on the market, which may require a slightly different assembly procedure.

The following is a basic guideline for installing the system into a rack with the rack mounting hardware provided. You should also refer to the installation instructions that came with the specific rack you are using.

Identifying the Sections of the Rack Rails

You should have received two rack rail assemblies in the rack mounting kit. Each assembly consists of two sections: an inner fixed chassis rail that secures directly to the server chassis and an outer fixed rack rail that secures directly to the rack itself (see Figure 2-1). Two pairs of short brackets to be used on the front side of the outer rails are also included.

Installing the Inner Rails

Both the left and right side inner rails have been pre-attached to the chassis. Proceed to the next step.

Outer Rail (attaches to rack)

Inner Rail (pre-installed)

Locking Tab
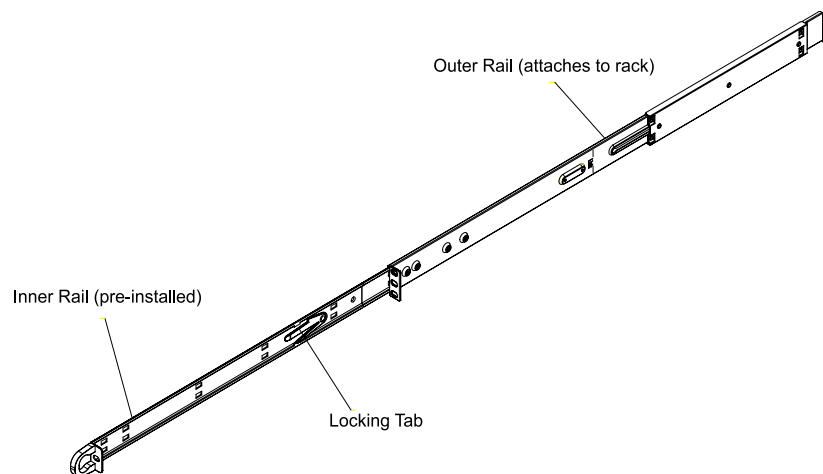
**Figure 2-1. Identifying the Sections of the Rack Rails
(right side rail shown)**

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

Installing the Outer Rails

Begin by measuring the distance from the front rail to the rear rail of the rack. Attach a short bracket to the front side of the right outer rail and a long bracket to the rear side of the right outer rail. Adjust both the short and long brackets to the proper distance so that the rail can fit snugly into the rack. Secure the short bracket to the front side of the outer rail with two screws and the long bracket to the rear side of the outer rail with three screws. Repeat these steps for the left outer rail.

Locking Tabs: Both chassis rails have a locking tab, which serves two functions. The first is to lock the server into place when installed and pushed fully into the rack, which is its normal position. Secondly, these tabs also lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when you pull it out for servicing.
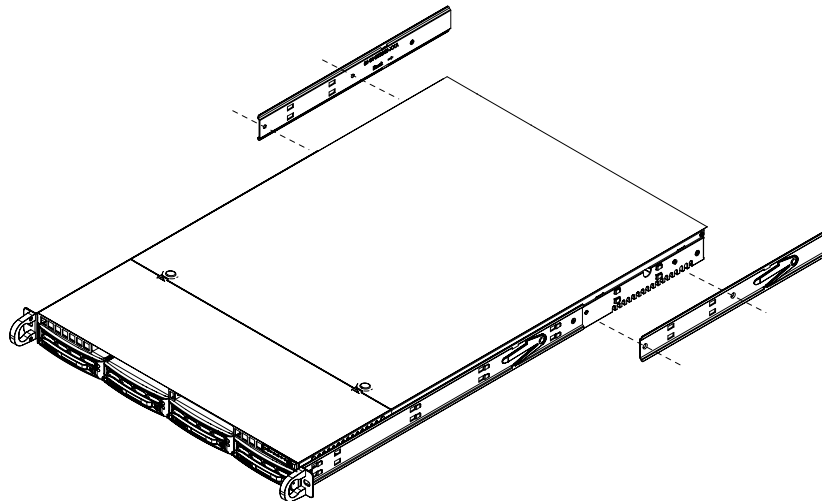
Figure 2-2. Installing the Rails

Note: Both chassis rails have a locking tab, which serves two functions. The first is to lock the server into place when installed and pushed fully into the rack, which is its normal position. Secondly, these tabs also lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when you pull it out for servicing.

Warning: Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.

2.5 Installing the Server into a Rack

Installing to a Standard Rack

You should now have rails attached to both the chassis and the rack. The next step is to install the server into the rack.

1. Line up the rear of the chassis rails with the front of the rack rails.

2. Slide the chassis rails into the rack rails, keeping the pressure even on both sides (you may have to press the locking tabs when inserting). See Figure 2-3.

3. When the server has been pushed completely into the rack, you should hear the locking tabs "click".
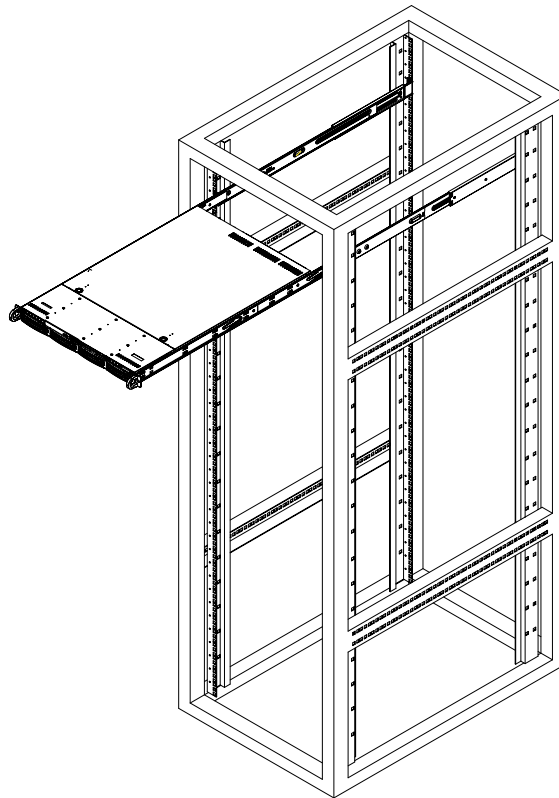
Figure 2-3. Installing the Server into a Rack

Note: Figure is for illustrative purposes only. Always install servers to the bottom of a rack first.

Slide rail mounted equipment is not to be used as a shelf or a work space.

Installing to a Telco Rack

To install the SuperServer SYS-510T-WTR/WTR-EU into a Telco (or "open") type rack, use two L-shaped brackets on either side of the chassis (four total).

1. First, determine how far the server will extend out from the front of the rack. The chassis should be positioned so that the weight is balanced between front and back.

2. Attach the two front brackets to each side of the chassis, then the two rear brackets positioned with just enough space to accommodate the width of the rack.

3. Finish by sliding the chassis into the rack and tightening the brackets to the rack. See Figure 2-4.
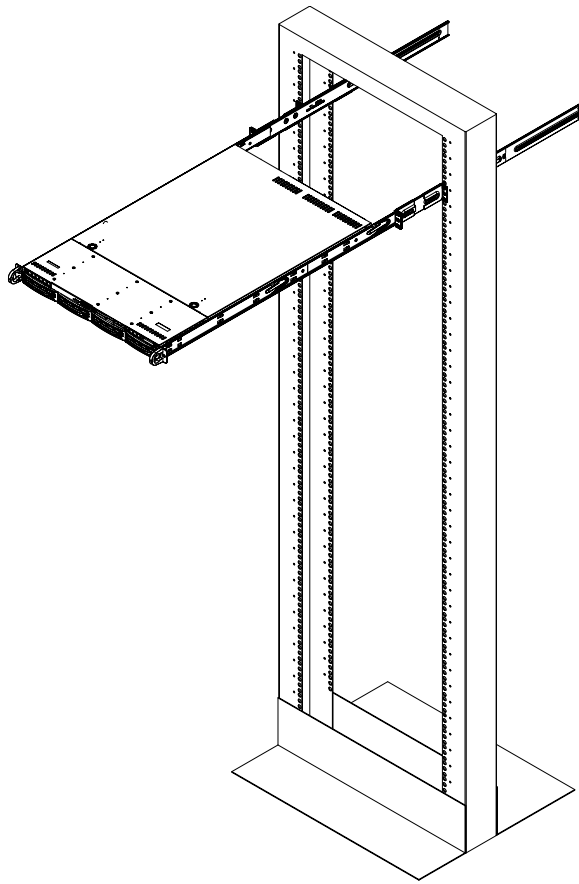
Figure 2-4. Installing the Server into a Telco Rack

Note: Figure is for illustrative purposes only. Always install servers to the bottom of a rack first.

Chapter 3

Maintenance and Component Installation

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

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

3.1 Removing Power

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

1. Use the operating system to power down the system.

2. After the system has completely shut-down, disconnect the AC power cord(s) from the power strip or outlet. (If your system has more than one power supply, remove the AC power cords from all power supply modules.)

3. Disconnect the power cord(s) from the power supply module(s).

3.2 Accessing the System

The CSE-815T chassis features a removable top cover, which allows easy access to the inside of the chassis.

Removing the Top Cover

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

2. Grasp the two handles on either side and pull the unit straight out until it locks (you will hear a "click").

3. Depress the two buttons on the top of the chassis to release the top cover and at the same time, push the cover away from you until it stops.

4. Lift the top cover from the chassis to gain full access to the inside of the server.

Check that all ventilation openings on the top cover and the top of the chassis are clear and unobstructed.

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.

3.3 Static-Sensitive Devices

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

Precautions

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

- Touch a grounded metal object before removing any PCB (printed circuit board) from its antistatic bag.

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

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

- Put the PCBs back into their antistatic bags when not in use.

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

3.4 Processor and Heatsink Installation

The processor (CPU) must first be attached to the processor carrier to form the processor carrier assembly. This assembly gets attached to the heatsink to form the processor heatsink module (PHM), which is then installed into the CPU socket. Before installing, be sure to perform the steps below:

- Please carefully follow the instructions given on ESD precautions.

- After shutting down the system, unplug the AC power cords from all power supplies.

- Check that the plastic protective cover is on the CPU socket and that none of the socket pins are bent. If they are, contact your retailer.

- When handling the processor, avoid touching or placing direct pressure on the LGA lands (gold contacts). Improper installation or socket misalignment can cause serious damage to the processor or the socket and may require manufacturer repairs.

- Thermal grease is pre-applied on new heatsinks. No additional thermal grease is needed.

- Refer to the Supermicro® website (https://www.supermicro.com/en) for updates on processor and memory support.

- All graphics in this manual are for illustration only. Your components may look different.

Installing the Processor(s)

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

1. Remove the cover plate that protects the CPU#1 socket: press the load lever to release the load plate, which covers the CPU socket, from its locked position.
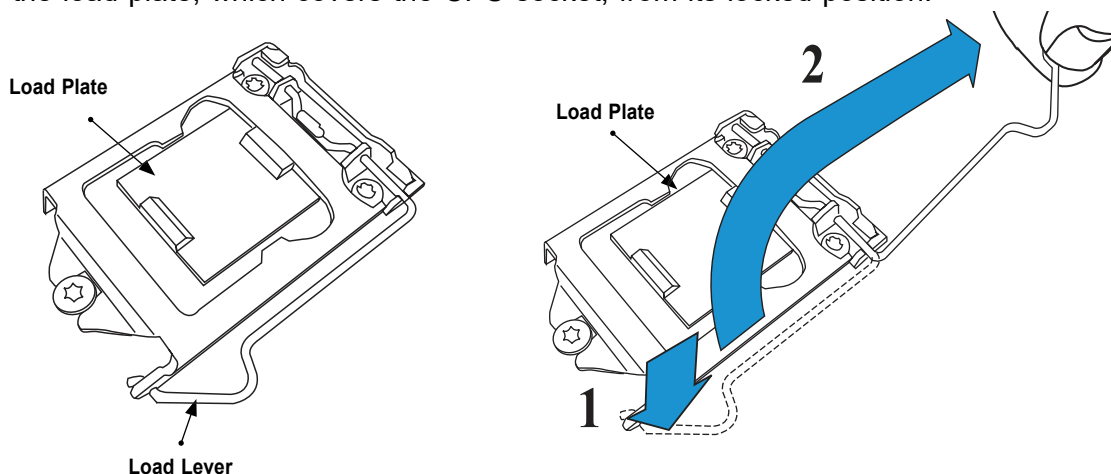
Figure 3-1. Removing the Processor Cover Plate

2. Gently lift the load lever to open the load plate. Remove the plastic cover plate.
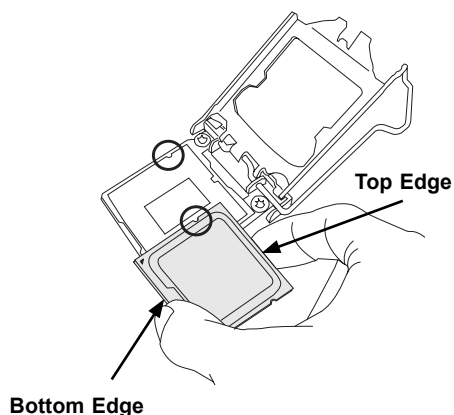
Figure 3-2. Placing the Processor into the Socket

3. Use your thumb and your index finger to hold the edges of the processor. Align the CPU key (the semi-circle cutouts) with the socket keys.

Pin 1
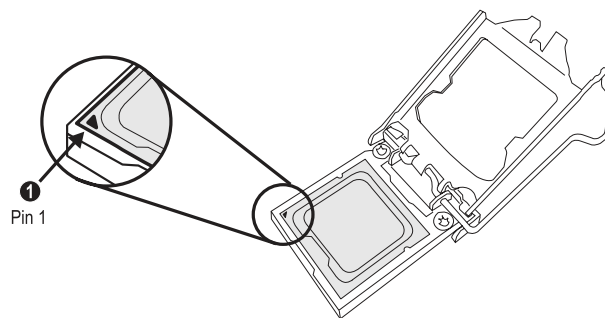
Figure 3-3. Inspecting the Processor Installation

4. Once aligned, carefully place the processor into the socket. Do not drop the processor on the socket, move or rub the processor against the socket or against any socket pins, which may damage the components.

5. With the processor inserted into the socket, inspect the four corners of the CPU to make sure that it is properly installed and flush with the socket.

6. Carefully press the processor load lever down until it locks into its retention tab.

Installing a Heatsink

A passive type heatsink is used on the X12STW-TF.

Note: Do not apply any thermal grease to the heatsink or the CPU die; the required amount has already been applied.

1. Place the heatsink on top of the CPU so that the four mounting holes are aligned with those on the heatsink retention mechanism.

2. Screw in two diagonal screws (i.e. the #1 and the #2 screws) until they are just snug. Do not fully tighten the screws or you may damage the CPU.

3. Add the two remaining screws then finish the installation by fully tightening all four screws (be careful not to overtighten).
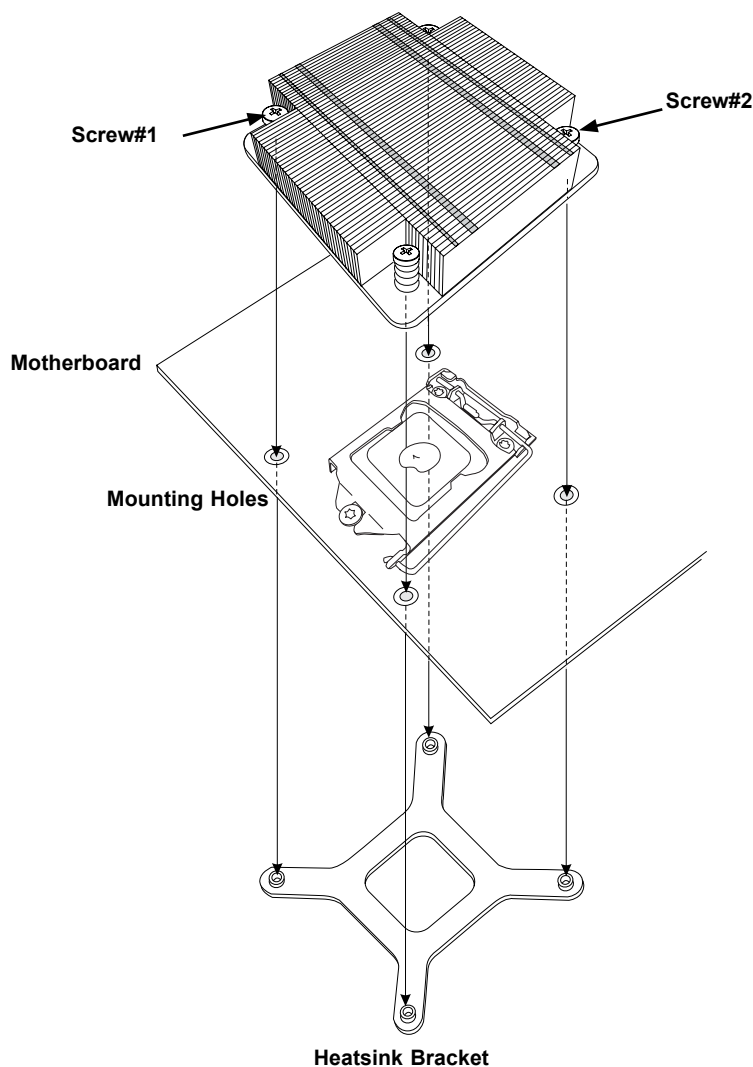
Figure 3-4. Installing/Removing the Heatsink

Note: Wait for the heatsink to cool down before removing it.

Removing a Heatsink

We do not recommend removing the heatsink. If necessary, please follow the instructions below to prevent damage to the CPU or the CPU socket.

1. Unscrew and remove the heatsink screws from the motherboard in the sequence as show in the figure above.

2. Hold and gently pivot the heatsink back and forth to loosen it from the CPU. (Do not use excessive force when dislodging the heatsink.)

3. Once the heatsink is loose, remove it from the CPU.

4. Clean the surface of the CPU and the heatsink to get rid of the old thermal grease. Reapply the proper amount of thermal grease to the surface before you re-install the heatsink.
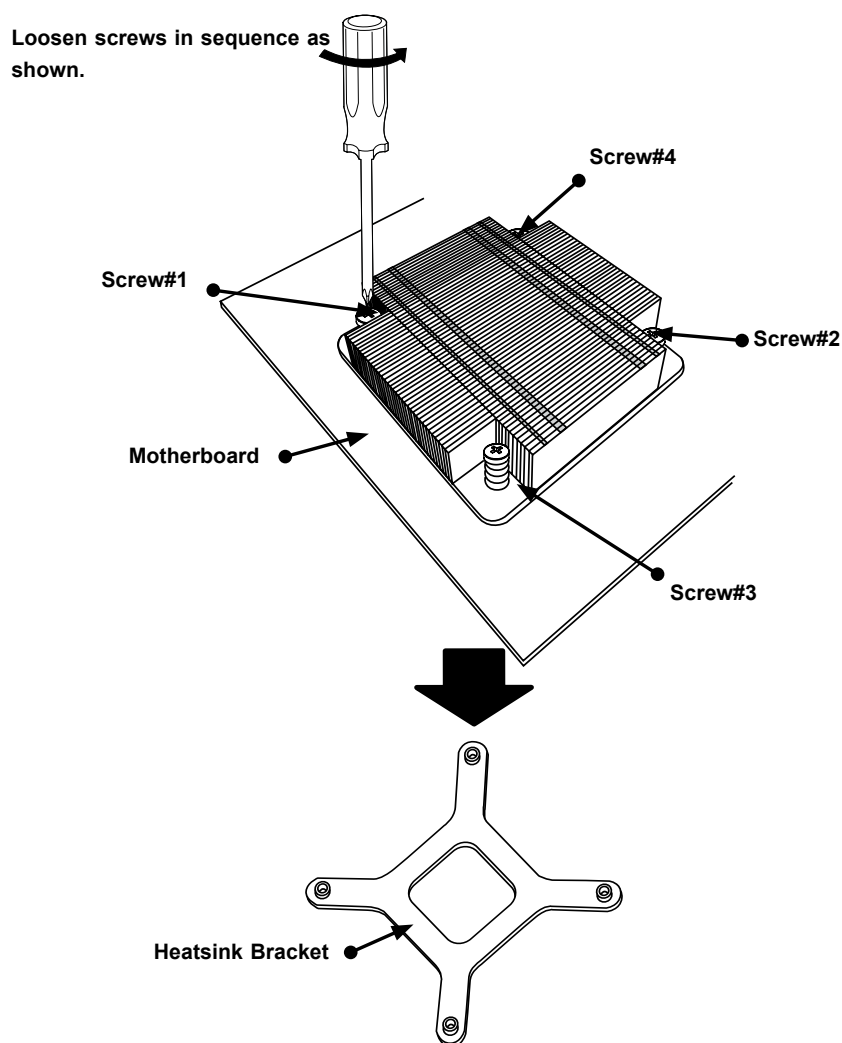
Figure 3-5. Removing the Heatsink

Note: Wait for the heatsink to cool down before removing it.

3.5 Memory

Memory Support

The X12STW-TF supports up to 128GB of DDR4 ECC UDIMM memory with speeds of up to 3200MHz in four memory slots. Refer to the tables below for the recommended DIMM population order and additional memory information. For validated memory, use our Product Resources page. Check the Supermicro® website for possible updates to memory support.

Memory Installation Sequence

Memory for this motherboard is populated using the "Fill First" method. The DIMM slots with blue release tabs are considered the first DIMM of their channel, and those with white release tabs are the second of the channel. When installing memory modules, be sure to populate the memory slots with the blue release tabs first and then populate those with the white release tabs.

General Memory Population Requirements

1. Be sure to use the memory modules of the same type and speed on the motherboard. Mixing of memory modules of different types and speeds is not allowed.

2. Using unbalanced memory topology such as populating two DIMMs in one channel while populating one DIMM in another channel will result in the reduced memory performance.

3. Populating memory slots with a pair of DIMM modules of the same type and size will result in interleaved memory, which will improve memory performance.

Recommended Population (Balanced)				
DIMMA1	DIMMB1	DIMMA2	DIMMB2	Total System Memory
		2GB	2GB	4GB
2GB	2GB	2GB	2GB	8GB
		4GB	4GB	8GB
4GB	4GB	4GB	4GB	16GB
		8GB	8GB	16GB
8GB	8GB	8GB	8GB	32GB
		16GB	16GB	32GB
16GB	16GB	16GB	16GB	64GB
		32GB	32GB	64GB
32GB	32GB	32GB	32GB	128GB

Max Memory Possible	4 Gb DRAM Technology	8 Gb DRAM Technology	16 Gb DRAM Technology
Single Rank UDIMM	16 GB (4 x 4 GB DIMMs)	32 GB (4 x 8 GB DIMMs)	64 GB (4 x 16 GB DIMMs)
Dual Rank UDIMMs	32 GB (4 x 8 GB DIMMs)	64 GB (4 x 16 GB DIMMs)	128 GB (4 x 32 GB DIMMs)

General Guidelines for Optimizing Memory Performance

- The blue slots must be populated first. DIMM slots must be populated in the following order: DIMMB2, DIMMA2, then DIMMB1, DIMMA1.

- It's recommended to use DDR4 memory of the same type and size.

- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.

- The motherboard will support odd-numbered modules (one or three modules installed). However, to achieve the best memory performance, a balanced memory population is recommended.

DIMM Installation

1. Insert the desired number of DIMMs into the slots based on the recommended DIMM population tables shown above.

2. Push the release tabs on both ends of the DIMM slot outwards to unlock it.
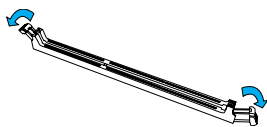
3. Align the key of the DIMM module with the receptive point on the memory slot.

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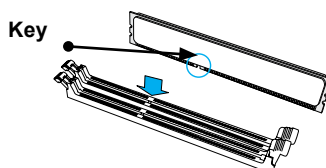
4. Align the notches on both ends of the module with the receptive points on the ends of the slot.

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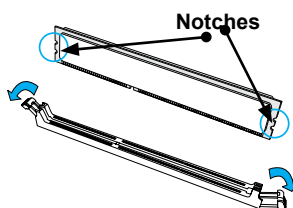
5. Push both ends of the module straight down into the slot until the module snaps into place.

Push both ends straight down into the memory slot.
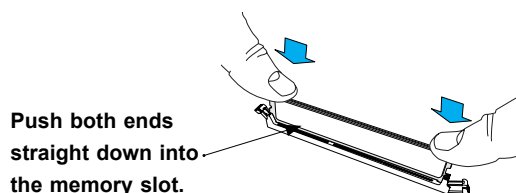
6. Press the release tabs to the lock positions to secure the DIMM module into the slot.

DIMM Removal

Press both release tabs on the ends of the DIMM module to unlock it. Once the DIMM module is loose, remove it from the memory slot.
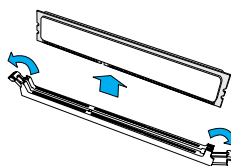
Warning! To avoid causing any damage to the DIMM module or the DIMM socket, do not use excessive force when pressing the release tabs on the ends of the DIMM socket. Handle DIMMs with care. Be aware and follow the ESD instructions given at the beginning of this chapter.

3.6 Motherboard Battery

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

Replacing the Battery

Begin by removing power from the system.

1. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.

2. To insert a new battery, slide one edge under the lip of the holder with the positive (+) side facing up. Then push the other side down until the clamp snaps over it.

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

LITHIUM BATTERY

BATTERY HOLDER
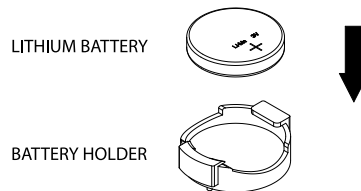
Figure 3-6. Installing the Onboard Battery

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).

3.7 Cable Routing Diagrams

MiniSAS HD cable for onboard SATA
and 3008/3108 Controller
CBL-SAST-0699 (default)

Slimline cable for 3808/3908 Controller

CBL-SAST-1275A-100 (optional)
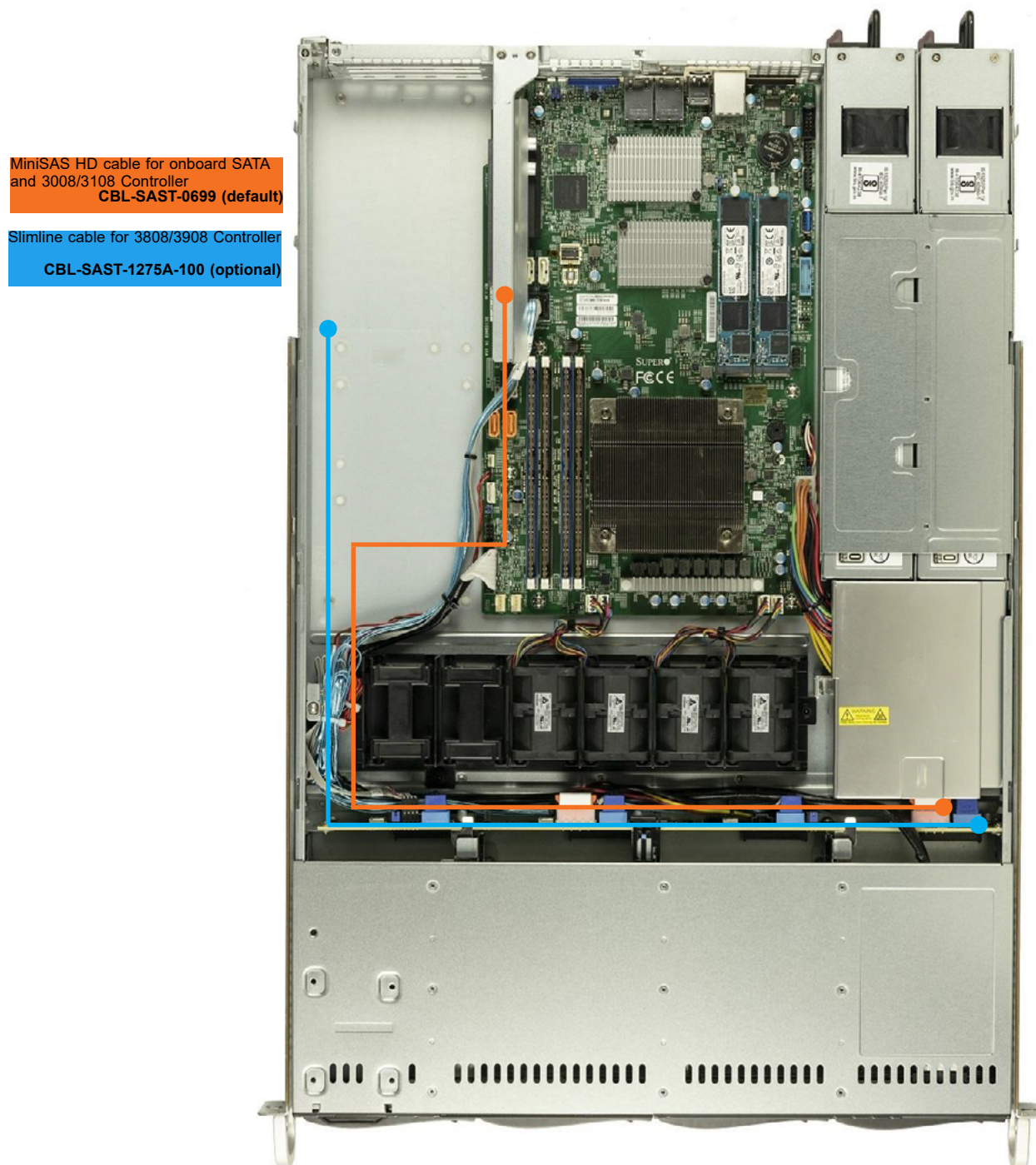
Figure 3-7. Cable Routing Diagram

3.8 Storage Drives

The storage drives are mounted in tool-less drive carriers that simplify their removal from the chassis. These carriers also help promote proper airflow. For compatible storage drives, see the product page.

Installing Drives

Figure 3-8. Logical Drive Numbers

Removing a Hot-Swap Drive Carrier from the Chassis

1. Push the release button on the carrier.

2. Swing the handle fully out.

3. Grasp the handle and use it to pull the drive carrier out of its bay.
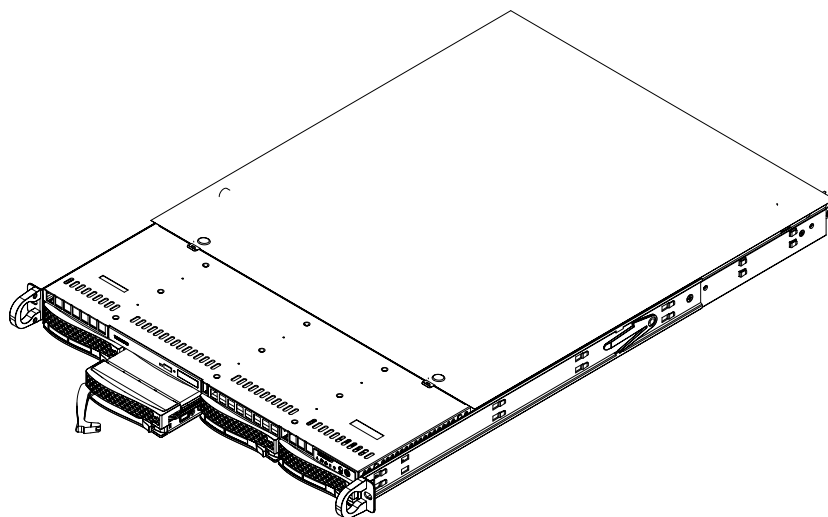
Figure 3-9. Removing a Drive Carrier

Installing M.2 Solid State Drives

The X12STW-TF motherboard has two M.2 slots (M.2-C and M.2-P). M.2 was formerly known as Next Generation Form Factor (NGFF) and serves to replace mini PCIe. M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency. The M.2-C slot on the motherboard supports PCIe 4.0 x4 SSD cards in the 2280 and 22110 form factors, while the M.2-P supports PCIe 3.0 x4 SSD cards in the 2280 and 22110 form factors.

Installing M.2 Drives

1. Remove power from the system and then remove the top cover as described in Sections 3.1 and 3.2.

2. Refer to its layout image in Chapter 1 and locate the M.2 slot.

3. Insert the M.2 sideways into the connector so that it lays flat, then secure it to the motherboard with the plastic clip.

4. Repeat as necessary for more M.2 drives.

5. Finish by replacing the cover and restoring power to the system.

3.9 System Cooling

Fans

Up to six 4-cm counter-rotating fans provide the cooling for the system. Each fan unit is actually made up of two fans joined back-to-back, which rotate in opposite directions. This counter-rotating action generates exceptional airflow and is effective in dampening vibration levels. The chassis provides two additional open fan housings, where an additional system fan may be added for optimal cooling.

It is very important that the chassis top cover is installed for the cooling air to circulate properly through the chassis and cool the components.

Installing Fans

The SYS-510T-WTR/WTR-EU chassis includes five pre-installed fans. One additional open slot is available so that one more fan may be added if additional cooling is required. These fans are NOT redundant, hot-plug, and so must be replaced when they fail.

Fan speed is controlled by system temperature via IPMI. If a fan fails, the remaining fans will ramp up to full speed. Replace any failed fan at your earliest convenience with the same type and model (the system can continue to run with a failed fan).

1. Open the chassis while the system is running to determine which fan has failed. Never run the server for an extended period of time with the chassis open.

2. Turn off the power to the system and unplug the power cord from the power supply.

3. Remove the failed fan's wiring from the fan header on the serverboard.

4. Lift the failed fan from the chassis and pull it completely out.

5. Place the new fan into the vacant space in the housing while making sure the arrows on the top of the fan (indicating air direction) point in the same direction as the arrows on the other fans.

6. Reconnect the fan wires to the same chassis fan header as the previous fan.

7. Power up the system and check that the fan is working properly before replacing the chassis cover.
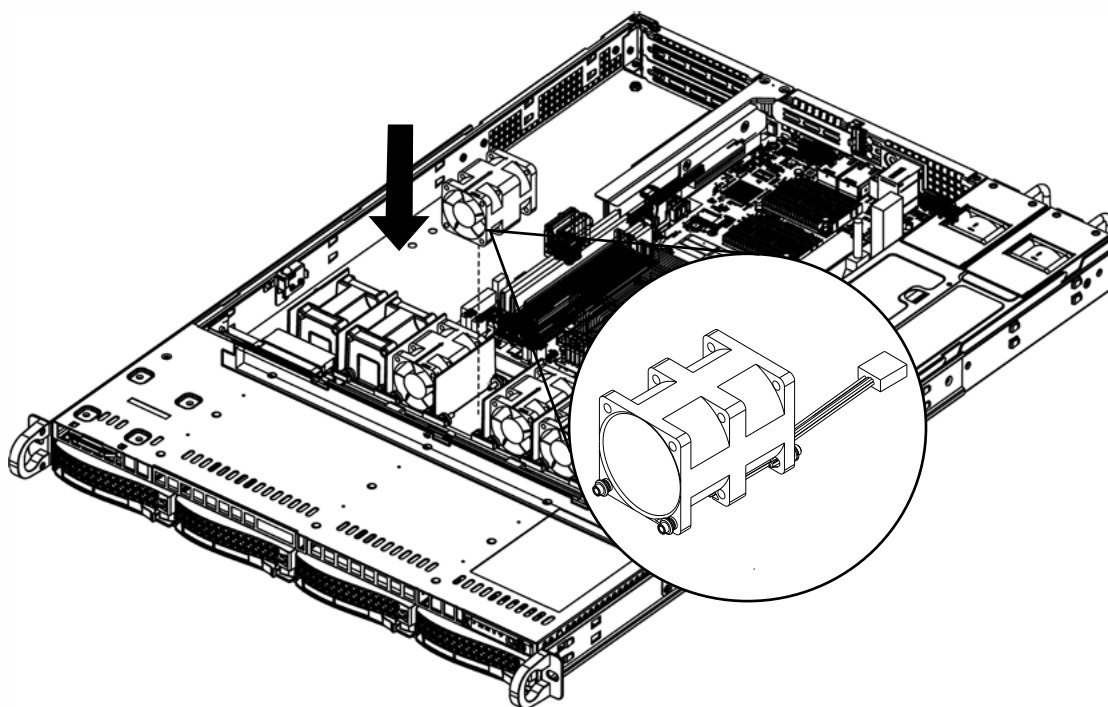
Figure 3-10. Replacing a System Fan

Note: the figure above is intended to show fan location only. The serverboard may differ from that in the SYS-510T-WTR/WTR-EU.

Air Shrouds

Air shrouds concentrate airflow to maximize fan efficiency. The SYS-510T-WTR/WTR-EU includes one air shroud for each CPU.
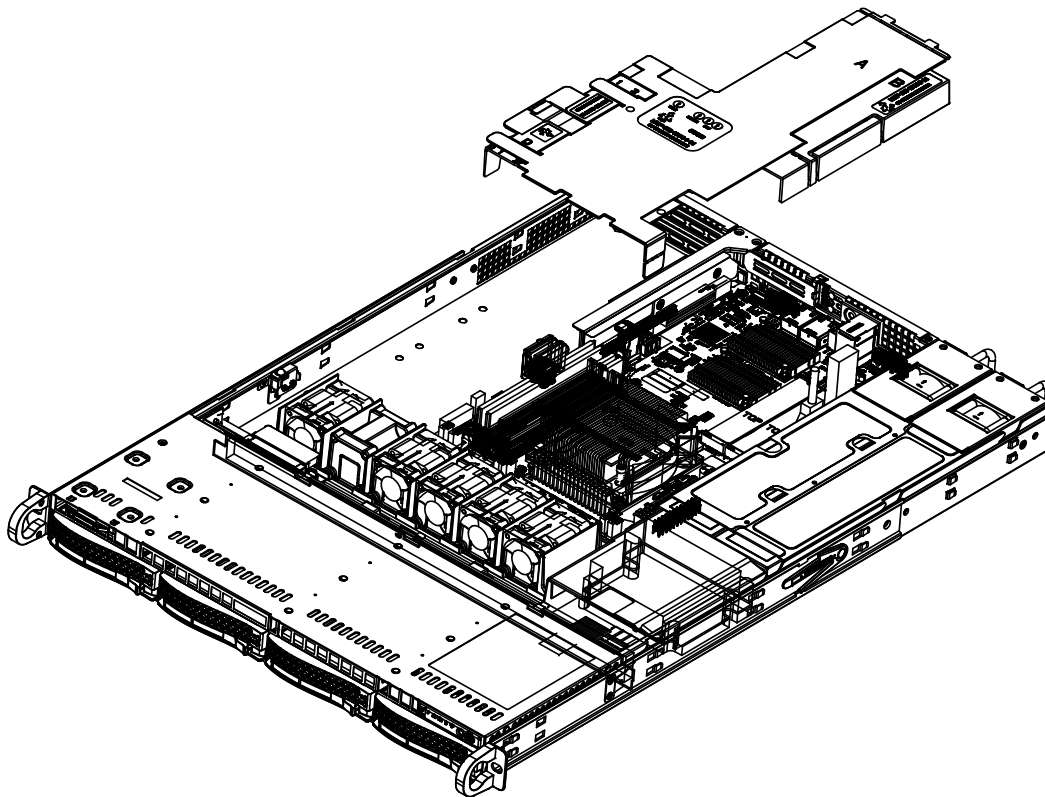
Figure 3-11. Installing Air Shroud for CPU DIMMs

3.10 Expansion Cards

The SYS-510T-WTR/WTR-EU includes two riser cards to support the use of expansion (add-on) cards. Before following the procedure below to install expansion cards, first turn off and remove power from the system as described in section 3.1 then remove the top cover.

Figure 3-12. Expansion Card Chassis Slots

Riser Cards

This system include riser cards that provide PCIe capabilities.

PCIe Slots per Riser Card			
Riser Card	**Part Number**	**Slot**	**Description**
Right (from rear)	RSC-W-68G4	❶ ❷	PCIe 4.0 x16 or x8 (auto switch) FHFL auto-switching PCIe 4.0 x0 or x8 (auto switch) FHFL auto-switching
Middle (from rear)	RSC-R1UW-E8R	❸	PCIe 3.0 x4 (in x8) LP

Full-height = 4.2", Low-profile = 2.5", Full-length = 10.5", Half-length = 6.6"

3.11 Power Supply

The SYS-510T-WTR/WTR-EU chassis comes equipped with two redundant 500/600 Watt hot-plug power supplies. These power supplies are auto-switching capable and automatically sense and operate at a 100V to 240V input voltage. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Power Supply Failure

The SYS-510T-WTR/WTR-EU includes a redundant power supply, which allows the server to continue running when one power supply has been removed. Replacement units can be ordered directly from Supermicro.

Replacing the Power Supply

1. Unplug the AC power cord from the failed power supply module (with the RED LED lit up).

2. Push the release tab (on the back of the power supply) as illustrated, then pull the power supply out using the handle provided.

3. Push the new power supply module into the power bay until you hear a click (replace with the same model).

4. Reconnect the power cord to the new module and make sure the GREEN LED is lit up and the power supply fans are rotating.

Release Tab
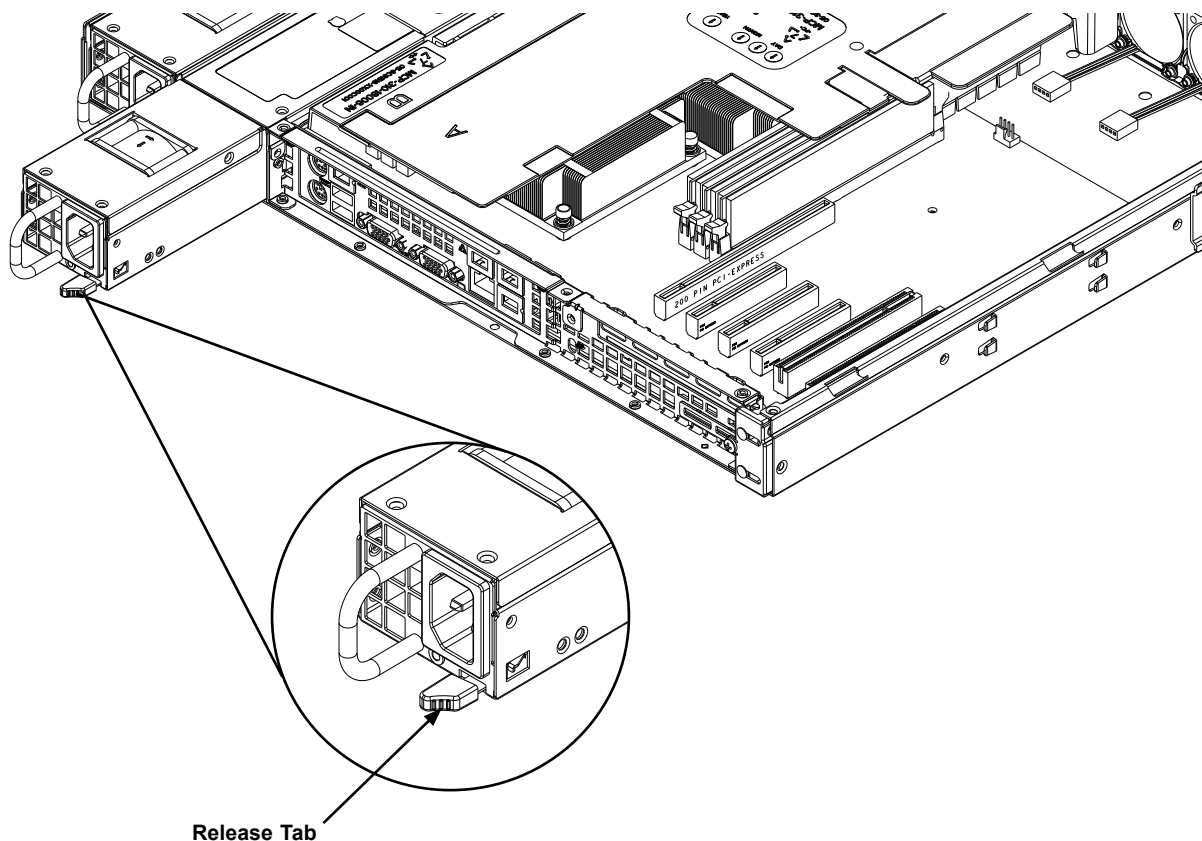
Figure 3-13. Removing/Replacing a Power Supply

Note: The figure above is intended to show the power supply locations only. The chassis and serverboard may differ from that found in the SYS-510T-WTR/WTR-EU.

3.12 BMC

The BMC can be reset using the button on the front control panel or on the chassis rear.

- Reset—Press and hold the button. After six seconds, the LED blinks at 2 Hz. The BMC resets and the reset duration is ~250 ms. Then the BMC starts to boot.

- Restore factory default configuration—Hold the button for twelve seconds. The LED blinks at 4 Hz while defaults are configured.

- Firmware update—the UID LED blinks at 10Hz during a firmware update.

BMC Reset Options	
Event	**LED (Green)**
Reset	Blinks at 2 Hz
Restore Defaults	Blinks at 4 Hz
Update	Blinks at 10 Hz

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. More detail can be found in the Motherboard Manual

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

4.1 Power Connections

ATX Power Supply Connector

The 24-pin power supply connector (JPWR1) meets the ATX SSI EPS 12V specification. You must also connect the 8-pin (JPWR2) processor power connector to the power supply.

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

8-Pin Power Connector

JPWR2 is an 8-pin 12V DC power input for the CPU that must be connected to the power supply. Refer to the table below for pin definitions.

8-pin Power Pin Definitions	
Pin#	Definition
1 - 4	Ground
5 - 8	P12V (12V Power)

Required Connection

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.

4.2 Headers and Connectors

Fan Headers

There are six 4-pin fan headers (FAN1 - FAN6) on the motherboard. All 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 BMC. Refer to the table below for pin definitions.

Fan Header Pin Definitions	
Pin#	**Definition**
1	Ground (Black)
2	+12V (Red)
3	Tachometer
4	PWM_Control

SGPIO Headers

There is one Serial Link General Purpose Input/Output (I-SGPIO2) header located on the motherboard. Refer to the table below for pin definitions.

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

NC = No Connection

Disk-On-Module Power Connectors

The motherboard has two power connectors (JSD1, JSD2) for SATA DOM devices. Connect appropriate cables here to provide power support for your third-party SATA DOM devices.

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

TPM/Port 80 Header

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

Trusted Platform Module 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	NC
9	+3.3V Stdby	10	SPI_IRQ#

Power SMB (I²C) Header

The Power System Management Bus (I²C) connector (JPI²C1) monitors the power supply, fan, and system temperatures. Refer to the table below for pin definitions.

Power SMB Header Pin Definitions	
Pin#	Definition
1	Clock
2	Data
3	PMBUS_Alert
4	Ground
5	+3.3V

Standby Power

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

Standby Power Pin Definitions	
Pin#	Definition
1	+5V Standby
2	Ground
3	No Connection

4-pin BMC External I²C Header/System Front Inlet Temperature Sensor

JIPMB1 and JSEN1 share the same header. To switch between the two, set the jumper on JP1. See the JP1 table below for the jumper settings.

A System Management Bus header for IPMI 2.0 is located at JIPMB1. Connect the appropriate cable here to use the IPMB I²C connection on your system. Refer to the table below for pin definitions. JSEN1 is the system front inlet temperature sensor. It represents the ambient air temperature entering the system. The equivalent temperature sensor retrievable by the onboard BMC is RT0.

External I²C Header Pin Definitions	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

JP1 Jumper Settings	
Pin#	Definition
1-2	JSEN1
2-3	JIPMB1

Chassis Intrusion

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

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

Speaker/Power LED

Pins 1-3 of JD1 are used for power LED indication, and pins 4-7 are for the speaker. Please note that the speaker connector pins are used with an external speaker. Refer to the tables below for pin definitions.

PWR LED Connector Pin Definitions	
Pin#	Signal
1	VCC
2	FP_PWR_LED_N
3	FP_PWR_LED_N

Speaker Connector Pin Definitions	
Pin#	Signal
4	P5V
5	NC
6	R_SPKRIN_N
7	R_SPKRIN

Internal Speaker/Buzzer

The Internal Speaker/Buzzer (SP1) is used to provide audible indications for various beep codes. Refer to the table below for pin definitions.

Internal Buzzer Pin Definitions		
Pin#	**Definition**	
1	Pos (+)	VCC
2	Neg (-)	Beep In

Control Panel

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

Power Button

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

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 to reset the system. Refer to the table below for pin definitions.

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. Refer to the table below for pin definitions.

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

Overheat (OH)/Fan Fail

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

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

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

NIC1/NIC2 (LAN1/LAN2)

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

NIC1/NIC2 LED Pin Definitions (JF1)	
Pin#	Definition
9	VCC
10	NIC 2 Active LED
11	VCC
12	NIC 1 Active LED

HDD LED

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

HDD LED Pin Definitions (JF1)	
Pins	Definition
13	UID SW
14	HDD Active

Power LED

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

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

NMI Button

The non-maskable interrupt (NMI) button header is located on pins 19 and 20 of JF1. Refer to the table below for pin definitions.

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

4.3 Input/Output Ports

I/O Ports

The locations and descriptions of the various I/O ports are on the rear of the motherboard.
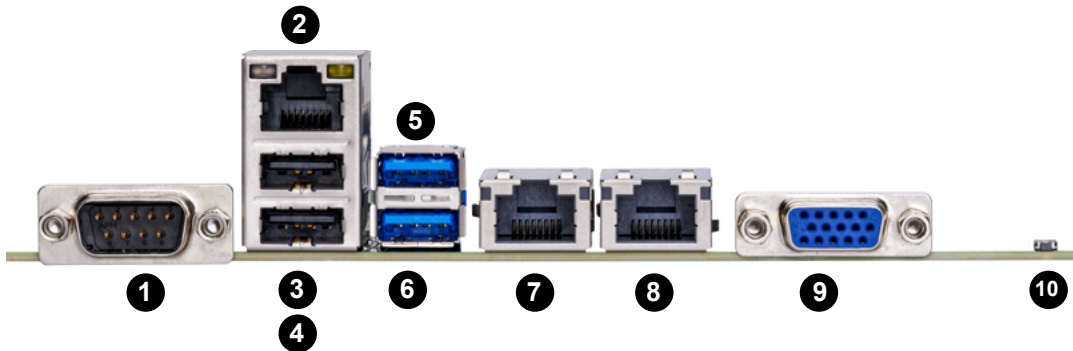
Rear I/O Ports			
#	**Description**	**#**	**Description**
1	COM1	6	USB6 (3.2 Gen 1)
2	Dedicated BMC LAN	7	LAN1
3	USB1	8	LAN2
4	USB0	9	VGA Port
5	USB7 (3.2 Gen1)	10	UID LED/Switch

VGA Port

A VGA port is located next to LAN2 on the I/O back panel. Use this connection for VGA displays.

COM Port and Header

The motherboard has one COM port (JCOM1) on the back panel and one COM header (JCOM2).

LAN Ports

Two 1GbE Ethernet (-F) or two 10GbE ports (-TF) (JLAN1/2) are located on the I/O back panel. In addition to the LAN ports, a dedicated IPMI LAN is also on the back panel. All of these ports accept RJ45 cables. Please refer to the LED Indicator section for LAN LED information.

Universal Serial Bus (USB) Ports

There are two USB 2.0 ports (USB0/1) and two USB 3.2 Gen 1 ports (USB6/7) located on the back I/O panel. The motherboard also has two front access USB 2.0 headers (USB2/3, USB4/5) and one front access USB 3.2 Gen 1 header (USB9/10). The USB8 header is USB 3.2 Gen 2 Type-A. The onboard headers can be used to provide front side USB access with a cable (not included).

Back Panel USB0/1 (2.0) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5V	5	+5V
2	USB_N	6	USB_N
3	USB_P	7	USB_P
4	GND	8	GND

Front Panel USB2/3, 4/5 (2.0) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5V	2	+5V
3	USB_N	4	USB_N
5	USB_P	6	USB_P
7	GND	8	GND
9	Key	10	NC

Type A USB8 (3.2 Gen 2) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	VBUS	5	SSRX-
2	USB_N	6	SSRX+
3	USB_P	7	GND
4	GND	8	SSTX-
		9	SSTX+

Back Panel USB6/7 (USB 3.2 Gen 1) Pin Definitions			
Pin#	Definition	Pin#	Definition
A1	VBUS	B1	VBUS
A2	USB_N	B2	USB_N
A3	USB_P	B3	USB_P
A4	GND	B4	GND
A5	Stda_SSRX-	B5	Stda_SSRX-
A6	Stda_SSRX+	B6	Stda_SSRX+
A7	GND	B7	GND
A8	Stda_SSTX-	B8	Stda_SSTX-
A9	Stda_SSTX+	B9	Stda_SSTX+

Front Panel USB9/10 (USB 3.2 Gen 2) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	GND	11	GND
2	Stda_SSTX+	12	Stda_SSTX-
3	Stda_SSTX-	13	Stda_SSTX+
4	GND	14	GND
5	Stda_SSRX+	15	Stda_SSRX-
6	Stda_SSRX-	16	Stda_SSRX+
7	GND	17	GND
8	USB_P	18	USB_P
9	USB_N	19	USB_N
10	VBUS	20	VBUS

1. USB0/1
2. USB2/3
3. USB4/5
4. USB6/7
5. USB8
6. USB9/10

Unit Identifier Switch/UID LED Indicator

A Unit Identifier (UID) switch and an LED indicator are located on the motherboard. The UID switch is located at JUIDB1, which is next to the VGA port on the back panel. The UID LED (LE1) is located next to the UID switch. When you press the switch, the LED will be turned on, which provides easy identification of a system unit that may be in need of service. Press the switch again to turn off the LED indicator.

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

| UID Switch Pin Definitions	
Pin#	Definition
1	Ground
2	Ground
G1	Button In
G2	Button In

UID LED Pin Definitions	
Color	Status
Blue: On	Unit Identified

4.4 Jumpers

Explanation of Jumpers

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

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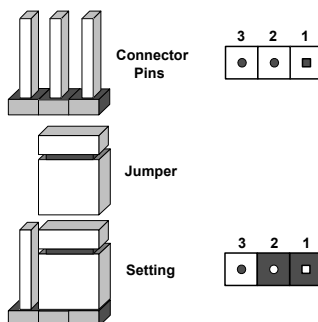
CMOS Clear

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

To Clear CMOS

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

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

3. Remove the onboard battery from the motherboard.

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

5. Remove the screwdriver (or shorting device), and reinstall the battery to the proper location

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

Note: Clearing CMOS will also clear all passwords. Do not use the PW_ON connector to clear CMOS.

Watch Dog Timer

Watchdog (JWD1) is a system monitor that can reboot the system when a software application hangs. Close pins 1-2 to reset the system if an application hangs. Close pins 2-3 to generate a non-maskable interrupt (NMI) signal for the application that hangs. Refer to the table below for jumper settings. The Watchdog must also be enabled in the BIOS.

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

ME Manufacturing Mode

Close pins 2-3 of jumper JPME2 to bypass SPI flash security and force the system to operate in the manufacturing mode, which will allow you to flash the system firmware from a host server for system setting modifications. Refer to the table below for jumper settings.

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

LAN1/LAN2 Enable/Disable

Use jumper JPL1 to enable or disable LAN port 1 and JPL2 to enable or disable LAN port 2.

LAN1/2 Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled

LAN X550 Enable/Disable

Use jumper JPTG1 to enable or disable LAN X550.

LAN X550 Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled

VGA Enable/Disable

JPG1 allows you to enable or disable the VGA port using the onboard graphcs controller. Refer to the table below for jumper settings.

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

4.5 LED Indicators

LAN LEDs

Two LAN ports (JLAN1 and JLAN2) are located on the I/O back panel of the motherboard. Each Ethernet LAN port has two LEDs. The green LED indicates activity, while the other Link LED may be green, amber, or off to indicate the speed of the connection. Refer to the tables below for more information.

LAN Activity LED (Right) LED State		
Color	Status	Definition
Green	Flashing	Active

LAN Link LED (Left) LED State (-TF SKU)	
LED Color	Definition
Green	10Gbps
Yellow/Amber	1Gbps

LAN Link LED (Left) LED State (-F SKU)	
LED Color	Definition
Off	No Connection
Amber	1 Gbps
Green	100 Mbps

BMC LAN LEDs

In addition to the two LAN ports, an BMC LAN is also located on the I/O back panel. The amber LED on the right indicates activity, while the green LED on the left indicates the speed of the connection. Refer to the table below for more information.

IPMI LAN

Link LED   Activity LED
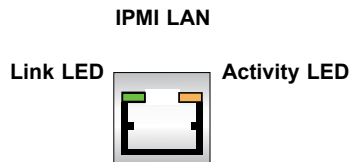
BMC LAN LEDs		
	Color/State	Definition
Link (left)	Green: Solid	100 Mbps
	Amber: Solid	1Gbps
Activity (Right)	Amber: Blinking	Active

Power LED

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

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

BMC Heartbeat LED

LEDM1 is the BMC heartbeat LED. When the LED is blinking green, BMC is functioning normally. Refer to the table below for the LED status.

BMC Heartbeat LED Indicator	
LED Color	Definition
Green: Blinking	BMC Normal

Power Ready LED

A Power Ready LED is located at LE6 on the motherboard. When this LED is green, all onboard power VRMs are normal. See the table below for more information.

Power Ready LED Indicator	
LED Color	**Definition**
Green	All onboard PWR VRMs are normal
Red	One or more PWR VRMs has failed
Amber	System in standby mode

Embedded Controller LED

LEDEC1 is the Embedded Controller Hearbeat LED. When this LED is blinking green, the EC is normal.

EC Heartbeat LED Indicator	
LED Color	**Definition**
Blinking Green	EC normal

4.6 Storage Ports

SATA Ports

Eight SATA 3.0 ports are located on the motherboard supported by the Intel® C256 chipset. These SATA ports support RAID 0, 1, 5, and 10.

Note: For more information on the SATA HostRAID configuration, please refer to the Intel SATA HostRAID user's guide posted on our website at https://www.supermicro.com/support/manuals/.

M.2 Slot

This motherboard has two M.2 slots (M.2-C and M.2-P). M.2 was formerly known as Next Generation Form Factor (NGFF) and serves to replace mini PCIe. M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency. The M.2-C slot on the motherboard supports PCIe 4.0 x4 SSD cards in the 2280 and 22110 form factors, while the M.2-P supports PCIe 3.0 x4.

Chapter 5

Software

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

5.1 Microsoft Windows OS Installation

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

Installing the OS

1. Create a method to access the MS Windows installation ISO file. That might be a USB flash or media drive, perhaps using a USB flash or media drive, or the IPMI KVM console.

2. Retrieve the proper RST/RSTe driver. Go to the Supermicro® web page for your motherboard and click on "Download the Latest Drivers and Utilities", select the proper driver, and copy it to a USB flash drive.

3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **F11** during the system startup.
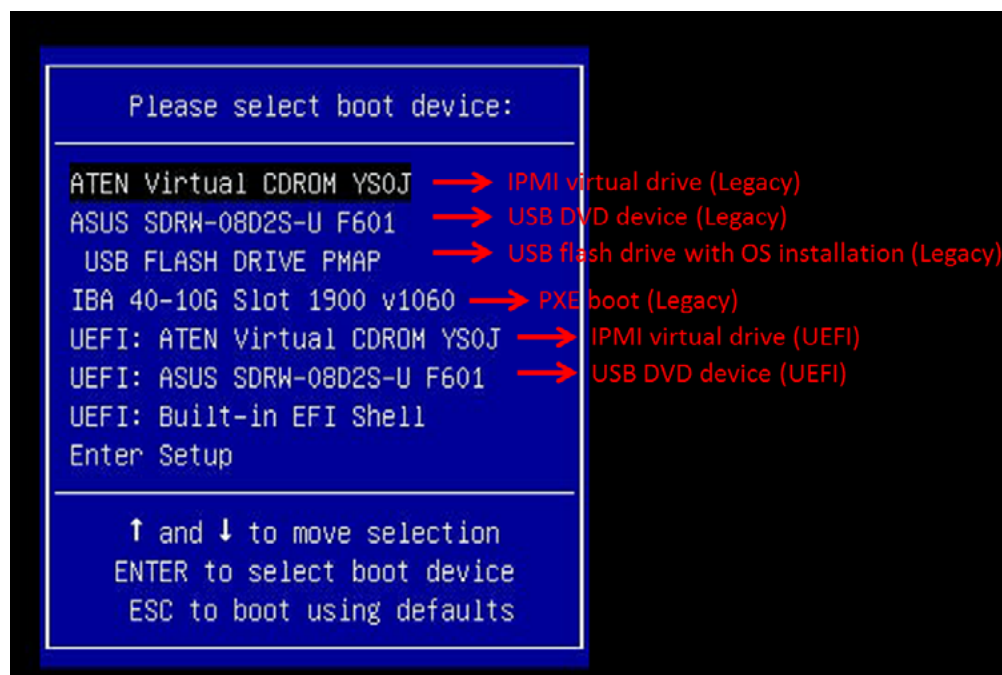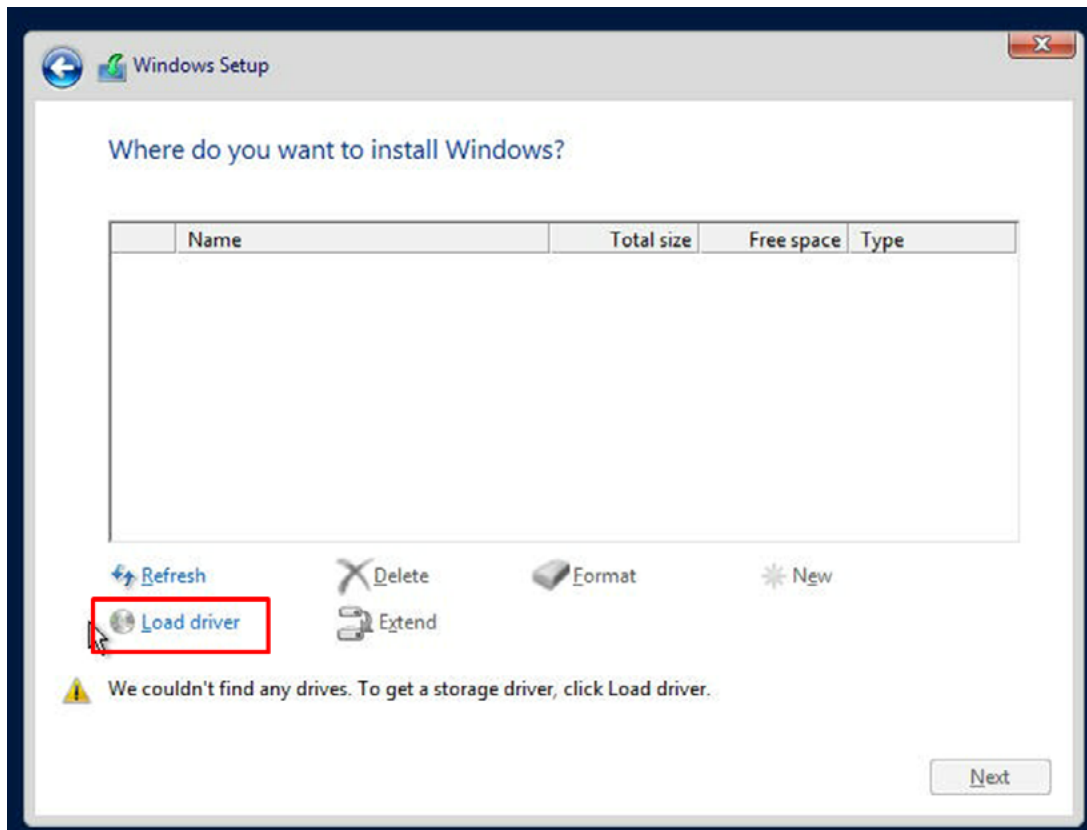

Figure 5-1. Select Boot Device

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

Figure 5-2. Load Driver Link

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

- For RAID, choose the SATA/sSATA RAID driver indicated then choose the storage drive on which you want to install it.

- For non-RAID, choose the SATA/sSATA AHCI driver indicated then choose the storage drive on which you want to install it.

5. Once all devices are specified, continue with the installation.

6. After the Windows OS installation has been completed, the system will automatically reboot multiple times.

5.2 Driver Installation

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

After accessing the website, go into the CDR_Images (in the parent directory of the above link) and locate the ISO file for your motherboard. Download this file to a USB flash drive or media drive. (You may also use a utility to extract the ISO file if preferred.)

Another option is to go to the Supermicro® website at http://www.supermicro.com/products/. Find the product page for your motherboard, and "Download the Latest Drivers and Utilities".

Insert the flash drive or disk, and the screenshot shown below should appear.

Figure 5-3. Driver and Tool Installation Screen

Note: Click the icons showing handwriting 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 reboot 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 content.

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) IPMI, you can remotely control power ON/OFF and reset chassis intrusion for multiple systems. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.
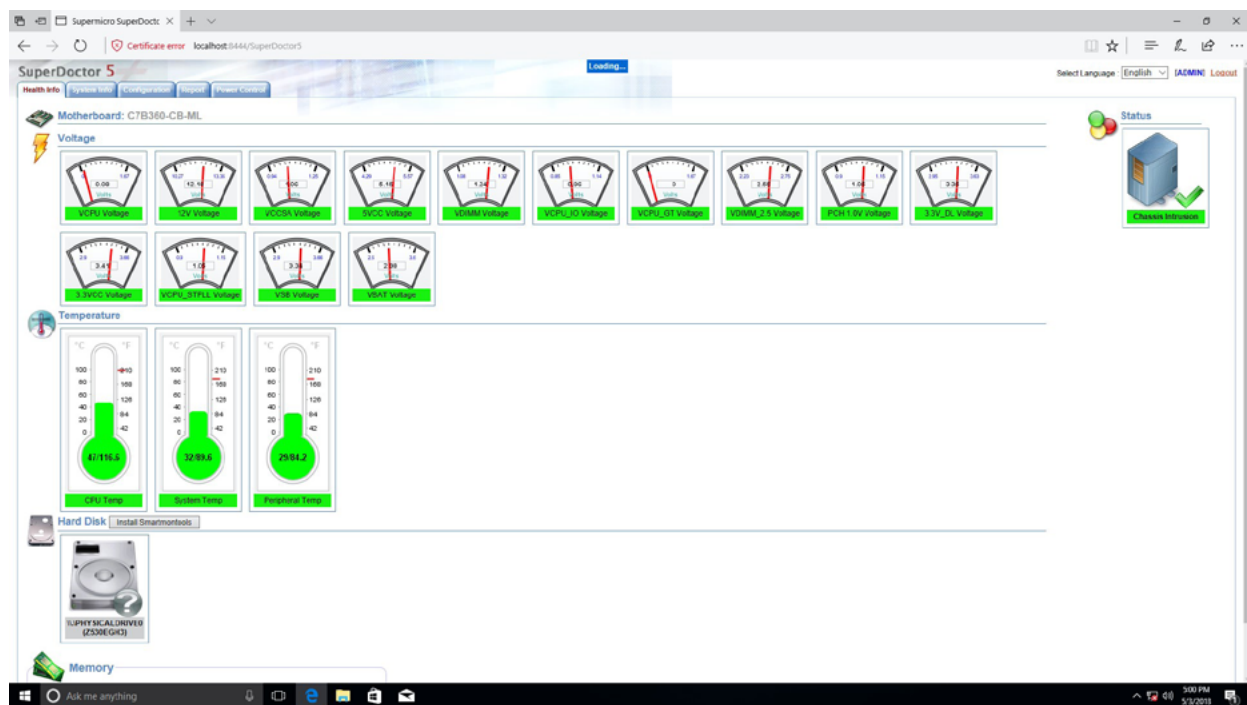
SuperDoctor® Manual and Resources

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

5.4 IPMI

The motherboard provides remote access, monitoring and management through the Intelligent Platform Management Interface (IPMI) and other management controllers distributed among different system modules. There are several BIOS settings that are related to IPMI. For general documentation and information on IPMI, visit our website at: www.supermicro.com/products/nfo/IPMI.cfm.

BMC ADMIN User Password

For security, each system is assigned a unique default BMC password for the ADMIN user. This can be found on a sticker on the chassis and a sticker on the motherboard. The sticker also displays the BMC MAC address. If necessary, the password can be reset using the Supermicro® IPMICFG tool.

Figure 5-5. BMC Password Label

The sticker can be found on the pull-out service tag at the front of the chassis. See Chapter 1 for label location.

Chapter 6

Optional Components

This chapter describes alternate configurations and optional system components.

Optional Parts
Storage drive options
TPM security module

6.1 Storage Drive Options

The storage drive bays can support SATA, and NVMe in any combination. To enable SATA and NVMe, additional hardware is required. Once the supporting hardware is installed for a selection of bays, drives of any storage protocol type can be inserted.

SATA – The system can support up to four SATA drives from the onboard Intel PCH SATA controller.

6.2 TPM Security Module

SPI capable TPM 2.0 (or 1.2) with Infineon 9670 controller, vertical form factor

The JTPM1 header is used to connect a Trusted Platform Module (TPM). A TPM is a security device that supports encryption and authentication in hard drives. It enables the motherboard to deny access if the TPM associated with the hard drive is not installed in the system.

Details and installation procedures are at:

 http://www.supermicro.com/manuals/other/TPM.pdf.
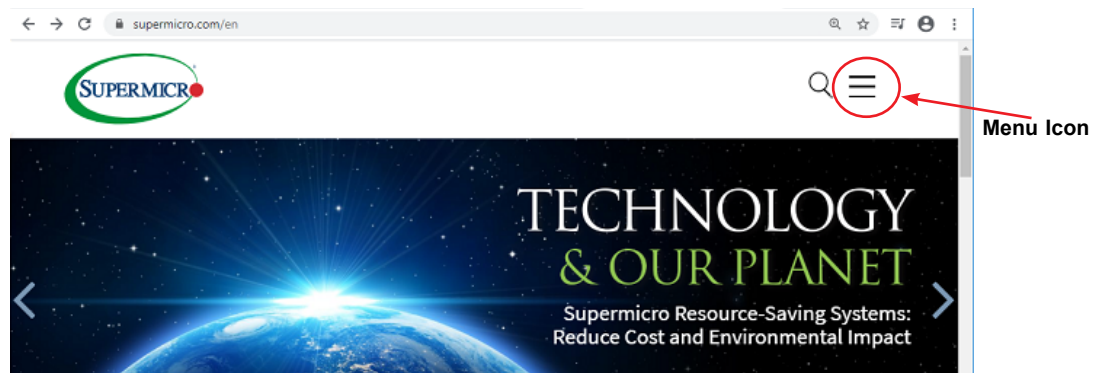
- AOM-TPM-9670V

- AOM-TPM-9671V

Chapter 7

Troubleshooting and Support

7.1 Information Resources

Website

A great deal of information is available on the Supermicro® website, supermicro.com.

Figure 7-1. Supermicro® Website

- Specifications for servers and other hardware are available by clicking the menu icon, then selecting the **Products** option.

- The **Support** option offers downloads (manuals, BIOS/BMC, drivers, etc.), FAQs, RMA, warranty, and other service extensions.

Direct Links for the SYS-510T-WTR System

SYS-SYS-510T-WTR specifications page

X12STW-TF motherboard page for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

Direct Links for General Support and Information

Frequently Asked Questions

TPM User Guide

General Memory Configuration Guide: X12

IPMI User Guide

SuperDoctor5 Large Deployment Guide

Direct Links (continued)

For validated memory, see our Product Resources page

Product Matrices page for links to tables summarizing specs for systems, motherboards, power supplies, riser cards, add-on cards, etc.

Security Center for recent security notices

Supermicro Phone and Addresses

7.2 Intelligent Platform Management Interface (IPMI)

The system supports the Intelligent Platform Management Interface (IPMI). IPMI is used to provide remote access, monitoring, and management. There are several BIOS settings that are related to IPMI.

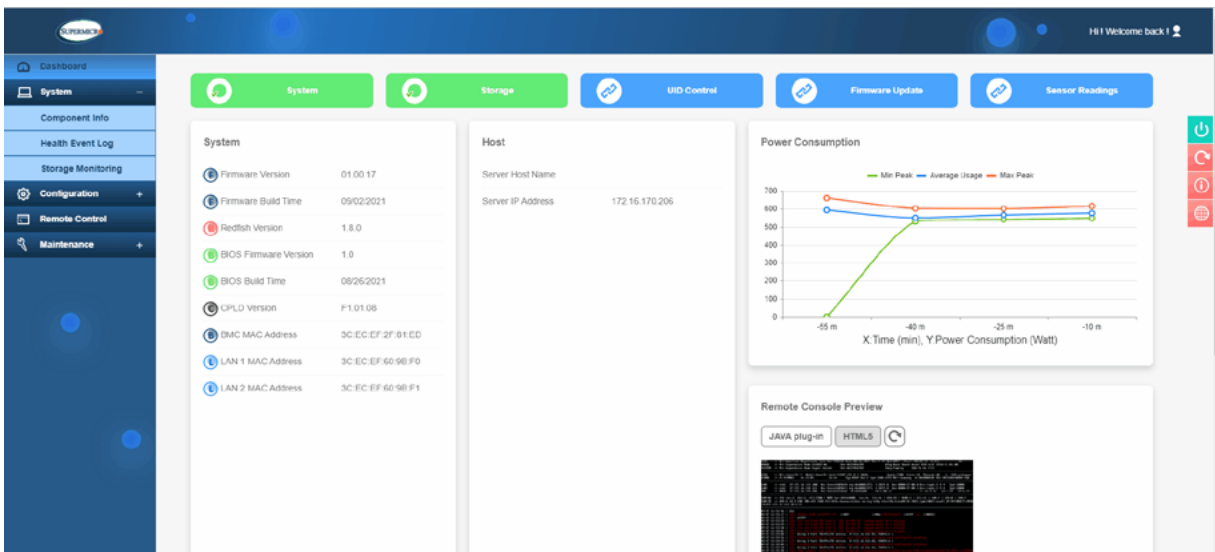For general documentation and information on IPMI, please visit our website at: https://www.supermicro.com/products/nfo/IPMI.cfm.


Figure 7-2. IPMI Sample

7.3 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the Technical Support Procedures or Returning Merchandise for Service section(s) in this chapter. Power down the system before changing any non-hot-swap hardware components.

General Technique

If you experience unstable operation or get no boot response, try:

1. With power off, remove all but one DIMM and other added components, such as add-on cards, from the motherboard. Make sure the motherboard is not shorted to the chassis.
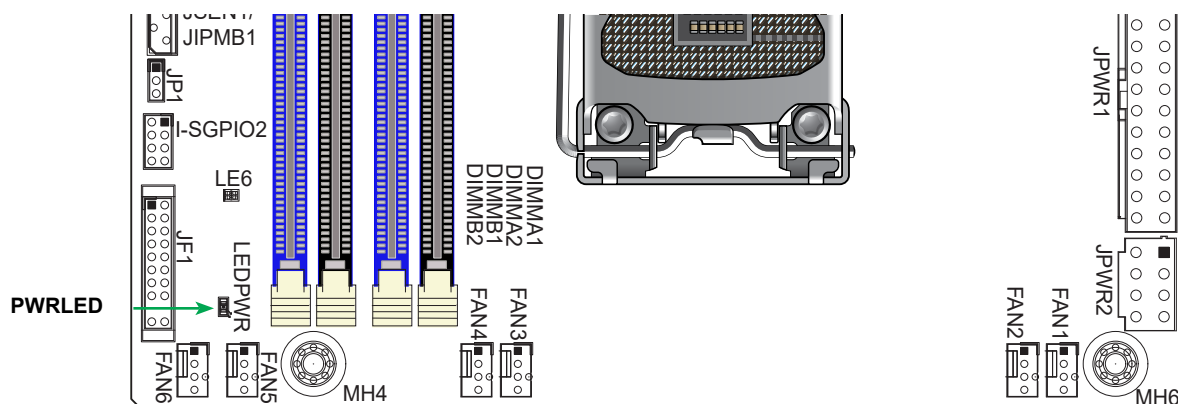
Figure 7-3. Location of the MB Power LED

2. Set all jumpers to their default positions.

3. Power up. If the system boots, check for memory errors and add-on card problems.

No Power

• Check that the power LED on the motherboard is ON.

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

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

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

• Remove all add-on cards.

• Install a CPU, a heatsink, connect the internal speaker (if applicable), and the power LED to the motherboard. Make sure that the heatsink is fully seated.

- Use the correct type of onboard CMOS battery as recommended by the manufacturer. Check to verify that it still supplies approximately 3VDC. If it does not, replace it with a new one. **Warning**: To avoid possible explosion, do not install the battery upside down.

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

- Check that the power supplies' input voltage operates at 100-120V or 180-240V.

- Turn the power switch ON and OFF to test the system.

No Video

- If the power is ON but you have no video, remove all the add-on cards and cables.

System Boot Failure

If the system does not display POST (Power-On-Self-Test) or does not respond after the power is turned ON, check the following:

Turn ON the system with only one DIMM module installed. If the system boots, check for bad DIMM modules or slots by following the Memory Errors Troubleshooting procedure below.

Memory Errors

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

- Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See Section 3.5 for memory details.

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

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

Losing the System's Setup Configuration

- Always replace power supplies with the exact same model that came with the system. A poor quality power supply may cause the system to lose the CMOS setup configuration.

- Check that the motherboard battery still supplies approximately 3VDC. If it does not, replace it.

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

When the System Becomes Unstable

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

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

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

   Note: Refer to the product page on our website at http://www.supermicro.com for memory and CPU support and updates.

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

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

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

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

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

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

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

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

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

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

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

7.4 POST Codes

The AMI UEFI BIOS supplies 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, the POST codes can be viewed from the BMC using the Post Snooping function.

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

7.5 Crash Dump Using IPMI

In the event of a processor internal error (IERR) that crashes your system, you may want to provide information to support staff. You can download a crash dump of status information using IPMI.

Check IPMI Error Log

1. Access the IPMI web interface.

2. Click the **Server Health** tab, then **Event Log** to verify an IERR error.
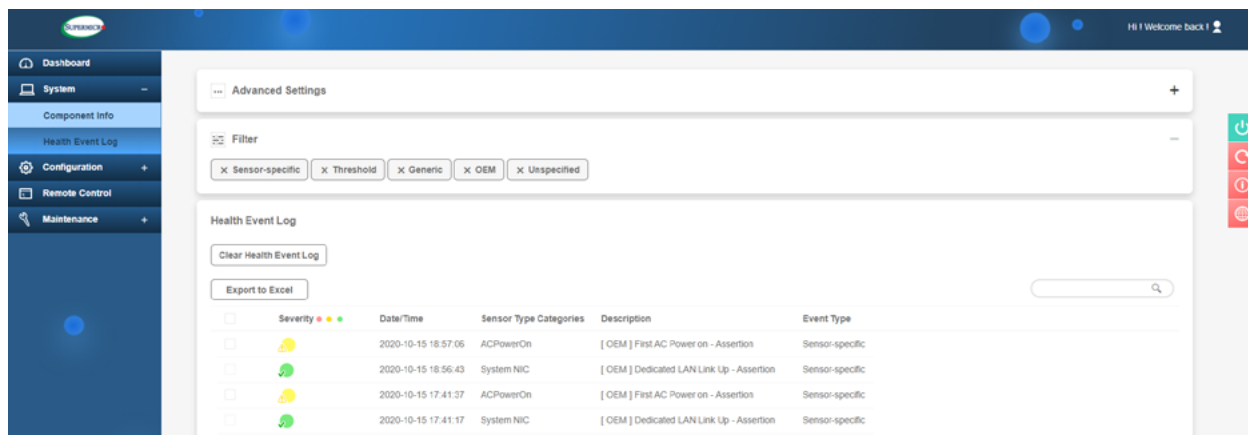
Figure 7-4. IPMI Event Log

In the event of an IERR, the BMC executes a crash dump. You must download the crash dump and save it.

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

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.

Recovering the UEFI BIOS Image

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

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

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

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 media drive, or a USB CD ROM/RW device can be used for this purpose. However, a USB Hard Disk drive cannot be used for BIOS recovery at this time.

The file system supported by 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 flash device or media drive or a writable CD.

   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.
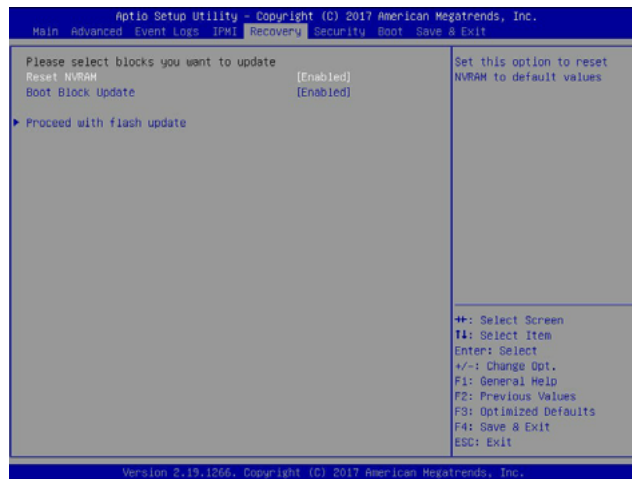

4. When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

   Note: _Do not interrupt the BIOS flashing process until it has been 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.
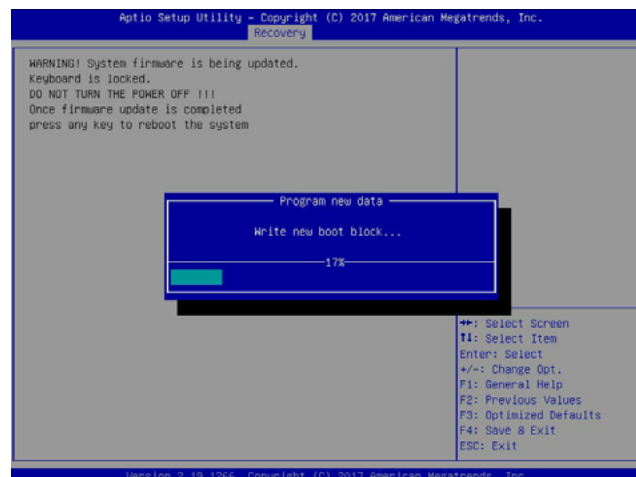
7. Press <Del> continuously during system boot to enter the BIOS Setup utility. From the top of the toolbar, select Boot to enter the submenu. From the submenu list, select Boot Option
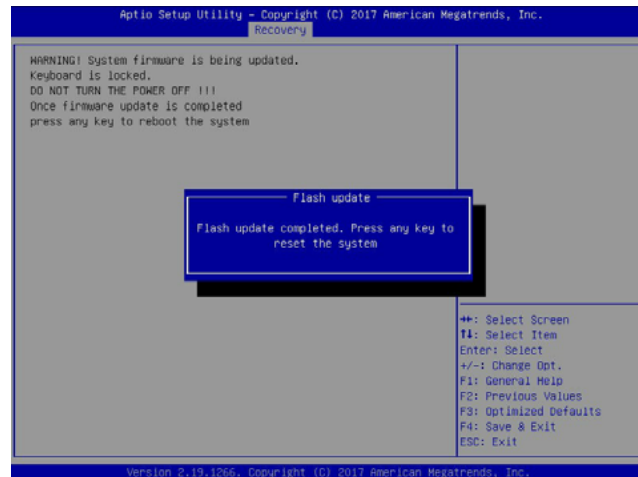
#1 as shown below. Then, set Boot Option #1 to [UEFI AP:UEFI: Built-in EFI Shell]. Press <F4> to save the settings and exit the BIOS Setup utility.

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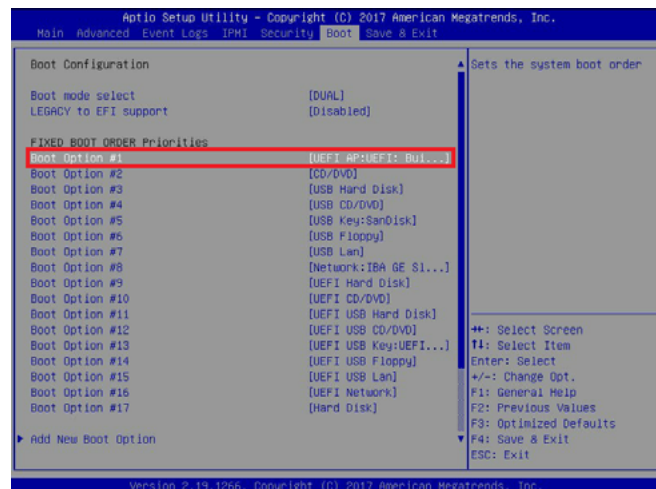
Note: *Do not interrupt this process* until the BIOS flashing is complete.

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.

7.7 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 completely.

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.

JBT1 contact pads

6. Replace the cover, reconnect the power cords, and power on the system.

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.

7.8 BMC Reset

The BMC can be reset using the UID button.

- Reset – Press and hold the button. After six seconds, the LED blinks at 2Hz. The BMC resets and the reset duration is ~250 ms. Then the BMC starts to boot.

- Restore factory default configuration – Hold the button for twelve seconds. The LED blinks at 4Hz while defaults are configured. **Note**: All BMC settings including username and password will be removed except the FRU and network settings.

Firmware update – When the BMC firmware is being updated, the UID LED blinks at 10Hz.

BMC Reset Options		
Event	**UID LED**	**BMC Heartbeat LED**
Reset	Blue, Blinks at 2Hz	Green, solid
Restore Defaults	Blue, Blinks at 4Hz	OFF
Update	Blue, Blinks at 10Hz	

7.9 Where to Get Replacement Components

If you need replacement parts for your system, to ensure the highest level of professional service and technical support, purchase exclusively from our Supermicro® Authorized Distributors/System Integrators/Resellers. A list can be found at: http://www.supermicro.com. Click the "Where to Buy" tab.

7.10 Reporting an Issue

Technical Support Procedures

Before contacting Technical Support, please take the following steps. If your system was purchased through a distributor or reseller, please contact them for troubleshooting services. They have the best knowledge of your specific system configuration.

1. Please review the Troubleshooting Procedures in this manual and Frequently Asked Questions on our website before contacting Technical Support.

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

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

   - System, motherboard, and chassis model numbers and PCB revision number

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

   - System configuration

An example of a Technical Support form is posted on our website. Distributors: For immediate assistance, please have your account number ready when contacting our technical support department by email.

Returning Merchandise for Service

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

For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

Whenever possible, repack the chassis in the original Supermicro® carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

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

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

Vendor Support Filing System

For issues related to Intel, use the Intel IPS filing system:

https://www.intel.com/content/www/us/en/design/support/ips/training/welcome.html

For issues related to Red Hat Enterprise Linux, since it is a subscription based OS, contact your account representative.

7.11 Feedback

Supermicro® values your feedback as we strive to improve our customer experience in all facets of our business. Please email us at techwriterteam@supermicro.com to provide feedback on our manuals.

7.12 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)
	Sales-USA@supermicro.com (Sales Inquiries)
	Government_Sales-USA@supermicro.com (Gov. Sales Inquiries)
	support@supermicro.com (Technical Support)
	RMA@supermicro.com (RMA Support)
	Webmaster@supermicro.com (Webmaster)
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_Europe@supermicro.com (Sales Inquiries)
	Support_Europe@supermicro.com (Technical Support)
	RMA_Europe@supermicro.com (RMA 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:	Sales-Asia@supermicro.com.tw (Sales Inquiries)
	Support@supermicro.com.tw (Technical Support)
	RMA@supermicro.com.tw (RMA Support)
Website:	www.supermicro.com.tw

Appendix A

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.

اً اكَ ف حالة وُيّ أى أى تتسبب ف اصابة جسذ ةً هذا الزهز عٌ خطز !تحذ زٌ.
قبل أى تعول على أي هعذات،كي على علن بالوخاطز ال اُجوة عي الذوائز
الكهزبائ ةٍ
وكّي على درا ةً بالووارسات النقائ ةٍ لو عٌ وقع أي حادث
استخذم رقن الب اٍى الو صُص ف هًا ةٌ كل تحذ زٌ للعثر 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 (except for hot-swap 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 اننظاو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد

انطاقت قبم

انصل إنى امناطق انداخهيت نههيكم نتشبيج 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 authorized personnel and qualified service persons 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

Nur autorisiertes Personal und qualifizierte Servicetechniker dürfen dieses Gerät installieren, austauschen oder warten..

¡Advertencia!

Sólo el personal autorizado y el personal de servicio calificado deben poder instalar, reemplazar o dar servicio a este equipo.

Attention

Seul le personnel autorisé et le personnel de maintenance qualifié doivent être autorisés à installer, remplacer ou entretenir cet équipement..

אזהרה!

יש לאפשר רק צוות מורשה ואנשי שירות מוסמכים להתקין, להחליף או לטפל בציוד זה.

.ينبغي السماح فقط للموظفين المعتمدين وأفراد الخدمة المؤهلين بتركيب هذا الجهاز أو استبداله أو صيانته

경고!

승인된 직원과 자격을 갖춘 서비스 담당자만이 이 장비를 설치, 교체 또는 서비스할 수 있습니다.

Waarschuwing

Alleen geautoriseerd personeel en gekwalificeerd onderhoudspersoneel mag deze apparatuur installeren, vervangen of onderhouden..

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
מפתח, מנעול וכד) כלי אבטחה בלבד.(

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 نلاألمما 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.

<div dir="rtl">

هناك خطر من انفجار في حالة اسحبذال البطارية بطريقة غير صحيحة فعليل

اسحبذال البطارية

فقط بنفس النع أو ما يعادلها مما أوصث به الشرمة المصنعة

جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة الصانعة

</div>

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 خطز مه التيار الكهزبائي أوالطاقة المجددة 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 للقواويه المحلية والطية والمتعلقة 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.

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

危险的可移动性零件。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 והמאווררים 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 조립품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

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

Power Cable and AC Adapter

Warning! When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the 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/CSAマークがコードに表記)を Supermicroが指定する製品以外に使用することを禁止しています。

警告

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

警告

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

Warnung

Nutzen Sie beim Installieren des Produkts ausschließlich die von uns zur Verfügung gestellten Verbindungskabeln, Stromkabeln und/oder 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.

כבלים חשמליים ומתאמי AC

אזהרה!

כאשר מתקינים את המוצר, שי להשתמש בכבלים, ספקים ומתאמים אשר AC נרכשו או שמאתו לצרור 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 Supermicro י"ע םאתוה רשא רצומב קר אלא ,רחא ילמשח רצומ לכ רובע UL/CSA).

عند تركيب المنتج، قم باستخدام التوصيلات المتوفرة أو المحددة قم بشراء الكابلات
الكهربائية ومحولات التيار المتردد مع الالتزام بقوانين ومتطلبات السلامة المحلية في ذلك
حجم الموصل والقابس السليم. استخدام أي كابلات ومحولات أخرى قد يتسبب في عطل أو حريق.
يحظر قانون السلامة للأجهزة الكهربائية والمعدات استخدام الكابلات المعتمدة من قبل UL وأ 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 B

System Specifications

Processors

Single Intel® Xeon® E-2300, 10th Generation Pentium in an LGA1200 (H5) socket, Supports CPU TDP up to 95W.

Note: Refer to the motherboard specifications pages on our website for updates to supported processors.

Chipset

Intel® C256

BIOS

AMI 32MB SPI Flash EEPROM

Memory0

Four DIMM slots, up to 128GB 4x 32GB DRAM, ECC DDR4 UDIMM with speeds up to 3200MHz

Storage Drives

Four 3.5" hot-swap SATA/SAS/NVMe hybrid drive bays

One M.2 PCIe 3.0 x4

One M.2 PCIe 4.0 x4 (Xeon® CPU required)

Two 2.5" peripheral drive bays

PCI Expansion Slots

One PCIe 4.0 x16 FHFL or two PCIe 4.0 x8 FHFL auto-switching (using RSC-W-68G4 riser card)

One PCIe 3.0 x4 (in x8) LP (using RSC-R1UW-E8R riser card)

Input/Output

Eight SATA (6Gbps) port(s)

Two RJ45 10GbE LAN ports

One RJ45 dedicated IPMI LAN port

Five USB 3.2 Gen1 ports (2 headers; 2 rear, 1 Type A)

Four USB 2.0 ports (2 headers; 1 rear)

One VGA port(1 rear)

Two COM ports (1 header; 1 rear)

Two SuperDOM (Disk on Module) ports with built-in power

Motherboard

X12STW-TF; Length 13.0", Width 8" (330.2 mm x 203.2 mm)

Chassis

SYS-510T-WTR: CSE-815TQC4-R504WBP7 1U Rackmount, 1.7 x 17.2 x 25.6in. / 43 x 437 x 650mm (HxWxD)

SYS-510T-WTR-EU: CSE-815TS-R000WNBP7-1 1U Rackmount, 1.7 x 17.2 x 25.6in. / 43 x 437 x 650mm (HxWxD)

System Cooling

Four 4cm counter-rotating fans with optimal fan speed control

One air shroud

One CPU heatsink

Power Supply

(Default for SYS-510T-WTR)

Model: PWS-504-1R2

AC Input Voltages: 100-240VAC

Rated Input Current: 6.1 to 2.6A

Rated Input Frequency: 50-60Hz

Rated Output Power: 500W Redundant

Rated Output Voltages: +12V (42A), +5VSB (3A)

(Default for SYS-510T-WTR-EU)

Model: PWS-601A-1R

AC Input Voltages: 100-240VAC

Rated Input Current: 7 to 2.7A

Rated Input Frequency: 50-60Hz

Rated Output Power: 600W Redundant

Rated Output Voltages: +12V (50A), +5VSB (4A)

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: 8% to 90% (non-condensing)

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

Regulatory Compliance

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

Applied Directives, Standards

Perchlorate WarningEMC/EMI: 2014/30/EU (EMC Directive) CLASS A

Electromagnetic Compatibility Regulations 2016

FCC Part 15

ICES-003

VCCI-CISPR 32

AS/NZS CISPR 32

BS/EN 55032

BS/EN 55035

CISPR 32

CISPR 24/CISPR 35

BS/EN 61000-3-2

BS/EN 61000-3-3

BS/EN 61000-4-2

BS/EN 61000-4-3

BS/EN 61000-4-4

BS/EN 61000-4-5

BS/EN 61000-4-6

BS/EN 61000-4-8

BS/EN 61000-4-11

Product Safety: 2014/35/EU (LVD Directive)

UL/CSA 62368-1 (USA and Canada)

Electrical Equipment (Safety) Regulations 2016

IEC/BS/EN 62368-1

Environment:

2011/65/EU (RoHS Directive)

EC 1907/2006 (REACH)

2012/19/EU (WEEE Directive)

Warning! This product can expose you to chemicals including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

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

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

VCCI－A

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: 伺服器/ Server
Equipment name

型號（型式） : 815- R5X12 (系列型號: SYS-510T-WTR)

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 (HDD)	-	○	○	○	○	○
電源背板 (PDB)	-	○	○	○	○	○

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.

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

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 3：The "−" indicates that the restricted substance corresponds to the exemption.

備考3.〝－〞係指該項限用物質為排除項目。

警告使用者：
此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。

輸入額定:

100-127V ~, 60-50Hz, 6-5A (x2)

200-240V ~, 60-50Hz, 4-3A (x2)

*使用者不能任意拆除或替換內部配備
*報驗義務人之姓名或名稱：美超微電腦股份有限公司
*報驗義務人之地址：新北市中和區建一路 150 號 3 樓