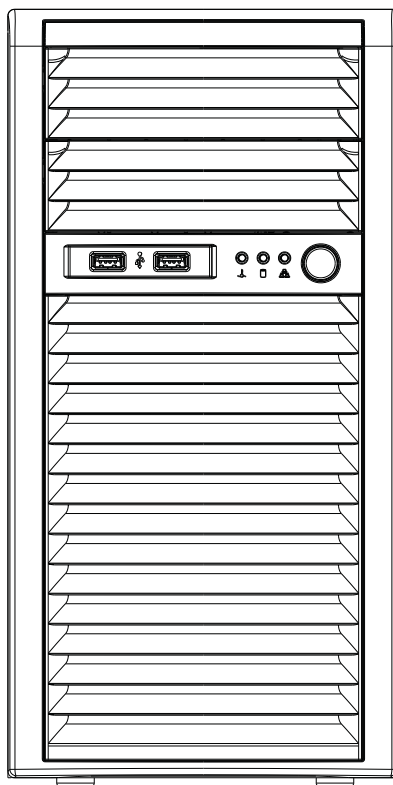


SUPERO®

SuperServer 5035L-I



USER'S MANUAL

Revision 1.0

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Manual Revision 1.0
Release Date: January 29, 2009

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Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SuperServer 5035L-I. Installation and maintenance shall be performed by experienced technicians only.

The SuperServer 5035L-I is a single processor system based on the SC731I-300B mini-tower chassis and the Super X7SLM-L motherboard. The X7SLM-L supports a single Intel® Core™ 2 processor E4000 series or a Pentium® dual core or Celeron® brand processor up to 800 MHz FSB. Please refer to our web site for an up-to-date list of supported processors.

Manual Organization

Chapter 1: Introduction

The first chapter provides a checklist of the main components included with the system and describes the main features of the Super X7SLM-L motherboard and the SC731I-300B chassis.

Chapter 2: Installation

This chapter describes the steps necessary to setup the system. If your server was ordered without the processor and memory components, this chapter will refer you to the appropriate sections of the manual for their installation.

Chapter 3: System Interface

Refer to this chapter for details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 4: System Safety

You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed when installing and servicing the SuperServer 5035L-I.

Chapter 5: Advanced Motherboard Setup

Chapter 5 provides detailed information on the X7SLM-L motherboard, including the locations and functions of connectors, headers and jumpers. Refer to this chapter when adding or removing processors or main memory and when reconfiguring the motherboard.

Chapter 6: Advanced Chassis Setup

Refer to Chapter 6 for detailed information on the SC731I-300B chassis. You should follow the procedures given in this chapter when installing, removing or reconfiguring Serial ATA or peripheral drives and when replacing system power supply units and cooling fans.

Chapter 7: BIOS

The BIOS chapter includes an introduction to BIOS and provides detailed information on running the CMOS Setup Utility.

Appendix A: POST Error Beep Codes

Appendix B: Installing Windows

Appendix C: System Specifications

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Appendix A POST Error Beep Codes

Appendix B Installing Windows

Appendix C System Specifications

Chapter 1

Introduction

1-1 Overview

The SuperServer 5035L-I is a high-end server comprised of two main subsystems: the SC731I-300B mini-tower chassis and the X7SLM-L motherboard. Please refer to our web site for information on operating systems that have been certified for use with the SuperServer 5035L-I (www.supermicro.com).

In addition to the motherboard and chassis, various hardware components have been included with the SuperServer 5035L-I, as listed below:

- One (1) cooling fan (FAN-0076L4)
- One (1) I/O shield (CSE-PT7L)
- One (1) IDE cable for DVD-ROM drive (CBL-0139L)
- SATA Accessories
 - Four (4) SATA cables (CBL-0044L)
- One (1) SuperServer 5035L-I User's Manual

Optional

- One (1) active heatsink (SNK-P0015A4)
- One (1) intake fan (FAN-0113L4)
- One (1) 5.25" DVD-ROM drive (DVM-LITE-DVDRW-HBT)

1-2 Motherboard Features

At the heart of the SuperServer 5035L-I lies the X7SLM-L, a single processor motherboard based on the Intel 945GC + ICH7R chipset. Below are the main features of the X7SLM-L. (See Figure 1-1 for a block diagram of the chipset).

Processors

The X7SLM-L supports a single Intel® Core™ 2 processor E4000 series or a Pentium® dual core or Celeron® brand processor up to 800 MHz FSB. Please refer to the motherboard description pages on our web site for a complete listing of supported processors (www.supermicro.com).

Memory

The X7SLM-L has two DIMM slots that can support up to 2 GB of unbuffered DDR2-667/533/400 SDRAM. Single channel and dual-channel interleaved configurations are supported. Memory modules of the same size and speed should be used. See Chapter 5 for details.

Serial ATA

A SATA controller is integrated into the South Bridge (ICH7R) section of the chipset to provide a four-port Serial ATA subsystem, which is RAID 0, 1, 10 and 5 capable. The Serial ATA drives are not hot-swappable units. See Appendix B for instructions on RAID setup.

PCI Expansion Slots

The X7SLM-L has one PCI-E x16, one PCI-E x4 and two 32-bit PCI slots.

Onboard Controllers/Ports

An onboard ATA/100 controller is provided to support up to two IDE hard drives or ATAPI devices. The color-coded I/O ports include two COM ports, two USB 2.0 ports, PS/2 mouse and keyboard ports and two Gb Ethernet ports.

Other Features

Other onboard features that promote system health include onboard voltage monitors, a chassis intrusion header, auto-switching voltage regulators, chassis and CPU overheat sensors, virus protection and BIOS rescue.

1-3 Chassis Features

The SC731I-300B is a mini-tower chassis with a unique design that allows most configurations to be performed without the need for tools. The following is a general outline of the main features of the SC731I-300B chassis.

System Power

The SC731I-300B features a high-efficiency 300W power supply. Power must be removed from the system before servicing or replacing the power supply.

SATA Subsystem

The chassis was designed to support four SATA hard drives (these drives are not hot-swappable).

Front Control Panel

The control panel provides you with system monitoring and control. LEDs indicate network activity, hard disk drive activity and overheat conditions. The control panel also includes a main power button, which has a blue LED that illuminates when the system is powered on.

I/O Backplane

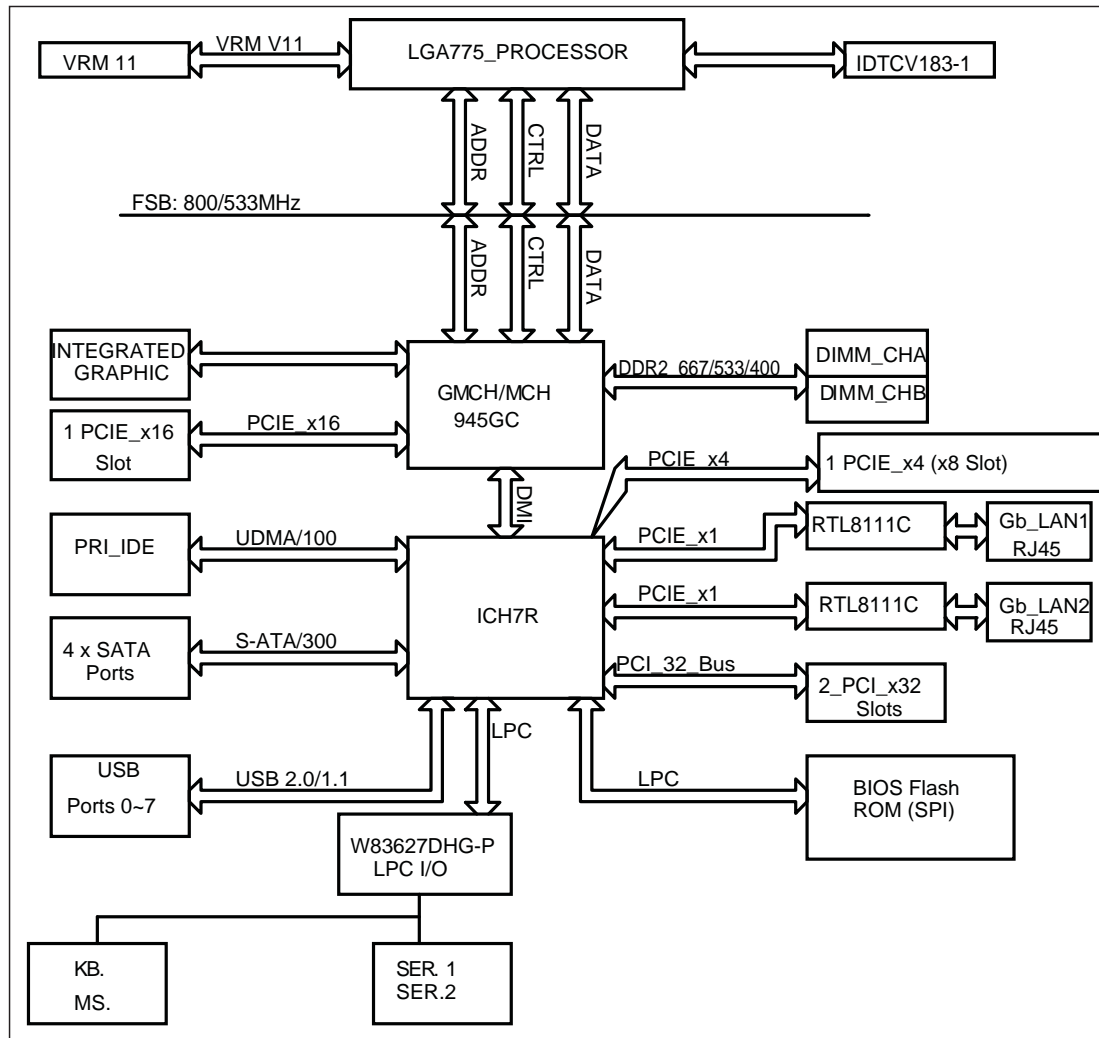
The I/O backplane includes two COM ports, two USB 2.0 ports, PS/2 mouse and keyboard ports and two gigabit Ethernet ports. Four standard size PCI expansion cards (the maximum number supported by the motherboard) may be added to the system.

Cooling System

The SC731I-300B chassis includes one whisper-quiet 9-cm exhaust fan located at the rear of the chassis and an 8-cm fan located in the power supply. Both fans operate continuously.

**Figure 1-1. Intel 945GC Chipset:
System Block Diagram**

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



1-4 Contacting Supermicro

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Web Site: www.supermicro.com.tw

Technical Support:

Email: support@supermicro.com.tw

Tel: 886-2-8228-1366, ext.132 or 139

Notes

Chapter 2

System Setup

2-1 Overview

This chapter provides a quick setup checklist to get your SuperServer 5035L-I up and running. Following the steps in the order given should enable you to have the system operational within a minimal amount of time. If your system is not already fully integrated with a motherboard, processor, system memory etc., please turn to the chapter or section noted in each step for details on installing specific components.

2-2 Unpacking the System

You should inspect the box the SuperServer 5035L-I was shipped in and note if it was damaged in any way. If the server itself shows damage, you should file a damage claim with the carrier who delivered it.

Decide on a suitable location for setting up and operating the SuperServer 5035L-I. 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. You will also need it placed near a grounded power outlet.



Warnings and Precautions!



- Review the electrical and general safety precautions in Chapter 4.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Allow the power supply units and Serial ATA drives to cool before touching them.
- To maintain proper cooling, always keep all chassis panels closed when not being serviced.

2-3 Setting Up the System

You should first open the left side panel (when facing the front of the chassis) to make sure the motherboard is properly installed and all connections have been made.



Warning: Only qualified service technicians should access the inside of the system. Except for short periods of time, do NOT operate the system without the cover in place. The chassis cover must be in place to allow proper airflow and prevent overheating.

Checking the Motherboard Setup

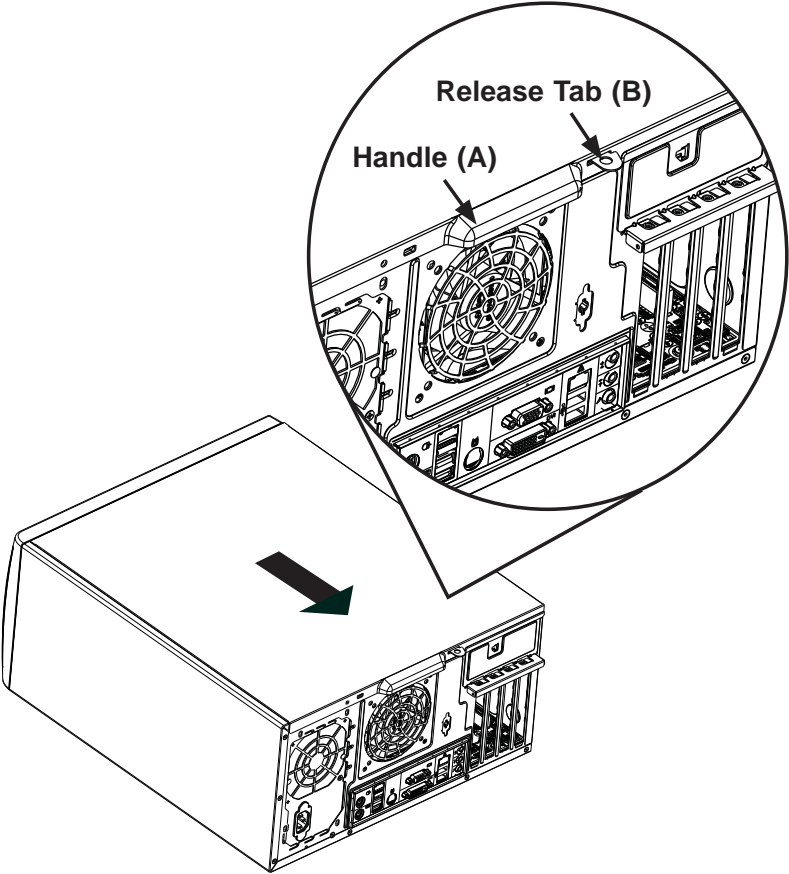
1. Accessing the inside of the system (Figure 2-1): Begin by disconnecting the chassis from any power source. Grasp the cover handle (A) with your fingers. Use your thumb to lift the cover latch (B). Slide the cover back, toward the rear of the chassis, then lift the cover off.
2. Check the CPU (processor): You may have a processor already installed into the system board. The processor should have its own heatsink attached. See Chapter 5 for instructions on processor installation.
3. Check the system memory: Your system may have come with system memory already installed. Make sure all DIMMs are fully seated in their slots. For details on adding system memory, refer to Chapter 5.
4. Installing add-on cards: If desired, you can install up to six add-on cards to the system. See Chapter 5 for details on installing PCI- add-on cards.
5. Check all cable connections and airflow: Make sure all power and data cables are properly connected and not blocking the airflow. See Chapter 5 for details on cable connections.

Checking the Drive Bay Setup

Next, you should check to make sure the peripheral drives and the SATA drives have been properly installed and all essential connections have been made.

1. Accessing the peripheral drive bays: To install a component to either of the two 5.25" drive bays, you will need to remove the side chassis cover. See the installation and removal sections for the peripheral drives in Chapter 6.

Figure 2-1. Accessing the Inside of the 5035L-I



2. Check the SATA disk drives: Depending upon your system's configuration, your system may have up to four SATA drives already installed. If you need to install or remove an SATA drive, please refer to the appropriate section in Chapter 6.
3. Check the airflow: Cooling air is provided by the chassis fan and the power supply fan. The system component layout was carefully designed to promote sufficient airflow throughout the chassis. Also note that all power and data cables have been routed in such a way that they do not block the airflow generated by the fan. Please keep this in mind when rerouting or adding/removing cables.
4. Supplying power to the system: The last thing you must do is to provide input power to the system. Plug the power cord from the power supply unit into a high-quality power strip that offers protection from electrical noise and power surges. It is recommended that you use an uninterruptible power supply (UPS).

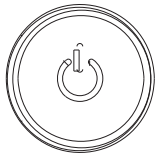
Chapter 3

System Interface

3-1 Overview

There are four LEDs on the control panel to keep you constantly informed of the overall status of the system as well as the activity and health of specific components. The control panel also is where to find the main power on/off button.

3-2 Control Panel Button



POWER

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

3-3 Control Panel LEDs

The control panel located on the front of the SC731I-300B chassis has four LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.



HDD

This LED indicates IDE channel activity, SATA drive and/or DVD-ROM drive activity when flashing.



NIC

Indicates network activity on the Gigabit LAN port when flashing.



Overheat/Fan Fail

When this LED flashes it indicates a fan failure. When on continuously (on and not flashing) it indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. Check the routing of the cables and make sure all fans are present and operating normally. You should also check to make sure that the chassis covers are installed. Finally, verify that the heatsinks are installed properly (see Chapter 5). This LED will remain flashing or on as long as the overheat condition exists.

Power On

A blue LED located behind the main power button is illuminated when the system is powered on and running.

Chapter 4

System Safety

4-1 Electrical Safety Precautions



Note: power should always be disconnected before performing any service on the system.

Basic electrical safety precautions shall be followed to protect yourself from harm and the SuperServer 5035L-I from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high voltage components.
- Power should always be disconnected from the system when removing or installing main system components, such as the serverboard, memory modules and floppy drive. When disconnecting power, you should first power down the system with the operating system first and then unplug the power cords of all the power supply units in the system.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease static electrical discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cords must include a grounding plug and must be plugged into grounded electrical outlets.

- Serverboard Battery: **CAUTION** - There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities (see Figure 4-1). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
- DVD-ROM Laser: **CAUTION** - this server may have come equipped with a DVD-ROM drive. To prevent direct exposure to the laser beam and hazardous radiation exposure, do not open the enclosure or use the unit in any unconventional way.
- Mainboard replaceable soldered-in fuses: Self-resetting PTC (Positive Temperature Coefficient) fuses on the mainboard must be replaced by trained service technicians only. The new fuse must be the same or equivalent as the one replaced. Contact technical support for details and support.

4-2 General Safety Precautions



Follow these rules to ensure general safety:

- Keep the area around the SuperServer 5035L-I clean and free of clutter.
- The SuperServer 5035L-I weighs approximately 43 lbs. (19.5 kg) when fully loaded. When lifting the system, two people at either end should lift slowly with their feet spread out to distribute the weight. Always keep your back straight and lift with your legs.
- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they won't accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.

- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

4-3 ESD Precautions



Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

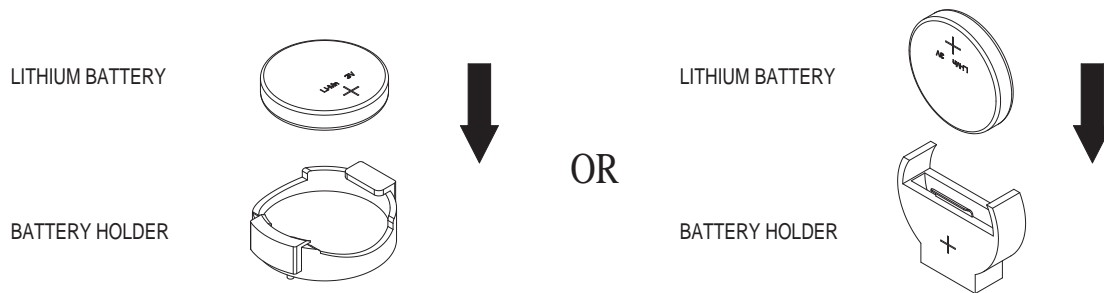
- Use a grounded wrist strap designed to prevent static discharge.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the serverboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the serverboard.

4-4 Operating Precautions



Care must be taken to assure that the chassis cover is in place when the 5035L-I is operating to assure proper cooling. Out of warranty damage to the system can occur if this practice is not strictly followed.

Figure 4-1. Installing the Onboard Battery



Chapter 5

Advanced Motherboard Setup

This chapter covers the steps required to install the X7SLM-L motherboard into the chassis, connect the data and power cables and install add-on cards. All motherboard jumpers and connections are also described. A layout and quick reference chart are included in this chapter for your reference. Remember to completely close the chassis when you have finished working with the motherboard to better cool and protect the system.

5-1 Handling the Motherboard

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

Precautions

- Use a grounded wrist strap designed to prevent Electrostatic Discharge.
- Touch a grounded metal object before removing any board from its antistatic bag.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the motherboard, add-on cards and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.

Unpacking

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

5-2 Motherboard Installation

This section explains the first step of physically mounting the X7SLM-L into the SC7311-300B chassis. Following the steps in the order given will eliminate the most common problems encountered in such an installation. To remove the motherboard, follow the procedure in reverse order.

Installing to the Chassis

1. Access the inside of the system (see procedure in Chapter 6).
2. Make sure that the I/O ports on the motherboard align properly with their respective holes in the I/O shield at the back of the chassis.
3. Carefully mount the motherboard to the motherboard tray by aligning the board holes with the raised metal standoffs that are visible in the chassis. You may need to add an extra standoff for the hole near the Fan 3 header.
4. Insert screws into all the mounting holes on your motherboard that line up with the standoffs and tighten until snug (if you screw them in too tight, you might strip the threads). Metal screws provide an electrical contact to the motherboard ground to provide a continuous ground for the system.
5. Finish by replacing the top cover of the chassis.

5-3 Connecting Cables

Now that the motherboard is installed, the next step is to connect the cables to the board. These include the data (ribbon) cables for the peripherals and control panel and the power cables.

Connecting Data Cables

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

should take care to keep them routed as they were originally after reconnecting them (make sure the red wires connect to the pin 1 locations). The following data cables (with their locations noted) should be connected. (See the layout on page 5-9 for connector locations.)

- SATA drive data cable (I-SATA0 ~ I-SATA3)
- Control Panel cable (JF1)

Important! Make sure the the cables do not come into contact with the fans.

Connecting Power Cables

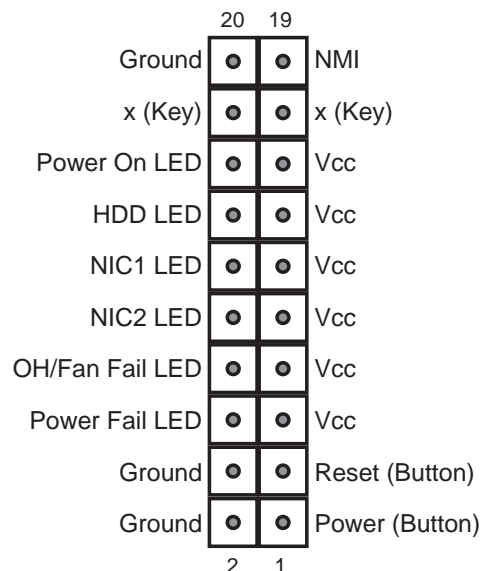
The X7SLM-L has a 24-pin primary power supply connector (JPW1) for connection to the ATX power supply. In addition, an 8-pin processor power connector (JPW2) must also be connected to your power supply. See Section 5-9 for power connector pin definitions.

Connecting the Control Panel

JF1 contains header pins for various front control panel connectors. See Figure 5-1 for the pin locations of the various front control panel buttons and LED indicators.

All JF1 wires have been bundled into a single ribbon cable to simplify this connection. Make sure the red wire plugs into pin 1 as marked on the board. The other end connects to the Control Panel PCB board, located just behind the system status LEDs on the chassis. See Chapter 5 for details and pin descriptions.

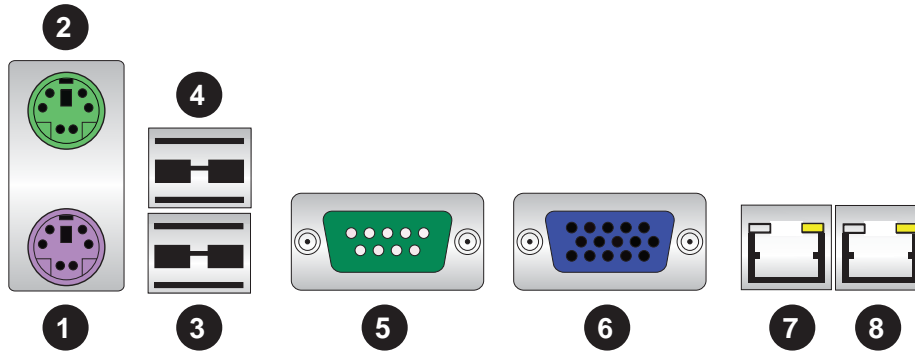
Figure 5-1. Control Panel Header Pins



5-4 I/O Ports

The I/O ports are color coded in conformance with the PC 99 specification. See Figure 5-2 below for the colors and locations of the various I/O ports.

Figure 5-2. I/O Ports



| | |
|-----------------------|--------------------|
| 1. Keyboard (Purple) | 5. COM1 Port |
| 2. PS/2 Mouse (Green) | 6. VGA Port (Blue) |
| 3. USB Port 0 | 7. LAN1 |
| 4. USB Port 1 | 8. LAN2 |

5-5 Processor and Heatsink Installation

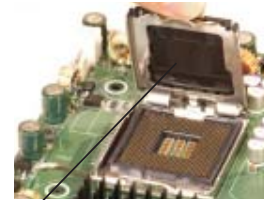
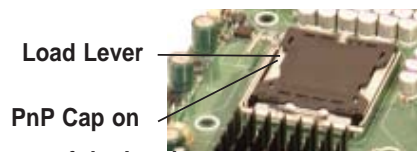


When handling the processor package, avoid placing direct pressure on the label area of the fan.

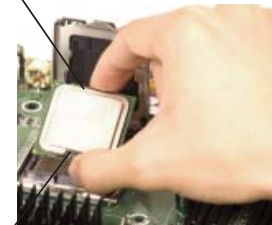
- Always connect the power cord last and always remove it before adding, removing or changing any hardware components. Make sure that you install the processor into the CPU socket before you install the CPU heatsink.
- Intel's boxed processor package contains the CPU fan and heatsink assembly. If you buy a CPU separately, make sure that you use only Intel-certified multi-directional heatsink and fan.
- Make sure to install the motherboard into the chassis before you install the CPU heatsink and heatsink fans.
- When purchasing an LGA 775 processor or when receiving a motherboard with an LGA 775 processor pre-installed, make sure that the CPU plastic cap is in place, and none of the CPU pins are bent; otherwise, contact the retailer immediately.
- Refer to the Supermicro web site for more details on CPU support.

Installing the LGA 775 Processor

1. Press the load lever to release the load plate, which covers the CPU socket, from its locking position.
2. Gently lift the load lever to open the load plate.
3. Use your thumb and your index finger to hold the CPU at the top center edge and the bottom center edge of the CPU.
4. Align CPU Pin1 (the CPU corner marked with a triangle) against the socket corner that is marked with a triangle cutout.
5. Align the CPU key that is the semi-circle cutout below a golden dot against the socket key, the Notch on the same side of the triangle cutout on the socket.
6. Once aligned, carefully lower the CPU straight down to the socket. (Do not drop the CPU on the socket. Do not move the CPU horizontally or vertically. Do not rub the CPU against the surface or against any pins of the socket to avoid damage to the CPU or the socket.)
7. With the CPU inside the socket, inspect the four corners of the CPU to make sure that the CPU is properly installed.
8. Use your thumb to gently push the load lever down to the lever lock.
9. If the CPU is properly installed into the socket, the plastic PnP cap will be automatically released from the load plate when the load lever is pushed in the lever lock. Remove the PnP cap from the motherboard.



North Center Edge

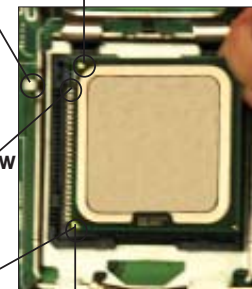


Socket Key

(Socket Notch)

Gold dot

CPU key (semi-circle cutout) below the circle



Corner with triangle cutout

CPU Pin1

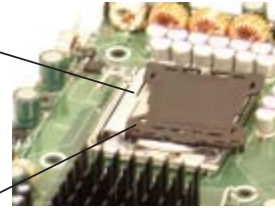




Warning: Please save the plastic PnP cap. The motherboard must be shipped with the PnP cap properly installed to protect the CPU socket pins. Shipment without the PnP cap properly installed will cause damage to the socket pins.



Load Lever



Plastic cap is released from the load plate if CPU properly installed.

Installing the Heatsink

1. Connect the heatsink fan wiring to the "CPU FAN" header on the motherboard.
2. Position the heatsink in such a way that the heatsink fan wires are closely routed to the CPU fan and do not interfere with other components.
3. Inspect the CPU fan wires to make sure that the wires are routed through the bottom of the heatsink.
4. Remove the thin layer of the protective film from the copper core of the heatsink. **Warning:** the CPU may overheat if the protective film is not removed from the heatsink.
5. Apply the proper amount of thermal grease on the CPU. (If your heatsink came with a thermal pad, please ignore this step.)
6. If necessary, rearrange the wires so that they are not pinched between the heatsink and the CPU. Also make sure there is clearance between the fan wires and the fins of the heatsink.

Note: not all steps are pictured.

Step 5



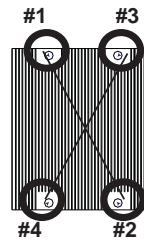
Thermal Grease

Step 6



Heatsink Fins

7. Align the four heatsink fasteners with the mounting holes on the motherboard. Gently push diagonal pairs of fasteners (#1 & #2 and #3 & #4) into the mounting holes until you hear a click. Orient each fastener so that the narrow end of the groove points outward.



Step 7

Narrow end of the groove points outward

5-6 Installing Memory Modules

Note: Check the Supermicro web site for recommended memory modules.

CAUTION

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

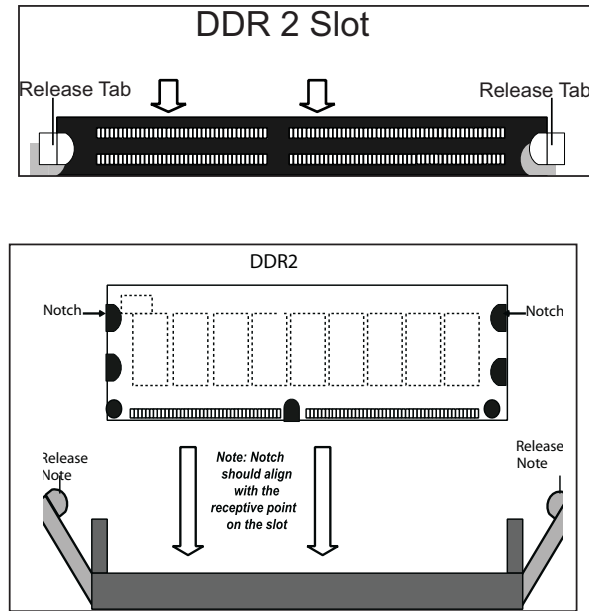
Installing & Removing DIMMs

1. Insert the desired number of DIMMs into the memory slots, starting with DIMM #1A. For best performance, please use the memory modules of the same type and speed.
2. Press down the release tabs on the ends of a memory slot. Insert each DIMM module vertically into its slot. Pay attention to the notch along the bottom of the module to prevent inserting the DIMM module incorrectly.
3. Gently press down on the DIMM module until it snaps into place in the slot. Repeat for all modules.
4. Reverse the steps above to remove the DIMM modules from the motherboard.

Figure 5-3. DIMM Installation

To Install: Insert module vertically and press down until it snaps into place. Pay attention to the alignment notch at the bottom.

To Remove: Use your thumbs to gently push the release tabs near both ends of the module. This should release it from the slot.



Memory Support

The X7SLM-L supports up to 2GB unbuffered non-ECC DDR2 667/533/400 in 2 DIMM slots. Populating these DIMM modules with a pair of memory modules of the same type and same size will result in interleaved memory, which will improve memory performance.

5-7 Installing PCI Add-On Cards

The 5035L-I can accommodate standard size add-on cards in all slots on the X7SLM-L motherboard.

Installing Add-on Cards

1. Depress the release latch (A) that holds the protective bracket (B), which secures the add-on card brackets to the chassis.
2. Lower the protective bracket from over the top of the add-on card dummy brackets as shown in the lower illustration.
3. Remove the add-on card dummy brackets from their slots.
4. Simultaneously, slide the add-on card and its bracket into the slot on the chassis, and insert the add-on card into its slot on the motherboard.

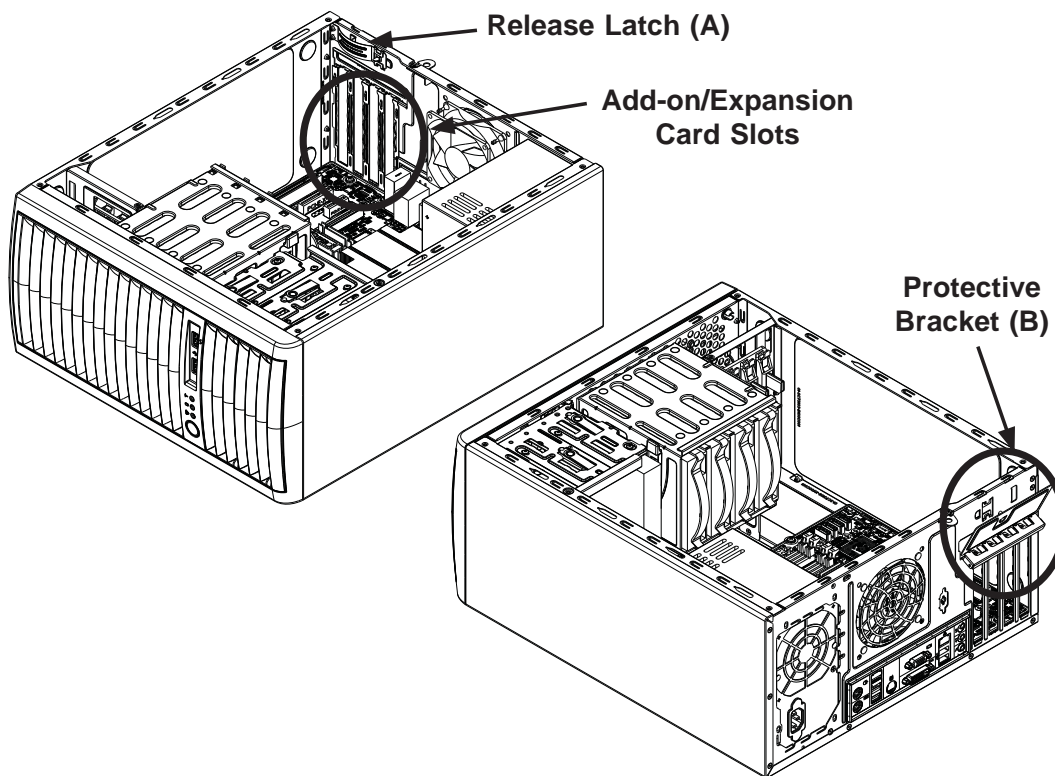
5. If desired, screws can be used to secure the add-on cards into the chassis.
6. Close the protective bracket over the tops of the add-on card brackets.

The SC731 chassis includes clips to accommodate the use of long-length add-on cards. These clips support and stabilize the long cards, preventing them from contacting any undesired surfaces.

Installing Long Add-on/Expansion Cards

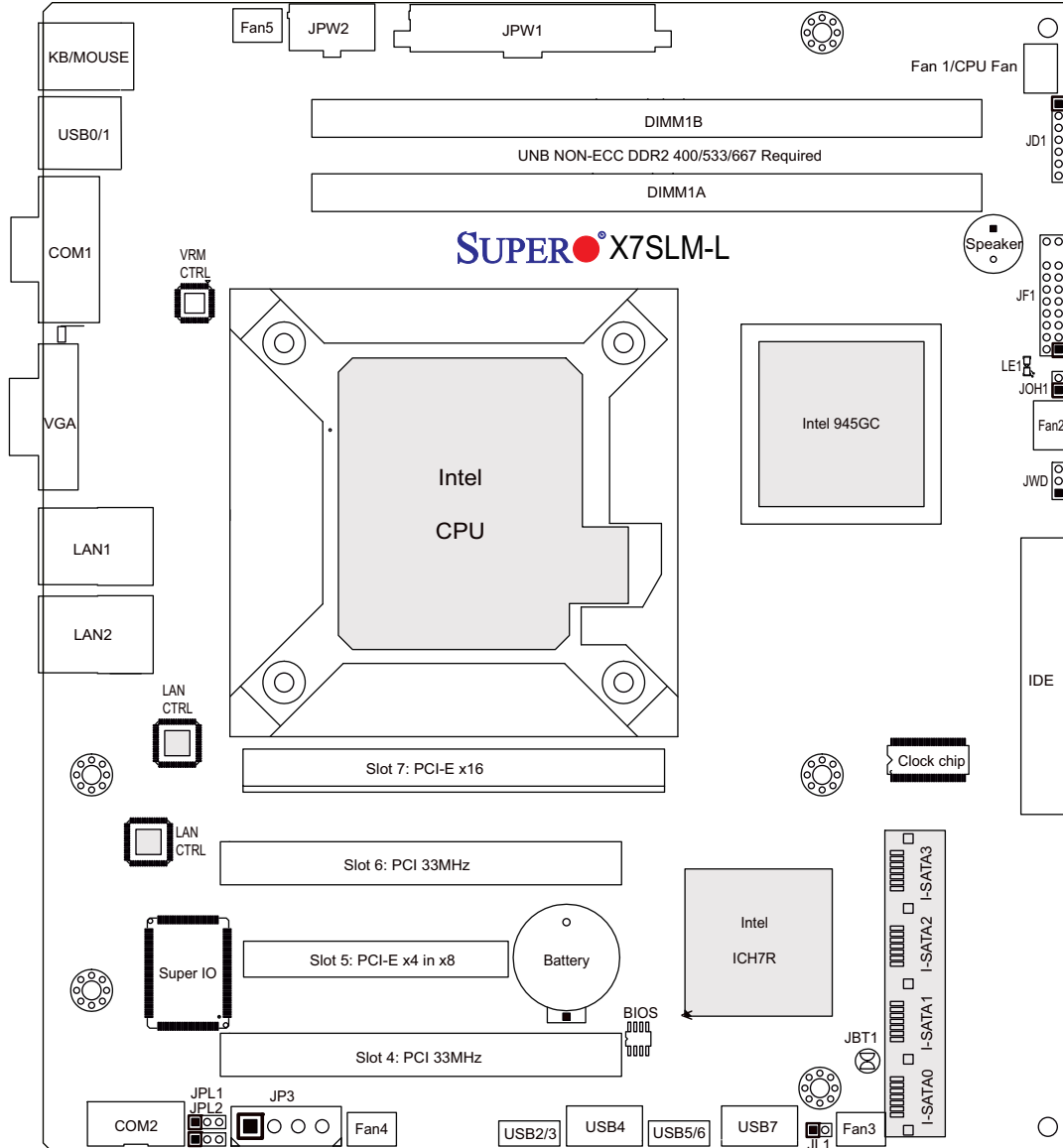
1. Locate the long card holders (A), on the opposite side of the chassis from the add-on card brackets.
2. Begin by installing the long card as described in the previous section.
3. Push the long card holder all the way down onto the end of the card to secure it in the chassis.

Figure 5-4: Installing Add-on Cards



5-8 Motherboard Details

Figure 5-5. X7SLM-L Layout



X7SLM-L Quick Reference

| Jumper | Description | Default Setting |
|-----------|--------------------------------|--------------------|
| JBT1 | CMOS Clear | (See Section 5-10) |
| JPL1/JPL2 | LAN 1/2 Enable/Disable | Pins 1-2 (Enabled) |
| JWD | Watch Dog Timer Enable/Disable | Pins 1-2 (Reset) |

| Connector | Description |
|----------------|--|
| COM1/COM2 | COM1/2 Serial Port Connectors |
| Fan 1~5 | Fan headers (Fan 1 = CPU fan) |
| I-SATA 0~5 | (Intel South Bridge) SATA Ports |
| IDE | IDE Hard Drive Connector |
| JD1 | Power LED/Speaker Header |
| JF1 | Control Panel Header |
| JL1 | Chassis Intrusion Header |
| JOH1 | Overheat LED Header |
| JP3 | Power Extension Connector (for add-on cards) |
| JPW1 | 24-pin ATX Main Power Connector |
| JPW2 | 8-pin Auxilliary Power Connector |
| LAN1/LAN2 | Gigabit Ethernet (RJ45) ports |
| USB0/1 | Rear I/O Panel USB Ports |
| USB2/3, USB5/6 | Onboard USB Headers |
| USB4, USB7 | Front Panel Accessible USB Headers |

| LED | Description |
|-----|-----------------------------|
| LE1 | Onboard Power LED Indicator |

Notes

Jumpers not noted are for test purposes only.

The JP3 connector provides power from the motherboard to an IDE or SATA drive and is not to be connectoed to the power supply.

5-9 Connector Definitions

Main ATX Power Supply Connector

The primary power supply connector (JPW1) meets the SSI EPS 12V specification. Refer to the table on the right for the pin definitions of the ATX 24-pin power connector. You must also connect the 8-pin (JPW2) power connector to your power supply (see below).

| ATX Power 24-pin Connector Pin Definitions (JPW1) | | | |
|---|------------|-------|------------|
| Pin# | Definition | Pin # | Definition |
| 13 | +3.3V | 1 | +3.3V |
| 14 | -12V | 2 | +3.3V |
| 15 | COM | 3 | COM |
| 16 | PS_ON | 4 | +5V |
| 17 | COM | 5 | COM |
| 18 | COM | 6 | +5V |
| 19 | COM | 7 | COM |
| 20 | Res (NC) | 8 | PWR_OK |
| 21 | +5V | 9 | 5VSB |
| 22 | +5V | 10 | +12V |
| 23 | +5V | 11 | +12V |
| 24 | COM | 12 | +3.3V |

Required Connection

Processor Power Connector

JPW2 must also be connected to provide power to the South Bridge, North Bridge and all VRMs. See the table on the right for pin definitions.

| 8-pin (+12V) Processor Power Pin Definitions (JPW2) | |
|---|------------|
| Pins | Definition |
| 1 - 4 | Ground |
| 5 - 8 | +12V |

Required Connection

External Power Connector

In addition to the 24-pin main power connector and the 8-pin auxiliary power, the 4-pin External Power connector at JP3 is used to provide power to an IDE or SATA drive and is not to be connected to the power supply.

| 4-Pin External Power Connector Pin Definitions (JP3) | |
|--|------------|
| Pin | Definition |
| 1 | +12V |
| 2 | Ground 1 |
| 3 | Ground 2 |
| 4 | +5V |

Power Button

The connection for the power button is on pins 1 and 2 of JF1. The chassis power button should be connected here. See the table on the right for pin definitions.

| Power Button Pin Definitions (JF1) | |
|------------------------------------|------------|
| Pin# | Definition |
| 1 | PW_ON |
| 2 | Ground |

Reset Connector

The reset header is located on pins 3 and 4 of JF1. Attach the reset switch on the computer chassis to these pins. See the table on the right for pin definitions.

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

Overheat/Fan Fail LED (OH)

Connect an LED to pins 7 and 8 of JF1 to provide advanced warning of chassis overheating or fan failure. Refer to the table on the right for pin definitions.

| OH/Fan Fail LED Pin Definitions (JF1) | | OH/Fan Fail Indicator Status | |
|--|------------|---------------------------------|------------|
| Pin# | Definition | State | Definition |
| 7 | Vcc | Off | Normal |
| 8 | Ground | On | Overheat |
| | | Flash- ing | Fan Fail |

NIC1 (GLAN) LED

The LED connections for the GB LAN port are on pins 11 and 12 of JF1. Attach an LED cable to display network activity. See the table on the right for pin definitions.

| NIC1 LED Pin Definitions (JF1) | |
|-----------------------------------|------------|
| Pin# | Definition |
| 11 | Vcc |
| 12 | Ground |

HDD LED

The HDD LED connection is located on pins 13 and 14 of JF1. This LED is used to display all IDE and SATA activity. See the table on the right for pin definitions.

| HDD LED Pin Definitions (JF1) | |
|----------------------------------|------------|
| Pin# | Definition |
| 13 | Vcc |
| 14 | HD Active |

Power On LED

The Power On LED connector is located on pins 15 and 16 of JF1 (use JLED for a 3-pin connector). This connection is used to provide LED indication of power being supplied to the system. See the table on the right for pin definitions.

| Power LED Pin Definitions (JF1) | |
|------------------------------------|------------|
| Pin# | Definition |
| 15 | 5V Stby |
| 16 | Control |

Chassis Intrusion

The Chassis Intrusion header is designated JL1. Attach an appropriate cable from the chassis to inform you of a chassis intrusion when the chassis is opened

| Chassis Intrusion Pin Definitions (JL1) | |
|---|-----------------|
| Pin# | Definition |
| 1 | Intrusion Input |
| 2 | Ground |

ATX PS/2 Keyboard and PS/2 Mouse Ports

The ATX PS/2 keyboard and the PS/2 mouse are located on the I/O back-panel. The mouse port is above the keyboard port. See the table on the right for pin definitions.

| PS/2 Keyboard and Mouse Port Pin Definitions | |
|--|------------|
| Pin# | Definition |
| 1 | Data |
| 2 | NC |
| 3 | Ground |
| 4 | VCC |
| 5 | Clock |
| 6 | NC |

Fan Headers

The X7SLM-L has five fan headers, all of which are 4-pin fans. However, pins 1-3 of the fan headers are backward compatible with the traditional 3-pin fans. See the table on the right for pin definitions. Fan 1 is intended for use with the CPU. The onboard fan speeds are controlled by Thermal Management (via Hardware Monitoring) under the Advanced Section in the BIOS. When using Thermal Management setting, please use all 3-pin fans or all 4-pin fans.

| Fan Header Pin Definitions (FAN1-5) | |
|-------------------------------------|-----------------|
| Pin# | Definition |
| 1 | Ground (Black) |
| 2 | 2.5A/+16V (Red) |
| 3 | Tachometer |
| 4 | PWM Control |

Overheat/Fan Fail LED (JOH1)

Connect an LED to the JOH1 header to provide warning of a chassis overheat. This LED will also blink to indicate a fan failure. Refer to the table on right for pin definitions.

| Overheat LED Pin Definitions | |
|------------------------------|------------|
| Pin# | Definition |
| 1 | 5vDC |
| 2 | OH Active |

| OH/Fan Fail LED Pin Definitions | |
|---------------------------------|----------|
| State | Message |
| Solid | Overheat |
| Blinking | Fan Fail |

Power LED/Speaker

On the JD1 header, pins 1~3 are used for a power LED and pins 4~7 are used for an external speaker. If you wish to use the onboard speaker, you should close pins 6-7 with a jumper. See the table on the right for speaker pin definitions.

| Speaker Connector Pin Definitions (JD1) | |
|--|------------------|
| Pin Setting | Definition |
| Pins 6-7 | Internal Speaker |
| Pins 4-7 | External Speaker |

Serial Ports

Two serial ports are included on the X7SLM-L. See the table on the right for pin definitions.

| Serial Port Pin Definitions (COM1/COM2) | | | |
|--|------------|-------|------------|
| Pin # | Definition | Pin # | Definition |
| 1 | DCD | 6 | DSR |
| 2 | RXD | 7 | RTS |
| 3 | TXD | 8 | CTS |
| 4 | DTR | 9 | RI |
| 5 | Ground | 10 | NC |

NC = No Connection

Universal Serial Bus (USB)

Two Universal Serial Bus ports (USB 0 and USB 1) are located on the I/O backplane. Additionally, two Type A USB headers (USB 4 & USB 7) and four USB connections (USB 2/3, 5/6) are also located on the motherboard to provide front chassis access. (Cables are not included). See the tables on the right for pin definitions.

| USB 0/1, USB4/5, 6/7 Pin Definitions | | | |
|---|------------|------|------------|
| Pin# | Definition | Pin# | Definition |
| 1 | +5V | 5 | +5V |
| 2 | USB_PN1 | 6 | USB_PN0 |
| 3 | USB_PP1 | 7 | USB_PP0 |
| 4 | Ground | 8 | Ground |

| Front Panel USB 8, 9, 10~11 Pin Definitions | | | |
|--|---------------|--------|------------|
| USB 8, 9, 10 | | USB 11 | |
| Pin # | Definition | Pin # | Definition |
| 1 | +5V | 6 | +5V |
| 2 | USB_PN2 | 7 | USB_PN3 |
| 3 | USB_PP2 | 8 | USB_PP3 |
| 4 | Ground | 9 | Ground |
| 5 | No Connection | 10 | Key |

LAN1/LAN2 (Ethernet Ports)

Two Ethernet ports are located on the I/O backplane. These ports accept RJ45 type cables.

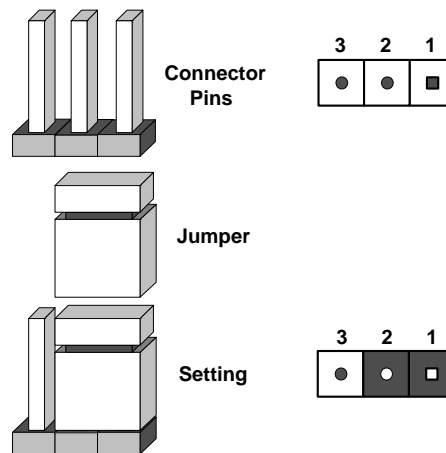


5-10 Jumper Settings

Explanation of Jumpers

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

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



CMOS Clear

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

To clear CMOS,

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

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

LAN1/LAN2 Enable/Disable

Change the setting of jumper JPL1 or JPL2 to enable or disable the LAN1 and LAN2 Ethernet ports, respectively. See the table on the right for jumper settings. The default setting is enabled.

| LAN1/LAN2 Enable/Disable Jumper Settings (JPL1/JPL2) | |
|--|------------|
| Jumper Setting | Definition |
| Pins 1-2 | Enabled |
| Pins 2-3 | Disabled |

Watch Dog Enable/Disable

JWD controls the Watch Dog function. Watch Dog is a system monitor that can reboot the system when a software application hangs. Jumping pins 1-2 will cause WD to reset the system if an application hangs. Jumping pins 2-3 will generate a non-maskable interrupt signal for the application that hangs. See the table on the right for jumper settings. Watch Dog must also be enabled in BIOS.

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

Note: When enabled, the user needs to write their own application software in order to disable the Watch Dog Timer.

5-11 Onboard Indicators

LAN1/2 LEDs

The Ethernet ports (located beside the VGA port) have two LEDs. On each port, one LED indicates activity while the other LED may be green, amber or off to indicate the speed of the connection. See the table on the right for the functions associated with the connection speed LED.

| LAN1/2 LED (Connection Speed Indicator) | |
|--|--------------------------|
| LED Color | Definition |
| Off | No Connection or 10 Mb/s |
| Green | 100 Mb/s |
| Amber | 1 Gb/s |

Onboard Power LED (LE1)

An Onboard Power LED is located at LE1 on the motherboard. When LE1 is on, the AC power cable is connected. Make sure to disconnect the power cable before removing or installing any component. See the table on the right for more details.

| Onboard PWR LED Indicator (LE1) | |
|------------------------------------|--|
| LED State | Definition |
| Off | System Off |
| On | System On or System Off and Power Cable is Connected |

5-12 SATA and IDE Ports

SATA Ports

Six Serial ATA (SATA) ports (I-SATA 0~5) are located on the motherboard to provide serial link connections. Serial Link connections provide faster data transmission than those of the traditional Parallel ATA. These SATA ports are supported by the Intel ICH10R Chip (South Bridge). See the table on the right for pin definitions.

| SATA Port Pin Definitions (I-SATA0 ~ I-SATA5) | |
|---|------------|
| Pin # | Definition |
| 1 | Ground |
| 2 | TXP |
| 3 | TXN |
| 4 | Ground |
| 5 | RXN |
| 6 | RXP |
| 7 | Ground |

IDE Connector

An IDE connector is located close to SATA Ports 0~3 on the motherboard. This 44-pin connector provides support for 2.5" hard drive disks. See the table on the right for pin definitions.

| IDE Connector Pin Definitions (IDE) | | | |
|--|-------------|-------|--------------|
| Pin# | Definition | Pin # | Definition |
| 1 | Reset IDE | 2 | Ground |
| 3 | Host Data 7 | 4 | Host Data 8 |
| 5 | Host Data 6 | 6 | Host Data 9 |
| 7 | Host Data 5 | 8 | Host Data 10 |
| 9 | Host Data 4 | 10 | Host Data 11 |
| 11 | Host Data 3 | 12 | Host Data 12 |
| 13 | Host Data 2 | 14 | Host Data 13 |
| 15 | Host Data 1 | 16 | Host Data 14 |
| 17 | Host Data 0 | 18 | Host Data 15 |
| 19 | Ground | 20 | Key |
| 21 | DRQ3 | 22 | Ground |
| 23 | I/O Write | 24 | Ground |
| 25 | I/O Read | 26 | Ground |
| 27 | SIORDY | 28 | (PD) |
| 29 | SDDACK# | 30 | Ground |
| 31 | IRQ15 | 32 | (NC) |
| 33 | Addr1 | 34 | SHDD66DET |
| 35 | Addr0 | 36 | Addr2 |
| 37 | SDCS1# | 38 | SDCS3# |
| 39 | SHDDLED# | 40 | Ground |
| 41 | +5V | 42 | +5V |
| 43 | Ground | 44 | (NC) |

Notes

Chapter 6

Advanced Chassis Setup

This chapter covers the steps required to install components and perform simple maintenance on the SC731I-300B chassis. Following the component installation steps in the order given will eliminate most common problems. If some steps are unnecessary, skip ahead to the next step.

Tools Required

The only tool you will need is a Philips screwdriver.

6-1 Static-Sensitive Devices

Static electrical discharge can damage electronic components. To prevent damage to any printed circuit boards (PCBs), it is important to handle them very carefully. The following measures are generally sufficient to protect your equipment from static discharge.

Precautions

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing any board from its antistatic bag.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the motherboard, add-on cards and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.

Unpacking

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

6-2 Front Control Panel

The front control panel must be connected to the JF1 connector on the motherboard to provide you with system status and alarm indications. A ribbon cable has bundled these wires together to simplify this connection. Connect the cable from JF1 on the motherboard (making sure the red wire plugs into pin 1) to the appropriate connector on the front control panel PCB (printed circuit board). Pull all excess cabling over to the control panel side of the chassis.

The LEDs inform you of system status - see Figure 6-1 for details. See Chapter 5 for details on JF1.

Figure 6-1. Front Control Panel LEDs





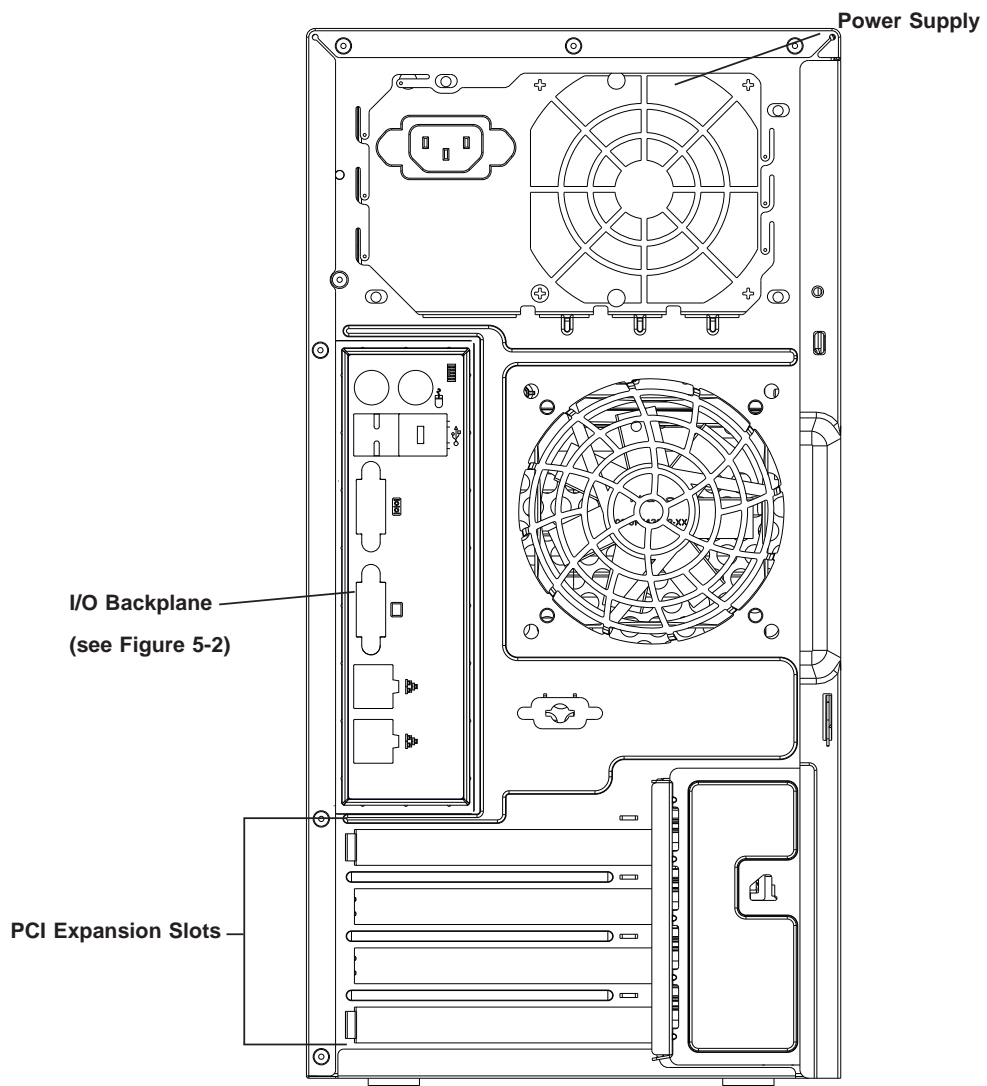
- | | | |
|-----------------|---|---|
| HDD |  | Indicates SATA hard disk/CD-ROM drive activity. |
| NIC |  | Indicates network activity the GLAN port. |
| Overheat |  | Indicates an overheat condition or fan failure. |
| Power On |  | Indicates the system is powered on. |

Figure 6-2. Chassis Rear View



6-3 Front Bezel

A bezel may be installed to cover the front of the chassis.

Front Bezel Installation

1. Remove the dummy cover (A) on the peripheral drive bay.
2. Push the front bezel into place on the front of the chassis to complete the installation (see Figure 6-4).

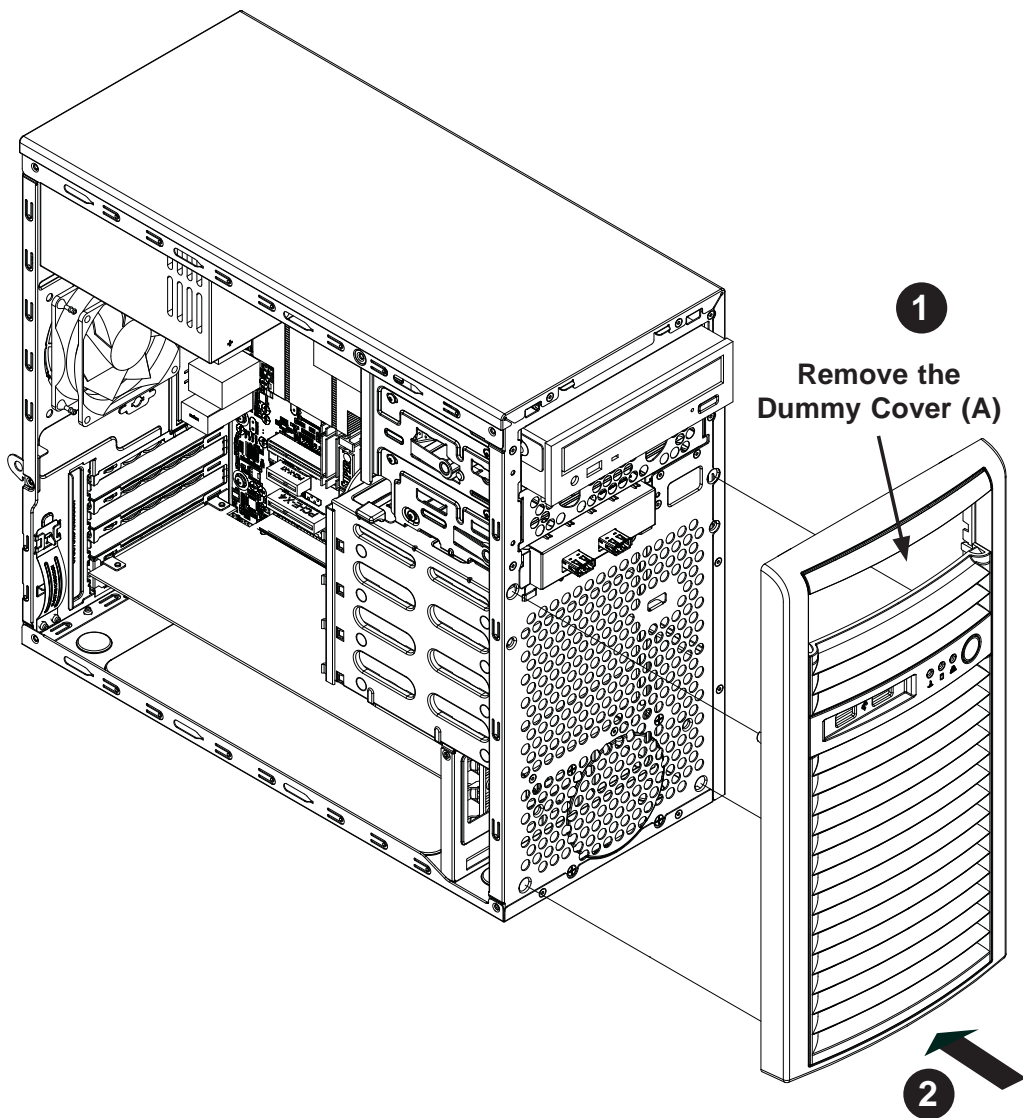


Figure 6-3: Installing the Front Bezel

6-4 Removing the Chassis Cover

The left side cover of the chassis must be removed before replacing the system fan or installing and removing hard drives.



Warning: Only qualified service technicians should access the inside of the system. Except for short periods of time, do NOT operate the system without the cover in place. The chassis cover must be in place to allow proper airflow and prevent overheating.

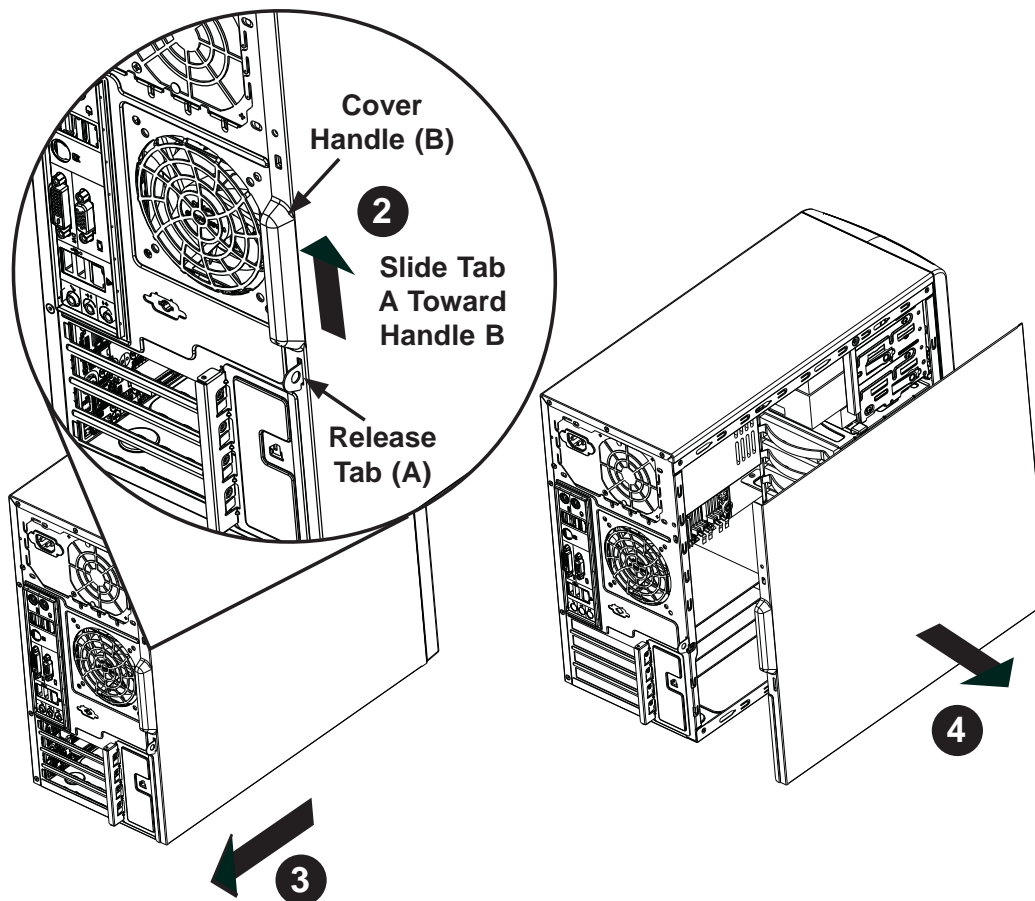


Figure 6-4: Removing the Chassis Cover

Removing the Chassis Cover:

1. Power down the server and disconnect it from the power source.
2. Slide the release tab (A) towards the cover handle (B).
3. Grasp the cover handle with your fingers and slide it toward the rear of the chassis
4. Remove the cover from the chassis.

6-5 System Fans

The SC731 includes a super quiet system fan that provides cooling for the chassis. No tools or screws are required to install the system fan.

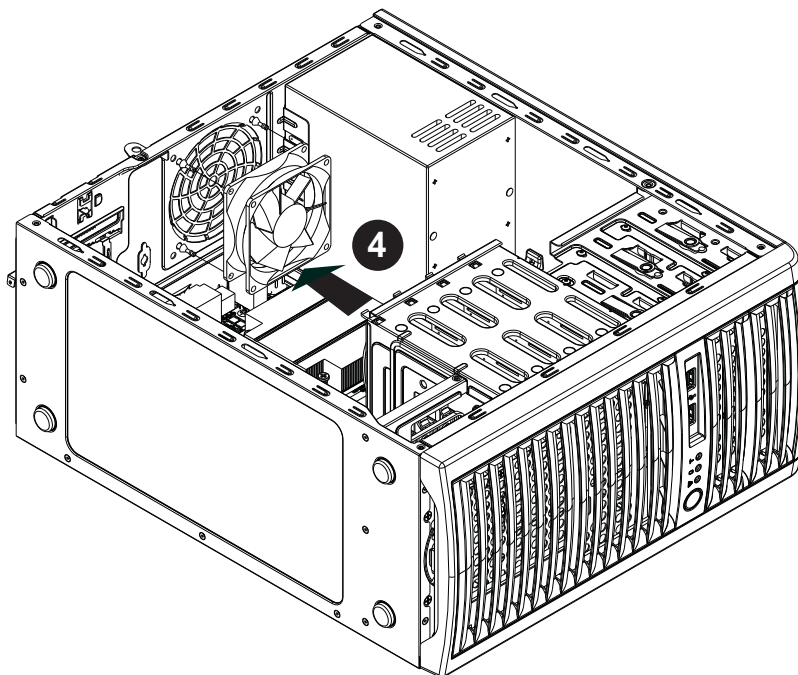
Fan Failure

Under normal operation, the chassis fan and the power supply fan both run continuously. If the chassis fan fails, the system must be powered down before replacing it. If the power supply fan fails, the power supply itself must be replaced.

Replacing the System Fan

1. Power down the server and disconnect it from the power source.
2. Remove the left chassis cover as described in Section 6-4.
3. Insert the four rubber pins into the four mounting holes surrounding the fan grill on the rear of the chassis.
4. Place the system fan on top of the fan grill, aligning the mounting holes of the fan grill with the mounting holes of the system fan.
5. Pull the rubber pins through the mounting holes of the system fan to secure the fan to the chassis.

Figure 6-5. Replacing the System Fan



6-6 Drive Bay Installation

The SC731 chassis must be powered-down before hard drives can be removed from the hard drive carriers, which are not hot-swappable.

SATA Drives

The SATA drive IDs are preconfigured as 0 through 3 in order from bottom to top. In order to access and install components in the chassis interior, it is necessary to rotate the hard drive cage. This will provide sufficient room to install and configure the chassis components. See Figures 6-6 and 6-7.

Rotating the Hard Drive Cage

1. Power down the server and disconnect it from the power source.
2. Remove the left chassis cover as described in Section 6-4.
3. Lift the release tab (A).
4. Rotate the hard disk drive cage (B) outward.

Removing and Installing Hard Drives

1. Rotate the hard drive cage as described above.
2. Press the release tab on the side of the hard drive carrier that is to be removed from the hard drive cage.
3. Gently slide the hard drive carrier out of the hard drive cage. See Figure 6-6.

Mounting a SATA Drive in a Drive Carrier

1. Insert a new hard drive into a hard drive carrier by sliding it towards the back of the the hard drive cage until it clicks into a locked position.
2. Connect the power and data cables to the hard drive.
3. Rotate the hard drive cage 90 degrees inward, returning it to the closed, operational position in the chassis.
4. If desired, each hard drive may be further secured to the drive cage with an additional (optional) screw at the middle of the drive.

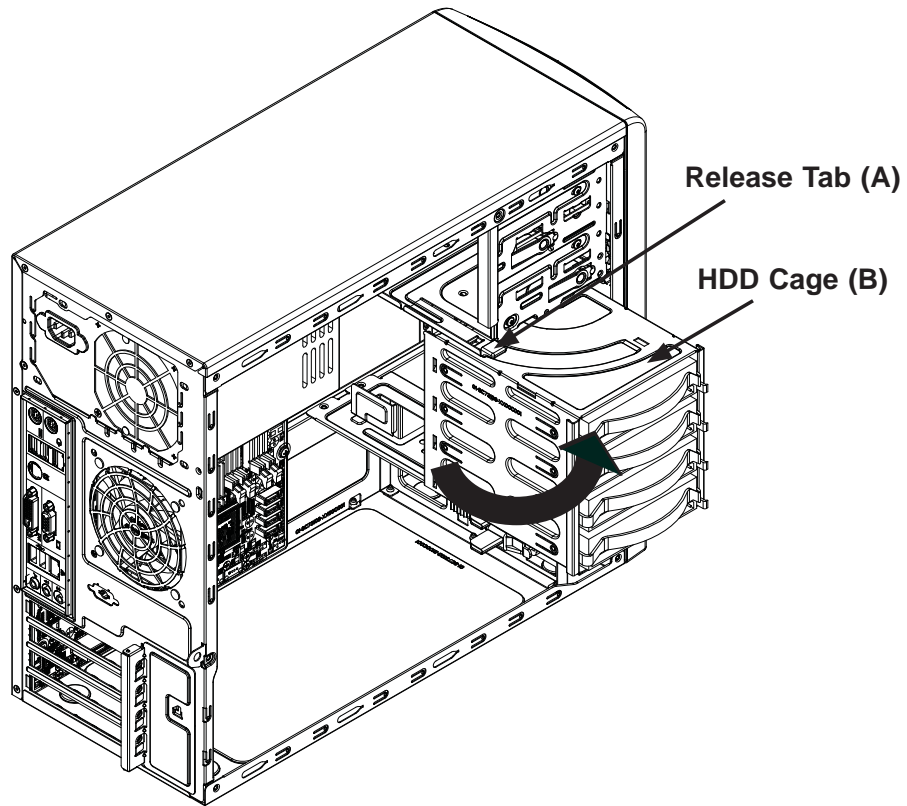


Figure 6-6: Rotating the Hard Drive Cage

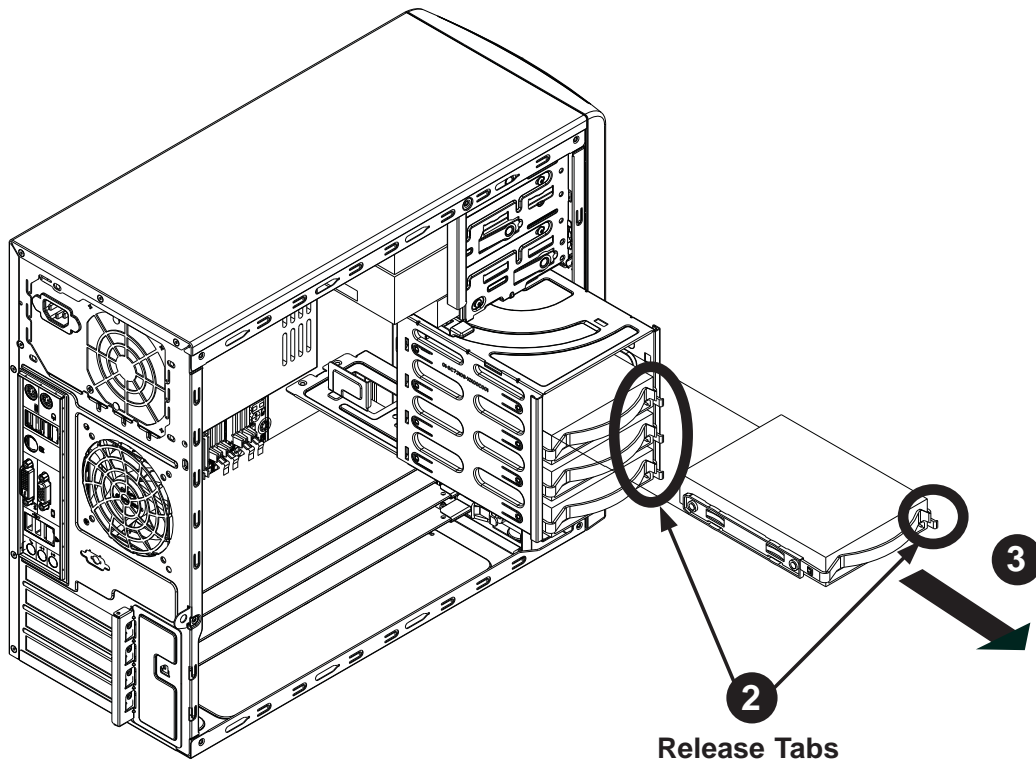


Figure 6-7: Removing a Hard Drive Carrier from the Hard Drive Cage

Installing Drives in the Optional Drive Bays

The SC731 chassis has two empty drive bays that support optional devices such as a DVD-ROM.

Installing an Optional Device

1. Power down the server and disconnect it from the power source.
2. Remove the front bezel from the chassis by lifting it upwards from the bottom, and pulling off the front of the chassis.
3. Remove the cover plate from the optical device slot on the front of the chassis.
4. Install the bracket rail (A) onto one side of the device by inserting the pins of the bracket into the mounting holes on the side of the device.
5. Slide the device into the chassis.
6. If desired, screws may be used to secure the device into chassis.
7. Attach the power and data cables to the drive.
8. Replace the chassis cover before restoring power to the system.

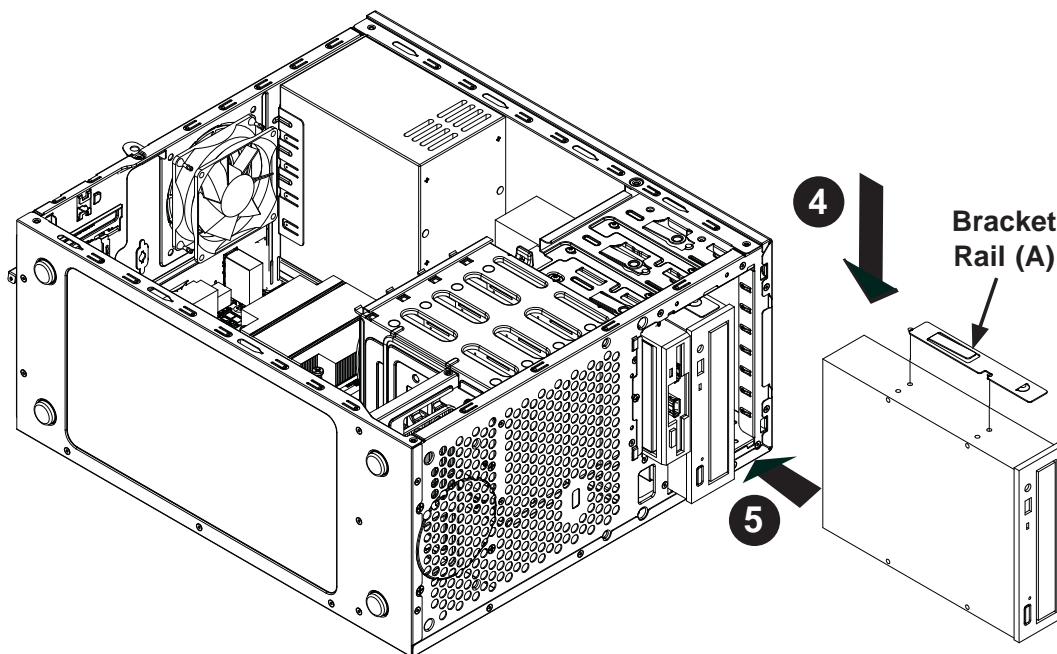


Figure 6-8: Installing an Optional Device

6-7 Power Supply

The SC731 chassis includes a 300-watt power supply. The power supply has the capability to automatically sense and operate with an input voltage of 100 or 240V AC.

If it becomes necessary to replace the power supply, follow the instructions below.

Replacing the Power Supply

1. Disconnect the chassis from any power source. Also disconnect all power cables that are connected to the motherboard.
2. Remove the screws securing the power supply to the chassis. These are located on the rear of the chassis. Set these screws aside for later use.
3. Gently lift the power supply out of the chassis.
4. Replace the failed power supply with an identical power supply model.
5. Secure the new power supply using the screws previously set aside.
6. Reconnect the power cables to the motherboard.
7. Plug the AC power cord back into the module and power up the server.
8. Finish by replacing the chassis left cover and then restoring power to the system.

Chapter 7

BIOS

7-1 Introduction

This chapter describes the AMI BIOS Setup Utility for the X7SLM-L. The AMI ROM BIOS is stored in a Flash EEPROM and can be easily updated. This chapter describes the basic navigation of the AMI BIOS Setup Utility setup screens.

Starting BIOS Setup Utility

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

Note: In most cases, the <Delete> key is used to invoke the AMI BIOS setup screen. There are a few cases when other keys are used, such as <F1>, <F2>, etc.

Each main BIOS menu option is described in this manual. The Main BIOS setup menu screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured. Options in blue can be configured by the user. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it. (**Note:** the AMI BIOS has default text messages built in. Supermicro retains the option to include, omit, or change any of these text messages.)

The AMI BIOS Setup Utility uses a key-based navigation system called hot keys. Most of the AMI BIOS setup utility hot keys can be used at any time during the setup navigation process. These keys include <F1>, <F10>, <Enter>, <ESC>, arrow keys, etc.


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

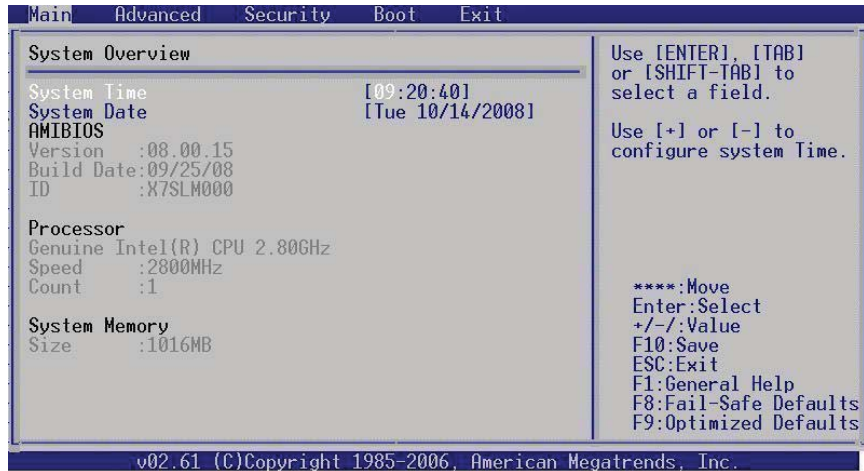
How To Change the Configuration Data

The configuration data that determines the system parameters may be changed by entering the AMI BIOS Setup utility. This Setup utility can be accessed by pressing when prompted during system boot.

Starting the Setup Utility

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

 **Warning!!** Do not shut down or reset the system while updating BIOS to prevent possible boot failure.



7-2 Main Setup

When you first enter the AMI BIOS Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab on the top of the screen. The Main BIOS Setup screen is shown below.

System Overview: The following BIOS information will be displayed:

System Time/System Date

Use this option to change the system time and date. Highlight *System Time* or *System Date* using the arrow keys. Enter new values through the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in Day MM/DD/YY format. The time is entered in HH:MM:SS format. (**Note:** The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00.)

AMIBIOS

Version : XX.XX.XX
 Build Date : MM/DD/YY
 ID : XXXXXXXX

Processor

The AMI BIOS automatically displays the status of processor as shown below:

Genuine Intel (R) CPU @ XX.XXGHz

Speed :XXXXMHz

Count :X

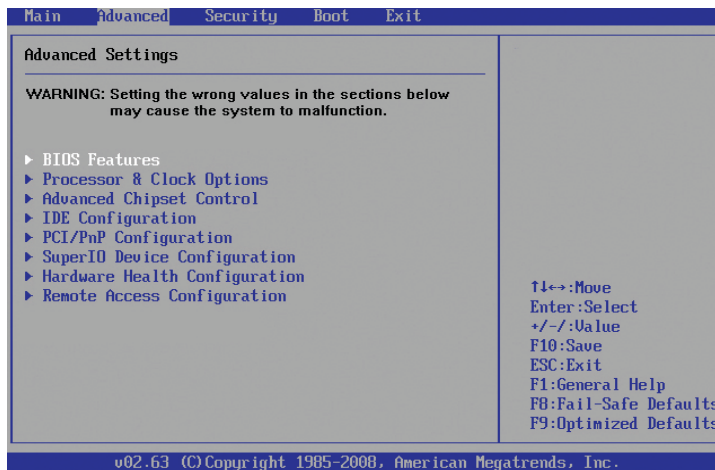
System Memory

This displays the size of memory available in the system, in megabytes (MB).

Size :XXXXMB

7-3 Advanced Setup Configurations

Use the arrow keys to select Boot Setup and hit <Enter> to access the submenu items:



► BIOS Features

Quick Boot

If Enabled, this option will skip certain tests during POST to reduce the time needed for system boot. The options are **Enabled** and Disabled.

Quiet Boot

This option allows the bootup screen options to be modified between POST messages or the OEM logo. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are Enabled and **Disabled**.

Wait for 'F1' If Error

If set to Enabled, the system will wait for the user to press F1 before displaying a message when an error occurs. The options are **Enabled** and Disabled.

High Performance Event Timer

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

HPET Memory Address

This feature appears when the High Performance Event Timer (above) is

enabled. Use this feature to select the interrupt address. The options are [FED0000h], [FED01000h], [FED02000h], and [FED03000h].

► ACPI Configuration

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

ACPI Aware OS

Select Yes to enable ACPI support for the OS. Disable this feature if ACPI is not supported by your OS. The options are **Yes** and No.

Suspend Mode

This option is used to select the ACPI State that is used for system suspend. The options are S1 (POS), S3 (STR) and **Auto**.

S1 (POS) - All processor caches are erased, and stops executing instructions. Power to the CPU(s) and RAM is maintained, but RAM is refreshed.

S3 (STR) - The CPU has no power and the power supply goes on reduced power mode. However, main memory (RAM) is still powered.

ACPI Version Feature

This feature allows the user to select the ACPI Version for the system. The options are **ACPI 1.0**, ACPI 2.0, and ACPI 3.0.

Watch Dog Function

Select Enable to enable Watch Dog Timer and allow the system to reboot when it is inactive for more than 5 minutes. The options are Enabled and **Disabled**.

Restore on AC Power Loss

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

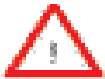
MPS Revision

This feature allows the user to specify the version of the Multi-Processor Specification (MPS) the motherboard is using. The options are **1.4** and 1.1.

Interrupt 19 Capture

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

► Processor & Clock Options



Warning! When you first enter the Advanced Setup screen, the Setup Warning will be displayed. Follow the instructions given on the screen to set the correct value for each item to make sure that the system functions properly.

CPU Ratio

Use this feature to select between automatic selection of the CPU clock ratio, or manually setting it. The options are **Auto** and Manual.

Ratio CMOS Setting

This option appears when Manual is select under CPU Ratio (above). It allows the user to set the ratio between the CPU Core Clock and the FSB Frequency. (**Note:** if an invalid ratio is entered, the AMI BIOS will restore the setting to the previous state.) Use your '+' and '-' keyboard keys to change the value.

Hardware Prefetcher (Available when supported by the CPU)

If set to Enabled, the hardware prefetcher will prefetch streams of data and instructions from the main memory to the L2 cache in the forward or backward manner to improve CPU performance. The options are Disabled and **Enabled**.

Adjacent Cache Line Prefetch (Available when supported by the CPU)

The CPU fetches the cache line for 64 bytes if this option is set to Disabled. The CPU fetches both cache lines for 128 bytes as comprised if **Enabled**.

Max CPUID Value Limit

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

Execute-Disable Bit Capability (Available when supported by the OS and the CPU)

Set to Enabled to enable the Execute Disable Bit which will allow the processor to designate areas in the system memory where an application code can execute and where it cannot, thus preventing a worm or a virus from flooding illegal codes to overwhelm the processor or damage the system during an attack. The default is **Enabled**. (Refer to Intel and Microsoft Web Sites for more information.)

Core Multi-Processing

This feature disables one execution core when Disabled, turning off one core on a dual-core CPU, and two cores on a quad-core CPU. The options are **Enabled** and Disabled.

Clock-Spread Spectrum

Select Enable to use the feature of Clock Spectrum, which will allow the BIOS to monitor and attempt to reduce the level of Electromagnetic Interference caused by the components whenever needed. The options are **Disabled** and Enabled. If this feature is set to Enabled, the following items will display:

Clock-Spread Spectrum Mode

This feature allows the user to select the Clock-Spread Spectrum Mode to determine how the BIOS will monitor and reduce the level of Electromagnetic Interference caused by the components. The options are **Down** (Down Spread), and Center (Center Spread).

Clock-Spread Spectrum Control

This feature allows the user to determine the Clock-Spread Spectrum Control level. The options are **0.5%**, 1.0%, 1.5%, 2.0% and 2.5%.

►Advanced Chipset Settings

The items included in the Advanced Settings submenu are listed below:

►NorthBridge Configuration

This feature allows the user to configure the settings for the Intel 945GC North-Bridge.

DRAM Frequency

This feature allows the user to select the DRAM Frequency setting. The options are **Auto (Auto-detect)**, 400 MHz, 533 MHz, and 667 MHz.

Configure DRAM Timing by SPD

Select Enable to allow the BIOS to read the SPD (Serial Presence Detect) chip which is built in the memory module in order to get the exact memory specifications. The options are **Enabled** and Disabled.

Memory Hole

Use the feature to allocate memory resource reserved for use of PCI devices. If set to 15 MB~16MB, the reserved memory will be placed in the location around 15 MB~16 MB. The options are **Disabled** and 15 MB~ 16 MB.

Initiate Graphic Adapter

Use the feature to select the graphics controller to be used as the primary boot device. The options are IGD, PCI/IGD, PCI/PEG, PEG/IGD, and **PEG/PCI**.

Internal Graphics Device (IGD) Graphics Mode Select

Use the feature to set the amount of system memory to be used by the Internal Graphics Devices. The options are Disabled, Enabled, 1 MB and **Enabled, 8 MB**.

PEG Port Configuration

PEG Port

Use the feature to configure the PEG Port. The Default setting is **Auto** to allow the PEG Port to be automatically detected and configured by the BIOS. The options are **Auto** and Disabled.

PEG Force x1

If set to Enabled, PEG will be configured to x1 setting by the BIOS. The options are Enabled, and **Disabled**.

►Video Function Configuration

DVMT Mode Select

This option allows the user to set the DVMT mode. The options are Fixed Mode, **DVMT Mode** and the COMBO mode.

DVMT/Fixed Memory

This option allows the user to set the amount of memory to be used for operation in the DVMT/Fixed Mode. The options are 64 MB, **128 MB** and Maximum DVMT.

Boot Display Device

This option allows the user to select the boot display device. The options are **CRT on Port 0**, LFP on Port2, and CRT-Port 0 & LFP-Port 2.

USB Functions

This feature allows the user to decide the number of onboard USB ports to be enabled. The Options are: Disabled, 2 USB ports, 4 USB ports, 6 USB ports and **8 USB ports**.

USB 2.0 Controller

Select Enabled to activate the onboard USB 2.0 controller. The options are **Enabled** and Disabled.

►USB Configuration

This feature allows the user to configure USB settings for the motherboard.

Legacy USB Support

Select Enabled to use Legacy USB devices. If this item is set to Auto, Legacy USB support will be automatically enabled if a legacy USB device is installed on the motherboard, and vice versa. The settings are Disabled, Enabled and **Auto**.

USB 2.0 Controller Mode

This setting allows you to select the USB 2.0 Controller mode. The options are **Hi-Speed** (480 Mbps) and Full Speed (12 Mbps).

BIOS EHCI Hand-Off

Select Enabled to enable BIOS Enhanced Host Controller Interface support to provide a workaround solution for an operating system that does not have EHCI Hand-Off support. When enabled, the EHCI Interface will be changed from the BIOS-controlled to the OS-controlled. The options are Disabled and **Enabled**.

►IDE Configuration Submenu

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

Floppy A

This feature allows the user to select the type of floppy drive connected to the system. The options are Disabled, 360KB 5 1/4", 1.2MB 5 1/4", 720KB 3 1/2", **1.44MB 3 1/2"** and 2.88MB 3 1/2".

ATA/IDE Configuration

This feature allows the user to configure ATA/IDE settings. The options are Disabled and **Enhanced**.

Configure SATA as

Please choose IDE if the installed hard disk(s) are to be configured as independent devices and will be used normally.

Choose RAID if you have more than one drive installed and will be used in a Redundant Array (RAID) configuration.

Note: Please use the Intel Matrix Storage Manager (option ROM) to configure your RAID by pressing and holding down <Ctrl> and pressing <I> (the "i" key) during POST. For a downloadable PDF manual, please visit Supermicro's website at: <http://www.supermicro.com/support/manuals/> and click "HostRAID - Setup for Intel ICH7R / ICH9R" under RAID Installation Guides.

Select AHCI for advanced SATA features such as hot-plugging and native command queueing. Note: Take caution when using AHCI, as your operating system may need drivers to match this configuration. This feature is for technicians only.

The options are **IDE**, RAID and AHCI.

Configure SATA Channels

The options are **Before PATA** and Behind PATA.

Primary IDE Master/Slave, Secondary IDE Master/Slave and Third IDE Master/Slave

These settings allow the user to set the parameters of Primary IDE Master/Slave, Secondary IDE Master/Slave and Third IDE Master/Slave slots. Hit <Enter> to activate the following submenu screen for detailed options of these items. Set the correct configurations accordingly. The items included in the submenu are:

Type

Select the type of device connected to the system. The options are Not Installed, **Auto**, CD/DVD and ARMD.

LBA/Large Mode

LBA (Logical Block Addressing) is a method of addressing data on a disk drive. In the LBA mode, the maximum drive capacity is 137 GB. For drive capacities over 137 GB, your system must be equipped with a 48-bit LBA mode addressing. If not, contact your manufacturer or install an ATA/133 IDE controller card that supports 48-bit LBA mode. The options are Disabled and **Auto**.

Block (Multi-Sector Transfer)

Block Mode boosts the IDE drive performance by increasing the amount of data transferred. Only 512 bytes of data can be transferred per interrupt if Block Mode is not used. Block Mode allows transfers of up to 64 KB per interrupt. Select Disabled to allow data to be transferred from and to the device one sector at a time. Select Auto to allow data transfer from and to the device occur multiple sectors at a time if the device supports it. The options are **Auto** and Disabled.

PIO Mode

The IDE PIO (Programmable I/O) Mode programs timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases. The options are **Auto**, 0, 1, 2, 3, and 4.

Select Auto to allow the AMI BIOS to automatically detect the PIO mode. Use this value if the IDE disk drive support cannot be determined.

Select 0 to allow the AMI BIOS to use PIO mode 0. It has a data transfer rate of 3.3 MBs.

Select 1 to allow the AMI BIOS to use PIO mode 1. It has a data transfer rate of 5.2 MBs.

Select 2 to allow the AMI BIOS to use PIO mode 2. It has a data transfer rate of 8.3 MBs.

Select 3 to allow the AMI BIOS to use PIO mode 3. It has a data transfer rate of 11.1 MBs.

Select 4 to allow the AMI BIOS to use PIO mode 4. It has a data transfer rate of 16.6 MBs. This setting generally works with all hard disk drives manufactured after 1999.

For other disk drives, such as IDE CD-ROM drives, check the specifications of the drive.

DMA Mode

Select Auto to allow the BIOS to automatically detect IDE DMA mode when the IDE disk drive support cannot be determined.

Select SWDMA0 to allow the BIOS to use Single Word DMA mode 0. It has a data transfer rate of 2.1 MBs.

Select SWDMA1 to allow the BIOS to use Single Word DMA mode 1. It has a data transfer rate of 4.2 MBs.

Select SWDMA2 to allow the BIOS to use Single Word DMA mode 2. It has a data transfer rate of 8.3 MBs.

Select MWDMA0 to allow the BIOS to use Multi Word DMA mode 0. It has a data transfer rate of 4.2 MBs.

Select MWDMA1 to allow the BIOS to use Multi Word DMA mode 1. It has a data transfer rate of 13.3 MBs.

Select MWDMA2 to allow the BIOS to use Multi-Word DMA mode 2. It has a data transfer rate of 16.6 MBs.

Select UDMA0 to allow the BIOS to use Ultra DMA mode 0. It has a data transfer rate of 16.6 MBs. It has the same transfer rate as PIO mode 4 and Multi Word DMA mode 2.

Select UDMA1 to allow the BIOS to use Ultra DMA mode 1. It has a data transfer rate of 25 MBs.

Select UDMA2 to allow the BIOS to use Ultra DMA mode 2. It has a data transfer rate of 33.3 MBs.

Select UDMA3 to allow the BIOS to use Ultra DMA mode 3. It has a data transfer rate of 66.6 MBs.

Select UDMA4 to allow the BIOS to use Ultra DMA mode 4 . It has a data transfer rate of 100 MBs.

The options are **Auto**, SWDMA_n, MWDMA_n, and UDMA_n.

S.M.A.R.T. For Hard disk drives

Self-Monitoring Analysis and Reporting Technology (SMART) can help predict impending drive failures. Select Auto to allow the AMI BIOS to automatically detect hard disk drive support. Select Disabled to prevent the AMI BIOS from using the S.M.A.R.T. Select Enabled to allow the AMI BIOS to use the S.M.A.R.T. to support hard drive disk. The options are Disabled, Enabled, and **Auto**.

32-Bit Data Transfer

Select Enabled to enable 32-Bit data transfer. The options are **Enabled** and Disabled.

Hard Disk Write Protect

Select Enabled to use the feature of Hard Disk Write Protect to prevent data from being written to HDD. The options are Enabled or **Disabled**.

IDE Detect Time Out

Use this feature to set the time-out value for the BIOS to detect the ATA, ATAPI devices installed in the system. The options are 0 (sec), 5, 10, 15, 20, 25, 30, and **35**.

► PCI/PnP Configuration

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

Clear NVRAM

Select Yes to clear NVRAM during system boot. The options are Yes and **No**.

Plug & Play OS

Select Yes to allow the OS to configure Plug & Play devices. (This is not required for system boot if your system has an OS that supports Plug & Play.) Select **No** to allow the AMI BIOS to configure all devices in the system.

PCI Latency Timer

This feature sets the latency Timer of each PCI device installed on a PCI bus. Select 64 to set the PCI latency to 64 PCI clock cycles. The options are 32, **64**, 96, 128, 160, 192, 224 and 248.

Allocate IRQ to PCI VGA

Select Yes to allow the system to give the VGA adapter card an interrupt address. The options are **Yes** and No.

Palette Snooping

Select Enabled to inform the onboard PCI devices that an ISA graphics device is installed in the system in order for the graphics card to function properly. The options are Enabled and **Disabled**.

PCI IDE Bus Master

Select Enabled to allow the BIOS to use the PCI bus master to read from and write to the onboard IDE drives. The options are **Enabled** and Disabled.

PCI Slot 5 & PCI Slot 6

Select Yes to enable OPROM for a PCI slot as specified. The options are **Yes** (to enable OPROM for the slot specified) and No.

Load Onboard LAN 1 Option ROM/ Load Onboard LAN 2 Option ROM

Select Enabled to load the onboard LAN Option ROM for the LAN port as specified. The options are Enabled and **Disabled**.

► Super IO Configuration

Onboard Floppy Controller

Select Enabled to enable the onboard Floppy Controller. The options are **Enabled** and Disabled.

Serial Port1 Address/ Serial Port2 Address

This option specifies the base I/O port address and the Interrupt Request address of Serial Port 1 and Serial Port 2. Select Disabled to prevent the serial port from accessing any system resources. When this option is set to Disabled, the serial port physically becomes unavailable. Select 3F8/IRQ4 to allow the serial port to use 3F8 as its I/O port address and IRQ 4 for the interrupt address. The options for Serial Port1 are Disabled, **3F8/IRQ4**, 3E8/IRQ4, 2E8/IRQ3. The options for Serial Port2 are Disabled, **2F8/IRQ3**, 3E8/IRQ4, and 2E8/IRQ3.

Serial Port 2 Mode

Use this feature to configure Serial Port 2 mode. The options are **Normal**, IrDA and ASK IR.

Keyboard Wake Up

Select Specific Key to enable the keyboard wake-up feature using a pre-set keyboard key, and Any Key to use any keyboard key. The options are **Disabled**, Specific Key, and Any Key.

Specific Key for Power On

This option becomes active if Specific Key (above) is enabled. When selected, this will allow the entry of a keystroke combination to wake-up the system. Enter the keystroke(s) when "Enter New Password" appears, then re-enter to confirm.

Mouse Wake Up

Use this option to wake-up the system using the installed mouse. The options are **Disabled**, and Enabled.

► Hardware Health Configuration

This feature allows the user to monitor Hardware Health of the system and review the status of each item when displayed.

CPU Temperature,

System Temperature,

Fan Speed Control Modes

This feature allows the user to decide how the system controls the speeds of the onboard fans. The CPU temperature and the fan speed are correlative. When the CPU on-die temperature increases, the fan speed will also increase, and vice versa. Select Workstation if your system is used as a Workstation. Select Server if your system is used as a Server. Select “Disabled, (Full Speed @12V)” to disable the fan speed control function and allow the onboard fans to constantly run at the full speed (12V). The Options are: 1. **Disabled**, 2. 4-pin (Server), and 3. 4-pin (Workstation).

This screen also displays Voltage Monitoring information:

Vcore, AVCC, +3.3Vcc, 12V, VDIMM, 5V, Chipset 1.5V, 3.3Vsb, and Vbatt.

Note: In the Windows OS environment, the Super Doctor III (SD III) settings take precedence over the BIOS settings. When first installed, SD III adopts the temperature threshold settings previously set in the BIOS. Any subsequent changes to these thresholds must be made within SD III, since the SD III settings override the BIOS settings. For the Windows OS to adopt the BIOS temperature threshold settings, please change the SD III settings to be the same as those set in the BIOS.

► Remote Access Configuration

Remote Access

This feature allows the user to enable the function of Remote Access. The options are **Disabled** and Enabled.

If the item Remote Access is set to Enabled, the following items will display:

Serial Port Number

This feature allows the user decide which serial port to be used for Console Redirection. The options are **COM 1**, and COM 2.

Serial Port Mode

This feature allows the user to set the serial port mode for Console Redirection. The options are **115200 8, n 1**; 57600 8, n, 1; 38400 8, n, 1; 19200 8, n, 1; and 9600 8, n, 1.

Flow Control

This feature allows the user to set the flow control for Console Redirection. The options are **None**, Hardware, and Software.

Redirection After BIOS POST

Select Disabled to turn off Console Redirection after Power_On_Self_Test (POST). Select Always to keep Console Redirection active all the time after POST. (Note: This setting may not be supported by some operating systems.) Select Boot Loader to keep Console Redirection active during POST and Boot Loader. The options are Disabled, Boot Loader, and **Always**.

Terminal Type

This feature allows the user to select the target terminal type for Console Redirection. The options are **ANSI**, VT100, and VT-UTF8.

VT-UTF8 Combo Key Support

A terminal keyboard definition that provides a way to send commands from a remote console. Available options are **Enabled** and Disabled.

Sredir Memory Display Delay

This feature defines the length of time in seconds to display memory information. The options are **No Delay**, Delay 1 Sec, Delay 2 Sec, and Delay 4 Sec.

7-4 Security Settings

The AMI BIOS provides a Supervisor and a User password. If you use both passwords, the Supervisor password must be set first.



Change Supervisor Password:

Use this feature to set a supervisor password. It secures the system from unauthorized use by restricting access to persons only with the proper supervisor-level password. Select this feature and press <Enter>, and then type in the Supervisor Password.

User Access Level

This feature appears when the Supervisor Password is set. Use this to assign an access level for a user. The options are: No Access, View Only, Limited, and **Full Access**.

Change User Password:

Use this feature to set a user password. It secures the system from unauthorized use by restricting access to persons only with the proper user-level password. Select this feature and press <Enter>, and then type in the User Password.

Clear User Password

This feature appears when the User Password is set. Select this to clear the User Password.

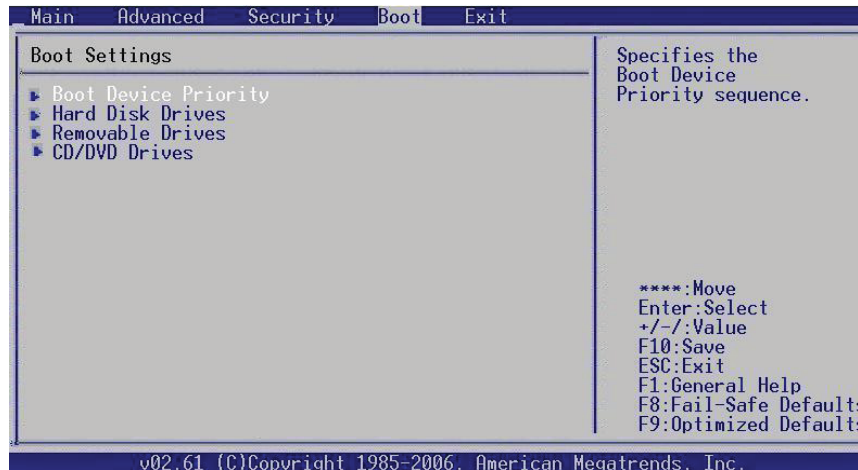
Password Check

Use this feature to set when the system prompts for a password. Choosing Setup will ask the user a password when entering the BIOS Setup, while selecting Always will prompt for a password during BIOS Setup and each system boot. The options are **Setup** and Always.

Boot Sector Virus Protection

When Enabled, the AMI BIOS displays a warning when any program (or virus) issues a Disk Format command or attempts to write to the boot sector of the hard disk drive. The options are Enabled and **Disabled**.

7-5 Boot Configuration



Use this feature to configure Boot Settings:

► Boot Device Priority

This feature allows the user to specify the sequence of priority for the Boot Device. The settings are 1st boot device, 2nd boot device, 3rd boot device, and Disabled.

- 1st boot device - 1st Floppy Drive
- 2nd boot device - [CD/DVD: XXXXXXXXXXXX]
- 3rd boot device - [SATA: XXXXXXXXXXXX]

► Hard Disk Drives

This feature allows the user to specify the boot sequence from available Hard Disk Drives. The options are 1st boot device, and Disabled.

- 1st Drive - [SATA: XXXXXXXXXXXX]

► Removable Drives

This feature allows the user to specify the boot sequence from available Removable Drives. The settings are 1st boot device, 2nd boot device, and Disabled.

- 1st Drive
- 2nd boot device - [USB: XXXXXXXXXXXX]

► CD/DVD Drives

This feature allows the user to specify the boot sequence from available CD/DVD Drives. The settings are 1st boot device and Disabled.

- 1st Drive - [CD/DVD: XXXXXXXXXXXX]

7-6 Exit Options

Select the Exit tab from the AMI BIOS Setup Utility screen to enter the Exit BIOS Setup screen.



Save Changes and Exit

When you have completed the system configuration changes, select this option to leave the BIOS Setup Utility and reboot the computer, so the new system configuration parameters can take effect. Select Save Changes and Exit from the Exit menu and press <Enter>.

Discard Changes and Exit

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

Discard Changes

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

Load Optimal Defaults

To set this feature, select Load Optimal Defaults from the Exit menu and press <Enter>. Then, select OK to allow the AMI BIOS to automatically load Optimal Defaults to the BIOS Settings. The Optimal settings are designed for maximum system performance, but may not work best for all computer applications.

Load Fail-Safe Defaults

To set this feature, select Load Fail-Safe Defaults from the Exit menu and press <Enter>. The Fail-Safe settings are designed for maximum system stability, but not for maximum performance.

Appendix A

POST Error Beep Codes

This section lists POST (Power On Self Test) error beep codes for the AMI BIOS. POST error beep codes are divided into two categories: recoverable and terminal. This section lists Beep Codes for recoverable POST errors.

Recoverable POST Error Beep Codes

When a recoverable type of error occurs during POST, BIOS will display a POST code that describes the problem. BIOS may also issue one of the following beep codes:

1 long and two short beeps - video configuration error

1 repetitive long beep - no memory detected

1 continuous beep with the front panel Overheat LED on - system overheat

Notes

Appendix B

Installing Windows

After all the hardware has been installed, you must first configure Intel South Bridge RAID settings before you install the OS and other software drivers. To install the Linux OS or to configure RAID settings, please refer to the OS Installation or RAID Configuration User Guides posted on our web site at www.supermicro.com/support/manuals. Please note that the ICH9R Driver does not support the Windows 2000 OS.

B-1 Installing Windows for RAID Systems

1. Insert Microsoft's Windows XP/2000/2003 Setup CD in the CD Driver, and the system will start booting up from CD.
2. Press the <F6> key when the message-" Press F6 if you need to install a third party SCSI or RAID driver" displays.
3. When the Windows XP/2000/2003 Setup screen appears, press "S" to specify additional device(s).
4. Insert the driver diskette-"Intel AA RAID XP/2000/2003 Driver for ICH7R" into Drive A: and press the <Enter> key.
5. Choose the Intel(R) ICH7R *SATA RAID Controller* from the list indicated in the XP/2000/2003 Setup Screen, and press the <Enter> key.
6. Press the <Enter> key to continue the installation process. (If you need to specify any additional devices to be installed, do it at this time.) Once all devices are specified, press the <Enter> key to continue with the installation.
7. From the Windows XP/2000/2003 Setup screen, press the <Enter> key. The XP/2000/2003 Setup will automatically load all device files and then, continue the Windows XP/2000/2003 installation.
8. After the Windows XP/2000/2003 OS Installation is completed, the system will automatically reboot.

B-2 Installing Windows for Non-RAID Systems

1. Insert Microsoft's Windows XP/2000/2003 Setup CD in the CD Driver, and the system will start booting up from CD.
2. Continue with the OS installation. The Windows OS Setup screen will display.
3. From the Windows XP/2000/2003 Setup screen, press the <Enter> key. The XP/2000/2003 Setup will automatically load all device files and then continue with the Windows XP/2000/2003 installation.
4. After the Windows XP/2000/2003 OS Installation is completed, the system will automatically reboot.
5. Insert the Supermicro Setup CD that came with your motherboard into the CD Drive during system boot, and the main screen will display.

Appendix C

System Specifications

Processors

One Intel® Core™ 2 processor E4000 series or a Pentium® dual core or Celeron® brand processor up to 800 MHz FSB

Note: Please refer to our web site for a complete listing of supported processors.

Chipset

Intel 945GC + ICH7R

BIOS

8 Mb AMI® BIOS

Memory Capacity

Two DIMM sockets supporting up to 2 GB of unbuffered DDR2-667/533/400 SDRAM

Note: See the memory section in Chapter 5 for details.

SATA Controller

Intel on-chip controller for 3 Gb/s Serial ATA (RAID 0, 1, 5 and 10 supported)

Drive Bays

Four (4) internal drive bays to house four (4) standard SATA drives

Expansion Slots

Supports the use of four standard size PCI add-on cards: one PCI-E x16, one PCI-E x4 and two 32-bit PCI slots

Serverboard

X7SLM-M (micro ATX form factor)

Dimensions: 9.6" x 8.6" (244 x 218 mm)

Chassis

SC7311-300B (Mini-tower)

Dimensions: (WxHxD) 7.25 x 14.25 x 16.75 in. (184 x 362 x 425 mm)

Weight

Gross (Bare Bone): 16 lbs. (7.26 kg.)

System Cooling

One whisper-quiet 9-cm exhaust fan

System Input Requirements

AC Input Voltage: 100-240 VAC

Rated Input Current: 6A (115V) to 3A (240V)

Rated Input Frequency: 50/60 Hz

Power Supply

Rated Output Power: 300W (Part# PWS-303-PQ)

Rated Output Voltages: +3.3V (16A), +5V (19A), +12V (11A), -12V (0.15A), +5Vsb (2A)

Operating Environment

Operating Temperature: 10° to 35° C (50° to 95° F)

Non-Operating Temperature: -40° to 70° C (-40° to 158° F)

Operating Relative Humidity: 8% to 90% (non-condensing)

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

Regulatory Compliance

Electromagnetic Emissions:

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

Electromagnetic Immunity:

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

Safety:

EN 60950/IEC 60950-Compliant

UL Listed (USA)

CUL Listed (Canada)

TUV Certified (Germany)

CE Marking (Europe)

California Best Management Practices Regulations for Perchlorate Materials:

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

Notes

(continued from front)

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