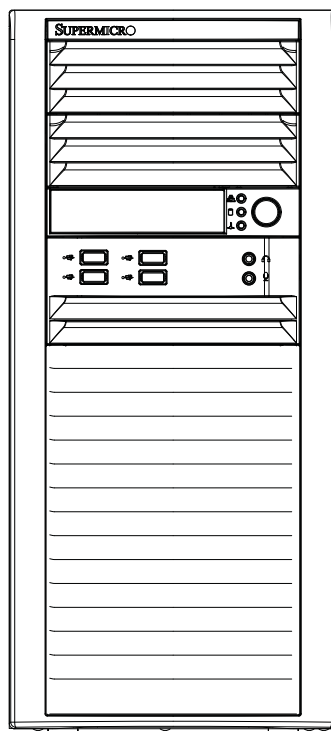


# SUPERO®

SuperWorkstation

PIO-537A-i-MA015



USER'S MANUAL

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Manual Revision 1.0

Release Date: October 31, 2012

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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 SuperWorkstation PIO-537A-i-MA015. Installation and maintenance should be performed by experienced technicians only.

## Manual Organization

### Chapter 1: Workstation Overview

The first chapter provides a list of the main components included with the system and describes the main features.

### Chapter 2: Server Setup

This chapter describes the steps necessary to set up the SuperWorkstation 5037A-i2-MA015. A motherboard layout is included and jumper settings are described here.

### Chapter 3: Component Installation

Refer here for details on installing components to the system, including CPUs, memory and power supplies.

### Appendix A: Software

### Appendix B: BIOS Beep Codes

### Appendix C: System Specifications

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# Chapter 1

## Workstation Overview

### 1-1 Introduction

The PIO-537A-i-MA015 is a high-end turnkey workstation. A replacement parts list is shown below. A complete list of safety warnings is provided on the Supermicro web site at [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm)

Replacement Parts List		
Qty.	Definition	Part Number
1	Black SC732D4 Desktop Chassis w/ 900W Power Supply	CSE-732D4-903B
1	Black Lite-On 5.25" HH 24x DVD-RW SATA Drive	DVM-LITE-DVDRW24-HBT
5	61-cm SATA Cables	CBL-0044L
1	Sandy Bridge 4C E5-1620 3.6G 10M 130W 2011 Processor	P4X-UPE51620-SR0LC
1	Motherboard	X9SRA
2	4GB DDR3-1600 1.5V 2Rx8 LP ECC REG DIMMs	MEM-DR340L-SL02-ER16
1	Seagate 500GB 6Gb/s 7.2k RPM, 3.5" SATA HDD	HDD-T0500-ST500NM0011
1	4U Active CPU Heat Sink for X9 Socket R	SNK-P0050AP4
1	NVIDIA® Quadro 2000	AOC-GPU-NVQ2000
1	Standard I/O Shield for C7P67 with EMI Gasket	MCP-260-00046-0N

### System Recovery Instructions

This computer includes a hidden partition which contains a backup of your factory Windows installation. In case of a system failure, you can use this backup to restore your computer to a working state in just a few minutes.

Since this backup resides on the same physical hard-disk as your current Windows installation, a hardware failure of the hard-disk will prevent you from reinstalling Windows. There are two different ways to initiate a system recovery of your system:

- Trigger recovery from OS level (run FullRestore.exe)
- Trigger recovery during system boot up (press F10 key).

Warning: System Recovery will wipe all of your personal data and restore the system to OOBE. You must have your CD-KEY from COA label ready before performing this action. System Recovery is an automated, one-step process. Do not initiate a system recovery unless you are prepared for a complete re-installation back to the factory default installation.

## 1-2 Motherboard Features

The SuperWorkstation PIO-537A-i-MA015 uses the X9SRA, a single processor motherboard built around the Intel® C600 series chipset. Below are the main features of the X9SRA.

### Processors

The PIO-537A-i-MA015 supports an Intel E5-2600/E5-1600 series processor (2011-pin Socket R). Please refer to the motherboard description pages on our Web site for a complete listing of supported processors ([www.supermicro.com](http://www.supermicro.com)).

### Memory

The PIO-537A-i-MA015 features up to 256GB RDIMM or 64GB UDIMM; DDR3 up to 1600MHz.

### SATA

A SATA controller is integrated into the chipset to provide a Serial ATA subsystem. The PIO-537A-i-MA015 supports two SATA 3.0 and eight SATA 2.0 ports.

### PCI Expansion Slots

The PIO-537A-i-MA015 has features the following PCI expansion slots:  
Two (2) PCI-Express 3.0 x16 Slot, one (1) PCI-Express 3.0 x4 in x8 Slot, one (1) PCI-Express 2.0 x4 in x8 Slot and one (1) PCI 33MHz Slot.

### Onboard Controllers/Ports

The color-coded I/O ports include eight (8) USB 2.0 ports on the rear I/O panel  
Six (6) USB 2.0 headers for front panel access, two (2) USB 3.0 (5Gb/s) headers for front panel access, two (2) USB 3.0 (5Gb/s) ports on the rear I/O panel PS/2 mouse and keyboard ports, two (2) Fast UART 16550 connections on two headers (COM1 & COM2). See Figure 1-2.



## 1-3 Chassis Features

The PIO-537A-i-MA015 is a workstation with Whisper Quiet operation. The following is a general outline of the main features. See Figure 1-3 for a front view.

### System Power

The PIO-537A-i-MA015 features a single 900W Gold Level multi-outlet power supply with PMBus, ideal for use in a workstation environment.

### SATA Support

The PIO-537A-i-MA015 was designed to support four 3.5" SATA hard drives and four optional 2.5" hard drives.

### Front Control Panel

The control panel on the PIO-537A-i-MA015 provides you with system monitoring and control. LEDs indicate system power, HDD activity, network activity, overheat conditions and power supply failure. A main power button and a system reset button are also included.

**Note:** The power supply fail LED indicates the power supply fan has failed.

### Cooling System

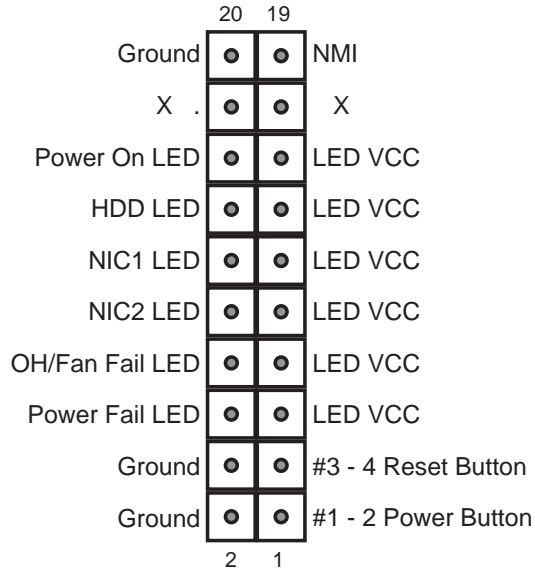
The PIO-537A-i-MA015 has an innovative "Whisper Quiet" cooling design that provides sufficient cooling at very low noise level - ideal for a workplace environment. The chassis includes one 12-cm exhaust fan located at the rear of the chassis, and one 12-cm optional system cooling fan in the middle of the chassis.

The power supply has one internal fan for redundancy; if this fan fails, the power supply must be replaced.

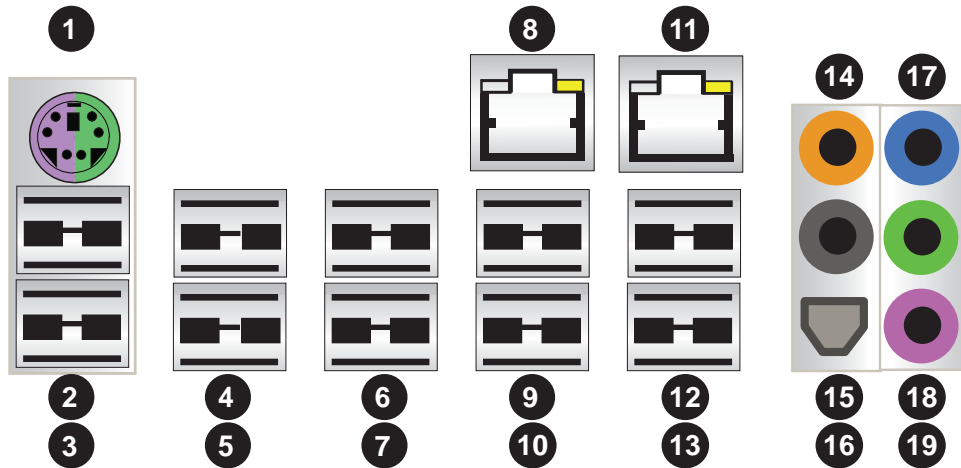
### Control Panel

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

**Figure 1-1. Control Panel Header Pins**

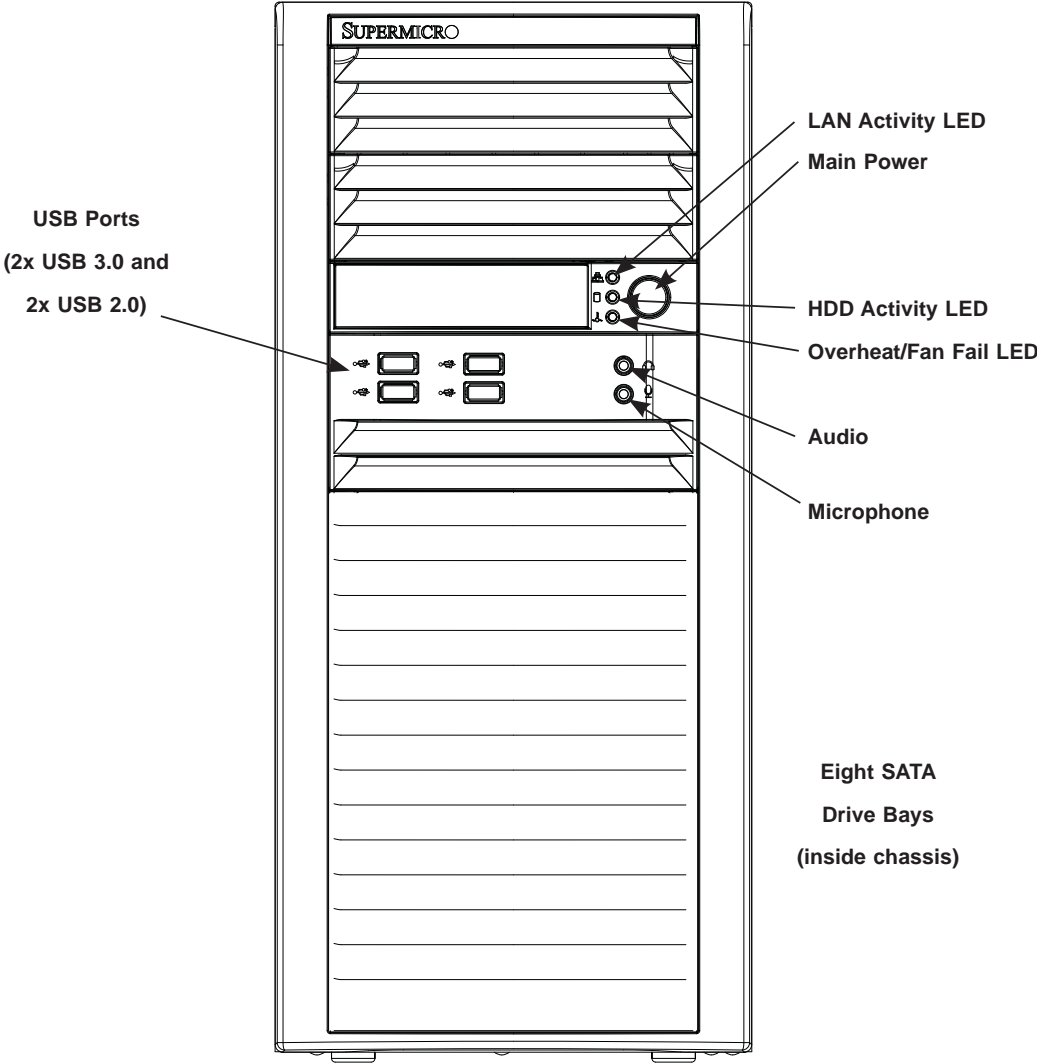


**Figure 1-2. I/O Ports**



I/O Backpanel		
1. Keyboard/Mouse	7. USB 2.0 Port 5	13. USB 2.0 Port 7
2. USB 2.0 Port 0	8. LAN 1 Port	14. Center/LFE Out
3. USB 2.0 Port 1	9. USB 3.0 Port 0	15. Surround Out
4. USB 2.0 Port 2	10. USB 3.0 Port 1	16. S/P DIF Out
5. USB 2.0 Port 3	11. LAN 2 Port	17. Line In
6. USB 2.0 Port 4	12. USB 2.0 Port 6	18. Line Out
		19. Mic In

Figure 1-3. Front View of Workstation



## 1-4 Contacting Supermicro

### Headquarters

Address: Super Micro Computer, Inc.  
980 Rock Ave.  
San Jose, CA 95131 U.S.A.

Tel: +1 (408) 503-8000

Fax: +1 (408) 503-8008

Email: [marketing@supermicro.com](mailto:marketing@supermicro.com) (General Information)  
[support@supermicro.com](mailto:support@supermicro.com) (Technical Support)

Web Site: [www.supermicro.com](http://www.supermicro.com)

### Europe

Address: Super Micro Computer B.V.  
Het Sterrenbeeld 28, 5215 ML  
's-Hertogenbosch, The Netherlands

Tel: +31 (0) 73-6400390

Fax: +31 (0) 73-6416525

Email: [sales@supermicro.nl](mailto:sales@supermicro.nl) (General Information)  
[support@supermicro.nl](mailto:support@supermicro.nl) (Technical Support)  
[rma@supermicro.nl](mailto:rma@supermicro.nl) (Customer Support)

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4F, No. 232-1, Liancheng Rd  
New Taipei City 235  
Taiwan

Tel: +886-(2) 8226-3990

Fax: +886-(2) 8226-3991

Web Site: [www.supermicro.com.tw](http://www.supermicro.com.tw)

Technical Support:

Email: [support@supermicro.com.tw](mailto:support@supermicro.com.tw)

Tel: +886-(2)-8226-3990

## Chapter 2

### Workstation Setup

#### 2-1 Unpacking the System

You should inspect the box the system was shipped in and note if it was damaged in any way. If the system itself shows damage you should file a damage claim with the carrier who delivered it.

Review the warnings and cautions, which may also be found on the Supermicro Web site at [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm).

#### 2-2 Preparing for Setup

Decide on a suitable location for the workstation. 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 AC power outlet.

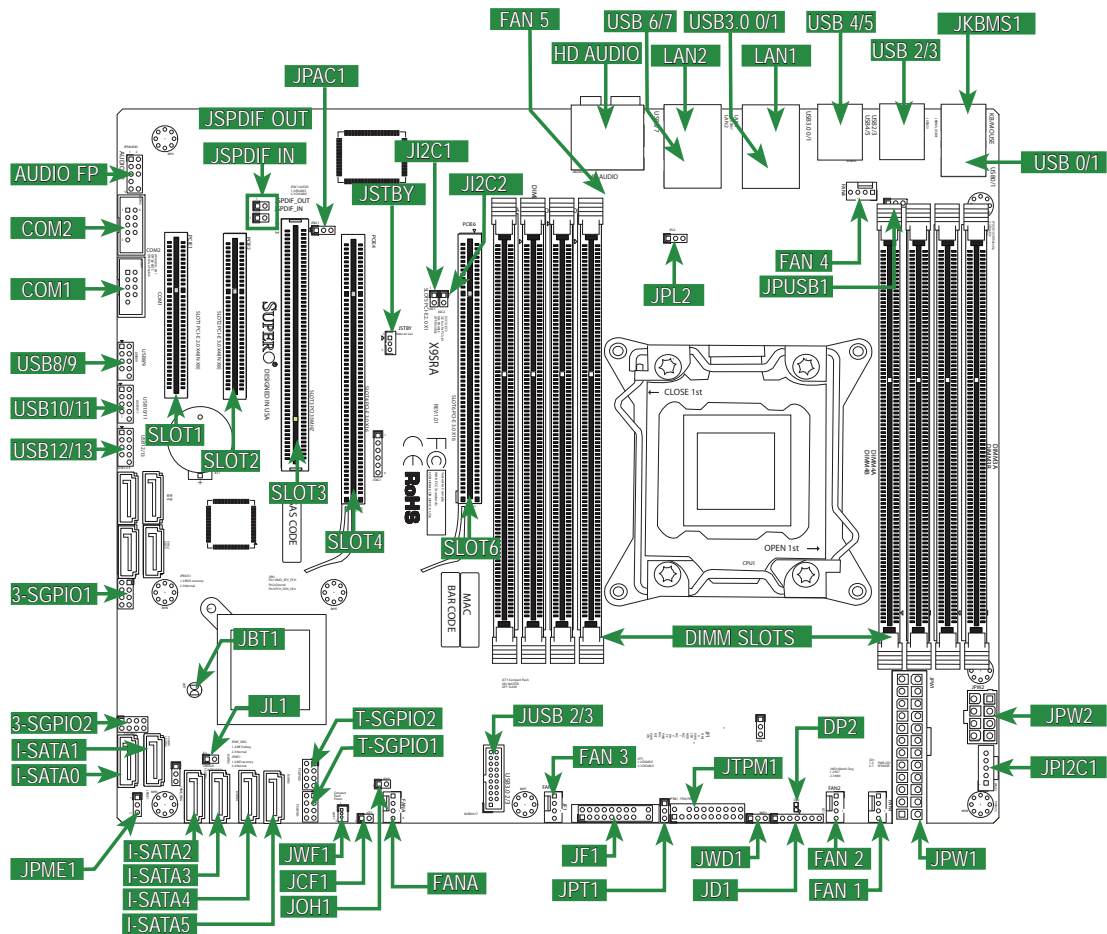
##### ***Setting Up***

1. Locate the workstation in a suitable area according to the guidelines above.
2. Connect the mouse, keyboard and monitor to the workstation.
3. Connect an Ethernet cable to a LAN port if needed.
4. Connect the power to the power supply and then to a grounded AC outlet.

## 2-3 Motherboard Layout

This section provides details on the motherboard and jumper settings that may be useful when setting up the system.

Figure 2-1. Layout



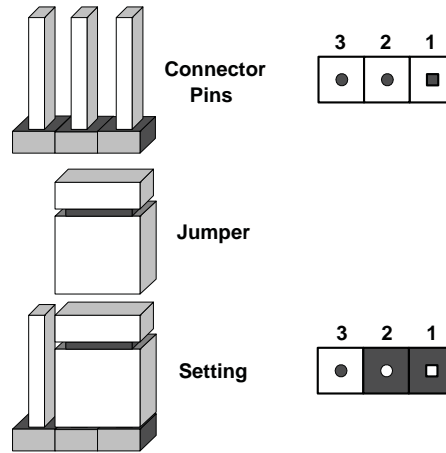
<b>Motherboard Headers/Connectors</b>	
<b>Connector</b>	<b>Description</b>
AUDIO FP	Front Panel Audio Header
COM1, COM2	COM1 & COM2 Serial Port Headers
USB 8/9, USB 10/11, USB 12/13	USB 2.0 Headers for front panel access
JUSB2/3 (USB 3.0)	USB 3.0 Header for USB 2/3
USB 0/1, USB 2/3, USB 4/5, USB 6/7	Back Panel USB 2.0 Ports
USB 3.0 0/1	Back Panel USB 3.0 Ports
JKBMS1	Combination PS/2 Keyboard/Mouse Port
LAN1, LAN2	Gb Ethernet LAN Ports (LAN1 & LAN2)
HD Audio	High Definition (HD) Audio output jacks
JSPDIF OUT/IN	SP/DIF Audion In/Out Headers
3-SGPIO1, 3-SGPIO2	Serial General Purpose I/O Headers for SAS
I-SATA0, I-SATA1	Serial ATA ports (SATA 3.0), 6Gb/s
I-SATA2~5	Serial ATA ports (SATA 2.0), 3Gb/s
JWF1	SATA DOM (Disk On Module) Power Connector
JOH1	Overheat LED/Fan Fail
FAN A, FAN1~FAN4	Internal Fan Headers
JF1	Front Panel Control Header
JTPM1	Trusted Platform Module (TPM) Header
JD1	Power LED / Speaker Header (Pins 4~7: External Speaker)
T-SGPIO1, T-SGPIO2	Serial Link General Purpose I/O Headers (5V Gen1/Gen 2)
JPW1	24-pin Main ATX Power Connector
JPW2	8-pin Secondary Power Connector
JPI2C1	Power Supply SMBus I2C Header
JL1	Chassis Intrusion Header
JSTBY	Legacy Wake On LAN Header
SLOT1	PCI-E 2.0 x4 (in x8 Slot)
SLOT2	PCI-E 3.0 x4 (in x8 Slot)
SLOT3,	PCI 33MHz Slot
SLOT4, SLOT6	PCI-E 3.0 x16 Slots

## 2-4 Jumper Settings

### Explanation of Jumpers

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

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



### Clear CMOS (JBT1)

JBT1 is used to clear CMOS. Instead of pins, this "jumper" consists of contact pads to prevent accidental clearing of CMOS. To clear CMOS, use a metal object such as a small screwdriver to touch both pads at the same time to short the connection. Always remove the AC power cord from the system before clearing CMOS.

**Note:** For an ATX power supply, you must completely shut down the system, remove the AC power cord and then short JBT1 to clear CMOS.

### PCI Slot SMB Enable (JP<sup>2</sup>C1/JP<sup>2</sup>C2)

Use jumpers JP<sup>2</sup>C1/JP<sup>2</sup>C2 to enable PCI SMB (System Management Bus) support to improve system management for the PCI slots. See the table on the right for jumper settings. The default setting is Enabled.

PCI Slot SMB Enable Jumper Settings	
Jumper Setting	Definition
Closed	Enabled
Open	Disabled



**LAN Port Enable/Disable (JPL2)**

Jumper JPL2 enables or disables LAN Port 2 on the motherboard. See the table on the right for jumper settings. The default setting is Enabled.

GLAN Enable Jumper Settings	
Pin#	Definition
1-2	Enabled
2-3	Disabled

**Watch Dog Reset (JWD1)**

Watch Dog (JWD1) is a system monitor that can reboot the system when a software application hangs. Close pins 1-2 to reset the system if an application hangs. Close pins 2-3 to generate a non-maskable interrupt signal for the application that hangs. See the table on the right for jumper settings. Watch Dog must also be enabled in the BIOS. The default setting is Reset.

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

**TPM Support Enable (JPT1)**

JPT1 allows the user to enable TPM (Trusted Platform Module) support to improve data integrity and system security. See the table on the right for jumper settings. The default setting is Enabled.

TPM Support Enable Jumper Settings	
Jumper Setting	Definition
1-2	Enabled
2-3	Disabled

**CF Card Master/Slave (JCF1)**

A Compact Flash Card Master/Slave Select Jumper is located at JCF1. Close this jumper to enable Compact Flash Card. For the Compact Flash Card or the Compact Flash Jumper (JCF1) to work properly, you will need to connect the Compact Flash Card power cable to JWF1 first.

CF Slave/Master Jumper Settings	
Jumper Setting	Definition
Open	Slave
Closed	Master

### ME Recovery (JPME1)

ME Recovery (JPME1) is used to enable or disable the ME Recovery feature of the motherboard. Place the jumper on pins 1-2 for normal operation. Jump pins 2-3 to reset Intel ME values back to their default settings. The default setting is Normal.

ME Recovery Jumper Settings	
Jumper Setting	Definition
1-2	Normal
2-3	Recover

### Audio Enable (JPAC1)

JPAC enables or disables the onboard audio connections. See the table on the right for jumper settings. The default setting is Enabled.

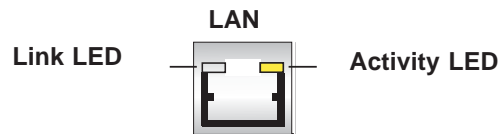
Audio Enable (JPAC1)	
Pin#	Definition
1-2	Enabled
2-3	Disabled

## 2-5 Onboard Indicators

### LAN Port LEDs

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

LAN Link LEDs (Green/Amber/Off)	
LED Color	Definition
Off	No Connection or 10 Mbps
Green	100 Mbps
Amber	1 Gbps



### Onboard Power LED (DP2)

An Onboard Power LED is located at DP2 on the motherboard. When DP2 is on, it means that the AC power cable is connected, the power supply switch and soft switch are on, and the system is running.

Onboard PWR LED (DP2) LED Status	
Status	Definition
Off	System Off (Soft Switch)
On	System is Running

## 2-6 SATA Ports

### SATA Ports

There are four (4) SATA 2.0 ports, two (2) SATA 3.0 ports and an additional four (4) SATA 2.0 ports located on SAS 0~3:

I-SATA 0~1: SATA 3.0 (6Gb/sec)

I-SATA 2~5: SATA 2.0 (3Gb/sec)

SAS 0~3: SATA 2.0 (3Gb/sec)

SATA/SAS Ports Pin Definitions	
Pin#	Signal
1	Ground
2	SATA_TXP
3	SATA_TXN
4	Ground
5	SATA_RXN
6	SATA_RXP
7	Ground

**Notes**

## Chapter 3

### Component Installation

Several steps must be taken prior to installing components in the system. Installation or replacement of most components require that power first be removed from the system. Please follow the procedures given for each type of component.

#### 3-1 Removing Power

Use the following procedure to ensure that power has been removed disconnected from the system.

1. Use the operating system to power down the system.
2. After the system has completely shut-down, carefully grasp the head of the power cord and gently pull it out of the back of the power supply.
3. Disconnect the cord from the power strip or wall outlet.

#### 3-2 Accessing the System

The PIO-537A-i-MA015 features two removable side covers, allowing easy access to the system interior.

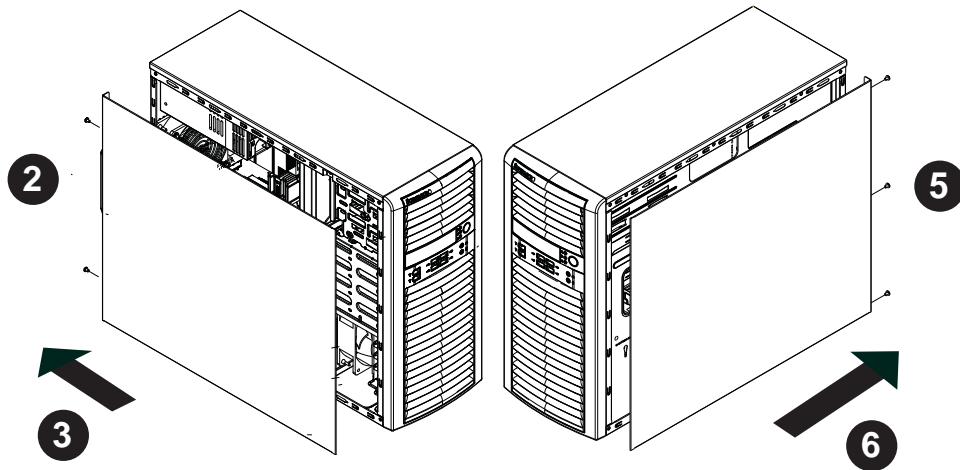
##### ***Removing the Side Covers***

1. Disconnect the system from any power source.
2. Remove the two screws securing the left side cover.
3. Slide the left cover toward the rear.
4. Lift the left cover from the system.
5. Remove the three screws securing the right side cover.
6. Slide the right cover toward the rear.
7. Lift the right cover from the system.

**Caution:** 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 for proper airflow and to prevent overheating.

Additional warnings and cautions can be found on the Supermicro Web site at [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm).

**Figure 3-1. Removing the Side Covers**



### 3-3 Adding PCI Add-On Cards

The PIO-537A-i-MA015 can accommodate standard size add-on cards populated in all slots.

#### ***Installing an Add-on Card***

1. Begin by removing power from the system as described on page 3-1.
2. Remove the PCI slot shield for the slot you wish to populate.
3. Fully seat the card into the card slot, pushing down with your thumbs evenly on both sides of the card.
4. Finish by using a screw to secure the top of the card shield to the chassis. The PCI slot shields protect the motherboard and its components from EMI and aid in proper ventilation, so make sure there is always a shield covering each unused slot.

## 3-4 Installing a CPU and Heat Sink

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

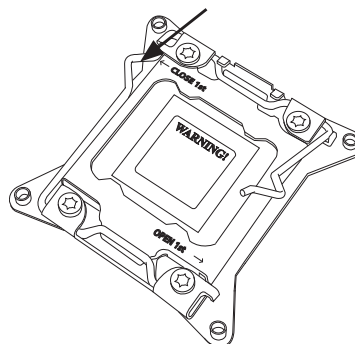
### Preparation

1. Begin by removing power from the system as described on page 3-1. Always connect the power cord last and always remove it before adding, removing or changing the CPU. Install the processor into the CPU socket before installing the CPU heat sink.
2. If buying a CPU separately, use an Intel-certified multi-directional heat sink only.
3. If installing a new motherboard, make sure to install the motherboard into the chassis before installing the CPU heat sinks.
4. When a motherboard has no CPU pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.
5. Refer to the Supermicro Web site for updates on CPU support.

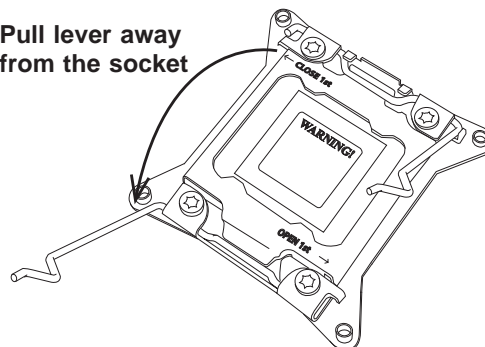
### Installing an LGA 2011 Processor

1. There are two levers on the LGA2011 socket. First press and release the load lever labeled 'Open 1st'.
2. Press the second load lever labeled 'Close 1st' to release the load plate from its locked position.

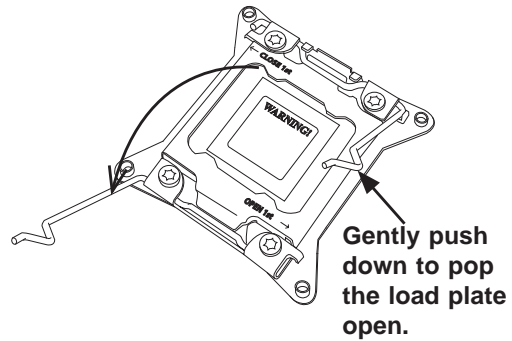
Press down on the lever labeled 'Close 1st'



Pull lever away from the socket

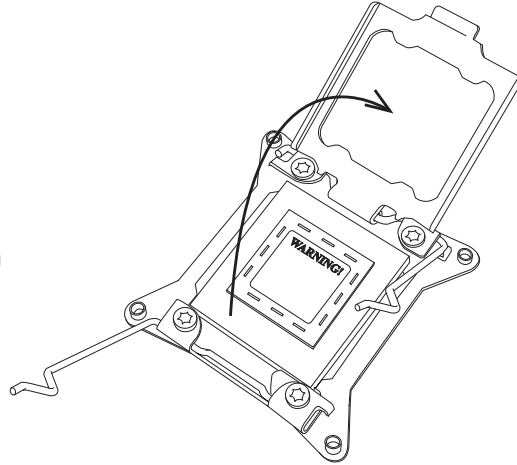


3. With the lever labeled 'Close 1st' fully retracted, gently push down on the 'Open 1st' lever to open the load plate. Lift the load plate to open it completely.

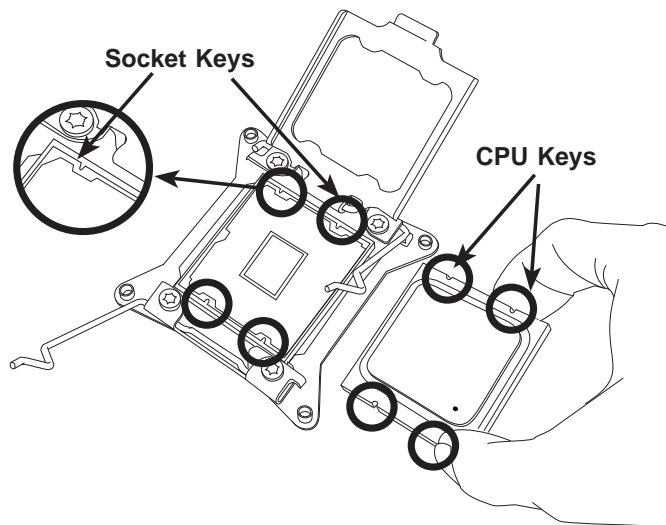


4. Using your thumb and the index finger, remove the 'WARNING' plastic cap from the socket.

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



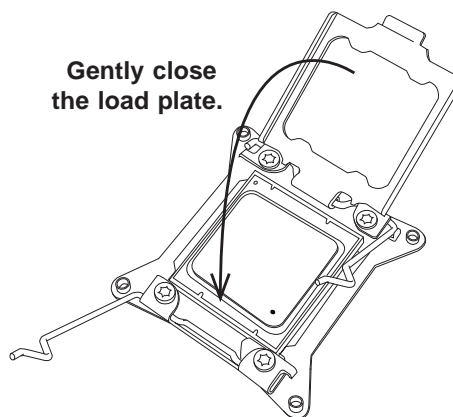
6. Once they are aligned, carefully lower the CPU straight down into the socket. (Do not drop the CPU on the socket. Do not move the CPU horizontally or vertically and do not rub the CPU against any pins of the socket, which may damage the CPU or the socket.)





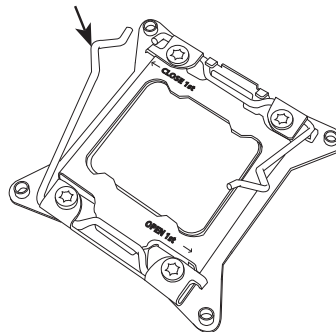
**Caution:** CPUs only install to the socket in one direction. Make sure that the CPU is properly inserted into the socket before closing the load plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the load plate again and double-check that the CPU is aligned properly.

7. With the CPU in the socket, inspect the four corners of the CPU to make sure that they are flush with the socket.

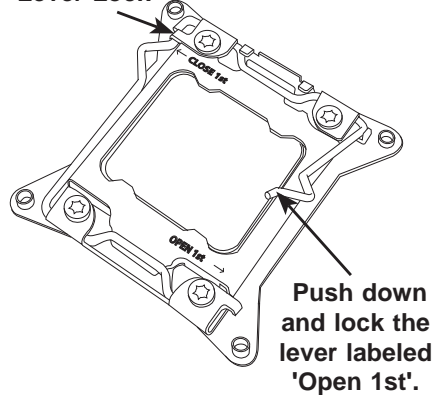


8. Close the load plate. Lock the lever labeled 'Close 1st', then lock the lever labeled 'Open 1st'. Use your thumb to gently push the load levers down until the lever locks.

Push down and lock the lever labeled 'Close 1st'.



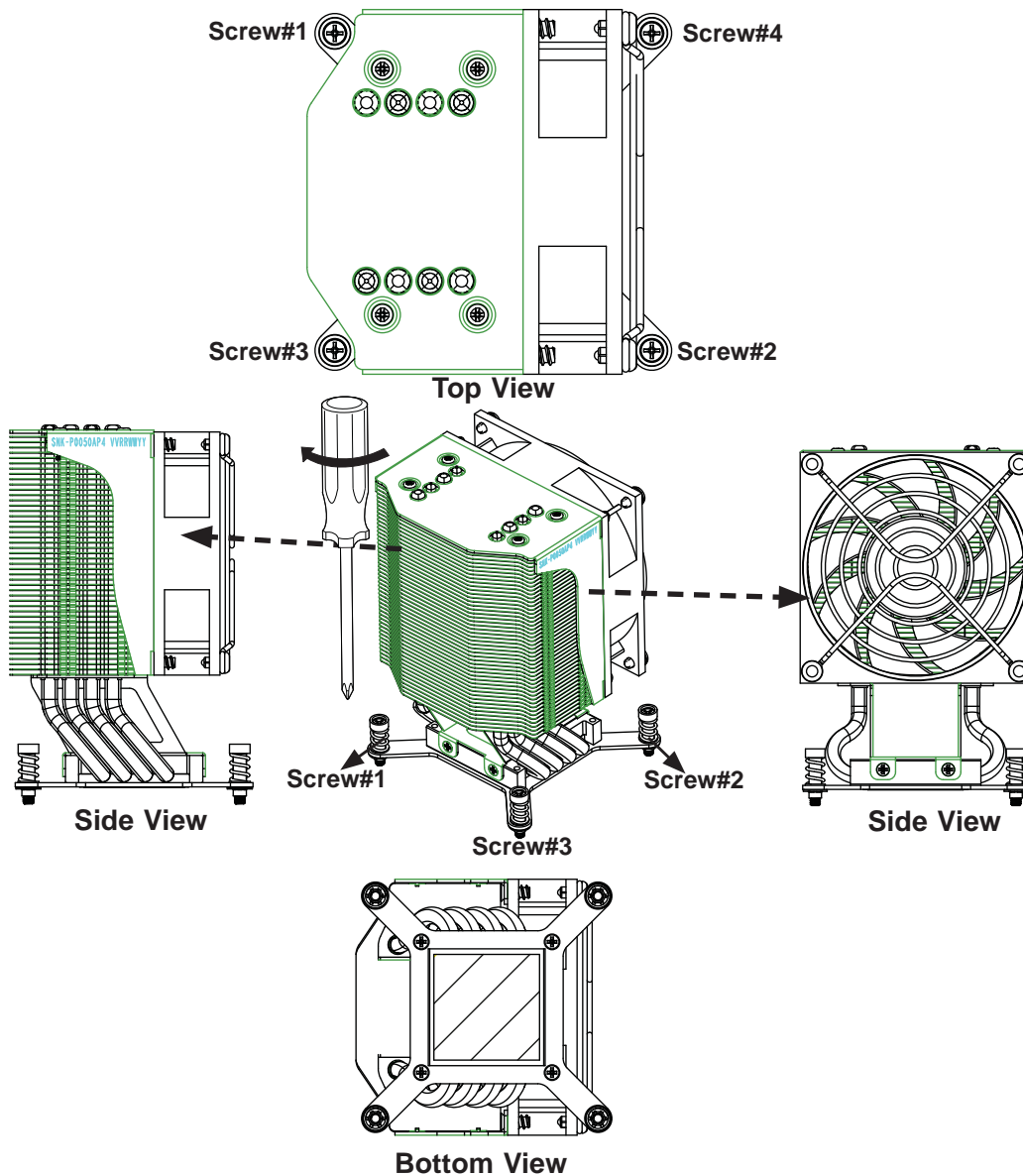
Lever Lock



## Installing a CPU Heat Sink

1. Do not apply any thermal grease to the heat sink or the CPU die; the required amount has already been applied.
2. Place the heat sink on top of the CPU so that the four mounting holes are aligned with those on the motherboard and the heat sink bracket underneath.
3. Screw in two diagonal screws (i.e., the #1 and the #2 screws) until just snug. (To avoid possible damage to the CPU do not over-tighten the screws.)
4. Finish the installation by fully tightening all four screws.

Figure 3-2. Heat Sink Installation

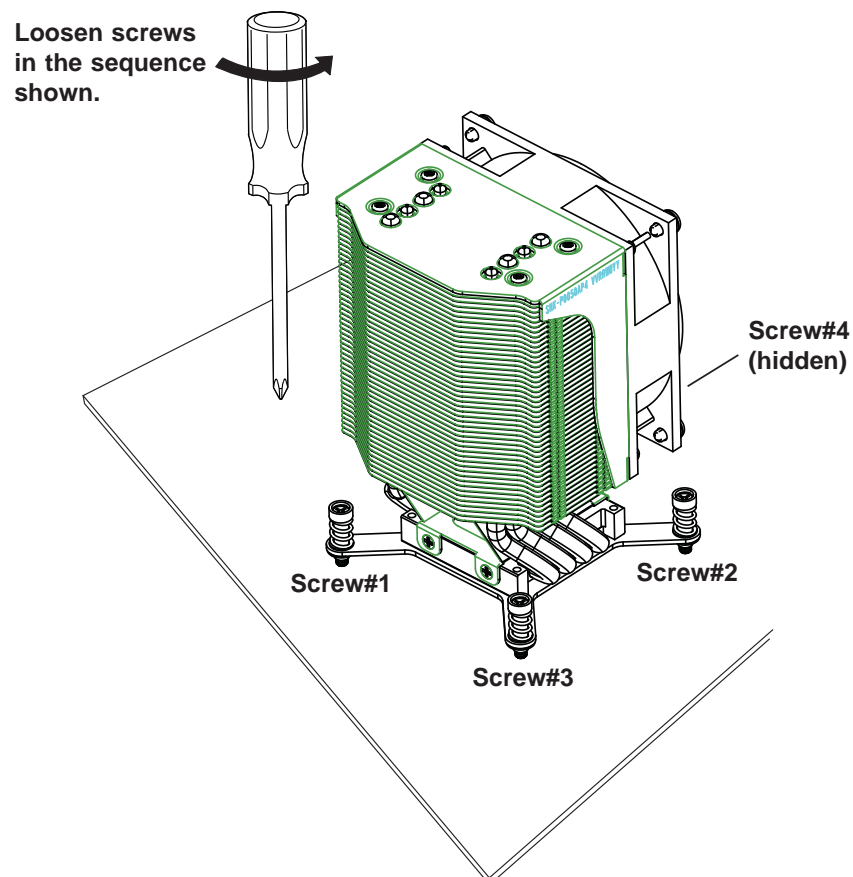


## Removing the Heat Sink

### Preparation

1. Begin by removing power from the system as described on page 3-1.
2. Remove the power cord from the system before removing the heatsink.
3. Unscrew the heat sink screws from the motherboard in the sequence as shown in the illustration below.
4. Gently wriggle the heat sink to loosen it from the CPU. (Do not use excessive force when wriggling the heat sink!)
5. Once the heat sink is loosened, remove it from the CPU socket.
6. Remove the used thermal grease and clean the surface of the CPU and the heat sink, Reapply the proper amount of thermal grease on the surface before reinstalling the heat sink.

Figure 3-3. Heat Sink Removal



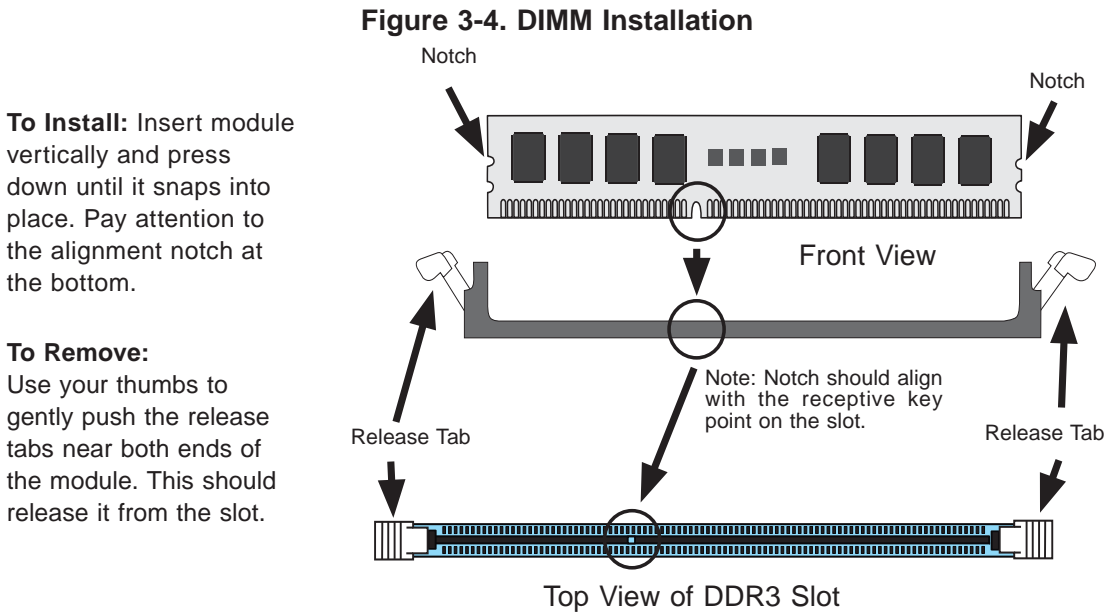
## 3-5 Installing Memory Modules

Check the Supermicro Web site for recommended memory modules.

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

### **Preparation**

1. Begin by removing power from the system as described on page 3-1.
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. Using both thumbs, gently press down on the DIMM module until it snaps into place in the slot. Repeat for all modules.
4. Insert the desired number of DIMMs into the memory slots, starting with P1 DIMM1A. For best performance, please use the memory modules of the same type and speed in the same bank. See the DIMM Installation Chart on the following page.
5. Reverse the steps above to remove the DIMMs from the motherboard.



## Memory Support

The PIO-537A-i-MA015 supports up to 256 GB of 1600/1066/1333/1600 MHz ECC/ Non-ECC DDR3 DIMMS in eight memory slots. For the latest memory updates, please refer to the product page on the Supermicro Web site.

### *Order of Populating DIMM Slots*

For memory to work properly, follow the table below for the correct order of populating the DIMM slots. See the serverboard layout page for slot numbering.

**Notes:** an "X" indicates a slot populated with a memory module.

Populate the "A" DIMM slots first. Any of the slots may be used. Populate the "B" slots only after all "A" slots have been filled.

Recommended Population (Balanced)								
DIMM1A	DIMM2A	DIMM3A	DIMM4A	DIMM1B	DIMM2B	DIMM3B	DIMM4B	Total System Memory
2GB	2GB							4GB
2GB	2GB	2GB	2GB					8GB
2GB	2GB	2GB	2GB	2GB	2GB			12GB
2GB	2GB	2GB	2GB	2GB	2GB	2GB	2GB	16GB
4GB	4GB							8GB
4GB	4GB	4GB	4GB					16GB
4GB	4GB	4GB	4GB	4GB	4GB			24GB
4GB	4GB	4GB	4GB	4GB	4GB	4GB	4GB	32GB
8GB	8GB							16GB
8GB	8GB	8GB	8GB					32GB
8GB	8GB	8GB	8GB	8GB	8GB			64GB
8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	128GB
16GB	16GB							32GB
16GB	16GB	16GB	16GB					64GB
16GB	16GB	16GB	16GB	16GB	16GB			96GB
16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	128GB
32GB	32GB							64GB
32GB	32GB	32GB	32GB					128GB
32GB	32GB	32GB	32GB	32GB	32GB			192GB
32GB	32GB	32GB	32GB	32GB	32GB	32GB	32GB	256GB

**Note:** Up to 256GB of memory are supported using ECC QR (Quad Rank or 4-Rank) registered DIMM technology at 1600/1333/1066/800 MHz. Up to 64GB of memory are supported using non-ECC UDIMMs.

## 3-6 System Fans

One 12-cm chassis cooling fan provides air intake while another 12-cm exhaust fan expels hot air from the chassis. Both are low-noise fans that result in "Whisper-Quiet" operation (~28 dB). The fans should be connected to headers on the motherboard (see Chapter 5).

The power supply includes redundant cooling fans. If one fan fails, the remaining fan will ramp up its rpm to provide sufficient cooling. The Power Fail LED will illuminate and an audible alarm will sound, which can be silenced with a button on the power supply. If a power supply fan fails, you should replace the power supply at your earliest convenience.

### ***Preparation***

Under normal operation, the chassis fans, the exhaust fan and the power supply fans run continuously. The chassis fans are hot-pluggable and can be replaced without powering down the system.

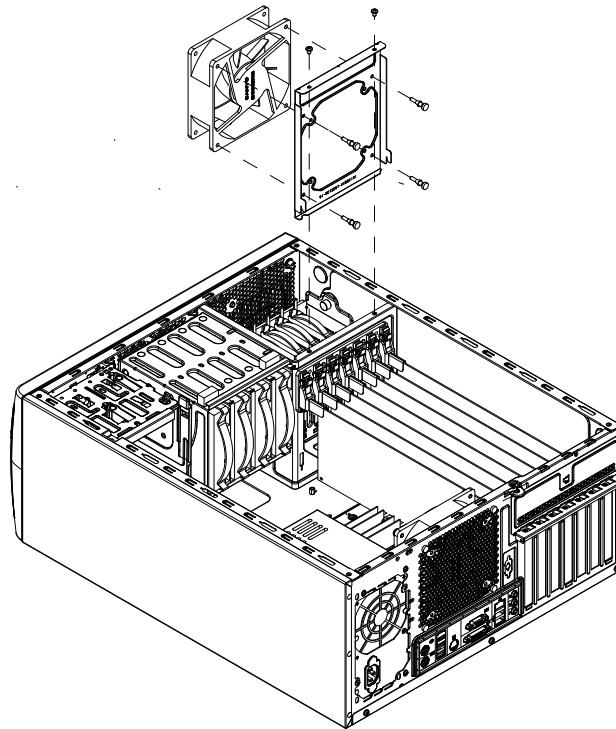
### ***Removing a Fan***

1. First locate the failed chassis fan by removing the top/left chassis cover (see Chapter 2 for details). Locate the fan that has stopped working.
2. Disconnect the power cord to the chassis and disconnect the cable to the fan.
3. Remove the two screws securing the fan bracket to the chassis.
4. Remove the four screws securing the fan to the fan bracket.
5. Lift the fan up and out of the chassis.

### ***Installing a New Fan***

1. Replace the failed fan with an identical one (available from Supermicro)
2. Secure the fan to the bracket with four screws and secure the bracket to the chassis with two screws.
3. Install it in the same position and orientation as the one you removed.
4. Check that the fan is working then replace the chassis cover.

Figure 3-5. Removing a Chassis Fan



### 3-7 Hard Drive Installation

A total of eight SAS or SATA drives may be housed in the PIO-537A-i-MA015. The drive IDs are preconfigured as 0 through 7 in order from bottom to top. Remove the side panel of the chassis to access these drives as described previously in this chapter.

**Caution:** Regardless of how many SATA drives are installed, all drive carriers must remain in the drive bays to promote proper airflow.

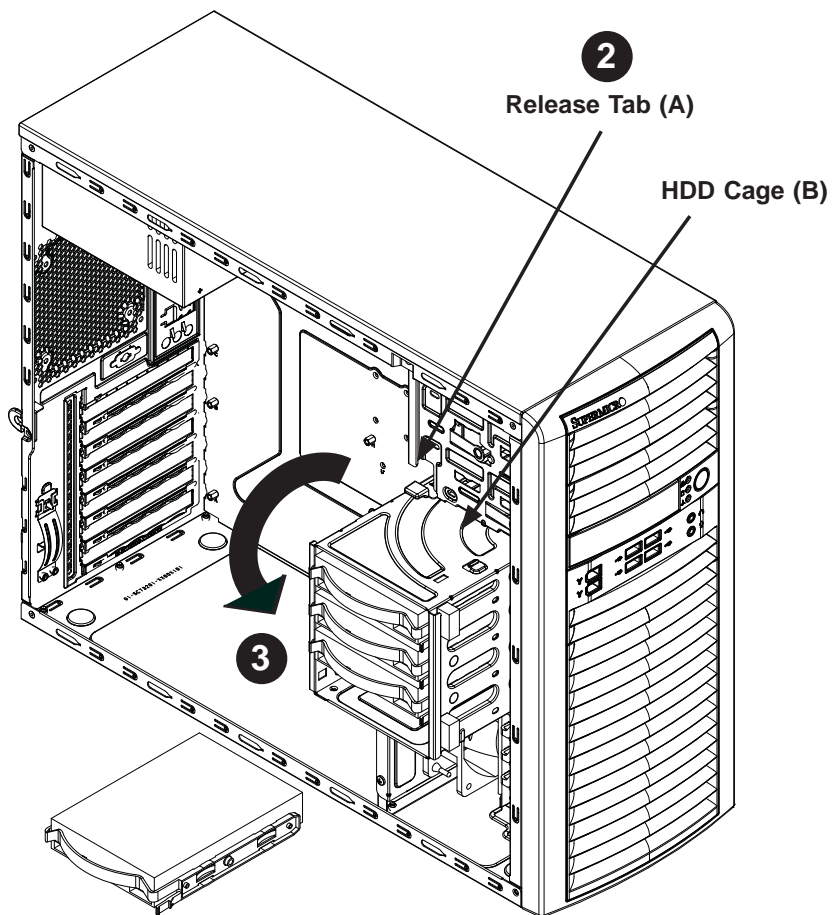
#### ***Preparation***

Begin by removing power from the system as described on page 3-1.

#### ***Rotating the Hard Drive Cage***

1. Disconnect the system from any power source.
2. Lift the release tab (A).
3. Rotate the hard drive cage (B) outward.

**Figure 3-6. Removing the Drive Carrier**



### ***Removing a Hard Drive***

1. Press the release tab on the side of the hard drive carrier which is to be removed from the hard drive cage.
2. Gently pull the hard drive carrier out of the cage.
3. If a hard drive is already present, remove it by carefully pulling the sides of the hard drive carrier outward.
4. Remove the hard drive from the hard drive carrier.



Figure 3-7. Removing the Hard Drive Carrier from the Hard Drive Cage

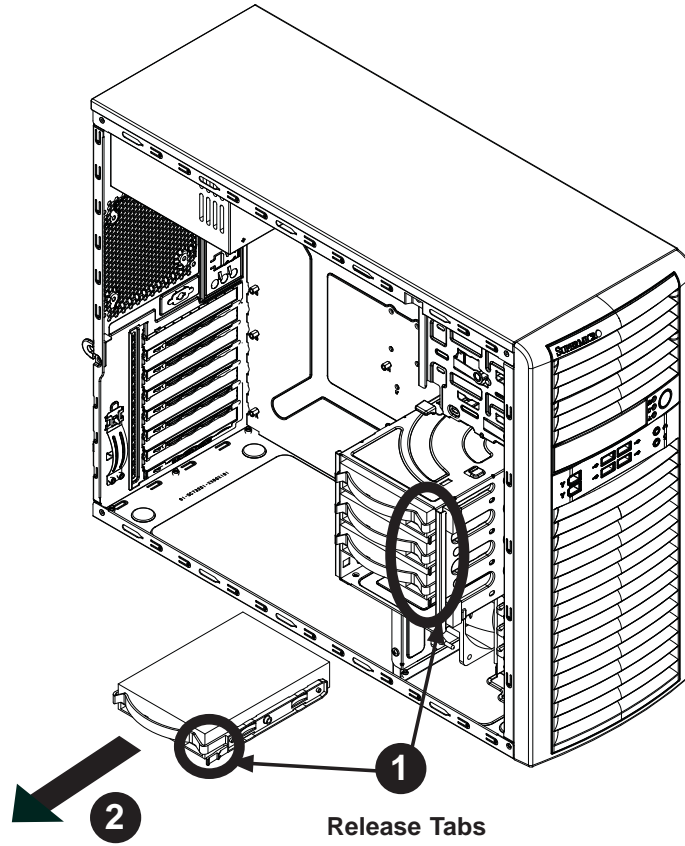
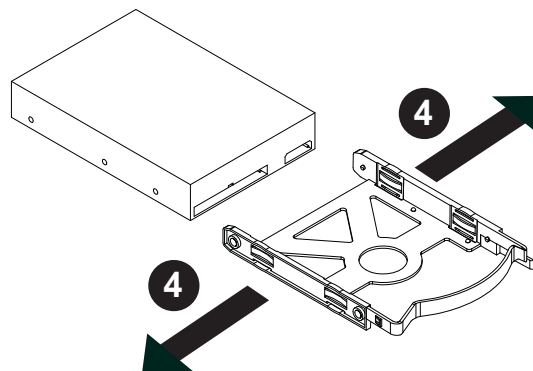
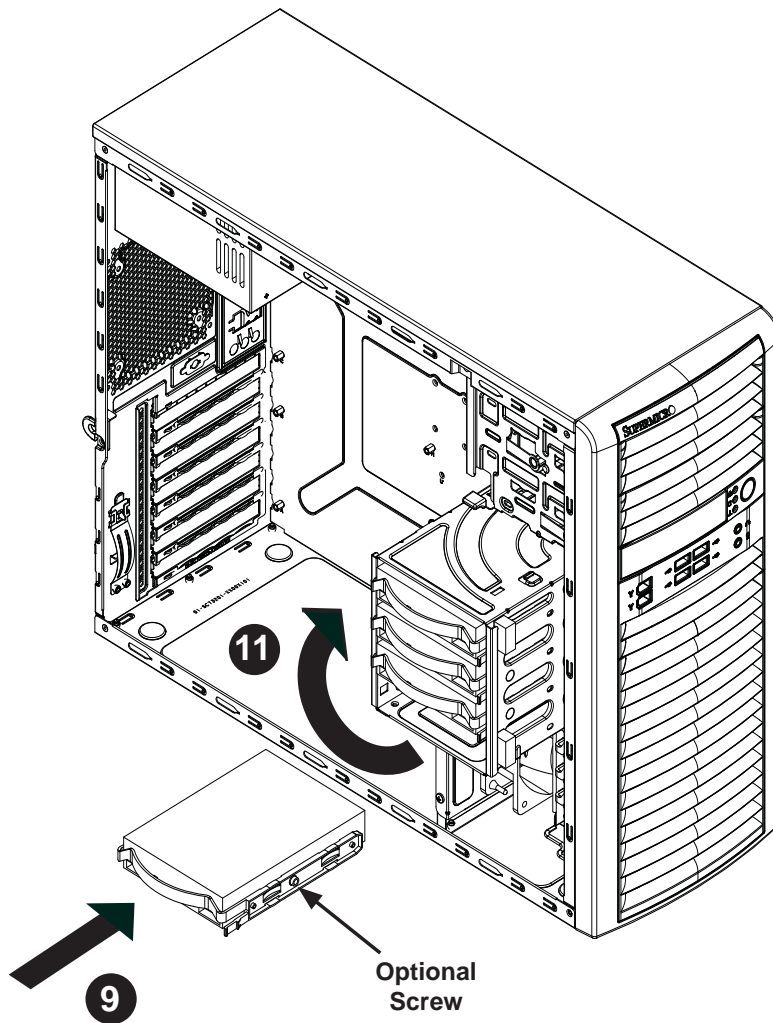


Figure 3-8. Removing a Hard Drive from the Drive Carrier



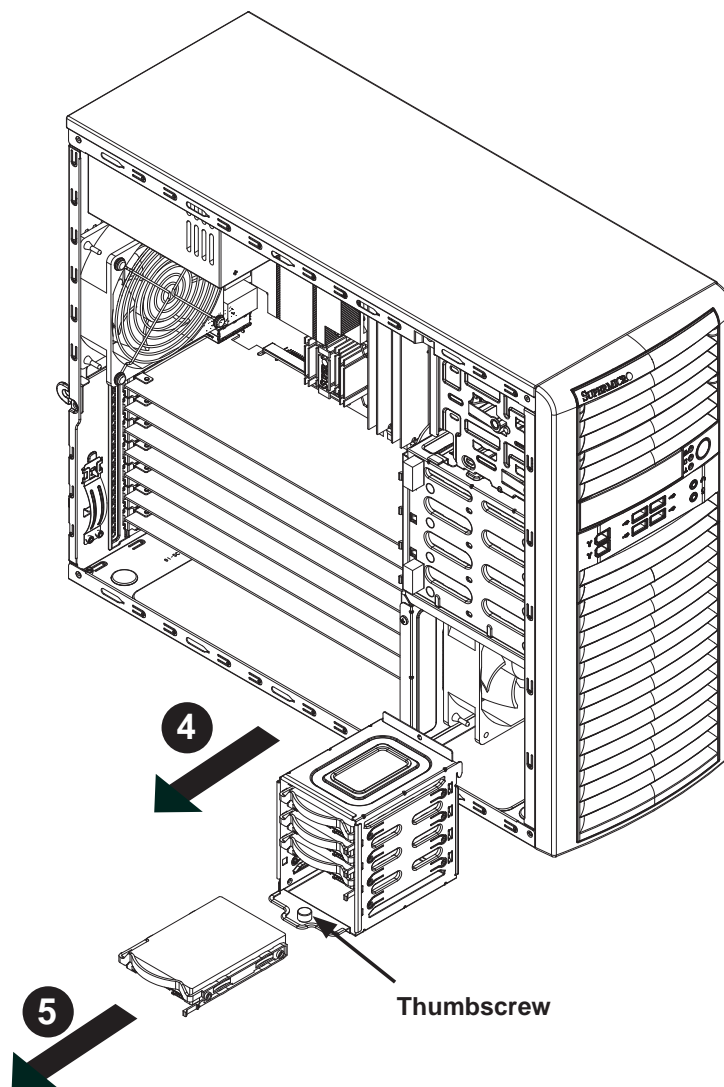
**Figure 3-9. Installing a Hard Drive Carrier into the Hard Drive Cage**



1. Insert the new hard drive into the hard drive carrier.
2. Insert the hard drive carrier into the hard drive cage, sliding it towards the back of the the hard drive cage until it clicks into a locked position.
3. If desired, each hard drive carrier may be secured to the exterior of the hard drive cage using one optional screw.
4. Rotate the hard drive cage 90 degrees inward, returning it to the closed, operational position in the chassis.
5. Connect the related cables to the hard drives.

## Optional 2.5" Hard Drives

Figure 3-10. Removing 2.5" Hard Drives



The system must be powered-down before hard drives can be removed from the hard drive carriers.

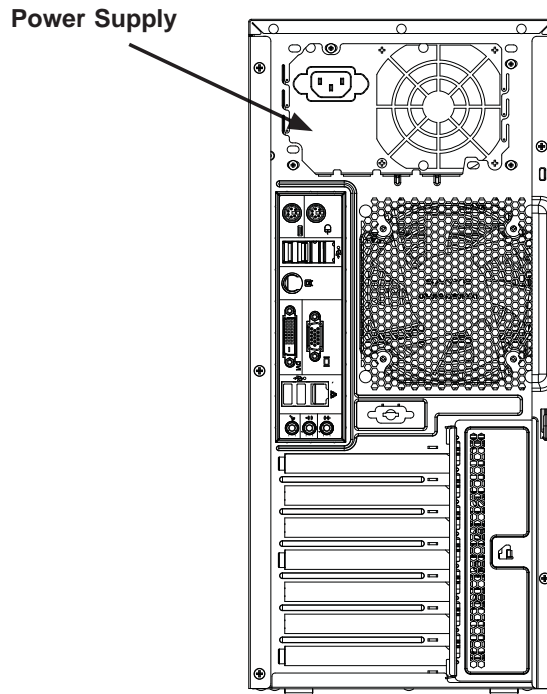
### ***Removing and Installing 2.5" Hard Drives***

1. Disconnect the chassis from any power source.
2. Loosen the thumb screw securing the 2.5" hard drive cage to the chassis.
3. Disconnect all cables from the hard drive.
4. Slide the 2.5" hard drive cage out of the chassis.

## 3-8 Power Supply

The PIO-537A-i-MA015 includes a 900 Watt power supply. In the unlikely event that it becomes necessary to replace the power supply, follow the instructions below..

**Figure 3-11. Removing the Power Supply**



### ***Preparation***

Begin by removing power from the system as described on page 3-1.

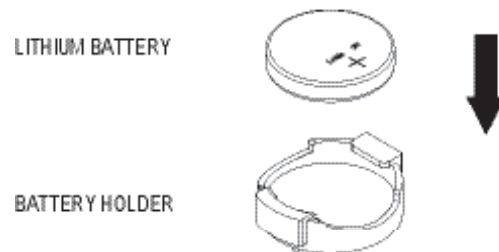
### ***Changing the Power Supply***

1. Disconnect the chassis from any power source.
2. Disconnect the motherboard cables.
3. Remove the screws securing the power supply to the chassis, which are located on the rear of the chassis. Set these screws aside for later use.
4. Gently lift the power supply out of the chassis.
5. Replace the failed power supply with an identical power supply model.
6. Secure the new power supply using the screws previously set aside.
7. Plug the AC power cord back into the module and power-up the system.

## 3-9 Motherboard Battery

**CAUTION:** There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities (see Figure 3-12). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (CR2032). Dispose of used batteries according to the manufacturer's instructions.

**Figure 3-12. Installing the Onboard Battery**



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

**Notes**

# Appendix A

## Software

### A-1 Operating System

The PIO-537A-i-MA015 supports the Windows 7 Professional 64-bit Operating System. This OS has been pre-installed to the system.

#### System Recovery Instructions

This computer includes a hidden partition which contains a backup of your factory Windows installation. In case of a system failure, you can use this backup to restore your computer to a working state in just a few minutes.

Since this backup resides on the same physical hard-disk as your current Windows installation, a hardware failure of the hard-disk will prevent you from reinstalling Windows. There are two different ways to initiate a system recovery of your system:

- Trigger recovery from OS level (run FullRestore.exe)
- Trigger recovery during system boot up (press F10 key).

**Warning:** System Recovery will wipe all of your personal data and restore the system to OOBE. You must have your CD-KEY from COA label ready before performing this action. System Recovery is an automated, one-step process. Do not initiate a system recovery unless you are prepared for a complete re-installation back to the factory default installation.

#### Support

If you require technical help for any Operating System problems, please contact your 3rd party software vendor or Technical Support at Supermicro. Contact information is provided in Chapter 1.

## A-2 Installing Drivers

With the hardware and operating system installed, you may need to install the drivers if not done already.

The drivers are available online at <http://www.supermicro.com/support/resources/>

### ***Obtaining Drivers***

1. Go to the Advanced Search area and select the Category (motherboards), Product Type and Model (motherboard model) from the drop-down menus.
2. Click Submit Request.
3. The following page will display a Drivers and Utilities section. Use the drop-down menus to select the OS and device type.
4. Click Submit to get the correct driver for your system.



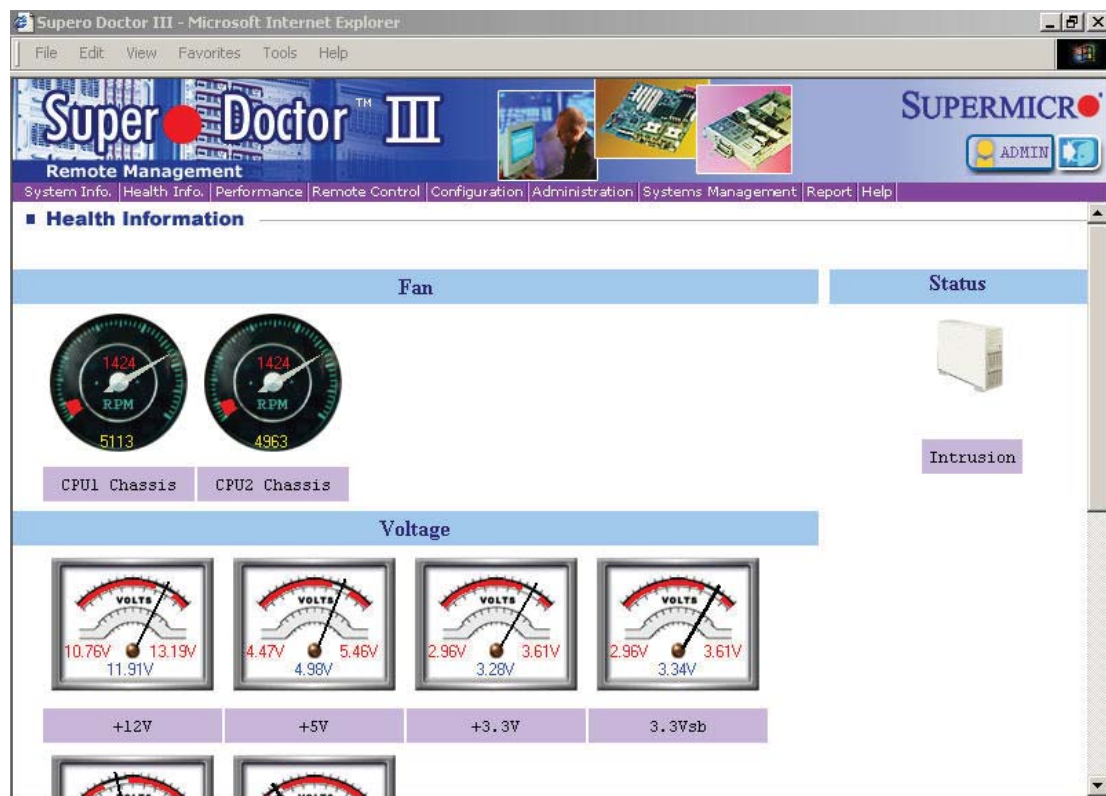
## A-3 SuperDoctor III

The SuperDoctor® III program is a Web based management tool that supports remote management capability. It includes Remote and Local Management tools. The local management is called SD III Client. The SuperDoctor III program included on the CD-ROM that came with your motherboard allows you to monitor the environment and operations of your system. SuperDoctor III displays crucial system information such as CPU temperature, system voltages and fan status. See the Figure below for a display of the SuperDoctor III interface.

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

**Note:** When SuperDoctor is first installed, it adopts the temperature threshold settings that have been set in BIOS. Any subsequent changes to these thresholds must be made within SuperDoctor, as the SuperDoctor settings override the BIOS settings. To set the BIOS temperature threshold settings again, you would first need to uninstall SuperDoctor.

### Supero Doctor III Interface Display Screen (Health Information)



## Supero Doctor III Interface Display Screen (Remote Control)



Note: The SuperDoctor III program and User's Manual can be downloaded from the Supermicro Web site at <http://www.supermicro.com/products/accessories/software/SuperDoctorIII.cfm>.

For Linux, we recommend using SuperDoctor II.

## A-4 BIOS

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.

**Note:** For instructions on BIOS recovery, please refer to the instruction guide posted at <http://www.supermicro.com/support/manuals/>.

### 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.

The Main BIOS setup menu screen has two main frames. The left frame displays all the options. 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 description of the highlighted option. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it. (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.

## How To Change the Configuration Data

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

## How to Start the Setup Utility

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

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

**Notes**

## Appendix B

### BIOS Beep Codes

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

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

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

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

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

**Notes**

## Appendix C

# System Specifications

### Processors

Intel Xeon E5-2600 / 1600 Series Processor Socket R (LGA 2011).

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

### Chipset

Intel C602

### BIOS

32 Mb SPI AMI BIOS® SM Flash BIOS

### Memory Capacity

Eight (8) DIMM slots support up to 256GB of DDR3 Unbuffered, ECC RDIMM memory or 64GB of DDR3 Unbuffered, non-ECC UDIMM memory, up to 1600MHz

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

### SATA Controller

Intel on-chip controller for two SATA 3.0 ports and four SATA 2.0 ports plus an additional four SATA 2.0 ports (RAID supported)

### Drive Bays

Eight drive bays to house four 3.5" and four 2.5" optional SATA drives

### Peripheral Drive Bay

Two 5.25" drive bays

### Expansion Slots

Supports the use of five standard size PCI add-on cards: two PCI-E 3.0 x16, one PCI-E 3.0 x4 in x8 slot, one PCI-E 2.0 x4 in x8 slot and one PCI 33MHz slot.

### Motherboard

X9SRA

Dimensions: 12" x 9.6" (305 x 244 mm)

## **Chassis**

SC732D4-903B Form Factor: Mid-tower

Dimensions (WxHxD) 7.6 x 16.7 x 20.68 in. (193 x 424 x 525.3 mm)

## **Weight**

Gross (Bare Bone): 39 lbs. (17.7 kg.)

## **System Cooling**

One 12-cm low-noise exhaust fan

One active CPU heatsink (optional)

## **System Input Requirements**

AC Input Voltage: 100-240 VAC

Rated Input Current: 12A - 6A

Rated Input Frequency: 50-60 Hz

## **Power Supply**

Rated Output Power: 900W AC 80 Plus Gold Level multi output power supply  
(Part# PWS-903-PQ)

Rated Output Voltages: +3.3V (25A), +5V (25A), +12V1 (25A), +12V2 (25A) +12V3  
(25A)+12V4 (25A), -12V (0.5A), +5Vsb (3A)

Power Supply Efficiency Rating: 94% (peak)

## **Operating Environment**

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

Non-operating Temperature: -40° to 60° C (-40° to 148° 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: CSA/EN/IEC/UL 60950-1 Compliant, UL or CSA Listed (USA and  
Canada), CE Marking (Europe)

California Best Management Practices Regulations for Perchlorate Materials:

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



## Notes

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