SUPER●®
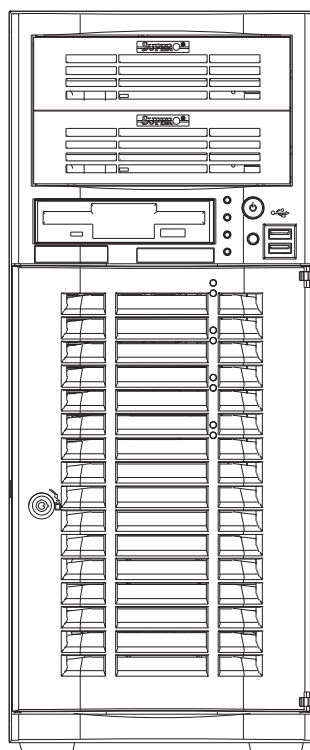
SuperWorkstation

PIO-737A-i-MA015

USER'S MANUAL

1.0

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

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

Manual Revision 1.0
Release Date: October 31, 2012

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-737A-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

Table of Contents

Appendix A Software

Appendix B BIOS Beep Codes

Appendix C System Specifications

Notes

Chapter 1

Workstation Overview

1-1   Introduction

The PIO-737A-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

Replacement Parts List		
Qty.	Definition	Part Number
1	Black SC733 Mid Tower Chassis w/ 665W Power Supply	CSE-733TQ-665BP
1	Black Lite-On 5.25" HH 24x DVD-RW SATA Drive	DVM-LITE-DVDRW24-HBT
5	61-cm SATA Cables	CBL-0044L
1	12-cm Chassis Fan	FAN-0124L4
2	Sandy Bridge 4C E5-1620 3.6G 10M 130W 2011 Processor	P4X-DPE52630-SR0KV
1	Motherboard	X9DAi
4	4GB DDR3-1600 1.5V 2Rx8 LP ECC REG DIMMs	MEM-DR340L-SL02-ER16
1	Seagate 1.0 TB 6Gb/s 7.2k RPM, 3.5" SATA 3.0 HDD	HDD-T1000-ST1000NM0011
2	2U Active CPU Heat Sink for X9 Socket R	SNK-P0048AP4
1	NVIDIA® Quadro 4000	AOC-GPU-NVQ4000
1	Standard I/O Shield for X9DA6 with EMI Gasket	MCP-260-00045-0N

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-737A-i-MA015 uses the X9DAi, a dual processor motherboard built around the Intel® C600 series chipset. Below are the main features of the X9DAi.

Processors

The PIO-737A-i-MA015 supports single or dual Intel E5-2600 processors in LGA 2011 sockets. Please refer to the motherboard description pages on our Web site for a complete listing of supported processors (www.supermicro.com).

Memory

The PIO-737A-i-MA015 features up to 512 GB of registered/unbuffered ECC DDR3-1333/1066/800 LRDIMMs (load-reduced DIMMs).

SATA

A SATA controller is integrated into the chipset to provide a Serial ATA subsystem. The PIO-737A-i-MA015 supports six SATA 3.0 and four SATA 2.0 ports.

PCI Expansion Slots

The PIO-737A-i-MA015 features the following PCI expansion slots:
Three PCI-Express 3.0 x16, two PCI-Express 3.0 x8 and one PCI-Express 3.0 x4 slots.

Onboard Controllers/Ports

The color-coded I/O ports include one COM port, six USB 2.0 ports, PS/2 mouse and keyboard ports, two Gb Ethernet ports and six HDA (High Definition Audio) ports. See Figure 1-2.

1-3   Chassis Features

The PIO-737A-i-MA015 is a workstation. The following is a general outline of the main features of the enclosure. See Figure 1-3 for a front view.

System Power

The PIO-737A-i-MA015 features a low-noise, high-efficiency 665W power supply. Power must be removed from the system before servicing or replacing the power supply.

SATA Support

The PIO-737A-i-MA015 was designed to support four 3.5" SATA hard drives, which are hot-swappable units.

Front Control Panel

The control panel on the PIO-737A-i-MA015 provides you with system monitoring and control. LEDs indicate power on, network activity, hard disk drive activity and overheat conditions. The control panel also includes a main power button and a system reset button.

Cooling System

The PIO-737A-i-MA015 has an innovative 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 front of the system.

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

	20	19	
Ground	○	○	NMI
x (Key)	○	○	x (Key)
Power On LED	○	○	Vcc
HDD LED	○	○	Vcc
NIC1 LED	○	○	Vcc
NIC2 LED	○	○	Vcc
OH/Fan Fail LED	○	○	Vcc
Power Fail LED	○	○	Vcc
Ground	○	○	Reset (Button)
Ground	○	○	Power (Button)
	2	1	
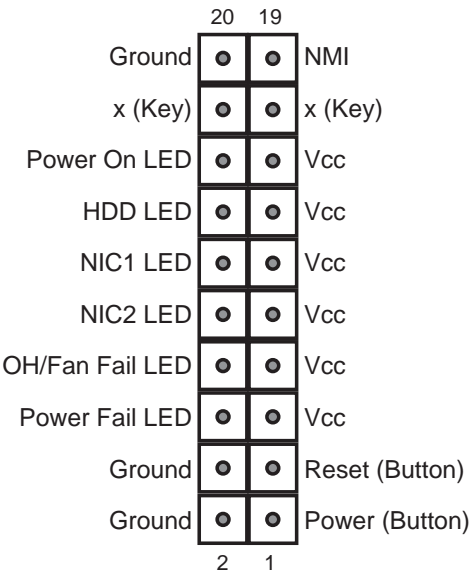
Figure 1-2. I/O Ports
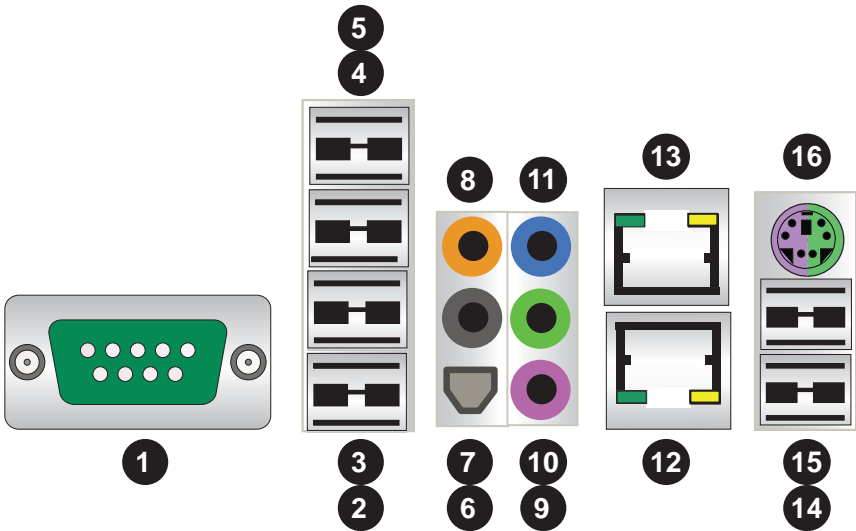
I/O Backpanel	
1. COM1 Port (Turquoise)	9. MIC In
2. USB 2.0 Port 0	10. Line Out
3. USB 2.0 Port 1	11. Line In
4. USB 2.0 Port 2	12. Gb LAN 1 Port
5. USB 2.0 Port 2	13. CGb LAN 2 Port
6. SPDIF Out	14. USB 3.0 Port 0 (or USB keyboard/mouse)
7. Surround Out	15. USB 3.0 Port 1 (or USB keyboard/mouse)
8. CEN/LFE Out	16. PS/2 Keyboard or Mouse

Figure 1-3. Front View of Workstation
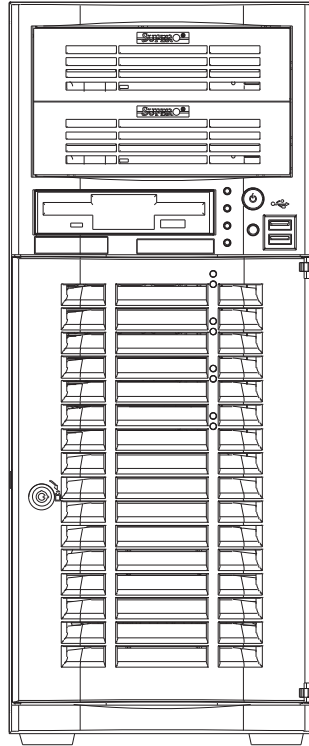
1-4 Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc.
	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
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Web Site:	www.supermicro.com.tw
Technical Support:	
Email:	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.

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 is 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
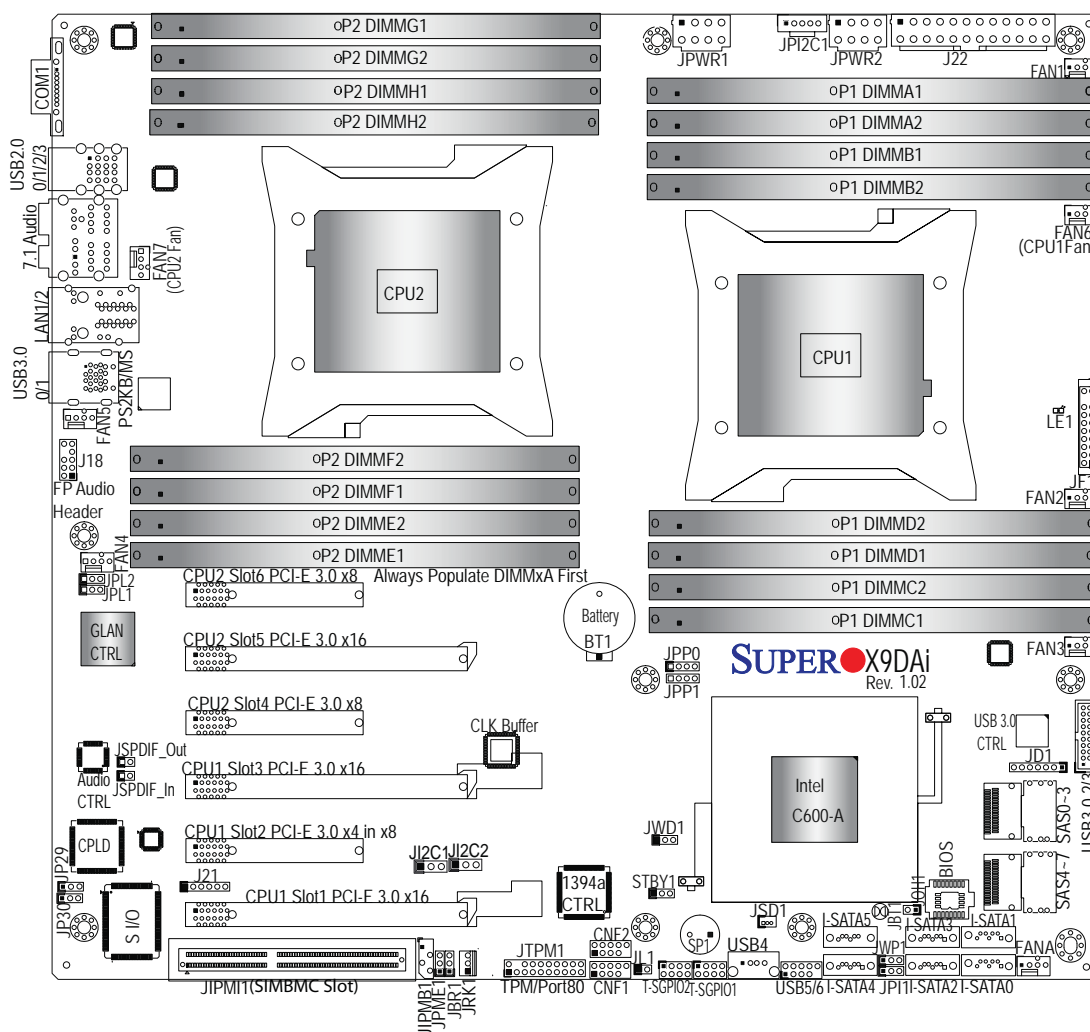
Motherboard Headers/Connectors

Jumper	Description	Default Setting
JBT1	Clear CMOS	See Section 5-10
JP4	SMBus En/Disable	Pins 1-2 (Enabled)
JPI1	IEEE1394a En/Disable	Pins 1-2 (Enabled)
JPL1/2	GLAN1/GLAN2 En/Disable	Pins 1-2 (Enabled)
JPME1	ME Recovery	Pins 2-3 (Normal)
JPP0	JTAG Scan	Pins 2-3 (CPU 1 only)
JPP1	JTAG Scan	Pins 2-3 (CPU 2 only)
JWD	Watch Dog	Pins 1-2 (Reset)
JWP1	Write Protect Enable	Pins 1-2 (Enabled)

Connector	Description
7.1 Audio	8 Channel (7.1) High-Definition Backplane Audio Connector
BT1	Onboard Battery
CNF1/CNF2	IEEE 1394a 1/2 Connectors
COM1	Backplane COM Port1
FAN1~7, FANA	CPU/System Fan Headers (Fan6/Fan7: CPU 1/2 Fans)
I-SATA 0~5	Intel SATA Ports 0~5 (SATA 0/1 = SATA3, SATA2~5 = SATA 2)
J18	Audio Header
J22	ATX 24-Pin Power Connector
JD1	Speaker/Power LED Indicator
JF1	Front Panel Control Header
JI^{2}C1	Power Supply SMBbus I^{2}C Header
JL1	Chassis Intrusion
JIPMI1	SIM_BMC Slot
JIPMB	4-pin External BMC I^{2}C Header (for an IPMI Card)
JPWR1/JPWR2	12V 8-Pin Power Connectors
JRK1	Option ROM Upgrade for the chipset
JSPDIF_In	SPDIF (Sony/Philips Digital Interface) In Header

2-4   Jumper Settings

Explanation of Jumpers

To modify the operation of the mother-
board, 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.
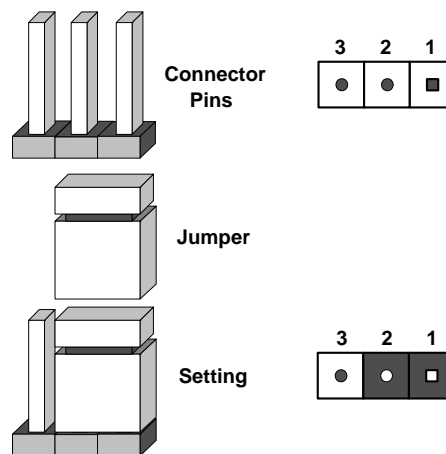
Clear CMOS (JBT1)

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 connec-
tion. 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.

GLAN 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.

GLAN Jumper Settings	
Jumper Setting	Definition
1-2	Enabled (default)
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	
Jumper Setting	Definition
Pins 1-2	Reset (default)
Pins 2-3	NMI
Open	Disabled

IEEE 1394a Enable/Disable

JPI1 allows you to enable or disable the onboard IEEE 1394a (Firewire) support. The default position is on pins 1 and 2 to use the 1394_1 and 1394_2 connections. See the table on the right for jumper settings.

1394a Jumper Settings	
Both Jumpers	Definition
Pins 1-2	Enabled
Pins 2-3	Disabled

Write Protect Enable/Disable

Close pins 1/2 of jumper JWP1 to enable write protect support for system security and data integrity. See the table on the right for jumper settings.

WriteProtect Jumper Settings	
Jumper Setting	Definition
Pins 1/2	Write_Protect Enable (Default)
Pins 2/3	Write_Protect Disable

Manufacture Mode

Jumper JPME1 allows the user to flash the system firmware from a host server to modify system settings. Close this jumper to bypass SPI flash security, and force ME into recovery mode in order to use recovery jumpers. See the table on the right for jumper settings.

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

JTAG Scan

The JTAG scan jumpers (JPP0/JPP1) allow the user to configure JTAG scan settings for system debugging. See the table on the right for jumper settings.

JTAG Scan (JPP0) Jumper Settings	
Jumper Setting	Definition
Pins 1/2, 3/4	including CPU2 in JTAG Scan
Pins 2/3 (Default)	JTAG Scan: CPU1 only

JTAG Scan (JPP1) Jumper Settings	
Jumper Setting	Definition
Pins 1/2, 3/4	including CPU1 in JTAG Scan
Pins 2/3 (Default)	JTAG Scan: CPU2 only

SMB Enable/Disable

Jumper JP4 allows the user to enable System Management Bus support. The default setting is 1-2 to enable support. See the table on the right for jumper settings.

SMB Jumper Settings	
Jumper Setting	Definition
1-2	Enabled (Default)
2-3	Disabled

2-5   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

An Onboard Power LED is located at LE1   on the serverboard. When this LED is on, the system is on. Be sure to turn off the system and unplug the power cord before removing or installing components. See the table at right for more information.

Onboard PWR LED Indicator (LE1) LED Definitions	
LED Color	Status
Off	System Off (PWR cable not connected)
Green	System On
Green: Flashing Quickly	ACPI S1 State
Green: Flashing Slowly	ACPI S3 (STR) State

2-6   SATA Ports

SATA Ports

Two SATA3 Ports (I-SATA0/1), colored in white, and four SATA2 Ports (I-SATA2~5) are located on the serverboard. These ports provide serial-link signal connections, which are faster than the connections of Parallel ATA. See the table on the right for pin definitions.

SATA Port Pin Definitions			
Pin#	Definition	Pin #	Definition
1	Ground	2	TXP
3	TXN	4	Ground
5	RXN	6	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-737A-i-MA015 features a removable side cover, allowing easy access to the system interior.

Removing the Side Cover

1. Begin by removing the two screws from the back lip of the side cover (this is the left cover when looking at the chassis from the front.)

2. Grab the handle and gently pull the side cover out to release it from its position.

3. Once the side cover is out of its position, slide the cover out of the chassis.

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.

Figure 3-1. Removing the Chassis Side Covers
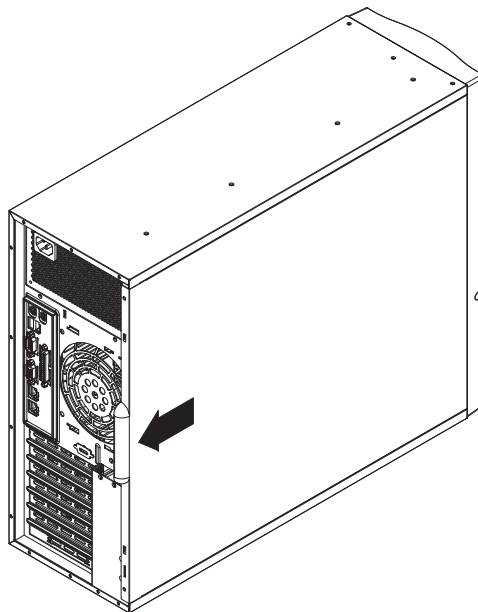
3-3 Adding PCI Add-On Cards

The PIO-737A-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. Removethe 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.

5. Refer to the Supermicro Web site for updates on CPU support.
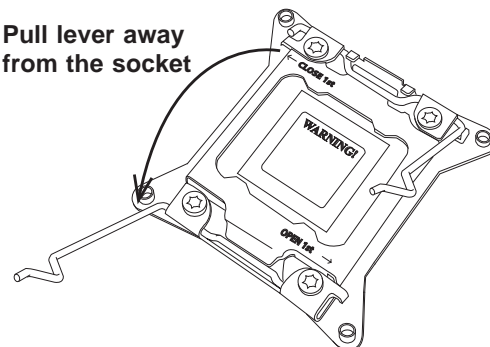
Installing an LGA 2011 Processor

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.
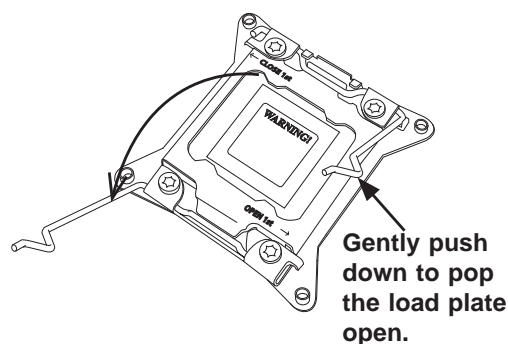
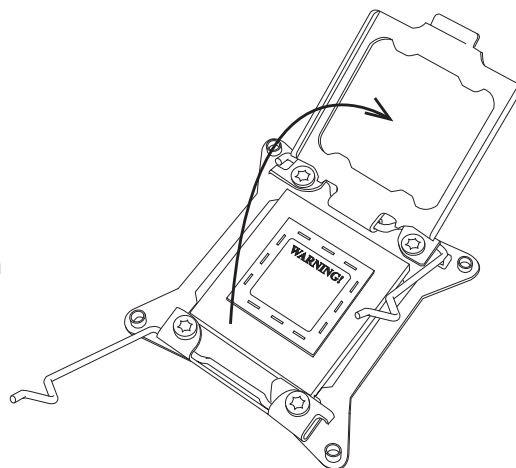**Press down on the lever labeled 'Close 1st'**
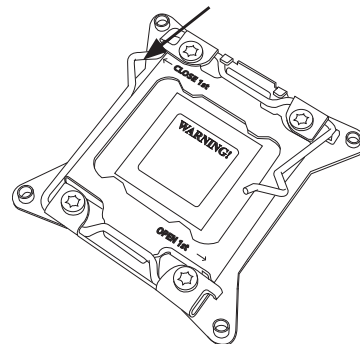
Pull lever away from the socket

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.

**Gently push
down to pop
the load plate
open.**

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 verti-
   cally and do not rub the
   CPU against any pins of
   the socket, which may
   damage the CPU or the
   socket.)

Socket Keys

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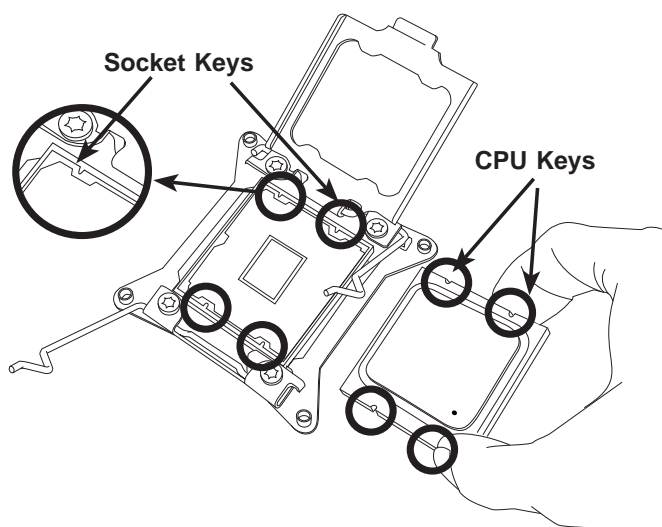
Caution: CPUs only install to the socket in one direction. Make sure that the CPU is properly inserted into the socket before closing the load plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the load plate again and double-check that the CPU is aligned properly.

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

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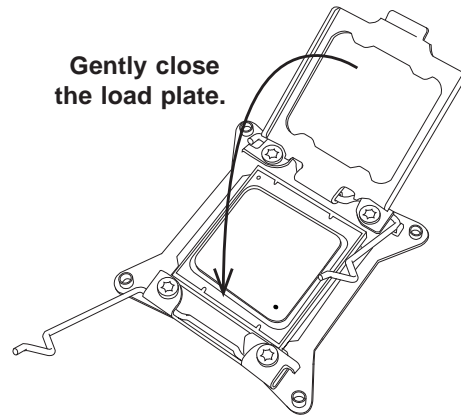
8. Close the load plate. Lock the lever labeled 'Close 1st', then lock the lever labeled 'Open 1st'. Use your thumb to gently push the load levers down until the lever locks.

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

Lever Lock

Push down and lock the lever labeled 'Open 1st'.
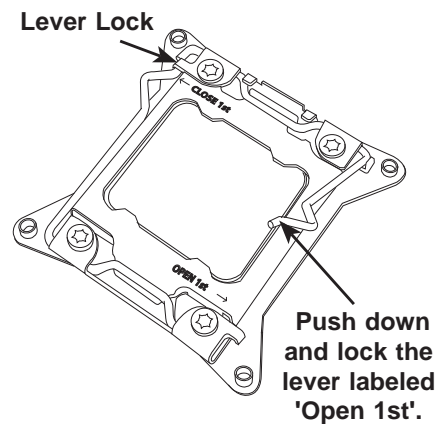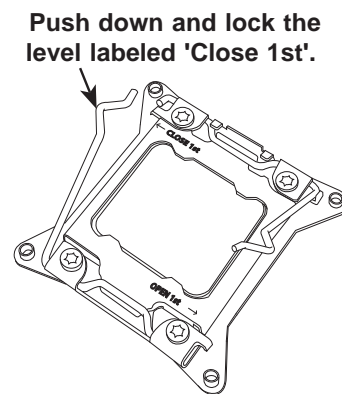
Installing a CPU Heat Sink

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
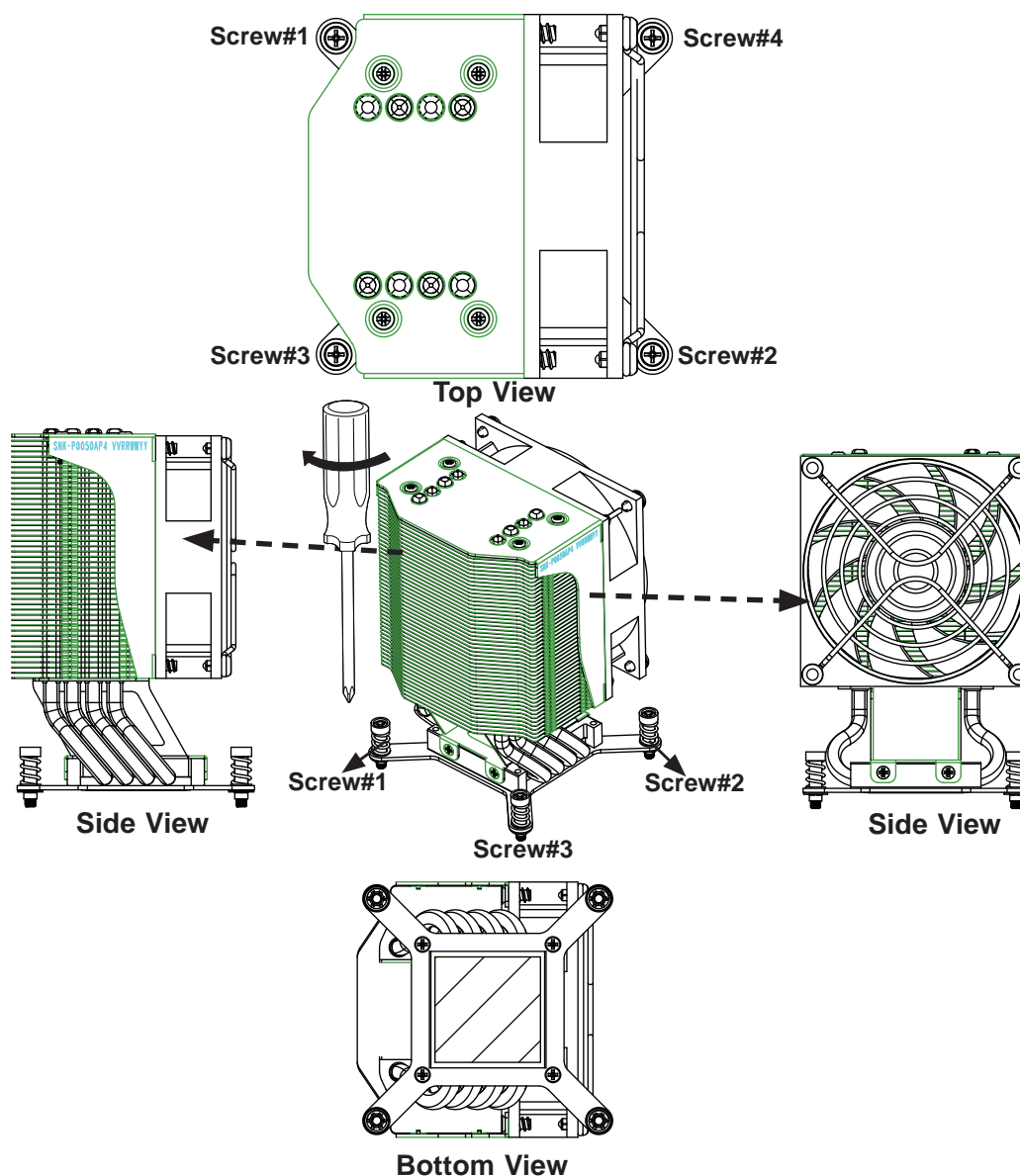
Removing the Heat Sink

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
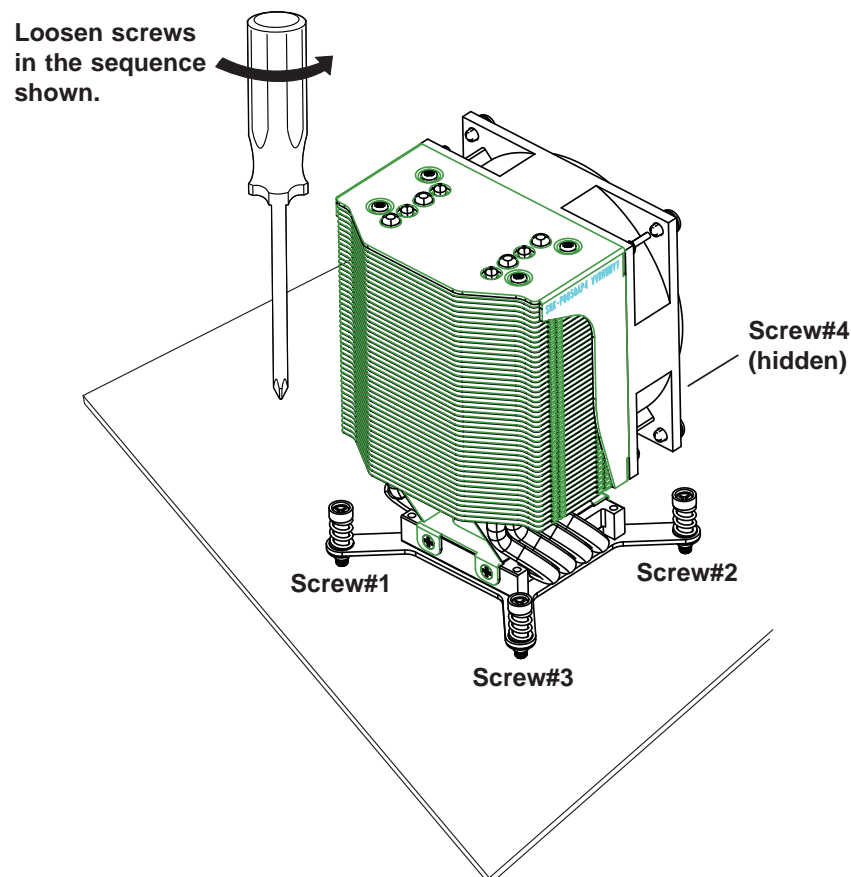
3-5 Installing Memory Modules

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.

Figure 3-4. 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.

Notch

Notch

Front View

Note: Notch should align with the receptive key point on the slot.

Release Tab

Release Tab

Top View of DDR3 Slot

Memory Support

The Super Workstation supports up to 512 GB of registered/unbuffered load reducing ECC DDR3 1333/1066/833 memory in 16 DIMM slots. For the latest memory updates, please refer to the product page on the Supermicro website.

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 serverboad 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.

Processors and their Corresponding DIMM Slots								
CPU#	**Corresponding DIMM Modules**							
CPU 1	P1-A1	P1-B1	P1-C1	P1-D1	P1-A2	P1-B2	P1-C2	P1-D2
CPU 2	P2-E1	P2-F1	P2-G1	P4-H1	P2-E2	P2-F2	P2-G2	P2-H2

Processor and Memory Module Population	
Number of CPUs+DIMMs	**CPU and Memory Population Configuration Table** **(For memory to work proper, please install DIMMs in pairs.)**
1 CPU & **2 DIMMs**	CPU1 P1-A1/P1-B1
1 CPU & **4 DIMMs**	CPU1 P1-A1/P1-B1, P1-C1/P1-D1
1 CPU & **5~8 DIMMs**	CPU1 P1-A1/P1-B1, P1-C1/P1-D1 + Any memory pairs in P1-A2/-B2/-C2/-D2 DIMM slots
2 CPUs & **4 DIMMs**	CPU1 + CPU2 P1-A1/P1-B1, P2-E1/P2-F1
2 CPUs & **6 DIMMs**	CPU1 + CPU2 P1-A1/P1-B1/ P1-C1, P2-E1/P2-F1/P2-G1
2 CPUs & **8 DIMMs**	CPU1 + CPU2 P1-A1/P1-B1/ P1-C1/P1-D1, P2-E1/P2-F1/P2-G1/P2-H1
2 CPUs & **10~16 DIMMs**	CPU1/CPU2 P1-A1/P1-B1/ P1-C1/P1-D1/P1-A2, P2-E1/P2-F1/P2-G1/P2-H1+/P2-E2, Any memory pairs in P1, P2 DIMM slots

UDIMM Memory Support							
Ranks Per DIMM & Data Width	Memory Capacity Per DIMM (Note 1)			Speed (MT/s) and Voltage Validated by Slot Per Channel (SPC) and DIMM Per Channel (DPC) (Notes 2, 3, 4)			
				2 Slots Per Channel			
				1DPC		2DPC	
				1.35V	1.5V	1.35V	1.5V
SRx8 Non-ECC	1GB	2GB	4GB	n/a	1066, 1333	n/a	1066, 1333
DRx8 Non-ECC	2GB	4GB	8GB	n/a	1066, 1333	n/a	1066, 1333
SRx16 Non-ECC	512MB	1GB	2GB	n/a	1066, 1333	n/a	1066, 1333
SRx8 ECC	1GB	2GB	4GB	1066, 1333	1066, 1333	1066	1066, 1333
DRx8 ECC	2GB	4GB	8GB	1066, 1333	1066, 1333	1066	1066, 1333

Notes:
1. 1Gb/2Gb/4Gb DRAMs are supported; however, only 2Gb and 4Gb DRAMs are validated.
2. Command Address Timing is 1N for 1DPC and 2N for 2DPC.
3. ES-4600 4S platforms do not support 3DPC UDIMMs.
4. Please refer to the ES-4600 Platform Design Guide for memory population rules.

RDIMM Memory Support							
Ranks Per DIMM & Data Width	Memory Capacity Per DIMM (Note 1)			Speed (MT/s) and Voltage Validated by Slot Per Channel (SPC) and DIMM Per Channel (DPC) (Notes 2, 3, 4)			
				2 Slots Per Channel			
				1DPC		2DPC	
				1.35V	1.5V	1.35V	1.5V
SRx8	1GB	2GB	4GB	1066, 1333	1066, 1333	1066	1066, 1333
DRx8	2GB	4GB	8GB	1066, 1333	1066, 1333	1066	1066, 1333
SRx4	2GB	4GB	8GB	1066, 1333	1066, 1333	1066	1066, 1333
DRx4	4GB	8GB	16GB	1066, 1333	1066, 1333	1066	1066, 1333
QRx4	8GB	16GB	32GB	800	1066	800	800
QRx8	4GB	8GB	16GB	800	1066	800	800

Notes:
1. 1Gb/2Gb/4Gb DRAMs are supported; however, only 2Gb and 4Gb DRAMs are validated.
2. Command Address Timing is 1N.
3. Please refer to the ES-4600 Platform Design Guide for memory population rules.
4. QR RDIMMs are supported but not validated. Memory testing are limited to system level testing. Signal integrity testing in interoperability testing are not performed. The passing QR RDIMMs will be posted on the website.

LRDIMM Memory Support				
Ranks Per DIMM & Data Width (Note 1)	Memory Capacity Per DIMM (Note 2)		Speed (MT/s) and Voltage Validated by Slot Per Channel (SPC) and DIMM Per Channel (DPC) (Notes 3, 4, 5, 6)	
			2 Slots Per Channel	
			1DPC/2DPC	
			1.35V	1.5V
QRx4 (DDP) (Note 7)	16GB	32GB	1066	1066, 1333
QRx8 (P) (Note 8)	8GB	16GB	1066	1066, 1333

Notes:
1. Physical Rank is used to calculate DIMM capacity.
2. Command Address Timing is 1N.
3. Only 2Gb/4Gb DRAMs are supported and validated.
4. The speeds listed are estimated only and will be verified through simulation.
5. Please refer to the ES-4600 Platform Design Guide for memory population rules.
6. For 3SPC/3DPC-Rank Multiplication (RM) is >=2.
7. DDP is for Dual Die Package DRAM stacking.
8. "P" Means "Planer Monolithic DRAM Die."

Notes and Restrictions

- For the memory modules to work properly, please install DIMM modules in pairs (with an even number of DIMMs installed).

- All channels in a system will run at the fastest common frequency.

3-6   System Fan

A 12-cm chassis cooling fan housed in a fan duct is located just below the peripheral drive bays to provide cool air intake for the system.

Preparation

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

Removing a Fan

1.   Release the clips that secure the fan duct to the chassis. You can then pull the fan duct out from its location in the chassis.

2.   Remove the four screws at the front of the fan duct that hold the fan in place. Then release the two fasteners along the side of the fan duct.

3.   You can now separate it into two pieces and easily remove the fan. Add a new fan of the same type.

Installing a New Fan

1.   Replace the failed fan with an identical one (available from Supermicro)

2.   Install it in the same position and orientation as the one you removed.

3.   Check that the fan is working, then replace the chassis cover.

Figure 3-5. Removing the Fan Duct Assembly
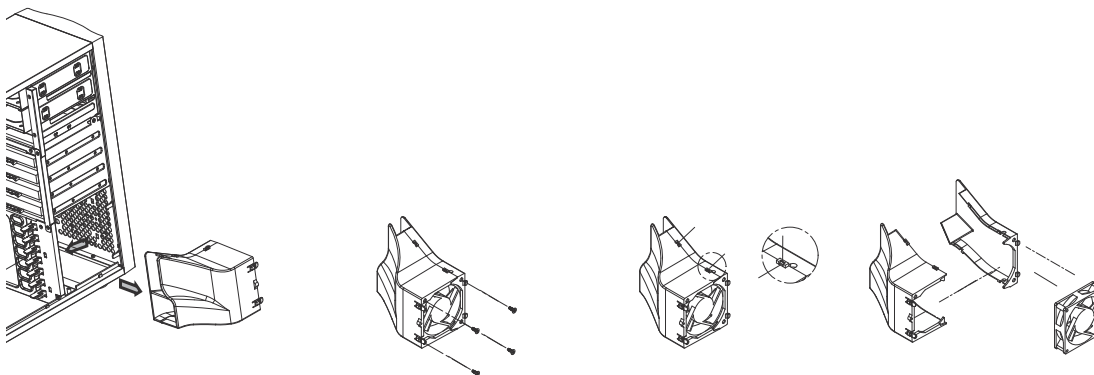
3-7   Hard Drive Installation

A total of four SATA drives may be housed in the PIO-737A-i-MA015. The drive IDs are preconfigured as 0 through 3 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

The SATA drives are hot-pluggable, meaning they can be removed and installed without powering down the system.

Removing SATA Drives

1. To remove a carrier, first open the front bezel then push the release button located beside the drive LEDs.

2. Swing the colored handle fully out and use it to pull the unit straight out.

Mounting a SATA Drive in a Drive Carrier

1. Insert the drive into the carrier with the printed circuit board side facing down so that the mounting holes align with those in the carrier.

2. Secure the drive to the carrier with four screws.

3. Insert the carrier back into the empty bay.

4. When fully in, close the handle to seat the carrier into the back plane.
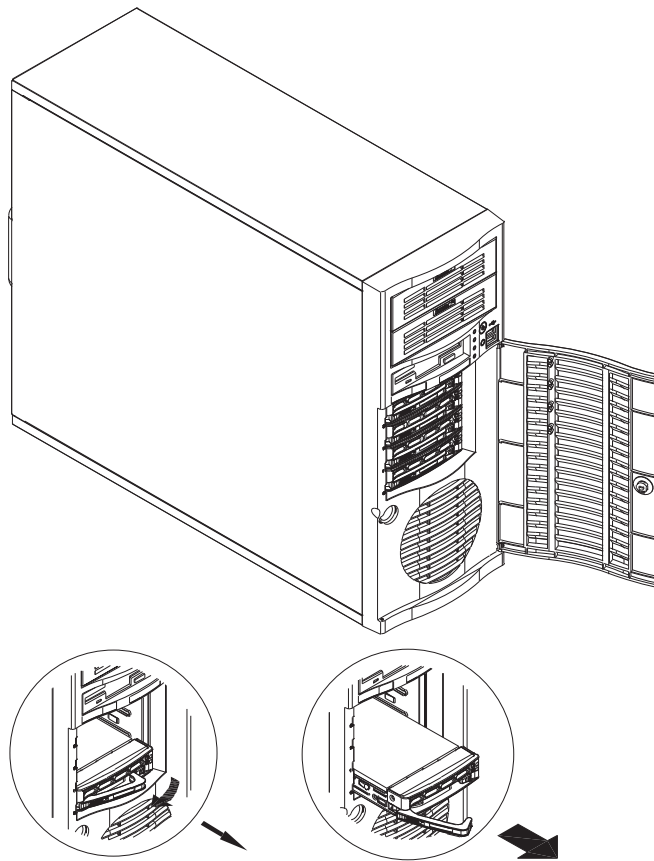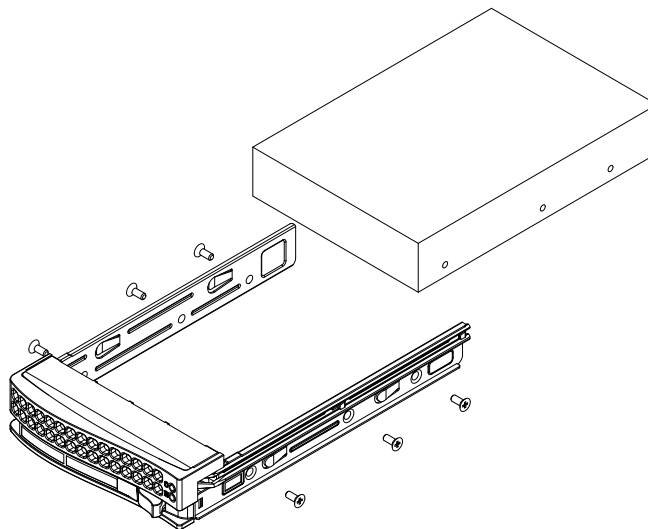
Figure 3-6. Removing the Drive Carrier

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

Installing Components in the 5.25" Drive Bays

The PIO-737A-i-MA015 has two 5.25" drive bays above the SATA drive bays. Components such as a hard drives or CD-ROM drives can be installed in these 5.25" drive bays.

Preparation

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

Accessing the Drive Bays

1. Remove the top/left chassis cover to access the interior of the system.

2. With the cover off, remove the two or four screws that secure the drive bay to the chassis (one side only) then push the entire empty drive carrier out from the back.

Adding a CD-ROM Drive

1. Remove the guide plate from right side of the empty drive carrier and screw it into the right side of the CD-ROM drive using the holes provided.

2. Slide the CD-ROM into the bay and secure it to the chassis with the drive carrier screws you first removed.

3. Attach the power and data cables to the drive.

4. Replace the top/left chassis cover before restoring power to the system.

Adding a Hard Drive

1. Install a hard drive into one of the removed empty drive carriers with the printed circuit board side toward the carrier so that the drive's mounting holes align with those in the carrier.

2. Secure the drive to the carrier with four screws then slide the assembly into the bay and secure it to the chassis with the drive carrier screws you first removed.

3. Attach the power and data cables to the drive.

4. Replace the top/left chassis cover before restoring power to the system.

Figure 3-8. Adding a Component Without a Drive Carrier
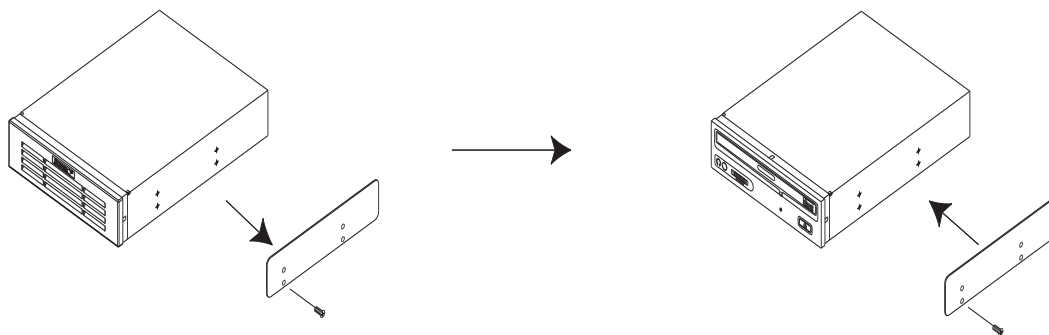
3-8   Power Supply

The PIO-737A-i-MA015 includes a single 665 Watt power supply. In the unlikely event that it becomes necessary to replace the power supply, follow the instructions below..

Preparation

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

Changing the Power Supply

1. Remove the power supply connectors going to the motherboard and the SATA backplane.

2. Remove the screws that secure the unit to the mounting brackets in the chassis and then pull the unit completely out.

3. Replace the failed power supply with another having the exact same part number (PWS-665-PQ). Gently but firmly push the new unit all the way into the open bay.

4. Secure it to the mounting brackets in the chassis with the screws provided.

5. Connect two power cables to the SATA backplane and two to the motherboard power connectors.

6. Finish by replacing the chassis left cover and then restoring power to 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 3-9. Installing the Onboard Battery
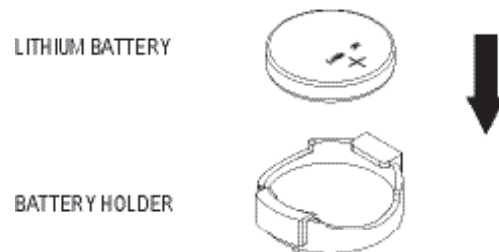
Please handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency 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)
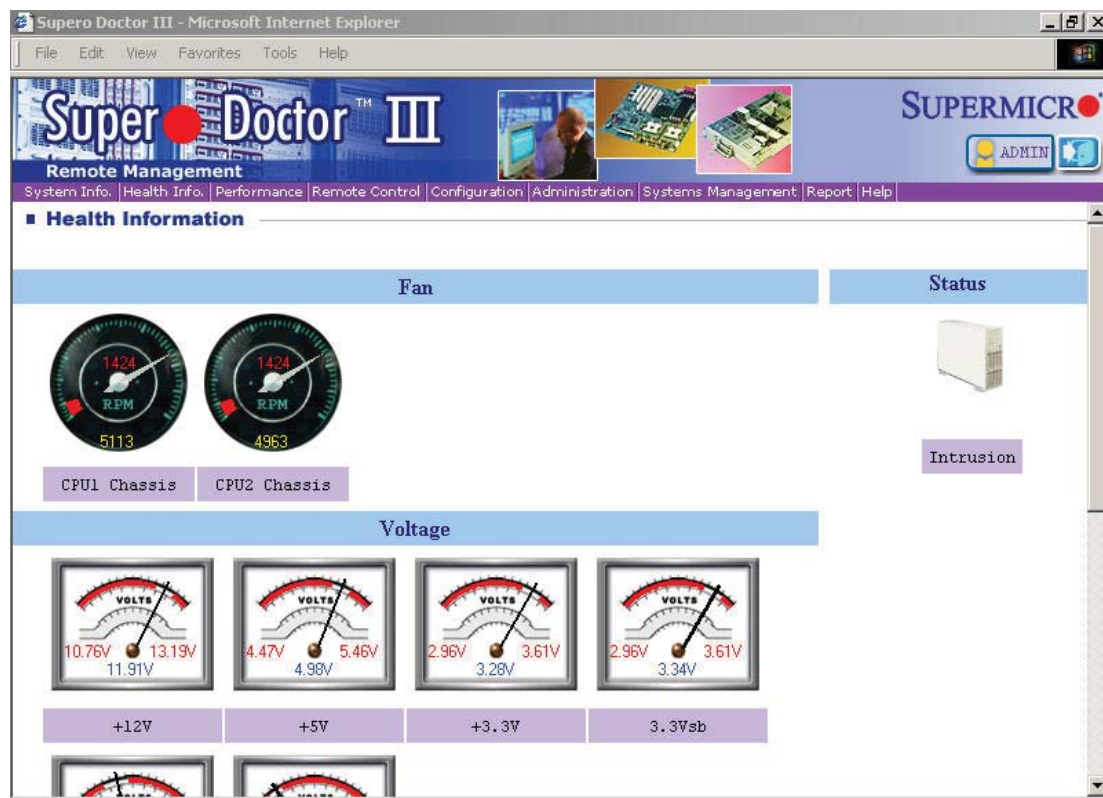
Supero Doctor III Interface Display Screen (Remote Control)

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

Two Intel E5-2600 processors in LGA 2011 sockets

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

Chipset

Intel C600

BIOS

8 Mb AMI SPI Flash EEPROM

Memory Capacity

Sixteen DIMM sockets supporting up to 512 GB of registered/unbuffered ECC DDR3-1333/1066/800 LRDIMMs

Note: See the memory section for details.

SATA Controller

Intel on-chip controller for six-port SATA 3.0/2.0 (RAID supported)

Drive Bays

Eight hot-swap drive bays to house eight SAS or six SATA drives

Peripheral Drive Bays

Two 5.25" drive bays

Expansion Slots

Supports the use of six standard size PCI add-on cards: three PCI-E 3.0 x16, two PCI-E 3.0 x8 and one PCI-E 3.0 x4 slots.

Motherboard

X9DAi (Extended ATX form factor)
Dimensions: 12" x 13" (305 x 330 mm)

Chassis

SC733TQ-665B (Mid-tower)

Dimensions: (WxHxD) 7 x 16.8 x 20.9 in. (178 x 427 x 531 mm)

Weight

Gross (Bare Bone): 43 lbs. (19.5 kg.)

System Cooling

One 12-cm chassis fan

System Input Requirements

AC Input Voltage: 100-240 VAC

Rated Input Current: 10A (100V) to 5A (240V)

Rated Input Frequency: 50/60 Hz

Power Supply

Rated Output Power: 665W (Part# PWS-665-PQ)

Rated Output Voltages: +3.3V (24A), +5V (30A), +12V (54A), -12V (0.5A), +5Vsb (6A)

Operating Environment

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

Non-Operating Temperature: -40º to 70º C (-40º to 158º 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"

Notes

(continued from front)

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