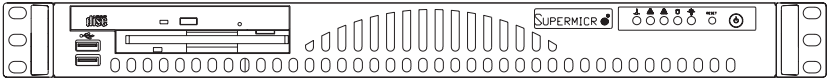


SUPERO[®]

SUPERSERVER 5013C-M



USER'S MANUAL

Revision 1.0a

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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 5013C-M. Installation and maintenance should be performed by experienced technicians only.

The SuperServer 5013C-M is a high-end single processor mini 1U rackmount server based on the SC512C 1U rackmount server chassis and the Super P4SCi motherboard. The P4SCi supports a single Intel® Pentium® 4 processor of up to 3.40 GHz (processors must be 0.13 micron technology).

Manual Organization

Chapter 1: Introduction

The first chapter provides a checklist of the main components included with the server system and describes the main features of the Super P4SCi motherboard and the SC512C chassis.

Chapter 2: Server Installation

This chapter describes the steps necessary to install the SuperServer 5013C-M into a rack and check out the server configuration prior to powering up 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 5013C-M.

Chapter 5: Advanced Motherboard Setup

Chapter 5 provides detailed information on the P4SCi 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 SC512C 1U rackmount server 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: BIOS POST Messages

Appendix B: BIOS POST Codes

Appendix C: Installing Software and Drivers

Appendix D: System Specifications

Notes

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Chapter 1

Introduction

1-1 Overview

The Supermicro SuperServer 5013C-M is a high-end single processor, mini 1U rackmount server. The 5013C-M is comprised of two main subsystems: the SC512C-260 chassis and the P4SCi motherboard. The P4SCi supports a single 478-pin Intel® Pentium® 4 microPGA processor at up to 3.40 GHz with HT (hyper-threading) technology or a single Intel Celeron® processor of up to 2.40 GHz and up to 4 GB of ECC or non-ECC unbuffered DDR400/333/266 SDRAM memory. Please refer to our web site for information on operating systems that have been certified for use with the 5013C-M (www.supermicro.com) and for regular updates on supported processor speeds.

In addition to the motherboard and chassis, various hardware components may have been included with the 5013C-M, as listed below.

- One CPU heatsink (SNK-P0002)
- One (1) slim floppy drive
- One (1) slim CD-ROM drive
- One (1) IDE cable
- One (1) 3.3V 64-bit, 66 MHz PCI-X slot riser card (CSE-RR1U-X)
- Rackmount hardware with screws (CSE-PT8) (optional):
 - Two (2) rack rail assemblies
 - Six (6) brackets for mounting the rack rails in a rack/telco rack
- One (1) CD containing drivers and utilities
- SuperServer 5013C-M User's Manual

1-2 Motherboard Features

At the heart of the SuperServer 5013C-M lies the P4SCi, a single processor motherboard designed to provide maximum performance. Below are the main features of the P4SCi.

Chipset Overview

The P4SCi is based on Intel's E7210 chipset (see Figure 1-1 for a block diagram). The E7210 chipset is made up of two main components:

The Memory Controller Hub (MCH)

The I/O Controller Hub (6300ESB)

Memory Controller Hub (MCH)

The MCH controls the flow of data between the host (CPU) interface, the memory interface and the I/O Controller Hub interface. It contains advanced power management logic and supports dual-channel (interleaved) DDR memory, providing bandwidth of up to 6.4 GB/s using DDR400 SDRAM. The MCH supports configurations of a 800 MHz FSB with a 400/333 memory interface, a 533 MHz FSB with a 333/266 memory interface, and a 400 MHz FSB with a 266 MHz memory interface.

The MCH supports 128 MB, 256 MB, 512 MB, 1 GB, x4, x8, and x16 DDR. Maximum system memory supports up to 4.0 GB for dual-channel, ECC or Non-ECC unbuffered DDR. Registered and/or mixed-mode DIMMs are not supported. For more information, please refer to Chapter 5.

I/O Controller Hub (6300ESB)

The 6300ESB ICH controller hub provides the I/O subsystem with access to the rest of the system. It integrates a dual-channel Ultra ATA/100 bus master IDE controller, two Serial ATA (SATA) host controllers, the SMBus 2.0 controller, the LPC/Flash BIOS interface, the PCI-X (66MHz) 1.0 interface, the PCI 2.2 interface and the System Management Controller.

Processors

The P4SCi supports a single Intel Pentium 4 processor of up to 3.40 GHz with hyper-threading technology in a 478-pin microPGA socket or a single Intel Celeron processor of up to 2.40 GHz. (Pentium 4 processors must be 0.13 micron technology.) Please refer to the support section of our web site for a complete listing of supported processors (<http://www.supermicro.com/support>).

Memory

The P4SCi has four (4) 184-pin DIMM sockets that can support up to 4 GB of ECC or non-ECC unbuffered DDR400/333/266 SDRAM modules. (Memory operates in a dual-channel, or interleaved configuration for increased performance.) Low-profile memory modules are required for use in the 1U form factor of the 5013C-M. Module sizes of 128 MB, 256 MB, 512 MB and 1 GB may be used to populate the DIMM slots.

Serial ATA

A Serial ATA controller is incorporated into the E7210 chipset to provide a two-port Serial ATA subsystem. The Serial ATA drive is not hot-swappable.

PCI Expansion Slots

The P4SCi has two 32-bit, 33 MHz (5V) PCI slots and two 64-bit, 66 MHz (3.3V) PCI-X slots. When incorporated into the 5013C-M server system, one 64-bit, 66 MHz PCI-X slot is available with the use of a riser card, which supports one full-size, half-length PCI card.

Ethernet Ports

The E7210 includes an on-chip Gb Ethernet controller and the P4SCi has an additional Gb Ethernet controller to support a total of two Gigabit LAN ports.

Onboard Controllers/Ports

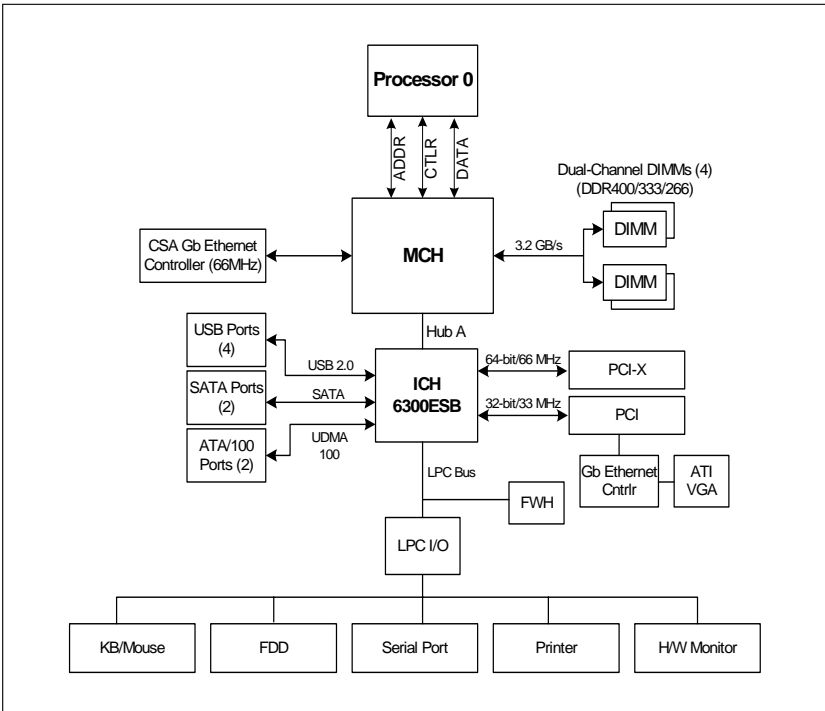
An onboard IDE controller supports one floppy drive and up to four Ultra ATA 100 hard drives or ATAPI devices. Onboard I/O backpanel ports include one serial COM port, one parallel port, four USB ports, PS/2 mouse and keyboard ports and two GLAN (RJ45) ports.

Other Features

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

**Figure 1-1 . Intel E7210 Chipset:
System Block Diagram**

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



1-3 Server Chassis Features

The SuperServer 5013C-M is a mini 1U rackmount server platform configuration. The following is a general outline of the main features of the SC512C-260 chassis.

System Power

When configured as a SuperServer 5013C-M, the SC512C-260 chassis includes a single 260W power supply.

Control Panel

The SC512C-260's control panel provides important system monitoring and control information. LEDs indicate power on, network activity, hard disk drive activity, overheat warning and drive failure. The control panel also includes a main power button and a system reset button.

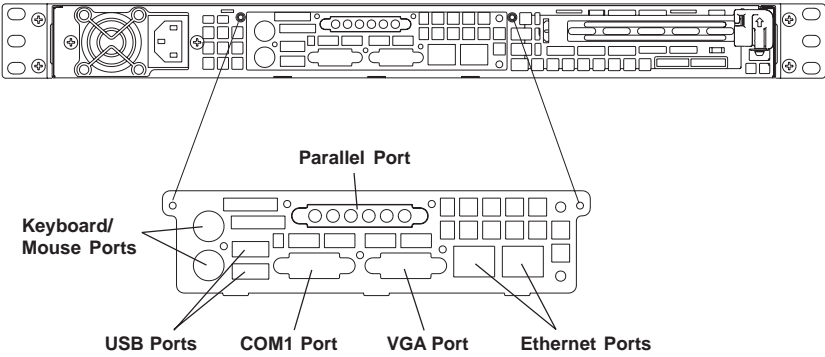
Rear I/O Panel

The rear I/O panel on the SC512C-260 provides one motherboard expansion slot, one COM port (another is internal), two USB ports, PS/2 mouse and keyboard ports, a graphics port and two Gb Ethernet ports. (See Figure 1-2.)

Cooling System

The SC512C chassis has an innovative cooling design that features a 10-cm blower system cooling fan. The blower fan plugs into a chassis fan header on the motherboard and operates at full rpm continuously.

Figure 1-2. Rear I/O Panel



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