Intel® Entry Server Board SE7221BA1-E User Guide

A Guide for Technically Qualified Assemblers of Intel® Identified Subassemblies/Products

Order Number: C92730-002

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Preface

About this Manual

Thank you for purchasing and using the Intel® Entry Server Board SE7221BA1-E.

This manual is written for system technicians who are responsible for troubleshooting, upgrading, and repairing this server board. This document provides a brief overview of the features of the board/chassis, a list of accessories or other components you may need, troubleshooting information, and instructions on how to add and replace components on the Intel® Entry Server Board SE7221BA1-E. For the latest version of this manual, refer to http://support.Intel.com/support/motherboards/server/SE7221BA1-E/.

Manual Organization

Chapter 1 provides a brief overview of the Intel® Entry Server Board SE7221BA1-E. In this chapter, you will find a list of the server board features, photos of the product, and product diagrams to help you identify components and their locations.

Chapter 2 provides instructions on adding and replacing components. Use this chapter for step-by-step instructions and diagrams for installing or replacing components such as the memory, processor, and the battery, among other components.

Chapter 3 provides instructions on using the utilities that are shipped with the board or that may be required to update the system. This includes how to perform a BIOS update, and how to reset the password or CMOS. Information about the specific BIOS settings and screens is available in the *Intel® Entry Server Board Technical Product Specification*. See "Additional Information and Software" for a link.

Chapter 4 provides troubleshooting information. In this chapter, you will find BIOS error messages and POST code messages. You will also find suggestions for performing troubleshooting activities to identify the source of a problem.

Product Accessories

You may need or want to purchase one or more of the following accessory items for your server:

Processor, memory DIMMs, hard drive, floppy drive, CDROM or DVDROM drive, RAID controller, operating system.

Additional Information and Software

If you need more information about this product or information about the accessories that can be used with this server board, use the following resources. These files are available at:

http://support.Intel.com/support/motherboards/server/SE7221BA1-E/.

If a link is not listed below, type the document or software name in the search field at the **left** side of the screen and select the option to search "This Product."

For this information or software	Use this Document or Software
For in-depth technical information about this product, including BIOS settings and chipset information	Intel® Entry Server Board SE7221BA1-E Technical Product Specification http://support.Intel.com/support/motherboards/server/SE7221BA1-E/sb/CS-020016.htm
If you just received this product and need to install it	Intel® Entry Server Board SE7221BA1-E Quick Start User's Guide in the product box or at: http://support.Intel.com/support/motherboards/server/SE7221BA1-E/sb/CS-020024.htm
For virtual system tours and interactive repair information	A link to the Intel® SMaRT Tool is available under "Other Resources" at the right side of the screen at: http://support.Intel.com/support/motherboards/server/SE7221BA1-E/
Accessories or other Intel® server products	Spares and Configuration Guide http://support.Intel.com/support/motherboards/server/SE7221BA1-E/sb/CS-020022.htm
Hardware (peripheral boards, adapter cards) and operating systems that have been tested with this product	Tested Hardware and Operating System List http://support.Intel.com/support/motherboards/server/SE7221BA1-E/sb/CS-020021.htm
Chassis that have been tested with this product	Reference Chassis List http://support.Intel.com/support/motherboards/server/SE7221BA1-E/sb/CS-020029.htm
Processors that have been tested with this product	Supported Processors http://support.Intel.com/support/motherboards/server/SE7221BA1-E/sb/CS-020019.htm
DIMMs that have been tested with this product	Supported Memory http://support.Intel.com/support/motherboards/server/SE7221BA1-E/sb/CS-020020.htm
To make sure your system falls within the allowed power budget	Power Budget
For software to manage your Intel® server	Intel® Server Management
For drivers	Driver (for an extensive list of drivers available) Operating System Driver (for operating system drivers) http://downloadfinder.intel.com/scripts-df/Product_Filter.asp?ProductID=1959
For firmware and BIOS updates	Firmware Update http://downloadfinder.intel.com/scripts-df/Product_Filter.asp?ProductID=1959
For diagnostics test software	Diagnostics http://downloadfinder.intel.com/scripts-df/Product_Filter.asp?ProductID=1959

Safety Information

⚠️ **WARNING**

Before working with your server product, whether you are using this guide or any other resource as a reference, pay close attention to the safety instructions. You must adhere to the assembly instructions in this guide to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products / components will void the UL listing and other regulatory approvals of the product and will most likely result in noncompliance with product regulations in the region(s) in which the product is sold.

⚠️ Warnings

System power on/off: The power button DOES NOT turn off the system AC power. To remove power from system, you must unplug the AC power cord from the wall outlet. Make sure the AC power cord is unplugged before you open the chassis, add, or remove any components.

Hazardous conditions, devices and cables: Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the server and disconnect the power cord, telecommunications systems, networks, and modems attached to the server before opening it. Otherwise, personal injury or equipment damage can result.

Electrostatic discharge (ESD) and ESD protection: ESD can damage disk drives, boards, and other parts. We recommend that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground—any unpainted metal surface—on your server when handling parts.

ESD and handling boards: Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

Installing or removing jumpers: A jumper is a small plastic encased conductor that slips over two jumper pins. Some jumpers have a small tab on top that you can grip with your fingertips or with a pair of fine needle nosed pliers. If your jumpers do not have such a tab, take care when using needle nosed pliers to remove or install a jumper; grip the narrow sides of the jumper with the pliers, never the wide sides. Gripping the wide sides can damage the contacts inside the jumper, causing intermittent problems with the function controlled by that jumper. Take care to grip with, but not squeeze, the pliers or other tool you use to remove a jumper, or you may bend or break the pins on the board.

Safety Cautions

Read all caution and safety statements in this document before performing any of the instructions. See also *Intel® Server Boards and Server Chassis Safety Information* on the Resource CD and/or at http://support.Intel.com/support/motherboards/server/sb/cs-010770.htm.

SAFETY STEPS: Whenever you remove the chassis covers to access the inside of the system, follow these steps:

1. Turn off all peripheral devices connected to the system.
2. Turn off the system by pressing the power button.
3. Unplug all AC power cords from the system or from wall outlets.
4. Label and disconnect all cables connected to I/O connectors or ports on the back of the system.
5. Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground of the system—any unpainted metal surface—when handling components.
6. Do not operate the system with the chassis covers removed.
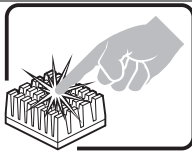
A microprocessor and heat sink may be hot if the system has been running. Also, there may be sharp pins and edges on some board and chassis parts. Contact should be made with care. Consider wearing protective gloves.

Wichtige Sicherheitshinweise

Lesen Sie zunächst sämtliche Warn- und Sicherheitshinweise in diesem Dokument, bevor Sie eine der Anweisungen ausführen. Beachten Sie hierzu auch die Sicherheitshinweise zu Intel®-Serverplatinen und -Servergehäusen auf der Ressourcen-CD oder unter http://support.Intel.com/support/motherboards/server/sb/cs-010770.htm.

SICHERHEISMASSNAHMEN: Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten:

1. Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus.
2. Schalten Sie das System mit dem Hauptschalter aus.
3. Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose.
4. Auf der Rückseite des Systems beschriften und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab.
5. Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden.
6. Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein.
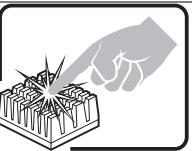
Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen.

重要安全指导

在执行任何指令之前，请阅读本文档中的所有注意事项及安全声明。参见 Resource CD（资源光盘） 和/或http://support.Intel.com/support/motherboards/server/sb/cs-010770.htm 上的 *Intel® Server Boards and Server Chassis Safety Information*（《Intel® 服务器主板与服务器机箱安全信息》）。
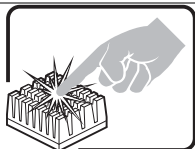
Consignes de sécurité

Lisez attention toutes les consignes de sécurité et les mises en garde indiquées dans ce document avant de suivre toute instruction. Consultez *Intel® Server Boards and Server Chassis Safety Information* sur le CD Resource CD ou bien rendez-vous sur le site http://support.Intel.com/support/motherboards/server/sb/cs-010770.htm.
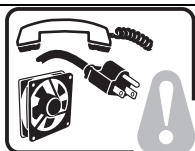
	CONSIGNES DE SÉCURITÉ -Lorsque vous ouvrez le boîtier pour accéder à l'intérieur du système, suivez les consignes suivantes: 1. Mettez hors tension tous les périphériques connectés au système. 2. Mettez le système hors tension en mettant l'interrupteur général en position OFF (bouton-poussoir). 3. Débranchez tous les cordons d'alimentation c.a. du système et des prises murales. 4. Identifiez et débranchez tous les câbles reliés aux connecteurs d'E-S ou aux accès derrière le système. 5. Pour prévenir les décharges électrostatiques lorsque vous touchez aux composants, portez une bande antistatique pour poignet et reliez-la à la masse du système (toute surface métallique non peinte du boîtier). 6. Ne faites pas fonctionner le système tandis que le boîtier est ouvert.
	Le microprocesseur et le dissipateur de chaleur peuvent être chauds si le système a été sous tension. Faites également attention aux broches aiguës des cartes et aux bords tranchants du capot. Nous vous recommandons l'usage de gants de protection.

Instrucciones de seguridad importantes

Lea todas las declaraciones de seguridad y precaución de este documento antes de realizar cualquiera de las instrucciones. Vea *Intel® Server Boards and Server Chassis Safety Information* en el CD Resource y/o en http://support.Intel.com/support/motherboards/server/sb/cs-010770.htm.

	INSTRUCCIONES DE SEGURIDAD: Cuando extraiga la tapa del chasis para acceder al interior del sistema, siga las siguientes instrucciones: 1. Apague todos los dispositivos periféricos conectados al sistema. 2. Apague el sistema presionando el interruptor encendido/apagado. 3. Desconecte todos los cables de alimentación CA del sistema o de las tomas de corriente alterna. 4. Identifique y desconecte todos los cables enchufados a los conectores E/S o a los puertos situados en la parte posterior del sistema. 5. Cuando manipule los componentes, es importante protegerse contra la descarga

electrostática (ESD). Puede hacerlo si utiliza una muñequera antiestática sujetada a la toma de tierra del chasis — o a cualquier tipo de superficie de metal sin pintar.

6.   No ponga en marcha el sistema si se han extraído las tapas del chasis.
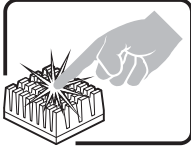
Si el sistema ha estado en funcionamiento, el microprocesador y el disipador de calor pueden estar aún calientes. También conviene tener en cuenta que en el chasis o en el tablero puede haber piezas cortantes o punzantes. Por ello, se recomienda precaución y el uso de guantes protectores.

AVVERTENZA: Italiano

PASSI DI SICUREZZA: Qualora si rimuovano le coperture del telaio per accedere all'interno del sistema, seguire i seguenti passi:

1.   Spegnere tutti i dispositivi periferici collegati al sistema.

2.   Spegnere il sistema, usando il pulsante spento/acceso dell'interruttore del sistema.

3.   Togliere tutte le spine dei cavi del sistema dalle prese elettriche.

4.   Identificare e sconnettere tutti i cavi attaccati ai collegamenti I/O od alle prese installate sul retro del sistema.

5.   Qualora si tocchino i componenti, proteggersi dallo scarico elettrostatico (SES), portando un cinghia anti-statica da polso che è attaccata alla presa a terra del telaio del sistema – qualsiasi superficie non dipinta – .

6.   Non far operare il sistema quando il telaio è senza le coperture.
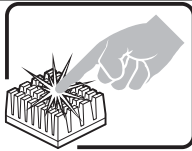
Se il sistema è stato a lungo in funzione, il microprocessore e il dissipatore di calore potrebbero essere surriscaldati. Fare attenzione alla presenza di piedini appuntiti e parti taglienti sulle schede e sul telaio. È consigliabile l'uso di guanti di protezione.

Contents

Figures

Tables

1   Server Board Features

This chapter briefly describes the main features of the Intel® Entry Server Board SE7221BA1-E. Provided is a photograph of the product, a list of the server board features, and diagrams showing the location of important components and connections on the server board.

The Intel® Entry Server Board SE7221BA1-E is shown in the following picture.
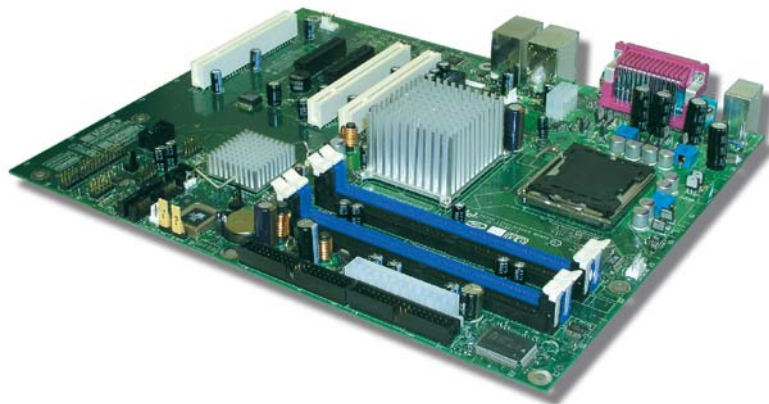
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Figure 1. Intel® Entry Server Board SE7221BA1-E

Table 1 summarizes the major features of the server board.

Table 1. Server Board Features

Feature	Description
Processors	Support for an Intel® Pentium® 4 processor in the LGA775 package with 800 MHz or 533 MHz front side bus
Memory	❏ Four 240-pin, 1.8 V SDRAM Dual Inline Memory Module (DIMM) sockets ❏ 533/400 MHz single or dual channel DDR2 SDRAM interface ❏ Designed to support up to 4 GB of system memory ▪ **NOTE:** *System resources (such as PCI and PCI Express*) require physical memory address locations that reduce available memory addresses above 3 GB. This may result in less than 4 GB of memory being available to the operating system and applications. For the latest list of tested memory, refer to the Intel World Wide Web site at:* http://support.Intel.com/support/motherboards/server/SE7221BA1-E/
Chipset	Intel® E7221 Chipset consisting of: ❏ Intel® E7221 Graphics Memory Controller Hub (MCH with integrated graphics) ❏ Intel® 82801FR I/O Controller Hub (ICH6-R)

Peripheral Interfaces	❏ Up to eight USB 2.0 ports
	   ▪ Four ports routed to the back panel
	   ▪ Four ports routed to two USB headers

Feature	Description
	❑ Four Serial ATA channels, via the ICH6-R, one device per channel
	❑ One IDE interface with ATA-66/100 support
	❑ One diskette drive interface
	❑ One parallel port
	❑ One serial port
	❑ PS/2* keyboard and mouse ports
LAN	❑ Marvell* 88E8050 PCI Express* Gigabit Ethernet Controller (10/100/1000 Mbit/sec) with RJ-45 connector
	❑ Intel® 82551QM 10/100 Ethernet Controller with RJ-45 connector
Expansion Capabilities	❑ Three PCI bus add-in card connectors (SMBus routed to PCI bus connector 2)
	❑ One PCI Express* x8
	❑ Two PCI Express* x1 using x4 connectors
	❑ Four Serial ATA (SATA) connectors
	❑ Two front panel USB 2.0 headers
BIOS	❑ 8 Mbit symmetrical flash memory
	❑ Support for SMBIOS
	❑ Intel® Rapid BIOS Boot
	❑ Intel® Express BIOS Update
Power Management	❑ Support for Advanced Configuration and Power Interface (ACPI)
	❑ Suspend to RAM (STR)
	❑ Wake on USB, PCI, PCI Express*, PS/2, LAN, and front panel
Server Management	Hardware monitor with:
	❑ Four fan sensing inputs used to monitor fan activity
	❑ Remote diode temperature sensing
	❑ Intel® Precision Cooling Technology fan speed control that automatically adjusts processor fan speeds based on processor temperature and chassis fan speeds based on system temperature
	▪ Voltage sensing to detect out of range values

Connector and Component Locations
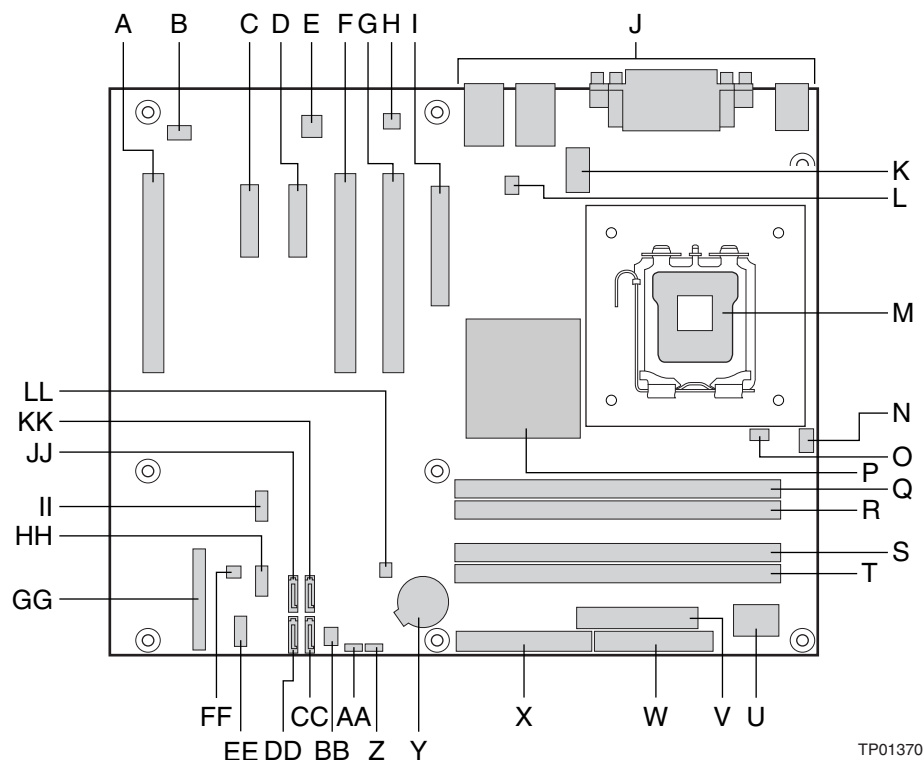
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A: Conventional PCI Slot 3

B: Rear Fan Connector

C: PCIE* Slot 2 (x4 Connector)

D: PCIE* Slot 1 (x4 Connector)

E: Intel® 82551QM LAN Contoller

F: Conventional PCI Slot 2

G: Conventional PCI Slot 1

H: Marvell* Yukon* 88E8050 PCI Express* Gigabit Ethernet Controller

I: PCI Express* 1 x8 Slot

J: Back Panel I/O

K: 2 x 4 Power Connector

L: Vreg Fan Connector

M: LGA775 Processor Socket

N: CPU Fan Connector

O: Hardware Management Controller

P: Intel® E7221 MCH with integrated graphics

Q: Channel A DIMM 0 Socket (blue)

R: Channel A DIMM 1 Socket (black)

S: Channel B DIMM 0 Socket (blue)

T: Channel B DIMM 0 Socket (black)

U: I/O Controller

V: 2 x 12 Power Connector

W: Diskette Drive Connector

X: Parallel ATA IDE Connector

Y: Battery

Z: BIOS Configuration Jumper

AA: Clear CMOS Jumper

BB: Front Fan Connector

CC: SATA 3 Connector

DD: SATA 2 Connector

EE: Serial B Connector

FF: SCSI LED Connector

GG: Front Panel Connector

HH: Front Panel USB 2

II: Front Panel USB 1

JJ: SATA 0 Connector

KK: SATA 1 Connector

LL: Chassis Intrusion Connector

Figure 2. Server Board Connector and Component Locations

Back Panel Connectors

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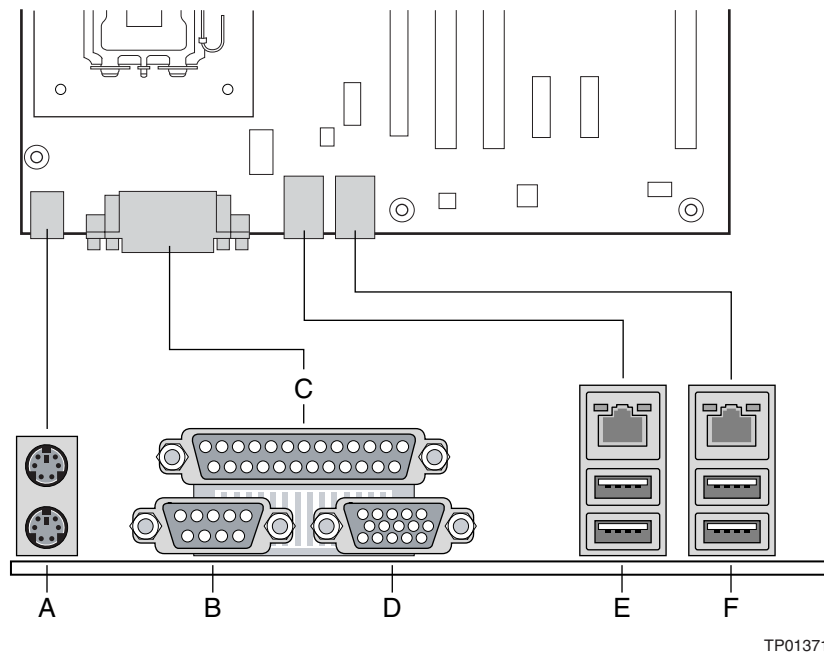
A	Keyboard / Mouse	**D**	Video
B	Serial Port A	**E**	Intel® 82551QM (10/100) / USB 0, 1
C	Parallel Port	**F**	Marvell* 88E8050 (Gigabit) / USB 2, 3

Figure 3. Back Panel Connectors

The NIC LEDs at the right and left of each NIC provide the following information:

Table 2. NIC LEDs

NIC	LED Color	LED State	Description
Intel® 82551QM (10/100 Mbit)	Left LED	Off	10 Mbps connection (if right LED is on)
		Solid Green	100 Mbps connection
	Right LED	On	Network connection in place
		Blinking Green	Transmit/receive activity
Marvell* 88E8050 (Gigabit)	Left LED	Off	No network connection
		Solid Amber	Network connection in place
		Blinking Amber	Transmit/receive activity
	Right LED	Off	10 Mbps connection (if left LED is on or blinking)
		Solid Amber	100 Mbps connection
		Solid Green	1000 Mbps connection

Hardware Requirements

To avoid integration difficulties and possible board damage, your system must meet the requirements outlined below. For a list of qualified components, see the links under "Additional Information and Software."

Processor

NOTE

Failure to use an EPS12 V or ATX12 V power supply or not connecting the 12 V (2x4) power connector to SE7221BA1-E server board may result in the computer not booting.

The Intel® Entry Server Board SE7221BA1-E supports a single Intel® Pentium® 4 processor in the LGA775 package. Processors are not included with the Server board and must be purchased separately.

The processor connects to the Intel® Entry Server Board through the LGA775 socket.

The supported processors list for Intel® Entry Server Board SE7221BA1-E is located on the web at: http://support.Intel.com/support/motherboards/server/SE7221BA1-E/.

Memory

NOTE

To be fully compliant with all applicable Intel® SDRAM memory specifications, the Server board should be populated with DIMMs that support the Serial Presence Detect (SPD) data structure. If your memory modules do not support SPD, you will see a notification to this effect on the screen at power up. The BIOS will attempt to configure the memory controller for normal operation.

The Intel® Entry Server Board SE7221BA1-E supports dual or single channel memory configurations defined in the table below, with four 240-pin Double Data Rate 2 (DDR2) SDRAM Dual Inline Memory Module (DIMMs) connectors with gold-plated contacts.

Support for:
- o Unbuffered, non-registered single or double-sided DIMMs
- o ECC or Non-ECC DIMMs
- o Serial Presence Detect (SPD) memory only
- o V memory

Memory configuration:
- o Up to 2.0 GB utilizing 256 Mb technology
- o Up to 4.0 GB utilizing 512 Mb or 1 Gb technology

NOTE

System resources (such as PCI and PCI Express*) require physical memory address locations that reduce available memory addresses above 3 GB. This may result in less than 4 GB of memory being available to the operating system and applications.

For a complete list of supported memory DIMMs, see the links under "Additional Information and Software."

Power Supply

A minimum of 350 Watts is required. Your supply must provide a minimum of 1.2 A of 5 V standby current or the board will not boot.

NOTE

PCI Express* Card Electromechanical Specification Revision 1.0a, April 15, 2003 states, in part:

DOWNSHIFTING, WHICH IS DEFINED AS PLUGGING A PCI EXPRESS* CARD INTO A CONNECTOR THAT IS NOT FULLY ROUTED FOR ALL OF THE PCI EXPRESS* LANES, IN GENERAL IS NOT ALLOWED. THE EXCEPTION IS THE X8 CONNECTOR WHICH THE SYSTEM DESIGNER MAY CHOOSE TO ROUTE ONLY THE FIRST FOUR PCI EXPRESS* LANES. A X8 CARD FUNCTIONS AS A X4 CARD IN THIS SCENARIO.

The Intel Server Board SE7221BA1-E features two PCI Express* x4 connectors, each routed with a x1 lane and limited to x1 throughput.

2 Hardware Installations and Upgrades

Before You Begin

Cautions and Warnings indicate conditions that, if not observed, can cause personal injury. The procedures in this chapter assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.

Disconnect the computer or server from its power source and from any telecommunications links, networks, or modems before performing any of the procedures described in this chapter. Failure to do so can result in personal injury or equipment damage. Some circuitry on the board can continue to operate even though the front panel power button is off.

Follow these guidelines before you begin:
- Always follow the steps in each procedure in the correct order.
- Set up a log to record information about your computer, such as model, serial numbers, installed options, and configuration information.
- Electrostatic discharge (ESD) can damage components. Perform the procedures described in this chapter only at an ESD workstation using an antistatic wrist strap and a conductive foam pad. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

Installation Precautions

When you install and test your new server board, observe all warnings and cautions.

To avoid injury, be careful of:
- ❑ Sharp pins on connectors
- ❑ Sharp pins on printed circuit assemblies
- ❑ Rough edges and sharp corners on the chassis
- ❑ Hot components (like processors, voltage regulators, and heat sinks)
- ❑ Damage to wires that could cause a short circuit

Observe all warnings and cautions that instruct you to refer computer servicing to qualified technical personnel.

Tools and Supplies Needed

- ❑ Phillips (cross head) screwdriver (#1 bit and #2 bit)
- ❑ Needle nosed pliers
- ❑ A ruler
- ❑ Pen or pencil
- ❑ Antistatic wrist strap and conductive foam pad (recommended)

Installing and Removing Memory

⚠️ **CAUTION**

To be fully compliant with all applicable Intel® SDRAM memory specifications, the board requires DIMMs that support the Serial Presence Detect (SPD) data structure.

Intel® Entry Server Board SE7221BA1-E has four 240-pin DIMM sockets arranged as DIMM 0 and DIMM 1 in both Channel A and Channel B, as shown in Figure 7.

Guidelines for Dual Channel Memory Configuration

Before installing DIMMs, read and follow these guidelines for dual channel configuration.

Two or Four DIMMs

Install a matched pair of DIMMs equal in speed and size in DIMM 0 (blue) of both channels A and B (see Figure 4).

Channel A

1 GB, 400 MHz	DIMM 0
	DIMM 1

Channel B

1 GB, 400 MHz	DIMM 0
	DIMM 1

Figure 4. Dual Configuration Example 1

If additional memory is to be used, install another matched pair of DIMMs in DIMM 1 (black) in both channels A and B (see Figure 5).

Channel A

256 MB, 400 MHz	DIMM 0
512 MB, 400 MHz	DIMM 1

Channel B

256 MB, 400 MHz	DIMM 0
512 MB, 400 MHz	DIMM 1

Figure 5. Dual Configuration Example 2

NOTE

All other memory configurations will result in single channel memory operation.

Installing DIMMs

⚠️ **CAUTION**

Install memory in the DIMM sockets prior to installing the PCI Express* x8 card to avoid interference with the memory retention mechanism.

To make sure you have the correct DIMM, place the DIMM on the illustration in Figure 6 showing the DDR2 DIMM. All the notches should match with the DDR2 DIMM.
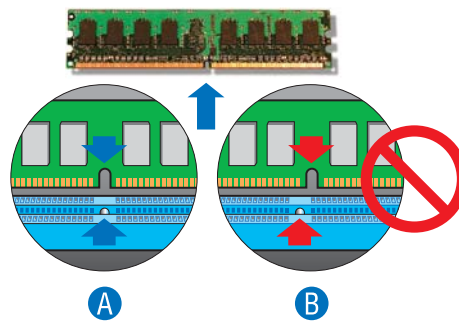
TP01372

Figure 6. Use DDR2 DIMMs

To install DIMMs, follow these steps:
1. Observe the precautions in "Safety Information" at the beginning of this document.
2. Turn off all peripheral devices connected to the computer. Turn off the computer and disconnect the AC power cord.
3. Remove the computer's cover and locate the DIMM sockets.

4. Remove the PCI Express* card if it interferes with the DIMM retaining clips from being easily opened and closed.
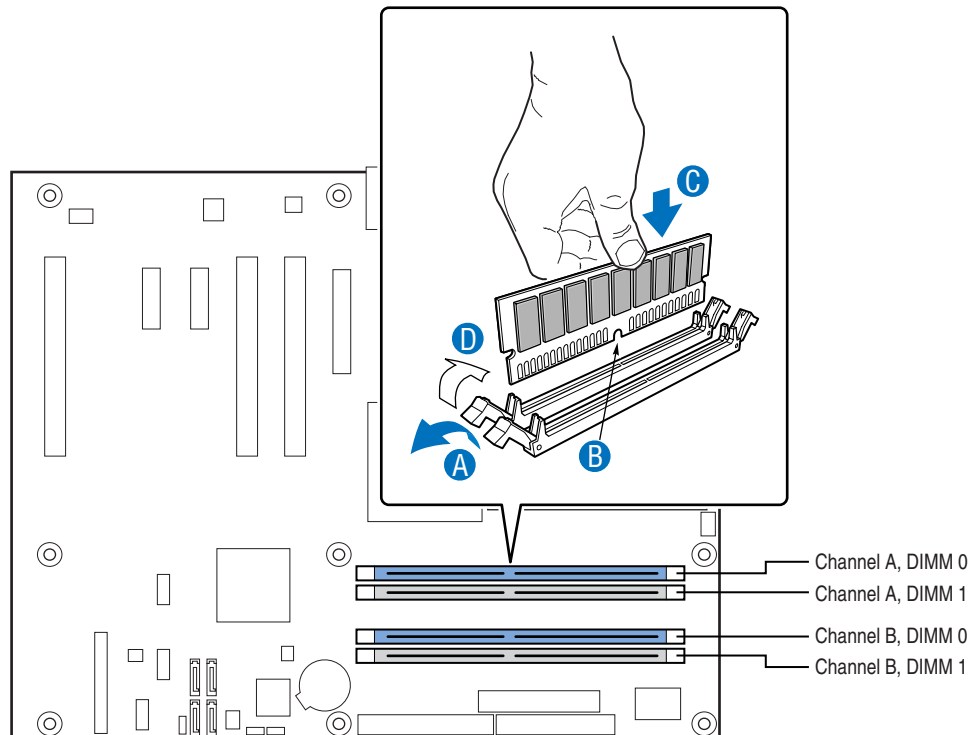
Figure 7. Installing a DIMM

5. Make sure the clips at either end of the DIMM socket(s) are pushed outward to the open position.
6. Holding the DIMM by the edges, remove it from its anti-static package.
7. Position the DIMM above the socket. Align the small notch at the bottom edge of the DIMM with the keys in the socket (see inset in Figure 7).
8. Insert the bottom edge of the DIMM into the socket.
9. When the DIMM is inserted, push down on the top edge of the DIMM until the retaining clips snap into place. Make sure the clips are firmly in place.
10. Reinstall the PCI Express* x8 card if it was removed prior to installing the DIMMs.
11. Replace the computer's cover and reconnect the AC power cord.

Removing DIMMs

To remove a memory module, follow these steps:
1. Observe the precautions in "Safety Information" at the beginning of this document.
2. Turn off all peripheral devices connected to the computer, then turn off the computer.
3. Remove the AC power cord from the computer.
4. Remove the computer's cover.
5. Remove the PCI Express* x8 card if it interferes with the DIMM clips from being easily opened and closed.

6. Gently spread the retaining clips at each end of the DIMM socket. The DIMM pops out of the socket.
7. Hold the DIMM by the edges, lift it away from the socket, and store it in an anti-static package.
8. Reinstall and reconnect any parts you removed or disconnected to reach the DIMM sockets.
9. Replace the computer's cover and reconnect the AC power cord.

Installing or Replacing the Processor

NOTES

Use the instructions provided below to install or replace a processor instead of using the instructions that came with the processor.

⚠ CAUTIONS

Processor must be appropriate: You may damage the server board if you install a processor that is inappropriate for your server. See "Additional Information and Software" for a link to the list of compatible processor(s).

ESD and handling processors: Reduce the risk of electrostatic discharge (ESD) damage to the processor by doing the following: (1) Touch the metal chassis before touching the processor or server board. Keep part of your body in contact with the metal chassis to dissipate the static charge while handling the processor. (2) Avoid moving around unnecessarily.

Installing a Processor

⚠ CAUTION

Before installing or removing the processor, make sure that AC power has been removed by unplugging the power cord from the computer; the standby power LED should not be lit. Failure to do so could damage the processor and the board.

To install a processor, follow these instructions:

1. Observe the precautions in "Safety Information" at the beginning of this document.
2. Open the socket lever by pushing the lever down and away from the socket.
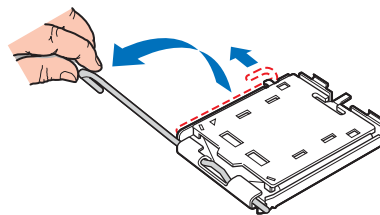
TP01374

Figure 8. Lift Socket Lever

3. Lift the load plate. **Do not touch the socket contacts**.
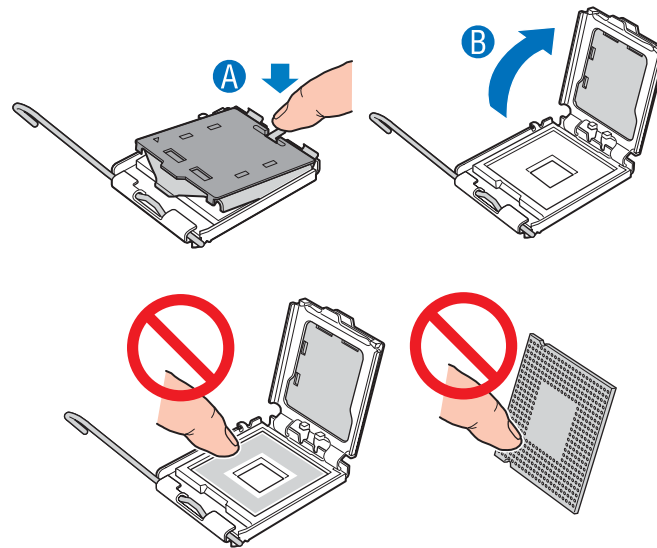
TP01375

Figure 9. Lift the Load Plate

4. Remove the protective socket cover from the load plate. Do not discard the protective socket cover. Always replace the socket cover if the processor is removed from the socket.
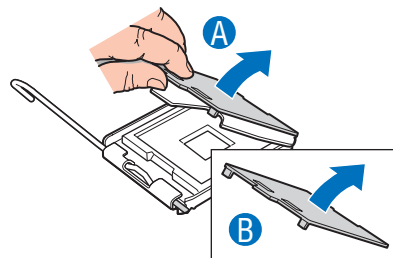
TP01376

Figure 10. Remove the Protective Socket Cover

5. Remove the processor from the protective processor cover. Hold the processor only at the edges, being careful not to touch the bottom of the processor. Do not discard the protective processor cover. Always replace the processor cover if the processor is removed from the socket.
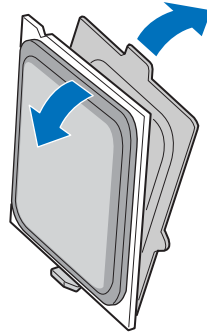
TP01377

Figure 11. Remove the Processor from the Protective Processor Cover

6. Hold the processor with your thumb and index fingers oriented as shown in Figure 12. Make sure fingers align to the socket cutouts. Align notches with the socket. Lower the processor straight down without tilting or sliding the processor in the socket.
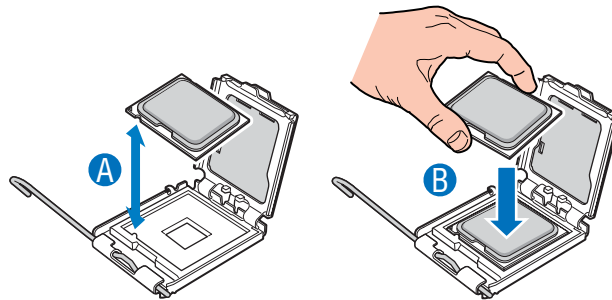
TP01378

Figure 12. Install Processor

7. Pressing down on the load plate close and engage the socket lever.
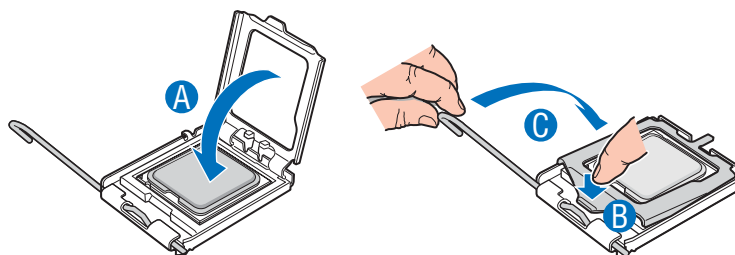
TP01379

Figure 13. Close the Load Plate

Installing the Processor Fan Heat Sink

The Intel® Entry Server Board SE7221BA1-E has an integrated processor fan heat sink retention mechanism (RM). For instructions on how to attach the processor fan heat sink to the integrated

processor fan heat sink RM, refer to the boxed processor manual or the Intel World Wide Web site at: http://support.Intel.com/support/processors/pentium4/intnotes478.htm

Connecting the Processor Fan Heat Sink Cable

Connect the processor fan heat sink cable to the 4-pin processor fan header.

TP01380
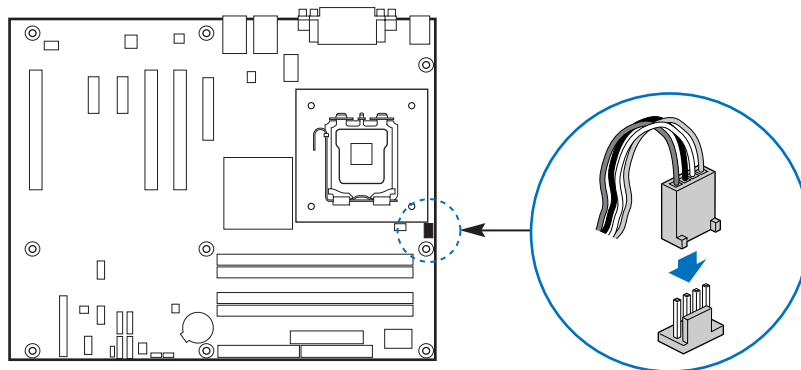
Figure 14. Connecting the Processor Fan Heat Sink Cable

Removing the Processor

For instruction on how to remove the processor fan heat sink and processor, refer to the processor installation manual or Intel support at:

http://support.Intel.com/support/processors/pentium4/intnotes478.htm

Installing and Removing a PCI Express* x8 Card

CAUTION

When installing any PCI Express* x8 card on the server board, ensure that it is fully seated in the PCI Express* x8 connector before you power on the system. If the card is not fully seated in the connector, an electrical short may result across the connector pins. Depending on the over-current protection of the power supply, certain board components and/or traces may be damaged.

Installing a PCI Express* x8 Card

Follow these instructions to install a PCI Express* x8 card:

1. Observe the precautions in "Safety Information" at the beginning of this document.
2. Place the card in the PCI Express* x8 connector.
3. Press down on the card until it is completely seated in the connector.

4. Secure the card's metal bracket to the chassis back panel with a screw.

Removing the PCI Express* x8 Card

Follow these instructions to remove the PCI Express* x8 card from the RM:

1. Observe the precautions in "Safety Information" at the beginning of this document.
2. Remove the screw that secures the card's metal bracket to the chassis back panel.
3. Push back on the RM lever until the retention pin completely clears the notch in the card.
4. Pull the card straight up.

Replacing the Backup Battery

A coin-cell battery (CR2032) powers the real-time clock and CMOS memory. When the server is not AC powered-on, the battery has an estimated life of three years. When the server is powered-on, the standby current from the power supply extends the life of the battery. The clock is accurate to ± 13 minutes/year at 25 ºC with 3.3 VSB applied.

When the voltage drops below a certain level, the BIOS Setup program settings stored in CMOS RAM (for example, the date and time) might not be accurate. Replace the battery with an equivalent one. Figure 15 shows the location of the battery.

1. Observe the precautions in "Safety Information" at the beginning of this document.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Disconnect the AC power cord from the server.
4. Remove the server's cover and locate the battery.
5. Insert the tip of a small flat bladed screwdriver, or an equivalent, under the tab in the plastic retainer. Gently push down on the screwdriver to lift the battery.
6. Remove the battery from its socket.
7. Dispose of the battery according to local ordinance.
8. Remove the new lithium battery from its package, and, being careful to observe the correct polarity, insert it in the battery socket.
9. Close the chassis.
10. Run Setup to restore the configuration settings to the RTC.
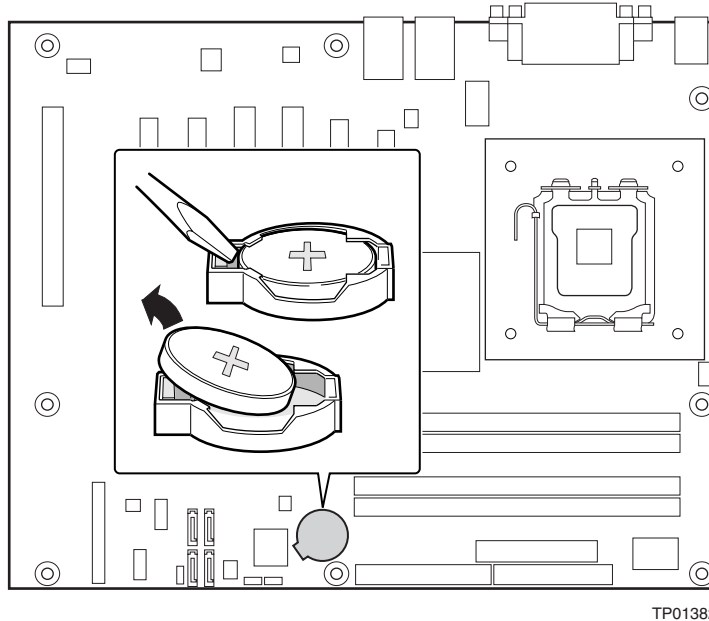
TP01382

Figure 15. Replacing the Backup Battery

⚠ **CAUTION**

Risk of explosion if the battery is replaced with an incorrect type. Batteries should be recycled where possible. Disposal of used batteries must be in accordance with local environmental regulations.

⚠ **PRÉCAUTION**

Risque d'explosion si la pile usagée est remplacée par une pile de type incorrect. Les piles usagées doivent être recyclées dans la mesure du possible. La mise au rebut des piles usagées doit respecter les réglementations locales en vigueur en matière de protection de l'environnement.

⚠ **WARNING FORHOLDSREGEL**

Eksplosionsfare, hvis batteriet erstattes med et batteri af en forkert type. Batterier bør om muligt genbruges. Bortskaffelse af brugte batterier bør foregå i overensstemmelse med gældende miljølovgivning.

⚠ **WARNING OBS!**

Det kan oppstå eksplosjonsfare hvis batteriet skiftes ut med feil type. Brukte batterier bør kastes i henhold til gjeldende miljølovgivning.

⚠ **WARNING VIKTIGT!**

Risk för explosion om batteriet ersätts med felaktig batterityp. Batterier ska kasseras enligt de lokala miljövårdsbestämmelserna.

⚠ **VARO**

Räjähdysvaara, jos pariston tyyppi on väärä. Paristot on kierrätettävä, jos se on mahdollista. Käytetyt paristot on hävitettävä paikallisten ympäristömääräysten mukaisesti.

⚠ **VORSICHT**

Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie verbrauchte Batterien den Anweisungen des Herstellers entsprechend.

⚠ **AVVERTIMENTO**

Esiste il pericolo di un esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore.

⚠ **PRECAUCIÓN**

Existe peligro de explosión si la pila no se cambia de forma adecuada. Utilice solamente pilas iguales o del mismo tipo que las recomendadas por el fabricante del equipo. Para deshacerse de las pilas usadas, siga igualmente las instrucciones del fabricante.

⚠ **WAARSCHUWING**

Er bestaat ontploffingsgevaar als de batterij wordt vervangen door een onjuist type batterij. Batterijen moeten zoveel mogelijk worden gerecycled. Houd u bij het weggooien van gebruikte batterijen aan de plaatselijke milieuwetgeving.

⚠ **ATENÇÃO**

Haverá risco de explosão se a bateria for substituída por um tipo de bateria incorreto. As baterias devem ser recicladas nos locais apropriados. A eliminação de baterias usadas deve ser feita de acordo com as regulamentações ambientais da região.

⚠ **AŚCIAROŽZNAŚĆ**

Існуе рызыка выбуху, калі заменены акумулятар няправільнага тыпу. Акумулятары павінны, па магчымасці, перапрацоўвацца. Пазбаўляцца ад старых акумулятараў патрэбна згодна з мясцовым заканадаўствам па экалогіі.

⚠ **UPOZORNÌNÍ**

V případě výměny baterie za nesprávný druh může dojít k výbuchu. Je-li to možné, baterie by měly být recyklovány. Baterie je třeba zlikvidovat v souladu s místními předpisy o životním prostředí.

⚠️ *Προσοχή*

Υπάρχει κίνδυνος για έκρηξη σε περίπτωση που η μπαταρία αντικατασταθεί από μία λανθασμένου τύπου. Οι μπαταρίες θα πρέπει να ανακυκλώνονται όταν κάτι τέτοιο είναι δυνατό. Η απόρριψη των χρησιμοποιημένων μπαταριών πρέπει να γίνεται σύμφωνα με τους κατά τόπο περιβαλλοντικούς κανονισμούς.

⚠️ **VIGYÁZAT**

Ha a telepet nem a megfelelő típusú telepre cseréli, az felrobbanhat. A telepeket lehetőség szerint újra kell hasznosítani. A használt telepeket a helyi környezetvédelmi előírásoknak megfelelően kell kiselejtezni.

⚠️ 注意

異なる種類の電池を使用すると、爆発の危険があります。リサイクル が可能な地域であれば、電池をリサイクルしてください。使用後の電 池を破棄する際には、地域の環境規制に従ってください。

⚠️ **AWAS**

Risiko letupan wujud jika bateri digantikan dengan jenis yang tidak betul. Bateri sepatutnya dikitar semula jika boleh. Pelupusan bateri terpakai mestilah mematuhi peraturan alam sekitar tempatan.

⚠️ **OSTRZEŻENIE**

Istnieje niebezpieczeństwo wybuchu w przypadku zastosowania niewłaściwego typu baterii. Zużyte baterie należy w miarę możliwości utylizować zgodnie z odpowiednimi przepisami ochrony środowiska.

⚠️ **PRECAUŢIE**

Risc de explozie, dacă bateria este înlocuită cu un tip de baterie necorespunzător. Bateriile trebuie reciclate, dacă este posibil. Depozitarea bateriilor uzate trebuie să respecte reglementările locale privind protecţia mediului.

⚠️ **ВНИМАНИЕ**

При использовании батареи несоответствующего типа существует риск ее взрыва. Батареи должны быть утилизированы по возможности. Утилизация батарей должна проводится по правилам, соответствующим местным требованиям.

⚠️ **UPOZORNENIE**

Ak batériu vymeníte za nesprávny typ, hrozí nebezpečenstvo jej výbuchu. Batérie by sa mali podľa možnosti vždy recyklovať. Likvidácia použitých batérií sa musí vykonávať v súlade s miestnymi predpismi na ochranu životného prostredia.

⚠️ **POZOR**

Zamenjava baterije z baterijo drugačnega tipa lahko povzroči eksplozijo. Če je mogoče, baterije reciklirajte. Rabljene baterije zavrzite v skladu z lokalnimi okoljevarstvenimi predpisi.

⚠️ <u>การระวัง</u>

ระวังการระเบิดที่เกิดจากเปลี่ยนแบตเตอรี่ผิดประเภท หากเป็นไปได้ ควรนำแบตเตอรี่ไปรีไซเคิล การทิ้งแบตเตอรี่ใช้แล้วต้องเป็นไปตามกฎข้อบังคับด้านสิ่งแวดล้อมของท้องถิ่น.

⚠️ **UYARI**

Yanlış türde pil takıldığında patlama riski vardır. Piller mümkün olduğunda geri dönüştürülmelidir. Kullanılmış piller, yerel çevre yasalarına uygun olarak atılmalıdır.

⚠️ **ОСТОРОГА**

Використовуйте батареї правильного типу, інакше існуватиме ризик вибуху. Якщо можливо, використані батареї слід утилізувати. Утилізація використаних батарей має бути виконана згідно місцевих норм, що регулюють охорону довкілля.

⚠️ UPOZORNĚNÍ

V případě výměny baterie za nesprávný druh může dojít k výbuchu. Je-li to možné, baterie by měly být recyklovány. Baterie je třeba zlikvidovat v souladu s místními předpisy o životním prostředí.

⚠️ ETTEVAATUST

Kui patarei asendatakse uue ebasobivat tüüpi patareiga, võib tekkida plahvatusoht. Tühjad patareid tuleb võimaluse korral viia vastavasse kogumispunkti. Tühjade patareide äraviskamisel tuleb järgida kohalikke keskkonnakaitse alaseid reegleid.

⚠️ FIGYELMEZTETÉS

Ha az elemet nem a megfelelő típusúra cseréli, felrobbanhat. Az elemeket lehetőség szerint újra kell hasznosítani. A használt elemeket a helyi környezetvédelmi előírásoknak megfelelően kell kiselejtezni.

⚠️ UZMANĪBU

Pastāv eksplozijas risks, ja baterijas tiek nomainītas ar nepareiza veida baterijām. Ja iespējams, baterijas vajadzētu nodot attiecīgos pieņemšanas punktos. Bateriju izmešanai atkritumos jānotiek saskaņā ar vietējiem vides aizsardzības noteikumiem.

⚠️ DĖMESIO

Naudojant netinkamo tipo baterijas įrenginys gali sprogti. Kai tik įmanoma, baterijas reikia naudoti pakartotinai. Panaudotas baterijas išmesti būtina pagal vietinius aplinkos apsaugos nuostatus.

⚠ **ATTENZJONI**

Riskju ta' splużjoni jekk il-batterija tinbidel b'tip ta' batterija mhux korrett. Il-batteriji għandhom jiġu riċiklati fejn hu possibbli. Ir-rimi ta' batteriji użati għandu jsir skond ir-regolamenti ambjentali lokali.

⚠ OSTRZEŻENIE

Ryzyko wybuchu w przypadku wymiany na baterie niewłaściwego typu. W miarę możliwości baterie należy poddać recyklingowi. Zużytych baterii należy pozbywać się zgodnie z lokalnie obowiązującymi przepisami w zakresie ochrony środowiska.

⚠ UPOZORNENIE

Ak batériu vymeníte za nesprávny typ, hrozí nebezpečenstvo výbuchu. Batérie by sa mali podľa možnosti vždy recyklovať. Likvidácia použitých batérií sa musí vykonať v súlade s miestnymi predpismi na ochranu životného prostredia.

⚠ คำเตือน

ระวังการระเบิดที่เกิดจากเปลี่ยนแบตเตอรี่ผิดประเภท หากเป็นไปได้ ควรนำแบตเตอรี่ไปรีไซเคิล การทิ้งแบตเตอรี่ใช้แล้วต้องเป็นไปตามกฎข้อบังคับด้านสิ่งแวดล้อมของท้องถิ่น.

⚠ DİKKAT

Yalnış türde pil kullanıldığında patlama tehlikesi var. Piller mümkün olduğunca geri dönüşüme kazandırılmalıdır. Kullanılmış piller yerel çevre koruma düzenlemelerine uygun olarak bertaraf edilmelidir.

3 Server Utilities

Using the BIOS Setup Utility

The BIOS Setup program is accessed by pressing the <F2> key after the Power-On Self-Test (POST) memory test begins and before the operating system boot begins. For the latest BIOS Setup menu options, go to the Intel World Wide Web site:

http://support.Intel.com/support/motherboards/server/SE7221BA1-E/.

Setting the BIOS Configuration Jumper Block

⚠ **CAUTION**

Always turn off the power and unplug the power cord from the computer before changing the jumper. Moving the jumper with the power on may result in unreliable computer operation.

The three-pin BIOS jumper block enables all board configurations to be done in BIOS Setup. Table 3 shows the jumper settings for the Setup program modes.

Table 3. Jumper Settings for the BIOS Setup Program Modes

Jumper Setting	Mode	Description
1　　3	Normal (default) (1-2)	The BIOS uses the current configuration and passwords for booting.
1　　3	Configure (2-3)	After the Power-On Self-Test (POST) runs, the BIOS displays the Maintenance Menu. Use this menu to clear passwords.
1　　3	Recovery (None)	The BIOS recovers data from a recovery diskette in the event of a failed BIOS update.

Clearing Passwords

This procedure assumes that the board is installed in the computer and the configuration jumper block is set to normal mode.

1. Observe the precautions in "Safety Information" at the beginning of this document.
2. Turn off all peripheral devices connected to the computer. Turn off the computer. Disconnect the computer's power cord from the AC power source (wall outlet or power adapter).
3. Remove the computer cover.
4. Find the configuration jumper block.

5. Place the jumper on pins 2-3 as shown below.

   1   3

6. Replace the cover, plug in the computer, turn on the computer, and allow it to boot.
7. The computer starts the Setup program. Setup displays the Maintenance menu.
8. Use the arrow keys to select Clear Passwords. Press <Enter> and Setup displays a pop-up screen requesting that you confirm clearing the password. Select Yes and press <Enter>. Setup displays the maintenance menu again.
9. Press <F10> to save the current values and exit Setup.
10. Turn off the computer. Disconnect the computer's power cord from the AC power source.
11. Remove the computer cover.
12. To restore normal operation, place the jumper on pins 1-2 as shown below.

   1   3

13. Replace the cover, plug in the computer, and turn on the computer.

Updating the BIOS

The BIOS can be updated by using the Iflash Memory Update utility.

Updating the BIOS with the Iflash Memory Update Utility

With the Iflash BIOS update utility you can update the system BIOS from a floppy disk or other bootable media. The utility available from the Web provides a simple method for creating a bootable flash memory update floppy that will automatically update your BIOS.

Obtaining the BIOS Update File

You can update to a new version of the BIOS by using the BIOS update file. The BIOS update file is a compressed self-extracting archive that contains all the files you need to update the BIOS. The BIOS update file contains:

❑   New BIOS files
❑   BIOS recovery files
❑   Intel® Flash Memory Update Utility

You can obtain the BIOS update file through your computer supplier or by navigating to the Server Board SE7221BA1-E page on the Intel World Wide Web site at:

   http://support.Intel.com/support/motherboards/server/SE7221BA1-E/

Navigate to the SE7221BA1-E page, click "[view] Latest BIOS updates," and select the Iflash BIOS Update utility file.

NOTE

Review the instructions distributed with the update utility before attempting a BIOS update.

The Iflash Memory Update utility allows you to:
❑ Update the BIOS in flash memory
❑ Update the language section of the BIOS

Updating the BIOS

⚠️ **CAUTION**

The AUTOEXEC.BAT file provided with the update files updates the BIOS.
Do not interrupt the process or the system may not function.

1. Boot the computer with the BIOS update diskette in drive A. During system boot, the AUTOEXEC.BAT file provided with the update files will automatically run the BIOS update process.
2. When the update process is complete, the monitor will display a message telling you to remove the diskette and to reboot the system.
3. As the computer boots, check the BIOS identifier (version number) to make sure the update was successful. If a logo appears, press <Esc> to view the POST messages.

Recovering the BIOS

It is unlikely that anything will interrupt the BIOS update; however, if an interruption occurs, the BIOS could be damaged. The following steps explain how to recover the BIOS if an update fails. The following procedure uses recovery mode for the Setup program.

NOTE

Because of the small amount of code available in the boot block area, there is no video support. You will not see anything on the screen during this procedure. Monitor the procedure by listening to the speaker and looking at the diskette drive LED.

1. Turn off the computer, disconnect the computer's power cord, and disconnect all external peripherals.
2. Remove the computer cover and locate the configuration jumper block.
3. Remove the jumper from all pins as shown below to set recovery mode for Setup.

■ ● ●
1　3

4. Insert the bootable BIOS update diskette into diskette drive A.
5. Replace the computer cover, connect the power cord, turn on the computer, and allow it to boot. The recovery process will take a few minutes.
6. Listen to the speaker:
   • Upon applying power, drive A will begin to show activity. In about a minute, two beeps are heard and drive A activity ceases (temporarily) indicating the successful recovery of the BIOS core. Drive A activity will begin again followed by two more beeps indicating the

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successful recovery of the boot block. This sequence of events indicates a successful BIOS recovery.

- A series of continuous beeps indicates a failed BIOS recovery.

7. If recovery fails, return to step 1 and repeat the recovery process.
8. If recovery is successful, turn off the computer, and disconnect its power cord.
9. Remove the computer cover and continue with the following steps.
10. On the jumper block, reinstall the jumper back on pins 1-2 as shown below to set normal mode for Setup.

11. Leave the update diskette in drive A, replace the computer cover, and connect the computer's power cord.
12. Turn on the computer and continue with the BIOS update.

4   Troubleshooting

This chapter helps you identify and solve problems that might occur while you are using the system.

For any issue, first ensure you are using the latest firmware and files. Firmware upgrades include updates for BIOS, the baseboard management controller (BMC), and the hot-swap controller (HSC). See "Additional Information and Software" for a link to the software updates. In addition to the server firmware and files, also update any drivers used for components you have installed in your system, such as video drivers, network drivers, and SCSI drivers.

Intel provides a package called the "Platform Confidence Test" that may help with your diagnostics. See "Additional Information and Software" for a link to this software.

If you are unable to resolve your server problems on your own, see "Getting Help" for assistance.

Resetting the System

Before going through in-depth troubleshooting, attempt first to perform reset your system using one of the methods below.

To do this:	Press:
Soft boot reset to clear the system memory and reload the operating system.	<Ctrl+Alt+Del>
Clear system memory, restart POST, and reload the operating system.	Reset button
Cold boot reset. Turn the system power off and then on. This clears system memory, restarts POST, reloads the operating system, and halts power to all peripherals.	Power off/on

Problems following Initial System Installation

Problems that occur at initial system startup are usually caused by an incorrect installation or configuration. Hardware failure is a less frequent cause. If the problem you are experiencing is with a specific software application, see "Problems with Newly Installed Application Software."

First Steps Checklist

❑ Is AC power available at the wall outlet?
❑ Are the power supplies plugged in? Check the AC cable(s) on the back of the chassis and at the AC source.
❑ Are all cables correctly connected and secured?
❑ Are the processors fully seated in their sockets on the server board?
❑ Are all standoffs in the proper location and not touching any components, causing a potential short?
❑ Are all add-in PCI boards fully seated in their slots on the server board?
❑ Are all jumper settings on the server board correct?
❑ Are all jumper and switch settings on add-in boards and peripheral devices correct? To check these settings, refer to the manufacturer's documentation that comes with them. If applicable, ensure that there are no conflicts—for example, two add-in boards sharing the same interrupt.

❑   Are all peripheral devices installed correctly?

❑   If the system has a hard disk drive, is it properly formatted or configured?

❑   Are all device drivers properly installed?

❑   Are the configuration settings made in Setup correct?

❑   Is the operating system properly loaded? Refer to the operating system documentation.

❑   Did you press the system power on/off switch on the front panel to turn the server on (power on light should be lit)?

❑   Is the system power cord properly connected to the system and plugged into a NEMA 5-15R outlet for 100-120 V~ or a NEMA 6-15R outlet for 200-240 V~?

❑   Are all integrated components from the tested components lists? Check the tested memory, and chassis lists, as well as the supported hardware and operating system list. See "Additional Information and Software" for links to the tested component lists.

Hardware Diagnostic Testing

This section provides a more detailed approach to identifying a hardware problem and locating its source.

⚠ CAUTION

> **Turn off devices before disconnecting cables:** Before disconnecting any peripheral cables from the system, turn off the system and any external peripheral devices. Failure to do so can cause permanent damage to the system and/or the peripheral devices.

1. Turn off the system and all external peripheral devices. Disconnect each device from the system, except for the keyboard and the video monitor.

2. Make sure the system power cord is plugged into a properly grounded AC outlet.

3. Make sure your video display monitor and keyboard are correctly connected to the system. Turn on the video monitor. Set its brightness and contrast controls to at least two thirds of their maximum ranges (see the documentation supplied with your video display monitor).

4. If the operating system normally loads from the hard disk drive, make sure there is no diskette in drive A and no CD-ROM disk in the CD-ROM drive.

5. If the power LED does light, attempt to boot from a floppy diskette or from a CD-ROM disk.

6. Turn on the system. If the power LED does not light, see "Power Light Does Not Light."

Verifying Proper Operation of Key System Lights

As POST determines the system configuration, it tests for the presence of each mass storage device installed in the system. As each device is checked, its activity light should turn on briefly. Check for the following:

❑   Does the diskette drive activity light turn on briefly? If not, see "Diskette Drive Activity Light Does Not Light."

❑   If system LEDs are illuminated, see "LED Information" for a description of the light and steps to take to correct the problem.

Confirming Loading of the Operating System

Once the system boots up, the operating system prompt appears on the screen. The prompt varies according to the operating system. If the operating system prompt does not appear, see "No Characters Appear on Screen."

Specific Problems and Corrective Actions

This section provides possible solutions for these specific problems:

- ❑ Power light does not light.
- ❑ No characters appear on screen.
- ❑ Characters on the screen appear distorted or incorrect.
- ❑ System cooling fans do not rotate.
- ❑ Diskette drive activity light does not light.
- ❑ Hard disk drive activity light does not light.
- ❑ CD-ROM drive activity light does not light.
- ❑ There are problems with application software.
- ❑ The bootable CD-ROM is not detected.

Try the solutions below in the order given. If you cannot correct the problem, contact your service representative or authorized dealer for help.

Power Light Does Not Light

Check the following:

- ❑ Did you press the power-on button?
- ❑ Is the system operating normally? If so, the power LED might be defective or the cable from the front panel to the server board might be loose.
- ❑ Have you securely plugged the server AC power cord into the power supply?
- ❑ Is the power supply correctly set to 110 V or 235 V, depending on your power output?
- ❑ Will other items plugged into the same power outlet function correctly?
- ❑ Some ATX power supplies have a power switch on the back of the power supply, next to the fan. If your system as one, is it turned on?
- ❑ Remove all add-in cares and see if the system boots. If successful, add the cards back in one at a time with a reboot between each addition.
- ❑ Make sure the memory DIMMs comply with the system requirements.
- ❑ Make sure the memory DIMMs have been populated according to the system requirements.
- ❑ Remove the memory DIMMs and re-seat them.
- ❑ Make sure the processor(s) comply with the system requirements.
- ❑ Make sure the processor(s) have been populated according to the system requirements.
- ❑ Remove the processor(s) and re-seat them.
- ❑ Make sure the chassis standoffs are installed only below mounting holes. Misplaced standoffs can contact the pins on the bottom of the server board and cause a short.

No Characters Appear on Screen

Check the following:

❑ Is the keyboard functioning? Test it by turning the "Num Lock" function on and off to make sure the Num Lock light is functioning.

❑ Is the video monitor plugged in and turned on? If you are using a switch box, is it switched to the correct system?

❑ Are the brightness and contrast controls on the video monitor properly adjusted?

❑ Is the video monitor signal cable properly installed?

❑ Does this video monitor work correctly if plugged into a different system?

❑ Is the onboard video controller enabled in the BIOS?

❑ Remove all add-in cares and see if the video returns. If successful, add the cards back in one at a time with a reboot between each addition.

❑ Make sure the memory DIMMs comply with the system requirements.

❑ Make sure the memory DIMMs have been populated according to the system requirements.

❑ Remove the memory DIMMs and re-seat them.

❑ Make sure the processor(s) comply with the system requirements.

❑ Make sure the processor(s) have been populated according to the system requirements.

❑ Remove the processor(s) and re-seat them.

If you are using an add-in video controller board, do the following:

1. Verify that the video works using the onboard video controller.
2. Verify that the video controller board is fully seated in the server board connector.
3. Reboot the system for changes to take effect.
4. If there are still no characters on the screen after you reboot the system and POST emits a beep code, write down the beep code you hear. This information is useful for your service representative.
5. If you do not receive a beep code and characters do not appear, the video display monitor or video controller may have failed. Contact your service representative or authorized dealer for help.

Characters Are Distorted or Incorrect

Check the following:

❑ Are the brightness and contrast controls properly adjusted on the video monitor? See the manufacturer's documentation.

❑ Are the video monitor's signal and power cables properly installed?

❑ Does this video monitor work correctly if plugged into a different system?

System Cooling Fans Do Not Rotate Properly

If the system cooling fans are not operating properly, it is an indication of possible system component failure.

Check the following:

❑ Is the power-on light lit? If not, see "Power Light Does Not Light"

❑ If your system has LED lights for the fans, is one or more of these LEDs lit?

❑ Are any other front panel LEDs lit?

❑ Have any of the fan motors stopped? Use the server management subsystem to check the fan status.

❑ Have your fans speeded up in response to an overheating situation?

❑ Have your fans speeded up in response to a fan that has failed?

❑ Are the fan power connectors properly connected to the server board?

❑ Is the cable from the front panel board connected to the both the front panel board and to the server board?

❑ Are the power supply cables properly connected to the server board?

❑ Are there any shorted wires caused by pinched-cables or have power connector plugs been forced into power connector sockets the wrong way?

Diskette Drive Activity Light Does Not Light

Check the following:

❑ Are the diskette drive's power and signal cables properly installed?

❑ Are all relevant switches and jumpers on the diskette drive set correctly?

❑ Is the diskette drive properly configured?

❑ Is the diskette drive activity light always on? If so, the signal cable may be plugged in incorrectly.

If you are using the onboard diskette controller, use the BIOS setup to make sure that "Onboard Floppy" is set to "Enabled." If you are using an add-in diskette controller, make sure that "Onboard Floppy" is set to "Disabled."

CD-ROM Drive or DVD-ROM Drive Activity Light Does Not Light

Check the following:

❑ Are the CD-ROM/DVD-ROM drive's power and signal cables properly installed?

❑ Are all relevant switches and jumpers on the drive set correctly?

❑ Is the drive properly configured?

Cannot Connect to a Server

❑ Make sure the network cable is securely attached to the correct connector at the system back panel.

❑ Try a different network cable.

❑ Make sure you are using the correct and the current drivers. See "Additional Information and Software" for a link to the current drivers.

❑ Make sure the driver is loaded and the protocols are bound.

❑ Make sure the hub port is configured for the same duplex mode as the network controller.

❑ Make sure the correct networking software is installed.

❑ If you are directly connecting two servers (without a hub), you will need a crossover cable.

❑ Check the network controller LEDs next to the NIC connectors.

Problems with Network

The server hangs when the drivers are loaded.

❑ Certain drivers may require interrupts that are not shared with other PCI drivers. For these drivers, it may be necessary to alter settings so that interrupts are not shared. See the documentation that came with your PCI card(s) for information on changing interrupts..

Diagnostics pass but the connection fails.

❑ Make sure the network cable is securely attached.

❑ Make sure you specify the correct frame type in your NET.CFG file.

The controller stopped working when an add-in adapter was installed.

❑ Make sure the cable is connected to the port from the onboard network controller.

❑ Make sure your BIOS is current. See "Additional Information and Software" for a link to the current version.

❑ Make sure the other adapter supports shared interrupts. Make sure your operating system supports shared interrupts.

❑ Try reseating the add-in adapter.

The add-in adapter stopped working without apparent cause.

❑ Try reseating the adapter first; then try a different slot if necessary.

❑ The network driver files may be corrupt or deleted. Delete and then reinstall the drivers.

❑ Run the diagnostics.

System Boots when Installing PCI Card

System Server Management features require full-time "standby" power. This means some parts of the system have power going to them whenever the power cord is plugged in, even if you have turned the system power off with the power button on the front panel. If you install a PCI card with the AC power cord plugged in, a signal may be sent to the command the system to boot. Before installing a PCI card, you should always:

❑ Turn off the server power by using the power button on the front of the system.

❑ Unplug the AC power cord(s) from the server.

Problems with Newly Installed Application Software

Problems that occur when you run new application software are usually related to the software, not the server hardware. Faulty equipment is unlikely, especially if other software runs correctly.

Check the following:

❑ Make sure the system meets the minimum hardware requirements for the software. See the software documentation.

❑ Make sure the software is properlyinstalled and configured for the system. See the software documentation.

❑ Use only an authorized copy. Unauthorized copies often do not work.

❑ If you are running the software from a diskette, CD-ROM or DVD-ROM, try a different diskette.

❑ Make sure the correct device drivers installed.

If the problems persist, contact the software vendor's customer service representative.

Problems with Application Software that Ran Correctly Earlier

Problems that occur after the system hardware and software have been running correctly sometimes indicate equipment failure. However, they can also be caused by file corruption or changes to the software configuration.

Check the following:

❑ If you are running the software from a diskette, CD-ROM or DVD-ROM, try a different diskette.

❑ Uninstall and reinstall the software. Make sure all necessary files are installed.

❑ If the problems are intermittent, there may be a loose cable, dirt in the keyboard (if keyboard input is incorrect), a marginal power supply, or other random component failures.

❑ If you suspect that a transient voltage spike, power outage, or brownout might have occurred, reload the software and try running it again. Symptoms of voltage spikes include a flickering video display, unexpected system reboots, and the system not responding to user commands.

✏ **NOTE**

> **Random errors in data files:** If you are getting random errors in your data files, they may be getting corrupted by voltage spikes on your power line. If you are experiencing any of the above symptoms that might indicate voltage spikes on the power line, you may want to install a surge suppressor between the power outlet and the system power cord.

Devices are not Recognized under Device Manager

The Windows* operating systems do not include all of the drivers for the Intel chipsets, onboard NICs, and other components. See "Additional Information and Software" for a link to the current drivers and chipset files.

Hard Drive(s) are not Recognized

Check the following:

❑ Make sure the drive is not disabled in BIOS Setup.

❑ Make sure the drive is connected correctly and that is plugged into the power supply.

❑ Make sure the drive is compatible. See "Additional Information and Software" for a link to the tested drives.

❑ Make sure you have not exceeded the power budget for the server. See "Additional Information and Software" for a link to software to check your power budget.

❑ If using SCSI drives, verify that each SCSI ID number is uniqe on the SCSI bus. See your drive documentation for details on setting the SCSI ID for your drives.

❑ If using IDE drives, verify that the master/slave settings are set correctly. See your drive documentation for details on setting the master/slave settings.

❑ If using a RAID configuration with SCSI or SATA drives, make sure the RAID card is installed correctly.

Bootable CD-ROM Is Not Detected

Check the following:

❑ Make sure the BIOS is configured to allow the CD-ROM to be the first bootable device.

LED Information

The Intel® Entry Server Board SE7221BA1-E includes LEDs that can aid in troubleshooting your system. A table of these LEDs with a description of their use is listed below.

Table 4. LED Functions

LED Name	Function	Location	Color	Correction
IDE activity	Front panel	Front panel	Red	Blinking = Activity. No action required.
5v Standby	Identify 5v standby power on state	Back right board	Green	On = 5v standby power on
Power LED	Identify the power state of the system	Front Panel	Green	❑ Off = Power is off (off or S5) ❑ On = Power on or S0)

BIOS POST Beep Codes

The Server Board SE7221BA1-E reports POST errors in two ways:

❑ By sounding a beep code
❑ By displaying an error message on the monitor

BIOS Beep Codes

The BIOS beep codes are listed in Table 5. The BIOS also issues a beep code (one long tone followed by two short tones) during POST if the video configuration fails (a faulty video card or no card installed) or if an external ROM module does not properly checksum to zero.

Table 5. Beep Codes

Beep	Description
1, 3	Memory error
8	Video error

BIOS Error Messages

When a recoverable error occurs during the POST, the BIOS displays an error message describing the problem.

Table 6. BIOS Error Messages

Error Message	Explanation
GA20 Error	An error occurred with Gate-A20 when switching to protected mode during the memory test.
Pri Master HDD Error Pri Slave HDD Error Sec Master HDD Error Sec Slave HDD Error	Could not read sector from corresponding drive.
Pri Master Drive - ATAPI Incompatible Pri Slave Drive - ATAPI Incompatible Sec Master Drive - ATAPI Incompatible Sec Slave Drive - ATAPI Incompatible	Corresponding drive is not an ATAPI device. Run Setup to make sure device is selected correctly.
A: Drive Error B: Drive Error	No response from the diskette drive.
CMOS Battery Low	The battery may be losing power. Replace the battery soon.
CMOS Display Type Wrong	The display type is different than what has been stored in CMOS. Check Setup to make sure type is correct.
CMOS Checksum Bad	The CMOS checksum is incorrect. CMOS memory may have been corrupted. Run Setup to reset values.
CMOS Settings Wrong	CMOS values are not the same as the last boot. These values have either been corrupted or the battery has failed.
CMOS Date/Time Not Set	The time and/or date values stored in CMOS are invalid. Run Setup to set correct values.

Error Message	Explanation
DMA Error	Error during read/write test of DMA controller.
FDC Failure	Error occurred trying to access diskette drive controller.
HDC Failure	Error occurred trying to access hard disk controller.
Checking NVRAM.....	NVRAM is being checked to see if it is valid.
Update OK!	NVRAM was invalid and has been updated.
Updated Failed	NVRAM was invalid but was unable to be updated.
Keyboard Is Locked	The system keyboard lock is engaged. The system must be unlocked to continue to boot.
Keyboard Error	Error in the keyboard connection. Make sure keyboard is connected properly.
KB/Interface Error	Keyboard interface test failed.
Memory Size Decreased	Memory size has decreased since the last boot. If no memory was removed, then memory may be bad.
Memory Size Increased	Memory size has increased since the last boot. If no memory was added, there may be a problem with the system.
Memory Size Changed	Memory size has changed since the last boot. If no memory was added or removed, then memory may be bad.
No Boot Device Available	System did not find a device to boot.
Off Board Parity Error	A parity error occurred on an offboard card. This error is followed by an address.
On Board Parity Error	A parity error occurred in onboard memory. This error is followed by an address.
Parity Error	A parity error occurred in onboard memory at an unknown address.
NVRAM / CMOS / PASSWORD cleared by Jumper	NVRAM, CMOS, and passwords have been cleared. The system should be powered down and the jumper removed.
<CTRL_N> Pressed	CMOS is ignored and NVRAM is cleared. User must enter Setup.

Regulatory and Certification Information

⚠ WARNING

To ensure regulatory compliance, you must adhere to the assembly instructions in this guide to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products / components will void the UL listing and other regulatory approvals of the product and will most likely result in noncompliance with product regulations in the region(s) in which the product is sold.

To help ensure EMC compliance with your local regional rules and regulations, before computer integration, make sure that the chassis, power supply, and other modules have passed EMC testing using a server board with a microprocessor from the same family (or higher) and operating at the same (or higher) speed as the microprocessor used on this server board. The final configuration of your end system product may require additional EMC compliance testing. For more information please contact your local Intel Representative.

This is an FCC Class A device. Integration of it into a Class B chassis does not result in a Class B device.

Product Regulatory Compliance

Intended Application – This product was evaluated as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations. The suitability of this product for other product categories and environments (such as: medical, industrial, telecommunications, NEBS, residential, alarm systems, test equipment, etc.), other than an ITE application, may require further evaluation. This is an FCC Class A device. Integration of it into a Class B chassis does not result in a Class B device.

Product Safety Compliance

UL60950 – CSA 60950(USA / Canada)
EN60950 (Europe)
IEC60950 (International)
CB Certificate & Report, IEC60950 (report to include all country national deviations)
GOST R 50377-92 – Listed on one System License (Russia)
Belarus License – Listed on System License (Belarus)
CE - Low Voltage Directive 73/23/EEE (Europe)
IRAM Certification (Argentina)

Product EMC Compliance – Class A Compliance

FCC /ICES-003 - Emissions (USA/Canada) Verification
CISPR 22 – Emissions (International)

EN55022 - Emissions (Europe)
EN55024 - Immunity (Europe)
CE – EMC Directive 89/336/EEC (Europe)
VCCI Emissions (Japan)
AS/NZS 3548 Emissions (Australia / New Zealand)
BSMI CNS13438 Emissions (Taiwan)
GOST R 29216-91 Emissions - Listed on one System License (Russia)
GOST R 50628-95 Immunity –Listed on one System License (Russia)
Belarus License – Listed on one System License (Belarus)
RRL MIC Notice No. 1997-41 (EMC) & 1997-42 (EMI) (Korea)

Certifications / Registrations / Declarations

UL Certification or NRTL (US/Canada)
CE Declaration of Conformity (CENELEC Europe)
FCC/ICES-003 Class A Attestation (USA/Canada)
C-Tick Declaration of Conformity (Australia)
MED Declaration of Conformity (New Zealand)
BSMI Certification (Taiwan)
GOST – Listed on one System License (Russia)
Belarus – Listed on one System License (Belarus)
RRL Certification (Korea)
Ecology Declaration (International)

Product Regulatory Compliance Markings

The Intel Server Baseboard bears the following regulatory marks.

Regulatory Compliance	Country	Marking
UL Mark	USA/Canada	
CE Mark	Europe	
EMC Marking (Class A)	Canada	CANADA ICES-003 CLASS A CANADA NMB-003 CLASSE A
BSMI Marking (Class A)	Taiwan	警告使用者： 這是甲類的資訊產品，在居住的環境中使用時， 可能會造成射頻干擾，在這種情況下，使用者會 被要求採取某些適當的對策
Ctick Marking	Australia / New Zealand	
RRL MIC Mark	Korea	
GOST-R Mark	Russia	ME06

Electromagnetic Compatibility Notices

FCC Verification Statement (USA)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Intel Corporation
5200 N.E. Elam Young Parkway
Hillsboro, OR 97124-6497
Phone: 1-800-628-8686

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment. The customer is responsible for ensuring compliance of the modified product.

All cables used to connect to peripherals must be shielded and grounded. Operation with cables, connected to peripherals that are not shielded and grounded may result in interference to radio and TV reception.

ICES-003 (Canada)

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le Ministre Canadian des Communications.

English translation of the notice above:

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Canadian Department of Communications.

Europe (CE Declaration of Conformity)

This product has been tested in accordance too, and complies with the Low Voltage Directive (73/23/EEC) and EMC Directive (89/336/EEC). The product has been marked with the CE Mark to illustrate its compliance.

VCCI (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

English translation of the notice above:

{XE "VCCI notice "}This is a Class B product based on the standard of the Voluntary Control Council for Interference (VCCI) from Information Technology Equipment. If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

BSMI (Taiwan)

The BSMI Certification Marking and EMC warning is located on the outside rear area of the product.

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，
可能會造成射頻干擾，在這種情況下，使用者會
被要求採取某些適當的對策

RRL (Korea)

Following is the RRL certification information for Korea.

MIC
1. 기기의 명칭(모델명) :
2. 인증번호 :
3. 인증받은 자의 상호 :
4. 제조년월일:
5. 제조자/제조국가 :

English translation of the notice above:

1. Type of Equipment (Model Name): On License and Product
2. Certification No.: On RRL certificate. Obtain certificate from local Intel representative
3. Name of Certification Recipient: Intel Corporation
4. Date of Manufacturer: Refer to date code on product

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5. Manufacturer/Nation: Intel Corporation/Refer to country of origin marked on product

CNCA (CCC-China)

The CCC Certification Marking and EMC warning is located on the outside rear area of the product.

声明

此为**A**级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取可行的措施。

Getting Help

World Wide Web

http://support.Intel.com/support/motherboards/server/SE7221BA1-E/

Telephone

All calls are billed US $25.00 per incident, levied in local currency at the applicable credit card exchange rate plus applicable taxes. (Intel reserves the right to change the pricing for telephone support at any time without notice).

Before calling, fill out an "Intel® Server Issue Report Form." A sample form is provided on the following pages.

In U.S. and Canada	1-800-404-2284
In Europe	
UK 0870 6072439 France 01 41 918529 Germany 069 9509 6099 Italy 02 696 33276 Spain 91 377 8166 Belgium 02 714 3182	Finland 9 693 79297 Denmark 38 487077 Norway 23 1620 50 Sweden 08 445 1251 Holland 020 487 4562
In Asia-Pacific region	

Australia   1800 649931
Hong Kong 852 2 844 4456
Korea   822 767 2595
China   800 820 1100 (toll-free)
                8 621 33104691 (not toll-free)
Singapore 65 6213-1311
India   0006517 2 68303634 (manual
                toll-free. From India, you need an
                IDD-equipped telephone)
Taiwan   2 2545-1640
	Indonesia 803 65 7249
	Malaysia 1 800 80 1390
	New Zealand 0800 444 365
	Pakistan 632 63684 15 (IDD via Philippines)
	Philippines 1 800 1 651 0117
	Thailand 1 800 631 0003
	Vietnam 632 6368416 (IDD via Philippines)
	Myanmar 63 2 636 9796 (via Philippines)
	Cambodia 63 2 636 9797 (via Philippines)

In Japan	
0120 868686 (Domestic)	81 298 47 0800 (outside country)

In Latin America	
Brazil 001-916 377 0180 Mexico Contact AT&T USA at 001 800 462 628 4240. Once connected, dial 800 843 4481 Colombia Contact AT&T USA at 01 800 911 0010. Once connected, dial 800 843 4481 Costa Rica Contact AT&T USA at 0 800 0 114 114. Once connected, dial 800 843 4481 Panama Contact AT&T USA at 00 800 001 0109. Once connected, dial 800 843 4481 Chile (Easter Island) Contact AT&T USA at 800 800 311. Once connected, dial 800 843 4481 Chile (Mainland and Juan) Contact AT&T USA at 800 225 288. Once connected, dial 800 843 4481 Miami 1 800 621 8423	Ecuador (Andimate) Contact AT&T USA at 1 999 119. Once connected, dial 800 843 4481 Ecuador (Pacifictel) Contact AT&T USA at 1 800 225 528. Once connected, dial 800 843 4481 Guatemala Contact AT&T USA at 99 99 190. Once connected, dial 800 843 4481 Venezuela Contact AT&T USA at 0 800 2255 288. Once connected, dial 800 843 4481 Argentina Contact AT&T USA at 0-800 222 1288. Once connected, dial 800 843 4481 Paraguay 001 916 377 0114 Peru 001 916 377 0114 Uruguay 001 916 377 0114

For an updated support contact list, see *http://support.Intel.com/support/9089.htm*

Intel® Server Issue Report Form

Date Submitted: _____

Company Name: _____

Contact Name: _____

Email Address: _____

Intel® Server Product: _____

Priority (Critical, Hot, High, Low): _____

Brief Problem Description. Provide a brief description below. See the last page for space to include a detailed problem description.

_____

_____

_____

Board / Chassis Information

Baseboard Revision – PBA#:	DIMM Configuration
Baseboard Serial Number:	DIMM1A MB:
CPU1 Speed/Stepping/Spec:	DIMM1A Vendor/part number:
CPU2 Speed/Stepping/Spec:	DIMM1B MB:
System BIOS Version:	DIMM1B Vendor/part number:
HSC Firmware Version:	DIMM2A MB:
Chassis Model	DIMM2A Vendor/part number:
❐ Intel® SC5200 Base	DIMM2B MB:
❐ Intel® SC5200 Base Redundant Power	DIMM2B Vendor/part number:
❐ Intel® SC5250-E	
❐ Intel® SR1350-E	
❐ Other (Vendor / Model):	

Operating System Information

Operating System _____

Version_____

Service Pack / Kernel Version_____

Peripheral Information

Check each box below that is used, and provide the requested information

Peripheral	Card Or Peripheral Description	Driver Revision	IRQ #	I/O Base Address	FW Rev#
P64 Segment C (PCI-X 64/133)					
❐ PCI Slot 1					
❐ PCI Slot 2					
P64 Segment B (PCI-X 64/100)					
❐ PCI Slot 3					
❐ PCI Slot 4					
P32 Segment A (PCI 32/33)					
❐ PCI Slot 5					
❐ PCI Slot 6					
Video					
❐ On-Board Video					
❐ Add-in Video					
NIC					
❐ On-Board NIC1 (10/100 Mb)					
❐ On-Board NIC2 (1.0 Gb)					

Hard Drive Information:

❐   IDE   # of drives installed: _____
   Make/Model/Firmware Revision _____

❐   SCSI   # of drives installed: _____
   Make/Model/Firmware Revision _____

❐   SATA   # of drives installed: _____
   Make/Model/Firmware Revision _____

Complete Problem Description

In the space below, provide a **complete** description of the steps used to reproduce the problem or a complete description of where the problem can be found. Please also include any details on troubleshooting already done.

![warning icon]