Global AMERICAN

integration with integrity

Product Guide

Mini-ITX Motherboard 2807638

Version 1.0

Revision History

Revision	Revision History	Date
-001	First release of the Mini-ITX Motherboard 2807638 Product Guide	March 2007

Preface

This Product Guide gives information about board layout, component installation, and regulatory requirements for Mini-ITX Motherboard 2807638.

Intended Audience

The Product Guide is intended for technically qualified personnel. It is not intended for general audiences.

Intended Uses

All Mini-ITX motherboards are evaluated as Information Technology Equipment (I.T.E.) for use in personal computers (PC) for installation in homes, offices, schools, computer rooms, and similar locations. The suitability of this product for other PC or embedded non-PC applications or other environments, such as medical, industrial, alarm systems, test equipment, etc. may not be supported without further evaluation.

Document Organization

The chapters in this Product Guide are arranged as follows:

1 Board Features: a summary of product features

2 Installing and Replacing Board Components: instructions on how to install the Board and other hardware components

B Regulatory Compliance: safety and EMC regulations and product certifications

Conventions

The following conventions are used in this manual:

CAUTION

Cautions warn the user about how to prevent damage to hardware or loss of data.

NOTE

Notes call attention to important information.

Terminology

The table below gives descriptions to some common terms used in the product guide.

Term	Description
GB	Gigabyte (1,073,741,824 bytes)
GHz	Gigahertz (one billion hertz)
KB	Kilobyte (1024 bytes)
MB	Megabyte (1,048,576 bytes)
Mbit	Megabit (1,048,576 bits)
MHz	Megahertz (one million hertz)

Box Contents

- Mini-ITX Motherboard
- I/O shield
- One ATA-66/100 cable
- Quick Reference Guide
- Configuration and safety labels

Contents

A Regulatory Compliance

Figures

Tables

1 Mini-ITX Motherboard Features

This chapter briefly describes the main features of the Mini-ITX Motherboard. Table 1 summarizes the features of the Board.

Table 1. Feature Summary

Form Factor	Mini-ITX (171.45 millimeters [6.75 inches] x 171.45 millimeters [6.75 inches])
Processor	Intel® Celeron® processor
Main Memory	• One 240-pin SDRAM Dual Inline Memory Module (DIMM) socket • 533/400 MHz single channel DDR2 SDRAM interface • Supports up to 1 GB of system memory
Chipset	• SiS662* Graphics and Memory Controller (Northbridge) • SiS964L* I/O Controller (Southbridge)
Graphics	SiS Integrated Mirage* 1 Graphics Engine
Audio	• ADI AD1888 Audio Codec • Support for AC'97 two-channel audio
Expansion Capabilities	One PCI bus add-in card connector
Peripheral Interfaces	• Six USB 2.0 ports — Two ports routed to the back panel — Four ports routed to two USB headers • One IDE interface with ATA-100 support (two devices) • One VGA connector • One parallel port • One serial port • PS/2* keyboard and mouse ports
BIOS	• Intel® BIOS • Support for SMBIOS • Intel® Rapid BIOS Boot
LAN Support	• 10/100 Mb/s LAN Subsystem
Power Management	• Support for Advanced Configuration and Power Interface (ACPI); no support for S3 • Wake on USB, PCI, PS/2, LAN, and front panel

Supported Operating Systems

The Board supports the following operating systems:

- Microsoft Windows* XP Professional
- Microsoft Windows XP Home
- Microsoft Windows XP Starter Edition

Mini-ITX Motherboard Components

Figure 1 shows the location of the major components on Mini-ITX Motherboard 2807638.

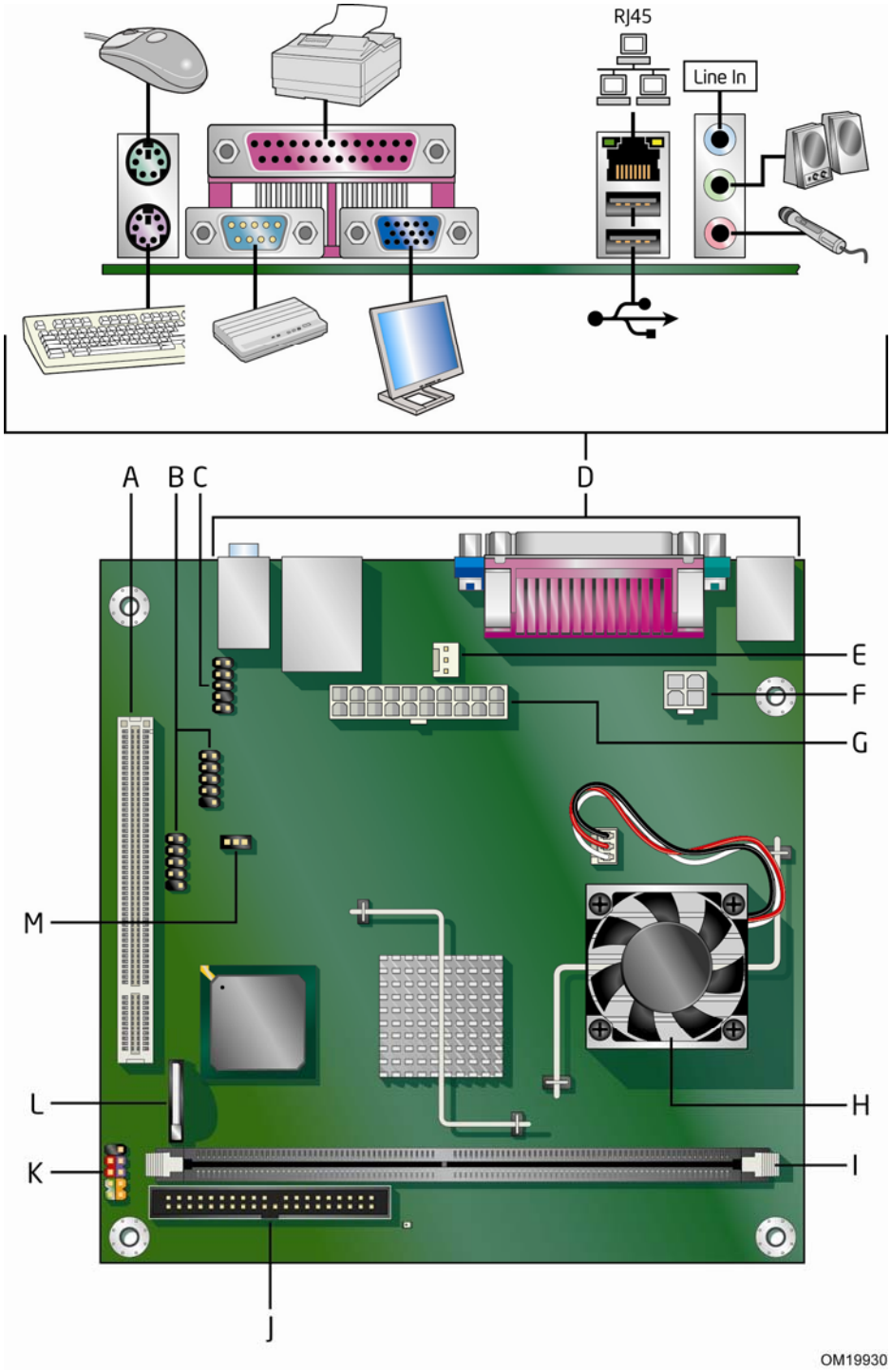


Figure 1. Mini-ITX Motherboard 2807638 Components

Table 2. Mini-ITX Motherboard 2807638 Components

Label	Description
A	PCI bus add-in card connector
B	Hi-speed USB 2.0 headers
C	Front panel audio header
D	Back panel connectors
E	Rear fan (3-pin) header
F	12 V processor core voltage connector (2 x 2)
G	Main power connector (2 x 10)
H	Processor
I	DDR 2 DIMM connector
J	IDE connector
K	Front panel header
L	Battery
M	BIOS configuration jumper

Processor

CAUTION

Failure to use an appropriate power supply and/or not connecting the 12 V (2 x 2) power connector to the Board may result in damage to the board, or the system may not function properly.

The Mini-ITX Motherbaord 2807638 includes an Intel Celeron processor. The processor is soldered to the Board and is not customer upgradeable.

Main Memory

NOTE

To be fully compliant with all applicable Intel® SDRAM memory specifications, the 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 Board has one 240-pin Double Data Rate 2 (DDR2) SDRAM Dual Inline Memory Module (DIMM) connector with gold-plated contacts. It supports:

- 533/400 MHz unbuffered, non-registered DDR2 DIMMs
- Serial Presence Detect (SPD) memory only
- Non-ECC memory
- Up to 1 GB of system memory utilizing 512 Mb or 1 Gb technology

Chipset

The chipset used on Mini-ITX Motherboard 2807638 consists of the following devices:

- SiS662 Graphics and Memory Controller (Northbridge)
- SiS964L I/O Controller (Southbridge)

Graphics Subsystem

The Mini-ITX Motherboard 2807638 graphics subsystem features the SiS* Mirage* 1 Graphics Engine which is integrated in the SiS662 Graphics and Memory Controller.

Audio Subsystem

Mini-ITX Motherboard 2807638 includes a 2-channel audio subsystem based on the following devices:

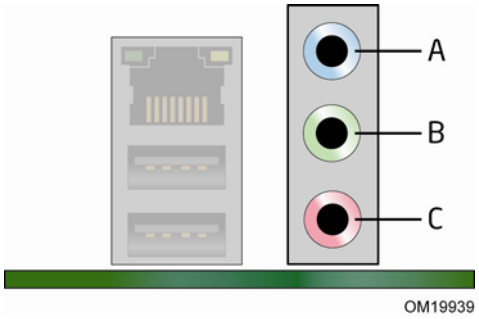
- SiS964L I/O Controller
- ADI AD1888 audio codec

The subsystem features:

- S/N (signal-to-noise) ratio: 90 dB
- Microphone input that supports dynamic, condenser, and electret microphones

The subsystem supports the following audio interfaces:

- Front panel audio header, including pins for:
  - Line out
  - Microphone in
- Back panel audio connectors (see Figure 2):
  - Line In
  - Line Out
  - Mic In



Item	Description
A	Line In
B	Line Out
C	Mic In

Figure 2. Back Panel Audio Connectors

NOTE

The back panel audio line out connector is designed to power headphones or amplified speakers only. Poor audio quality occurs if passive (non-amplified) speakers are connected to this output.

Input/Output (I/O) Controller

The super I/O controller features the following:

- One serial port
- One parallel port with Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) support
- Serial IRQ interface compatible with serialized IRQ support for PCI systems
- PS/2-style mouse and keyboard interfaces
- Intelligent power management, including a programmable wake up event interface
- PCI power management support

LAN Subsystem

The LAN provides the following functions:

- 10/100 Mb/s Ethernet LAN
- Support for RJ-45 connector with status indicator LEDs
- Programmable transit threshold
- Configurable EEPROM that contains the MAC address

RJ-45 LAN Connector LEDs

Two LEDs are built into the RJ-45 LAN connector located on the back panel (see Figure 3).

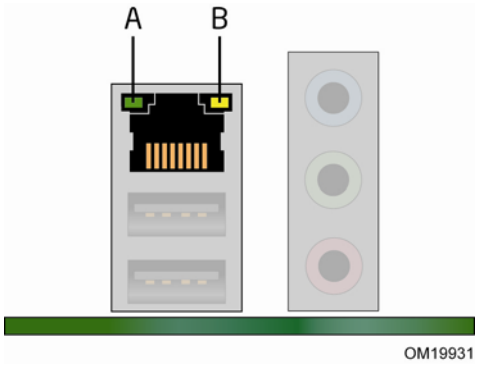


Figure 3. LAN Connector LEDs

Table 3 describes the LED states when the board is powered up and the 10/100 Ethernet LAN subsystem is operating.

Table 3. RJ-45 10/100 Ethernet LAN Connector LEDs

LED	LED State	Indicates
A (Green)	Off	LAN link is not established
	On	LAN link is established
	Blinking	LAN activity is occurring
B (Yellow)	Off	10 Mbits/s data rate is selected
	On (steady state)	100 Mbits/s data rate is selected

Hi-Speed USB 2.0 Support

NOTE

Computer systems that have an unshielded cable attached to a USB port might not meet FCC Class B requirements, even if no device or a low-speed USB device is attached to the cable. Use a shielded cable that meets the requirements for a full-speed USB device.

The Board supports up to six USB 2.0 ports (two ports routed to the back panel and four ports routed to two internal USB 2.0 headers). The USB 2.0 ports are backward compatible with USB 1.1 devices. USB 1.1 devices will function normally at USB 1.1 speeds.

USB 2.0 support requires both an operating system and drivers that fully support USB 2.0 transfer rates. Disabling Hi-Speed USB in the BIOS reverts all USB 2.0 ports to USB 1.1 operation. This may be required to accommodate operating systems that do not support USB 2.0.

Enhanced IDE Interface

The IDE interface handles the exchange of information between the processor and peripheral devices such as hard disks and optical drives inside the computer. The interface supports:

- Up to two IDE devices (such as hard drives)
- ATAPI-style devices (such as CD-ROM or DVD drives)
- Older PIO Mode devices
- Ultra DMA-33/66/100 modes

Expandability

The Board supports one PCI add-in card.

BIOS

The BIOS provides the Power-On Self-Test (POST), the BIOS Setup program, the PCI and IDE auto-configuration utilities, and the video BIOS.

IDE Auto Configuration

If you install an IDE device (such as a hard drive) in your computer, the auto-configuration utility in the BIOS automatically detects and configures the device for your computer. You do not need to run the BIOS Setup program after installing an IDE device. You can override the auto-configuration options by specifying manual configuration in the BIOS Setup program.

PCI Auto Configuration

If you install a PCI add-in card in your computer, the PCI auto-configuration utility in the BIOS automatically detects and configures the resources (IRQs, DMA channels, and I/O space) for that add-in card. You do not need to run the BIOS Setup program after you install a PCI add-in card.

Security Passwords

The BIOS includes security features that restrict whether the BIOS Setup program can be accessed and who can boot the computer. A supervisor password and a user password can be set for the BIOS Setup and for booting the computer, with the following restrictions:

- The supervisor password gives unrestricted access to view and change all Setup options. If only the supervisor password is set, pressing <Enter> at the password prompt of Setup gives the user restricted access to Setup.
- If both the supervisor and user passwords are set, you must enter either the supervisor password or the user password to access Setup. Setup options are then available for viewing and changing depending on whether the supervisor or user password was entered.
- Setting a user password restricts who can boot the computer. The password prompt is displayed before the computer is booted. If only the supervisor password is set, the computer boots without asking for a password. If both passwords are set, you can enter either password to boot the computer.

Related Links:

For instructions on resetting the password, see Clearing Passwords on page 36.

Power Management Features

Power management is implemented at several levels, including:

- Advanced Configuration and Power Interface (ACPI)
- Hardware support:
  - Power connectors
  - Fan headers
  - LAN Wake capabilities
  - Wake from USB
  - Wake from PS/2 keyboard/mouse
  - PME# wakeup support

ACPI

ACPI gives the operating system direct control over the power management and Plug and Play functions of a computer. The use of ACPI with the Board requires an operating system that provides full ACPI support.

Hardware Support

Power Connectors

The Board has two power connectors. See Figure 12 on page 33 for the location of the power connectors.

Fan Headers

The Board has a 3-pin processor fan header and a 3-pin chassis fan header. See Figure 11 on page 32 for the location of the chassis fan header.

The Board's standby power indicator, shown in Figure 4, is lit when there is standby power to the system. This includes the memory module and PCI bus connector, even when the computer appears to be off.

If the system has a dual-colored power LED on the front panel, the sleep state is indicated by the LED turning amber.

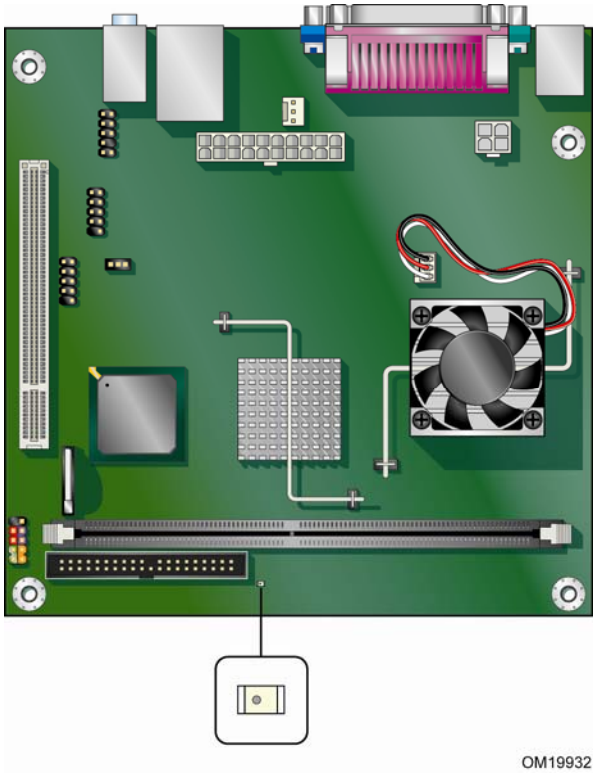


Figure 4. Location of the Standby Power Indicator

LAN Wake Capabilities

CAUTION

For LAN wake capabilities, the 5 V standby line for the power supply must be capable of delivering adequate +5 V standby current. Failure to provide adequate standby current when using this feature can damage the power supply.

LAN wakeup capabilities enable remote wake-up of the computer through a network. The LAN subsystem monitors network traffic and upon detecting a Magic Packet* frame, it asserts a wake-up signal that powers up the computer.

Wake from USB

NOTE

Wake from USB requires the use of a USB peripheral that supports wake from USB.

USB bus activity wakes the computer from an ACPI S1 state.

Wake from PS/2 Keyboard/Mouse

PS/2 keyboard/mouse activity wakes the computer from an ACPI S1 state.

PME# Wakeup Support

When the PME# signal on the PCI bus is asserted, the computer wakes from an ACPI S1 or S5 state.

Battery

A battery on the Board keeps the values in CMOS RAM and the clock current when the computer is turned off. Go to page 37 for instructions on how to replace the battery.

Real-Time Clock

The Board has a time-of-day clock and 100-year calendar. The battery on the Board keeps the clock current when the computer is turned off.

2 Installing and Replacing Board Components

This chapter tells you how to:

- Install the I/O shield
- Install and remove the Board
- Install and remove memory
- Connect the IDE cable
- Connect internal headers
- Connect chassis fan and power supply cables
- Set the BIOS configuration and audio jumpers
- Clear passwords
- Replace the battery

Before You Begin

CAUTIONS

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 from its power source and from any telecommunications links, networks, or modems before performing any of the procedures described in this chapter. Failure to disconnect power, telecommunications links, networks, or modems before you open the computer or perform any procedures 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 installing the Board:

- 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 the Board, observe all warnings and cautions in the installation instructions.

To avoid injury, be careful of:

- Sharp pins on connectors or headers
- 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.

Prevent Power Supply Overload

Do not overload the power supply output. To avoid overloading the power supply, make sure that the calculated total current loads of all the modules within the computer is less than the output current rating of each of the power supplies output circuits.

Observe Safety and Regulatory Requirements

Read and adhere to the instructions in this section and the instructions supplied with the chassis and associated modules. If you do not follow these instructions and the instructions provided by chassis and module suppliers, you increase safety risk and the possibility of noncompliance with regional laws and regulations.

Refer to Appendix B for safety and regulatory requirements.

Installing the I/O Shield

The Board comes with an I/O shield. When installed in the chassis, the shield blocks radio frequency transmissions, protects internal components from dust and foreign objects, and promotes correct airflow within the chassis.

Install the I/O shield before installing the Board in the chassis. Place the shield inside the chassis as shown in Figure 5. Press the shield into place so that it fits tightly and securely. If the shield does not fit, obtain a properly-sized shield from the chassis supplier.

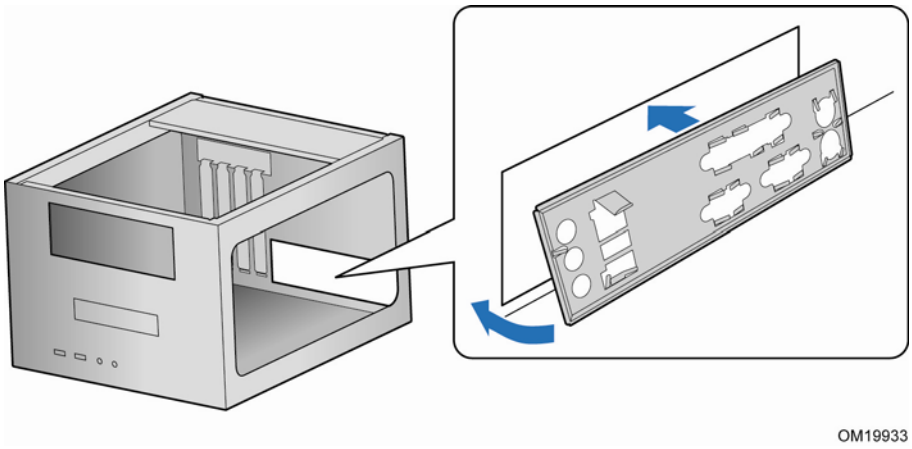


Figure 5. Installing the I/O Shield

Installing and Removing the Board

CAUTION

Only qualified technical personnel should do this procedure. Disconnect the computer from its power source before performing the procedures described here. Failure to disconnect the power before you open the computer can result in personal injury or equipment damage.

Refer to your chassis manual for instructions on installing and removing the Board.

Figure 6 shows the location of the mounting screw holes for Board 2807638.

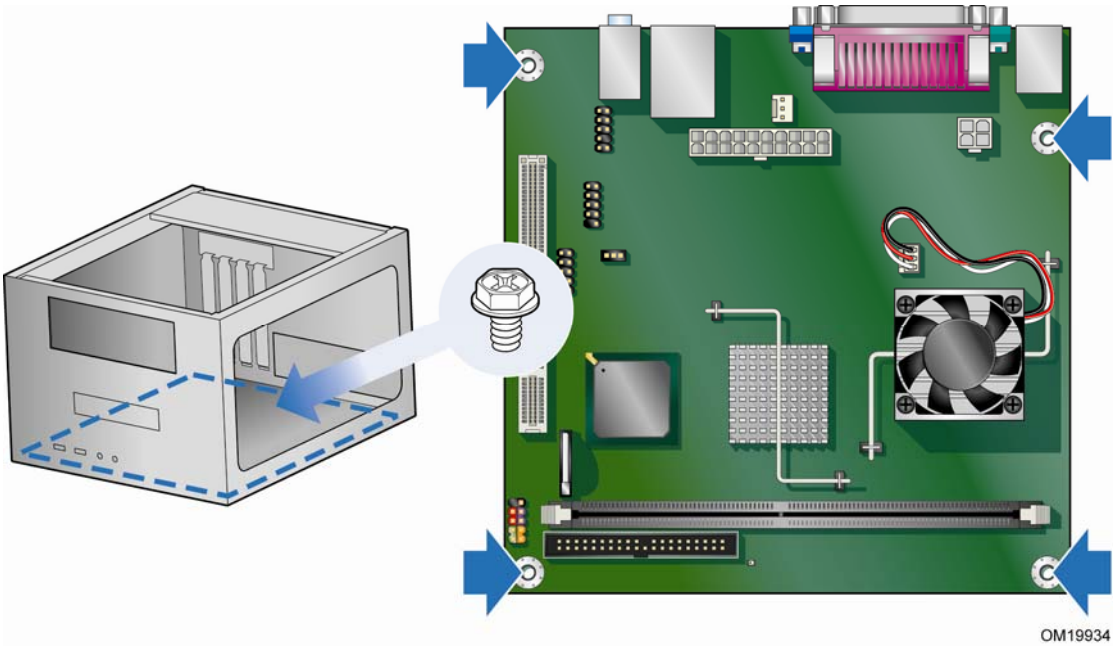


Figure 6. Board 2807638 Mounting Screw Holes

Installing and Removing Memory

NOTE

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

The Board has one 240-pin DDR2 DIMM socket.

Installing DIMMs

To make sure you have the correct DIMM, place it on the illustration in Figure 7 showing the DDR2 DIMM. All the notches should match the DDR2 DIMM.

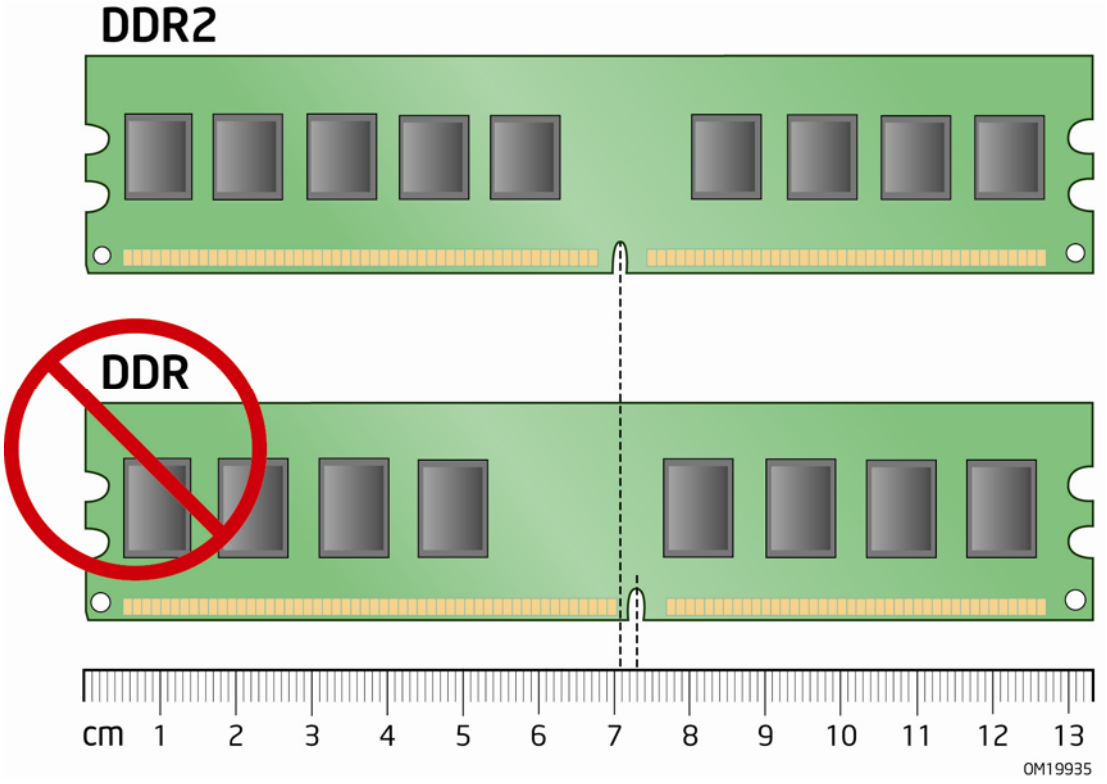


Figure 7. Use DDR DIMMs

1. Observe the precautions in "Before You Begin" on page 21.
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 socket (see Figure 8).

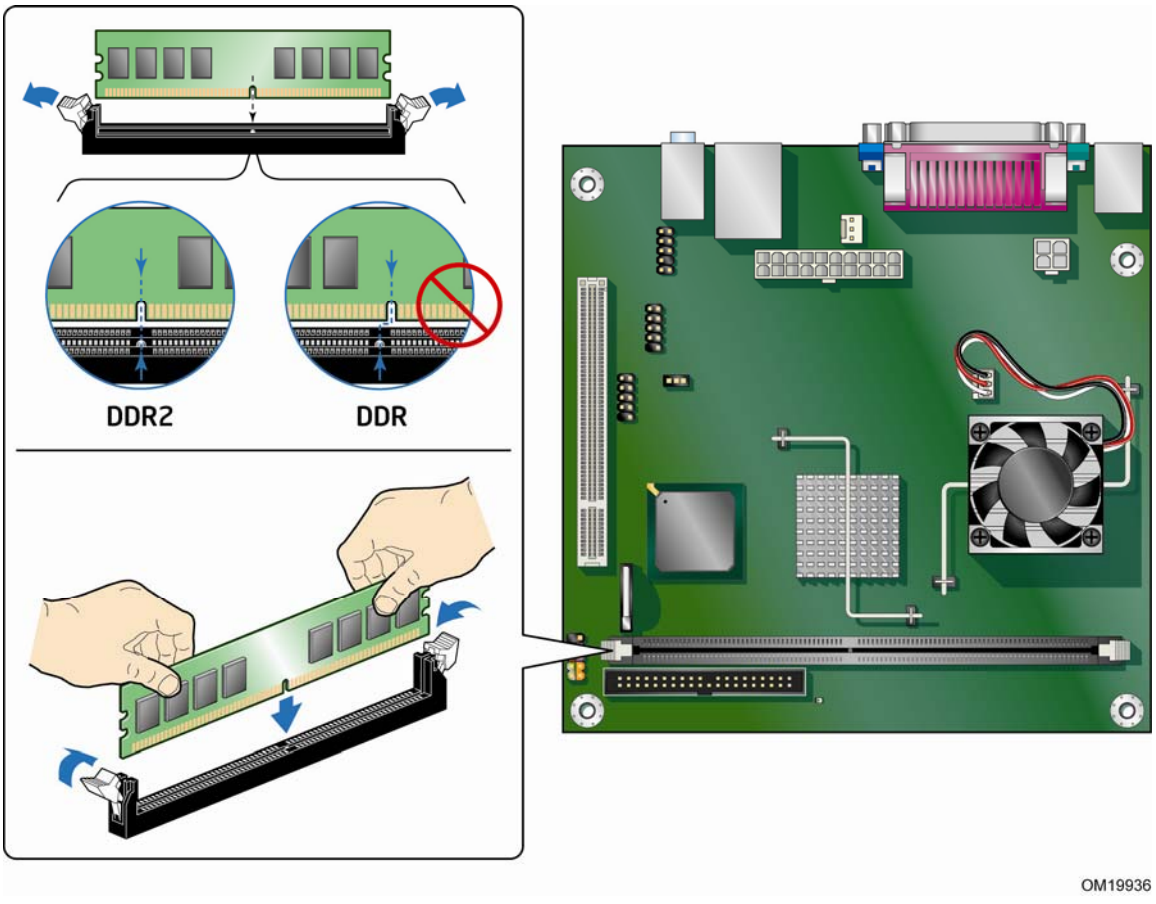


Figure 8. Installing a DIMM

4. Make sure the clips at either end of the DIMM socket are pushed outward to the open position.
5. Holding the DIMM by the edges, remove it from its anti-static package.
6. Position the DIMM above the socket. Align the small notch at the bottom edge of the DIMM with the key in the socket (see Figure 8).
7. Insert the bottom edge of the DIMM into the socket.
8. 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.
9. Replace the computer's cover and reconnect the AC power cord.

Removing DIMMs

To remove a DIMM, follow these steps:

1. Observe the precautions in "Before You Begin" on page 21.
2. Turn off all peripheral devices connected to the computer. Turn off the computer.
3. Remove the AC power cord from the computer.
4. Remove the computer's cover.
5. Gently spread the retaining clips at each end of the DIMM socket. The DIMM pops out of the socket.
6. Hold the DIMM by the edges, lift it away from the socket, and store it in an anti-static package.
7. Reinstall and reconnect any parts you removed or disconnected to reach the DIMM sockets.
8. Replace the computer's cover and reconnect the AC power cord.

Connecting the IDE Cable

The IDE cable can connect two drives to the Board. The cable supports the ATA-100 transfer protocol. Figure 9 shows the correct installation of the cable.

NOTES

ATA-100 compatible cables are backward compatible with drives using slower IDE transfer protocols. If an ATA-100 disk drive and a disk drive using any other IDE transfer protocol are attached to the same cable, the maximum transfer rate between the drives may be reduced to that of the slowest drive.

Do not connect an ATA device as a slave on the same IDE cable as an ATAPI master device. For example, do not connect an ATA hard drive as a slave to an ATAPI CD-ROM drive.

For correct function of the cable:

1. Observe the precautions in "Before You Begin" on page 21.
2. Attach the cable end with the single connector (blue) to the Board (Figure 9).
3. Attach the cable end with the two closely spaced connectors (gray and black) to the drives.

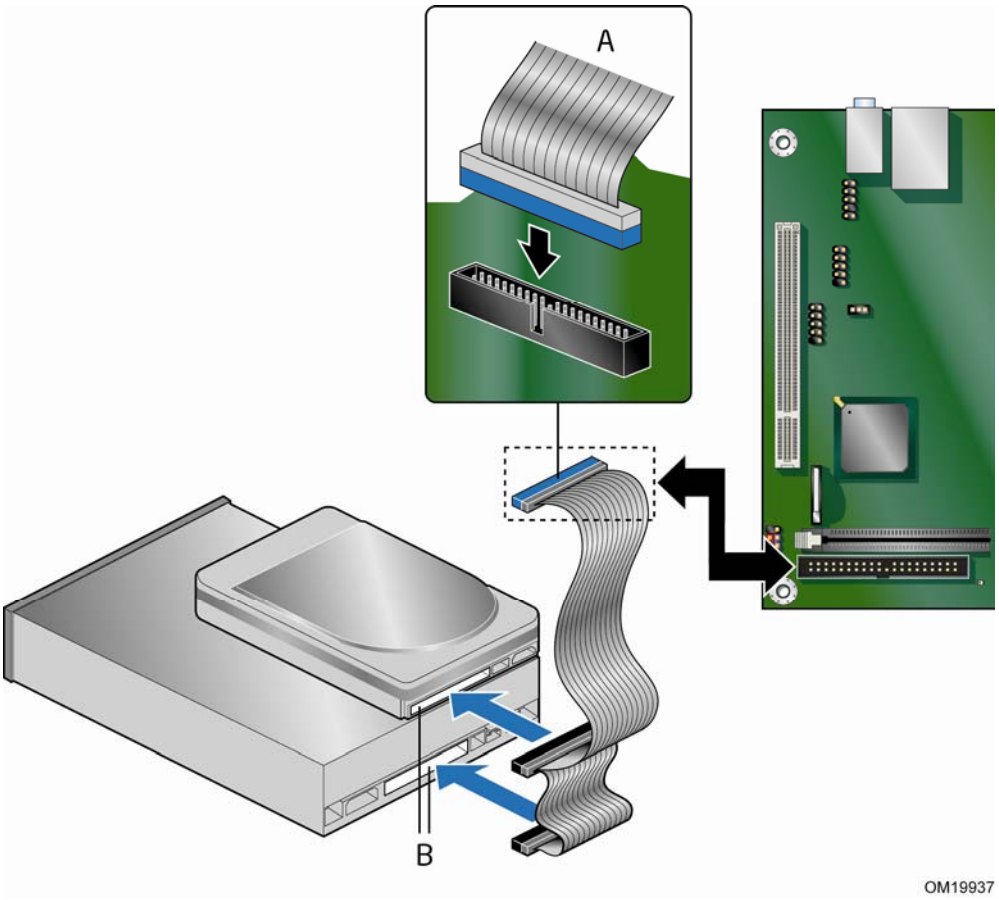
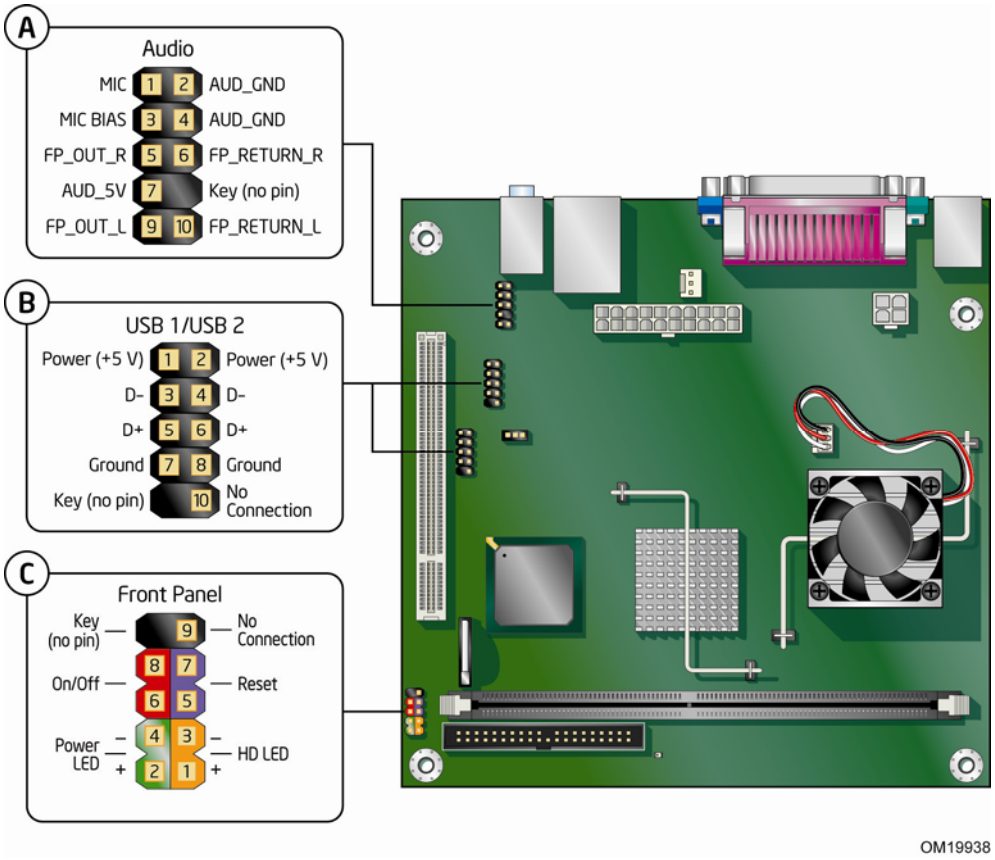


Figure 9. Connecting the IDE Cable

Connecting Internal Headers

Before connecting cables to the internal headers, observe the precautions in "Before You Begin" on page 21. Figure 10 shows the location of the board's internal headers.



Item	Description
A	Audio
B	Hi-speed USB 2.0 (two)
C	Front panel

Figure 10. Internal Headers

Installing a Front Panel Audio Solution

Figure 10, A shows the location of the front panel audio header. Table 4 shows the pin assignments for the front panel audio header.

Table 4. Front Panel Audio Header Signal Names

Pin	Signal Name	Pin	Signal Name
1	MIC	2	AUD_GND
3	MIC-BIAS	4	AUD_GND
5	FP_OUT_R	6	FP_RETURN_R
7	AUD_5V	8	KEY
9	FP_OUT_L	10	FP_RETURN_L

To install a cable that connects a front panel audio solution to the front panel audio header, follow these steps:

1. Observe the precautions in "Before You Begin" on page 21.
2. Turn off all peripheral devices connected to the computer. Turn off the computer and disconnect the AC power cord.
3. Remove the cover.
4. Locate the front panel audio header. Remove the two jumpers from the header to disable the back panel audio connectors.
5. Install a correctly keyed and shielded front panel audio cable.
6. Connect the audio cable to the front panel audio solution.
7. Replace the cover.

To restore back panel operations, follow these steps:

1. Observe the precautions in "Before You Begin" on page 21.
2. Turn off all peripheral devices connected to the computer. Turn off the computer and disconnect the AC power cord.
3. Remove the cover.
4. Remove the front panel audio cable.
5. Install a jumper on pins 5-6 (rear R channel).
6. Install a jumper on pins 9-10 (rear L channel).
7. Replace the cover.

Connecting Hi-Speed USB 2.0 Headers

Before connecting the USB 2.0 headers, observe the precautions in "Before You Begin" on page 21. See Figure 10, B on page 29 for the location of the USB 2.0 headers.

Table 5 shows the pin assignments for the headers.

Table 5. Hi-Speed USB 2.0 Header Signal Names

USB Port A		USB Port B	
Pin	**Signal Name**	**Pin**	**Signal Name**
1	Power	2	Power
3	D-	4	D-
5	D+	6	D+
7	Ground	8	Ground
9	Key	10	No connect

Note: USB ports may be assigned as needed.

Connecting the Front Panel Header

Before connecting the front panel header, observe the precautions in "Before You Begin" on page 21. See Figure 10, C on page 29 for the location of the multi-colored front panel header.

Table 6 shows the pin assignments for the front panel header.

Table 6. Front Panel Header Signal Names

Pin	Signal	In/Out	Description	Pin	Signal	In/Out	Description
Hard Drive Activity LED				**Power LED**			
1	HD_PWR	Out	Hard disk LED pull-up (330 Ω) to +5 V	2	HDR_BLNK_GRN	Out	Front panel green LED
3	HDA#	Out	Hard disk active LED	4	HDR_BLNK_YEL	Out	Front panel yellow LED
Reset Switch				**On/Off Switch**			
5	Ground		Ground	6	SWITCH_ON#	In	Power switch
7	FP_RESET#	In	Reset switch	8	Ground		Ground
Power				**Not Connected**			
9	+5 V		Power	10	N/C		No pin

Connecting the Chassis Fan

Figure 11 shows the location of the chassis fan header. Connect the chassis fan cable to this header.

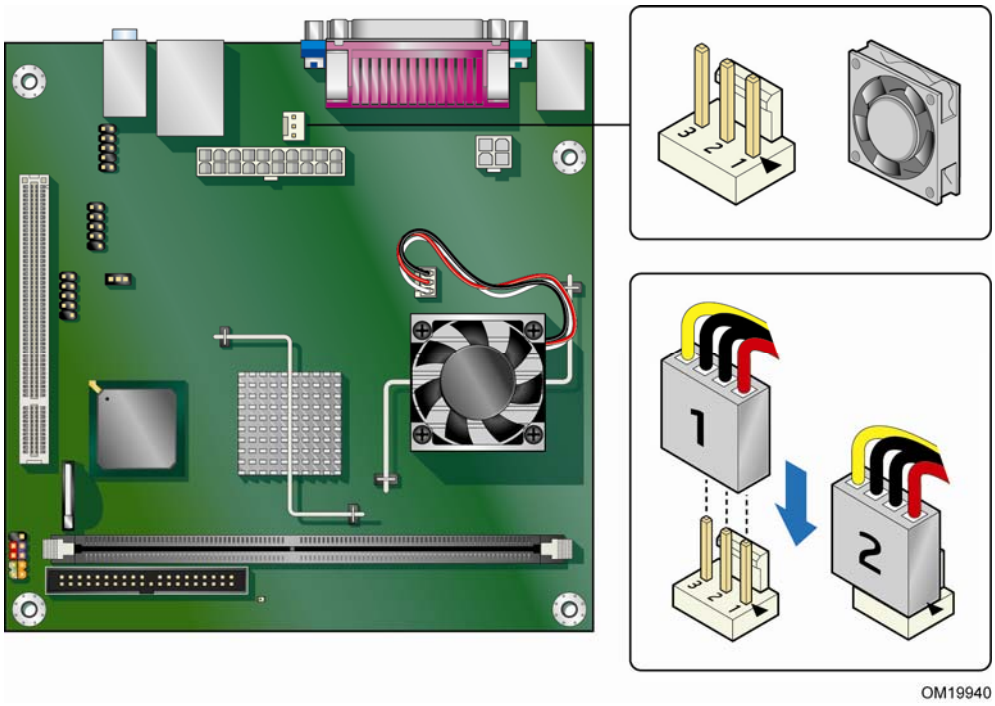


Figure 11. Location of the Chassis Fan Header

Connecting Supply Power Cables

CAUTION

Failure to use an appropriate power supply and/or not connecting the 12 V (2 x 2) power connector to the Board may result in damage to the board or the system may not function properly.

Figure 12 shows the location of the power connectors.

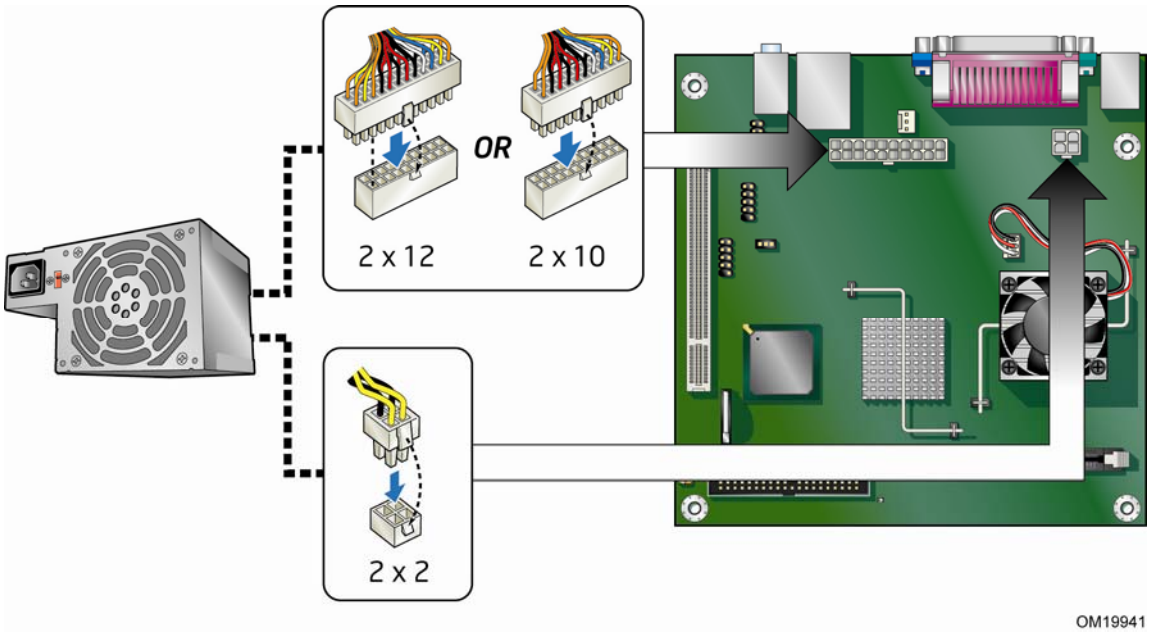


Figure 12. Connecting a 2 x 10 or 2 x 12 Power Supply Cable

1. Observe the precautions in "Before You Begin" on page 21.
2. Connect the 12 V processor core voltage power supply cable to the 2 x 2 connector (Figure 12).
3. Connect the main power supply cable (2 x10 or 2 x 12) to the 2 x 10 connector (Figure 12).

Setting the Board Jumpers

NOTE

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

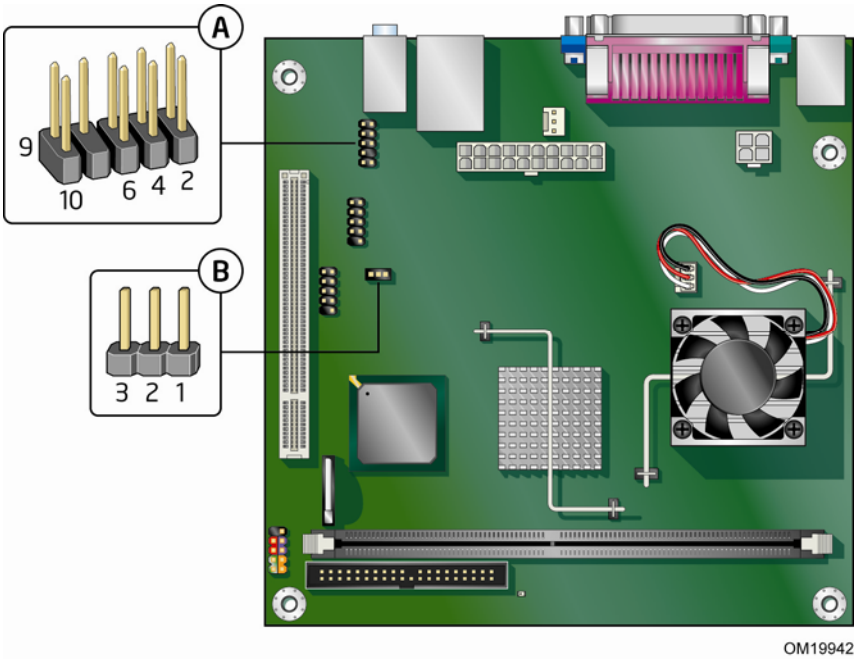


Figure 13. Board Jumpers

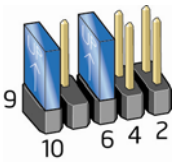
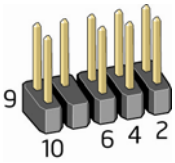
Front Panel Audio Header/Jumper Block

This header (Figure 13, A) has two functions:

- With jumpers installed, the audio line out and mic-in signals are routed to the back panel audio connectors (see Figure 2).
- With jumpers removed, the header provides audio line out and mic-in signals for front panel audio connectors (see Table 4).

Table 7 describes the two configurations of this header/jumper block.

Table 7. Front Panel Audio Header/Jumper Block

Jumper Setting		Configuration
	5 and 6 9 and 10	Audio line out and mic-in signals are routed to the back panel connectors. The back panel audio connectors are shown in Figure 2.
	No jumpers installed	Table 4 lists the names of the signals available on this connector when no jumpers are installed.

NOTE

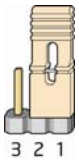
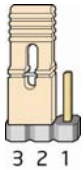
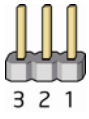
When the jumpers are removed and this header is used for front panel audio, the back panel audio line out and mic-in connectors are disabled.

BIOS Configuration Jumper

The three-pin BIOS jumper block enables all board configuration to be done in the BIOS Setup program. Table 8 shows the jumper settings for the Setup program modes.

Figure 13, B shows the location of the Board's BIOS configuration jumper block.

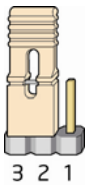
Table 8. Jumper Settings for the BIOS Setup Program Modes

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

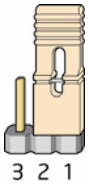
Clearing Passwords

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

1. Observe the precautions in "Before You Begin" on page 21.
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 (see Figure 13, B).
5. Place the jumper on pins 2-3 as shown below.



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.



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

Replacing the Battery

A coin-cell battery (CR2032) powers the real-time clock and CMOS memory. When the computer is not plugged into a wall socket, the battery has an estimated life of three years. When the computer is plugged in, 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 14 on page 41 shows the location of the 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.

PRECAUTION

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.

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.

OBS!

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

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 неправільнага тыпу. Акумулятары павінны, па магчымасці, перепрацоўвацца. 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.

VIGYAZAT

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.


คำเตือน

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.

To replace the battery, follow these steps:

1. Observe the precautions in "Before You Begin" (see page 21).
2. Turn off all peripheral devices connected to the computer. Disconnect the computer's power cord from the AC power source (wall outlet or power adapter).
3. Remove the computer cover.
4. Locate the battery on the board (see Figure 14).
5. Push the battery retention clip aside and remove the battery from the connector as shown in Figure 14. Note the orientation of the "+" and "-" on the battery.
6. Install the new battery in the connector, making sure to orient the "+" and "-" correctly.
7. Replace the computer cover.

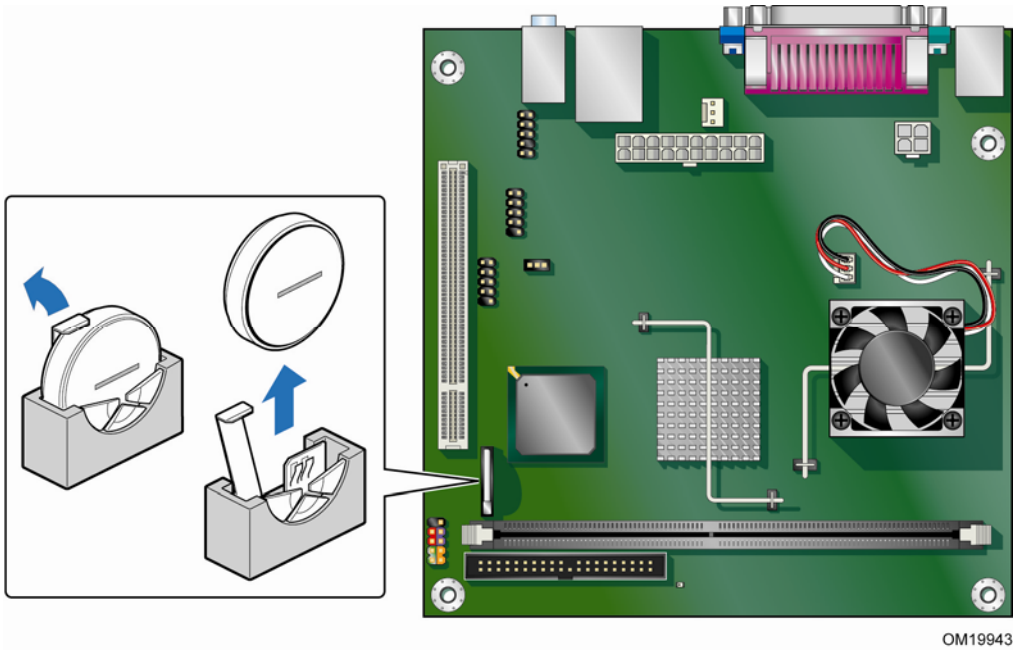


Figure 14. Removing the Battery

A Regulatory Compliance

This appendix contains the following regulatory compliance information for Mini-ITX Motherboard 2807638:

- Safety regulations
- European Union Declaration of Conformity statement
- Product Ecology statements
- Electromagnetic Compatibility (EMC) regulations
- Product certifications

Safety Regulations

Mini-ITX Motherboard complies with the safety regulations stated in Table 11 when correctly installed in a compatible host system.

Table 11. Safety Regulations

Regulation	Title
UL 60950-1:2003/ CSA C22.2 No. 60950-1-03	Information Technology Equipment – Safety - Part 1: General Requirements (USA and Canada)
EN 60950-1:2002	Information Technology Equipment – Safety - Part 1: General Requirements (European Union)
IEC 60950-1:2001, First Edition	Information Technology Equipment – Safety - Part 1: General Requirements (International)

Place Battery Marking

There is insufficient space on this Board to provide instructions for replacing and disposing of the Lithium ion coin cell battery. For system safety certification, the statement below or an equivalent statement is required to be permanently and legibly marked on the chassis near the 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.

Related Links

For information about replacing the battery, go to page 37.

Any advice or comments about our products and service, or anything we can help you with please don't hesitate to contact with us. We will do our best to support your products, projects and business.

Address: Global American, Inc.
17 Hampshire Drive
Hudson, NH 03051

Telephone: Toll Free (U.S. Only) 800-833-8999
(603)886-3900

FAX: (603)886-4545

Website: http://www.globalamericaninc.com
E-Mail: salesinfo@globalamericaninc.com