COM330-B

System Board
User's Manual

A-211-M-2008

Copyright

Trademarks

FCC and DOC Statement on Class B

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 when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, 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.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables must be used in order to comply with the emission limits.

Table of Contents

About this Manual

This manual can be downloaded from the website, or acquired as an electronic file included in the optional CD/DVD. The manual is subject to change and update without notice, and may be based on editions that do not resemble your actual products. Please visit our website or contact our sales representatives for the latest editions.

Warranty

1. Warranty does not cover damages or failures that arised from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.

2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.

3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.

4. We will not be liable for any indirect, special, incidental or consequencial damages to the product that has been modified or altered.

Static Electricity Precautions

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.

2. Wear an antistatic wrist strap.

3. Do all preparation work on a static-free surface.

4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.

5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.

Important:
Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. 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 system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

Safety Measures

To avoid damage to the system:
- Use the correct AC input voltage range.

To reduce the risk of electric shock:
- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

Battery:
- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

About the Package

The system board package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

- ☑ One COM330-B board
- ☑ Two Serial ATA data cable
- ☑ One COM port cable
- ☑ One USB port cable
- ☑ One I/O shield
- ☑ One QR (Quick Reference)

Optional Items

- ☑ Serial ATA data cable
- ☑ Serial ATA power cable
- ☑ USB port cable
- ☑ COM port cable
- ☑ I/O shield

The system board and accessories in the package may not come similar to the information listed above. This may differ in accordance to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

Before Using the System Board

Before using the system board, prepare basic system components.

If you are installing the system board in a new system, you will need at least the following internal components.

- A CPU
- Memory module
- Storage devices such as hard disk drive, CD-ROM, etc.

You will also need external system peripherals you intend to use which will normally include at least a keyboard, a mouse and a video display monitor.

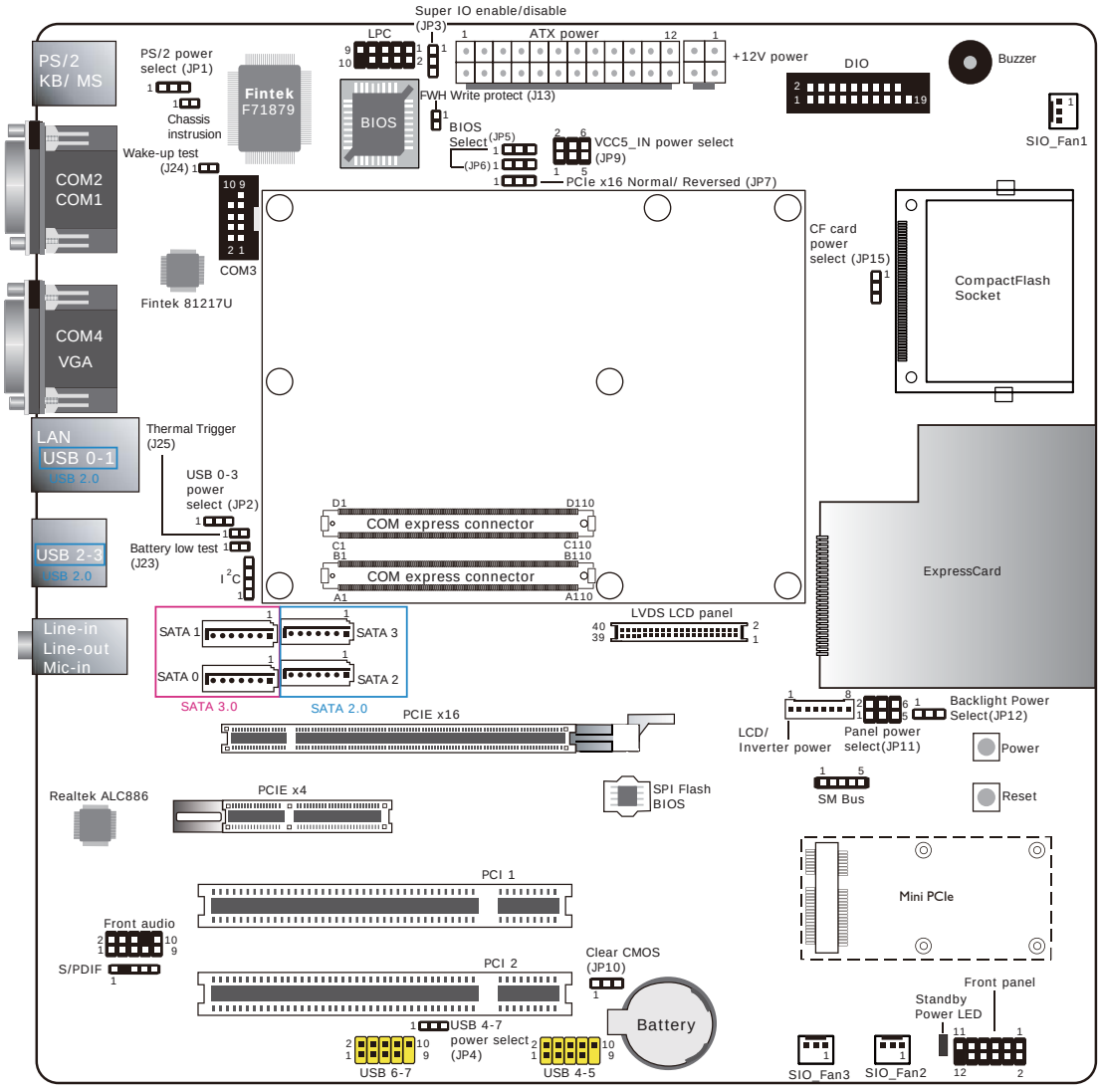
Specifications

Audio	• Realtek ALC886 5.1-channel High Defi nition Audio • Audio outputs: Mic-in/Center+Subwoofer, line-in/surround and line out • S/PDIF audio interface
Storage	• 4 Serial ATA ports - 2 SATA 3.0 ports with data transfer rate up to 6Gb/s - 2 SATA 2.0 ports with data transfer rate up to 3Gb/s • 1 CompactFlash socket
Digital I/O	• 8-bit Digital I/O connector - 4-bit GPI (General Purpose Input) - 4-bit GPO (General Purpose Output)
Rear Panel I/O Ports	• 3 DB-9 RS232 serial ports • 1 DB-15 VGA port • 1 RJ45 LAN port • 4 USB 2.0/1.1 ports • Line-in/Surround, Line out, Mic-in/Center+Subwoofer jacks • 1 mini-DIN-6 PS/2 mouse port (option) • 1 mini-DIN-6 PS/2 keyboard port (option)
I/O Connectors	• 2 connectors for 4 external USB 2.0/1.1 ports • 1 connector for 1 external RS232 serial port • 1 LVDS LCD panel connector • 1 LCD/inverter power connector • 1 8-bit Digital I/O connector • 1 front audio connector for line-out and mic-in jacks • 1 S/PDIF connector • 4 Serial ATA ports • 1 LPC connector • 1 I2C connector • 1 SMBus connector • 1 24-pin ATX power connector • 1 4-pin 12V power connector • 1 chassis intrusion connector • 1 front panel connector • 3 fan connectors
Expension Slots	• 1 PCIe x16 Gen 3 slot • 1 PCIe x4 Gen 2 slot • 1 Mini PCIe x1 slot (PCIe 2.0) (PCIe signal only) - USB signal: optional • 2 PCI slots (PCI 2.3) • 1 ExpressCard slot (PCIe signal only) - USB signal: optional

COM Express Modules	• Basic • Compact
Damage Free Intelligence	• Legacy Super I/O support (option) - Monitors 5V/1.5V/12V/3.3V - Monitors SIO_Fan 1/SIO_Fan 2/SIO_Fan 3
ROM Interface	• 1 SPI interface - Supports up to 64Mbit • 1 LPC/FWH interface
Temperature	• Operating: 0°C to 60°C • Storage: -20°C to 85°C
Humidity	• 10% to 90%
Power Output	• 12V, 5VSB, VCC_RTC (ATX mode) 12V, 5V, VCC_RTC (AT mode) 12V, VCC_RTC (AT mode)
Regulatory	• EMC: CE, FCC Part 15 Class B
PCB	• Dimensions - microATX form factor - 244mm (9.6”) x 244mm (9.6”) • Compliance - PICMG COM Express R2.0, Type 2

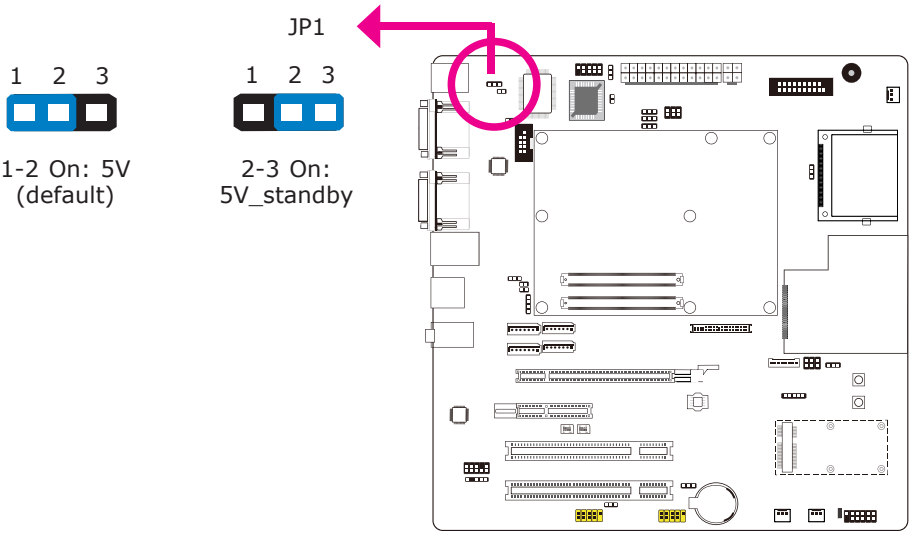
Chapter 2 - Hardware Installation

System Board Layout



Jumper Settings

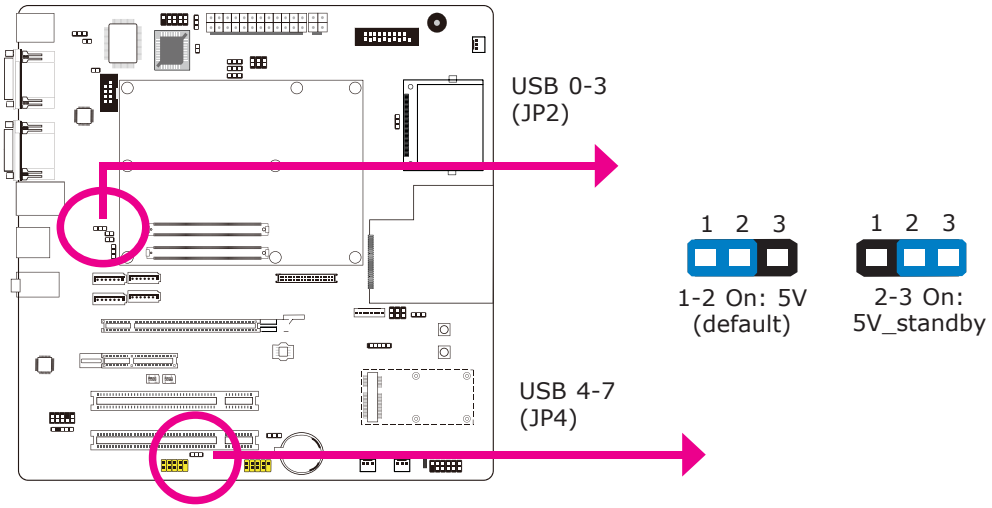
PS/2 Power Select



JP1 is used to select the power of the PS/2 keyboard/mouse port. Selecting 5V_standby will allow you to use the PS/2 keyboard or PS/2 mouse to wake up the system.

Important:
The 5VSB power source of your power supply must support ≥720mA.

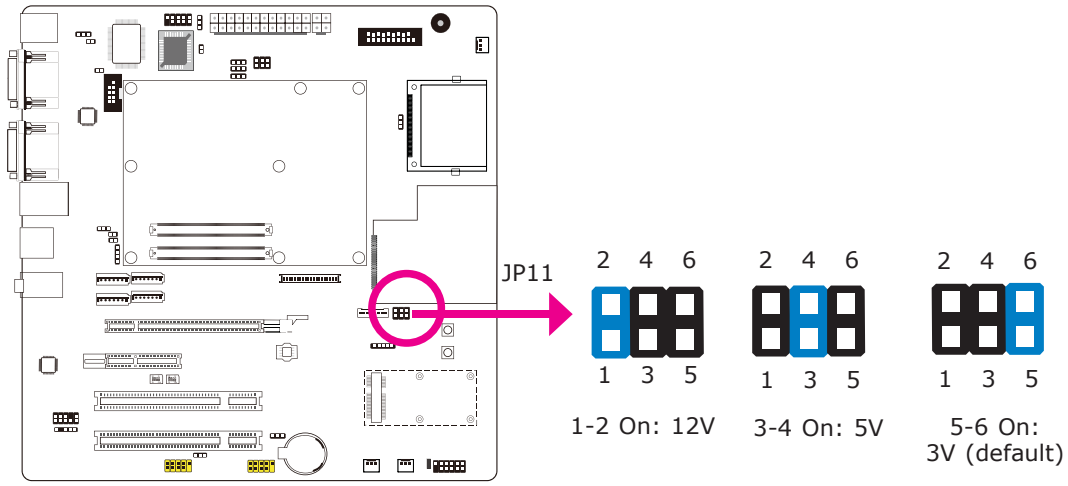
USB Power Select



JP2 (for USB 0-3) and JP4 (for USB 4-7) are used to select the power of the USB ports. Selecting 5V_standby will allow you to use a USB keyboard to wake up the system.

Important:
If you are using the Wake-On-USB Keyboard/Mouse function for 2 USB ports, the 5V_standby power source of your power supply must support ≥1.5A. For 3 or more USB ports, the 5V_standby power source of your power supply must support ≥2A.

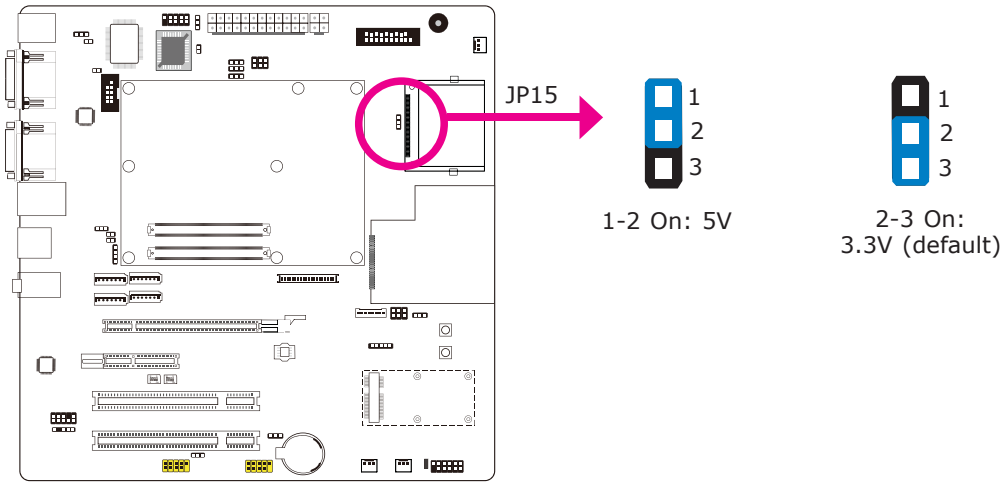
Panel Power Select



JP11 is used to select the power supplied to the LCD panel.

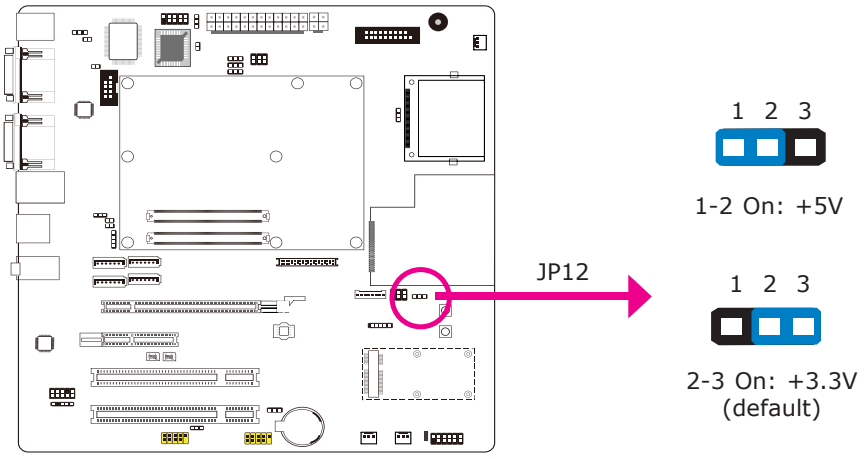
Important:
Before powering-on the system, make sure JP11's setting matches the LCD panel's specification. Selecting the incorrect voltage will seriously damage the LCD panel.

CF Card Power Select



JP15 is used to select the power supplied to the CF card that is on the motherboard. Selecting 3V3 will be the default setting.

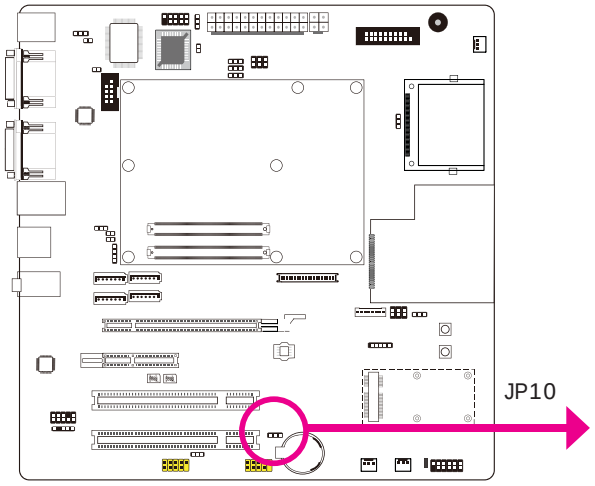
Backlight Power Select



JP12 is used to select the backlight control level +5V or +3.3V.

Important:
Before powering-on the system, make sure JP12's setting matches the backlight power's specification. Selecting the incorrect voltage will seriously damage the backlight.

Clear CMOS



1-2 On: Normal (default)

2-3 On: Clear CMOS

If you encounter the following,

a) CMOS data becomes corrupted.
b) You forgot the supervisor or user password.

you can reconfigure the system with the default values stored in the ROM BIOS.

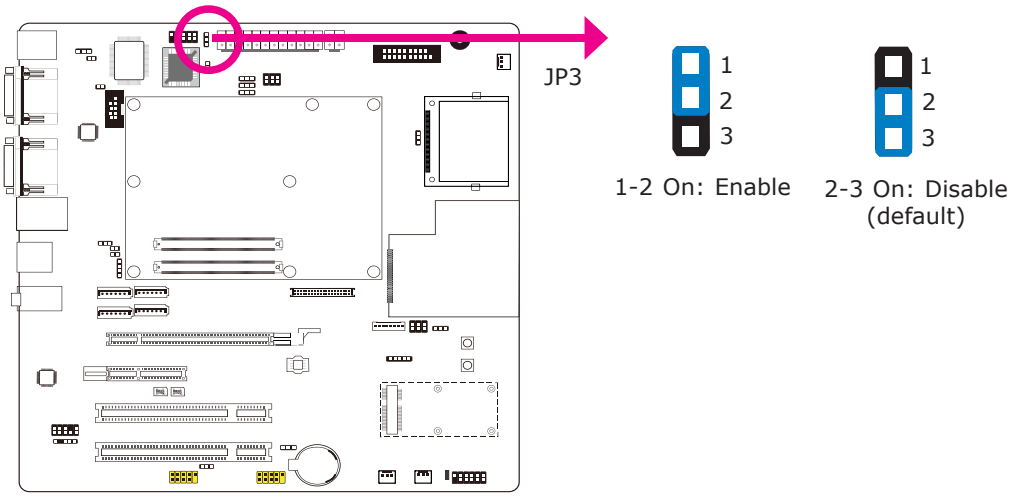
To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system and unplug the power cord.

2. Set JP10 pins 2 and 3 to On. Wait for a few seconds and set JP10 back to its default setting, pins 1 and 2 On.

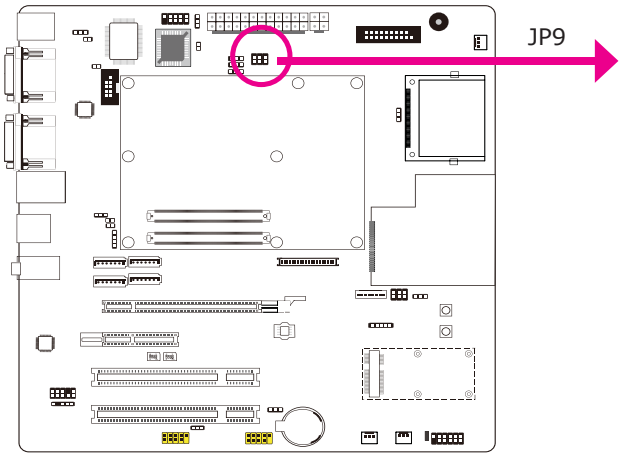
3. Now plug the power cord and power-on the system.

Super IO Enable/ Disable

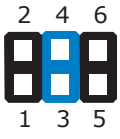


JP3 is used to select enable or disable the super IO select.

VCC5_IN Power Select



1-2 On: 5VSB (default)

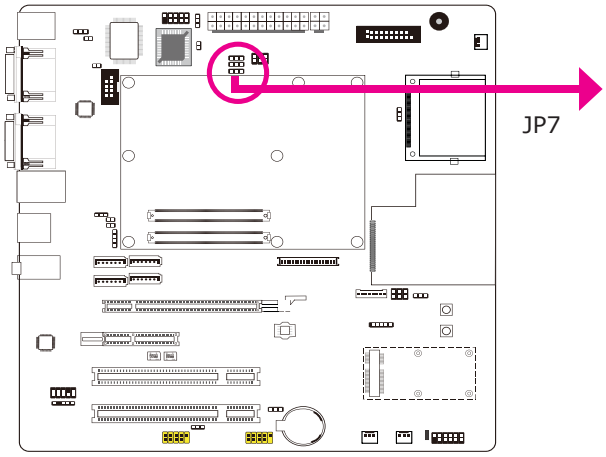


3-4 On: 5V

5-6 On: NC

JP9 is used to select the power of the COM Express connector.

PCIe x16 Normal/ Reversed

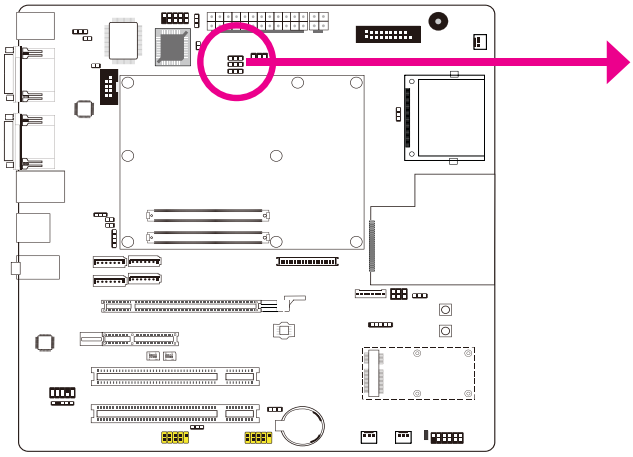


1-2 On: Normal
(default)

2-3 On: Reversed
(for cards that support
reversed signals)

IF you are installing a PCIe x16 card who's signal is reversed, set JP7 pins 2 and 3 to on.

BIOS Select



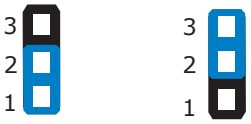
JP5: 1-2 On JP6: 1-2 On

Module SPI BIOS

JP5: 2-3 On JP6: 1-2 On

Carrier LPC FWH

JP5: 1-2 On JP6: 2-3 On



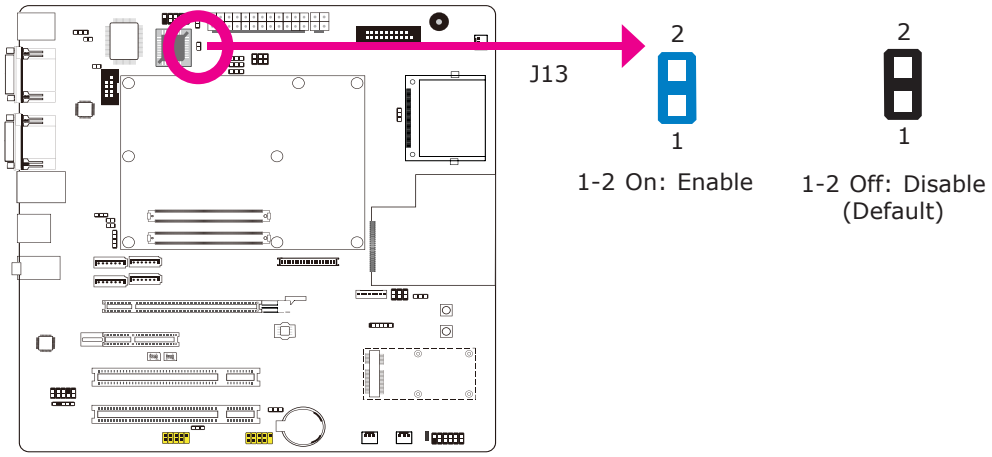
Carrier SPI0

JP5: 2-3 On JP6: 2-3 On

Module SPI0 (Default)

JP5 and JP6 are used to determine the BIOS boot device.

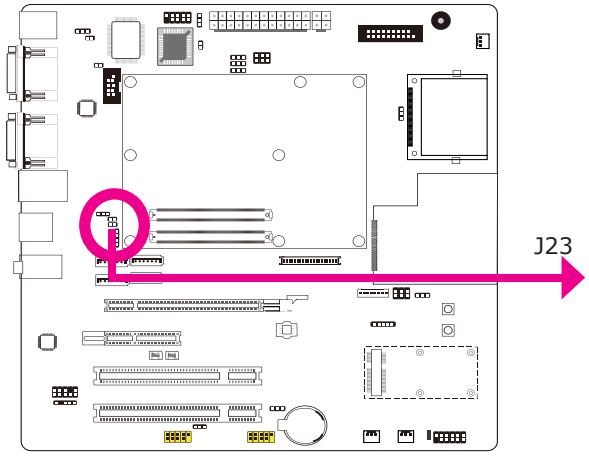
FWH Write Protect



J13 is used to configure the BIOS Write Protect function. When this function is enabled, the system will be protected from unnecessary updating or flashing of the BIOS. It secures the BIOS therefore any updates to it will not take effect.

Function Test Jumpers

Battery Low Test

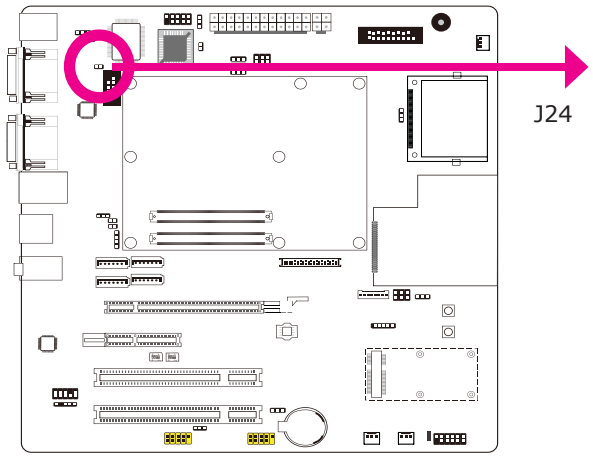


1-2 On:
Battery low test

1-2 Off: Normal
(default)

This jumper is used to simulate the signal status that indicates the external battery is low. By setting J23 pins 1 and 2 to On, it sends a battery low signal to the module.

Wake-up Test

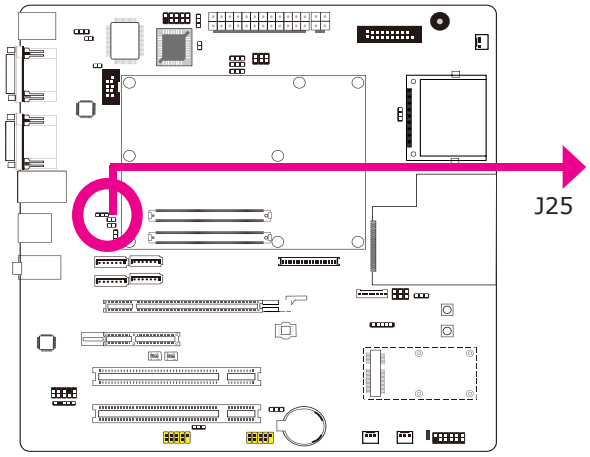


1-2 On:
Wake-up test

1-2 Off: Normal
(default)

This jumper is used to simulate the signal status that indicates the wake-on-ring or PME# event from the Super I/O. It is also used to simulate a general purpose wake-up signal such as wake-up on PS/2 keyboard or PS/2 mouse. Set J24 pins 1 and 2 to On to send WAKE# signal to the module.

Thermal Trigger



1 2

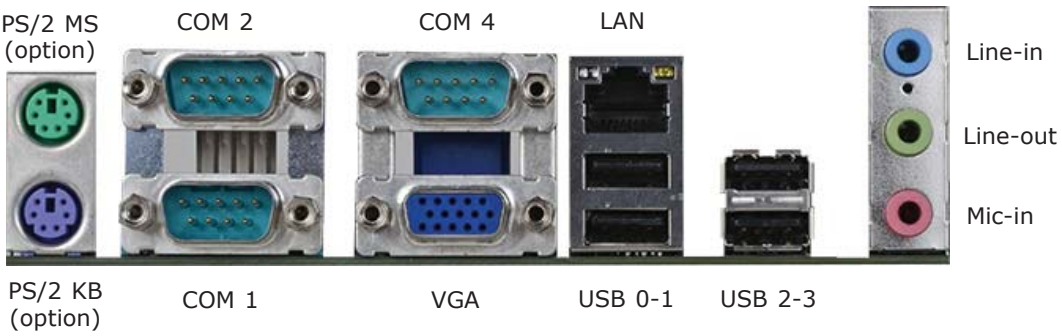
1-2 On:
Thermal Trigger

1 2

1-2 Off: Normal
(default)

This jumper is used to simulate the signal status that indicates the Over Temperature Signal (OVT) output from the Super I/O F71879. When monitored temperature exceeds the OVT value, OVT# will be asserted until the temperature goes below the hysteresis temperature. Set J25 pins 1 and 2 to On to send THRM# signal to the module.

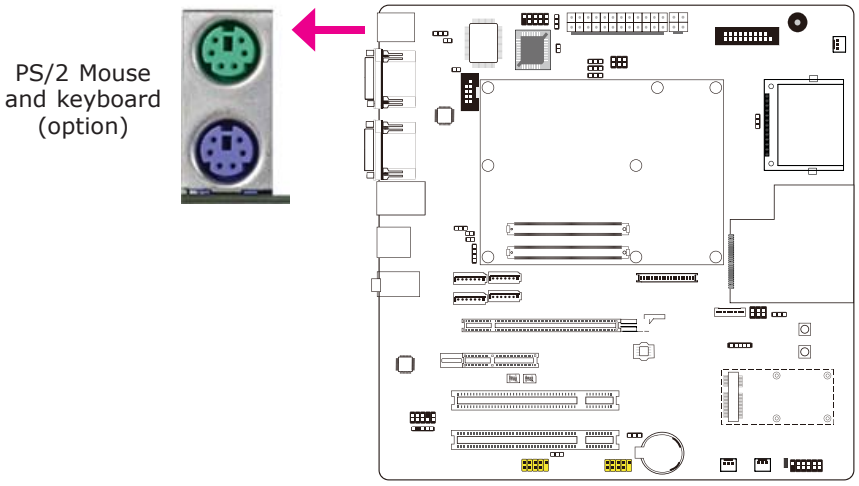
Rear Panel I/O Ports



The rear panel I/O ports consist of the following:

- PS/2 keyboard port
- PS/2 mouse port
- 3 COM ports
- VGA port
- LAN port
- 4 USB ports
- Mic-in jack
- Line-in jack
- Line-out jack

PS/2 Mouse and Keyboard Port



These ports are used to connect a PS/2 mouse and a PS/2 keyboard. The PS/2 mouse port uses IRQ12.

Wake-On-PS/2 Keyboard/Mouse

The Wake-On-PS/2 Keyboard/Mouse function allows you to use the PS/2 keyboard or PS/2 mouse to power-on the system. To use this function:

- Jumper Setting

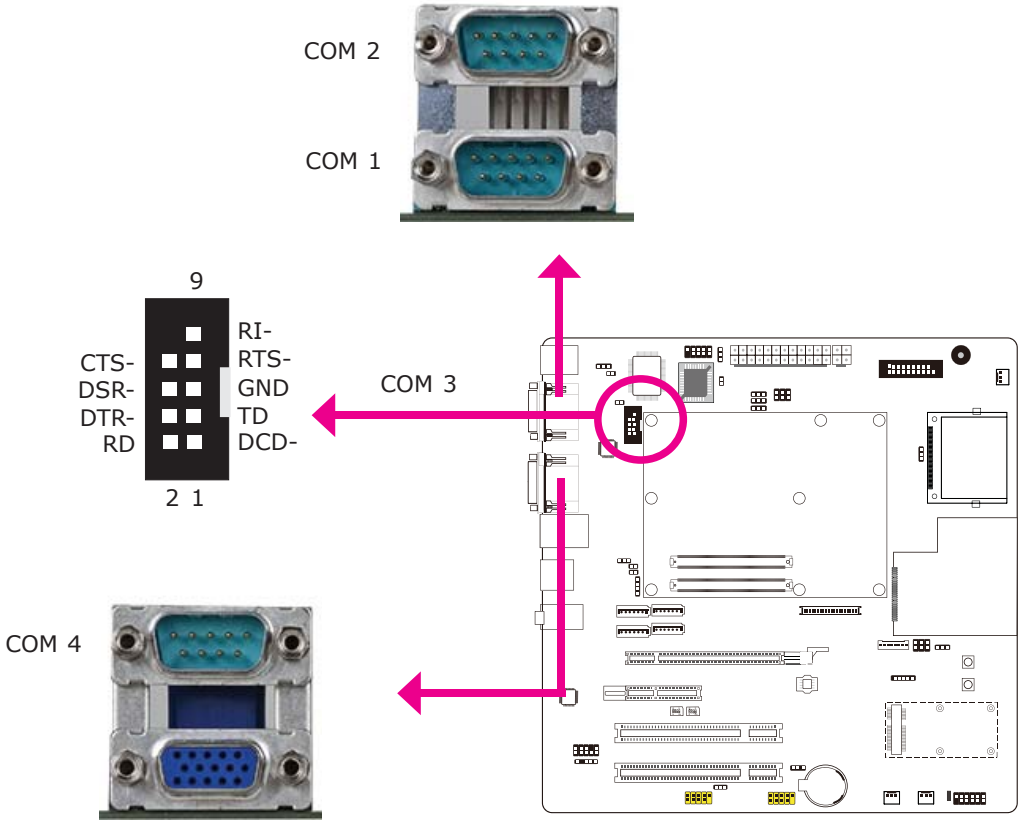
  JP1 must be set to "2-3 On: +5V_standby". Refer to "PS/2 Power Select" in this chapter for more information.

- BIOS Setting

  Configure the PS/2 keyboard/mouse wake up function in the Advanced menu ("ACPI Power Management Configuration" submenu) of the BIOS. Refer to chapter 3 for more information.

Important:
The +5V_standby power source of your power supply must support ≥720mA.

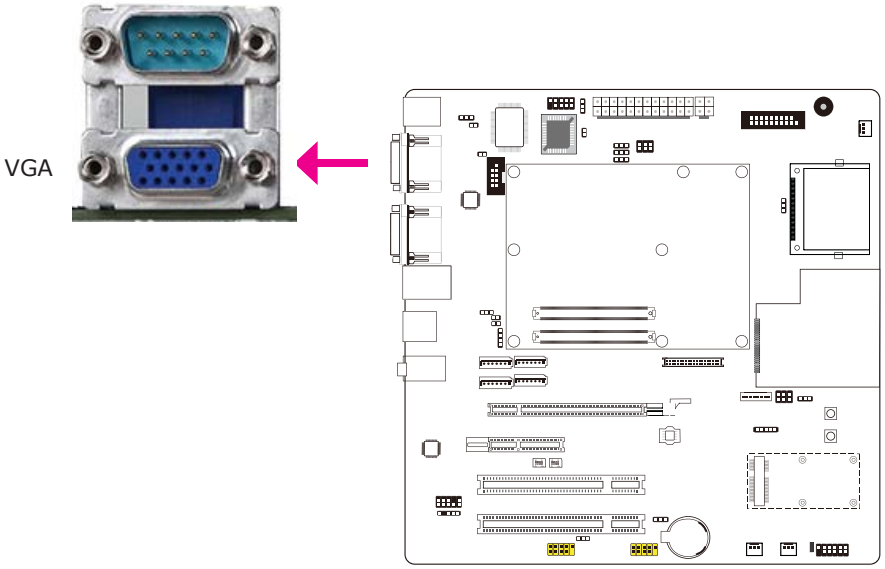
Serial (COM) Ports



The system board is equipped with 3 onboard serial port (COM 1, COM2 and COM 4). It is also equipped with a 9-pin connector for connecting an external serial port (COM 3).

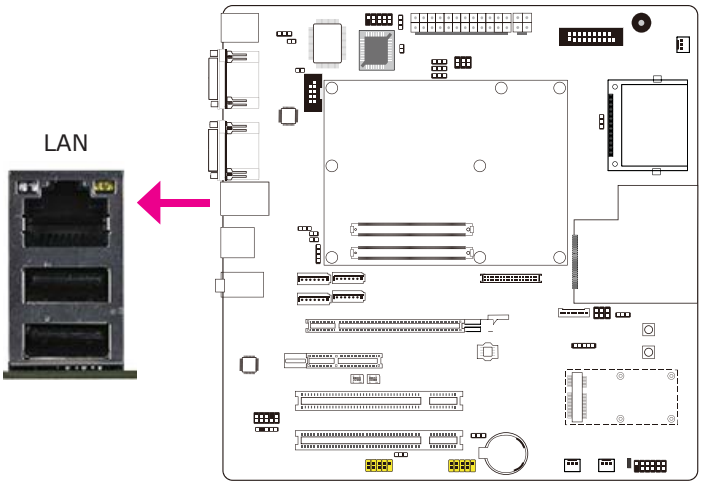
The serial ports are RS-232 asynchronous communication ports with 16C550A-compatible UARTs that can be used with modems, serial printers, remote display terminals, and other serial devices. To connect COM 3, please refer to the following description. The serial port may be mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then insert the cable connector to the 9-pin connector. Make sure the colored stripe on the ribbon cable is aligned with pin 1 of the connector.

VGA Port



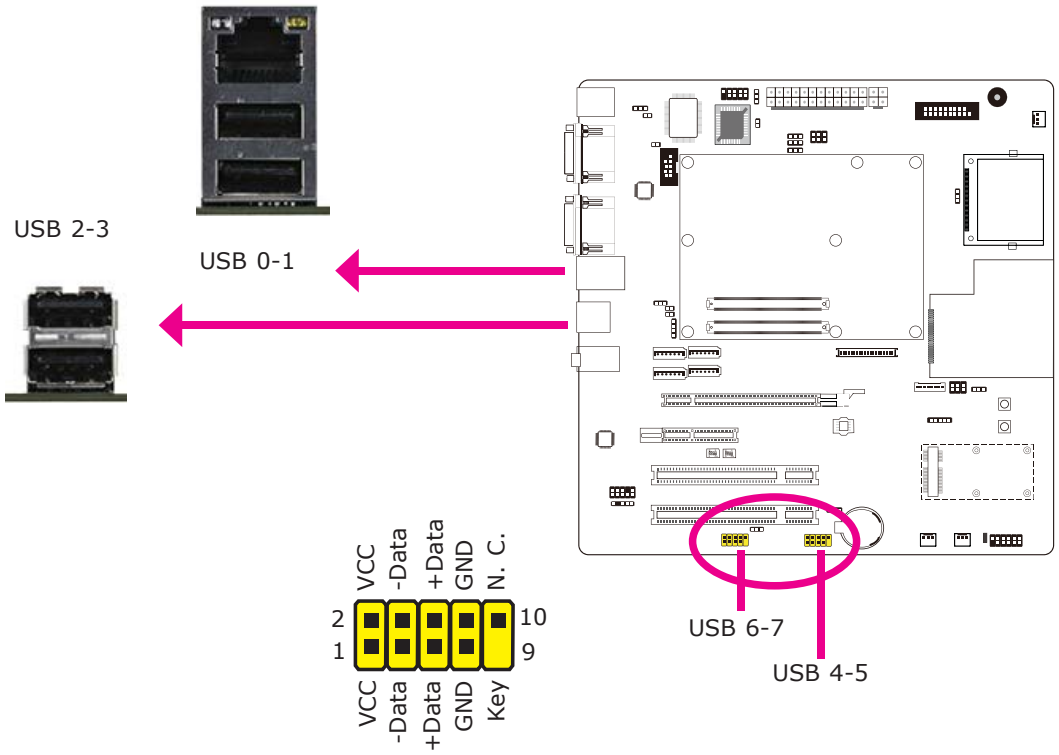
The VGA port is used for connecting a VGA monitor. Connect the monitor's 15-pin D-shell cable connector to the VGA port. After you plug the monitor's cable connector into the VGA port, gently tighten the cable screws to hold the connector in place.

RJ45 LAN Port



The onboard RJ45 LAN port allows the system board to connect to a local area network by means of a network hub.

Universal Serial Bus Connectors



USB allows data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals.

The system board is equipped with four onboard USB 2.0/1.1 ports (USB 0-3). The two 10-pin connectors allow you to connect 4 additional USB 2.0/1.1 ports (USB 4-7). The additional USB ports may be mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis and then insert the USB port cables to a connector.

BIOS Setting

Configure the onboard USB in the Advanced menu ("USB Configuration" submenu) of the BIOS. Refer to chapter 3 for more information.

Driver Installation

You may need to install the proper drivers in your operating system to use the USB device. Refer to your operating system's manual or documentation for more information.

Wake-On-USB Keyboard/Mouse

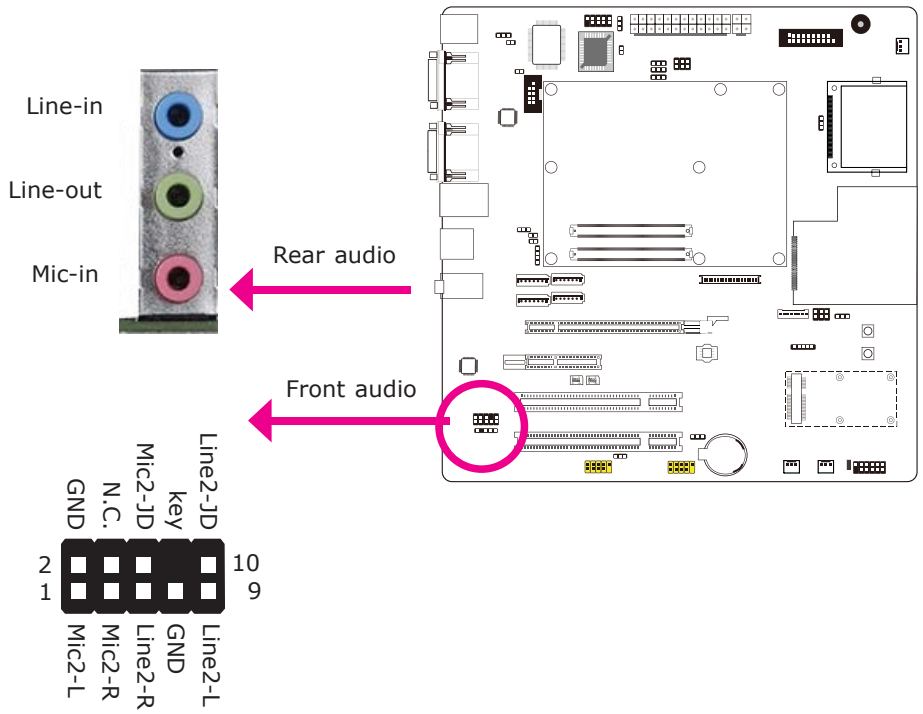
The Wake-On-USB Keyboard/Mouse function allows you to use a USB keyboard or USB mouse to wake up a system from the S3 (STR - Suspend To RAM) state. To use this function:

- Jumper Setting

  JP2, and/or JP4 must be set to "2-3 On: 5V_standby". Refer to "USB Power Select" in this chapter for more information.

Important:
If you are using the Wake-On-USB Keyboard/Mouse function for 2 USB ports, the 5V_standby power source of your power supply must support ≥1.5A. For 3 or more USB ports, the 5V_standby power source of your power supply must support ≥2A.

Audio



Rear Audio

The system board is equipped with 3 audio jacks. A jack is a one-hole connecting interface for inserting a plug.

- Line-in Jack (Light Blue)
  This jack is used to connect any audio devices such as Hi-fi set, CD player, tape player, AM/FM radio tuner, synthesizer, etc.

- Line-out Jack (Lime)
  This jack is used to connect a headphone or external speakers.

- Mic-in Jack (Pink)
  This jack is used to connect an external microphone.

Front Audio

The front audio connector allows you to connect to the second line-out and mic-in jacks that are at the front panel of your system.

BIOS Setting

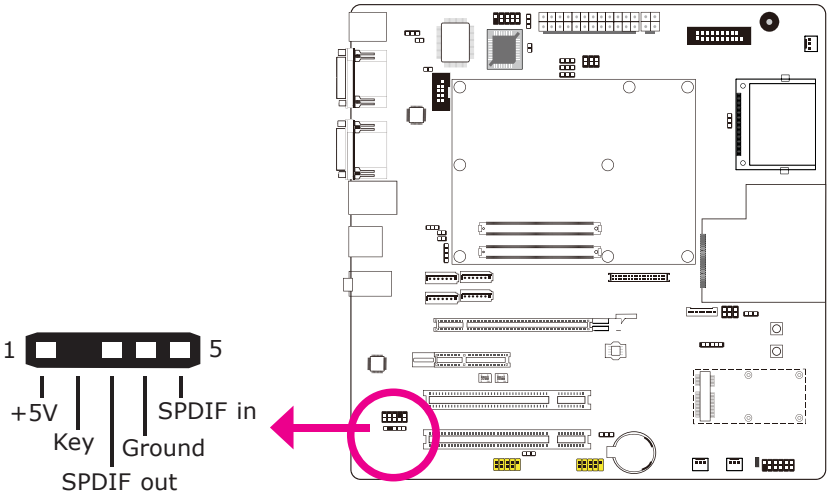
Refer to the module's BIOS for more information.

Driver Installation

Install the audio driver. Refer to chapter 3 for more information.

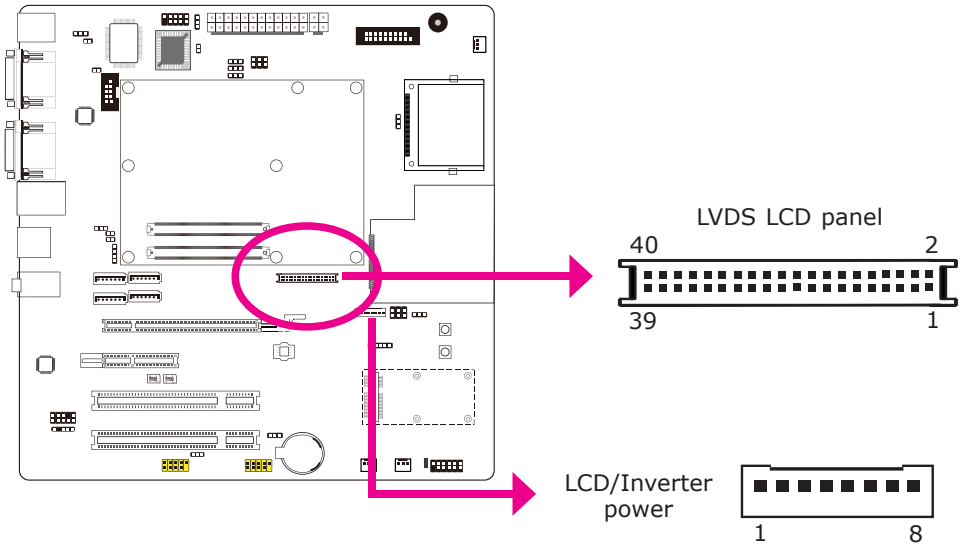
I/O Connectors

S/PDIF Connector



The S/PDIF connector is used to connect external S/PDIF ports. Your S/PDIF ports may be mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then connect the audio cable to the S/PDIF connector. Make sure pin 1 of the audio cable is aligned with pin 1 of the connector.

LVDS LCD Panel Connector
LCD/Inverter Power Connector



The system board allows you to connect a LCD Display Panel by means of the LVDS LCD panel connector and the LCD/Inverter power connector. These connectors transmit video signals and power from the system board to the LCD Display Panel.

Refer to the next page for the pin functions of these connectors.

Jumper Settings

Refer to the "Jumper Settings" section in this chapter for settings relevant to the LCD panel.

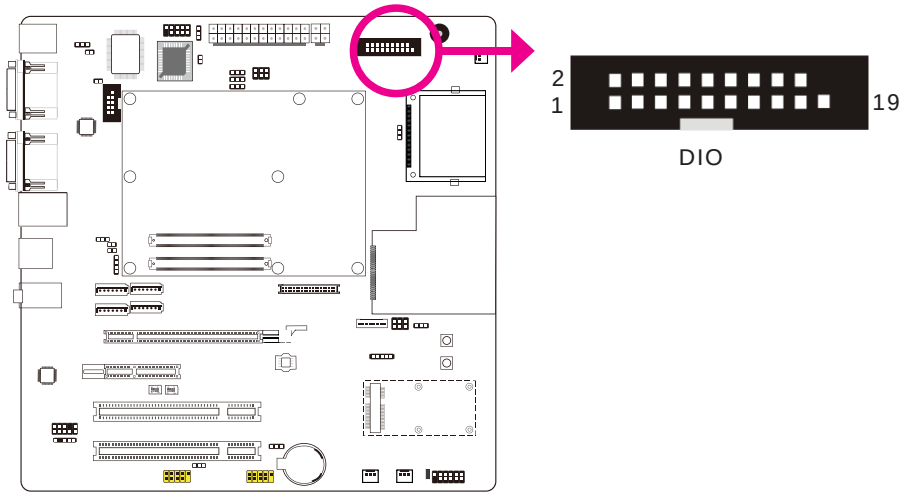
LVDS LCD Panel Connector

Pins	Function	Pins	Function
1	GND	2	GND
3	LVDS_Out3+	4	LVDS_Out7+
5	LVDS_Out3-	6	LVDS_Out7-
7	GND	8	GND
9	LVDS_Out2+	10	LVDS_Out6+
11	LVDS_Out2-	12	LVDS_Out6-
13	GND	14	GND
15	LVDS_Out1+	16	LVDS_Out5+
17	LVDS_Out1-	18	LVDS_Out5-
19	GND	20	GND
21	LVDS_Out0+	22	LVDS_Out4+
23	LVDS_Out0-	24	LVDS_Out4-
25	GND	26	GND
27	LVDS_CLK1+	28	LVDS_CLK2+
29	LVDS_CLK1-	30	LVDS_CLK2-
31	GND	32	GND
33	LVDS_DDCCLK	34	N. C.
35	LVDS_DDCDATA	36	N. C.
37	Panel Power	38	Panel Power
39	Panel Power	40	Panel Power

LCD/Inverter Power Connector

Pins	Function
1	GND
2	GND
3	Panel Inverter Brightness Voltage Control
4	Panel Power
5	+3.3V
6	Panel Backlight On/Off Control
7	+12V
8	+12V

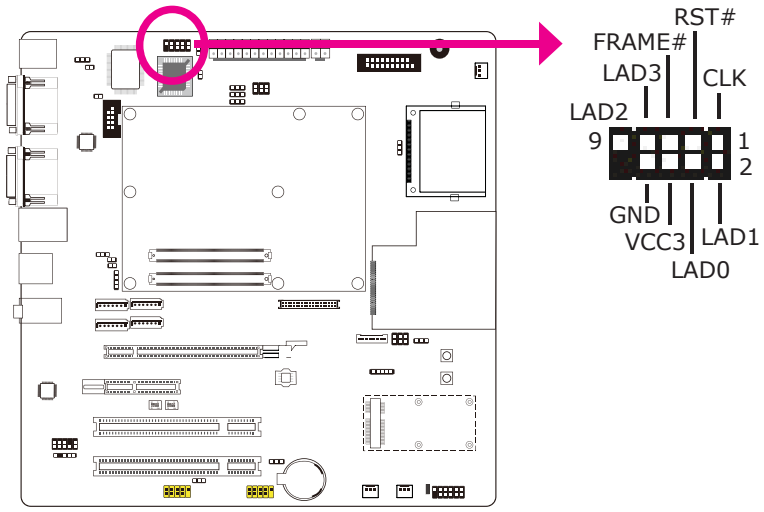
Digital I/O Connector



The 8-bit Digital I/O connector provides powering-on function to external devices that are connected to these connectors.

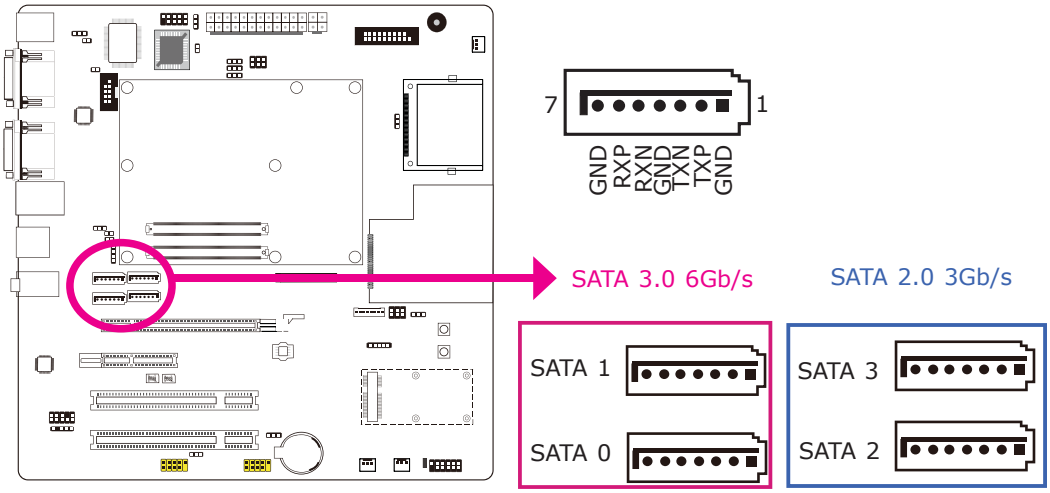
Pin	Pin Assignment	Pin	Pin Assignment
1	GND	2	+12V
3	DIO7(GPO3)	4	+12V
5	DIO6(GPO2)	6	GND
7	DIO5(GPO1)	8	+5V
9	DIO4(GPO0)	10	+5V
11	DIO3(GPI3)	12	GND
13	DIO2(GPI2)	14	5VSB
15	DIO1(GPI1)	16	5VSB
17	DIO0(GPI0)	18	GND
19	GND		

LPC connector



The Low Pin Count Interface was defined by Intel® Corporation to facilitate the industry's transition towards legacy free systems. It allows the integration of low-bandwidth legacy I/O components within the system, which are typically provided by a Super I/O controller. Furthermore, it can be used to interface firmware hubs, Trusted Platform Module (TPM) devices and embedded controller solutions. Data transfer on the LPC bus is implemented over a 4 bit serialized data interface, which uses a 33MHz LPC bus clock. For more information about LPC bus refer to the Intel® Low Pin Count Interface Specification Revision 1.1'.

SATA (Serial ATA) Connectors



Features

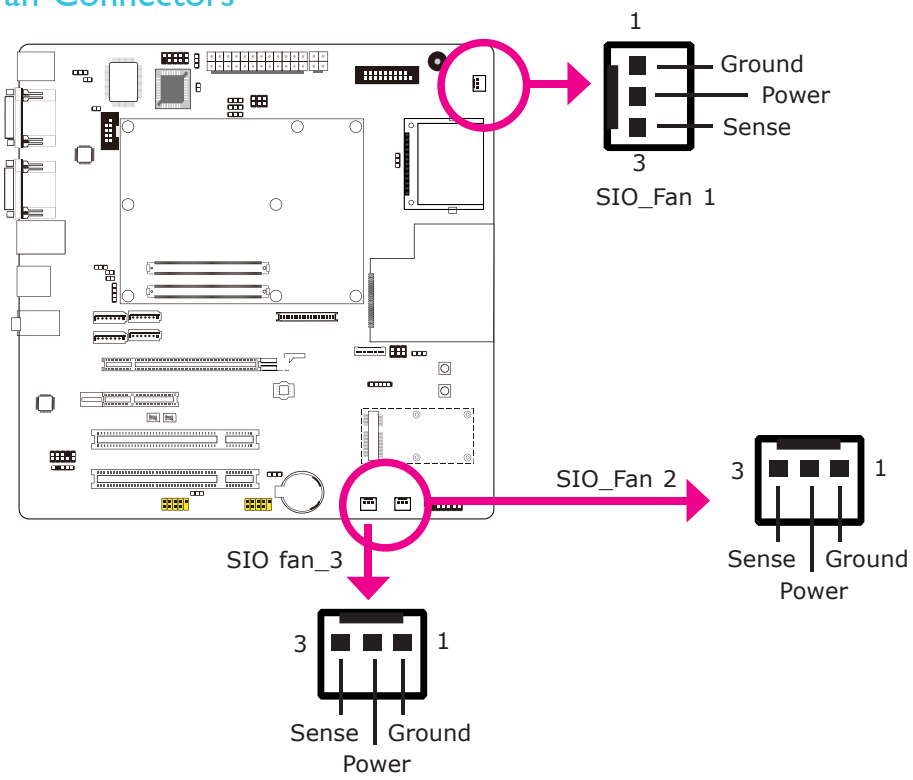
- SATA 0 and SATA 1 support data transfer rate up to 6Gb/s
- SATA 2 to SATA 3 support data transfer rate up to 3Gb/s
- Integrated Advanced Host Controller Interface (AHCI) controller
- Supports RAID 0, RAID 1, RAID 5 and RAID 10

The Serial ATA connectors are used to connect Serial ATA devices. Connect one end of the Serial ATA cable to a SATA connector and the other end to your Serial ATA device.

BIOS Setting

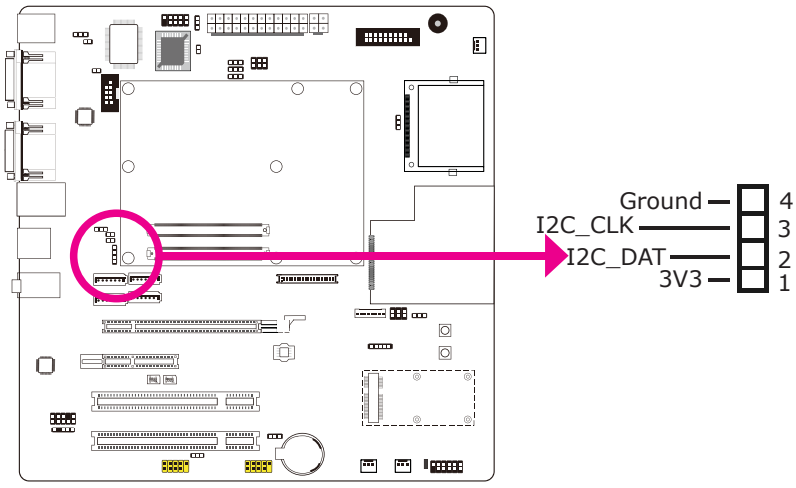
Refer to the module's BIOS for more information.

Cooling Fan Connectors



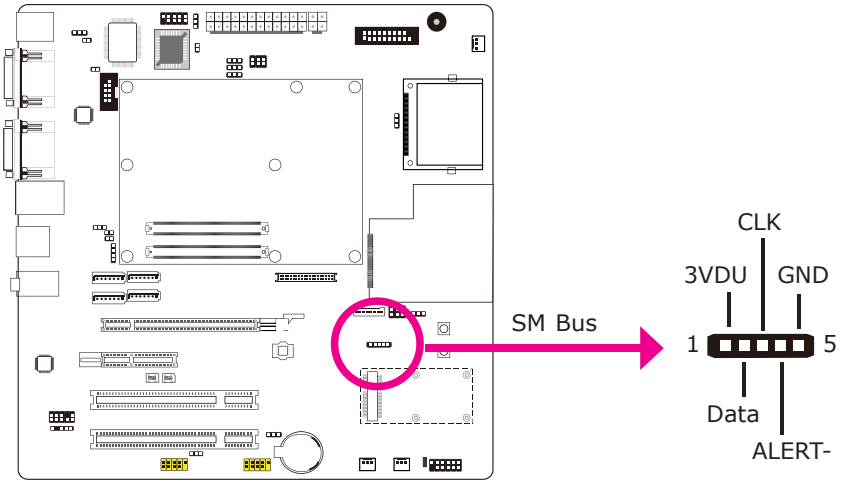
The fan connectors are used to connect cooling fans. The cooling fans will provide adequate airflow throughout the chassis to prevent overheating the module and system board components.

I²C Connector



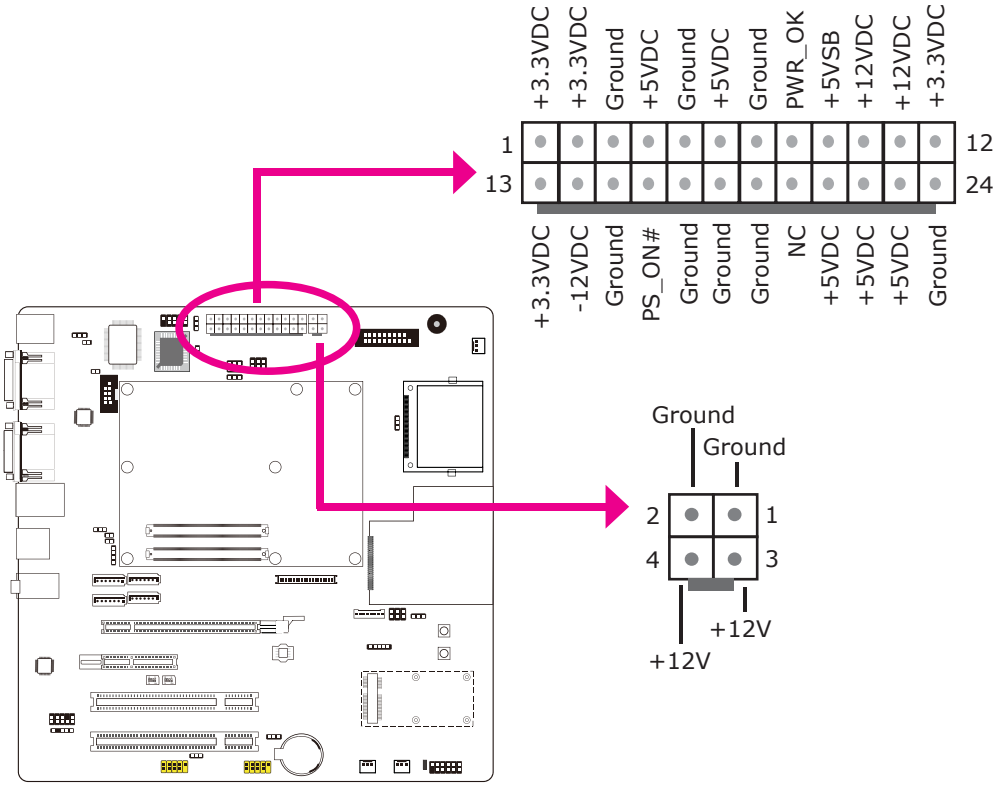
The 1-channel I²C bus interface conforms to the version 2.1 I²C bus specification. It operates as a master or slave device and supports a multi-master bus.

SM bus



The SMBus (System Management Bus) connector is used to connect SMBus devices. It is a multiple device bus that allows multiple chips to connect to the same bus and enable each one to act as a master by initiating data transfer.

Power Connectors



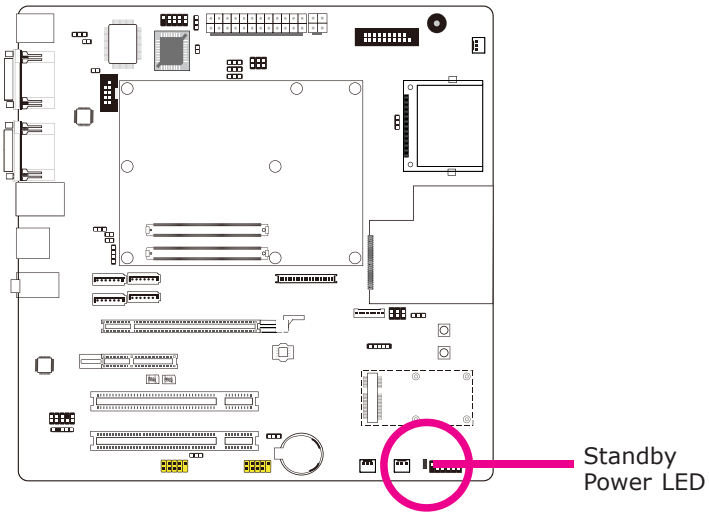
Use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1. An ATX12V power supply unit has a standard 24-pin ATX main power connector that must be inserted into the 24-pin connector. The 4-pin +12V power connector enables the delivery of more +12VDC current to the COM express module board and carrier board's PCI/ PCIe device.

The power connectors from the power supply unit are designed to fit the 24-pin and 4-pin connectors in only one orientation. Make sure to find the proper orientation before plugging the connectors.

Important

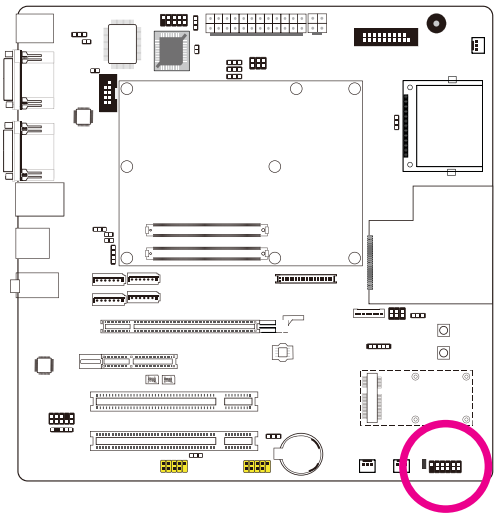
The system board consumes a minimal amount of power. Due to its low power consumption, you only need a 120W to 150W power supply. Every power supply has its minimum load of power. If you use a greater than 150W power supply, the power consumed by the system board may not attain its minimum load causing instability to the entire system.

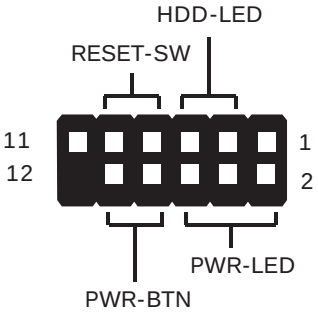
Standby Power LED



This LED will lit red when the system is in the standby mode. It indicates that there is power on the system board. Power-off the PC then unplug the power cord prior to installing any devices. Failure to do so will cause severe damage to the motherboard and components.

Front Panel Connectors





HDD-LED - HDD LED

This LED will light when the hard drive is being accessed.

RESET SW - Reset Switch

This switch allows you to reboot without having to power off the system.

PWR-BTN - Power Switch

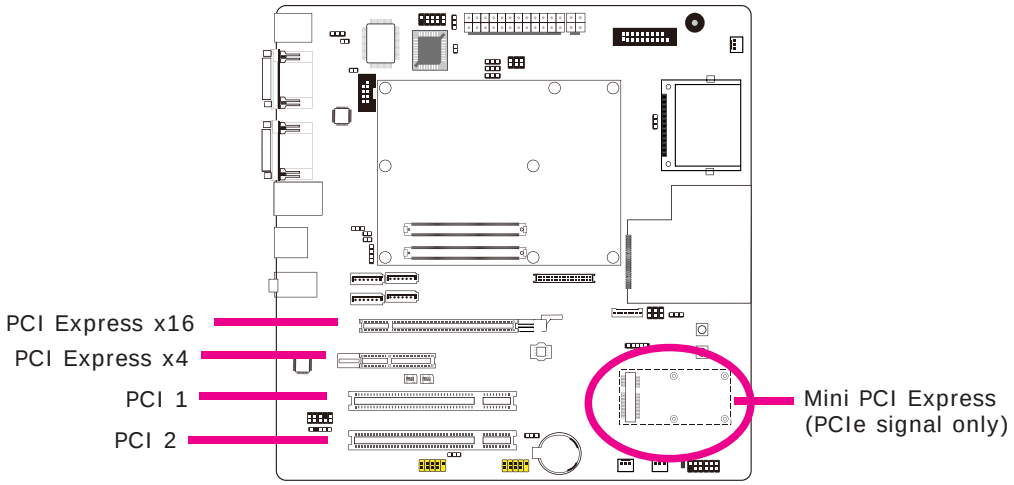
This switch is used to power on or off the system.

PWR-LED - Power/Standby LED

When the system's power is on, this LED will light. When the system is in the S0 ,S1 (POS - Power On Suspend), S3 (STR - Suspend To RAM) state, it will be always light. When the system is in the S4 (STD - Suspend to Disc), S5 state, it will be light off.

	Pin	Pin Assignment		Pin	Pin Assignment
N. C.	1	N. C.	PWR-LED	2 4 6	LED Power LED Power Signal
HDD-LED	3 5	HDD Power Signal	PWR-BTN	8 10	Signal Ground
RESET SW	7 9	Ground RST Signal			
N. C.	11	N. C.	Key	12	Key

Expansion Slots



PCI Express x16 Slot

Install PCI Express x16 graphics card, that comply to the PCI Express specifications, into the PCI Express x16 slot. To install a graphics card into the x16 slot, align the graphics card above the slot then press it down firmly until it is completely seated in the slot. The retaining clip of the slot will automatically hold the graphics card in place.

PCI Express x4 Slots

Install PCI Express cards such as network cards or other cards that comply to the PCI Express specifications into the PCI Express x4 slot.

PCI Slots

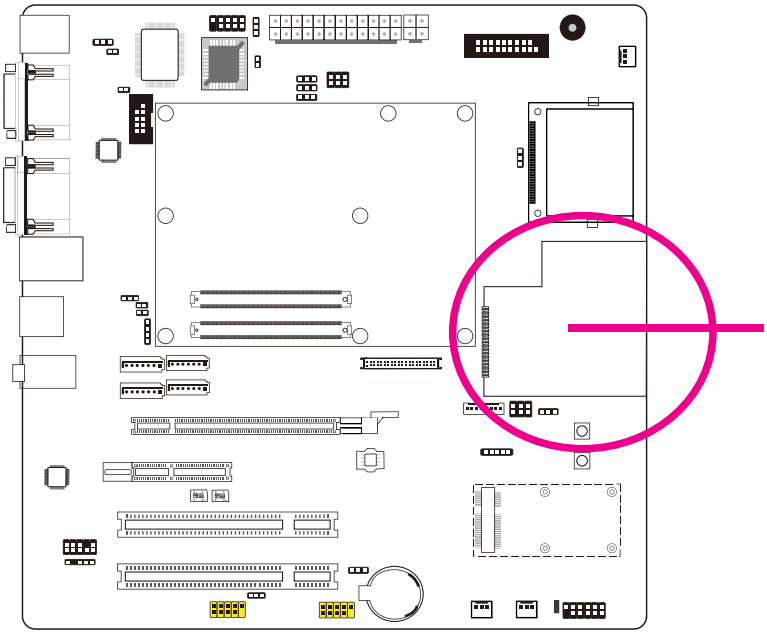
The PCI slots support expansion cards that comply with PCI specifications.

Mini PCIe Slot

The Mini PCIe socket is used to install a Mini PCIe card. Mini PCIe card is a small form factor PCI card with the same signal protocol, electrical definitions, and configuration definitions as the conventional PCI.

The Mini PCIe slot supports PCIe signal only. To support both PCIe and USB signals, another version will be provided upon request. Since the USB signal for this slot is shared with USB 6, the said version will not support the USB 6 connector.

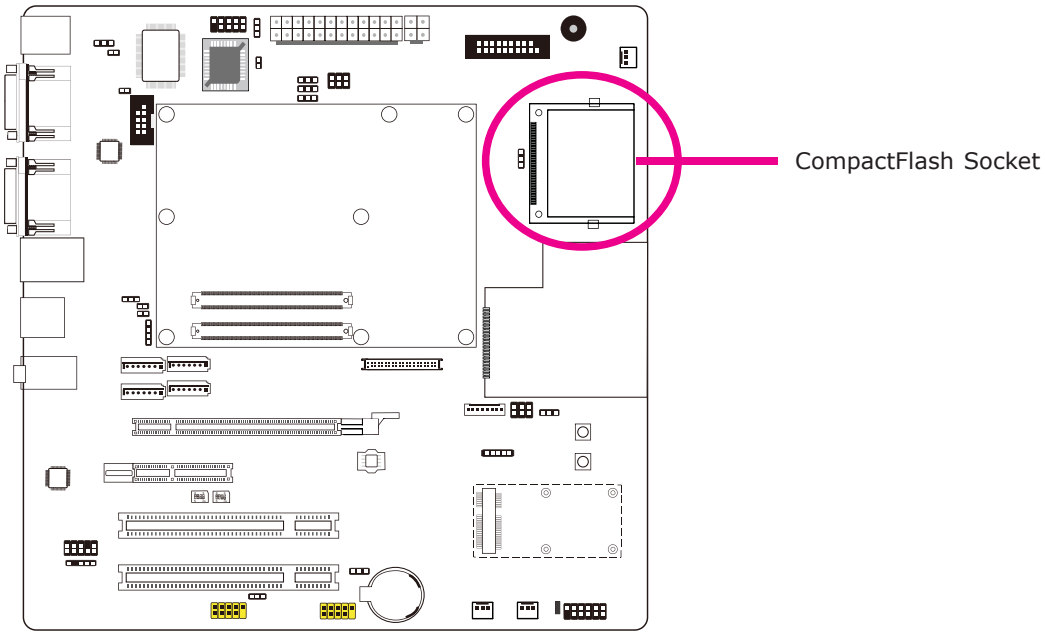
Express Card



The ExpressCard slot is an interface for high-performance, modular expansion. It uses serial data interfaces that provide improve data transfer speed. You can insert an ExpressCard such as wireless network cards, Ethernet cards, solid-state drives, or TV tuner cards. Its hot-plug functionality allows you to install and remove modules at any time, without having to switch off your system. This provides added reliability, durability and expansion flexibility to your system.

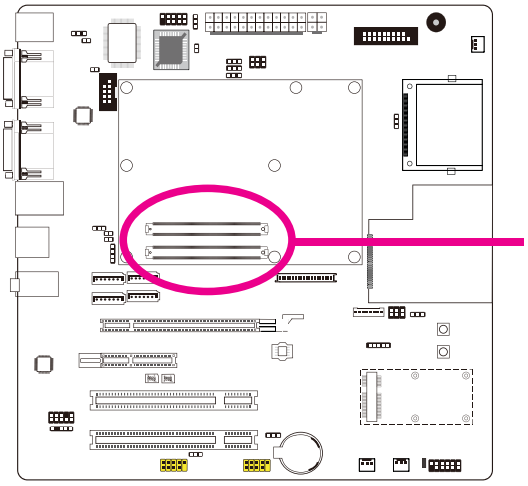
The ExpressCard slot supports PCIe signal only. To support both PCIe and USB signals, another version will be provided upon request. Since the USB signal for this slot is shared with USB 7, the said version will not support the USB 7 connector.

CompactFlash Socket



The CompactFlash™ socket is used for inserting a CompactFlash™ card. CompactFlash™ card is a small removable mass storage device designed with flash technology - a non-volatile storage solution that does not require a battery to retain data indefinitely. The CompactFlash™ technology is widely used in products such as portable and desktop computers, digital cameras, handheld data collection scanners, PDAs, Pocket PCs, handy terminals and personal communicators.

COM Express Connectors



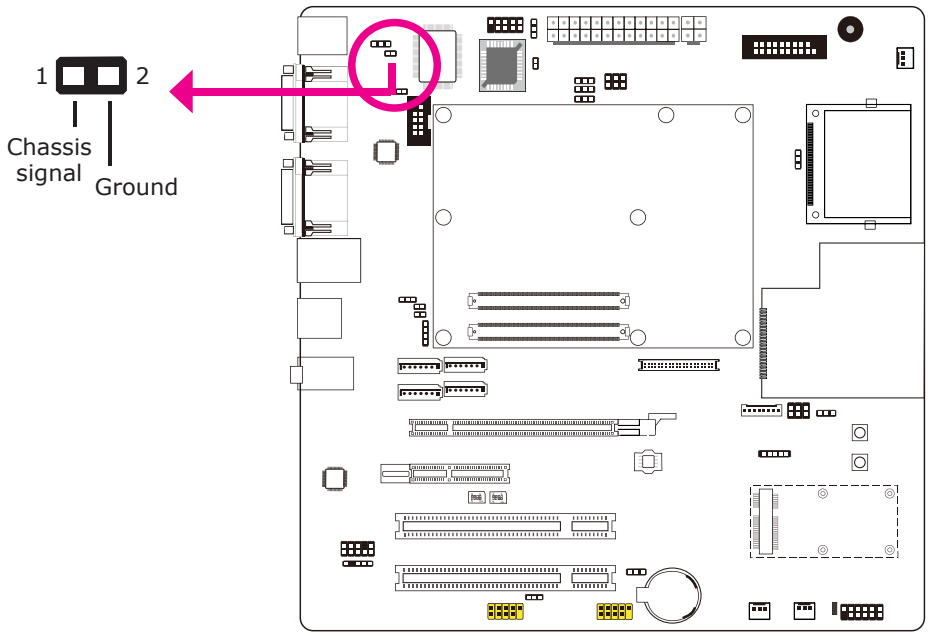
The COM Express connectors are used to interface the carrier board with a COM Express board. Refer to the following pages for the pin functions of these connectors.

Pin	Row A	Row B	Row C	Row D
1	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
2	GBE0_MDI3-	GBE0_ACT#	IDE_D7	IDE_D5
3	GBE0_MDI3+	LPC_FRAME#	IDE_D6	IDE_D10
4	GBE0_LINK100#	LPC_AD0	IDE_D3	IDE_D11
5	GBE0_LINK1000#	LPC_AD1	IDE_D15	IDE_D12
6	GBE0_MDI2-	LPC_AD2	IDE_D8	IDE_D4
7	GBE0_MDI2+	LPC_AD3	IDE_D9	IDE_D0
8	GBE0_LINK#	LPC_DRQ0#	IDE_D2	IDE_REQ
9	GBE0_MDI1-	LPC_DRQ1#	IDE_D13	IDE_IOW#
10	GBE0_MDI1+	LPC_CLK	IDE_D1	IDE_ACK#
11	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
12	GBE0_MDI0-	PWRBTN#	IDE_D14	IDE_IRQ
13	GBE0_MDI0+	SMB_CK	IDE_IORDY	IDE_A0
14	GBE0_CTREF	SMB_DAT	IDE_IOR#	IDE_A1
15	SUS_S3#	SMB_ALERT#	PCI_PME#	IDE_A2
16	SATA0_TX+	SATA1_TX+	PCI_GNT2#	IDE_CS1#
17	SATA0_TX-	SATA1_TX-	PCI_REQ2#	IDE_CS3#
18	SUS_S4#	SUS_STAT#	PCI_GNT1#	IDE_RESET#
19	SATA0_RX+	SATA1_RX+	PCI_REQ1#	PCI_GNT3#
20	SATA0_RX-	SATA1_RX-	PCI_GNT0#	PCI_REQ3#
21	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
22	SATA2_TX+	SATA3_TX+	PCI_REQ0#	PCI_AD1
23	SATA2_TX-	SATA3_TX-	PCI_RESET#	PCI_AD3
24	SUS_S5#	PWR_OK	PCI_AD0	PCI_AD5
25	SATA2_RX+	SATA3_RX+	PCI_AD2	PCI_AD7
26	SATA2_RX-	SATA3_RX-	PCI_AD4	PCI_C/BE0#
27	BATLOW#	WDT	PCI_AD6	PCI_AD9
28	(S)ATA_ACT#	AC/HDA_SDIN2	PCI_AD8	PCI_AD11
29	AC/HDA_SYNC	AC/HDA_SDIN1	PCI_AD10	PCI_AD13
30	AC/HDA_RST#	AC/HDA_SDIN0	PCI_AD12	PCI_AD15
31	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
32	AC/HDA_BITCLK	SPKR	PCI_AD14	PCI_PAR
33	AC/HDA_SDOUT	I2C_CK	PCI_C/BE1#	PCI_SERR#
34	BIOS_DIS0#	I2C_DAT	PCI_PERR#	PCI_STOP#
35	THRMTRIP#	THRM#	PCI_LOCK#	PCI_TRDY#
36	USB6-	USB7-	PCI_DEVSEL#	PCI_FRAME#
37	USB6+	USB7+	PCI_IRDY#	PCI_AD16
38	USB_6_7_OC#	USB_4_5_OC#	PCI_C/BE2#	PCI_AD18
39	USB4-	USB5-	PCI_AD17	PCI_AD20
40	USB4+	USB5+	PCI_AD19	PCI_AD22

Pin	Row A	Row B	Row C	Row D
41	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
42	USB2-	USB3-	PCI_AD21	PCI_AD24
43	USB2+	USB3+	PCI_AD23	PCI_AD26
44	USB_2_3_OC#	USB_0_1_OC#	PCI_C/BE3#	PCI_AD28
45	USB0-	USB1-	PCI_AD25	PCI_AD30
46	USB0+	USB1+	PCI_AD27	PCI_IRQC#
47	VCC_RTC	EXCD1_PERST#	PCI_AD29	PCI_IRQD#
48	EXCD0_PERST#	EXCD1_CPPE#	PCI_AD31	PCI_CLKRUN#
49	EXCD0_CPPE#	SYS_RESET#	PCI_IRQA#	PCI_M66EN
50	LPC_SERIRQ	CB_RESET#	PCI_IRQB#	PCI_CLK
51	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
52	PCIE_TX5+	PCIE_RX5+	PEG_RX0+	PEG_TX0+
53	PCIE_TX5-	PCIE_RX5-	PEG_RX0-	PEG_TX0-
54	GPI0	GPO1	TYPE0#	PEG_LANE_RV#
55	PCIE_TX4+	PCIE_RX4+	PEG_RX1+	PEG_TX1+
56	PCIE_TX4-	PCIE_RX4-	PEG_RX1-	PEG_TX1-
57	GND	GPO2	TYPE1#	TYPE2#
58	PCIE_TX3+	PCIE_RX3+	PEG_RX2+	PEG_TX2+
59	PCIE_TX3-	PCIE_RX3-	PEG_RX2-	PEG_TX2-
60	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
61	PCIE_TX2+	PCIE_RX2+	PEG_RX3+	PEG_TX3+
62	PCIE_TX2-	PCIE_RX2-	PEG_RX3-	PEG_TX3-
63	GPI1	GPO3	RSVD[16]	RSVD[16]
64	PCIE_TX1+	PCIE_RX1+	RSVD[16]	RSVD[16]
65	PCIE_TX1-	PCIE_RX1-	PEG_RX4+	PEG_TX4+
66	GND	WAKE0#	PEG_RX4-	PEG_TX4-
67	GPI2	WAKE1#	RSVD[16]	GND
68	PCIE_TX0+	PCIE_RX0+	PEG_RX5+	PEG_TX5+
69	PCIE_TX0-	PCIE_RX0-	PEG_RX5-	PEG_TX5-
70	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
71	LVDS_A0+	LVDS_B0+	PEG_RX6+	PEG_TX6+
72	LVDS_A0-	LVDS_B0-	PEG_RX6-	PEG_TX6-
73	LVDS_A1+	LVDS_B1+	SDVO_DATA	SDVO_CLK
74	LVDS_A1-	LVDS_B1-	PEG_RX7+	PEG_TX7+
75	LVDS_A2+	LVDS_B2+	PEG_RX7-	PEG_TX7-
76	LVDS_A2-	LVDS_B2-	GND	GND
77	LVDS_VDD_EN	LVDS_B3+	RSVD[16]	IDE_CBLID#
78	LVDS_A3+	LVDS_B3-	PEG_RX8+	PEG_TX8+
79	LVDS_A3-	LVDS_BKLT_EN	PEG_RX8-	PEG_TX8-
80	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
81	LVDS_A_CK+	LVDS_B_CK+	PEG_RX9+	PEG_TX9+
82	LVDS_A_CK-	LVDS_B_CK-	PEG_RX9-	PEG_TX9-
83	LVDS_I2C_CK	LVDS_BKLT_CTRL	RSVD[16]	RSVD[16]
84	LVDS_I2C_DAT	VCC_5V_SBY	GND	GND
85	GPI3	VCC_5V_SBY	PEG_RX10+	PEG_TX10+
86	KBD_RST#	VCC_5V_SBY	PEG_RX10-	PEG_TX10-
87	KBD_A20GATE	VCC_5V_SBY	GND	GND

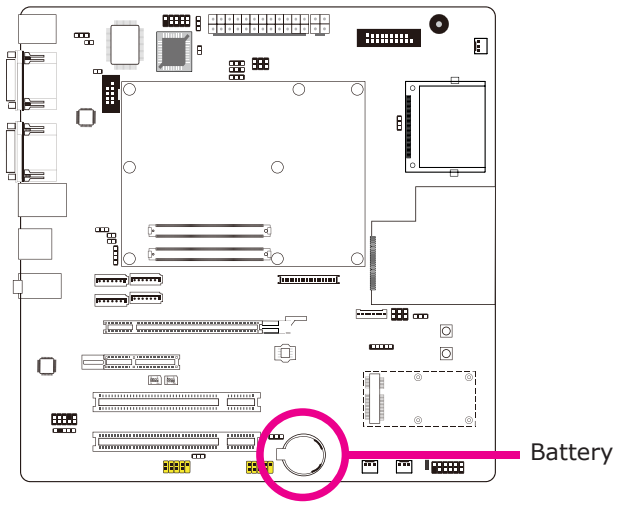
Pin	Row A	Row B	Row C	Row D
88	PCIE_CLK_REF+	BIOS_DIS1#	PEG_RX11+	PEG_TX11+
89	PCIE_CLK_REF-	VGA_RED	PEG_RX11-	PEG_TX11-
90	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
91	SPI_POWER	VGA_GRN	PEG_RX12+	PEG_TX12+
92	SPI_MISO	VGA_BLU	PEG_RX12-	PEG_TX12-
93	GPO0	VGA_HSYNC	GND	GND
94	SPI_CLK	VGA_VSYNC	PEG_RX13+	PEG_TX13+
95	SPI_MOSI	VGA_I2C_CK	PEG_RX13-	PEG_TX13-
96	GND	VGA_I2C_DAT	GND	GND
97	TYPE10#	SPI_CS#	RSVD[16]	PEG_ENABLE#
98	RSVD[16]	RSVD[16]	PEG_RX14+	PEG_TX14+
99	RSVD[16]	RSVD	PEG_RX14-	PEG_TX14-
100	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
101	RSVD[16]	RSVD[16]	PEG_RX15+	PEG_TX15+
102	RSVD[16]	RSVD[16]	PEG_RX15-	PEG_TX15-
103	RSVD[16]	RSVD[16]	GND	GND
104	VCC_12V	VCC_12V	VCC_12V	VCC_12V
105	VCC_12V	VCC_12V	VCC_12V	VCC_12V
106	VCC_12V	VCC_12V	VCC_12V	VCC_12V
107	VCC_12V	VCC_12V	VCC_12V	VCC_12V
108	VCC_12V	VCC_12V	VCC_12V	VCC_12V
109	VCC_12V	VCC_12V	VCC_12V	VCC_12V
110	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)

Chassis Intrusion Connector



The board supports the chassis intrusion detection function. Connect the chassis intrusion sensor cable from the chassis to this connector. When the system's power is on and a chassis intrusion occurred, an alarm will sound. When the system's power is off and a chassis intrusion occurred, the alarm will sound only when the system restarts.

Battery

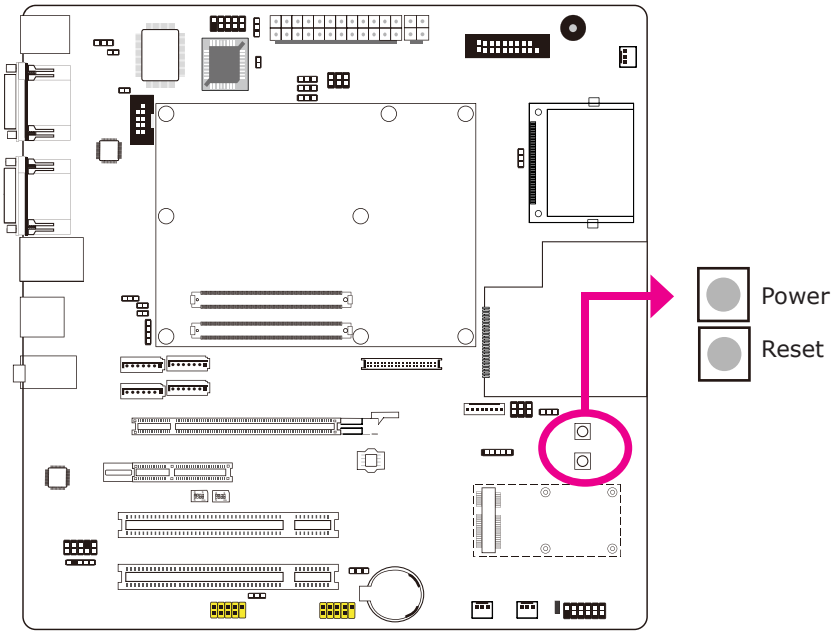


The lithium ion battery powers the real-time clock and CMOS memory. It is an auxiliary source of power when the main power is shut off.

Safety Measures

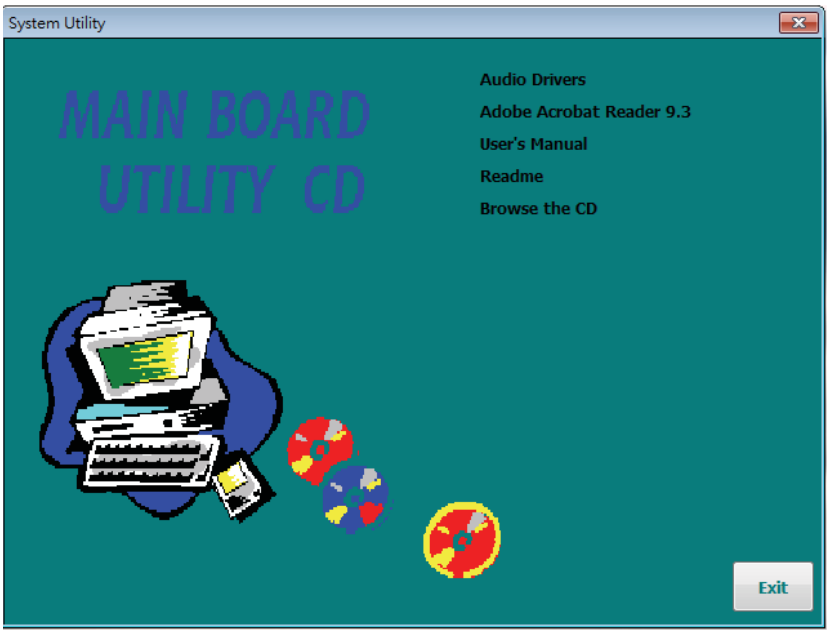
- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

Switches



Chapter 3 - Supported Software

Install drivers, utilities and software applications that are required to facilitate and enhance the performance of the system board. You may acquire the software from your sales representatives, from an optional DVD included in the shipment, or from the website download page at https://www.dfi.com/DownloadCenter.



Note:
This step can be ignored if the applications are downloaded standalone files.

Audio Drivers

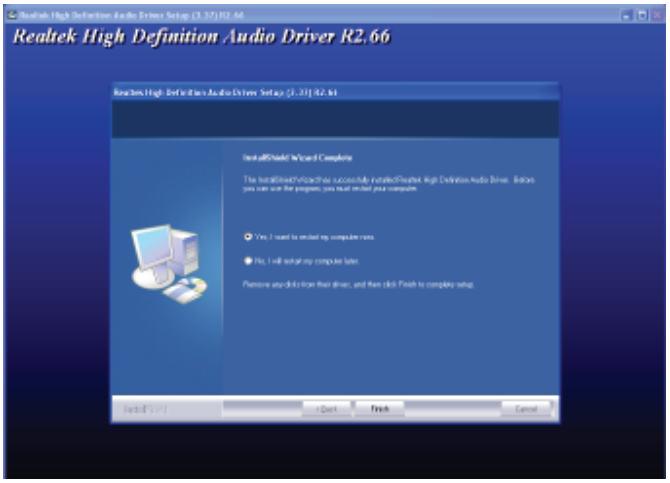
To install the driver, click “Audio Drivers” on the main menu.

1. Setup is now ready to install the audio driver. Click Next.

2. Follow the remainder of the steps on the screen; clicking “Next” each time you finish a step.

3. Click “Yes, I want to restart my computer now” then click Finish.

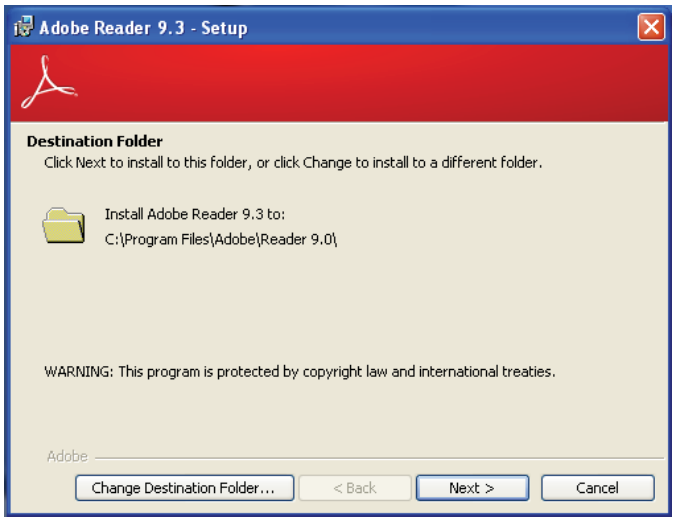
   Restarting the system will allow the new software installation to take effect.



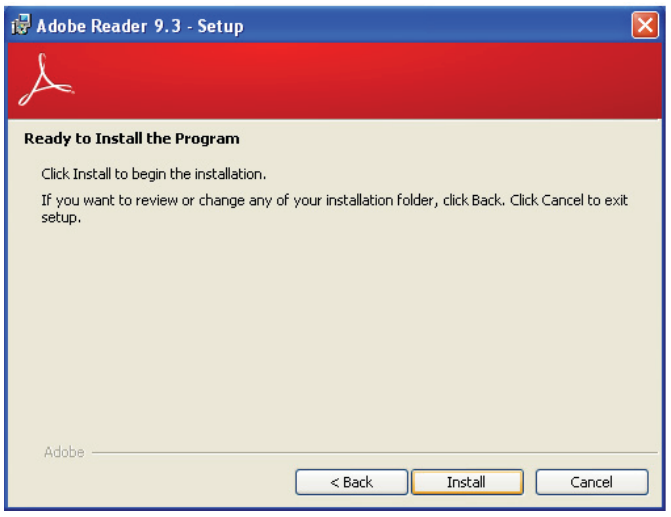
Adobe Acrobat Reader 9.3

To install the reader, click “Adobe Acrobat Reader 9.3” on the main menu.

1. Click Next to install or click Change Destination Folder to select another folder.



2. Click Install to begin installation.



3. Click Finish to exit installation.