COM630-B

System Board
User's Manual

A01430151

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

An electronic file of this manual is included in the CD. To view the user's manual in the CD, insert the CD into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear. Click "User's Manual" on the main menu.

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 system board
- ☑ One USB port cable
- ☑ One Serial ATA data cable
- ☑ One Serial ATA power cable
- ☑ One IDE cable
- ☑ One FDD cable
- ☑ One I/O shield
- ☑ One QR (Quick Reference)

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.

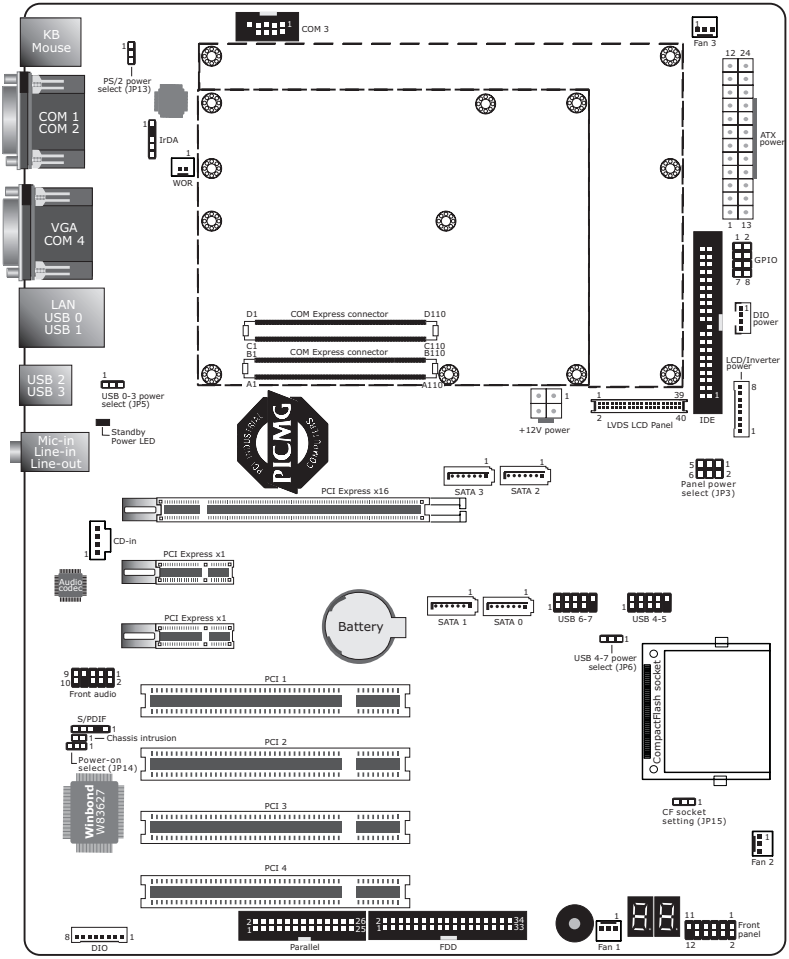
Specifications

Audio	• Realtek ALC262 audio codec (ALC655 optional) • 6-channel audio output
Serial ATA	• SATA speed up to 3Gb/s • Four SATA ports
IDE	• Supports up to Ultra ATA 100 • One IDE channel supports up to 2 IDE devices
BIOS (optional)	• FWH/LPC interface • Supports up to 4Mbit flash ROM • PLCC32 socket • Supports WP# jumper • Carrier board ROM enable/disable function supported
I/O Chip 1	• Winbond 83627HG-AW controller • LPC interface • Supports Smart fan • Default I/O port address “2eh”
I/O Chip 2	• Fintek F81216D controller • LPC interface • Supports 4 COM ports • Supports IrDA • Watchdog timer function • Default I/O port address “4eh”
Damage Free Intelligence	• Monitors system temperature and overheat alarm • Monitors system fan speed and failure alarm
Temperature	• Operating: 0°C to 60°C • Storage: -20°C to 85°C
Humidity	• Operating: 10% to 90%
Rear Panel I/O Ports	• 1 mini-DIN-6 PS/2 mouse port • 1 mini-DIN-6 PS/2 keyboard port • 3 DB-9 serial ports • 1 DB-15 VGA port • 1 RJ45 LAN port • 4 USB 2.0/1.1 ports • Mic-in, line-in and line-out

I/O Connectors	• 2 connectors for 4 additional external USB 2.0/1.1 ports • 1 connector for an external serial port • 1 LVDS LCD panel connector • 1 LCD/inverter power connector • 1 Digital I/O connector • 1 Digital I/O power connector • 1 front audio connector for line-out and mic-in jacks • 1 CD-in internal audio connector • 1 S/PDIF-in/out connector • 1 GPIO connector • 1 connector for IrDA interface • 4 Serial ATA connectors • 1 40-pin IDE connector • 1 FDD connector • 1 parallel connector (optional) • 1 24-pin ATX power connector • 1 4-pin 12V power connector • 1 Wake-On-Ring connector • 1 chassis open connector • 1 front panel connector • 3 fan connectors • 1 diagnostic LED (optional)
Expansion Slots	• 1 CompactFlash socket • 1 PCI Express x16 (Graphics or Dual SDVO) • 2 PCI Express x1 • 4 PCI slots (PCI 2.3, 32-bit, 33MHz)
COM Express Connectors	• Two 220-pin COM Express standard connectors • Module connector pin: Tyco 3-631849-6
Dimensions	• Dimensions - ATX form factor - 305mm (12”) x 244mm (9.6”) • Compliance - PICMG COM Express R1.0, Type 2

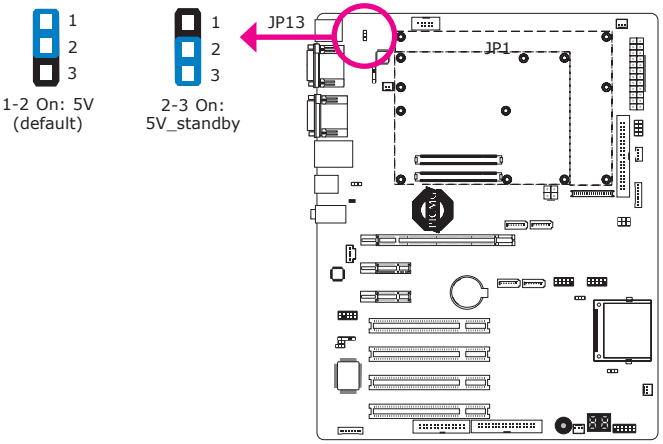
Chapter 2 - Hardware Installation

System Board Layout



Jumper Settings

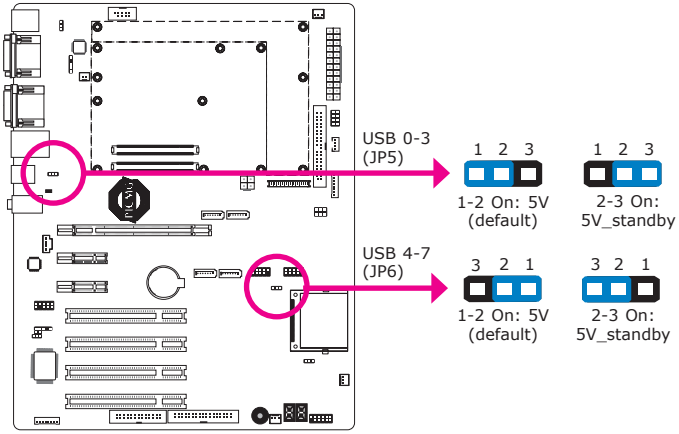
PS/2 Power Select



JP13 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.

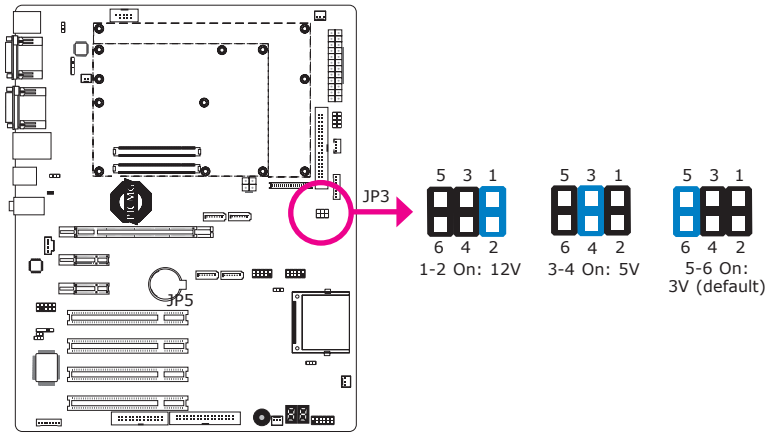
USB Power Select



JP5 (for USB 0-3) and JP6 (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.

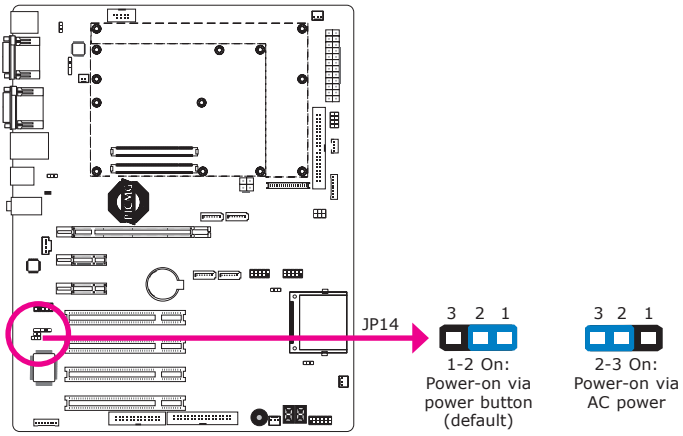
Panel Power Select



JP3 is used to select the power supplied to the LCD panel.

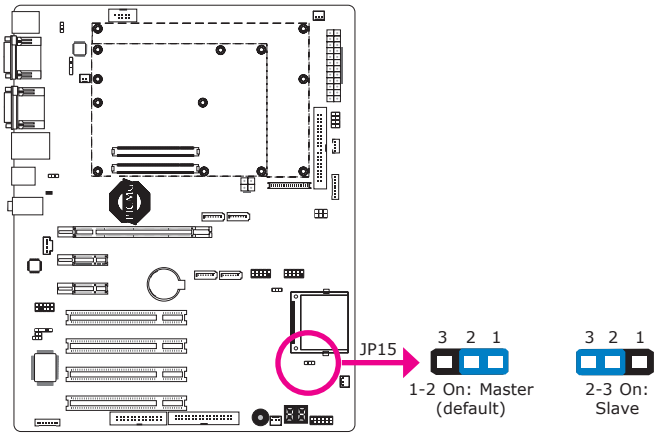
Important:
Before powering-on the system, make sure JP3's setting matches the LCD panel's specification. Selecting the incorrect voltage will seriously damage the LCD panel.

Power-on Select



JP14 is used to select the method of powering on the system. If you want the system to power-on whenever AC power comes in, set pins 2 and 3 to On. If you want to use the power button, set pins 1 and 2 to On.

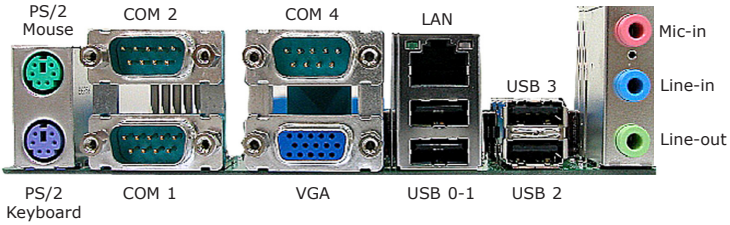
CompactFlash Socket Setting



JP15 is used to set the CompactFlash™ socket to Master or Slave mode.

Note:
We do not recommend using IDE devices and CF card at the same time.

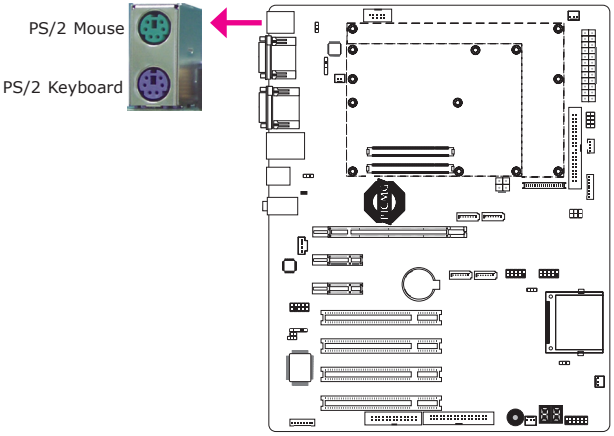
Rear Panel I/O Ports



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

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

PS/2 Mouse and PS/2 Keyboard Ports



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

Important:
Make sure to turn off your computer prior to connecting or disconnecting a mouse or keyboard. Failure to do so may damage the system board.

Wake-On-PS/2 Keyboard/Mouse

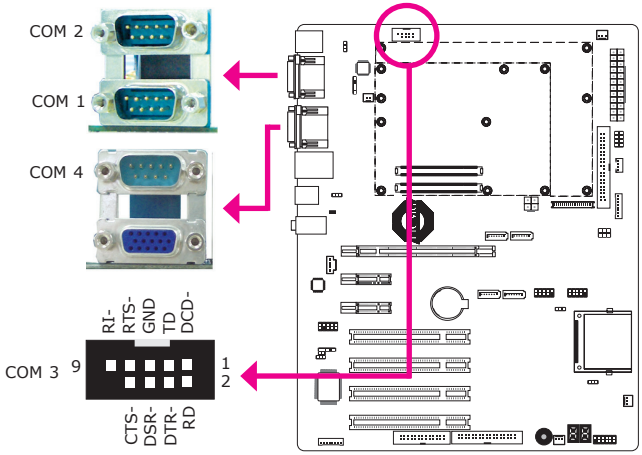
The Wake-On-PS/2 Keyboard/Mouse function allows you to use the PS/2 keyboard or PS/2 mouse to power-on the system. To use this function:

- **Jumper Setting:**

  JP13 must be set to "2-3 On: 5V_standby". Refer to "PS/2 Power Select" in this chapter for more information.

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

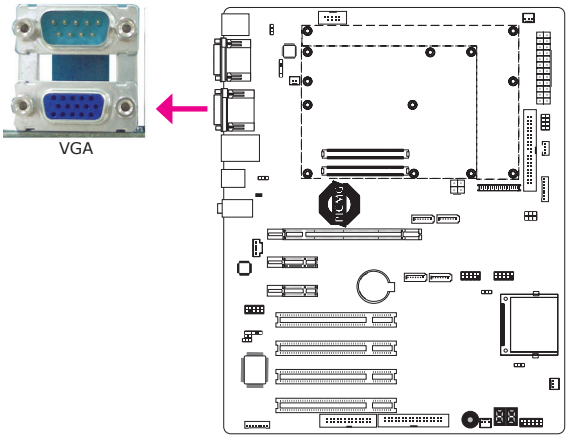
Serial (COM) Ports



The system board is equipped with 3 onboard serial ports (COM 1, COM 2 and COM 4). It is also equipped with a 9-pin connector for connecting an external serial port (COM 3).

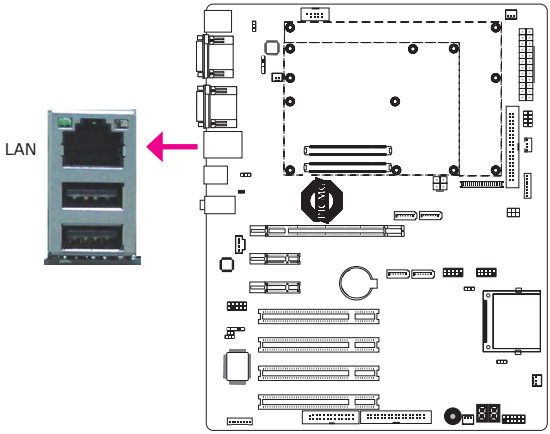
The serial ports are RS-232 asynchronous communication ports with 16C550A-compatible UARTs that can be used with modems, serial printers, remote display terminals, and other serial devices. To connect COM 3, please refer to the following description. The serial port may be mounted on a card-edge bracket. 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



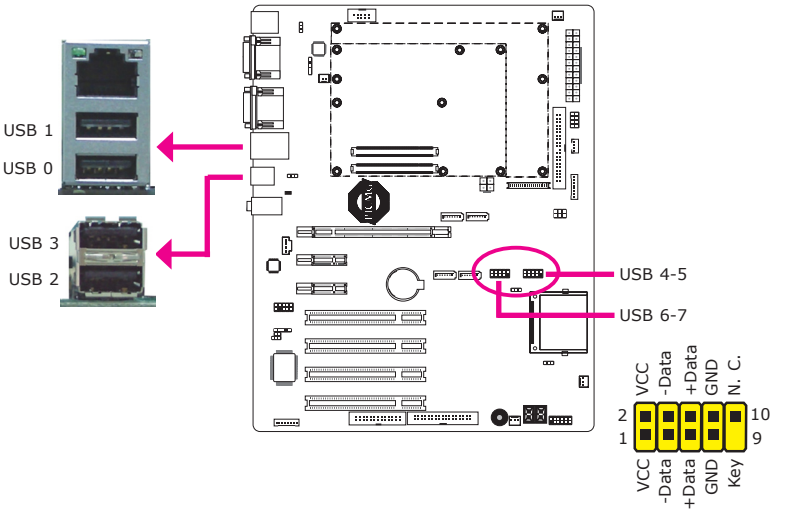
The VGA port is used for connecting a VGA monitor. Connect the monitor's 15-pin D-shell cable connector to the VGA port. After you plug the monitor's cable connector into the VGA port, gently tighten the cable screws to hold the connector in place.

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. The USB 4-5 and USB 6-7 connectors allow you to connect 4 additional USB 2.0/1.1 ports. 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 then insert the cable connector to a USB connector.

Wake-On-USB Keyboard

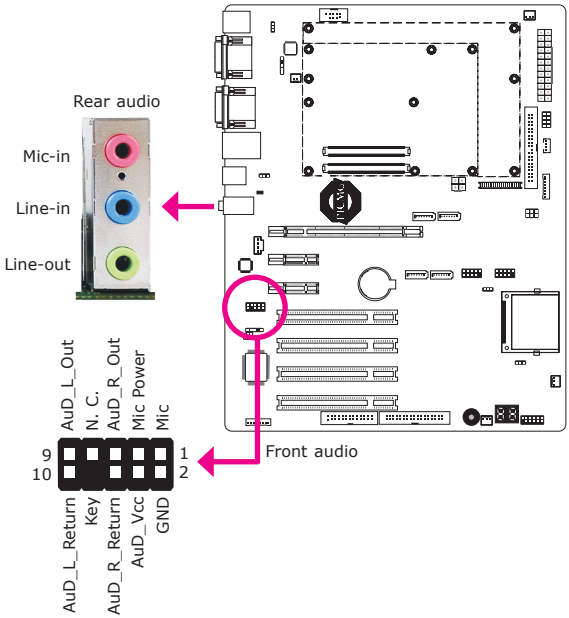
The Wake-On-USB Keyboard function allows you to use a USB keyboard to wake up a system from the S3 (STR - Suspend To RAM) state. To use this function:

- **Jumper Setting:**

  JP5 and/or JP6 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.

- **Mic-in Jack (Pink)**
  In a 2-channel or 4-channel mode, this jack is used to connect an external microphone. In a 6-channel mode, this jack functions as Center/Subwoofer.

- **Line-in Jack (Light Blue)**
  In a 2-channel mode, this jack is used to connect any audio devices such as Hi-fi set, CD player, tape player, AM/FM radio tuner, synthesizer, etc. In a 4-channel or 6-channel mode, this jack functions as rear right/left speaker out.

- **Line-out Jack (Lime)**
  In a 2-channel mode, this jack is used to connect a headphone or external speakers. In a 4-channel or 6-channel mode, this jack functions as front right/left speaker out.

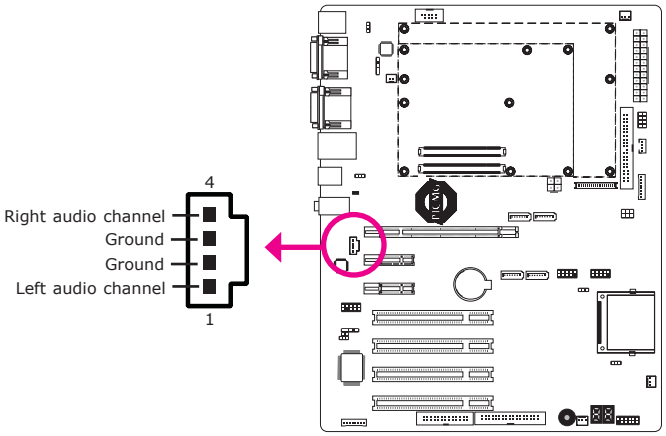
Front Audio

The front audio connector allows you to connect to the line-out and mic-in jacks that are at the front panel of your system. Using the line-out and mic-in jacks will disable the rear audio's line-out and mic-in functions. Remove the jumper caps from pins 5-6 and pins 9-10 prior to connecting the front audio cable connector. Make sure pin 1 of the cable is aligned with pin 1 of the connector. If you are not using this connector, make sure to replace the jumper caps back to their original pin locations.

Pins 5-6 and 9-10 short (default)	The front audio is disabled. The rear audio is enabled.
Pins 5-6 and 9-10 open	The front audio is enabled. The rear audio is disabled.

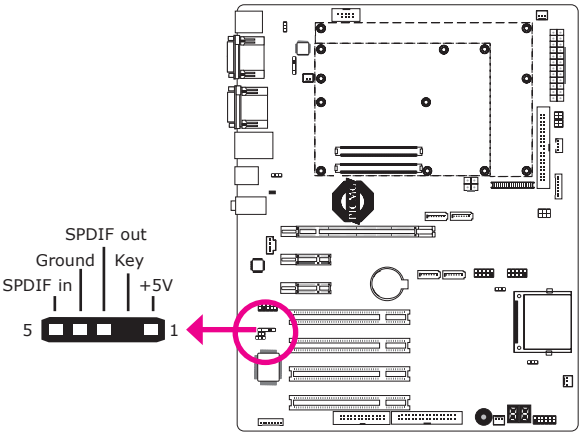
I/O Connectors

CD-in Internal Audio Connector



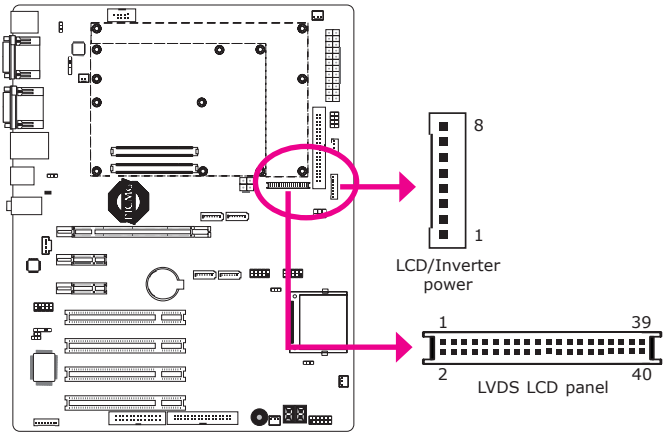
The CD-in connector is used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

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.

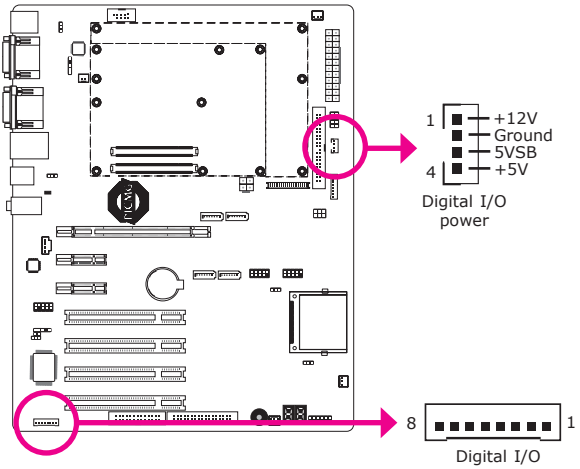
LVDS LCD Panel Connector

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_DDCDAA	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
Digital I/O Power Connector

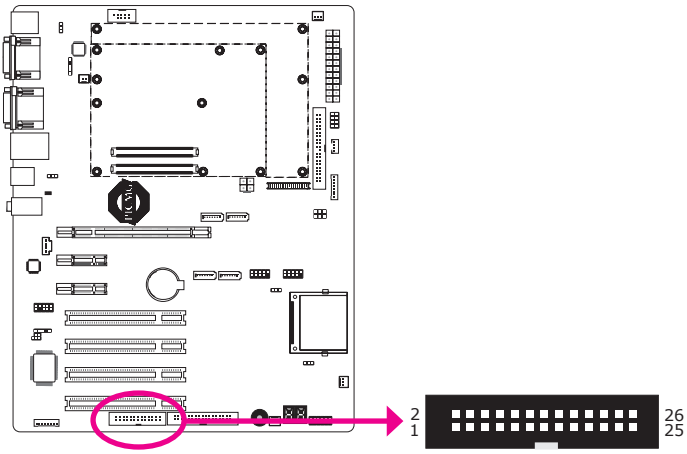


The Digital I/O connector provides powering-on function to an external device that is connected to this connector.

Digital I/O Connector

Pins	Function
1	DIO0
2	DIO1
3	DIO2
4	DIO3
5	DIO4
6	DIO5
7	DIO6
8	DIO7

Parallel Connector (optional)



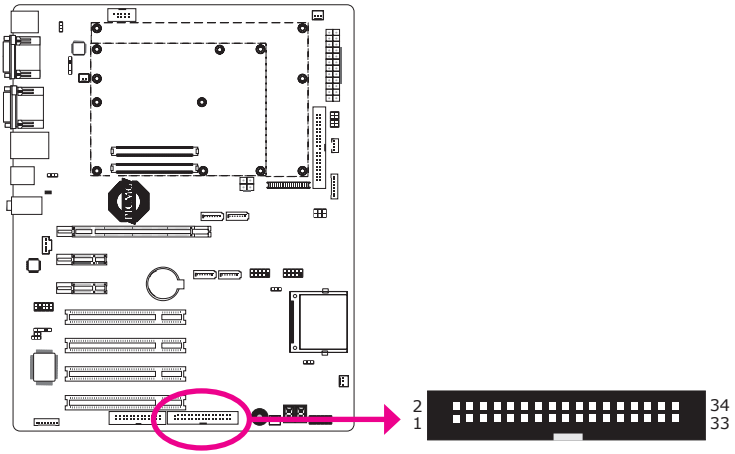
The parallel port is for interfacing your PC to a parallel printer. It supports SPP, ECP and EPP.

SPP (Standard Parallel Port)	Allows normal speed operation but in one direction only.
ECP (Extended Capabilities Port)	Allows parallel port to operate in bidirectional mode and at a speed faster than the SPP's data transfer rate.
EPP (Enhanced Parallel Port)	Allows bidirectional parallel port operation at maximum speed.

Connecting the Parallel Port Cable

Your parallel 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 to the parallel connector. Make sure the colored stripe on the ribbon cable is aligned with pin 1 of the connector.

Floppy Disk Drive Connector

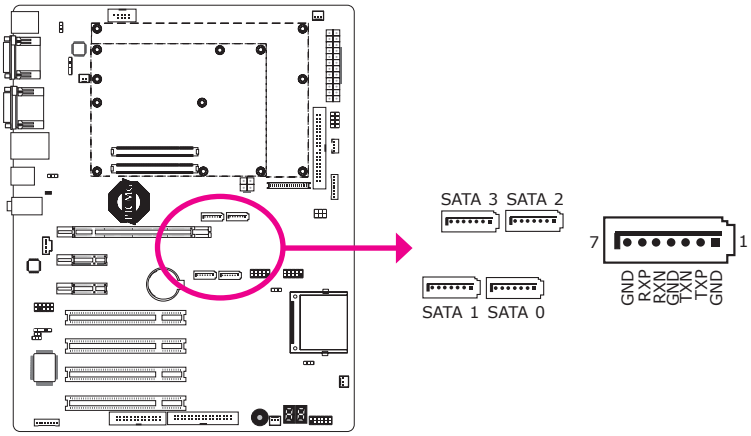


The floppy disk drive connector supports a standard floppy disk drive. The floppy cable can be inserted into the connector only if pin 1 of the cable's connector is aligned with pin 1 of this connector.

Connecting the Floppy Disk Drive Cable

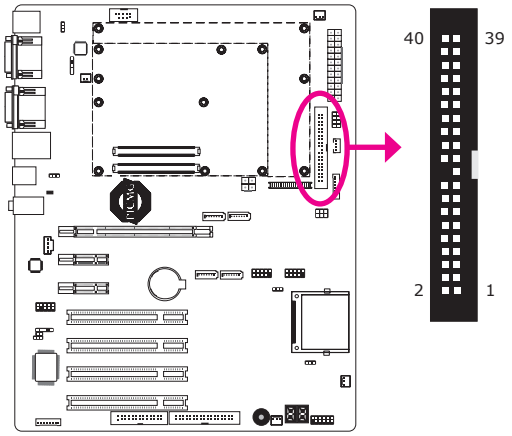
Insert one end of the FDD cable into the FDD connector and the other end of the cable to the floppy drive. Pin 1 of the cable must align with pin 1 of the FDD connector.

SATA (Serial ATA) Connectors



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.

IDE Connector



Important:
We do not recommend using IDE devices and CF card at the same time.

The IDE connector is used to connect hard drives. The connector on the IDE cable can be inserted into this connector only if pin 1 of the cable is aligned with pin 1 of this connector.

The IDE connector supports 2 devices, a Master and a Slave. Use an IDE ribbon cable to connect the drives to the system board. An IDE ribbon cable have 3 connectors on them, one that plugs into the IDE connector on the system board and the other 2 connects to IDE devices. The connector at the end of the cable is for the Master drive and the connector in the middle of the cable is for the Slave drive.

Note:
Refer to your disk drive user's manual for information about selecting proper drive switch settings.

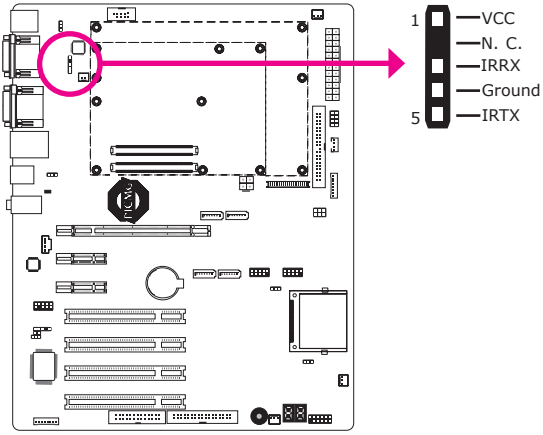
Adding a Second IDE Disk Drive

When using two IDE drives, one must be set as the master and the other as the slave. Follow the instructions provided by the drive manufacturer for setting the jumpers and/or switches on the drives.

The system board supports Enhanced IDE or ATA-2, ATA/33, ATA/66 and ATA/100 hard drives. We recommend that you use hard drives from the same manufacturer. In a few cases, drives from two different manufacturers will not function properly when used together. The problem lies in the hard drives, not the system board.

Important:
If you encountered problems while using an ATAPI CD-ROM drive that is set in Master mode, please set the CD-ROM drive to Slave mode. Some ATAPI CD-ROMs may not be recognized and cannot be used if incorrectly set in Master mode.

IrDA Connector

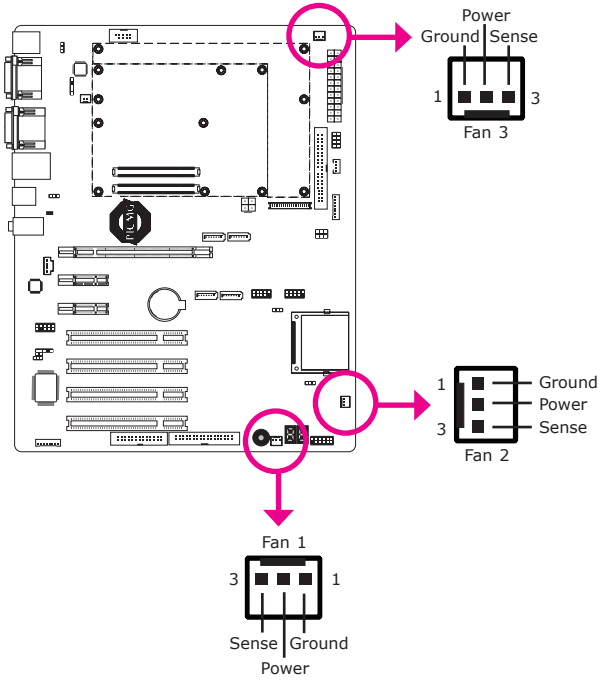


Connect the cable connector from your IrDA module to the IrDA connector.

Note:
The sequence of the pin functions on some IrDA cable may be reversed from the pin function defined on the system board. Make sure to connect the cable connector to the IrDA connector according to their pin functions.

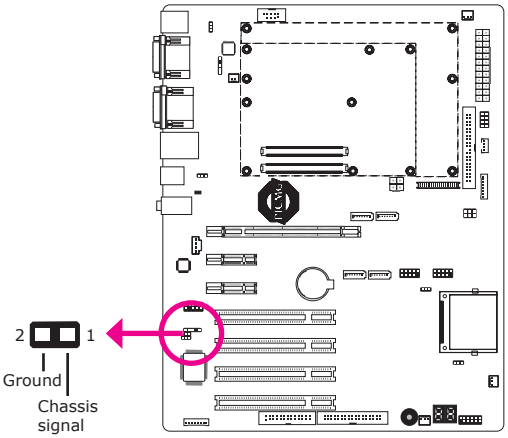
You may need to install the proper drivers in your operating system to use the IrDA function. Refer to your operating system's manual or documentation for more information.

Cooling Fan Connectors



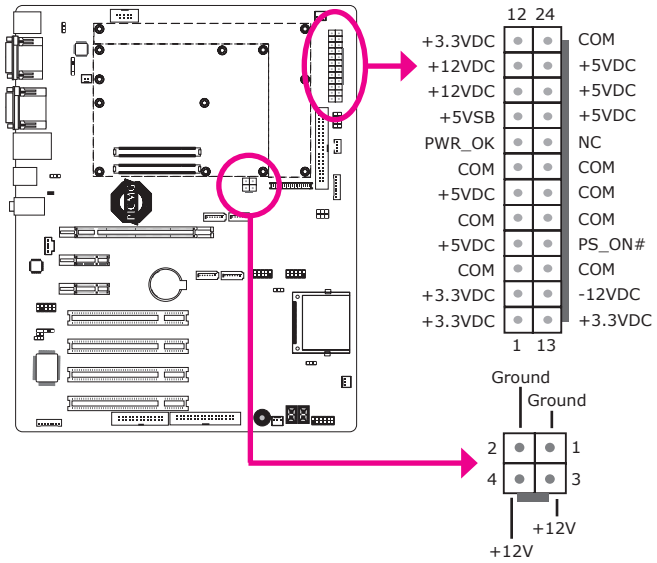
The fan connectors are used to connect cooling fans. The cooling fans will provide adequate airflow throughout the chassis to prevent overheating the CPU and system board components.

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.

Power Connectors



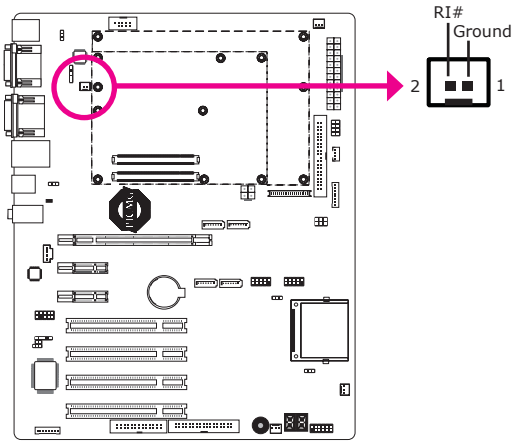
Use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1. An ATX12V power supply unit has a standard 24-pin ATX main power connector that must be inserted into the 24-pin connector. The 4-pin +12V power connector enables the delivery of more +12VDC current to the processor's Voltage Regulator Module (VRM).

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.

Wake-On-Ring Connector



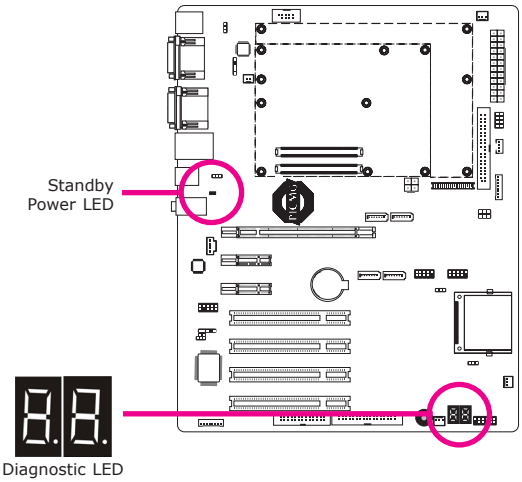
The Wake-On-Ring connector is used to connect to an internal modem add-in card that has the same connector. It will allow the system that is in the Suspend mode or Soft Power Off mode to wake-up/power-on to respond to calls coming from the internal modem card.

To use this function, connect one end of the cable (that came with the card) to the card's wake-on-ring connector and the other end to the Wake-On-Ring connector on the system board.

If you are using an external modem, the ring-on function will come through the serial port where the external modem is connected.

Important
If you are using a modem add-in card, the 5V_standby power source of your power supply must support ≥720mA.

Standby Power LED



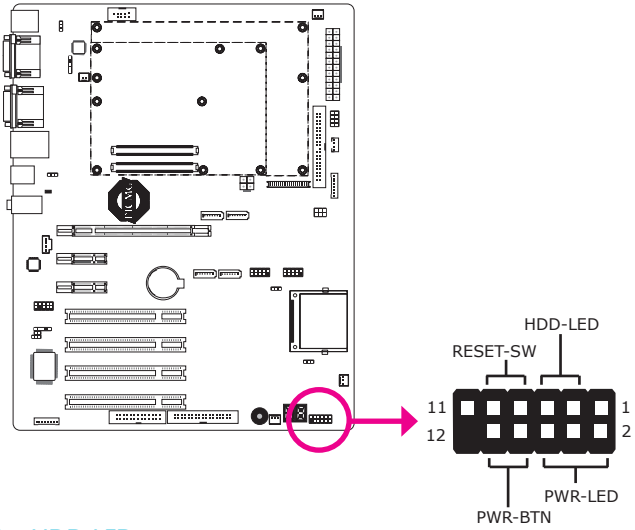
Standby Power LED

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.

Diagnostic LED

The Diagnostic LED displays POST codes. POST (Power-On Self Tests) which is controlled by the BIOS is performed whenever you power-on the system. POST will detect the status of the system and its components. Each code displayed on the LED corresponds to a certain system status.

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

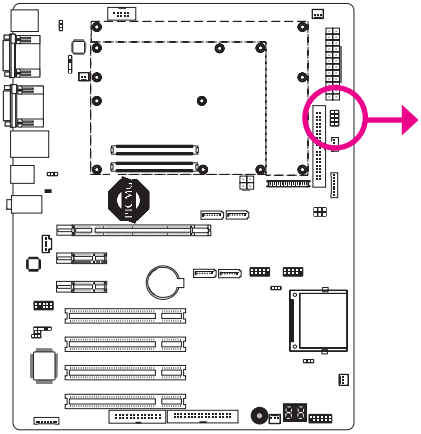
This switch is used to power on or off the system.

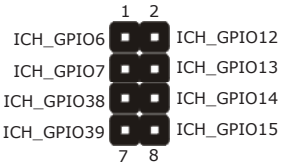
PWR-LED - Power/Standby LED

When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) state, it will blink every second. When the system is in the S3 (STR - Suspend To RAM) state, it will blink every 4 seconds.

	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

GPIO Connector



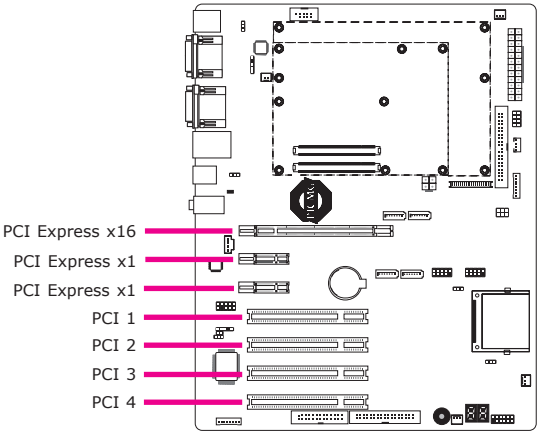


The General Purpose Input/Output (GPIO) peripheral provides dedicated general-purpose pins that can be configured as either inputs or outputs. When configured as an output, you can write to an internal register to control the state driven on the output pin. When configured as an input, you can detect the state of the input by reading the state of an internal register.

ICH_GPIO 6/7/38/39 is the main power used for GPIO output.

ICH_GPIO 12/13/14/15 is the resume power used for GPIO input.

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.

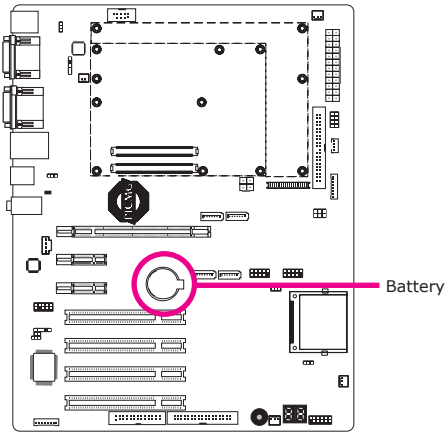
PCI Express x1 Slots

Install PCI Express cards such as network cards or other cards that comply to the PCI Express specifications into the PCI Express x1 slot.

PCI Slots

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

Battery

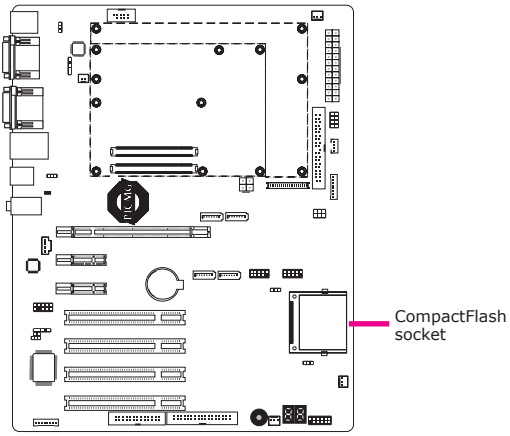


The lithium ion battery powers the real-time clock and CMOS memory. It is an auxiliary source of power when the main power is shut off.

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.

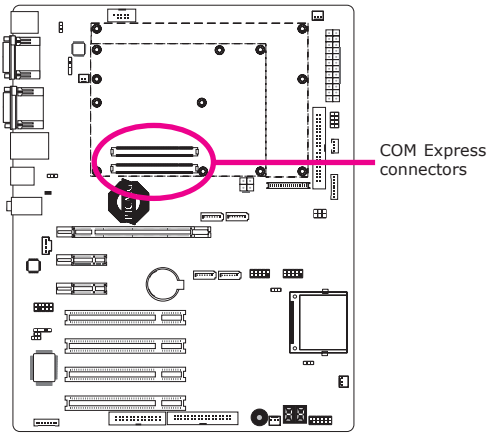
CompactFlash Socket



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.

Important:
We do not recommend using IDE devices and CF card at the same time.

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.

Row A			
1	GND	56	RSVD
2	GBE0_MDI3-	57	GND
3	GBE0_MDI3+	58	RSVD
4	GBE0_LINK100#	59	RSVD
5	GBE0_LINK1000#	60	GND
6	GBE0_MDI2-	61	RSVD
7	GBE0_MDI2+	62	RSVD
8	RSVD	63	GPIO13
9	GBE0_MDI1-	64	PCIE_TX1+
10	GBE0_MDI1+	65	PCIE_TX1-
11	GND	66	GND
12	GBE0_MDI0-	67	GPIO14
13	GBE0_MDI0+	68	PCIE_TX0+
14	GBE0_CTREF	69	PCIE_TX0-
15	SUS_S3#	70	GND
16	SATA0_TX+	71	LVDS_A0+
17	SATA0_TX-	72	LVDS_A0-
18	SUS_S4#	73	LVDS_A1+
19	SATA0_RX+	74	LVDS_A1-
20	SATA0_RX-	75	LVDS_A2+
21	GND	76	LVDS_A2-
22	SATA2_TX+	77	LVDS_VDD_EN
23	SATA2_TX-	78	MCH_RSVD_13
24	SUS_S5#	79	MCH_RSVD_12
25	SATA2_RX+	80	GND
26	SATA2_RX-	81	LVDS_A_CK+
27	RSVD	82	LVDS_A_CK-
28	ATA_ACT#	83	LVDS_I2C_CK
29	AC_SYNC	84	LVDS_I2C_DAT
30	AC_RST#	85	GPIO15
31	GND	86	KBD_RST#
32	AC_BITCLK	87	KBD_A20GATE
33	AC_SDOUT	88	PCIE0_CK_REF+
34	BIOS_DESABLE#	89	PCIE0_CK_REF-
35	RSVD	90	GND
36	USB6-	91	RSVD
37	USB6+	92	RSVD
38	USB_6_7_OC#	93	GPIO6
39	USB4-	94	RSVD
40	USB4+	95	RSVD
41	GND	96	GND
42	USB2-	97	VCC_12V
43	USB2+	98	VCC_12V
44	USB_2_3_OC#	99	VCC_12V
45	USB0-	100	GND
46	USB0+	101	VCC_12V
47	VCC_RTC	102	VCC_12V
48	RSVD	103	VCC_12V
49	RSVD	104	VCC_12V
50	LPC_SERIRQ	105	VCC_12V
51	GND	106	VCC_12V
52	RSVD	107	VCC_12V
53	RSVD	108	VCC_12V
54	GPIO12	109	VCC_12V
55	RSVD	110	GND

Row B			
1	GND	56	RSVD
2	GBE_ACT#	57	GPIO38
3	LPC_FRAME#	58	RSVD
4	LPC_AD0	59	RSVD
5	LPC_AD1	60	GND
6	LPC_AD2	61	RSVD
7	LPC_AD3	62	RSVD
8	LPC_DRQ0#	63	GPIO39
9	RSVD	64	PCIE_RX1+
10	LPC_CLK	65	PCIE_RX1-
11	GND	66	WAKE0#
12	PWRBTN#	67	WAKE1#
13	SMB_CK	68	PCIE_RX0+
14	SMB_DAT	69	PCIE_RX0-
15	RSVD	70	GND
16	SATA1_TX+	71	LVDS_B0+
17	SATA1_TX-	72	LVDS_B0-
18	SUS_STAT#	73	LVDS_B1+
19	SATA1_RX+	74	LVDS_B1-
20	SATA1_RX-	75	LVDS_B2+
21	GND	76	LVDS_B2-
22	SATA3_TX+	77	MCH-RSVD_15
23	SATA3_TX-	78	MCH-RSVD_14
24	PWR_OK	79	LVDS_BKLT_EN
25	SATA3_RX+	80	GND
26	SATA3_RX-	81	LVDS_B_CK+
27	RSVD	82	LVDS_B_CK-
28	AC_SDIN2	83	RSVD
29	RSVD	84	VCC_5V_SBY
30	RSVD	85	VCC_5V_SBY
31	GND	86	VCC_5V_SBY
32	SPKR	87	VCC_5V_SBY
33	SMLINK0	88	VCC_5V_SBY
34	SMLINK1	89	VGA_RED
35	THRM#	90	GND
36	USB7-	91	VGA_GRN
37	USB7+	92	VGA_BLU
38	USB_4_5_OC#	93	VGA_HSYNC
39	USB5-	94	VGA_VSYNC
40	USB5+	95	VGA_I2C_CK
41	GND	96	VGA_I2C_DAT
42	USB3-	97	RSVD
43	USB3+	98	RSVD
44	USB_0_1_OC#	99	RSVD
45	USB1-	100	GND
46	USB1+	101	VCC_12V
47	RSVD	102	VCC_12V
48	RSVD	103	VCC_12V
49	SYS_RESET#	104	VCC_12V
50	CB_RESET#	105	VCC_12V
51	GND	106	VCC_12V
52	RSVD	107	VCC_12V
53	RSVD	108	VCC_12V
54	GPIO7	109	VCC_12V
55	RSVD	110	GND

Row C			
1	GND	56	PEG_RX1-
2	IDE_D7	57	RSVD
3	IDE_D6	58	PEG_RX2+
4	IDE_D3	59	PEG_RX2-
5	IDE_D15	60	GND
6	IDE_D8	61	PEG_RX3+
7	IDE_D9	62	PEG_RX3-
8	IDE_D2	63	RSVD
9	IDE_D13	64	RSVD
10	IDE_D1	65	PEG_RX4+
11	GND	66	PEG_RX4-
12	IDE_D14	67	RSVD
13	IDE_IORDY	68	PEG_RX5+
14	IDE_IOR#	69	PEG_RX5-
15	PCI_PME#	70	GND
16	PCI_GNT2#	71	PEG_RX6+
17	PCI_REQ2#	72	PEG_RX6-
18	PCI_GNT1#	73	SDVO_DATA
19	PCI_REQ1#	74	PEG_RX7+
20	PCI_GNT0#	75	PEG_RX7-
21	GND	76	GND
22	PCI_REQ0#	77	RSVD
23	PCI_RESET#	78	PEG_RX8+
24	PCI_AD0	79	PEG_RX8-
25	PCI_AD2	80	GND
26	PCI_AD4	81	PEG_RX9+
27	PCI_AD6	82	PEG_RX9-
28	PCI_AD8	83	RSVD / SDLOC DATA
29	PCI_AD10	84	GND
30	PCI_AD12	85	PEG_RX10+
31	GND	86	PEG_RX10-
32	PCI_AD14	87	GND
33	PCI_C/BE1#	88	PEG_RX11+
34	PCI_PERR#	89	PEG_RX11-
35	PCI_LOCK#	90	GND
36	PCI_DEVSEL#	91	PEG_RX12+
37	PCI_IRDY#	92	PEG_RX12-
38	PCI_C/BE2#	93	GND
39	PCI_AD17	94	PEG_RX13+
40	PCI_AD19	95	PEG_RX13-
41	GND	96	GND
42	PCI_AD21	97	RSVD
43	PCI_AD23	98	PEG_RX14+
44	PCI_C/BE3#	99	PEG_RX14-
45	PCI_AD25	100	GND
46	PCI_AD27	101	PEG_RX15+
47	PCI_AD29	102	PEG_RX15-
48	PCI_AD31	103	GND
49	PCI_IRQA#	104	VCC_12V
50	PCI_IRQB#	105	VCC_12V
51	GND	106	VCC_12V
52	PEG_RX0+	107	VCC_12V
53	PEG_RX0-	108	VCC_12V
54	RSVD	109	VCC_12V
55	PEG_RX1+	110	GND

Row D			
1	GND	56	PEG_TX1-
2	IDE_D5	57	RSVD
3	IDE_D10	58	PEG_TX2+
4	IDE_D11	59	PEG_TX2-
5	IDE_D12	60	GND
6	IDE_D4	61	PEG_TX3+
7	IDE_D0	62	PEG_TX3-
8	IDE_REQ	63	RSVD
9	IDE_LOW#	64	RSVD
10	IDE_ACK#	65	PEG_TX4+
11	GND	66	PEG_TX4-
12	IDE_IRQ	67	GND
13	IDE_A0	68	PEG_TX5+
14	IDE_A1	69	PEG_TX5-
15	IDE_A2	70	GND
16	IDE_CS1	71	PEG_TX6+
17	IDE_CS3	72	PEG_TX6-
18	IDE_RESET#	73	SDVO_CLK
19	PCI_GNT3#	74	PEG_TX7+
20	PCI_REQ3#	75	PEG_TX7-
21	GND	76	GND
22	PCI_AD1	77	IDE_CBLID#
23	PCI_AD3	78	PEG_TX8+
24	PCI_AD5	79	PEG_TX8-
25	PCI_AD7	80	GND
26	PCI_C/BE0#	81	PEG_TX9+
27	PCI_AD9	82	PEG_TX9-
28	PCI_AD11	83	RSVD / SDVOC CLK
29	PCI_AD13	84	GND
30	PCI_AD15	85	PEG_TX10+
31	GND	86	PEG_TX10-
32	PCI_PAR	87	GND
33	PCI_SERR#	88	PEG_TX11+
34	PCI_STOP#	89	PEG_TX11-
35	PCI_TRDY#	90	GND
36	PCI_FRAME#	91	PEG_TX12+
37	PCI_AD16	92	PEG_TX12-
38	PCI_AD18	93	GND
39	PCI_AD20	94	PEG_TX13+
40	PCI_AD22	95	PEG_TX13-
41	GND	96	GND
42	PCI_AD24	97	PEG_ENABLE#
43	PCI_AD26	98	PEG_TX14+
44	PCI_AD28	99	PEG_TX14-
45	PCI_AD30	100	GND
46	PCI_IRQC#	101	PEG_TX15+
47	PCI_IRQD#	102	PEG_TX15-
48	RSVD	103	GND
49	GND	104	VCC_12V
50	PCI_CLK	105	VCC_12V
51	GND	106	VCC_12V
52	PEG_TX0+	107	VCC_12V
53	PEG_TX0-	108	VCC_12V
54	RSVD	109	VCC_12V
55	PEG_TX1+	110	GND