



# COM101-BAT

## COM Express Carrier Board User's Manual

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Changes after the publication's first release will be based on the product's revision. The website will always provide the most updated information.

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## Trademarks

Product names or trademarks appearing in this manual are for identification purpose only and are the properties of the respective owners.

## 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.

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## 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 consequential 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.

## About the Package

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

- One COM101-BAT board
- One SATA data with power cable
- One DVD
- One QR (Quick Reference)

## Optional Items

- SATA data with power cable
- Power adapter (120W, 19V)

The board and accessories in the package may not come similar to the information listed above. This may differ in accordance with 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.

## Chapter 1 - Introduction

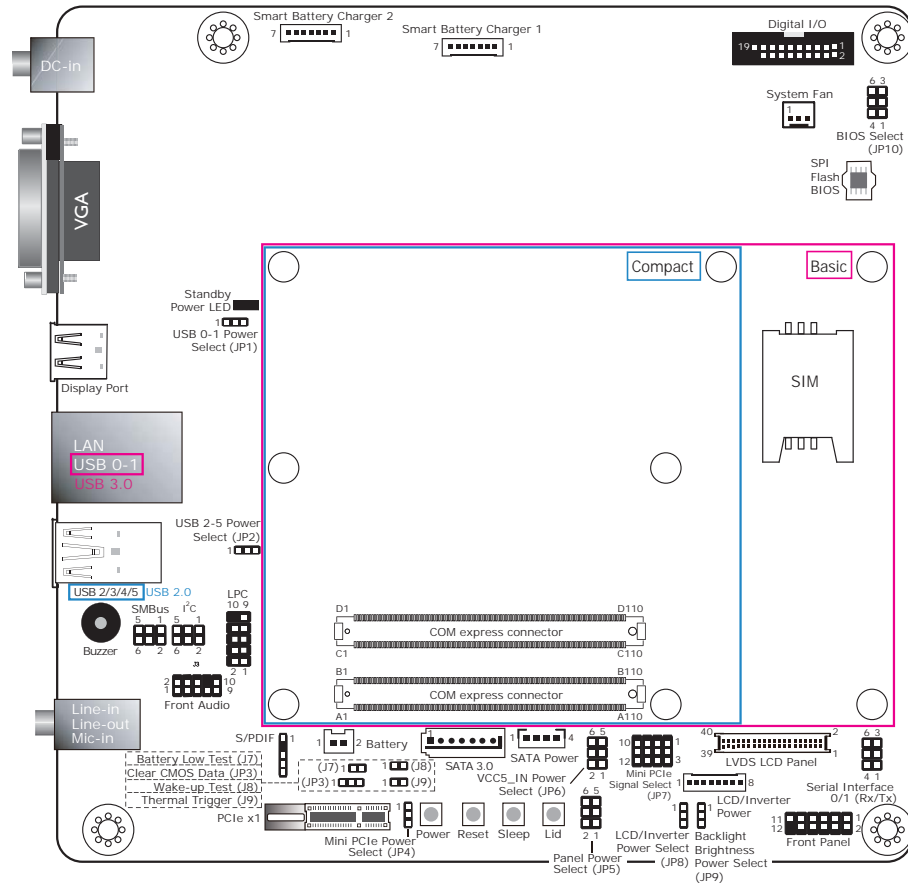
### Specifications

<b>Graphics</b>	<ul style="list-style-type: none"> <li>• Display ports <ul style="list-style-type: none"> <li>- 1 DisplayPort</li> <li>- 1 VGA</li> <li>- 1 24-bit dual channel LVDS</li> </ul> </li> </ul>
<b>Audio</b>	<ul style="list-style-type: none"> <li>• Realtek ALC886 7.1-channel High Definition Audio</li> <li>• Audio outputs: Mic-in/Center+Subwoofer, Line-in/Surround and Line-out</li> <li>• S/PDIF audio interface</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• 1 SATA 3.0 port with data transfer rate up to 6Gb/s</li> </ul>
<b>Digital I/O</b>	<ul style="list-style-type: none"> <li>• 8-bit Digital I/O connector <ul style="list-style-type: none"> <li>- 4-bit GPI (General Purpose Input)</li> <li>- 4-bit GPO (General Purpose Output)</li> </ul> </li> </ul>
<b>Temperature</b>	<ul style="list-style-type: none"> <li>• Operating: 0°C to 60°C</li> <li>• Storage: -20°C to 85°C</li> </ul>
<b>Humidity</b>	10% to 90%
<b>Rear Panel IO Ports</b>	<ul style="list-style-type: none"> <li>• 19V DC-in jack</li> <li>• 1 DisplayPort</li> <li>• 1 RJ45 LAN port</li> <li>• 2 USB 3.0 ports</li> <li>• 4 USB 2.0 ports</li> <li>• 1 VGA port</li> <li>• Line-in/Surround, Line-out, Mic-in/Center+Subwoofer jacks</li> </ul>
<b>I/O Connectors</b>	<ul style="list-style-type: none"> <li>• 2 3-pin connectors for general purpose serial interface (Type 6)</li> <li>• 1 LVDS LCD panel connector</li> <li>• 1 LCD/inverter power connector</li> <li>• 1 8-bit Digital I/O connector</li> <li>• 1 front audio connector for line-out and mic-in jacks</li> <li>• 1 S/PDIF connector</li> <li>• 1 SATA 3.0 port</li> <li>• 1 SATA power connector</li> <li>• 2 Smart battery charger connectors</li> <li>• 1 LPC connector</li> <li>• 1 I<sup>2</sup>C connector</li> <li>• 1 SMBus connector</li> <li>• 1 front panel connector</li> <li>• 1 fan connector</li> </ul>

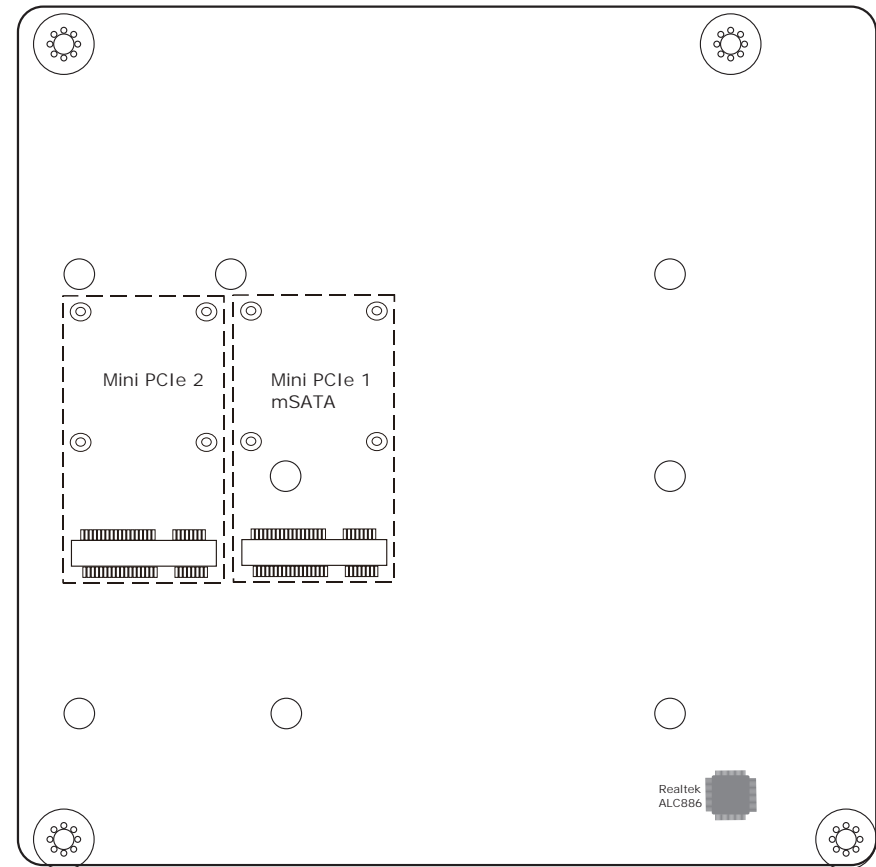
<b>Expansion Slots</b>	<ul style="list-style-type: none"> <li>• 1 PCIe x1 slot (PCIe 2.0)</li> <li>• 2 Mini PCIe slots (PCIe 2.0) <ul style="list-style-type: none"> <li>- 1 slot supports PCIe and USB signals for 3G module</li> <li>- 1 slot supports PCIe, USB or mSATA signal</li> <li>- Supports half/full size Mini PCIe card</li> </ul> </li> <li>• 1 SIM card socket</li> </ul>
<b>ROM Interface</b>	<ul style="list-style-type: none"> <li>• 1 SPI interface <ul style="list-style-type: none"> <li>- Supports up to 64Mbit</li> </ul> </li> </ul>
<b>Power Output</b>	<ul style="list-style-type: none"> <li>• 12V, 5VSB, VCC_RTC (ATX mode)</li> <li>• 12V, 5V, VCC_RTC (AT mode)</li> <li>• 12V, VCC_RTC (AT mode)</li> </ul>
<b>PCB</b>	<ul style="list-style-type: none"> <li>• Dimensions <ul style="list-style-type: none"> <li>- Mini-ITX form factor</li> <li>- 170mm (6.7") x 170mm (6.7")</li> </ul> </li> <li>• Compliance <ul style="list-style-type: none"> <li>- PICMG COM Express® R2.1, Type 6</li> </ul> </li> </ul>

# Chapter 2 - Hardware Installation

## Board Layout

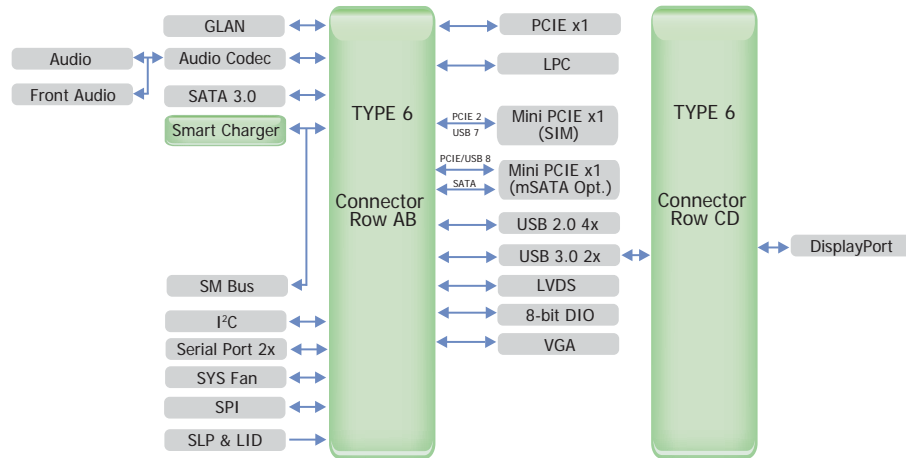


Top View

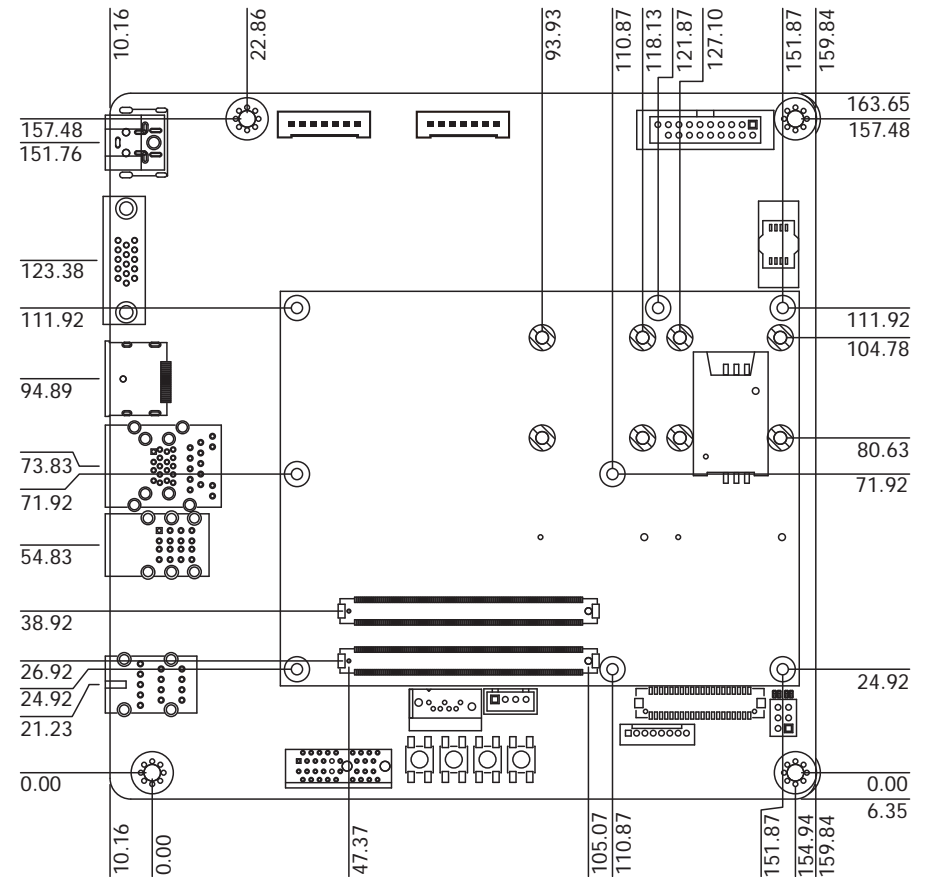


Bottom View

### Block Diagram



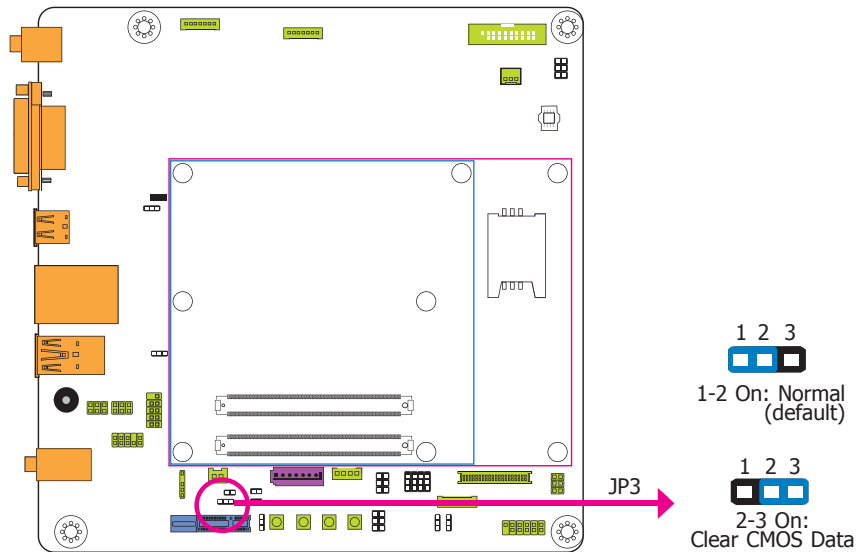
### Mechanical Diagram





## Jumper Settings

### Clear CMOS Data



If you encounter the following situations,

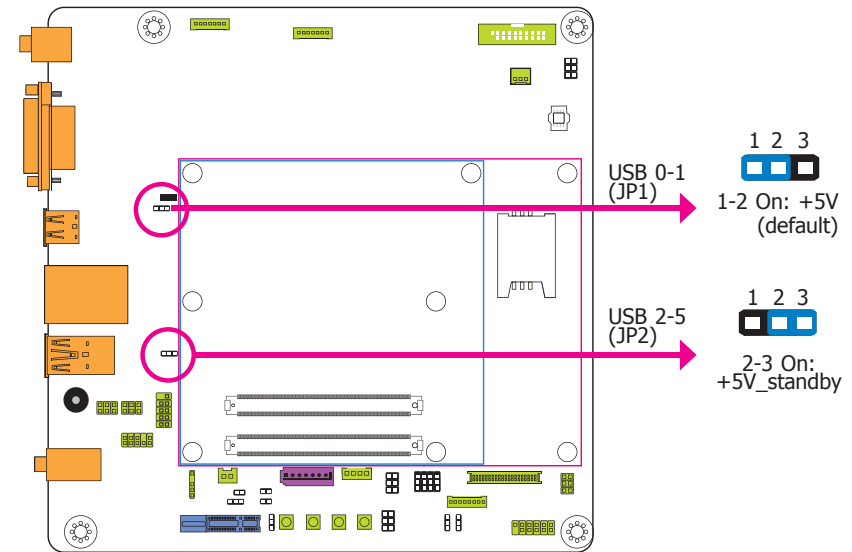
- CMOS data becomes corrupted.
- You forgot the supervisor or user password.

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:

- Power-off the system and unplug the power cord.
- Set JP3 pins 2 and 3 to On. Wait for a few seconds and set JP3 back to its default setting, pins 1 and 2 On.
- Now plug the power cord and power-on the system.

### USB Power Select



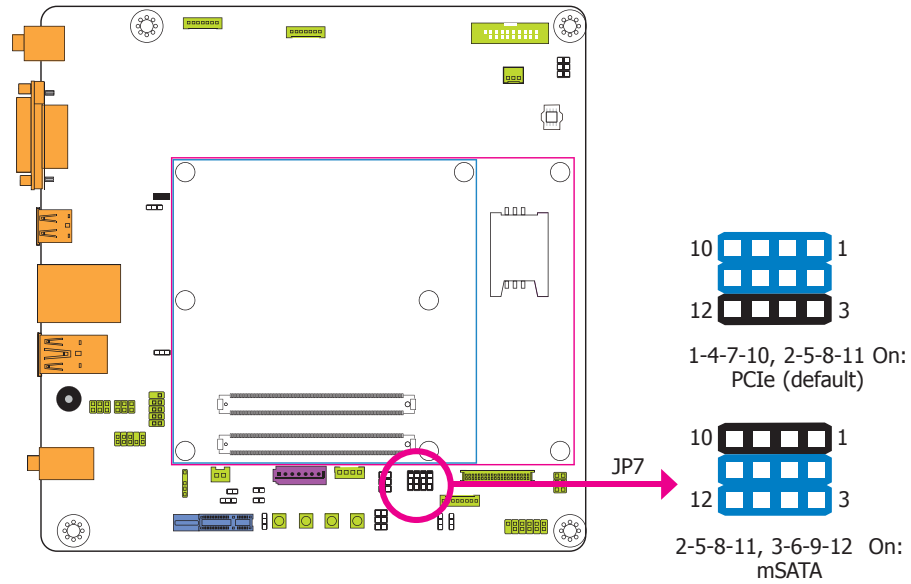
JP1 (for USB 0-1) and JP2 (for USB 2-5) are used to select the power of USB ports. Selecting +5V\_standby will allow you to use a USB keyboard to wake up the system.



#### Important:

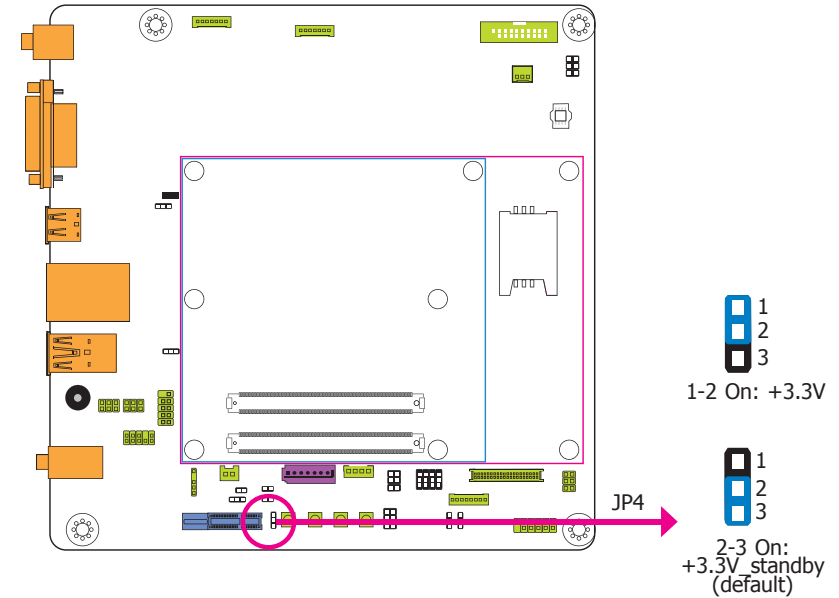
If you are using the Wake-On-USB Keyboard/Mouse function for 2 USB ports, the +5V\_standby power source of your power supply must support  $\geq 1.5A$ . For 3 or more USB ports, the +5V\_standby power source of your power supply must support  $\geq 2A$ .

## Mini PCIe Signal Select



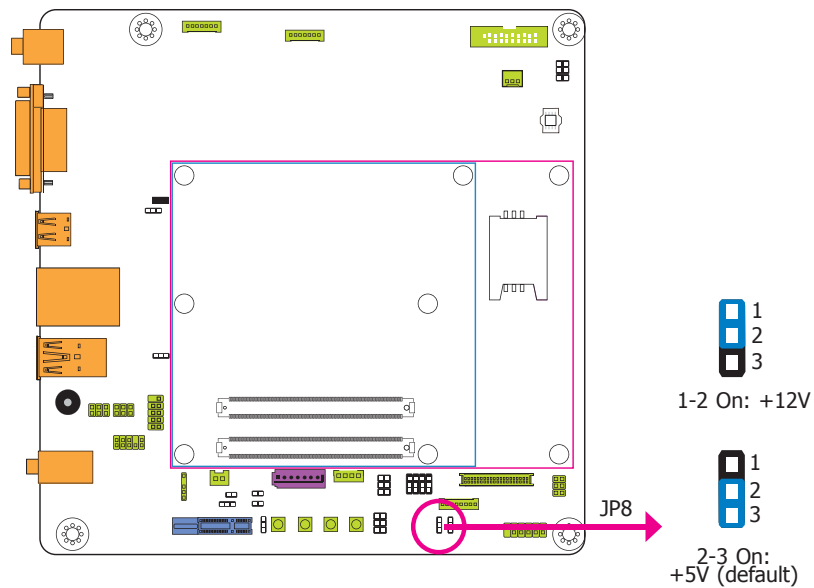
The JP7 is used to select the Mini PCIe signal.

## Mini PCIe Power Select



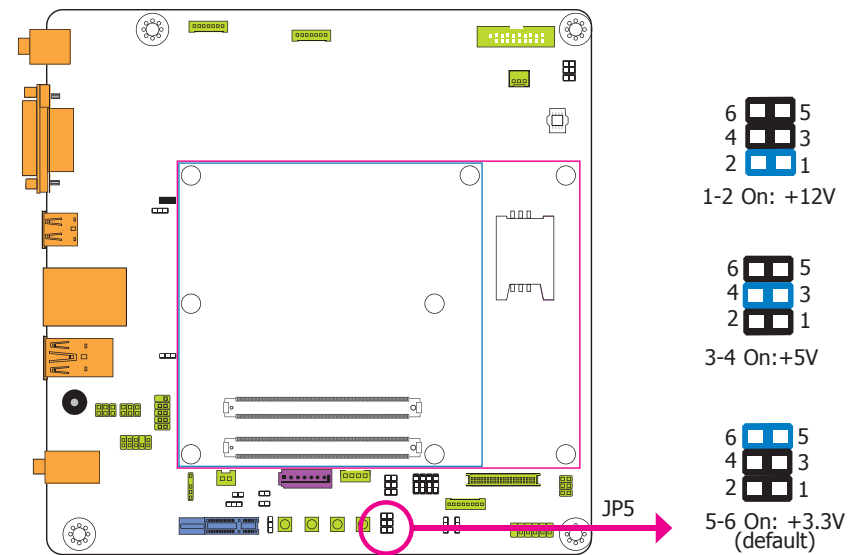
The JP4 is used to select the power supplied with the Mini PCIe.

## LCD/Inverter Power Select



The JP8 is used to select the power level of LCD inverter connector.

## Panel Power Select

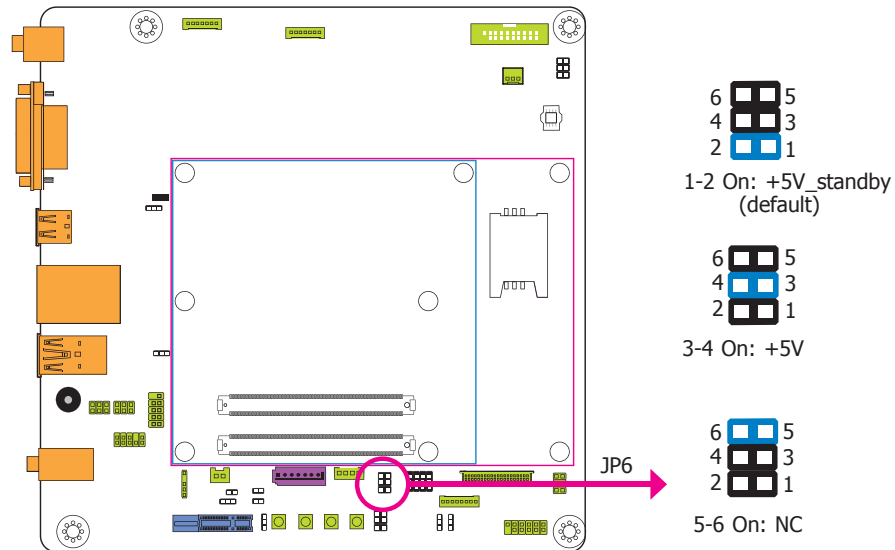


The JP5 is used to select the power supplied with the LCD panel.

**Important:**

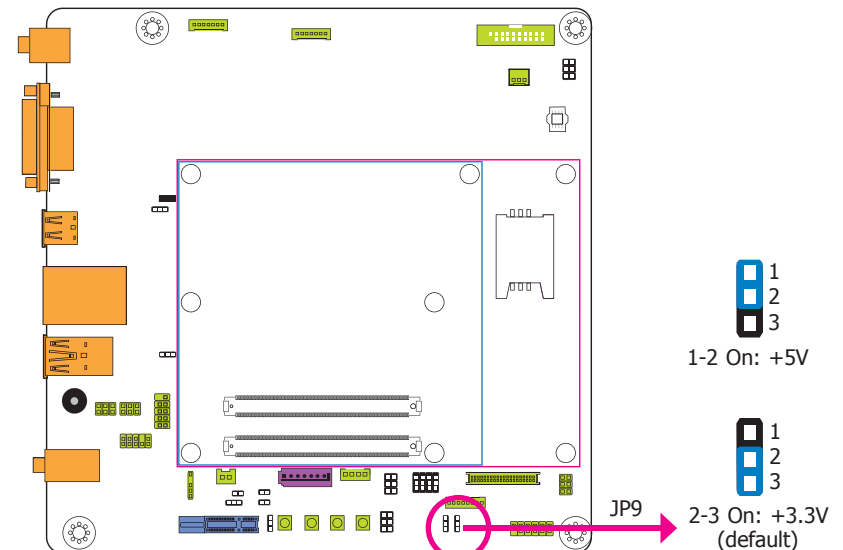
Before powering on the system, make sure that the power settings of JP5 match the LCD panel's specification. Selecting the incorrect voltage will seriously damage the LCD panel.

## VCC5\_In Power Select



The JP6 is used to select the power of the COM Express connectors.

## Backlight Brightness Power Select

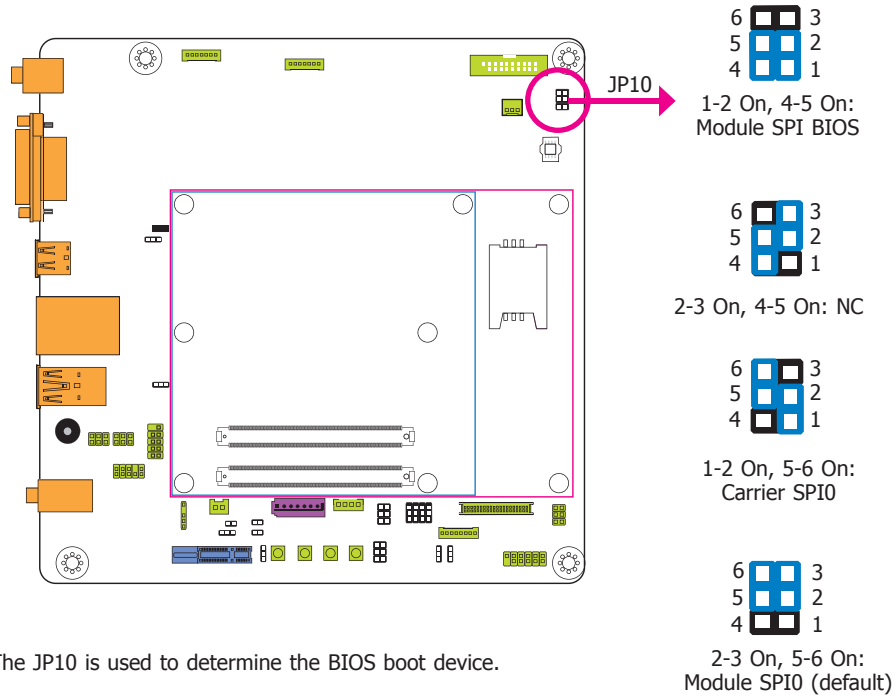


The JP9 is used to select the power level of backlight brightness control: +5V or +3.3V.

**Important:**

Before powering-on the system, make sure that the power settings of JP9 match the power specification of backlight control. Selecting the incorrect voltage will seriously damage the backlight.

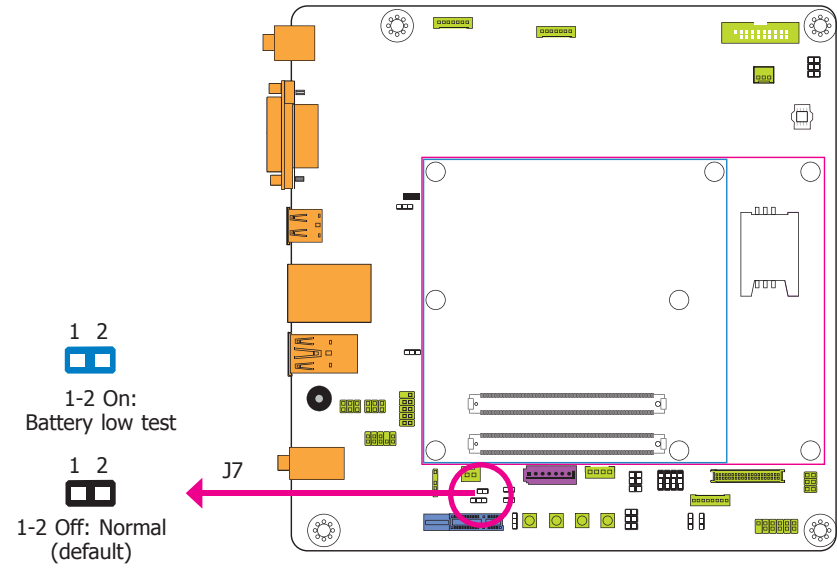
### BIOS Select



The JP10 is used to determine the BIOS boot device.

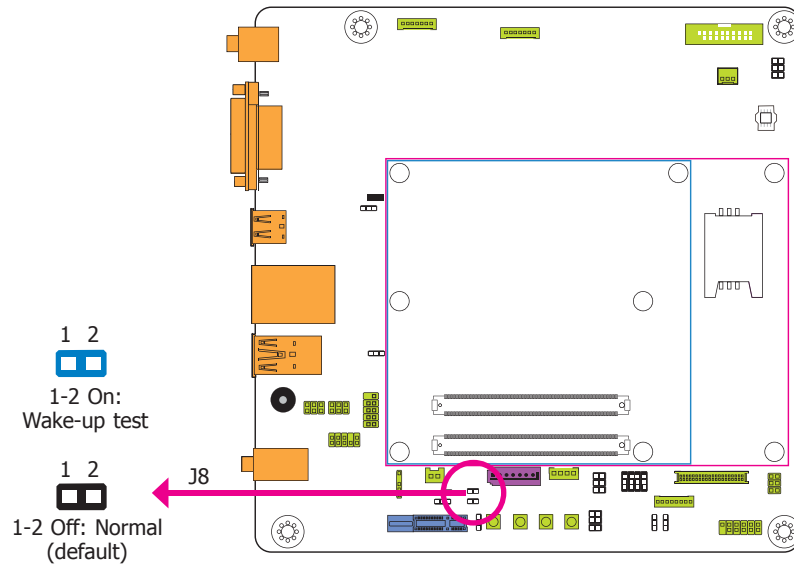
### Function Test Jumpers

#### Battery Low Test



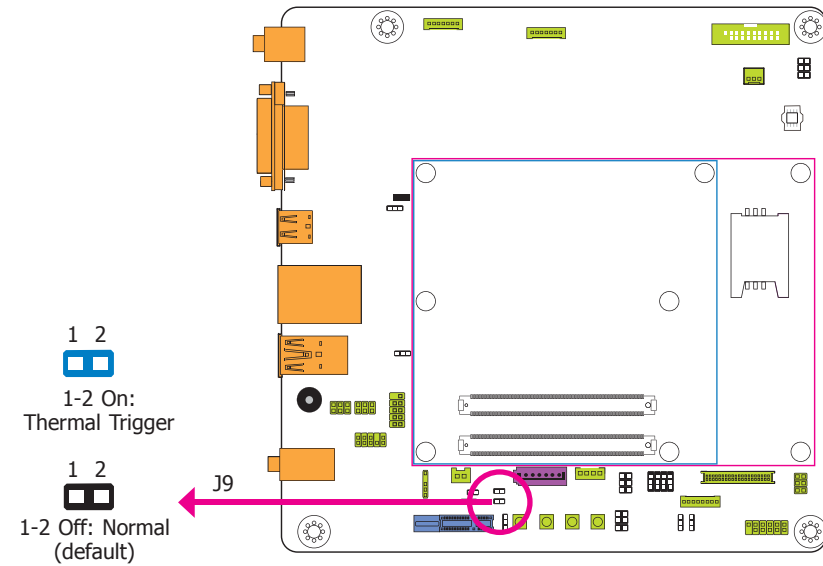
This jumper is used to simulate the signal status that indicates the external battery is low. By setting J7 pins 1 and 2 to On, it sends a battery low signal to the module.

## Wake-up Test



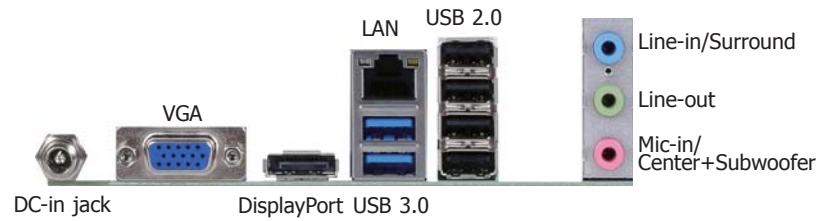
This jumper is used to simulate a general purpose wake-up signal such as wake-up on PS/2 keyboard or PS/2 mouse. Set J8 pins 1 and 2 to On to send WAKE# signal to the module.

## Thermal Trigger



This jumper is used to simulate the signal status that indicates an Over Temperature Situation. Set J9 pins 1 and 2 to On to send THRM# signal to the module.

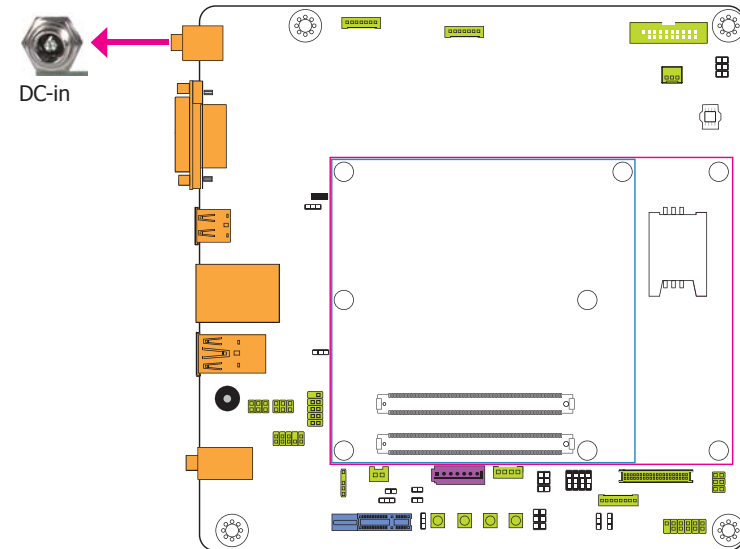
## Rear Panel I/O Ports



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

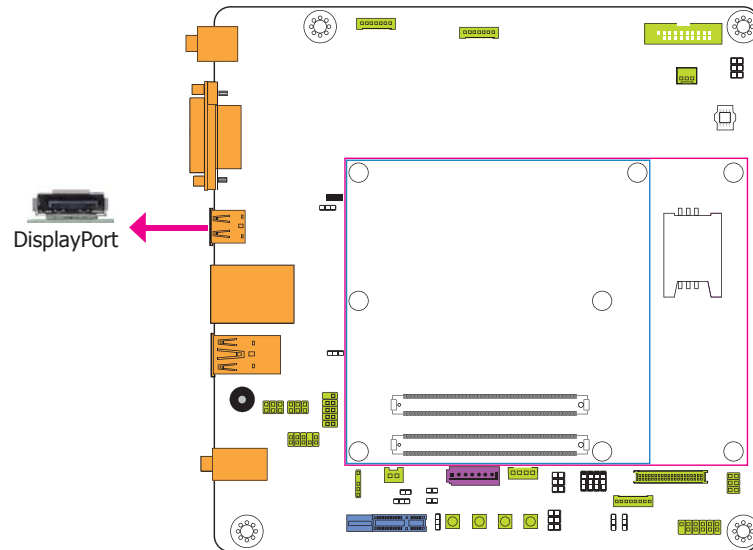
- 1 19V DC-in jack
- 1 DisplayPort
- 1 RJ45 LAN port
- 2 USB 3.0 ports
- 4 USB 2.0 ports
- 1 VGA port
- Line-in/Surround jack
- Line-out jack
- Mic-in/Center+Subwoofer jack

## 19V DC-in



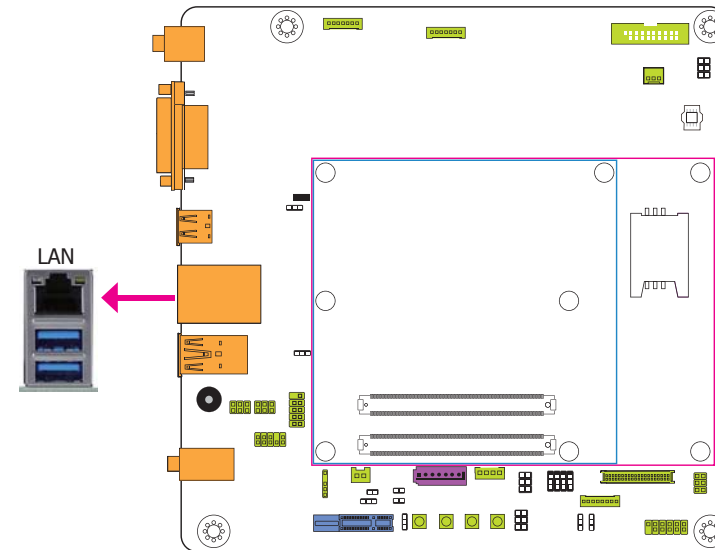
This jack provides maximum of 120W power and is considered a low power solution. Connect a DC power cord to this jack. Use a power adapter with 19V DC output voltage. Using a voltage higher than the recommended one may fail to boot the system or cause damage to the system board.

## DisplayPort



DisplayPort is a digital display interface used to connect a display device such as a computer monitor. It is used to transmit audio and video simultaneously. The interface, which is developed by VESA, delivers higher performance features than any other digital interface.

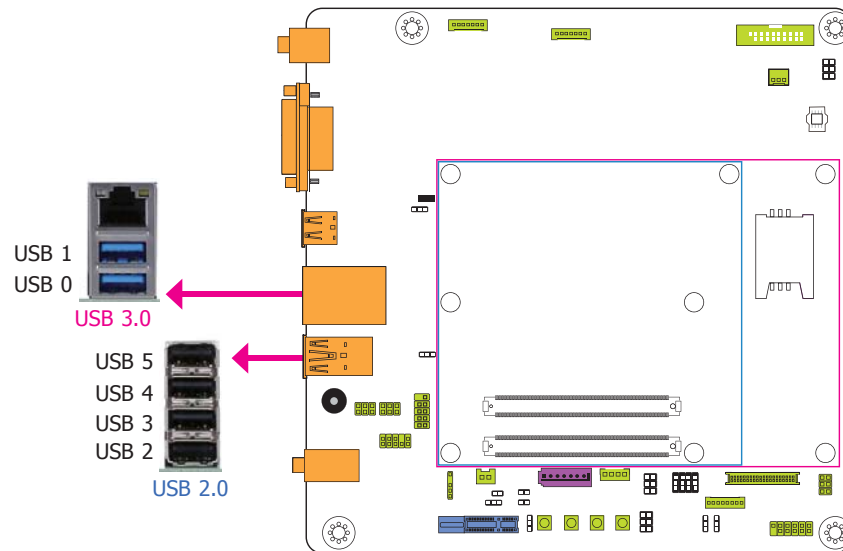
## RJ45 LAN Port



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



## USB Ports



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

The system board is equipped with two onboard USB 3.0/2.0/1.1 ports (USB 0-1) and four onboard USB 2.0/1.1 ports (USB 2-5).

### 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**

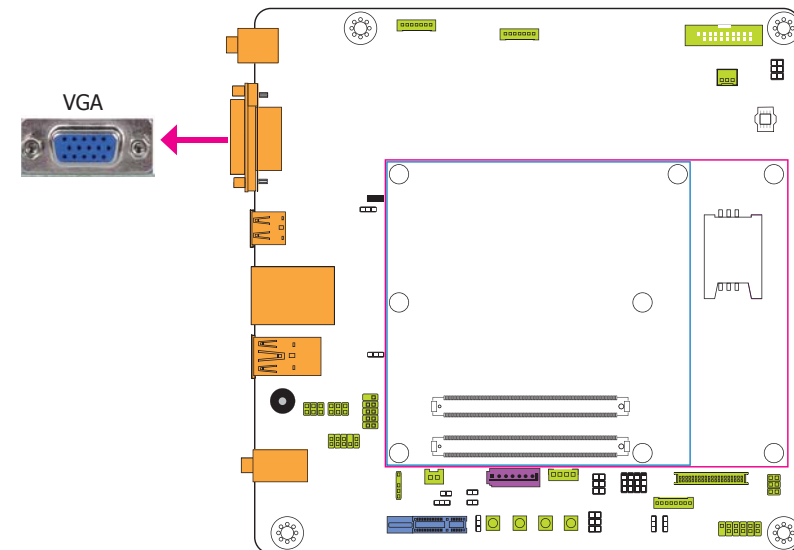
JP1 (for USB 0-1) and JP2 (for USB 2-5) must be set to "2-3 On: +5V\_standby". Refer to "USB Power Select" in this chapter for more information.



#### 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  $\geq 1.5A$ . For 3 or more USB ports, the +5V\_standby power source of your power supply must support  $\geq 2A$ .

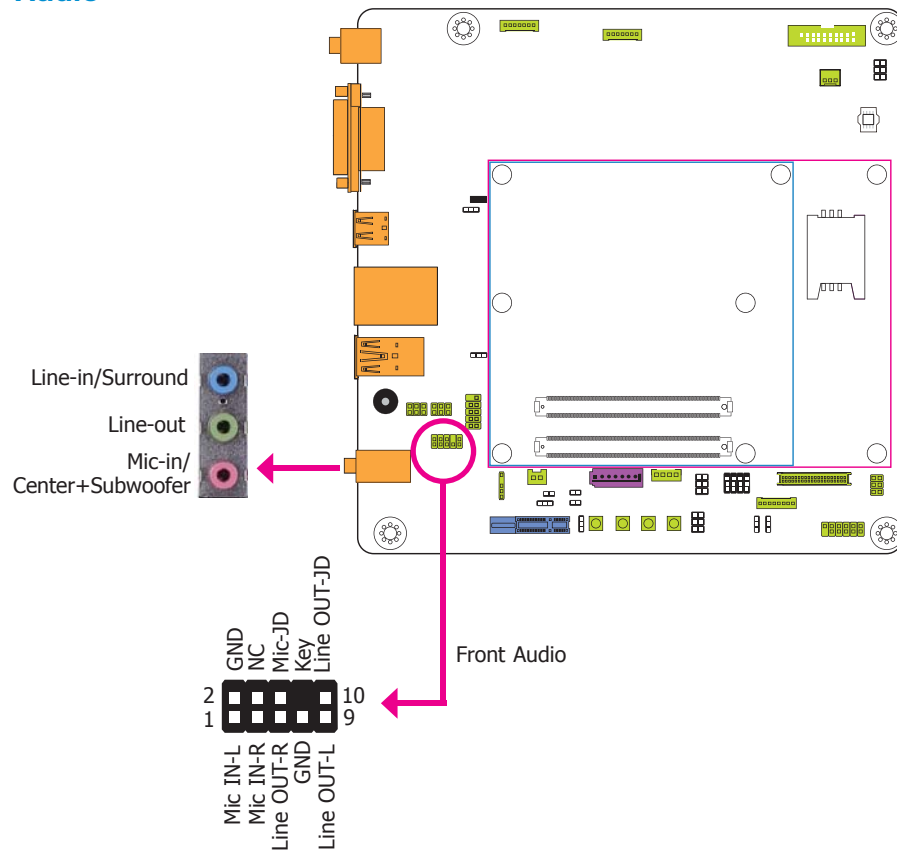
## VGA Port



### 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.

## 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/Surround 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/Center+Subwoofer (Pink)**  
This jack is used to connect to the center and subwoofer speakers of the audio system.

### 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 board.

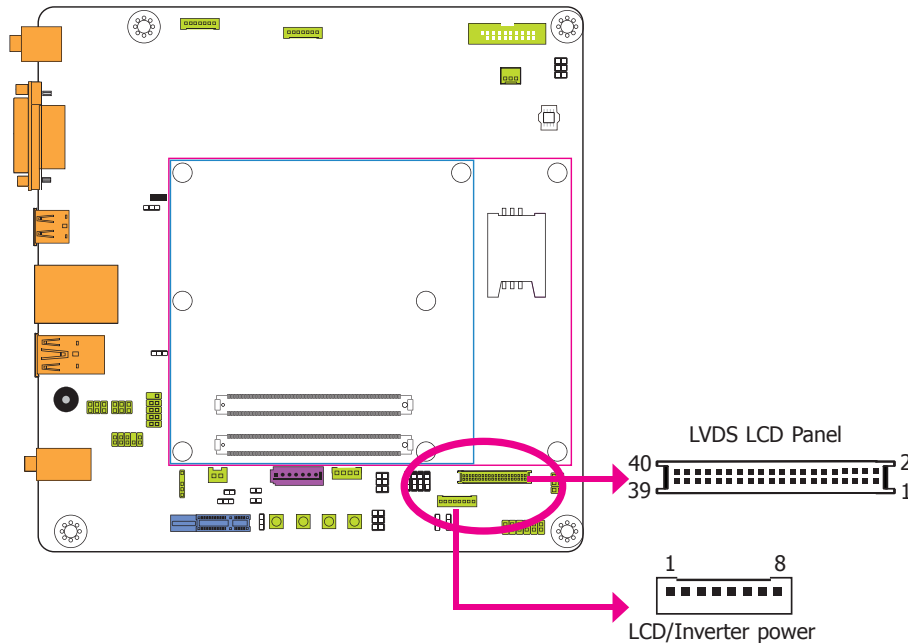
### BIOS Setting

Refer to the module's BIOS for more information.

## I/O Connectors

### 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 right side 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.



#### Note:

DFI board's LVDS connector: Hirose DF13-40DP-1.25V(91)/40P/1.25mm; cable side connector: Hirose DF13-40DS-1.25C.

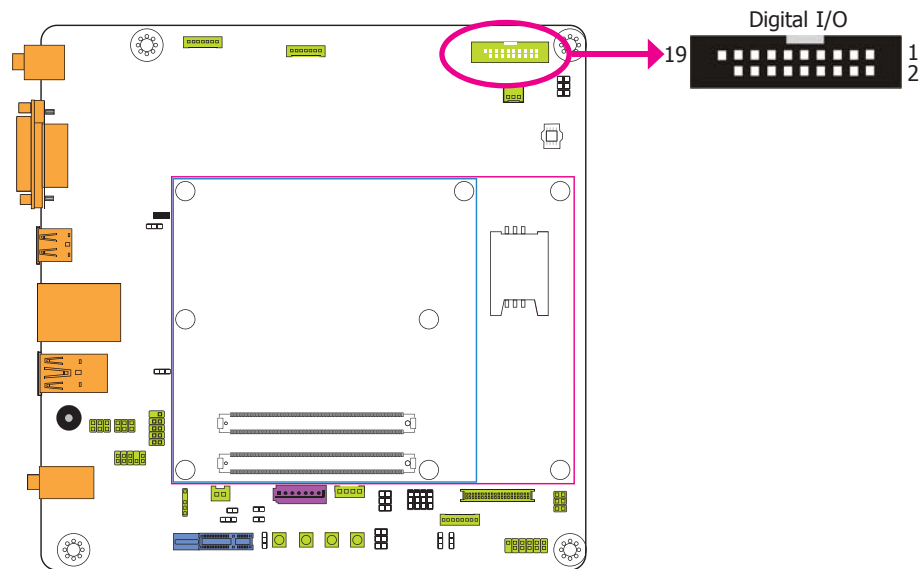
### LVDS LCD Panel Connector

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	+3.3V
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	LCD/Inverter Power
8	LCD/Inverter Power

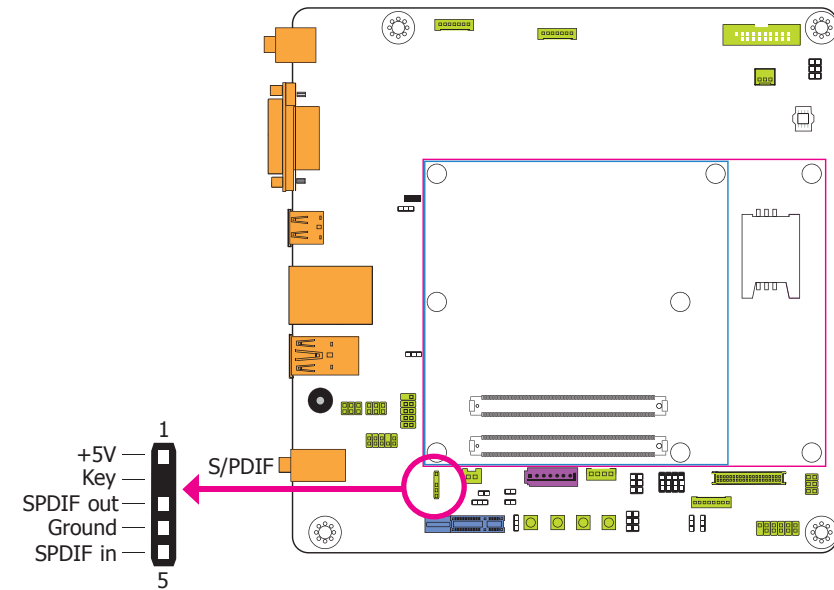
## Digital I/O Connector



The 8-bit Digital I/O connector (4-bit GPI and 4-bit GPO) provides powering-on function to the external device that is connected to the connector. The pin functions of the Digital I/O connector are listed below:

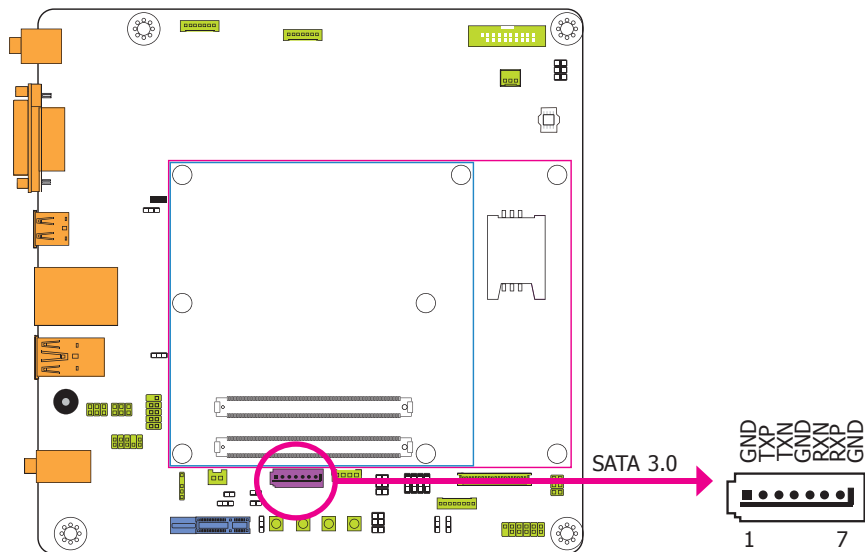
Pins	Pin Assignment	Pins	Pin Assignment
1	GND	2	+12V
3	DIO7 (GPO3)	4	+12V
5	DIO6 (GPO2)	6	GND
7	DIO5 (GPO1)	8	+5V
9	DIO4 (GPO0)	10	+5V
11	DIO3 (GPI3)	12	GND
13	DIO2 (GPI2)	14	+5V_Standby
15	DIO1 (GPI1)	16	+5V_Standby
17	DIO0 (GPI0)	18	GND
19	GND		

## 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.

## SATA (Serial ATA) Connector

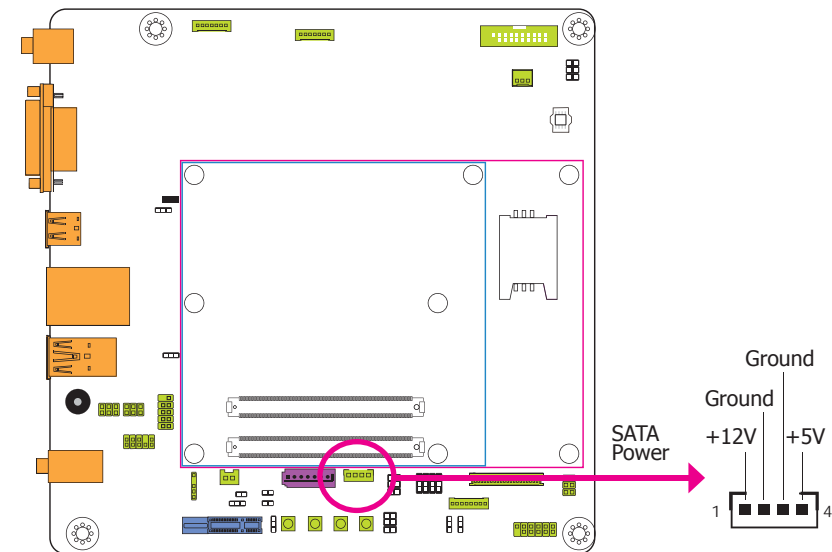


The Serial ATA connector is used to connect the Serial ATA device. Connect one end of the Serial ATA cable to a SATA connector and the other end to your Serial ATA device.

### BIOS Setting

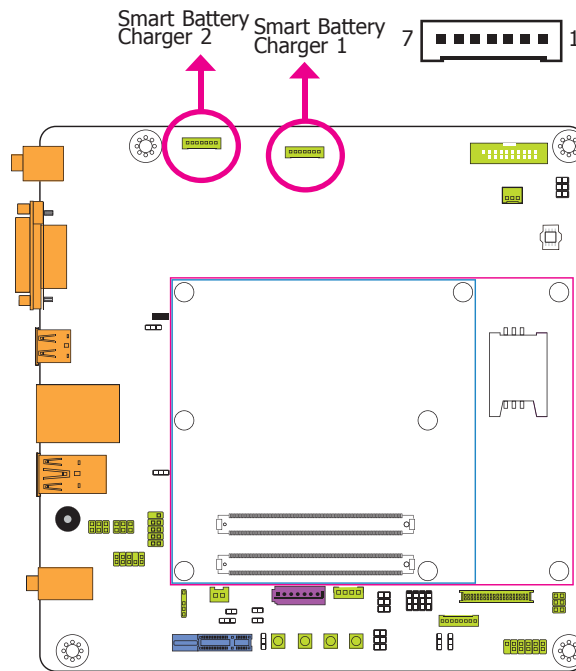
Refer to the module's BIOS for more information.

## SATA (Serial ATA) Power Connector



The SATA power connector supplies power to the SATA drive. Connect one end of the provided power cable to the SATA power connector and the other end to your storage device.

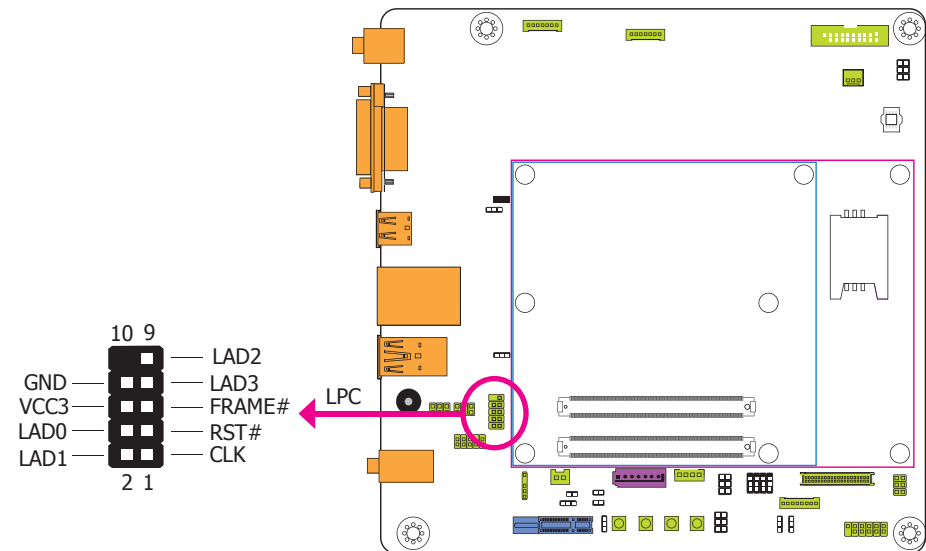
### Smart Battery Charger Connectors



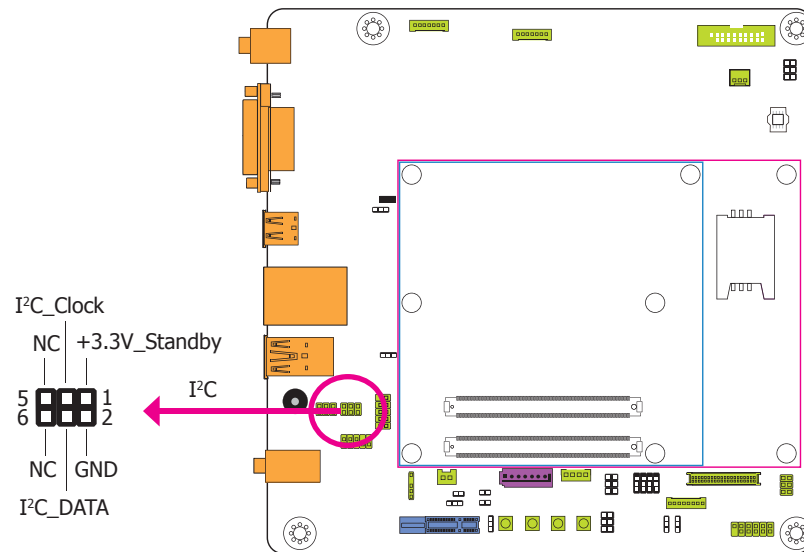
The smart battery charger connectors are used for the function of power mangement and determine the accurate battery capacity in the system operation. The function of each pin is listed below:

Pins	Function
1	V+
2	V+
3	Thermal
4	SMBus_DATA
5	SMBus_CLK
6	V- (GND)
7	V- (GND)

### LPC connector

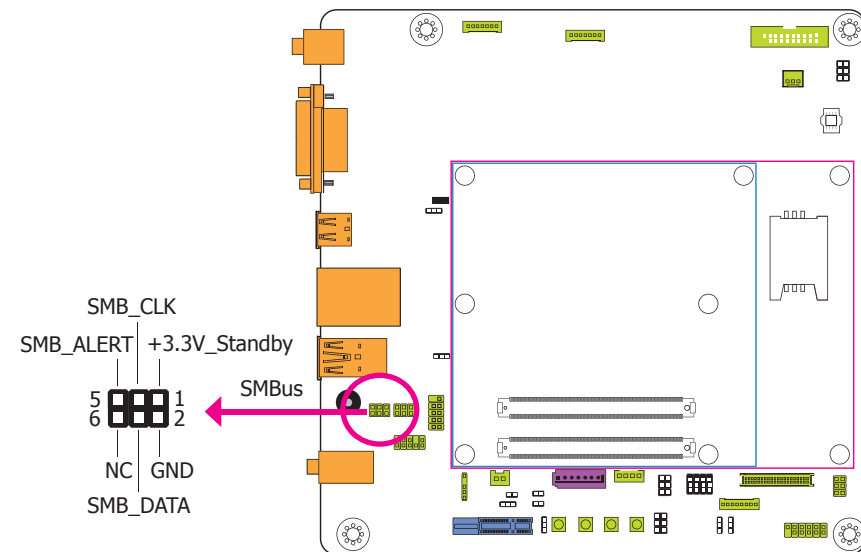


The Low Pin Count Interface was defined by Intel® Corporation to facilitate the industry's transition towards legacy free systems. It allows the integration of low-bandwidth legacy I/O components within the system, which are typically provided by a Super I/O controller. Furthermore, it can be used to 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'.

I<sup>2</sup>C Connector

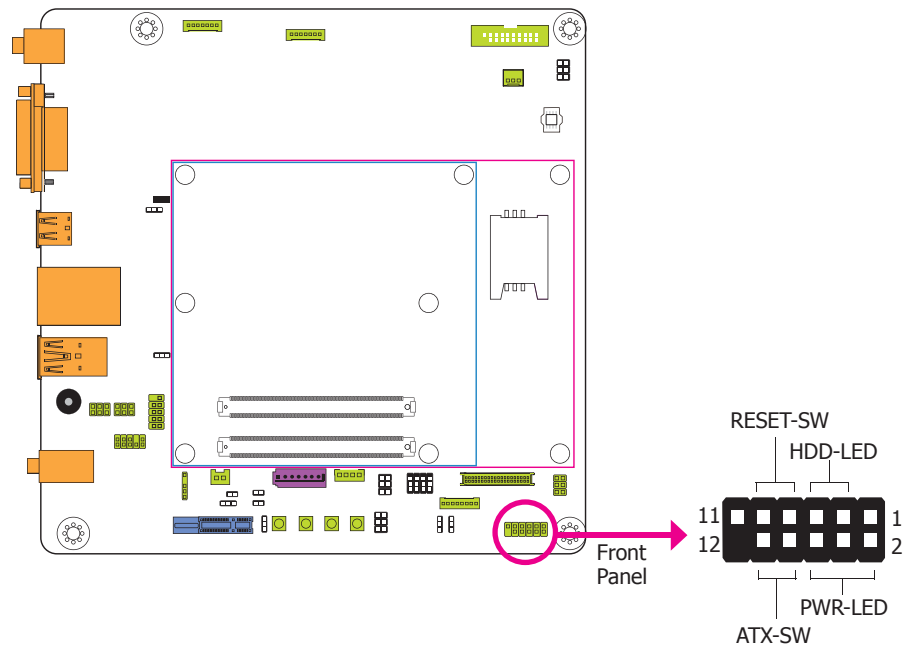
The 1-channel I<sup>2</sup>C bus interface conforms to the version 2.1 I<sup>2</sup>C bus specification. It operates as a master or slave device and supports a multi-master bus.

## SMBus Connector



The SMBus (System Management Bus) connectors are used to connect the SMBus device. 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.

## Front Panel Connector



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

### 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.

### ATX-SW - ATX Power Switch

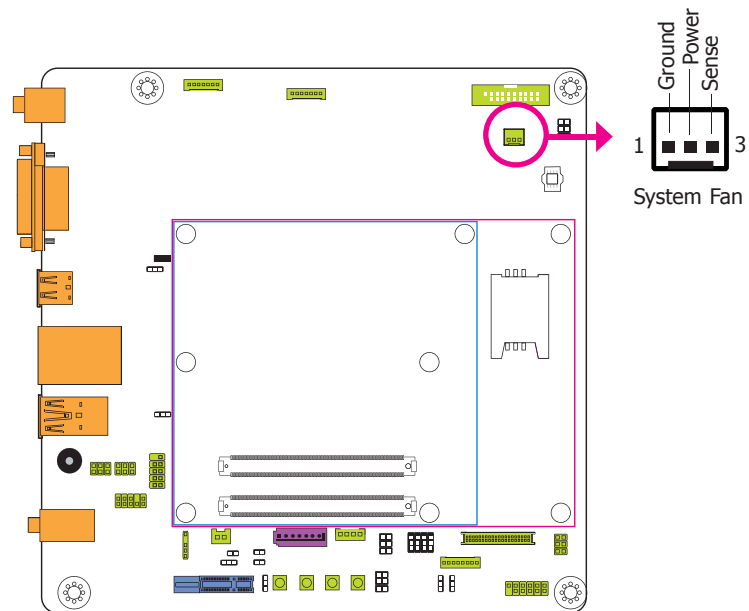
This switch is used to power on or off the system.

### PWR-LED - Power/Standby LED

When the system's power is On, in the S1 (POS - Power On Suspend) state or in the S3 (STR - Suspend To RAM) state, this LED will light.

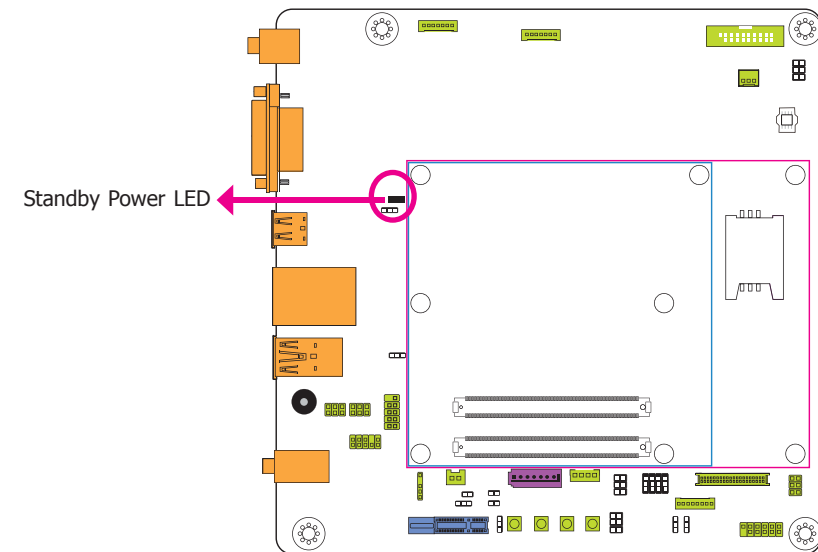


## Cooling Fan Connector



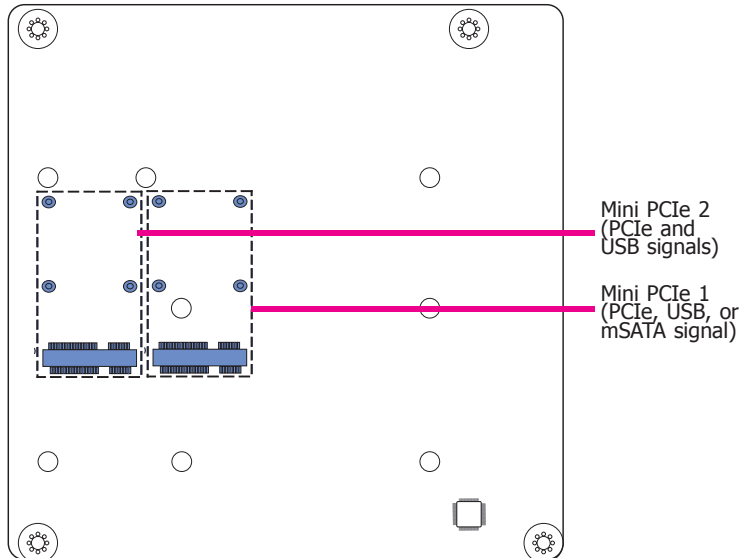
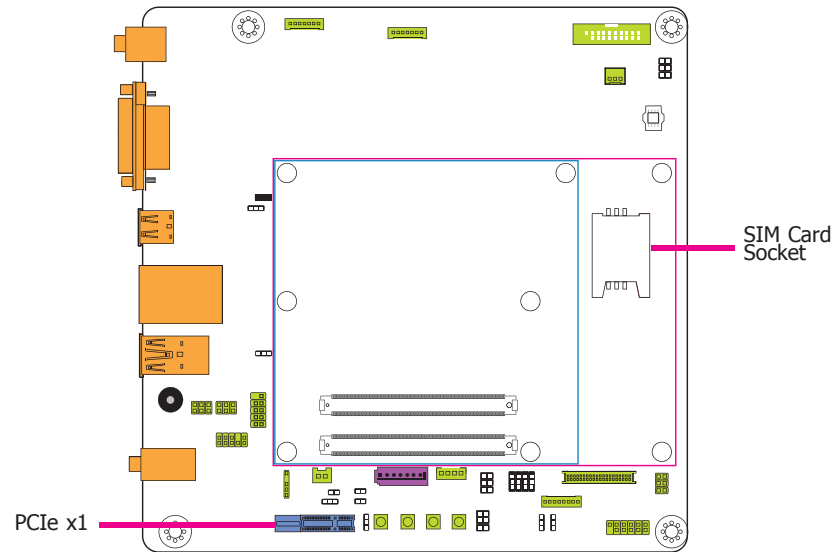
The fan connector is used to connect a cooling fan. The cooling fan will provide adequate air-flow throughout the chassis to prevent overheating the system board components.

## 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.

## Expansion Slots



### 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.

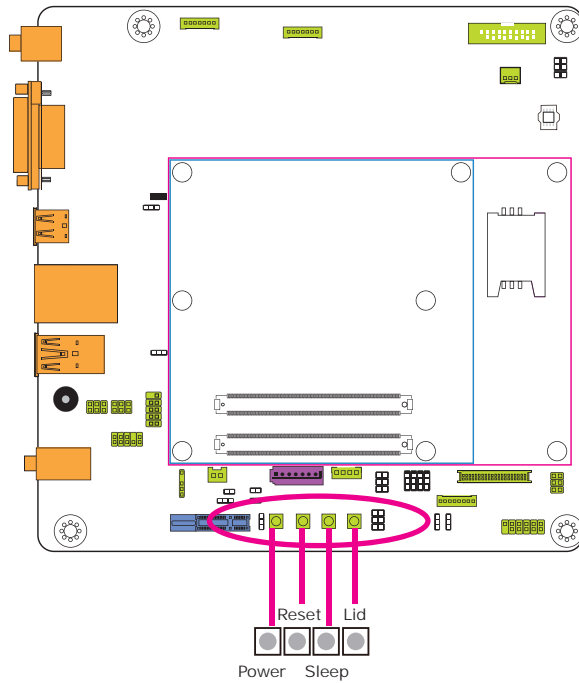
### PCI Express x1 Slot

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

### SIM Card Socket

The SIM card socket on the system board is used to insert a SIM card.

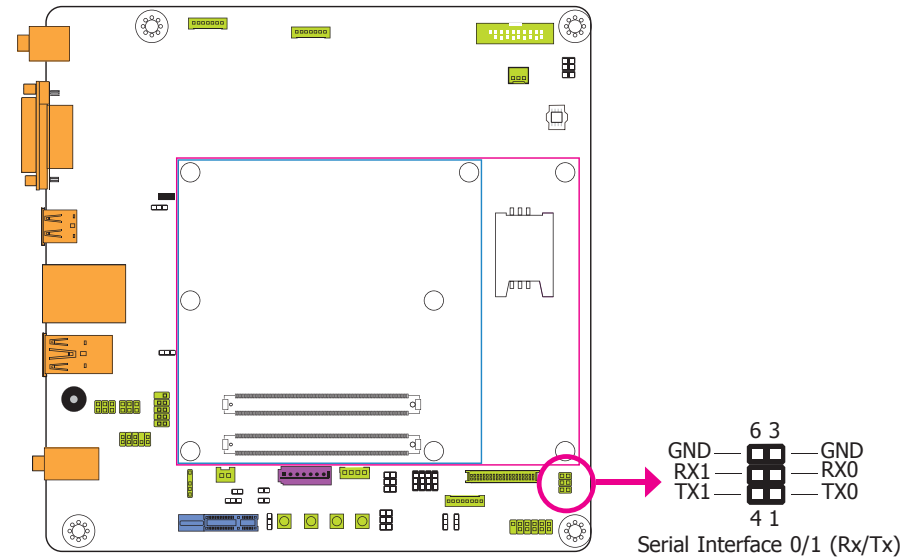
## Switches

**Note:**

The Sleep and Lid functions are supported only when your operating system supports ACPI.

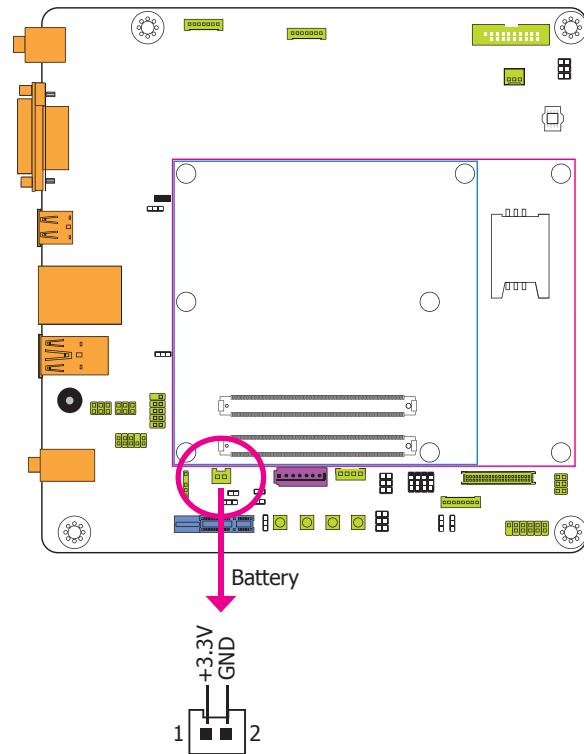
- Lid: it is used to turn the LVDS on or off.
- Sleep: it is used to set the system to “sleep” or “wake-up” mode.

## Serial Interface Connector



The serial interface connector is used for 2 serial ports supported by Tx and Rx signals.

## Battery

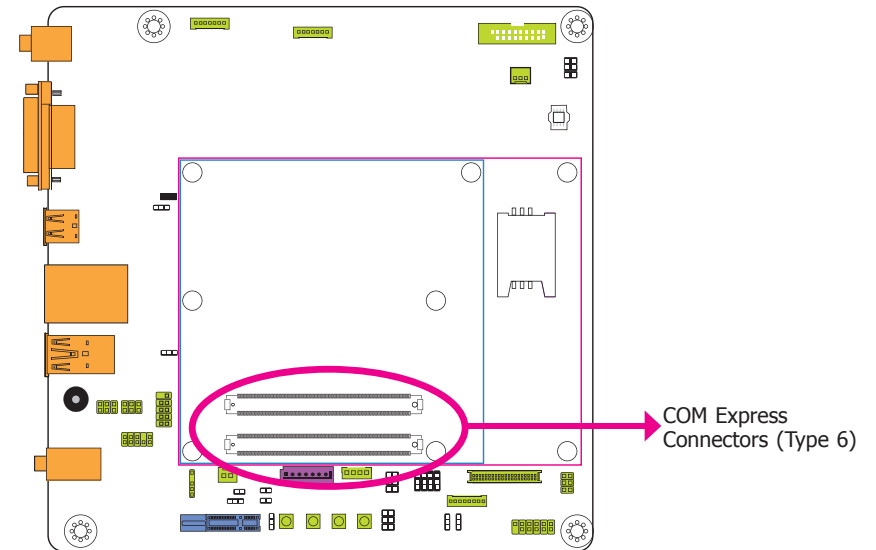


The lithium ion battery powers the real-time clock and CMOS memory. It is an auxiliary source of power when the main power is shut off.

### 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.

## 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#	GND	GND
3	GBE0 MDI3+	LPC_FRAME#	USB_SSRX0-	USB_SSTX0-
4	GBE0_LINK100#	LPC_AD0	USB_SSRX0+	USB_SSTX0+
5	GBE0_LINK1000#	LPC_AD1	GND	GND
6	GBE0 MDI2-	LPC_AD2	USB_SSRX1-	USB_SSTX1-
7	GBE0 MDI2+	LPC_AD3	USB_SSRX1+	USB_SSTX1+
8	GBE0_LINK#	LPC_DRQ0#	GND	GND
9	GBE0 MDI1-	LPC_DRQ1#	NC	NC
10	GBE0 MDI1+	LPC_CLK	NC	NC
11	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
12	GBE0 MDI0-	PWRBTN#	NC	NC
13	GBE0 MDI0+	SMB_CK	NC	NC
14	GBE0_CTREF	SMB_DAT	GND	GND
15	SUS_S3#	SMB_ALERT#	NC	DDI1_CTRLCLK_AUX+
16	SATA0_TX+	SATA1_TX+	NC	DDI1_CTRLDATA_AUX-
17	SATA0_TX-	SATA1_TX-	RSVD <sup>19</sup>	RSVD <sup>19</sup>
18	SUS_S4#	SUS_STAT#	RSVD <sup>19</sup>	RSVD <sup>19</sup>
19	SATA0_RX+	SATA1_RX+	NC	NC
20	SATA0_RX-	SATA1_RX-	NC	NC
21	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
22	NC	NC	NC	NC
23	NC	NC	NC	NC
24	SUS_S5#	PWR_OK	DDI1_HPD	RSVD <sup>19</sup>
25	NC	NC	NC	RSVD <sup>19</sup>
26	NC	NC	NC	DDI1_PAIR0+
27	BATLOW#	WDT	RSVD <sup>19</sup>	DDI1_PAIR0-
28	(S)ATA_ACT#	NC	RSVD <sup>19</sup>	RSVD <sup>19</sup>
29	AC/HDA_SYNC	NC	NC	DDI1_PAIR1+
30	AC/HDA_RST#	AC/HDA_SDINO	NC	DDI1_PAIR1-
31	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
32	AC/HDA_BITCLK	SPKR	NC	DDI1_PAIR2+
33	AC/HDA_SDOOUT	I2C_CK	NC	DDI1_PAIR2-
34	BIOS_DIS0#	I2C_DAT	NC	DDI1_DDC_AUX_SEL
35	THRMTRIP#	THRM#	RSVD <sup>19</sup>	RSVD <sup>19</sup>
36	USB6-	USB7-	NC	DDI1_PAIR3+
37	USB6+	USB7+	NC	DDI1_PAIR3-
38	USB_6_7_OC#	USB_4_5_OC#	NC	RSVD <sup>19</sup>
39	USB4-	USB5-	NC	NC
40	USB4+	USB5+	NC	NC
41	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)

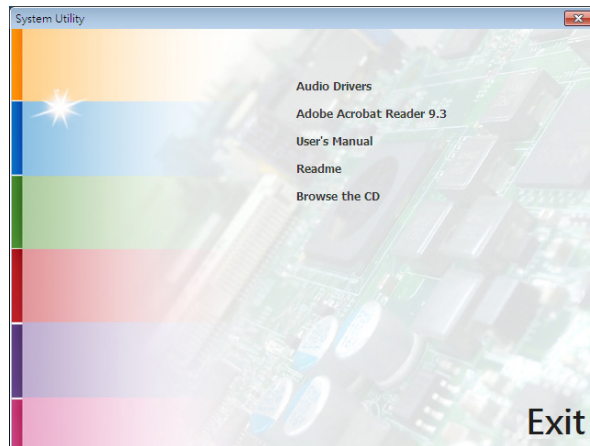
Pin	Row A	Row B	Row C	Row D
42	USB2-	USB3-	NC	NC
43	USB2+	USB3+	NC	NC
44	USB_2_3_OC#	USB_0_1_OC#	NC	NC
45	USB0-	USB1-	RSVD <sup>19</sup>	RSVD <sup>19</sup>
46	USB0+	USB1+	NC	NC
47	VCC_RTC	EXCD1_PERST#	NC	NC
48	EXCD0_PERST#	EXCD1_CPPE#	RSVD <sup>19</sup>	RSVD <sup>19</sup>
49	EXCD0_CPPE#	SYS_RESET#	NC	NC
50	LPC_SERIRQ	CB_RESET#	NC	NC
51	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
52	NC	NC	NC	NC
53	NC	NC	NC	NC
54	GPIO	GPO1	TYPE0#	NC
55	NC	NC	NC	NC
56	NC	NC	NC	NC
57	GND	GPO2	TYPE1#	TYPE2#
58	NC	NC	NC	NC
59	NC	NC	NC	NC
60	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
61	PCIE_TX2+	PCIE_RX2+	NC	NC
62	PCIE_TX2-	PCIE_RX2-	NC	NC
63	GPIO1	GPO3	RSVD <sup>19</sup>	RSVD <sup>19</sup>
64	PCIE_TX1+	PCIE_RX1+	RSVD <sup>19</sup>	RSVD <sup>19</sup>
65	PCIE_TX1-	PCIE_RX1-	NC	NC
66	GND	WAKE0#	NC	NC
67	GPIO2	WAKE1#	RSVD <sup>19</sup>	GND
68	PCIE_TX0+	PCIE_RX0+	NC	NC
69	PCIE_TX0-	PCIE_RX0-	NC	NC
70	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
71	LVDS_A0+	LVDS_B0+	NC	NC
72	LVDS_A0-	LVDS_B0-	NC	NC
73	LVDS_A1+	LVDS_B1+	GND	GND
74	LVDS_A1-	LVDS_B1-	NC	NC
75	LVDS_A2+	LVDS_B2+	NC	NC
76	LVDS_A2-	LVDS_B2-	GND	GND
77	LVDS_VDD_EN	LVDS_B3+	RSVD <sup>19</sup>	RSVD <sup>19</sup>
78	LVDS_A3+	LVDS_B3-	NC	NC
79	LVDS_A3-	LVDS_BKLT_EN	NC	NC
80	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
81	LVDS_A_CK+	LVDS_B_CK+	NC	NC
82	LVDS_A_CK-	LVDS_B_CK-	NC	NC
83	LVDS_I2C_CK	LVDS_BKLT_CTRL	RSVD <sup>19</sup>	RSVD <sup>19</sup>
84	LVDS_I2C_DAT	VCC_5V_SBY	GND	GND
85	GPIO3	VCC_5V_SBY	NC	NC
86	RSVD <sup>19</sup>	VCC_5V_SBY	NC	NC
87	NC	VCC_5V_SBY	GND	GND
88	PCIE_CLK_REF+	BIOS_DIS1#	NC	NC
89	PCIE_CLK_REF-	VGA_RED	NC	NC
90	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)

Pin	Row A	Row B	Row C	Row D
91	SPI_POWER	VGA_GRN	NC	NC
92	SPI_MISO	VGA_BLU	NC	NC
93	GPO0	VGA_HSYNC	GND	GND
94	SPI_CLK	VGA_VSYNC	NC	NC
95	SPI_MOSI	VGA_I2C_CK	NC	NC
96	TPM_PP	VGA_I2C_DAT	GND	GND
97	TYPE10#	SPI_CS#	RSVD <sup>19</sup>	RSVD <sup>19</sup>
98	SER0_TX	RSVD <sup>19</sup>	NC	NC
99	SER0_RX	RSVD <sup>19</sup>	NC	NC
100	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
101	SER1_TX	FAN_PWNOUT	NC	NC
102	SER1_RX	FAN_TACHIN	NC	NC
103	LID#	SLEEP#	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)

## Chapter 3 - Supported Software

The CD that came with the system board contains drivers, utilities and software applications required to enhance the performance of the system board.

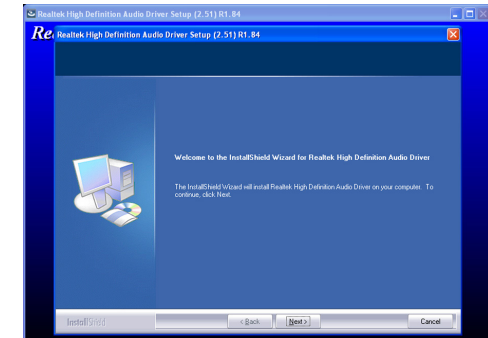
Insert the CD into a CD-ROM drive. The autorun screen (Mainboard Utility CD) will appear. If after inserting the CD, "Autorun" did not automatically start (which is, the Mainboard Utility CD screen did not appear), please go directly to the root directory of the CD and double-click "Setup".



### Audio Drivers

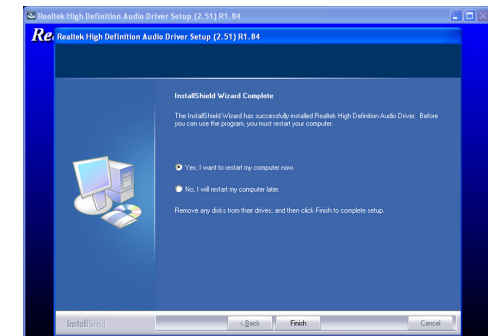
To install the driver, click "Audio Drivers" on the main menu.

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.

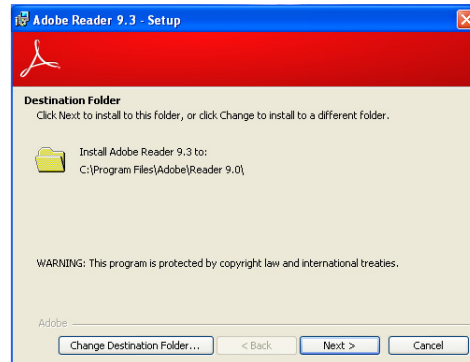
Restarting the system will allow the new software installation to take effect.



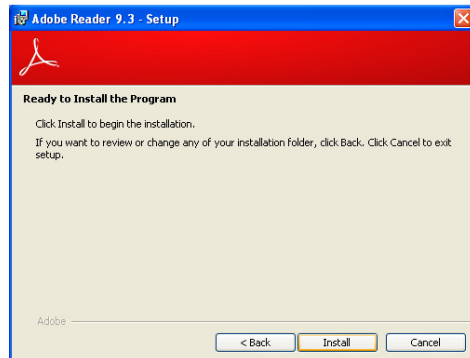
## Adobe Acrobat Reader 9.3

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.

